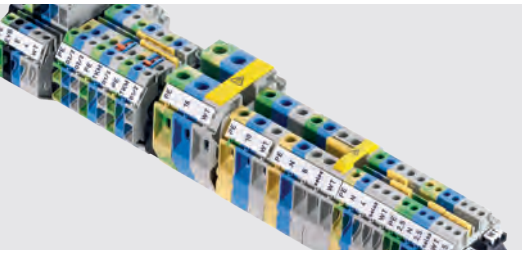
Business Unit

Technology

DKSH Cables & Electrical



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Product sections

Product index

DKSH Australia

The Melbourne DKSH Distribution Centre. Over 8,000 square metres of world-leading infrastructure.

DKSH is the leading Market Expansion Services provider with a focus on Asia Pacific. As the term "Market Expansion Services" suggests, DKSH helps other companies and brands to grow their business in new or existing markets. Publicly listed on the SIX Swiss Exchange since 2012, DKSH is a global company headquartered in Zurich. With 780 business locations in 36 countries – 750 of them in Asia – and 30,320 specialized staff, DKSH generated net sales of CHF 10.5 billion in 2016.

The company offers a tailor-made, integrated portfolio of sourcing, marketing, sales, distribution and after-sales services. It provides business partners with expertise as well as on-the-ground logistics based on a comprehensive network of unique size and depth. Business activities are organized into four specialized Business Units that mirror DKSH fields of expertise: Consumer Goods, Healthcare, Performance Materials and Technology.

DKSH was founded in 1865. With strong Swiss heritage, the company has a long tradition of doing business in and with Asia and is deeply rooted in communities and businesses across Asia Pacific.

About DKSH

DKSH Cables & Electrical

DKSH Australia is a leading supplier of industrial services and technologies. Our broad range of products includes cables and connectors for power, control, instrumentation, telecommunications and data applications, electrical enclosures in both metal and plastic, low voltage control and monitoring products and electrical cable handling, protection, mounting and installation systems.

For over 25 years we have been serving all types of manufacturers, electrical contractors, system integrators and electrical wholesale clients with premium products from leading brands.

Comprising a national network of local State-based sales, customer service and warehouse operations, DKSH offers exceptional availability and one-stop shop convenience across a comprehensive range of cables, electrical accessories and complete solutions for all applications.

- 10,000m^2 of warehousing
- over 100,000 product lines
- National coverage

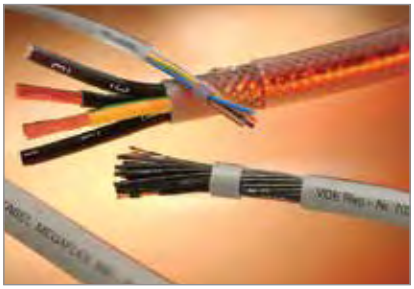
The DKSH Group

Over 30,000 specialised staff	
Operations in 36 countries	
780 business locations around the World	
4 business locations in Australia	
Network of more than 5,500 suppliers and over 500,000 customers	
150 state-of-the-art distribution centres	
Largest SAP application in Asia	

Industries served include:

- Automation
- Automotive
- Construction
- Cranes, conveyors and lifts
- Defence
- Electrical Contractors
- Food and beverage
- Generator and plant hire
- HVAC
- Mass transit
- Materials handling
- Mining, oil and gas
- OEM's
- Solar
- Stage, theatre and film
- Switchboard builders
- Utilities
- Water and waste water
- Wholesale

Cables



DKSH offers a large range of cable products from world-class leading companies including Tele-Fonika (Poland) and Helukabel (Germany). Products include:

- Servo, robotic and drag chain cables
- Mining cables
- Data, Instrumentation and BUS cables
- Power and control cables
- Fire rated cable
- Screened EMC cables
- Solar cables
- H07 and RE110 rubber cables
- High temperature cables
- Orange circular
- Ethernet cable
- Flexible building wire

Connectors

DKSH stocks a large range of connectors from some of the world's leading manufacturers. Wieland Electric's connector range includes Industrial and Exi multipoles and IP68 power connectors. Multi-Contact's range of high power connectors are rated up to 6000A, with solutions for robotic and automation applications, they are also the world leader in solar (MC4) connectors. DKSH's range of connectors also includes Mennekes CEEform connectors and ITT Cannon Powerlocks, both manufacturers are recognised as the world leaders in their respective fields.

- Industrial and Exi Multipoles
- High current powerlocks
- Solar
- CEEform and Refrigerated container connectors
- Robotic, servo and automation connectors

Providing solutions to industry

Adding value

Providing valuable expertise and best-in-class products requires focus on new techniques, new technologies and developing products that meet changing regulations.

When a new regulation is introduced and existing products are no longer compliant you can trust that DKSH have already been talking to our clients about meeting this challenge.

Our staff receive product training from the world's leading brands on application and service, and this investment by DKSH is considerable. DKSH works with customers to ensure their goals are achieved, whether that's by defined supply, sourcing of new products, stock holding, terms, warranties, distribution, marketing support, training or more. We recognise that our business can't grow unless we help you grow.

Our business is more than just the exchange and promotion of goods. It is about a service philosophy that takes profound responsibility for the goods and brands of our clients.

Our proactive approach provides strategic advice born from the experience, know-how and network of over 30,000 specialists working for DKSH.

Cable Accessories

To complement our range of cables and connectors, we offer cable entry systems from Icotek, world-class leader in cable management systems. We also carry a large range of cable glands including nylon through to nickel plated brass, and stainless steel, with EMC and strain relief options available. Where standard cable glands are not suitable, the Icotek range of gland plates and accessories, can suit almost any application. Slotted cable duct, Industrial conduits, stainless steel cable ties, and ferrules complete the extensive range of cable accessories.

- Cable glands
- Cable entry systems
- Gland Plates
- Nylon and steel flexible conduits
- Slotted cable duct
- Cable ties
- Ferrules

Enclosures

The DKSH range of enclosures includes epoxy-polyester powder coated terminal boxes and wall mount enclosures from ETA in Italy.

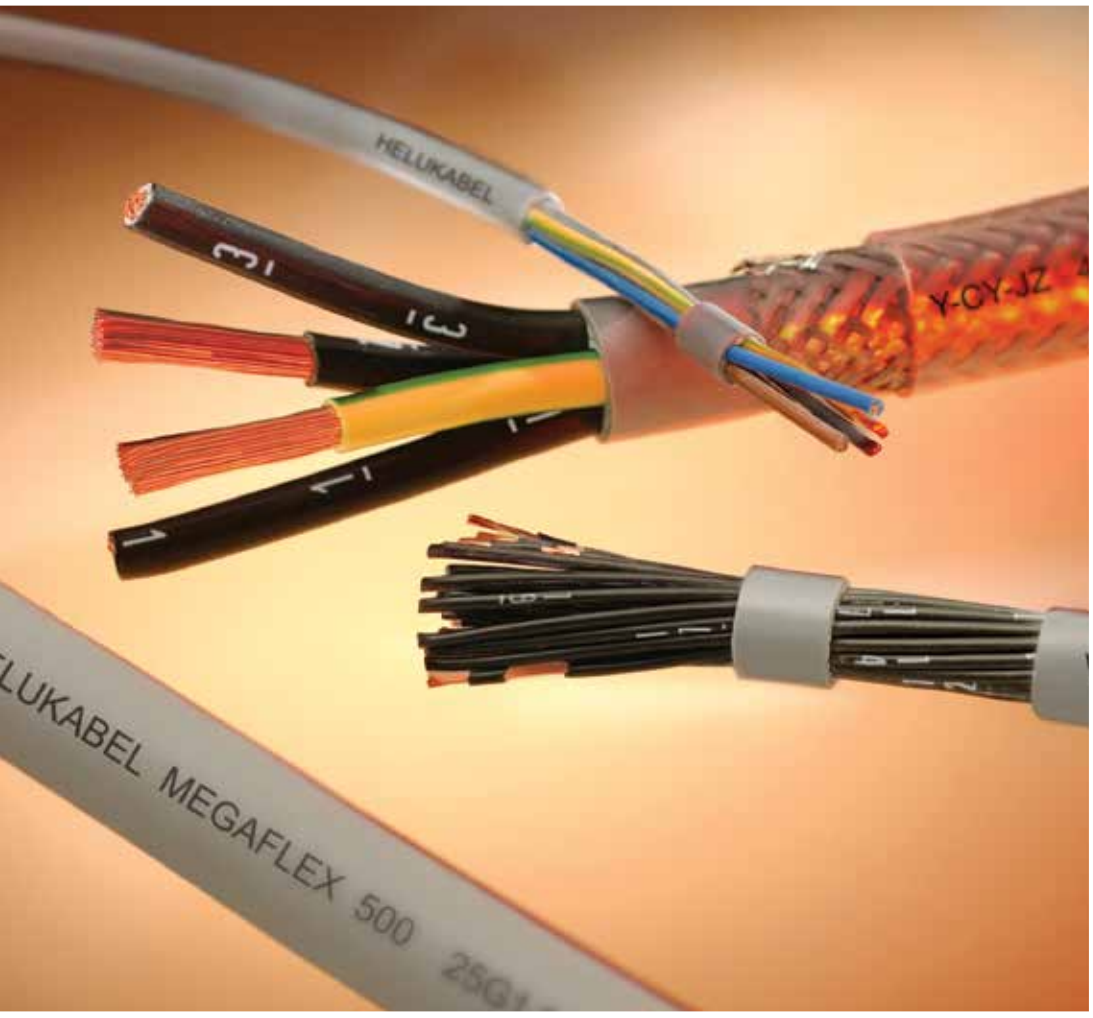
- IP66 consumer units
- Epoxy-polyester powder coated sheet steel
- Wall mount enclosures
- Accessories

Control and integration

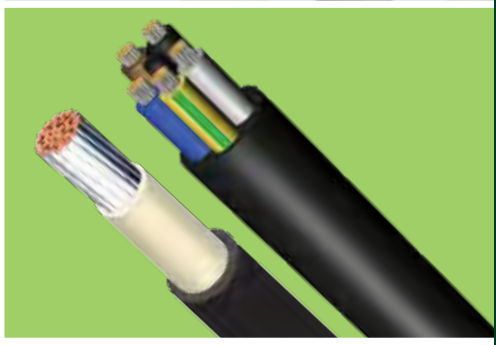
DKSH offers a large range of switchboard products from some of the world's leading manufacturers. From circuit protection, through to control and monitoring, DKSH's range of control and integration products can suit most applications.

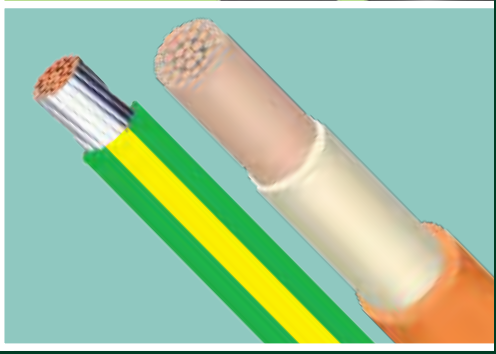
- Circuit breakers
- DIN mount terminals and accessories
- Contactors and relays
- Timers and monitoring relays
- Power supplies
- Surge protection
- Disconnectors and isolators

Cable


HELUKABEL
Y-CY-JZ
LUKABEL MEGAFLEX 500


HELUKABEL
HELUKABEL VDE-REG-





Orange Circular

Power Cable

Australian standard power distribution cable

Cable Construction:
Class 2 stranding, coloured PVC insulation, flame retardant, UV resistant orange PVC sheath and metre marked.

Minimum Bending Radius:
≤ 25mm2 4 x cable diameter
≥ 35mm2 6 x cable diameter

Nominal Voltage:
600/1000V

Temperature Range:
-30°C to +90°C

Colour Coding
- 2 core + earth : Red, Black, Green/Yellow
- 3 core + earth : Red, White, Blue, Green/Yellow
- 4 core + earth : Red, White, Blue, Black, Green/Yellow

Features
- UV resistant
- Non compacted conductors
- Oil & chemical resistant
- Flame retardant
- Metre marked

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
2 core + earth				
OC3G1.5	1.5mm²	2 core + earth	10.10	146
OC3G2.5	2.5mm²	2 core + earth	11.20	192
OC3G4	4mm²	2 core + earth	12.50	253
OC3G6	6mm²	2 core + earth	13.00	299
OC3G10	10mm²	2 core + earth	15.10	432
OC3G16	16mm²	2 core + earth	16.90	599
3 core + earth				
OC4G1.5	1.5mm²	3 core + earth	11.00	175
OC4G2.5	2.5mm²	3 core + earth	12.10	231
OC4G4	4mm²	3 core + earth	13.80	314
OC4G6	6mm²	3 core + earth	14.50	379
OC4G10	10mm²	3 core + earth	16.80	553
OC4G16	16mm²	3 core + earth	18.90	778
OC4G25	25mm²	3 core + earth	22.10	1136
OC4G35	35mm²	3 core + earth	24.60	1519
OC4G50	50mm²	3 core + earth	28.30	2050
OC4G70	70mm²	3 core + earth	31.90	2825
4 core + earth				
OC5G1.5	1.5mm²	4 core + earth	11.90	211
OC5G2.5	2.5mm²	4 core + earth	13.20	280
OC5G4	4mm²	4 core + earth	15.20	389
OC5G6	6mm²	4 core + earth	15.90	474
OC5G10	10mm²	4 core + earth	18.50	696
OC5G16	16mm²	4 core + earth	20.90	989
OC5G25	25mm²	4 core + earth	24.80	1464
OC5G35	35mm²	4 core + earth	27.50	1933
OC5G50	50mm²	4 core + earth	32.00	2625
OC5G70	70mm²	4 core + earth	36.20	3628

Orange Circular

Control Cable

Australian standard control cable

Cable Construction:
Class 2 stranding, white with black numbered PVC insulation, flame retardant, UV resistant orange PVC sheath, meter marked.

Minimum Bending Radius:
12 x cable diameter

Nominal Voltage:
600/1000V

Temperature Range:
-30°C to +90°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
OC7G1.5	1.5mm²	6 core + earth	12.90	258
OC9G1.5	1.5mm²	8 core + earth	14.70	337
OC11G1.5	1.5mm²	10 core + earth	16.60	393
OC16G1.5	1.5mm²	15 core + earth	18.30	515
OC21G1.5	1.5mm²	20 core + earth	20.00	635
OC7G2.5	2.5mm²	6 core + earth	14.30	347
OC11G2.5	2.5mm²	10 core + earth	18.40	532
OC16G2.5	2.5mm²	15 core + earth	20.40	707

TELE-FONIKA - a leading supplier of cables and cabling systems

The Group TELE-FONIKA Kable S.A. (TF Kable) is ranked in the forefront of the global cable industry and is the third largest manufacturer of cables and wires in Europe. Products manufactured by TELE-FONIKA are sold in over 80 countries. Their product portfolio includes 25,000 cable types.

The company has 460 quality certificates of manufactured goods, compliance-tested by 34 renowned certification centres in the world.

Flexible Building Wire

110°C Flexible halogen-free building wire

AS/NZS standard 110°C halogen free, low smoke, high temperature, flame-retardant, UV-resistant flexible cable

Construction:
Class 5 (0.5-10mm²) or Class 6 (16-25mm²) tinned fire wire flexible copper conductor, halogen-free, low smoke, high temperature, flame-retardant, UV-resistant. Cross-linked, halogen-free, flame-retardant compound type X-HF-110 acc. to AS/NZS 3808, chemical and oil-resistant insulation.

Minimum Operating Temperature:
-40°C

Maximum Operating Temperature:
+110°C

Flame retardant:
AS/NZS 1660.5.1; IEC 60332-3-22 Cat. A; IEC 60332-1

Smoke density:
AS/NZS 1660.5.2; IEC 61034-2

Halogen acid gas content:
AS/NZS 1660.5.3, IEC 60754-1

Gases evolved during combustion:
AS/NZS 1660.5.4, IEC 60754-2

Minimum Bending Radius:
4 x cable diameter

Nominal Voltage:
600/1000V

Length:
100 mtr spool

Part No.	Number and cross-sectional area of conductor n x mm2	Maximum diameter of wires in conductor mm	Nominal thickness of insulation mm	Approximate overall diameter mm	Approximate net weight of cables kg/km	Maximum conductor resistance at temperature 20°C Ω/km	Current rating A*
HF1X0.5**	0,5	0,21	0,7	2,3	9	40,1	10
HF1X0.75**	0,75	0,21	0,7	2,5	12	26,7	16
HF1X1**	1	0,21	0,7	2,6	14	20,0	26
HF1X1.5**	1,5	0,26	0,7	2,9	19	13,7	32
HF1X2.5**	2,5	0,26	0,7	3,4	29	8,21	43
HF1X4**	4	0,31	0,7	3,9	42	4,95	57
HF1X6**	6	0,31	0,7	4,4	60	3,39	73
HF1X10**	10	0,41	0,7	5,4	98	1,95	102
HF1X16**	16	0,21	0,7	6,4	150	1,24	135

* acc to AS/NZS 3008.1.1:2009 Table 6 Column 3

**** = Colour Coding**

BK = Black	BE = Blue	BN = Brown	RD = Red	GY = Grey
OE = Orange	PK = Pink	VT = Violet	WE = White	GN/YW = Green/Yellow

Cross section in mm²	Red	Black	White	Blue	Brown	Grey	Orange	Violet	Pink	Green/Yellow
0.5	HF1X0.5RD	HF1X0.5BK	HF1X0.5WE	HF1X0.5BE	HF1X0.5BN	HF1X0.5GY	HF1X0.5OE	HF1X0.5VT	HF1X0.5PK	HF1X0.5GN/YW
0.75	HF1X0.75RD	HF1X0.75BK	HF1X0.75WE	HF1X0.75BE	HF1X0.75BN	HF1X0.75GY	HF1X0.75OE	HF1X0.75VT	HF1X0.75PK	HF1X0.75GN/YW
1	HF1X1RD	HF1X1BK	HF1X1WE	HF1X1BE	HF1X1BN	HF1X1GY	HF1X1OE	HF1X1VT	HF1X1PK	HF1X1GN/YW
1.5	HF1X1.5RD	HF1X1.5BK	HF1X1.5WE	HF1X1.5BE	HF1X1.5BN	HF1X1.5GY	HF1X1.5OE	HF1X1.5VT	HF1X1.5PK	HF1X1.5GN/YW
2.5	HF1X2.5RD	HF1X2.5BK	HF1X2.5WE	HF1X2.5BE	HF1X2.5BN	HF1X2.5GY	HF1X2.5OE	HF1X2.5VT	HF1X2.5PK	HF1X2.5GN/YW
4	HF1X4RD	HF1X4BK	HF1X4WE	HF1X4BE	-	-	-	-	-	HF1X4GN/YW
6	HF1X6RD	HF1X6BK	HF1X6WE	HF1X6BE	-	-	-	-	-	HF1X6GN/YW
10	HF1X10RD	HF1X10BK	HF1X10WE	HF1X10BE	-	-	-	-	-	HF1X10GN/YW
16	HF1X16RD	HF1X16BK	HF1X16WE	HF1X16BE	-	-	-	-	-	-

Building Wire

V90HT Flexible Building Wire

Class 5 tinned copper

Construction:
Class 5 flexible tinned copper conductors, heat-resistant, flame-retardant PVC (V90HT) insulation.

Nominal Voltage:
600/1000V

Application:
Suitable for installations in plants, devices, switchgear cabinets where higher temperatures occur and at working voltages up to 600/1000V.

Temperature Range:
Fixed: -35°C to +105°C

flame retardant

Part No.	Nominal conductor area (mm²)	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
FHDT116020B100	0.5	16 x 0.20	Black	2.55	40.1	1.1	100
FHDT116020G/Y100	0.5	16 x 0.20	Green / Yellow	2.55	40.1	1.1	100
FHDT116020I100	0.5	16 x 0.20	Light Blue	2.55	40.1	1.1	100
FHDT116020L100	0.5	16 x 0.20	Blue	2.55	40.1	1.1	100
FHDT116020N100	0.5	16 x 0.20	Brown	2.55	40.1	1.1	100
FHDT116020O100	0.5	16 x 0.20	Orange	2.55	40.1	1.1	100
FHDT116020P100	0.5	16 x 0.20	Pink	2.55	40.1	1.1	100
FHDT116020R/W100	0.5	16 x 0.20	Red / White	2.55	40.1	1.1	100
FHDT116020R100	0.5	16 x 0.20	Red	2.55	40.1	1.1	100
FHDT116020R500	0.5	16 x 0.20	Red	2.55	40.1	1.1	500
FHDT116020S/B100	0.5	16 x 0.20	Grey / Black	2.55	40.1	1.1	100
FHDT116020S100	0.5	16 x 0.20	Grey	2.55	40.1	1.1	100
FHDT116020V100	0.5	16 x 0.20	Violet	2.55	40.1	1.1	100
FHDT116020V500	0.5	16 x 0.20	Violet	2.55	40.1	1.1	500
FHDT116020W100	0.5	16 x 0.20	White	2.55	40.1	1.1	100
FHDT116020W500	0.5	16 x 0.20	white	2.55	40.1	1.1	100
FHDT116020Y100	0.5	16 x 0.20	Yellow	2.55	40.1	1.1	100
FHDT124020B/W100	0.75	24 x 0.20	Black / White	2.75	26.7	1.4	100
FHDT124020B100	0.75	24 x 0.20	Black	2.75	26.7	1.4	100
FHDT124020G/Y100	0.75	24 x 0.20	Green / Yellow	2.75	26.7	1.4	100
FHDT124020G100	0.75	24 x 0.20	Green	2.75	26.7	1.4	100
FHDT124020L100	0.75	24 x 0.20	Blue	2.75	26.7	1.4	100
FHDT124020N100	0.75	24 x 0.20	Brown	2.75	26.7	1.4	100
FHDT124020N500	0.75	24 x 0.20	Brown	2.75	26.7	1.4	500
FHDT124020O/R100	0.75	24 x 0.20	Orange / Red	2.75	26.7	1.4	100
FHDT124020O100	0.75	24 x 0.20	Orange	2.75	26.7	1.4	100
FHDT124020P100	0.75	24 x 0.20	Pink	2.75	26.7	1.4	100
FHDT124020P500	0.75	24 x 0.20	Pink	2.75	26.7	1.4	500
FHDT124020R/W100	0.75	24 x 0.20	Red / White	2.75	26.7	1.4	100
FHDT124020R100	0.75	24 x 0.20	Red	2.75	26.7	1.4	100
FHDT124020R500	0.75	24 x 0.20	Red	2.75	26.7	1.4	500
FHDT124020S100	0.75	24 x 0.20	Grey	2.75	26.7	1.4	100
FHDT124020S500	0.75	24 x 0.20	Grey	2.75	26.7	1.4	500
FHDT124020V100	0.75	24 x 0.20	Violet	2.75	26.7	1.4	100
FHDT124020W100	0.75	24 x 0.20	White	2.75	26.7	1.4	100
FHDT124020W500	0.75	24 x 0.20	White	2.75	26.7	1.4	500
FHDT124020Y100	0.75	24 x 0.20	Yellow	2.75	26.7	1.4	100
FHDT132020B100	1	32 x 0.20	Black	2.95	20	1.7	100

Building Wire

V90HT Flexible Building Wire

Class 5 tinned copper

flame retardant

Part No.	Nominal conductor area (mm²)	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
FHDT132020B500	1	32 x 0.20	Black	2.95	20	1.7	500
FHDT132020G/Y100	1	32 x 0.20	Green / Yellow	2.95	20	1.7	100
FHDT132020G100	1	32 x 0.20	Green	2.95	20	1.7	100
FHDT132020I100	1	32 x 0.20	Light Blue	2.95	20	1.7	100
FHDT132020L/W100	1	32 x 0.20	Blue / White	2.95	20	1.7	100
FHDT132020L100	1	32 x 0.20	Blue	2.95	20	1.7	100
FHDT132020N100	1	32 x 0.20	Brown	2.95	20	1.7	100
FHDT132020O100	1	32 x 0.20	Orange	2.95	20	1.7	100
FHDT132020O200	1	32 x 0.20	Orange	2.95	20	1.7	200
FHDT132020P100	1	32 x 0.20	Pink	2.95	20	1.7	100
FHDT132020R/W100	1	32 x 0.20	Red / White	2.95	20	1.7	100
FHDT132020R100	1	32 x 0.20	Red	2.95	20	1.7	100
FHDT132020S100	1	32 x 0.20	Grey	2.95	20	1.7	100
FHDT132020S1K	1	32 x 0.20	Light Grey	2.95	20	1.7	Bulk
FHDT132020V100	1	32 x 0.20	Violet	2.95	20	1.7	100
FHDT132020W100	1	32 x 0.20	White	2.95	20	1.7	100
FHDT132020Y100	1	32 x 0.20	Yellow	2.95	20	1.7	100
FHDT130025500	1.5	30 x 0.25	Red	3.15	13.7	2.2	500
FHDT130025B/W100	1.5	30 x 0.25	Black / White	3.15	13.7	2.2	100
FHDT130025B100	1.5	30 x 0.25	Black	3.15	13.7	2.2	100
FHDT130025B500	1.5	30 x 0.25	Black	3.15	13.7	2.2	500
FHDT130025G/Y100	1.5	30 x 0.25	Green / Yellow	3.15	13.7	2.2	100
FHDT130025G100	1.5	30 x 0.25	Green	3.15	13.7	2.2	100
FHDT130025I100	1.5	30 x 0.25	Light Blue	3.15	13.7	2.2	100
FHDT130025L/R100	1.5	30 x 0.25	Blue / Red	3.15	13.7	2.2	100
FHDT130025L100	1.5	30 x 0.25	Blue	3.15	13.7	2.2	100
FHDT130025N/B100	1.5	30 x 0.25	Brown / Black	3.15	13.7	2.2	100
FHDT130025N/W100	1.5	30 x 0.25	Brown / White	3.15	13.7	2.2	100
FHDT130025N100	1.5	30 x 0.25	Brown	3.15	13.7	2.2	100
FHDT130025N500	1.5	30 x 0.25	Brown	3.15	13.7	2.2	500
FHDT130025O/B100	1.5	30 x 0.25	Orange / Black	3.15	13.7	2.2	100
FHDT130025O/R100	1.5	30 x 0.25	Orange / Red	3.15	13.7	2.2	100
FHDT130025O100	1.5	30 x 0.25	Orange	3.15	13.7	2.2	100
FHDT130025O200	1.5	30 x 0.25	Orange	3.15	13.7	2.2	200
FHDT130025O500	1.5	30 x 0.25	Orange	3.15	13.7	2.2	500
FHDT130025P100	1.5	30 x 0.25	Pink	3.15	13.7	2.2	100
FHDT130025P500	1.5	30 x 0.25	Pink	3.15	13.7	2.2	500
FHDT130025R/W100	1.5	30 x 0.25	Red / White	3.15	13.7	2.2	100
FHDT130025R100	1.5	30 x 0.25	Red	3.15	13.7	2.2	100
FHDT130025S100	1.5	30 x 0.25	Light Grey	3.15	13.7	2.2	100
FHDT130025S500	1.5	30 x 0.25	Light Grey	3.15	13.7	2.2	500
FHDT130025V100	1.5	30 x 0.25	Violet	3.15	13.7	2.2	100
FHDT130025V500	1.5	30 x 0.25	Violet	3.15	13.7	2.2	500
FHDT130025W100	1.5	30 x 0.25	White	3.15	13.7	2.2	100
FHDT130025W200	1.5	30 x 0.25	White	3.15	13.7	2.2	200
FHDT130025W500	1.5	30 x 0.25	White	3.15	13.7	2.2	500
FHDT130025Y100	1.5	30 x 0.25	Yellow	3.15	13.7	2.2	100
FHDT150025B100	2.5	50 x 0.25	Black	3.9	8.21	3.5	100
FHDT150025B500	2.5	50 x 0.25	Black	3.9	8.21	3.5	500
FHDT150025G/Y100	2.5	50 x 0.25	Green / Yellow	3.9	8.21	3.5	100

Building Wire

V90HT Flexible Building Wire

Class 5 tinned copper

flame retardant

Part No.	Nominal conductor area (mm²)	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
FHDT150025G/Y500	2.5	50 x 0.25	Green / Yellow	3.9	8.21	3.5	500
FHDT150025I100	2.5	50 x 0.25	Light Blue	3.9	8.21	3.5	100
FHDT150025L100	2.5	50 x 0.25	Blue	3.9	8.21	3.5	100
FHDT150025L500	2.5	50 x 0.25	Blue	3.9	8.21	3.5	500
FHDT150025N100	2.5	50 x 0.25	Brown	3.9	8.21	3.5	100
FHDT150025N500	2.5	50 x 0.25	Brown	3.9	8.21	3.5	500
FHDT150025O/B100	2.5	50 x 0.25	Orange / Black	3.9	8.21	3.5	100
FHDT150025O100	2.5	50 x 0.25	Orange	3.9	8.21	3.5	100
FHDT150025P100	2.5	50 x 0.25	Pink	3.9	8.21	3.5	100
FHDT150025R100	2.5	50 x 0.25	Red	3.9	8.21	3.5	100
FHDT150025R500	2.5	50 x 0.25	Red	3.9	8.21	3.5	500
FHDT150025S100	2.5	50 x 0.25	Red	3.9	8.21	3.5	100
FHDT150025V100	2.5	50 x 0.25	Violet	3.9	8.21	3.5	100
FHDT150025W100	2.5	50 x 0.25	White	3.9	8.21	3.5	100
FHDT150025Y100	2.5	50 x 0.25	Yellow	3.9	8.21	3.5	100
FHDT150025Y500	2.5	50 x 0.25	Yellow	3.9	8.21	3.5	500
FHDT1560030Y100	4	56 x 0.30	Yellow	4.7	5.09	5.3	100
FHDT156030B100	4	56 x 0.30	Black	4.7	5.09	5.3	100
FHDT156030G/Y100	4	56 x 0.30	Green / Yellow	4.7	5.09	5.3	100
FHDT156030L100	4	56 x 0.30	Blue	4.7	5.09	5.3	100
FHDT156030N100	4	56 x 0.30	Brown	4.7	5.09	5.3	100
FHDT156030O100	4	56 x 0.30	Orange	4.7	5.09	5.3	100
FHDT156030P100	4	56 x 0.30	Pink	4.7	5.09	5.3	100
FHDT156030R100	4	56 x 0.30	Red	4.7	5.09	5.3	100
FHDT156030S100	4	56 x 0.30	Red	4.7	5.09	5.3	100
FHDT156030V100	4	56 x 0.30	Violet	4.7	5.09	5.3	100
FHDT156030W100	4	56 x 0.30	White	4.7	5.09	5.3	100
FHDT184030B100	6	84 x 0.30	Black	5.46	3.39	7.6	100
FHDT184030G/Y100	6	84 x 0.30	Green / Yellow	5.46	3.39	7.6	100
FHDT184030G/Y500	6	84 x 0.30	Green / Yellow	5.46	3.39	7.6	500
FHDT184030L100	6	84 x 0.30	Blue	5.46	3.39	7.6	100
FHDT184030L500	6	84 x 0.30	Blue	5.46	3.39	7.6	500
FHDT184030N100	6	84 x 0.30	Brown	5.46	3.39	7.6	100
FHDT184030O100	6	84 x 0.30	Orange	5.46	3.39	7.6	100
FHDT184030P100	6	84 x 0.30	Pink	5.46	3.39	7.6	100
FHDT184030R100	6	84 x 0.30	Red	5.46	3.39	7.6	100
FHDT184030S100	6	84 x 0.30	Grey	5.46	3.39	7.6	100
FHDT184030V100	6	84 x 0.30	Violet	5.46	3.39	7.6	100
FHDT184030W100	6	84 x 0.30	White	5.46	3.39	7.6	100
FHDT184030Y100	6	84 x 0.30	Yellow	5.46	3.39	7.6	100
FHDT177040B100	10	77 x0.40	Black	6.7	2.02	9.1	100
FHDT177040R100	10	77 x0.40	Red	6.7	2.02	9.1	100
FHDT177040W100	10	77 x0.40	White	6.7	2.02	9.1	100

Building Wire

V90HT Flexible Building Wire

Class 6 plain copper

Construction:
Class 6 highly flexible plain copper conductors, heat-resistant, flame-retardant PVC (V90HT) insulation.

Application:
Suitable for installations in plants, devices, switchgear cabinets where higher temperatures occur and at working voltages up to 600/1000V.

Temperature Range:
Fixed: -35°C to +105°C

Nominal Voltage:
600/1000V

flame retardant

Part No.	Nominal conductor area (mm²)	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
SIPF6W100	6	192 x 0.20	White	5.3	3.3	7.6	100
SIPF10B100	10	322 x 0.20	Black	6.3	1.91	12	100
SIPF10B500	10	322 x 0.20	Black	6.3	1.91	12	500
SIPF10G/Y500	10	322 x 0.20	Green / Yellow	6.3	1.91	12	500
SIPF10L500	10	322 x 0.20	Blue	6.3	1.91	12	500
SIPF10R100	10	322 x 0.20	Red	6.3	1.91	12	100
SIPF10R500	10	322 x 0.20	Red	6.3	1.91	12	500
SIPF10W100	10	322 x 0.20	White	6.3	1.91	12	100
SIPF10W500	10	322 x 0.20	White	6.3	1.91	12	500
SIPF16B100	16	511 x 0.20	Black	7.4	1.21	18	100
SIPF16B500	16	511 x 0.20	Black	7.4	1.21	18	500
SIPF16G/Y500	16	511 x 0.20	Green / Yellow	7.4	1.21	18	500
SIPF16L100	16	511 x 0.20	Blue	7.4	1.21	18	100
SIPF16L500	16	511 x 0.20	Blue	7.4	1.21	18	500
SIPF16R100	16	511 x 0.20	Red	7.4	1.21	18	100
SIPF16R500	16	511 x 0.20	Red	7.4	1.21	18	500
SIPF16W100	16	511 x 0.20	White	7.4	1.21	18	100
SIPF16W500	16	511 x 0.20	White	7.4	1.21	18	500
SIPF25B500	25	784 x 0.20	Black	9.1	0.78	27.5	500
SIPF25G/Y500	25	784 x 0.20	Green / Yellow	9.1	0.78	27.5	500
SIPF25L500	25	784 x 0.20	Blue	9.1	0.78	27.5	500
SIPF25R500	25	784 x 0.20	Red	9.1	0.78	27.5	500
SIPF25W500	25	784 x 0.20	White	9.1	0.78	27.5	500
SIPF35B100	35	714 x 0.25	Black	10.4	0.53	37.9	100
SIPF35B500	35	714 x 0.25	Black	10.4	0.53	37.9	500
SIPF35G/Y500	35	714 x 0.25	Green / Yellow	10.4	0.53	37.9	500
SIPF35L500	35	714 x 0.25	Blue	10.4	0.53	37.9	500
SIPF35R100	35	714 x 0.25	Red	10.4	0.53	37.9	100
SIPF35R500	35	714 x 0.25	Red	10.4	0.53	37.9	500
SIPF35W500	35	714 x 0.25	White	10.4	0.53	37.9	500
SIPF50B100	50	1577 x 0.20	Black	12.3	0.386	53.5	100
SIPF50L500	50	1577 x 0.20	Blue	12.3	0.386	53.5	500
SIPF50B500	50	1577 x 0.20	Black	12.3	0.386	53.5	500
SIPF50G/Y500	50	1577 x 0.20	Green / Yellow	12.3	0.386	53.5	500
SIPF50R100	50	1577 x 0.20	Red	12.3	0.386	53.5	100
SIPF50R500	50	1577 x 0.20	Red	12.3	0.386	53.5	500

Class 5 flexible conductors

Building Wire

V90HT Flexible Building Wire

Class 6 plain copper

Construction:
Class 6 highly flexible plain copper conductors, heat-resistant, flame-retardant PVC (V90HT) insulation.

Nominal Voltage:
600/1000V

Application:
Suitable for installations in plants, devices, switchgear cabinets where higher temperatures occur and at working voltages up to 600/1000V.

Temperature Range:
Fixed: -35°C to +105°C

flame retardant

Part No.	Nominal conductor area (mm²)	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
SIPF50W500	50	1577 x 0.20	White	12.3	0.386	53.5	500
SIPF70B500	70	2204 x 0.20	Black	14	0.272	73.1	500
SIPF70G/Y500	70	2204 x 0.20	Green / Yellow	14	0.272	73.1	500
SIPF70L500	70	2204 x 0.20	Blue	14	0.272	73.1	500
SIPF70R500	70	2204 x 0.20	Red	14	0.272	73.1	500
SIPF70W500	70	2204 x 0.20	White	14	0.272	73.1	500
SIPF95B500	95	1348 x 0.30	Black	16.3	0.2	100	500
SIPF95G/Y500	95	1348 x 0.30	Green / Yellow	16.3	0.2	100	500
SIPF95R500	95	1348 x 0.30	Red	16.3	0.2	100	500
SIPF95W500	95	1348 x 0.30	White	16.3	0.2	100	500
SIPF120B500	120	1672 x 0.30	Black	17.9	0.161	122.9	500
SIPF120G/Y500	120	1672 x 0.30	Green / Yellow	17.9	0.161	122.9	500
SIPF120R500	120	1672 x 0.30	Red	17.9	0.161	122.9	500

Fire Rated Cable

FR3013 flexible fire rated power cable

Single core

Construction:
Flexible bare copper class 5 fine wire stranding, glass mica tape, cross-linked, halogen free, flame-retardant compound type X-HF-110 acc. to AS/NZS 3808, red low smoke halogen-free type HSF-110TP metre marked sheath to AS/NZS 3808.

Bending Radius:
8 x cable diameter

Nominal Voltage:
600/1000V

Temperature Range:
-40°C - 110°C

Features, Rating and Approvals:
- Flexibility for easy installation
- REACH and RoHS compliant
- Halogen free acc. to IEC 60754-1
- UV-resistant

Flame-retardant: AS/NZS 1660.5.1; IEC 60332-3-22 Cat. A; IEC 60332-1
Cable circuit integrity: AS/NZS 1660.5.5; IEC 60331; BS 6387, Cat. C.W.Z
Wiring system circuit integrity: AS/NZS 3013, Cat. WS52W
Smoke density: AS/NZS 1660.5.2; IEC 61034-2
Halogen acid gas content: AS/NZS 1660.5.3, IEC 60754-1
Gases evolved during combustion: AS/NZS 1660.5.4, IEC 60754-2

Core Colour Coding:
- Single Cores : Natural
- 2 core + earth : Red, Black, Green/Yellow
- 4 core + earth : Red, White, Blue, Black, Green/Yellow

Outer Sheath Colour:
Red

Installation Guidance
It is the responsibility of the installing contractor to ensure FR cables are installed in accordance with the relevant standards and regulations for fire rated areas.

Single Core

Part No.	Nominal conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km
FR1X16R	1 x 16	10.3	215
FR1X25R	1 x 25	11.9	311
FR1X35R	1 x 35	12.7	403
FR1X50R	1 x 50	14.9	558
FR1X70R	1 x 70	16.9	761
FR1X95R	1 x 95	19.2	983
FR1X120R	1 x 120	20.5	1222
FR1X150R	1 x 150	23.0	1522
FR1X185R	1 x 185	25.8	1855
FR1X240R	1 x 240	27.5	2365
FR1X300R	1 x 300	31.5	2945
FR1X400R	1 x 400	34.1	3810
FR1X500R	1 x 500	39.3	4811
FR1X630R	1 x 630	44.4	6366

Fire Rated Cable

FR3013 flexible fire rated power cable

Multicore

Multi Core with earth

Part No.	Number of cores and nominal conductor area mm²	Earth conductor size mm²	Approx. overall Ø mm	Approx. weight kg/km
FR3G1.5R	1.5mm 2C+E	1.5mm	11.2	171
FR3G2.5R	2.5mm 2C+E	2.5mm	12.3	217
FR3G4R	4mm 2C+E	2.5mm	12.9	257
FR3G6R	6mm 2C+E	2.5mm	13.8	312
FR3G10R	10mm 2C+E	4mm	15.4	433
FR3G16R	16mm 2C+E	6mm	17.5	605
FR5G1.5R	1.5mm 4C+E	1.5mm	13.5	243
FR5G2.5R	2.5mm 4C+E	2.5mm	14.8	310
FR5G4R	4mm 4C+E	2.5mm	16.1	398
FR5G6R	6mm 4C+E	2.5mm	17.6	514
FR5G10R	10mm 4C+E	4mm	20.1	746
FR5G16R	16mm 4C+E	6mm	23.2	1073
FR5G25R	25mm 4C+E	6mm	25.7	1407
FR5G35R	35mm 4C+E	10mm	27.8	1836
FR5G50R	50mm 4C+E	16mm	33.4	2612
FR5G70R	70mm 4C+E	25mm	38.8	3627

Fire Rated Cable

FR3013 fire rated cable

Conforms to the following standards

TeleFonika fire rated cable has been tested and approved to achieve a WS52W rating and performed to ensure that such cables are fire-resistant.

AS3013 is a classification system which defines a performance criteria for a Wiring System (WS) inclusive of all elements forming part of that system i.e. cable joints, tap-offs, supports and fixings. The classification system prefix will be 'WS' followed by two numerals and a supplementary letter W.

- First numeral indicates the wiring system's ability to maintain circuit integrity to fire
- Second numeral indicates the wiring system's degree of mechanical protection
- Supplementary letter 'W' will denote the wiring system's capability of maintaining electrical integrity when Subjected to water spray following a fire

Fire test

First Numeral	Minimum time for which circuit integrity is retained (min)
X	Degree of protection does not apply
1	15
2	30
3	60
4	90
5	120

Core colour:

Table 1

No. of cores	As per AS5000 (reduced earth)
Single	Natural
2	Red, Black or Red, White
2 + earth	Red, Black, Gn/Ye
3 (w/o earth)	Red White, Blue
3 + earth	Red, White, Blue, Gn/Ye
4 (w/o earth)	Red, White, Blue, Black
4 + earth	Red, White, Blue, Black, Gn/Ye
> 5	White with black numbering, Gn/Ye

Fire with water spray

Supplementary letter W – Cables are subjected to fire at 1050°C for 120 minutes, then at 1050°C with water spray for a further 3 minutes.

Mechanical test

Second Numeral	Impact test(J)	Cutting test (kN)	Level of impact protection
X	-	-	Degree of protection does not apply
1	2.5	0.3	Light
2	15	1.0	Moderate
3	50	5.0	Heavy
4	500	5.0	Very heavy
5	5000	5.0	Extremely heavy

Fire Rated Cable

Flame propagation tests

IEC 60332: Test on electrical cables under fire conditions

Part 1 : Test on a single vertical insulated wires or cable
Part 3 : Test on bunched wires and cables under fire condition

The propagation of fires along cable runs is influenced by a number of factors but in particular is relative to the total volume of combustible material in the cable run.

IEC 60332-3 details 3 test categories to test different amount of combustible material contained in a one metre sample bunched cable.

IEC 60332-3-22	-	The number of test pieces required to provide a total volume of 7 litres of non-metallic material shall be bunched on a ladder exposed to flame for 40 minutes.
IEC 60332-3-23	-	The number of test pieces required to provide a total volume of 3.5 litres of non-metallic material shall be bunched on a ladder exposed to flame for 40 minutes.
IEC 60332-3-24	-	The number of test pieces required to provide a total volume of 1.5 litres of non-metallic material shall be bunched on a ladder exposed to flame for 20 minutes.

The cable specimens are placed vertically next to each other and then exposed to the flame for a specified duration. After the burning has ceased, the charred or affected portion should not exceed a height of 2.5 meters.

Acid gas emission tests

IEC 60754: Test on gases evolved during combustion of electric cables

Part 1 : Determination of the amount of halogen acid gas
Part 2 : Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity

IEC 60754-1 specifies a method in determining the amount of halogen acid gas, other than hydrofluoric acid, evolved during the combustion of materials based on halogenated polymers and compounds containing halogenated additives taken from electric cables. This standard requires the amount of halogen acid evolved is less than 5mg/g of hydrochloric acid.

IEC 60754-2 specifies a method in determining the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity. This standard requires the weighted pH value of not less than 4.3 when related to 1 litre of water, and the weighted value of conductivity should not exceed 10μS/mm.

Smoke emission tests

IEC 61034: Measurement of smoke density of electric cables burning under defined condition

The 3 meter cube test determines the amount of smoke from electric cables during fire conditions. A one-meter length of cable is placed in a 3m2 enclosure, and exposed to a beam of light through a clear window. This light travels across the enclosure to a photocell connected to recording equipment in the window on the other end. A fire is then generated within the container and the minimum light transmission recorded. This standard requires a minimum light transmission value greater than 60% is acceptable.

Installation Guidance

It is the responsibility of the installing contractor to ensure FR cables are installed in accordance with the relevant standards and regulations for fire rated areas.

Control Cable

JZ-500

Industrial standard PVC control cable

Construction:
Class 5 fine wire stranding, special black PVC insulating material with consecutive numbering with one Green/Yellow earth conductor, special Silver Grey PVC flame-retardant sheath, metre marked.

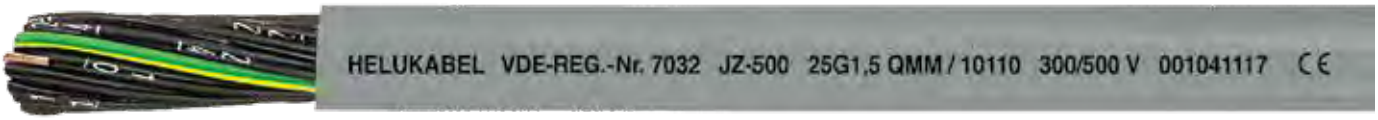
Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

Features:
- Flexible
- Extensive oil/chemical resistance
- Metre marked

flame retardant



Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
CC3G0.5	0.5mm²	2 core + earth	5.1	46
CC4G0.5	0.5mm²	3 core + earth	5.5	56
CC5G0.5	0.5mm²	4 core + earth	6.2	63
CC7G0.5	0.5mm²	6 core + earth	6.7	80
CC10G0.5	0.5mm²	9 core + earth	8.6	116
CC12G0.5	0.5mm²	11 core + earth	9.1	135
CC18G0.5	0.5mm²	17 core + earth	10.7	196
CC21G0.5	0.5mm²	20 core + earth	11.3	240
CC25G0.5	0.5mm²	24 core + earth	12.6	270
CC30G0.5	0.5mm²	29 core + earth	13.5	310
CC34G0.5	0.5mm²	33 core + earth	14.7	362
CC40G0.5	0.5mm²	39 core + earth	15.3	434
CC3G0.75	0.75mm²	2 core + earth	5.6	54
CC4G0.75	0.75mm²	3 core + earth	6.3	66
CC5G0.75	0.75mm²	4 core + earth	6.9	80
CC7G0.75	0.75mm²	6 core + earth	7.7	110
CC10G0.75	0.75mm²	9 core + earth	9.8	162
CC12G0.75	0.75mm²	11 core + earth	10.1	179
CC18G0.75	0.75mm²	17 core + earth	12.2	257
CC25G0.75	0.75mm²	24 core + earth	14.3	365
CC34G0.75	0.75mm²	33 core + earth	16.7	510
CC41G0.75	0.75mm²	40 core + earth	18.2	607
CC50G0.75	0.75mm²	49 core + earth	19.8	735
CC3G1	1mm²	2 core + earth	6.1	72
CC4G1	1mm²	3 core + earth	6.7	86
CC5G1	1mm²	4 core + earth	7.5	104
CC7G1	1mm²	6 core + earth	8.0	141
CC9G1	1mm²	8 core + earth	11	200
CC12G1	1mm²	11 core + earth	10.9	230
CC18G1	1mm²	17 core + earth	12.9	343

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
CC20G1	1mm²	19 core + earth	13.8	375
CC25G1	1mm²	24 core + earth	15.4	485
CC36G1	1mm²	35 core + earth	17.9	668
CC41G1	1mm²	40 core + earth	19.5	770
CC50G1	1mm²	49 core + earth	21.3	936
CC3G1.5	1.5mm²	2 core + earth	6.8	90
CC4G1.5	1.5mm²	3 core + earth	7.6	109
CC5G1.5	1.5mm²	4 core + earth	8.3	131
CC7G1.5	1.5mm²	6 core + earth	9.2	184
CC9G1.5	1.5mm²	8 core + earth	12.0	259
CC12G1.5	1.5mm²	11 core + earth	12.4	309
CC18G1.5	1.5mm²	17 core + earth	14.8	440
CC21G1.5	1.5mm²	20 core + earth	15.6	555
CC25G1.5	1.5mm²	24 core + earth	17.6	620
CC34G1.5	1.5mm²	33 core + earth	20.2	830
CC50G1.5	1.5mm²	49 core + earth	24.2	1250
CC3G2.5	2.5mm²	2 core + earth	8.3	148
CC4G2.5	2.5mm²	3 core + earth	9.3	178
CC5G2.5	2.5mm²	4 core + earth	10.1	221
CC7G2.5	2.5mm²	6 core + earth	11.2	306
CC12G2.5	2.5mm²	11 core + earth	15.3	498
CC18G2.5	2.5mm²	17 core + earth	18.2	764
CC25G2.5	2.5mm²	24 core + earth	21.6	1044
CC4G4	4mm²	3 core + earth	10.9	295
CC7G4	4mm²	6 core + earth	13.4	458
CC4G6	6mm²	3 core + earth	13.2	424
CC5G6	6mm²	4 core + earth	14.7	525
CC4G10	10mm²	3 core + earth	16.6	701
CC4G16	16mm²	3 core + earth	20.6	1035

Control Cable

JZ-500 (no earth)

Industrial standard PVC control cable

Construction:
Class 5 fine wire stranding, special black PVC insulating material with consecutive numbering, special silver grey PVC flame-retardant sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

Features:
- Flexible
- Extensive oil/chemical resistance
- Metre marked

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
CC2X0.5	0.5mm²	2 core	4.8	40
CC3X0.5	0.5mm²	3 core	5.1	46
CC4X0.5	0.5mm²	4 core	5.5	56
CC2X0.75	0.75mm²	2 core	5.4	45
CC3X0.75	0.75mm²	3 core	5.6	54
CC4X0.75	0.75mm²	4 core	6.3	66
CC5X0.75	0.75mm²	5 core	6.9	80

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
CC2X1	1mm²	2 core	5.6	60
CC3X1	1mm²	3 core	6.1	72
CC4X1	1mm²	4 core	6.7	86
CC2X1.5	1.5mm²	2 core	6.4	70
CC3X1.5	1.5mm²	3 core	6.8	90
CC4X1.5	1.5mm²	4 core	7.6	109
CC2X2.5	2.5mm²	2 core	7.8	112

JZ-600

0.6/1 kV PVC Black Sheath Control Cable

Construction:
Class 5 fine wire stranding, PVC insulated black numbered cores with one Green/Yellow earth conductor. Black PVC flame retardant & UV resistant sheath rated at 600/1000 volts, meter marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
600/1000V

Temperature Range:
Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
10670	1.5mm²	11 core + earth	15.0	370
10674	1.5mm²	17 core + earth	18.8	520
10701	2.5mm²	17 core + earth	22.0	795

Control Cable

JZ-500 PUR

Superior mechanical & chemical resistant polyurethane control cable

Construction:
Class 5 fine wire stranding, special black PVC based insulating material with consecutive numbering in white, and one Green/Yellow earth conductor. Special polyurethane microbe-proof, oil & hydrolysis resistant, and uv-resistant silver grey outer sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

Part No.	Nominal conductor area mm² and number of cores	Approx. overall Ø mm	Approx. weight kg/km
23315	0.5mm²	2 core + earth	5.1	55
23317	0.5mm²	3 core + earth	5.5	65
23319	0.5mm²	4 core + earth	6.2	75
23321	0.5mm²	6 core + earth	6.7	90
23323	0.5mm²	9 core + earth	8.6	120
23324	0.5mm²	11 core + earth	8.9	135
23325	0.5mm²	17 core + earth	10.7	205
23326	0.5mm²	24 core + earth	12.4	270
23327	0.5mm²	33 core + earth	14.3	380
23330	0.75mm²	2 core + earth	5.6	53
23332	0.75mm²	3 core + earth	6.3	64
23334	0.75mm²	4 core + earth	6.9	76
23336	0.75mm²	6 core + earth	7.5	96
23338	0.75mm²	9 core + earth	9.6	140
23339	0.75mm²	11 core + earth	9.9	170
23340	0.75mm²	17 core + earth	12.2	260
23341	0.75mm²	24 core + earth	14.1	282
23345	1mm²	2 core + earth	5.9	63
23347	1mm²	3 core + earth	6.7	75
23349	1mm²	4 core + earth	7.3	89
23351	1mm²	6 core + earth	8.1	115
23353	1mm²	9 core + earth	10.2	166
23354	1mm²	11 core + earth	10.6	201
23355	1mm²	17 core + earth	12.9	289
23356	1mm²	24 core + earth	15.1	380
23357	1mm²	33 core + earth	17.7	645
23361	1.5mm²	2 core + earth	6.8	87
23363	1.5mm²	3 core + earth	7.4	106
23365	1.5mm²	4 core + earth	8.3	131
23367	1.5mm²	6 core + earth	9.2	173
23369	1.5mm²	11 core + earth	12.0	293
23370	1.5mm²	17 core + earth	14.2	454
23371	1.5mm²	24 core + earth	16.9	541
23374	2.5mm²	2 core + earth	8.3	146
23375	2.5mm²	3 core + earth	9.2	183
23376	2.5mm²	4 core + earth	10.1	222
23377	2.5mm²	6 core + earth	11.2	293
23378	2.5mm²	11 core + earth	15.0	512

Screened Control Cable

HELUKABEL®

Yö-C-PURö-JZ

EMC compliant, superior mechanical & chemical resistant polyurethane control cable

Construction:
Class 5 fine wire stranding, special black PVC based insulating material with consecutive numbering in white, and one Green/Yellow earth conductor. Special PVC inner sheath, tinned copper braid screen, special polyurethane microbe-proof, hydrolysis resistant and uv-resistant silver grey outer sheath, metre marked.

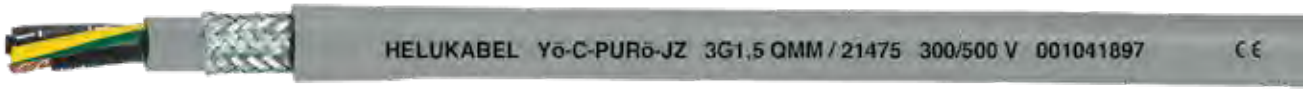
Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -20°C to +80°C
Fixed: -40°C to +80°C

flame retardant

uv resistant



Part No.	Nominal conductor area m² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
21433	0.75mm²	11 core + earth	12.7	294
21436	0.75mm²	17 core + earth	14.9	357
21452	1mm²	2 core + earth	8.3	102
21453	1mm²	3 core + earth	9.0	145
21454	1mm²	4 core + earth	9.7	170
21456	1mm²	6 core + earth	10.3	220
21459	1mm²	11 core + earth	13.3	350
21462	1mm²	17 core + earth	15.6	515
21475	1.5mm²	2 core + earth	9.2	152
21476	1.5mm²	3 core + earth	9.8	167
21477	1.5mm²	4 core + earth	10.8	203
21479	1.5mm²	6 core + earth	11.7	305
21482	1.5mm²	11 core + earth	14.9	435
21485	1.5mm²	17 core + earth	17.4	642
21500	2.5mm²	2 core + earth	10.8	215
21501	2.5mm²	3 core + earth	11.5	268
21502	2.5mm²	4 core + earth	12.8	349
21503	2.5mm²	6 core + earth	14.0	406
21504	2.5mm²	11 core + earth	17.9	720

Screened Power Cable

HELUKABEL

Y-CY-JB

VSD EMC compliant screened power cable

Construction:

Class 5 fine wire stranding, special PVC colour coded insulating material, PVC based inner sheath, high coverage tinned copper braid screen, transparent special PVC flame-retardant, oil & chemical resistant sheath, metre marked.

Minimum Bending Radius:

Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:

Flexing: ≤ 1.5mm² : 300/500V
≥ 2.5mm² : 450/750V

Temperature Range:

Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

Colour Coding:

- 2 core + earth : Blue, Brown, Green/Yellow
- 3 core + earth : Brown, Black, Grey, Green/Yellow
- 4 core + earth : Blue, Brown, Black, Grey, Green/Yellow

flame retardant

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
PC4G1CY	1mm²	3 core + earth	9.0	145
PC3G1.5CY	1.5mm²	2 core + earth	9.2	152
PC4G1.5CY	1.5mm²	3 core + earth	9.8	168
PC5G1.5CY	1.5mm²	4 core + earth	10.8	202
PC3G2.5CY	2.5mm²	2 core + earth	11.6	216
PC4G2.5CY	2.5mm²	3 core + earth	12.7	267
PC5G2.5CY	2.5mm²	4 core + earth	14.1	347
PC4G4CY	4mm²	3 core + earth	15.3	410
PC5G4CY	4mm²	4 core + earth	16.7	502
PC4G6CY	6mm²	3 core + earth	17.0	559
PC5G6CY	6mm²	4 core + earth	18.6	702
PC4G10CY	10mm²	3 core + earth	21.1	1020
PC4G16CY	16mm²	3 core + earth	25.3	1380
PC4G25CY	25mm²	3 core + earth	31.1	1890
PC4G35CY	35mm²	3 core + earth	33.9	2390
PC4G50CY	50mm²	3 core + earth	40.1	3315
PC4G70CY	70mm²	3 core + earth	46.0	4600
PC4G95CY	95mm²	3 core + earth	51.2	6060

Glands to suit EMC cable (screened)

Part No.	Metric thread	Cable Ø range mm	Minimum-Ø over braid mm
53112625	M16	4.5 – 9.0	4.0
53112635	M20	7.0 – 12.5	5.0
53112645	M25	9.0 – 16.5	7.5
53112655	M32	11.0 – 21.0	9.0
53112665	M40	19.0 – 28.0	15.0
53112675	M50	27.0 – 35.0	21.0

Locknut to suit EMC glands

Part No.	Metric thread
5210 3310	M16
5210 3320	M20
5210 3330	M25
5210 3340	M32
5210 3350	M40
5210 3360	M50

Brush glands to suit EMC cable (screened)

Part No.	Metric thread	Cable Ø range mm	Minimum-Ø over braid mm
53112680	M63	34.0 - 45.0	20.0
53112681	M63	44.0 - 55.0	25.0

Locknut to suit brush glands

Part No.	Metric Thread
52103370	M63
52103370	M63

Screened Control Cable

Y-CY-JZ

EMC compliant screened control cable

Construction:
Class 5 fine wire stranding, special Black PVC insulating material with consecutive numbering with one Green/Yellow earth conductor, PVC based inner sheath, high coverage tinned copper braid screen, transparent special PVC flame-retardant, oil & chemical resistant sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -15°C to +80°C
Fixed: -40°C to +80°C

flame retardant

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
CC3G0.5CY	0.5mm²	2 core + earth	7.3	83
CC4G0.5CY	0.5mm²	3 core + earth	7.9	99
CC5G0.5CY	0.5mm²	4 core + earth	8.4	112
CC7G0.5CY	0.5mm²	6 core + earth	9.1	136
CC12G0.5CY	0.5mm²	11 core + earth	11.5	195
CC25G0.5CY	0.5mm²	24 core + earth	15.7	407
CC2X0.75CY	0.75mm²	2 core	7.7	87
CC4G0.75CY	0.75mm²	3 core + earth	8.5	113
CC5G0.75CY	0.75mm²	4 core + earth	9.3	130
CC7G0.75CY	0.75mm²	6 core + earth	9.9	184
CC12G0.75CY	0.75mm²	11 core + earth	12.7	292
CC18G0.75CY	0.75mm²	17 core + earth	14.9	358
CC3G1CY	1mm²	2 core + earth	8.3	103
CC4G1CY	1mm²	3 core + earth	9.0	146
CC5G1CY	1mm²	4 core + earth	9.7	169
CC7G1CY	1mm²	6 core + earth	10.3	219
CC12G1CY	1mm²	11 core + earth	13.3	350
CC18G1CY	1mm²	17 core + earth	15.6	514
CC25G1CY	1mm²	24 core + earth	18.5	689
CC3G1.5CY	1.5mm²	2 core + earth	9.2	152
CC4G1.5CY	1.5mm²	3 core + earth	9.8	168
CC5G1.5CY	1.5mm²	4 core + earth	10.8	202
CC7G1.5CY	1.5mm²	6 core + earth	11.7	304
CC12G1.5CY	1.5mm²	11 core + earth	14.9	434
CC18G1.5CY	1.5mm²	17 core + earth	17.4	640
CC25G1.5CY	1.5mm²	24 core + earth	20.8	805
CC3G2.5CY	2.5mm²	2 core + earth	10.8	216
CC4G2.5CY	2.5mm²	3 core + earth	11.5	267
CC7G2.5CY	2.5mm²	6 core + earth	14.0	407
CC12G2.5CY	2.5mm²	11 core + earth	17.9	722

Screened Control Cable

F-CY-JZ

EMC compliant screened control cable

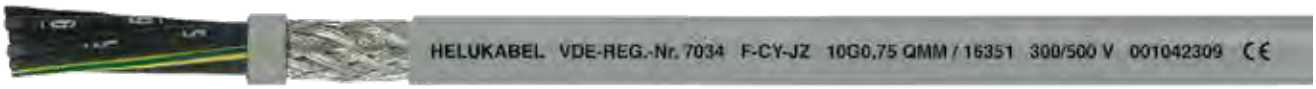
Construction:
Class 5 fine wire stranding, special Black PVC insulating material with consecutive numbering with one Green/Yellow earth conductor, plastic foil wrapping, high coverage tinned copper braid screen, grey PVC flame-retardant according to IEC 60332-1-2, chemical resistant sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -10°C to +80°C
Fixed: -40°C to +80°C

flame retardant



Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ømm	Approx. weight kg/km
16321	0.5mm²	2 core + earth	5.9	55
16322	0.5mm²	3 core + earth	6.4	61
16323	0.5mm²	4 core + earth	6.9	74
16325	0.5mm²	6 core + earth	7.6	98
16328	0.5mm²	11 core + earth	9.7	157
16331	0.5mm²	17 core + earth	11.5	217
16334	0.5mm²	24 core + earth	13.7	314
16345	0.75mm²	2 core + earth	6.3	66
16346	0.75mm²	3 core + earth	6.8	77
16347	0.75mm²	4 core + earth	7.4	93
16349	0.75mm²	6 core + earth	8.2	130
16353	0.75mm²	11 core + earth	10.5	202
16356	0.75mm²	17 core + earth	12.7	292
16359	0.75mm²	24 core + earth	15.0	415
16371	1mm²	2 core + earth	6.7	80
16372	1mm²	3 core + earth	7.2	98
16373	1mm²	4 core + earth	8.0	127
16375	1mm²	6 core + earth	8.7	158
16378	1mm²	11 core + earth	11.4	260
16381	1mm²	17 core + earth	13.6	380
16384	1mm²	24 core + earth	16.2	534
16394	1.5mm²	2 core + earth	7.4	100
16395	1.5mm²	3 core + earth	8.1	126
16396	1.5mm²	4 core + earth	9.0	160
16397	1.5mm²	6 core + earth	9.8	208
16400	1.5mm²	11 core + earth	12.8	338
16403	1.5mm²	17 core + earth	15.6	479
16407	1.5mm²	24 core + earth	18.4	705
16417	2.5mm²	2 core + earth	8.8	167
16418	2.5mm²	3 core + earth	9.8	195
16419	2.5mm²	4 core + earth	10.8	223
16420	2.5mm²	6 core + earth	11.9	344
16438	2.5mm²	11 core + earth	15.8	570
16452	2.5mm²	17 core + earth	19.0	681

FLEXIBLE TO THE CORE

TF Cable TELE-FONIKA

FLEXIBLE SINGLE CONDUCTOR POWER CABLE

You get the best and most flexible solution every time with DKSH's range of **Tele-Fonika flexible single conductor power cable.** We couldn't force any more value into this highly flexible range. And when you see the prices you'll wonder how we did it. Choose flexiblity, choose Tele-Fonika from DKSH.

EXTENSIVE RANGE OF APPLICATIONS

Tele-Fontika's heavy duty rubber power cable range is perfect for **damp**, **wet or polluted environments** with multiple applications such as **power supplies, aerators, switchboards, gensets and pumps**.

- UV RESISTANT
- HALOGEN FREE
- 110°C RATED
- HIGH BENDING RADIUS
- MADE IN EUROPE

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TF Cable TELE-FONIKA

Rubber Cable - Single Core

H07RN-F

Rubber, power and control cable

Construction:

Class 5 tinned copper conductors, colour or number coded ethylene-propylene rubber insulating material, flame-retardant, UV, ozone and oil-resistant black rubber sheath, metre marked.

Minimum Bending Radius:

Flexing: 4 x cable diameter (up to 12mm Ø)
5 x cable diameter (12-20mm Ø)
6 x cable diameter (over 20mm Ø)
Fixed: 3 x cable diameter (up to 12mm Ø)
4 x cable diameter (over 12mm Ø)

Temperature Range:

-40°C to +90°C

Features:

- Submersible to 500 metres
- UV resistant
- Oil resistant
- Tinned conductors

Nominal Voltage:

600/1000V

Colour Coding:

Colour coding of power conductors comply to HD 308 , DIN VDE 0293- 308.

- 2-core: Blue and brown
- 3-core: Blue, brown, green-yellow
- 4-core: Brown, black, grey, green-yellow
- 5-core: Blue, brown, black, grey
- Above 5-core: Black numbered cores with a green-yellow earth core

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
G-022938	16mm²	1 core	11.1	248
G-022940	25mm²	1 core	12.9	356
G-022944	35mm²	1 core	14.3	476
G-022945	50mm²	1 core	16.8	657
G-022946	70 mm²	1 core	19.0	884
G-023032	95 mm²	1 core	21.9	1156
G-023033	120mm²	1 core	23.4	1420
G-023034	150mm²	1 core	26.0	1762
G-023035	185mm²	1 core	29.1	2145
G-023036	240mm²	1 core	31.2	2720

Rubber Cable - Multicore

H07RN-F

Rubber, power and control cable

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
G-023028	1mm²	2 core	7.9	89
G-023029	1.5mm²	2 core	8.9	116
G-023030	2.5mm²	2 core	10.6	167
G-023041	4mm²	2 core	12.8	227
G-023042	6mm²	2 core	15.0	390
G-023011	1mm²	2 core + earth	8.5	107
G-023012	1.5mm²	2 core + earth	9.5	137
G-023013	2.5mm²	2 core + earth	11.3	202
G-023014	4mm²	2 core + earth	13.8	292
G-023015	6mm²	2 core + earth	15.0	390
G-023016	10mm²	2 core + earth	20.2	684
G-023017	16mm²	2 core + earth	23.1	944
G-022879	1mm²	3 core + earth	9.4	131
G-022880	1.5mm²	3 core + earth	10.4	167
G-022981	2.5mm²	3 core + earth	12.5	247
G-022982	4mm²	3 core + earth	14.3	340
G-022983	6mm²	3 core + earth	16.3	463
G-022984	10mm²	3 core + earth	22.1	831
G-022985	16mm²	3 core + earth	25.3	1166
G-022986	25mm²	3 core + earth	30.1	1711
G-022987	35mm²	3 core + earth	32.5	2190
G-022988	50mm²	3 core + earth	37.8	3101
G-022989	70mm²	3 core + earth	44.2	4143
G-022990	95mm²	3 core + earth	49.6	5517
G-022991	120mm²	3 core + earth	54.4	6611
G-022992	150mm²	3 core + earth	60.9	8244
G-022993	185mm²	3 core + earth	68.2	10113
G-022994	240mm²	3 core + earth	74.1	12838

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
G-022910	1.5mm²	4 core + earth	11.5	206
G-022951	2.5mm²	4 core + earth	13.7	304
G-022952	4mm²	4 core + earth	15.9	426
G-022953	6mm²	4 core + earth	18.1	579
G-022954	10mm²	4 core + earth	24.3	1024
G-022955	16mm²	4 core + earth	28.7	1440
G-022956	25mm²	4 core + earth	33.3	2105
G-024457	35mm²	4 core + earth	36.2	2618
G-024459	50mm²	4 core + earth	43.9	3730
G-024460	70mm²	4 core + earth	49.5	4985
G-025754	95mm²	4 core + earth	57.5	6765
G-029183	120mm²	4 core + earth	60.5	7920
G-027746	150mm²	4 core + earth	67.5	9800
G-029184	185mm²	4 core + earth	75.9	12040
G-022973	1.5mm²	6 core + earth	15.7	339
G-022974	2.5mm²	6 core + earth	18.3	482
G-022975	1.5mm²	11 core + earth	19.1	497
G-022976	2.5mm²	11 core + earth	22.3	707
G-022977	1.5mm²	17 core + earth	22.3	700

Rubber Cable

R-E-110 Rubber SDI Cable

Highly flexible single conductor, SDI, low smoke, halogen free power cable

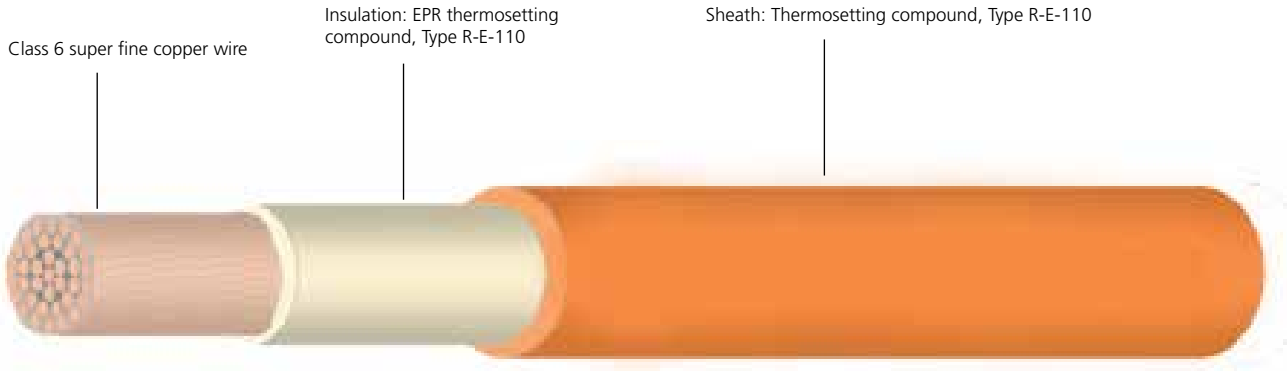
Construction:
Class 6 super fine copper conductors, EPR thermosetting compound type R-E-110 insulation, halogen-free, low smoke, flame and heat retardant, UV, oil, chemical and weather-resistant orange thermosetting compound R-E-110 sheath, metre marked. Other colours available on request subject to minimum order quantity and lead time.

Minimum Bending Radius:
Fixed: 6 x cable diameter
Flexing: 10 x cable diameter

Nominal Voltage:
600/1000V

Features:
- UV-resistant
- Halogen-free
- 110° rated

Temperature Range:
Fixed: -40°C to +110°C
Flexing: -25°C to +90°C



Part No.	Nominal conductor area mm² and number of cores		Stranding	Current rating* (AMPS)	Approx. overall Ø mm	Approx. weight kg/km
G-012568	10mm²	1 core	301 x 0.2	80	8.65	149
G-012569	16mm²	1 core	470 x 0.2	105	9.80	202
G-012570	25mm²	1 core	726 x 0.2	139	11.35	293
G-012571	35mm²	1 core	1040 x 0.2	172	12.70	390
G-022907	50mm²	1 core	1499 x 0.2	217	14.35	535
G-012573	70mm²	1 core	2165 x 0.2	273	16.30	725
G-012574	95mm²	1 core	2745 x 0.2	329	18.70	870
G-012575	120mm²	1 core	1554 x 0.3	390	20.65	1205
G-012576	150mm²	1 core	1961 x 0.3	450	23.00	1500
G-012577	185mm²	1 core	2331 x 0.3	516	25.45	1840
G-012579	240mm²	1 core	3172 x 0.3	620	28.30	2350
G-012581	300mm²	1 core	3965 x 0.3	714	31.15	2915
G-012582	400mm²	1 core	5246 x 0.3	855	34.90	3817

*AS/NZS 3008.1.1:2009 Table 9 (Fixed-Unenclosed, Touching, Flexible Copper Conductor) 110°C operating temperature, 40°C air temperature, 25°C soil temperature.

Rubber Cable

Earth

Flexible rubber earth cable

Construction:
Class 6 super fine tinned copper wire. Green/yellow ozone, oil & UV resistant, halogen-free and flame-retardant type X-HF-110 metre marked insulation.

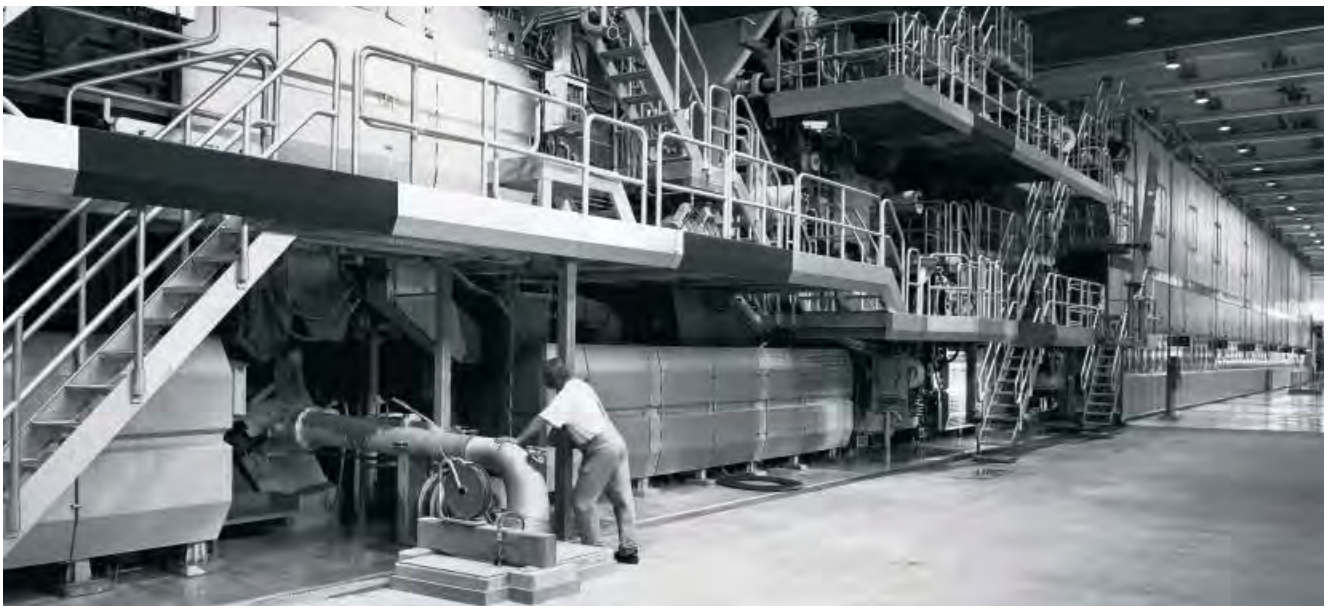
Minimum Bending Radius:
Fixed: 4 x cable diameter

Nominal Voltage:
600/1000V

Features:
- UV-resistant
- Halogen-free
- 110° rated

Temperature Range:
-40°C to +110°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
HF1X16GN/YW	16mm²	1 core	6.4	150
HF1X25GN/YW	25mm²	1 core	7.9	232
HF1X35GN/YW	35mm²	1 core	9.1	321
HF1X50GN/YW	50mm²	1 core	10.6	457
HF1X70GN/YW	70mm²	1 core	12.9	645
HF1X95GN/YW	95mm²	1 core	14.6	841
HF1X120GN/YW	120mm²	1 core	16.4	1076



Rubber Cable

ARISTONCAVI

H07RN-F

Screened Rubber Cable with Pilots

Construction:

Class 5 tinned copper conductors, colour coded, ethylene-propylene rubber insulated, ethylene-propylene rubber bedded, braided overall tinned copper wire screened, flame retardant, UV, ozone and oil resistant black rubber sheath, metre marked.

Features:

- Submersible up to 500 metres
- UV resistant
- Oil resistant

Minimum Bending Radius:

Flexing: 4 x cable diameter (up to 12mm Ø)
5 x cable diameter (12-20mm Ø)
6 x cable diameter (over 20mm Ø)
Fixed: 3 x cable diameter (up to 12mm Ø)
4 x cable diameter (over 12mm Ø)

Temperature Range:

-25°C to +90°C

Nominal Voltage:

600/1000V

Part No.	Nominal conductor area mm² and number of cores		No of Pilot Cores and conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km	Submersible depth
A008887	16mm²	4 core	4 x 1.5mm²	25.7	1300	500 m
A008784	25mm²	4 core	4 x 1.5mm²	30.9	1980	500 m
A008780	35mm²	4 core	4 x 2.5mm²	34.2	2460	500 m
A008785	50mm²	4 core	4 x 2.5mm²	39.9	3400	500 m
A008786	70mm²	4 core	4 x 2.5mm²	45.5	4520	500 m
A008787	95mm²	4 core	4 x 2.5mm²	51.8	5900	500 m
A008888	120mm²	4 core	4 x 2.5mm²	56.7	7160	500 m

KNOCKOUT TOOLS

Hand hydraulic punch drivers & knockout punches

This small-sized hand hydraulic punch driver without hose makes it quick and easy to punch holes in mild steel, aluminium or plastics.

The cylinder rotates 360° (on 3 axles) for maximum flexibility, even in hard-to-reach places. When you have to punch several holes, this hand hydraulic punch driver is much faster than manual wrench-style punches.

Suitable for round, rectangular or square cut-outs.

For more information see pages 248 - 249.

icotek®

Rubber Cable

PVC/NBR Single Core SDI

90° rated single core flexible SDI

Description:
Class 5 and 6 flexible plain copper conductors, V90 PVC Insulated, flame and heat-retardant, UV stabilized NBR (rubber) outer sheath, 0.6/1kV.

Nominal Voltage:
600/1000V

Temperature Range:
Fixed: -35°C to +90°C

Features:
- UV-resistant
- Flexible
- 90°C rated

flame retardant

Part No.	Nominal conductor area (mm²)	No. of cores	Stranding	Colour	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
DIPF6O500	6	1	192 x 0.20	Orange	8.0	3.3	11.6	500
DIPF6R500	6	1	192 x 0.20	Red	8.0	3.3	11.6	500
DIPF10L500	10	1	203 x 0.25	Blue	9.1	1.88	16.3	500
DIPF10O500	10	1	203 x 0.25	Orange	9.1	1.88	16.3	500
DIPF10R500	10	1	203 x 0.25	Red	9.1	1.88	16.3	500
DIPF16B500	16	1	322 x 0.25	Black	9.9	1.21	23	500
DIPF16L500	16	1	322 x 0.25	Blue	9.9	1.21	23	500
DIPF16O500	16	1	322 x 0.25	Orange	9.9	1.21	23	500
DIPF16R500	16	1	322 x 0.25	Red	9.9	1.21	23	500
DIPF25B500	25	1	504 x 0.25	Black	11.7	0.78	34	500
DIPF25N500	25	1	504 x 0.25	Brown	11.7	0.78	34	500
DIPF25O500	25	1	504 x 0.25	Orange	11.7	0.78	34	500
DIPF25R500	25	1	504 x 0.25	Red	11.7	0.78	34	500
DIPF25S500	25	1	504 x 0.25	Grey	11.7	0.78	34	500
DIPF35B500	35	1	708 x 0.25	Black	13.1	0.53	45.5	500
DIPF35L500	35	1	708 x 0.25	Blue	13.1	0.53	45.5	500
DIPF35O500	35	1	708 x 0.25	Orange	13.1	0.53	45.5	500
DIPF35R500	35	1	708 x 0.25	Red	13.1	0.53	45.5	500
DIPF50B500	50	1	1008 x 0.25	Black	15.2	0.386	63	500
DIPF50L500	50	1	1008 x 0.25	Blue	15.2	0.386	63	500
DIPF50O500	50	1	1008 x 0.25	Orange	15.2	0.386	63	500
DIPF50R500	50	1	1008 x 0.25	Red	15.2	0.386	63	500
DIPF70B500	70	1	1425 x 0.25	Black	17.0	0.272	84.1	500
DIPF70L500	70	1	1425 x 0.25	Blue	17.0	0.272	84.1	500
DIPF70O500	70	1	1425 x 0.25	Orange	17.0	0.272	84.1	500
DIPF70R500	70	1	1425 x 0.25	Red	17.0	0.272	84.1	500
DIPF95B500	95	1	1178 x 0.32	Black	19.5	0.2	113.4	500
DIPF95O500	95	1	1178 x 0.32	Orange	19.5	0.2	113.4	500
DIPF95R500	95	1	1178 x 0.32	Red	19.5	0.2	113.4	500
DIPF120B500	120	1	1482 x 0.32	Black	21.2	0.161	138.1	500
DIPF120O500	120	1	1482 x 0.32	Orange	21.2	0.161	138.1	500
DIPF150O500	150	1	1862 x 0.36	Orange	23.3	0.129	174.1	500
DIPF185O500	185	1	1862 x 0.36	Orange	25.8	0.106	206.1	500
DIPF240O500	240	1	2368 x 0.36	Orange	29.8	0.0801	276.2	500

Rubber Cable

ARISTONCAVI

3.3kV 110° Single Core SDI

Highly flexible single core, SDI, 3.3kV rubber cable

Construction:
Class 5 fine wire stranded tinned copper conductors, EPR insulated (white), sheathed with a 5GM3 rubber compound (Black), rated to 110°C, metre marked.

Application:
Suitable for the wiring of traction vehicles, switchboard wiring, and submersible pump applications.

Features:
- UV resistant
- Oil resistant
- Varnish resistant
- Submersible to 100 metres
- Abrasion resistant
- Tinned copper conductors

Minimum Bending Radius:
Flexing: 5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
1.9 / 3.3kV
Test Voltage: 6kV

Temperature Range:
Flexing: -25°C to +110°C
Fixed: -35°C to +110°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm minimum	Approx. overall Ø mm maximum	Approx weight kg/km
A009085	1.5mm²	1 core	5.5	7.0	50
A009086	2.5mm²	1 core	5.9	7.5	65
A009087	4mm²	1 core	6.4	8.0	80
A009088	6mm²	1 core	7.0	8.6	105
A009089	10mm²	1 core	8.2	10.0	155
A009090	16mm²	1 core	9.2	11.1	215
A009091	25mm²	1 core	11.3	13.4	330
A009092	35mm²	1 core	12.5	14.6	430
A009093	50mm²	1 core	14.1	16.4	590
A009044	70mm²	1 core	15.9	18.3	785
A009045	95mm²	1 core	18.2	20.8	1030
A009046	120mm²	1 core	19.6	22.4	1300
A009047	150mm²	1 core	21.7	24.7	1560
A009048	185mm²	1 core	23.6	26.7	1930
A009049	240mm²	1 core	26.3	29.7	2390
A009050	300mm²	1 core	29.3	32.9	3040
A009051	400mm²	1 core	32.5	36.4	3960
A009052	500mm²	1 core	36.5	40.7	5150

Solar Cable

ÖLFLEX® Solar XLR-R SDI

TÜV PV1-F Approved

Description

ÖLFLEX® SOLAR XLR-R cables are weather, abrasion and UV-resistant photovoltaic cables. These cross-linked, halogen free and double insulated solar cables are suitable for permanent outdoor use and especially for the interconnection of grounded and ungrounded photovoltaic power systems. The cable is approved by TÜV Rheinland according to 2PfG 1169/08.2007 (PV1-F).

Construction

Constructed using class 5, fine stranded tinned copper conductors insulated with a temperature-resistant, halogen-free cross-linked co-polymer compound and protected by an outer sheath of flame-retardant, weather, abrasion and UV-resistant, halogen-free black cross-linked co-polymer.

Minimum Bending Radius

Flexing: 15 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage

0.6/1kV AC
0.9/1.5kV DC

Temperature Range

Fixed: -40°C to +120°C

Approvals

TÜV approved according to;
2PfG 1169/08.2007 PV1-F.
Certificate No. R 50202588 002

Features

- Weathering, abrasion, UV and ozone-resistant
- Cross-linked, halogen-free and double insulated
- Acid and alkaline-resistant (Oxal acid and sodium hydroxide)
- Suitable for permanent outdoor use
- Flame-retardant
- Inner sheath has contrasting colour to easily identify any damage to outer sheath
- Metre marked

>25 YEARS LIFE EXPECTANCY

Cable design

1. Conductor: Fine wire strands of tinned copper according to IEC 60228, Class 5
2. Core insulation: Temperature resistant and halogen-free polyolefin co-polymer, electron beam cross-linked
3. Outer sheath: Flame-retardant, weather-resistant and halogen-free polyolefin co-polymer, electron beam cross-linked. Outer sheath colour: Black

Part No.	Nominal conductor area (mm²)	Approx overall Ø mm	Stranding	Inner sheath	Outer sheath	Roll size (mtrs)
0023177	4	5.2	56 x 0.30	White	Black	100 - 500
0023177S	4	5.2	56 x 0.30	White	Black	100
0023177.500M	4	5.2	56 x 0.30	White	Black	500
0023188S	4	5.2	56 x 0.30	Red	Black	100
0023178	6	5.8	84 x 0.30	White	Black	100 - 500
0023179	10	7.0	80 x 0.40	White	Black	100 - 500
0023180	16	8.3	128 x 0.40	White	Black	100 - 500

Solar Cable

>25 YEARS LIFE EXPECTANCY

LAPP KABEL

ÖLFLEX® Solar XLR-R Twin

TÜV PV1-F Approved

Description

ÖLFLEX® SOLAR XLR-R cables are weather, abrasion and UV-resistant photovoltaic cables. These cross-linked, halogen free and double insulated solar cables are suitable for permanent outdoor use and especially for the interconnection of grounded and ungrounded photovoltaic power systems. The cable is approved by TÜV Rheinland according to 2PfG 1169/08.2007 (PV1-F).

Construction

Constructed using class 5, fine stranded tinned copper conductors insulated with a temperature-resistant, halogen-free cross-linked co-polymer compound and protected by an outer sheath of flame-retardant, weather, abrasion and UV-resistant, halogen-free black cross-linked co-polymer.

Minimum Bending Radius

Flexing: 15 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage

0.6/1kV AC
0.9/1.5kV DC

Temperature Range

Fixed: -40°C to +120°C

Approvals

TÜV approved according to;
2PfG 1169/08.2007 PV1-F.
Certificate No. R 50202588 003

Features

- Weathering, abrasion, UV and ozone-resistant
- Cross-linked, halogen-free and double insulated
- Acid and alkaline-resistant (Oxal acid and sodium hydroxide)
- Suitable for permanent outdoor use
- Flame-retardant
- Inner sheath has contrasting colour to easily identify any damage to outer sheath
- Metre marked

Part No.	Nominal conductor area (mm²)	Dimensions (mm)	Stranding	Inner sheath	Outer sheath	Roll size (mtrs)
0023995S	4	10.7 x 5.2	56 x 0.30	Red/Blue	BLACK	100
0023997	6	11.9 x 5.8	84 x 0.30	Red/Blue	BLACK	100 - 500

ÖLFLEX® Solar XLS Earth

Cross-linked UV-resistant earth cable

Description

Constructed using class 5, fine stranded tinned copper conductors, and insulated with a cross-linked copolymer compound and protected by an outer sheath of black, UV resistant, halogen-free cross-linked copolymer, with green/yellow inner sheath.

Benefits

- Reduced spreading of fire source and formation of toxic combustion gases in event of fire
- Exact quantity control during installation by meter marking on the cable sheath.

Features

- Weathering, abrasion, and UV resistant
- Good heat pressure resistance
- Halogen-free and flame retardant
- Resistant against ammonia and biogases, oxalic acid, sodium hydroxide, and other chemical media

900/1500 V DC.

Part No.	Nominal conductor area (mm²)	Approx overall Ø (mm)	Stranding	Inner sheath	Outer sheath	Roll size (mtrs)
0025814S	4	6.0	56 x 0.30	Earth - G/YE	BLACK	100
0025823S	6	7.1	84 x 0.30	Earth - G/YE	BLACK	100

Solar Cable

Multi-Contact MC
STÄUBLI GROUP

Electron beam cross-linked solar PV single core cable

Description
These cables are developed according to TUV EN50618 requirements and designed to meet the rigours of the outdoor application environment and provide long term durability and flexibility, combined with ease of installation.

Single core solar cables provide a durable, high performance interconnection solution between photovoltaic (PV) panels and from the panels to the inverter.

Sheath colour
Black

Inner insulation
XLPE (White)

Sheath insulation
XLPE (Crosslinked Polyethylene)

Test voltage according to EN 50395-6
6,5 kV AC / 15 kV DC (5 min.)

Rated current
55 A (4.0 mm²), 70 A (6.0 mm²), 98A (10mm²)

Nominal voltage
1500 V/max. 1800 V (U0) (IEC)

Insulation resistance of the complete cable
≥ 1000 MΩkm in accordance to EN 50395-8.2

Ambient temperature
–40°C ...+90°C

Maximum conductor temperature
max. +120 °C

Bending radius
Dynamic: >5 × OD
Static >4 x OD

Resistant to
UV: HD 605/A1 / Ozone: EN 50396

Resistance to... tested according to IEC 60811-2-1
Acids, alcalis and oil (IRM902)

TUV Approvals
Approval according to EN50618
H1Z272-K R50359551

Packaging
Standard: 1000m drum
500m drum available on request.

Marking
As per image.
Meter marked.

Part No.	Conductor cross section mm²	Approx. overall Ø mm	Strand design: Number x Ø (mm)	Conductor resistance/20°C Ω / km	Insulation colours	Jacket colour	Approvals	Reel Size
SC1C4TEN1000	1 x 4	5.4	52 x Ø 0.30	5.09	White	Black	TUV EN50618	1000m
SC1C6TEN1000	1 x 6	6.0	78 x Ø 0.30	3.39	White	Black	TUV EN50618	1000m
SC1C10TEN1000	1 x 10	7.2	77 x Ø 0.40	1.95	White	Black	TUV EN50618	1000m

Solar Cable

RALOS

Electron beam cross-linked Solar PV twin core cable

Description:
These cables are developed according to PV1-F requirements and designed to meet the rigours of the outdoor application environment and provide long term durability and fiexibility, combined with ease of installation.

Twin core solar cables provide a durable, high performance interconnection solution between photovoltaic (PV) panels and from the panels to the inverter.

Sheath colour:
Black

Inner insulation:
XLPE (Black, Red)

Sheath insulation:
XLPE (Crosslinked Polyethylene)

Test voltage according to EN 50395-6:
6,5 kV AC / 15 kV DC (5 min.)

Rated current:
55 A (4.0 mm²), 70 A (6.0 mm²)

Nominal voltage:
U0 / U: 0,6 / 1 kV AC / max. 1,8 kV DC

Insulation resistance of the complete cable:
≥ 1000 MΩkm in accordance to EN 50395-8.2

Ambient temperature:
–40 °C ...+90 °C

Maximum conductor temperature:
max. +120 °C

Bending radius:
Dynamic: >4 × OD

Resistant to:
UV: HD 605/A1 / Ozone: EN 50396

Resistance to... tested according to IEC 60811-2-1
Acids and alkali

Approvals:
TÜV R 50356448 (tested according to 2PfG 1169/08.2007)

Packaging:
Standard: 100m and 500m drums.
Available on request: As per customer requirements (i.e. 1000m, 2000m, 5000m).

Marking:
RALOS CABLE 0.9/1.8KV DC 2X6 SQ.MM DC SOLAR CABLE RED TÜV 2PfG 1169 PV1-F TYPE APPROVED.
CAUTION: DO NOT DISCONNECT UNDER LOAD. R50356448.
Meter marked.

Part No.	Conductor cross section mm²	Conductor Ø mm	Outer Ø mm	Strand design: Number x Ø (mm)	Conductor resistance/ 20°C Ω / km	Insulation colours	Jacket colour	Approvals	Reel Size
RC2C4T100	2 x 4.0	2.4	9.4 x 4.6	52 x Ø 0.30	5.09	Black / Red	Black	TUV	100m
RC2C4T500	2 x 4.0	2.4	9.4 x 4.6	52 x Ø 0.30	5.09	Black / Red	Black	TUV	500m
RC2C6T100	2 x 6.0	3.06	10.8 x 5.3	78 x Ø 0.30	3.39	Black / Red	Black	TUV	100m
RC2C6T500	2 x 6.0	3.06	10.8 x 5.3	78 x Ø 0.30	3.39	Black / Red	Black	TUV	500m

Drag Chain Cable

JZ-HF

Highly flexible PVC drag chain control cable

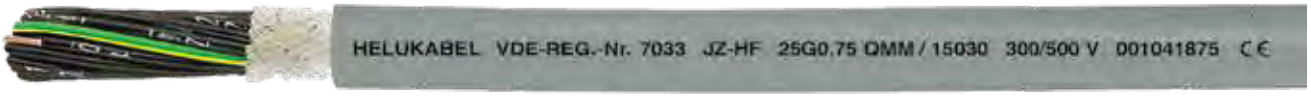
Construction:
Class 6 super fine wire stranding. Special black PVC insulation, with consecutive white numbers, one Green/Yellow earth conductor. Cores with extremely short lay length, fleece wrapping, silver-grey flame retardant PVC sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -10°C to +80°C
Fixed: -40°C to +80°C

Service Life:
In excess of 9 million alternating bending cycles



Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
15025	0.75mm²	11 core + earth	10.2	247
15028	0.75mm²	17 core + earth	12.1	356
15030	0.75mm²	24 core + earth	14.9	498
15038	1mm²	2 core + earth	6.0	84
15039	1mm²	3 core + earth	6.8	113
15040	1mm²	4 core + earth	7.4	137
15041	1mm²	6 core + earth	8.8.	192
15043	1mm²	11 core + earth	10.8	295
15046	1mm²	17 core + earth	13.0	420
15048	1mm²	24 core + earth	15.8	600

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
15056	1.5mm²	2 core + earth	6.8	117
15057	1.5mm²	3 core + earth	7.4	147
15059	1.5mm²	6 core + earth	9.9	273
15061	1.5mm²	11 core + earth	12.1	391
15064	1.5mm²	17 core + earth	14.5	590
15066	1.5mm²	24 core + earth	17.8	801
15074	2.5mm²	2 core + earth	8.4	160
15075	2.5mm²	3 core + earth	9.1	200
15076	2.5mm²	4 core + earth	10.2	268
15077	2.5mm2	6 core + earth	12.2	357

JZ-HF-CY

Highly flexible EMC compliant PVC drag chain control cable

Construction:
Class 6 super fine wire stranding. Special black PVC insulation, with consecutive white numbers, one Green/Yellow earth conductor. Fleece tape wrapping, PVC inner sheath, high coverage tinned copper braid screen, silver-grey flame-retardant PVC sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -10°C to +80°C
Fixed: -40°C to +80°C

Service Life:
In excess of 9 million alternating bending cycles

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
15935	0.5mm²	11 core + earth	11.6	274
15962	1mm²	3 core + earth	8.4	142
15965	1mm²	6 core + earth	11.2	307
15966	1mm²	11 core + earth	13.4	474
15968	1mm²	24 core + earth	19.0	828
15978	1.5mm²	3 core + earth	9.8	243
15980	1.5mm²	6 core + earth	12.5	403

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
15981	1.5mm²	11 core + earth	14.8	592
15926	2.5mm²	3 core + earth	11.5	264
15928	2.5mm²	6 core + earth	15.1	410
15156	4mm²	3 core + earth	14.2	372
15158	6mm²	3 core + earth	16.0	526
15160	10mm²	3 core + earth	21.2	838
15162	16mm²	3 core + earth	24.1	1225

Drag Chain Cable

PURö-JZ-HF

Highly flexible polyurethane drag chain cable

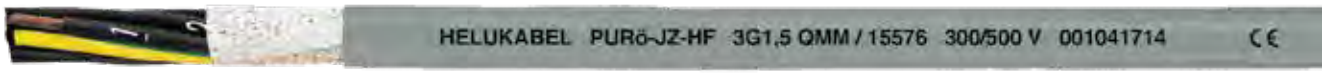
Construction:
Class 6 super fine wire stranding. Special PVC insulation, black with white numbers, one Green/Yellow earth conductor. Fleece wrapping, special microbe, hydrolysis, oil and UV-resistant silver-grey polyurethane flame-retardant sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -20°C to +80°C
Fixed: -40°C to +80°C

Service Life:
In excess of 10 million alternating bending cycles



Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
15529	0.5mm²	17 core + earth	10.7	283
15539	0.75mm²	2 core + earth	5.6	72
15540	0.75mm²	3 core + earth	6.3	97
15541	0.75mm²	4 core + earth	6.9	119
15542	0.75mm²	6 core + earth	8.3	165
15545	0.75mm²	11 core + earth	10.1	247
15577	1.5mm²	3 core + earth	7.4	147
15582	1.5mm²	11 core + earth	12.4	391

PURö-JZ-HF-YCP

Highly flexible EMC compliant polyurethane drag chain cable

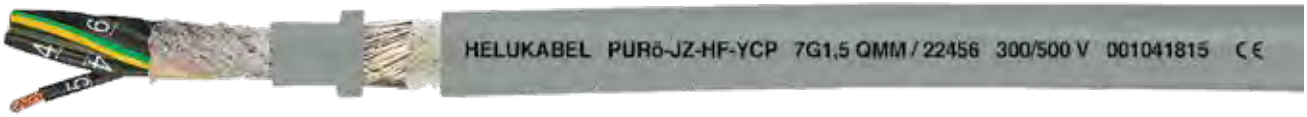
Construction:
Class 6 super fine wire stranding. Special black PVC insulation, with consecutive white numbers, one Green/Yellow earth conductor. Fleece wrapping, PVC inner sheath, high coverage tinned copper braid screen, special microbe, hydrolysis, oil and uv-resistant silver-grey polyurethane flame-retardant sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -20°C to +80°C
Fixed: -40°C to +80°C

Service Life:
In excess of 10 million alternating bending cycles



Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
22419	0.75mm²	3 core + earth	8.5	150
22421	0.75mm²	6 core + earth	10.9	205
22441	1mm²	11 core + earth	14.8	358
22456	1.5mm²	6 core + earth	13.3	323
22459	1.5mm²	11 core + earth	16.1	481

As each drag chain application is unique, our range of products are specifically designed to meet individual applications.
Please contact us for assistance in designing the ideal solution.

Drag Chain Cable

SUPERTRONIC® -330 C-PURö (Multicore)

Highly flexible screened multicore data cable for drag chains

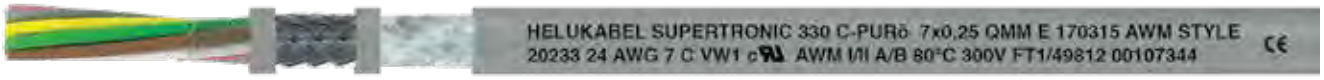
Construction:
Class 6 super fine stranding of plain copper wire, DIN 47100 colour coded polyolefin insulation, fleece wrapping high coverage tinned copper screen braid, special microbe, hydrolysis, oil and uv-resistant silver-grey polyurethane flame-retardant sheath, metre marked.

Nominal Voltage:
300V (not for power purposes)

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Temperature Range:
Flexing: -30°C to +80°C
Fixed: -40°C to +80°C

Mutual Capacitance:
C/C approx. 60 nF/km



Part No.	Nominal conductor area mm² and number of c ores		Approx. overall Ø mm	Approx. weight kg/km
49799	0.14mm²	4 core	4.8	40
49801	0.14mm²	7 core	5.8	66
49802	0.14mm²	10 core	6.7	86
49804	0.14mm²	14 core	7.1	102
49807	0.14mm²	25 core	9.2	156
49808	0.25mm²	2 core	4.8	38
49809	0.25mm²	3 core	5.0	44
49811	0.25mm²	5 core	5.7	68
49812	0.25mm²	7 core	6.6	82

Part No.	Nominal conductor area mm² and number of c ores		Approx. overall Ø mm	Approx. weight kg/km
49813	0.25mm²	10 core	7.5	110
49815	0.25mm²	14 core	8.0	135
49816	0.25mm²	18 core	8.8	150
49818	0.25mm²	25 core	10.7	204
49821	0.34mm²	4 core	5.7	76
49823	0.34mm²	7 core	7.1	110
49824	0.34mm²	10 core	8.1	148
49826	0.34mm²	14 core	8.7	185
49829	0.34mm²	25 core	11.8	305

SUPER-PAAR-TRONIC 340-C-PUR (Twisted Pairs)

Highly flexible screened twisted pair data cable for drag chains

	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
49830	0.25mm²	1 pair	4.8	26
49831	0.25mm²	2 pair	6.7	61
49832	0.25mm²	3 pair	7.1	70
49833	0.25mm²	4 pair	7.6	82
49834	0.25mm²	5 pair	8.3	99
49834	0.25mm²	6 pair	9.0	126
49848	0.5mm²	1 pair	5.8	47
49849	0.5mm²	2 pair	8.4	100
49850	0.5mm²	3 pair	9.0	131
49851	0.5mm²	4 pair	10.0	149
49852	0.5mm²	5 pair	11.0	169
49853	0.5mm²	6 pair	11.8	181

	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
49855	0.5mm²	10 pair	16.5	332
49857	0.75mm²	1 pair	6.2	56
49858	0.75mm²	2 pair	9.2	102
49859	0.75mm²	3 pair	9.8	144
49860	0.75mm²	4 pair	11.2	160
49862	0.75mm²	6 pair	13.2	216
49864	0.75mm²	10 pair	18.4	451
49866	1mm²	1 pair	6.7	64
49867	1mm²	2 pair	10.0	120
49868	1mm²	3 pair	10.8	160
49869	1mm²	4 pair	11.7	184
49870	1mm²	5 pair	13.2	217

Servo Cable

TOPSERV PUR

Servo cable in accordance to SIEMENS standard 6FX 8008 for drag chain applications

Construction:
In accordance with Siemens standards. (Classs 6 Construction) Polyurethane sheath for added protection. Metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter

Nominal Voltage:
Power: 600/1000 V

Temperature Range:
Flexing: -30°C to +80°C
Fixed: -40°C to +90°C

Part No.	SIEMENS-Article No.	Number of cores and nominal conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km	Sheath Colour
700657	6FX8008-1BD41	3x(2 x 0.14) + 4 x 0.14 + 2 x 0.5	8.9	120	Green
78948	6FX8008-1BA11	3 core + earth 1.5 + 2x1	11.6	233	Orange
75943	6FX8008-1BB11	3 core + earth 1.5	8.9	142	Orange
75944	6FX8008-1BB21	3 core + earth 2.5	10.7	206	Orange

Siemens Article No. 6FX 8008 is a registered trademark of Siemens AG.

TOPGEBER 512 PUR

Highly flexible feedback/sensor cable for resolvers and encoders

Construction:
Class 6 extra fine stranding, colour coded PP insulation, cores and pairs twisted together, tape wrapping, high coverage tinned copper braid screen, microbe & hydrolysis resistant, halogen free, uv-resistant, flame retardant sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 6 x cable diameter

Nominal Voltage:
30V

Temperature Range:
Flexing: -30°C to +80°C
Fixed: -40°C to +80°C

Part No.	Number of cores and nominal conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km
702050	4x2x0.25 + 2x1	8.8	99

Instrumentation & Data Cable

TRONIC-CY (LiY-CY)

Flexible screened multicore data cable

Construction:
Class 5 fine wire stranding, colour coded PVC insulation to DIN47100. Plastic foil wrapping, high coverage tinned copper braid screen, flame retardant grey PVC sheath, metre marked.

Minimum Bending Radius:
Fixed: 10 x cable diameter
Flexing: 5 x cable diameter

Peak Working Voltage:
0.14mm² = 350 V
≥ 0.25mm² = 500 V
(not for power purposes)

Temperature Range:
Flexing: -5°C to +80°C
Fixed: -40°C to +80°C

Inductance:
Approx. 0.65 mH/km

Capacitance:
(approx. - value) at 800 Hz
core/core at 0,14 mm² = 120 pF/m
core/core 0,25 mm² = 150 pF/m
core/screen at 0,14 mm² = 240 pF/m
core/screen 0,25 mm² = 270 pF/m

flame retardant

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
20029	0.25mm²	2 core	4.3	31
20030	0.25mm²	3 core	4.5	36
20031	0.25mm²	4 core	4.8	40
20033	0.25mm²	7 core	5.8	64
20034	0.25mm²	8 core	7.0	82
20036	0.25mm²	12 core	7.5	90
20039	0.25mm²	18 core	9.1	142
20040	0.25mm²	20 core	9.5	152
20092	0.25mm²	25 core	10.6	169
20044	0.25mm²	30 core	11.1	189
20046	0.25mm²	36 core	11.9	219
20047	0.25mm²	40 core	12.9	247
20056	0.34mm²	2 core	4.9	30
20059	0.34mm²	5 core	6.0	54
16002	0.5mm²	2 core	5.3	45
16003	0.5mm²	3 core	5.6	55
16005	0.5mm²	5 core	6.8	76
16007	0.5mm²	7 core	7.3	98
16026	0.75mm²	2 core	5.8	59
16500	1.50mm²	2 core	7.0	88

Instrumentation & Data Cable

PAAR-TRONIC-CY

Industrial standard screened twisted pair data cable

Construction:
Fine wire stranding, colour coded twisted pair PVC insulation to DIN47100. Plastic foil wrapping, high coverage tinned copper braid screen, flame retardant grey PVC sheath, metre marked.

Minimum Bending Radius:
Fixed: 5 x cable diameter
Flexing: 10 x cable diameter

Peak Working Voltage:
350V (not for power purposes)

Temperature Range:
Flexing: -5°C to +80°C
Fixed: -30°C to +80°C

Mutual Capacitance:
C/C approx. 140 nF/km
C/S approx. 150 nF/km

Inductance:
Approx. 0.65 mH/km

flame retardant

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
21002	0.14mm²	2 pair	5.0	40
21003	0.14mm²	3 pair	5.7	49
21004	0.14mm²	4 pair	6.1	55
21006	0.14mm²	6 pair	7.2	86
21008	0.14mm²	8 pair	8.2	97
21034	0.25mm²	2 pair	5.8	53
21035	0.25mm²	3 pair	6.4	65
21036	0.25mm²	4 pair	7.2	80
21038	0.25mm²	6 pair	8.8	114
21040	0.25mm²	8 pair	9.4	129
17001	0.5mm²	2 pair	7.6	89
17002	0.5mm²	3 pair	8.2	104
17003	0.5mm²	4 pair	9.0	126
17005	0.5mm²	6 pair	10.9	171
17006	0.5mm²	8 pair	12.0	290
17008	0.5mm²	12 pair	14.5	361
17012	0.75mm²	2 pair	8.7	105
17013	0.75mm²	3 pair	9.3	128
17014	0.75mm²	4 pair	10.6	156
17016	0.75mm²	6 pair	12.7	216
17017	0.75mm²	8 pair	14.4	309
17019	0.75mm²	12 pair	16.8	405

Instrumentation & Data Cable

RALOS

RALOS INST to AS/NZS 3808

High temperature PVC V90HT overall screened

Construction:
Class 2 stranding, twisted pairs with heat resistant PVC V90HT insulation, aluminium polyester tape screen with 0.5mm² tinned copper drain wire, heat & UV resistant, flame retardant, black PVC V90HT sheath, metre marked. Also available in an intrinsically blue sheath upon request.

Minimum Bending Radius:
5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Fixed: -20°C to +105°C

Colour Coding:
- Pairs: black and white with consecutive numbering
- Triads: black, white & red with consecutive numbering

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
INS1P0.5CSBK	0.5mm²	1 pair	6.4	54
INS2P0.5CSBK	0.5mm	2 pair	9.2	83
INS1TR0.5CSBK	0.5mm²	1 triad	7.1	75
INS3P0.5CSBK	0.5mm²	3 pair	9.7	125
INS4P0.5CSBK	0.5mm²	4 pair	10.7	151
INS6P0.5CSBK	0.5mm²	6 pair	13.0	206
INS8P0.5CSBK	0.5mm²	8 pair	15.9	265
INS12P0.5CSBK	0.5mm²	12 pair	17.7	375
INS20P0.5CSBK	0.5mm²	20 pair	22.4	600
INS24P0.5CSBK	0.5mm²	24 pair	25.1	708
INS36P0.5CSBK	0.5mm²	36 pair	28.4	950
INS1P1CSBK	1.0mm²	1 pair	7.3	72
INS1P1.5CSBK	1.5mm²	1 pair	7.7	82
INS2P1.5CSBK	1.5mm²	2 pair	11.5	146
INS1TR1.5CSBK	1.5mm²	1 triad	8.5	115
INS4P1.5CSBK	1.5mm²	4 pair	13.8	254
INS6P1.5CSBK	1.5mm²	6 pair	16.8	370
INS8P1.5CSBK	1.5mm²	8 pair	18.9	484
INS12P1.5CSBK	1.5mm²	12 pair	22.1	703
INS20P1.5CSBK	1.5mm²	20 pair	28.5	1135
INS24P1.5CSBK	1.5mm²	24 pair	30.9	1370
INS36P1.5CSBK	1.5mm²	36 pair	36.8	1967

Instrumentation & Data Cable

RALOS

RALOS INST to AS/NZS 3808

High temperature PVC V90HT overall and individually screened

Construction:
Class 2 stranding, twisted pairs with heat resistant PVC V90HT insulation, aluminium polyester tape individual pair screen, overall aluminium polyester tape screen with 0.5mm² tinned copper drain wire, heat & UV resistant, flame retardant, black PVC V90HT sheath, metre marked. Also available in an intrinsically blue sheath upon request.

Minimum Bending Radius:
5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Fixed: -20°C to +105°C

Colour Coding:
- Pairs: black and white with consecutive numbering
- Triads: black, white & red with consecutive numbering

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
INS2P0.5ESCSBK	0.5mm²	2 pair	11.4	105
INS4P0.5ESCSBK	0.5mm²	4 pair	13.4	190
INS6P0.5ESCSBK	0.5mm²	6 pair	15.6	250
INS8P0.5ESCSBK	0.5mm²	8 pair	17.0	316
INS12P0.5ESCSBK	0.5mm²	12 pair	20.2	477
INS20P0.5ESCSBK	0.5mm²	20 pair	26.0	771
INS24P0.5ESCSBK	0.5mm²	24 pair	29.0	879
INS36P0.5ESCSBK	0.5mm²	36 pair	34.6	1350

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
INS2P1.5ESCSBK	1.5mm²	2 pair	14.8	195
INS4P1.5ESCSBK	1.5mm²	4 pair	17.0	338
INS6P1.5ESCSBK	1.5mm²	6 pair	19.4	446
INS8P1.5ESCSBK	1.5mm²	8 pair	22.5	608
INS12P1.5ESCSBK	1.5mm²	12 pair	27.1	860
INS20P1.5ESCSBK	1.5mm²	20 pair	32.5	1345
INS24P1.5ESCSBK	1.5mm²	24 pair	37.2	1676
INS36P1.5ESCSBK	1.5mm²	36 pair	44.9	2350

Instrumentation & Data Cable

RALOS

RALOS INSTR to AS/NZS 3808

High temperature PVC V90HT overall screened with steel wire armouring

Construction:
Class 2 stranding, twisted pairs with heat resistant PVC V90HT insulation, aluminium polyester tape screen with 0.5mm² tinned copper drain wire, PVC V90HT inner sheath, galvanised steel wire armouring, heat & UV resistant, flame retardant, black PVC V90HT sheath, metre marked.

Also available in an intrinsically blue sheath upon request.

Minimum Bending Radius:
5 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Fixed: -20°C to +105°C

Colour Coding:
- Pairs: black and white with consecutive numbering
- Triads: black, white & red with consecutive numbering

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
INS1P1.5CSSWABK	1.5mm²	1 pair	13	336
INS1TR1.5CSSWABK	1.5mm²	1 triad	14.5	380

Data Cables

Screened Multipair data cable - low capacitance

Construction:
Class 2 tinned copper stranding (7/020), polypropylene insulation, aluminium mylar tape screen with 7/020 tinned copper drain wire, with grey PVC sheath

Cross sectional area:
0.20mm²

Conductor Resistance:
95.8 Ohms/km, nominal

Nominal Impedance:
110 Ohms @ 1kHz

Capacitance:
Core to screen 75 pF/m @ 1kHz
Core to core 50 pF/m @ 1kHz

Part No.	Length	No. of pairs	Approx. overall Ø mm	Approx. weight kg/km
DATA1P0.2CSGY500M	500M	1	4.2	22
DATA2P0.2CSGY500M	500M	2	5.4	34
DATA4P0.2CSGY500M	500M	4	6.6	47

Bus System Cable

HELUKABEL

Profibus

Cables for bus systems, Profibus - DP / FMS/ FIP

Conductor Resistance:
(loop): max. 110 Ohms/km

Peak Working Voltage:
(not for power purposes): 250V

Characteristic Impedance:
150 ± 15 Ohms

flame retardant

Fixed Applications

Part No.	Connection	Stranding	Sheath	Number of cores and conductor Ø mm	Approx. overall Ø mm	Approx. weight kg/km
81448	Conventional	Solid	PVC	1 x 2 x 0.64 Ø	7.8	69
81903	Fast Connect	Solid	PVC	1 x 2 x 64 Ø	8.0	79

flame retardant · halogen free · Suitable for drag chain

Highly Flexible Applications

Part No.	Connection	Stranding	Sheath	Number of cores and conductor Ø mm	Approx. overall Ø mm	Approx. weight kg/km
80267	Conventional	19 wire	PUR	1 x 2 x 0.64 Ø	8.0	65
801659	Fast Connect	19 wire	PUR	1 x 2 x 0.64 Ø	8.0	70

HELUKABEL A-BUS (Actuator Sensor Interface)

Industrial rubber construction (EPDM) networking cable

Minimum Bending Radius:
Static: 3 x cable diameter
Flexing: 6 x cable diameter

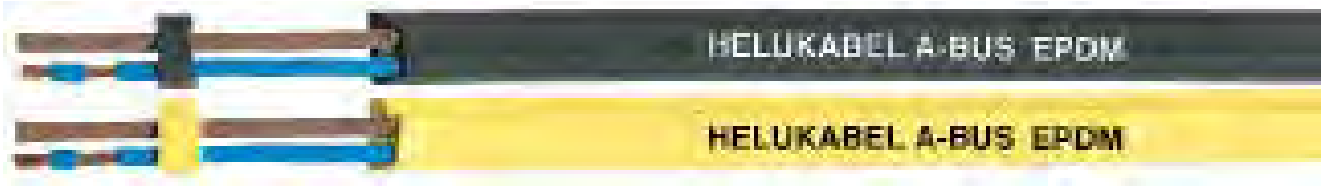
Temperature range:
-40 °C to +85 °C

Conductor Resistance:
(loop): max. 27.4 Ohms/km

Nominal Voltage:
Yellow: 32V
Black: 48V

Note:
TPE and PUR versions are also available.

flame retardant · halogen free



Part No.	Number of cores and nominal conductor area mm²	Sheath colour	Approx. weight kg/km
80824	2 x 1.5mm	Yellow	70
80825	2 x 1.5mm	Black	70

Bus System Cable

DEVICENET BUS

DeviceNet (fixed applications)

Minimum Bending Radius:
PVC: 15 x cable diameter
PUR: 10 x cable diameter

Temperature Range:
PVC -20°C to +80 °C
PUR -40°C to +80°C

Colours:
Data Pair: Light Blue & White
Power Supply: Red and Black

Mutual Capacitance:
(800 Hz) 39.8 nF / km

Characteristic Impedance:
120 Ohm ± 120 Ohm

Fixed applications

Part No.	Type	No. of cores and AWG per conductor	Approx. overall Ø mm	Approx. weight kg/km	Sheath Type	Sheath Colour
800683	DeviceNet Trunk (thick)	1x2xAWG18 + 1x2xAWG15	12.2	192	PVC	Grey
800684	DeviceNet Drop (Thin)	1x2xAWG24 + 1x2xAWG22	6.9	67	PVC	Grey

DEVICENET BUS

DeviceNet (flexible applications)

Highly flexible and drag chain applications

Part No.	Type	No. of cores and AWG per conductor	Approx. overall Ø mm	Approx. weight kg/km	Sheath Type	Sheath Colour
81909	Trunk (Thick)	1x2xAWG18 + 1x2xAWG15	12.2	185	PUR	Purple
81910	Drop (Thin)	1x2xAWG24 + 1x2xAWG22	6.9	68	PUR	Purple

Bus System Cable

Industrial Ethernet

Industrial Standard Cat. 5e for fixed, flexible, highly flexible & drag chain applications

Characteristic Impedance:
100 Ohms @ 1-100 MHz

Part No.	Application	Sheath	No. of cores and AWG per conductor	Approx. overall Ø mm	Approx. weight kg/km
81609	Fixed (solid)	Halogen free	4 x 2 x AWG24	6.0	50
81254	Flexible (7 wire)	Halogen free	4 x 2 x AWG26	5.4	40
82839	Drag chain (19 wire)	Polyurethane	4 x 2 x AWG26	6.6	56

Industrial Ethernet Helukat 250S

4-pairs high flexible CAT. 6 for drag chain

Construction:
Super fine stranded tinned copper wire conductor. Polypropylene core insulation. Aluminium foil and tinned copper wire screened with a Halogen free Polyurethane outer sheath, metre marked.

Minimum Bending Radius:
Flexing 7.5 x cable diameter
Fixed 4 x cable diameter

Temperature:
Flexing -30°C to +70°C

Part No.	Application	Sheath	No. of cores and AWG per conductor	Approx. overall Ø mm	Approx. weight kg/km
803387	High flex (19 wire)	Polyurethane	4 x 2 x AWG26	7.8	63

High Temperature Cable

SiF

180°C flexible silicon single core

Construction:
Class 5, tinned copper fine wire stranding with halogen-free, flame-retardant silicone insulation.

Nominal Voltage:
300/500V

Temperature Range:
-60°C to + 180°C

Nominal conductor area mm²	Red	Black	White	Blue	Brown	Grey	Orange	Violet	Pink	Green/ Yellow
0.75	23402	23401	23405	23403	23404	23406	23409	23407	23411	23413
1	23502	23501	23505	23503	23504	23506	23509	23507	23511	23513
1.5	23602	23601	23605	23603	23604	23606	23609	23607	23611	23613
2.5	23702	23701	23705	23703	23704	23706	23709	23707	23711	23713
4	23802	23801	23805	23803	23804	23806	23809	23807	23811	23813
6	23902	23901	23905	23903	23904	23906	23909	23907	23911	23913
10	24602	24601	24605	24603	24604	24606	24609	24607	24611	24613
16	24702	24701	24705	24703	24704	24706	24709	24707	24711	24713
25	24802	24801	24805	24803	24804	24806	24809	24807	24811	24813

SiHF

180°C flexible silicon control cable

Construction:
Class 5 tinned copper fine wire stranding, silicone insulation, halogen free, flame retardant, red, silicone sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
-60°C to +180°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
23001	0.75mm²	2 core	6.4	53
23002	0.75mm²	2 core + earth	6.8	63
23003	0.75mm²	3 core + earth	7.6	83
23004	0.75mm²	4 core + earth	8.5	101
23006	0.75mm²	6 core + earth	9.2	124
23007	1mm²	2 core	6.6	59
23008	1mm²	2 core + earth	7.0	77
23009	1mm²	3 core + earth	7.8	94
23010	1mm²	4 core + earth	8.8	115
23012	1mm²	6 core + earth	9.5	144
23013	1.5mm²	2 core	7.6	81

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
23014	1.5mm²	2 core + earth	8.0	98
23015	1.5mm²	3 core + earth	8.7	122
23016	1.5mm²	4 core + earth	9.6	147
23018	1.5mm²	6 core + earth	10.4	187
23021	1.5mm²	11 core + earth	13.9	314
23025	1.5mm²	19 core + earth	17.5	566
23027	2.5mm²	2 core	8.8	134
23028	2.5mm²	2 core + earth	9.7	152
23029	2.5mm²	3 core + earth	10.6	188
23030	2.5mm²	4 core + earth	11.6	228
23032	2.5mm²	6 core + earth	12.6	320

High Temperature Cable

THERMFLEX® 180 EWKF-C

EMC Compliant Silicone flexible screened power & control cable for harsh environmental applications

Construction:
Class 5,tinned copper fine wire stranding, colour or number coded EWKF silicone insulation, silicone based inner sheath, high coverage tinned copper braid screen, halogen free, flame retardant, abrasive & notch resistant black sheath, metre marked.

Minimum Bending Radius:
Flexing: 10 x cable diameter
Fixed: 5 x cable diameter

Nominal Voltage:
300/500

Temperature Range:
Flexing: -25°C to +180°C
Fixed: -60°C to +180°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
79808	1mm²	2 core	9.4	132
79809	1mm²	2 core + earth	9.8	154
79810	1mm²	3 core + earth	10.7	176
79811	1mm²	4 core + earth	11.6	207
79812	1.5mm²	2 core	10.8	170
79813	1.5mm²	2 core + earth	11.2	190
79814	1.5mm²	3 core + earth	12.0	231

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
79815	1.5mm²	4 core + earth	12.8	282
79816	1.5mm²	6 core + earth	13.6	342
79820	2.5mm²	2 core + earth	12.9	275
79821	2.5mm²	3 core + earth	13.9	340
79824	4mm²	2 core + earth	14.9	364
79825	4mm²	3 core + earth	16.0	511

THERMFLEX® 180 EWKF

Silicone flexible power & control cable for harsh environmental applications

Construction:
Class 5, tinned copper fine wire stranding, colour or number coded EWKF silicone insulation, halogen free, flame retardant, abrasive & notch resistant black sheath, metre marked.

Minimum Bending Radius:
Flexing: 7.5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage:
300/500V

Temperature Range:
Flexing: -25°C to +180°C
Fixed: -60°C to +180°C

Part No.	Number of cores and nominal conductor area mm²		Approx. overall Ø mm	Approx. weight kg/km
74992	0.75mm²	2 core	6.4	53
74993	0.75mm²	2 core + earth	7.0	64
74994	0.75mm²	3 core + earth	7.6	84
74995	0.75mm²	4 core + earth	8.5	101
74996	1mm²	2 core	6.8	60
74997	1mm²	2 core + earth	7.2	78
74998	1mm²	3 core + earth	7.8	95
74999	1mm²	4 core + earth	8.8	116

Part No.	Number of cores and nominal conductor area mm²		Approx. overall Ø mm	Approx. weight kg/km
75000	1.5mm²	2 core	8.8	82
75001	1.5mm²	2 core + earth	8.9	98
75002	1.5mm²	3 core + earth	9.9	122
75003	1.5mm²	4 core + earth	10.8	148
75004	1.5mm²	6 core + earth	12.0	187
75009	2.5mm²	2 core + earth	10.4	152
75010	2.5mm²	3 core + earth	11.5	189
75011	2.5mm²	4 core + earth	12.9	229

Curly Cords

Spiral Cable

Custom manufactured to specific requirements

Description:
Custom manufactured Spiral cables to your specifications. We are able to manufacture using most cables within this catalogue, including PVC, Polyurethane & screened cables.

Rubber & high temperature cables are not suitable for spiral applications.

PVC Spiral Cable

- Ideal for commercial and domestic applications
- Fair retention of shape
- Available in 0.5mm^2, 0.75mm^2, 1mm^2, 1.5mm^2 and 2.5mm^2
- Available in black, white or grey sheath
- Available in screened cables

Polyurethane Spiral Cable

- Ideal for light to heavy duty industrial applications
- Excellent retention of shape
- High chemical resistance
- Available in 0.5mm^2, 0.75mm^2, 1mm2, 1.5mm^2, 2.5mm^2
- Grey sheath
- Available in screened cables

Complete the enquiry form below and fax back on: 1800 010 118

Name: .....

Company: .....

Phone: ..... Fax: ..... Email: .....

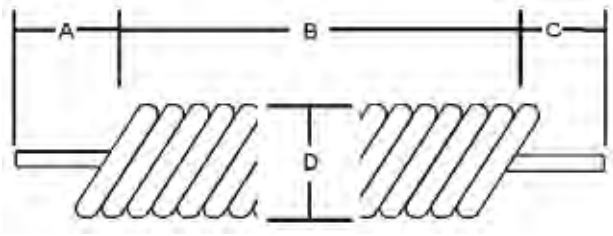
(1) Quantity: .....

(2) Cable type: PVC Polyurethane Other .....

(3) Cable construction (e.g. 2 core + earth, 1mm^2): .....

(4) Conductor insulation : Colour Coded Number Coded

(5) Sheath colour: BLACK WHITE GREY OTHER .....



(6) Required extended length (max. 4 metres): .....

(7) Other critical dimensions if applicable:

(A)..... (B)..... (C)..... (D).....

Tail No 1 Relaxed Length (max 1.3 metres) Tail No 2 Max. Diameter

Flat Cable

PVC-flat

Highly flexible power & control cable for cable trollies & elevators

Construction:
Class 5 fine wire stranding, colour or number coded PVC insulation, flame-retardant black PVC sheath, metre marked.

Screened version contains high coverage individually screened copper braid.

Minimum Bending Radius:
10 x cable thickness

Temperature Range:
Flexing: -5°C to +70°C
Fixed: -40°C to +80°C

Nominal Voltage:
up to 1 mm² U0/U 300/500 V
from 1,5 mm² U0/U 450/750 V

Colour Code Type:
A: Black, Brown, Blue, Green/Yellow
B: Grey, Black, Brown, Blue, Green/Yellow
C: Black Numbered Cores with 1 Green/Yellow

flame retardant

Part No.	Nominal conductor area mm² and number of cores		Colour code type	Approx. overall dimensions mm	Approx. weight kg/km
27001	1.5mm²	3 core + earth	A	13.7 x 4.5	133
27002	1.5mm²	4 core + earth	B	17.9 x 4.5	169
27003	1.5mm²	6 core + earth	C	23.5 x 4.5	235
27004	1.5mm²	7 core + earth	C	26.8 x 4.5	265
27092	1.5mm²	7 core + earth (Screened)	C	35.6 x 5.9	400
27005	1.5mm²	9 core + earth	C	33.5 x 4.5	332
27006	1.5mm²	11 core + earth	C	38.9 x 4.5	421
27007	2.5mm²	3 core + earth	A	17.0 x 5.5	205
27008	2.5mm²	4 core + earth	B	21.5 x 5.5	256
27009	2.5mm²	6 core + earth	C	30.3 x 5.5	344
27010	2.5mm²	7 core + earth	C	31.9 x 5.5	389
27011	2.5mm²	11 core + earth	C	47.1 x 5.8	580
27013	4mm²	3 core + earth	A	21.8 x 7.0	344
27015	4mm²	6 core + earth	C	36.6 x 7.9	590
27016	6mm²	3 core + earth	A	24.8 x 8.2	424
27019	10mm²	3 core + earth	A	29.6 x 10.0	710
27020	16mm²	3 core + earth	A	34.4 x 11.2	1014
27021	25mm²	3 core + earth	A	42.6 x 13.7	1365

Skintop® SVF-M

Brass metric cable gland for flat cables - IP54

Cable gland

Part No.	Metric Thread	Flat Cable Width Min./Max.	Cable Thickness Min./Max.
5210 7350	M 32	14 / 27	4 / 11.5
5210 7360	M 40	24 / 34	4 / 11.5
5210 7370	M 50	29 / 44	5 / 12.0
5210 7380	M 63	34 / 50	5 / 12.0

Locknut to suit

Part No.	Metric Thread	Pack Size Pieces
5210 3040	32	100
5210 3050	40	50
5210 3060	50	50
5210 3070	63	25

Mining Cable

General underground coal mining

Available upon request

TELE-FONIKA is a worldwide leader in mining cables from surface mining to the toughest underground applications. TF MINING GRADE cables perform well in the extreme environments and are engineered to handle any mining application from medium to extra heavy duty.

With 80 years of manufacturing experience in shaft and surface mine applications, TELE-FONIKA has developed a wide range of mining cables that provide the following features:

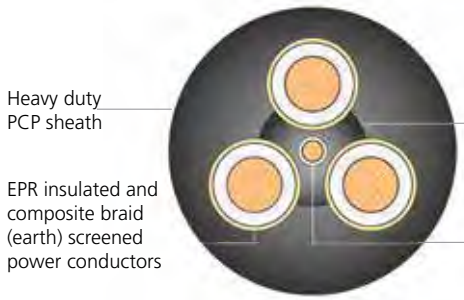
Excellent flexibility, torsion and drag resistance due to superior construction and applied materials including tinned rope-lay conductors and pure integral filling.

Maximum working safety due to applied individual shielding which minimize induction of mutual electromotive forces.

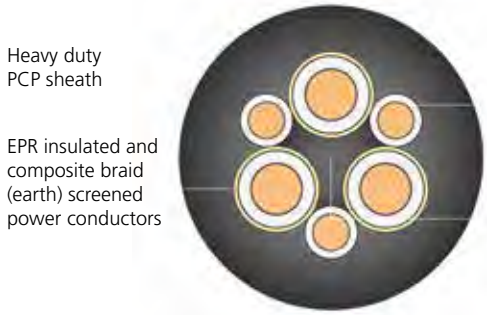
Excellent electrical, temperature parameters, abrasion, compression, tear and flame resistance due to special in-house developed formulations of insulation and jacketing materials.

All of the Mining cables are manufacture to Australian standards. Contact DKSH for details on the full range of TELE-FONIKA Mining Cables.

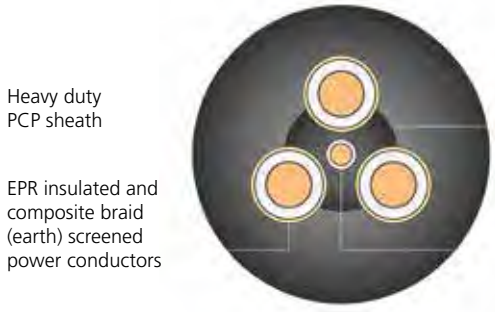
Type 209
Copper screened three-core cables
Central pilot core
Flexible feeder to machinery/handheld Tools



Type 240
Copper screened three-core cables
Interstitial pilot conductors
Mine power / main feeder / long wall



Type 210
Copper Screened Three-core Cables
Central Pilot Core
Hand Held Boring Machines and Drills



Mining Cable

Underground metal and surface mining

Available upon request

Type 409
Copper Screened Three-core Cables
Central Pilot Core
General Underground Metal / Surface Mining

Heavy duty PCP sheath

EPR insulated and composite braid (earth) screened power conductors

Semiconductive CSP cradle separator

EPR covered miniature extensible pilot conductor

Type 440
Copper Screened Three-core Cables
Interstitial Pilot Conductors
Power to Machinery and Equipment

Heavy duty PCP sheath

Semiconductive CSP filling and covering

EPR covered interstitial pilot conductor

Semiconductive CSP cradle separator

Type 441
Three-core Cables
Central Pilot Core / Interstitial Earth Conductors
Trailing / Draglines / Shovels / Drills / Reeling

Heavy duty PCP sheath

Semiconductive CSP filling and covering

Open weave braid reinforcement

EPR insulated and semiconductive elastomer screened power conductors

Semiconductive CSP covered interstitial earth conductors

EPR covered miniature extensible pilot conductor

Semiconductive CSP cradle separator

Type 450
Copper Screened Three-core Cables
Two Earth and One Pilot Interstitial Conductors
Dragline, Shovel, Drill Cable and Reeling

Open weave braid reinforced extra heavy duty PCP sheath

EPR insulated composite braid screened power conductors

Elastomer centre filler

EPR covered interstitial conductor

Semiconductive PCP covered interstitial earth conductors

Type 455
Three-core Cables
Two Earth and One Pilot Interstitial Conductors
Stacker / Reclamation

Open weave braid reinforcement

Heavy duty CSP sheath

Semiconductive CSP filling and covering

EPR insulated and semiconductive elastomer screened power conductors

Semiconductive CSP covered interstitial earth conductors

Mining Cable

Type 241.1 Reeling and trailing cables

Suitable for underground coal mining

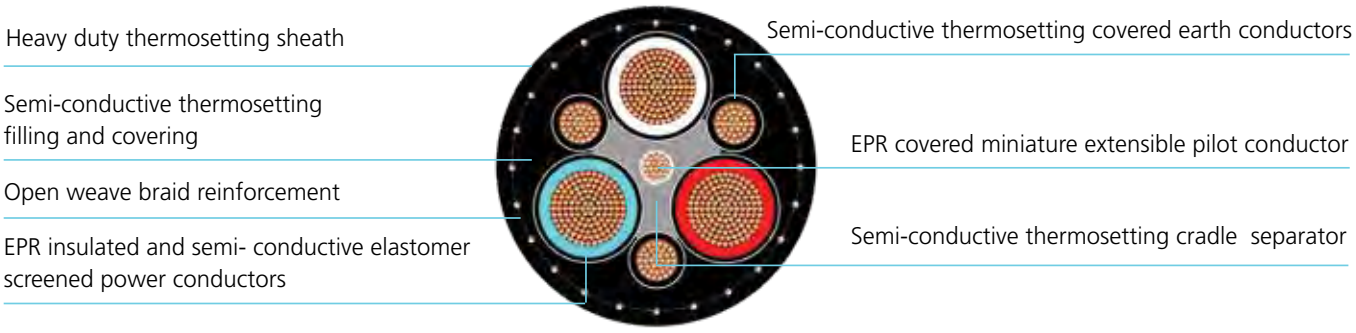
Construction:
Class 5 tinned and annealed copper wires. Power, earth and pilot conductors comply with AS/NZS 1125:2001 and AS/NZS 1802:2003. Crush-resistant central cradle construction, flexible Ethylene Propylene Rubber (EPR) insulation, reinforced Radial-strengthened heavy duty jacket, oil-resistant and flame-retardant, metre marked.

Minimum Bending Radius:
Flexing: 6 x cable diameter
Fixed: 4 x cable diameter

Temperature Range:
-25˚C - +90˚C

Colour Coding:
Core ID: Red, (black), White, (black), Blue, (black)

Standards:
AS/NZS 1802:2003
AS/NZS 1125:2001



All cables are marked with type of cable, manufacturer and year of manufacture.

		Power Conductor			Earth Conductor					
Part No.	Description	Nominal conductor area mm²	Insulation thickness mm	Stranding	Nominal conductor area mm²	Stranding	Semi-conductive covering thickness mm	Sheath thickness including semi-conductive core screen mm	Approx. overall Ø mm	Approx. weight kg/km
G-020250	Type 241.1 6	6	1.5	84/0.3	8.19	18/0.3	1	3.8	29.7	1060
G-004834	Type 241.1 35	35	1.6	285/0.4	13.28	90/0.3	1	4.4	39.8	2540
G-023336	Type 241.1 50	50	1.8	380/0.4	14.98	120/0.3	1	4.9	45.2	3280
G-020313	Type 241.1 70	70	1.8	361/0.5	17.32	110/0.4	1	5.3	50.0	4250
G-020323	Type 241.1 95	95	2	475/0.5	19.31	110/0.4	1	5.8	56.0	5320
G-020330	Type 241.1 120	120	2.1	608/0.5	21.18	110/0.4	1.2	6.3	59.5	6330
G-023337	Type 241.1 150	150	2.3	740/0.5	23.44	135/0.4	1.2	6.7	64.9	7660
G-023580	Type 241.1 185	185	2.5	925/0.5	25.82	165/0.4	1.4	7.3	71.3	9240

Mining Cable

Multicore Shot Fire Cable

Two core V90 insulated and sheathed

Description:
Multi stranded plain copper conductors to AS/NZS 1125. Two core with V90 PVC outer insulation, made to AS/NZS 3808:2000 Standard. UV Stabilized outer sheath.

Application:
Suitable for wiring of detonators.

Temperature Range:
Fixed: -35°C to +90°C

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Inner cores	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
ETS250025R100	2	2.5	50 x 0.25	Red	Red / Black	7 x 10.6	7.6	12.2	100
ETS250025R500	2	2.5	50 x 0.25	Red	Red / Black	7 x 10.6	7.6	12.2	500
ETS250025Y100	2	2.5	50 x 0.25	Yellow	Red / Black	7 x 10.6	7.6	12.2	100
ETS27085I100	2	4	7 x 0.85	Light Blue	Red / Black	6.4 x 10.6	4.61	27.6	100

Not suitable for connection to mains power supply.

Shot Fire Cable

Two core V90 insulated and sheathed

Description:
Multi stranded plain copper conductors to AS/NZS 1125. 2 core with V90 PVC outer insulation, made to AS/NZS 3808:2000 Standard. Blue outer sheath with yellow stripe. UV stabilized.

Application:
Suitable for wiring of detonators.

Nominal Voltage:
600/1000V AC

Temperature Range:
Fixed: -35°C to +90°C

Minimum Bending Radius:
5 x outside diameter

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Inner cores	Stripe/ trace	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
ETR27085L/Y500	2	4	7 x 0.85	Blue	Red / Black	Yellow	13.1	4.61	20.4	500

Not suitable for connection to mains power supply.

Mining Cable

Bell Wire/Shot Fire Cable

Figure 8 detonator wire

Description:
Solid tinned copper conductor to AS1125. Figure 8 cores with V90 PVC insulation, made to AS/NZS 3808:2000 Standard. White outer sheath with red stripe.

Application:
Suitable for wiring of detonators.

Temperature Range:
Fixed: -35°C to +90°C

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Stripe/ trace	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
EFT210710W/R500	2	0.4	1 x 0.71	White	Red	1.7 x 3.5	45.3	1.25	500
EFT210710W/R500	2	0.4	1 x 0.71	White	Red	1.7 x 3.5	45.3	1.25	500

Bell Wire/Shot Fire Cable

Figure 8 detonator wire

Description:
Solid plain copper conductor to AS1125. Figure 8 cores with V90 PVC insulation, made to AS/NZS 3808:2000. Standard white outer sheath with red stripe.

Application:
Suitable for wiring of detonators.

Temperature Range:
Fixed: -35°C to +90°C

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Stripe/ trace	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
EFP210710W/R500	2	0.4	1 x 0.71	White	Red	1.7 x 3.5	45.3	1.25	500
EFP210710W/R500	2	0.4	1 x 0.71	White	Red	1.7 x 3.5	45.3	1.25	500

Seismic Cable

Seismograph detector cable E.L.V.

Description:
Single core Class 5 and 6 stranded tinned copper conductor to AS1125. Polypropylene insulated (Metal Deactivated) UV stabilized 0.6/1kV.

Application:
Suitable for use in seismic loop detecting.

Nominal Voltage:
600/1000V AC

Temperature Range:
Fixed: -35°C to +75°C

Part No.	Nominal conductor area (mm²)	Stranding	Outer sheath	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx. weight kg/100mt	Roll sizes (mtrs)
FHDPP1203025BK	10	203 x0.25	Black	6.7	1.91	11.4	Bulk
FHDPP1203025YW	10	203 x0.25	Yellow	6.7	1.91	11.4	Bulk

Robot Cable

ROBOFLEX® 2001 / 2001-C

Power, data & control cable designed for robotic applications. Designed for bend and twist applications

Construction:
Fine or superfine bare copper stranding, PP core insulation, special separating foil, helically-wound copper screen with approx. 85-95% coverage, with a special black polyurethane outer sheath, metre marked.

Minimum Bending Radius:
7.5 x cable diameter

Nominal Voltage:
Up to 0.34mm² 350V
From 0.5mm² 300/500V

Temperature Range:
Flexing: -30°C to +80°C
Fixed: -40°C to +80°C

Max. Torsion Angle:
+/- 360°/meter

flame retardant

uv resistant

ROBOFLEX 2001

Part No.	Number of cores and nominal conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km
25459	7 x 0.25	5.8	48
25460	25 x 0.25	10.6	143
25461	2 x 0.34	4.0	28
25464	17 core + earth 0.5	12.7	121
25465	24 core + earth 0.5	14.2	256
25466	3 core + earth 0.75	6.0	63
25468	13 core + earth 0.75	12.8	200
25469	2 x 1	5.5	48
25470	2 core + earth 1	6.0	60
25471	3 core + earth 1	6.3	78
25472	6 core + earth 1	8.5	131
25473	11 core + earth 1	12.5	216
25474	17 core + earth 1	15.4	306
25475	24 core + earth 1	17.4	432
25476	33 core + earth 1	21.3	569
25477	40 core + earth 1	23.2	694
25479	17 core + earth 1.5	19.3	445
25480	24 core + earth 1.5	21.8	636
25481	2 core + earth 2.5	8.4	136
25482	3 core + earth 2.5	9.1	170

ROBOFLEX 2001-C / 152

Part No.	Number of cores and nominal conductor area mm²	Approx. overall Ø mm	Approx. weight kg/km
25488	12 x 0.14	7.8	95
77267	3 x 2 x 0.14	5.8	43
25493	25 x 0.25	11.1	215
76165	5 x 2 x 0.34	9.2	116
25506	11 core + earth 1.5	16.2	345
25507	17 core + earth 1.5	20.3	485

Battery Cable

Power and Battery Starter Cable

Two core twin sheathed

Description:
Class 5 stranding of plain copper conductor to AS1125. Core Insulation of Modified Nitrile (NBR) UV stabilised, made to AS/NZS 3808 : 2000 Standards. V90 clear outer sheath also UV stabilised.

Application:
Suitable for general automotive wiring.

Nominal Voltage:
600/1000V AC
900 1500V DC

Temperature Range:
Fixed: -35°C to +90°C

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Core colours	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
FPLN1.5R/B500	2	1.5	30 x 0.25	Clear	Red / Black	4.3 x 7.30	13.7	6.4	500
FPLN1.5R/L500	2	1.5	30 x 0.25	Clear	Red / Blue	4.3 x 7.30	13.7	6.4	500
FPLN2.5R/L500	2	2.5	50 x0.25	Clear	Red / Blue	4.9 x 9.4	8.21	12.1	500
FPLN4R/L500	2	4.0	56 x 0.30	Clear	Red / Blue	6.6 x 11.2	5.09	15.6	500

Power and Battery Starter Cable

Figure 8 webbed outer sheath

Description:
Class 5 and 6 stranding of plain copper conductor to AS1125. Figure 8 parallel webbed cores of Modified Nitrile (NBR) insulation. UV stabilized, made to AS/NZS 3808:2000 Standards. V90 clear outer sheath.

Application:
Suitable for general automotive wiring

Nominal Voltage:
600/1000V AC
900/1500V DC

Temperature Range:
Fixed: -35°C to +90°C

Part No.	No. of cores	Nominal conductor area (mm²)	Stranding	Outer sheath	Core colours	Approx. overall Ø mm	Max DC Ω resistance at 20°C	Approx weight kg/100mt	Roll sizes (mtrs)
FPLN6R/B500	2	6	192 x 0.20	Clear	Red / Black	7.7 x 16.4	3.3	11	500
FPLN6R/L500	2	6	192 x 0.20	Clear	Red / Blue	7.7 x 16.4	3.3	11	500
FPLN10R/B500	2	10	203 x 0.25	Clear	Red / Black	8.5 x 17.5	1.88	32	500
FPLN10R/L500	2	10	203 x 0.25	Clear	Red / Blue	8.5 x 17.5	1.88	32	500
FPLN16R/B500	2	16	322 x 0.25	Clear	Red / Black	9.7 x 19.5	1.18	45	500
FPLN16R/L500	2	16	322 x 0.25	Clear	Red / Blue	9.7 x 19.5	1.18	45	500
FPLN25R/B500	2	25	504 x 0.25	Clear	Red / Black	11 x 22.5	0.77	63.7	500
FPLN25R/L500	2	25	504 x 0.25	Clear	Red / Blue	11 x 22.5	0.77	63.7	500
FPLN35R/L500	2	35	708 x 0.25	Clear	Red / Blue	12.3 x 25.2	0.53	85.8	500
FPLN35R/B500	2	35	708 x 0.25	Clear	Red / Black	12.3 x 25.2	0.53	85.8	500

* Class 6 Stranding

Extension Leads

EMC Extension leads

10 or 15 amp 240V

Description:

10A or 15A plug and socket with insulated active/neutral pins fitted to 1.5mm² cable with tinned copper braided shield with 80% EMC coverage and extra soft triple insulated flex to avoid tangles. Approved for mining and industrial markets.

Note: 2.5mm² cable used on EXT-BRAID-30M15A

Part No.	Current (A)	Length (mtr)	Indicator
EXT-BRAID-05M10A	10	5	-
EXT-BRAID-05M10A-N	10	5	Neon
EXT-BRAID-10M10A	10	10	-
EXT-BRAID-10M10A-N	10	10	Neon
EXT-BRAID-15M10A	10	15	-
EXT-BRAID-15M10A-N	10	15	Neon
EXT-BRAID-20M10A	10	20	-
EXT-BRAID-20M10A-N	10	20	Neon
EXT-BRAID-25M10A	10	25	-
EXT-BRAID-25M10A-N	10	25	Neon
EXT-BRAID-30M10A	10	30	-
EXT-BRAID-30M10A-N	10	30	Neon
EXT-BRAID-10M15A	15	10	-
EXT-BRAID-10M15A-N	15	10	Neon
EXT-BRAID-15M15A	15	15	-
EXT-BRAID-15M15A-N	15	15	Neon
EXT-BRAID-20M15A	15	20	-
EXT-BRAID-20M15A-N	15	20	Neon
EXT-EWA-25M15A	15	25	-
EXT-BRAID-25M15A-N	15	25	Neon
EXT-BRAID-30M15A	15	30	-

IP56 EMC Extension leads

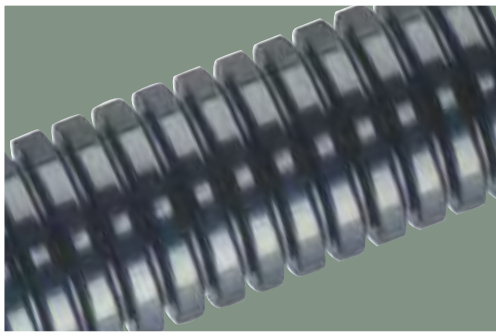
10 or 15 amp 240V

Description:

10A or 15A IP56 plug and socket with insulated active/neutral pins fitted to 1.5mm² cable with tinned copper braided shield with 80% EMC coverage and extra soft triple insulated flex to avoid tangles. Approved for mining and industrial markets.

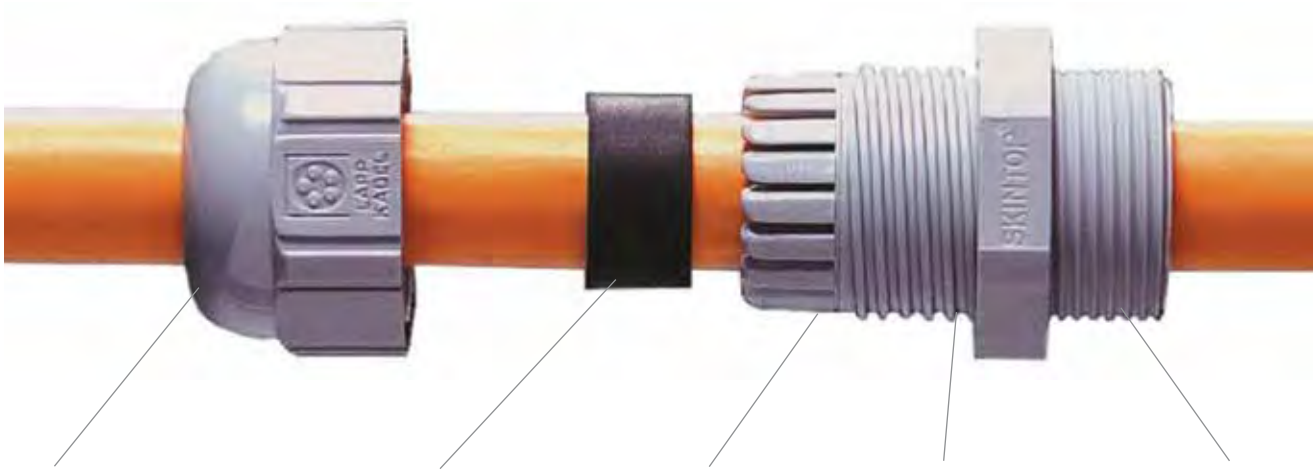
Part No.	Current (A)	Length (mtr)
EXT-EWA56S-05M10A	10	5
EXT-EWA56S-10M10A	10	10
EXT-EWA56S-15M10A	10	15
EXT-EWA56S-20M10A	10	20
EXT-EWA56S-25M10A	10	25
EXT-EWA56S-30M10A	10	30
EXT-EWA56S-10M15A	15	10
EXT-EWA56S-15M15A	15	15
EXT-EWA56S-20M15A	15	20
EXT-EWA56S-25M15A	15	25

Cable Accessories



Glands

Skintop®



Cap nut with ergonomically designed gripping grooves. The gripping surfaces are generously dimensioned for spanners. Integral locking feature for vibration-resistant assembly.

Lamellar design for optimum strain relief and protection of the cable. Widely variable clamping range, therefore only a few gland sizes are necessary.

Integral sealing ridges for a watertight junction with the housing.

Neoprene® sealing for a hermetic seal (IP 68 -5 bar/ IP 69 K). Every SKINTOP® version is available with reducing seal insert for smaller cable diameters.

Multiple trapezoidal thread for secure and instant assembly.

Shown here are the carefully matched components of the SKINTOP® cable glands. It is precisely these parts which guarantee optimum reliability.

Even more

With SKINTOP® you can fix the cable in an instant. Just feed it in, turn till tight - ready. So your cable is fixed, centered, hermetically sealed and completely strainrelieved with a turn of the hand. If you do not wish to use your hands, you can of course work with a spanner. Either way, with SKINTOP® you can achieve maximum reliablity. To ensure that this remains so, SKINTOP® quality is continuously monitored. A quality which has brought us a great many international approvals.

Resistance Properties

Thermal

SKINTOP® ST-M

static: -40°C up to +100°C

dynamic: -20°C up to +100°C

Chemical

- Alcohols
- Aromatic hydrocarbons
- Ethers
- Benzene
- Chlorinated hydrocarbons
- Esters
- Grease, animal-vegetable
- Fluorinated hydrocarbons
- Ketones
- Motor fuels

= resistant
= limited resistance
= non-resistant

For other aggressive media we recommend a test in the Lapp laboratory.

Glands - Nylon

Skintop® ST-M & ST

Black polyamide cable gland

Material:
Body: Polyamide

Temperature Range:
-20°C to +100°C

Protection Class:
IP 68

Metric cable gland complete with lock nuts

Part No.	Metric Thread	Cable Ø range mm
53111206	M 12	3.5 – 7
53111216	M 16	4.5 – 10
53111226	M 20	7 – 13
53111236	M 25	9 – 17
53111246	M 32	11 – 21
53111350	M 40	15 - 23
53111256	M 40	19 – 28
53111266	M 50	27 – 35
53111270C	M 63	34 – 45

PG cable gland without locknuts

Part No. (Black)	PG Thread	Cable Ø range mm	Locknut to suit (Grey)
53015200	ST 7	2.5 - 6.5	53019000
53015210	ST 9	3.5 - 8	53019010
53015220	ST 11	4 – 10	53019020
53015230	ST 13.5	6 – 12	53019030
53015240	ST 16	9 – 14	53019040
53015250	ST 21	13 – 18	53019050
53015260	ST 29	14 – 25	53019060
53015270	ST 36	24 - 32	53019070

Skintop® Spiral BS-M & BS

Spiral strain relief cable gland

Material:
Body: Polyamide

Temperature Range:
-20°C to +80°C

Protection Class:
IP 68


Metric

Metric strain relief cable gland

Part No.	Metric Thread	Cable Ø range mm	Colour
53017610	BS M16	3.5 – 8	Grey
53017630	BS M20	5 – 12	Grey
53017640	BS M25	9 – 14	Grey
53111700	BS M12	3.5 – 7	Black
53111710	BS M16	4.5 – 10	Black
53111720	BS M20	7 – 13	Black
53111730	BS M25	9 – 17	Black
53111740	BS M32	11 - 21	Black

Metric locknut to suit

Part No.	Metric Thread	Colour
53119010	GMP GLM16	Grey
53119020	GMP GLM20	Grey
53119030	GMP GLM25	Grey
53119100	GMP GLM12	Black
53119110	GMP GLM16	Black
53119120	GMP GLM20	Black
53119130	GMP GLM25	Black
53119140	GMP GLM32	Black

PG strain relief cable gland

Part No.	PG Thread	Cable Ø range mm	Colour
53015600	BS 7	2.5 – 6.5	Grey
53015610	BS 9	3.5 – 8	Grey
53015620	BS 11	4 – 10	Grey
53015630	BS 13,5	6 – 12	Grey
53015640	BS16	9 – 14	Grey
53015650	BS 21	13 – 18	Grey
53015800	BS 7	2.5 – 6.5	Black
53015810	BS 9	3.5 – 8	Black
53015820	BS 11	4 – 10	Black
53015830	BS 13,5	6 – 12	Black
53015840	BS16	9 – 14	Black
53015850	BS 21	13 – 18	Black

PG locknut to suit

Part No.	PG Thread	Colour
53019000	GMP GL7	Grey
53019010	GMP GL9	Grey
53019020	GMP GL11	Grey
53019030	GMP GL13,5	Grey
53019040	GMP GL16	Grey
53019050	GMP GL21	Grey
53019000	GMP GL7	Grey
53019010	GMP GL9	Grey
53019020	GMP GL11	Grey
53019030	GMP GL13,5	Grey
53019040	GMP GL16	Grey
53019050	GMP GL21	Grey


PG

Glands - Nylon

LAPP KABEL

Skintop® CLICK

Cable glands without locknuts for quick assembly

Application:

The most innovative cable insertion system on the market for very fast, highly flexible assembly with all the proven properties of Lapp's SKINTOP® cable glands in use world-wide. Simply click in - turn to left - turn to right - finished. Result: fixed, centred, strain relief and IP68 protection in seconds.

Developed especially for:

- Manufacturing of control cabinets
- Measurement, control and electrical applications
- Automation technology
- Plant, apparatus construction
- Control system construction

Advantage:

- Up to 70% time saving due to innovative snap-in system
- Simple assembly in any position
- Fewer parts, locknut no longer needed
- Protected against vibration
- IP 68, hermetically sealed

Skintop® CLICK Cable Glands

Part No.	Size	Colour	Cable Ø Range (mm)	Pack Size
53112686	M16	Light Grey	5 - 9	50
53112882	M16	Black	5 - 9	50
53112687	M20	Light Grey	7 - 13	25
53112883	M20	Black	7 - 13	25
53112688	M25	Light Grey	9 - 17	25
53112884	M25	Black	9 - 17	25
53112694	M32	Light Grey	11 - 21	25
53112924	M32	Black	11 - 21	25

Skintop® CLICK Disassembly Tool

Part No.	Size
53112697	M16
53112698	M20
53112699	M25
53112797	M32

Material:

Body: Special Polyamide

Temperature Range:

-20°C to +100°C

Protection Class:

IP 68 - 5 bar

SKINTOP® CLICK Assembly Instructions

1. Position the gland.

2. Press the gland in to the housing.

3. Fasten the gland with counterclockwise rotation of the pressure nut.

4. Put the cable through.

5. Tighten the gland with a clockwise rotation.

6. No locknut required.

SKINTOP® CLICK Disassembly Instructions

1. Position the disassembly tool.

2. Push the tool over notch to unlock.

3. Push the gland with both thumbs out of the clearance hole.

Glands - Brass

Skintop® MS-M-XL & MS-M

Brass metric cable gland

Material:
Body: Brass, nickel-plated
Insert: Polyamide
Sealing Ring: Neoprene
O-ring: Perbunan

Temperature Range:
-30°C to +100°C

Protection Class:
IP 68

Note:
MS-M-XL has a slightly longer thread than MS-M. Details available upon request.

MS-M-XL cable gland

Part No.	Metric Thread	Cable Ø Range mm	Thread length (mm)	Locknut to suit
5311 2005	12	3 – 7	12	5210 3000
5311 2015	16	4,5 – 10	12	5210 3010
5311 2025	20	7 – 13	12	5210 3020
5311 2035	25	9- 17	12	5210 3030
5311 2045	32	11 – 21	15	5210 3040
5311 2055	40	19 – 28	15	5210 3050
5311 2065	50	27 – 35	15	5210 3060

MS-M cable gland

Part No.	Metric Thread	Cable Ø Range mm	Thread length (mm)	Locknut to suit
5311 2000	12	3 – 7	6.5	5210 3000
5311 2010	16	4,5 – 10	7	5210 3010
5311 2020	20	7 – 13	8	5210 3020
5311 2030	25	9- 17	8	5210 3030
5311 2040	32	11 – 21	9	5210 3040
5311 2050	40	19 – 28	9	5210 3050
5311 2060	50	27 – 35	10	5210 3060
5311 2070	63	34 - 45	15	5210 3070
5311 2080	63	44 - 55	15	5210 3070

Skintop® SVF-M

Brass metric cable gland for flat cables

Material:
Body: Nickel plated brass
Insert: Polychloroprene

Temperature Range:
-20°C to +100°C

Protection Class:
IP 54

Cable gland

Part No.	Metric Thread	Flat Cable Width Min./Max.	Cable Thickness Min./Max.	Locknut to suit
5210 7350	M 32	14 / 27	4 / 11.5	5210 3040
5210 7360	M 40	24 / 34	4 / 11.5	5210 3050
5210 7370	M 50	29 / 44	5 / 12.0	5210 3060
5210 7380	M 63	34 / 50	5 / 12.0	5210 3070

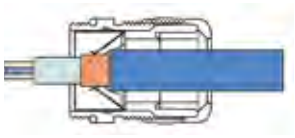
Glands - EMC

Skintop® MS-SC-M-XL

Brass metric cable gland for EMC compliant screened cables

Material:
Body: Brass, nickel-plated
Insert: Polyamide
Sealing Ring: Neoprene
O-ring: Perbunan

Temperature Range:
-30°C to +100°C



Protection Class:
IP 68

Installation Guidelines:

- Strip back the outer sheath and screen
- Cut the outer sheath approx. 15mm back from the end, but do not remove the sheath
- Guide the cable through the cable gland
- Pull off the outer sheath
- Pull back the cable until the connection is made between the cable screen and contact spring
- Turn shut … and it is ready for use!

Skintop MS-SC-M-XL.

Part No.	Metric thread	Cable Ø range mm	Minimum-Ø over braid mm
53112625	M16	4.5 – 9.0	4.0
53112635	M20	7.0 – 12.5	5.0
53112645	M25	9.0 – 16.5	7.5
53112655	M32	11.0 – 21.0	9.0
53112665	M40	19.0 – 28.0	15.0
53112675	M50	27.0 – 35.0	21.0

Locknut to suit

Part No.	Metric thread
5210 3310	M16
5210 3320	M20
5210 3330	M25
5210 3340	M32
5210 3350	M40
5210 3360	M50

Skintop® MS-SC-M brush

Nickel plated brass metric cable gland for EMC compliant screened cables

Material:
Body: Brass, nickel-plated
Insert: Polyamide
Sealing Ring: Special elastomer
O-ring: Special elastomer

Temperature Range:
-30°C to +100°C

Protection Class:
IP 68

Skintop MS-SC-M

Part No.	Metric thread	Cable Ø range mm	Minimum-Ø over braid mm
53112680	M63	34.0 - 45.0	20.0
53112681	M63	44.0 - 55.0	25.0

Locknut to suit

Part No.	Metric Thread
52103370	M63
52103370	M63

Glands Accessories

LAPP KABEL

Skintop® DIX-M

Multiple sealing insert for SKINTOP® metric cable glands

Application:
Turns the SKINTOP cable gland into a multiple entry gland. An insert with several holes is used in place of the inner sealing insert. The SKINTOP® DIX-M multiple sealing insert enables several cables to be fed simultaneously through one gland. As a result, components can be dimensioned smaller.

Material:
NBR

Temperature Range:
-40°C to +100°C

Protection Class:
IP 68 (with all bores filled)

Part No.	Suits Gland	No. of cables x cable Ø mm
53316220	M16	2 x 2
53316230	M16	2 x 3
53316240	M16	2 x 4
53320250	M20	2 x 5
53320260	M20	2 x 6
53320340	M20	3 x 4
53320353	M20	3 x 5.3
53320440	M20	4 x 4
53320920	M20	9 x 2
53320430	M20	4 x 3
53325260	M25	2 x 6
53325350	M25	3 x 5
53325360	M25	3 x 6
53325370	M25	3 x 7

Part No.	Suits Gland	No. of cables x cable Ø mm
53325450	M25	4 x 5
53325540	M25	5 x 4
53325640	M25	6 x 4
53332270	M32	2 x 7
53332280	M32	2 x 8
53332290	M32	2 x 9
53332370	M32	3 x 7
53332380	M32	3 x 8
53332460	M32	4 x 6
53332470	M32	4 x 7
53332560	M32	5 x 6
53332650	M32	6 x5
53332840	M32	8 x 4
53332850	M32	8 x 5

Part No.	Suits Gland	No. of cables x cable Ø mm
53332940	M32	9 x 4
53340290	M40	2 x 9
53340310	M40	3 x 10
53340480	M40	4 x8
53340490	M40	4 x 9
53340580	M40	5 x 8
53340590	M40	5 x 9
53340670	M40	6 x 7
53340860	M40	8 x 6
53340969	M40	9 x 6.9
53350680	M50	6 x 8
53350780	M50	7 x 8
53350870	M50	8 x 7
53350164	M50	16 x 4

Brass blanking plugs, reducers, enlargers and adaptors

Metric Blanking Plugs

Part No.	Size
5210 3110	M16
5210 3120	M20
5210 3130	M25
5210 3140	M32
5210 3150	M40

PG Blanking Plugs

Part No.	Size
5200 3400	PG11
5200 3410	PG13.5
5200 3420	PG16
5200 3430	PG21
5200 3440	PG29

Reducers

Part No.	Ext.	Int.
5210 4312	M20	M16
5210 4313	M25	M16
5210 4314	M25	M20
5210 4315	M32	M20
5210 4316	M32	M25
5210 4318	M40	M32

Enlargers

Part No.	Ext.	Int.
5210 4452	M16	M20
5210 4454	M20	M25
5210 4456	M25	M32
5210 4458	M32	M40
5210 4460	M40	M50

Metric to PG Adaptors

Part No.	Ext.	Int.
5210 4220	M25	PG11
5210 4230	M25	PG13.5
5210 4240	M25	PG16
5210 4250	M32	PG16
5210 4260	M32	PG21

PG to Metric Adaptors

Part No.	Ext.	Int.
5210 4492	PG11	M16
5210 4495	PG16	M20
5210 4498	PG21	M25
5210 4500	PG29	M25
-	-	-

Extreme versatility, extreme value.

You get the best and most robust solution every time with DKSH's range of Weyer quick install conduit and fittings. We couldn't force any more value into this highly flexible range. And when you see the prices you'll wonder how we did it. Choose a product that can handle the extreme, choose Weyer from DKSH.

- **IP68 CONDUIT AND FITTINGS**
- **- 40°C to +115°C TEMP. RANGE**
- **HALOGEN FREE**
- **FLAME RETARDANT: VO (UL94)**
- **UV, OIL, ACID, SOLVENT, WIND AND CRUSH RESISTANT**
- **SELF EXTINGUISHING (FMV SS 302)**

For more information. Call DKSH today on 1800 010 113.

WEYER
Conduit & Fittings

Flexible IP 68 Conduit

WEYER

PA6-VO Polyamide (nylon) Conduit

Industrial standard conduit

Construction
Internally and externally corrugated PA6-VO plastic tubing.

Temperature range
-40°C to +115°C. Short term 150°C

Material
Polyamide 6

Colour
Black

Protection class
IP 68

Properties
- Flame-retardant VO (UL94)
- Gas and liquid-tight
- Highly flexible
- Stretch and crush-resistant
- Glossy surface
- Wind-resistant high mechanical strength
- Resistant to oil, acids and solvents
- Anti-friction
- UV-resistant
- Self-extinguishing (FMVSS 302)
- Medium wall thickness
- Halogen, phosphor and cadmium-free
- Passed RoHS

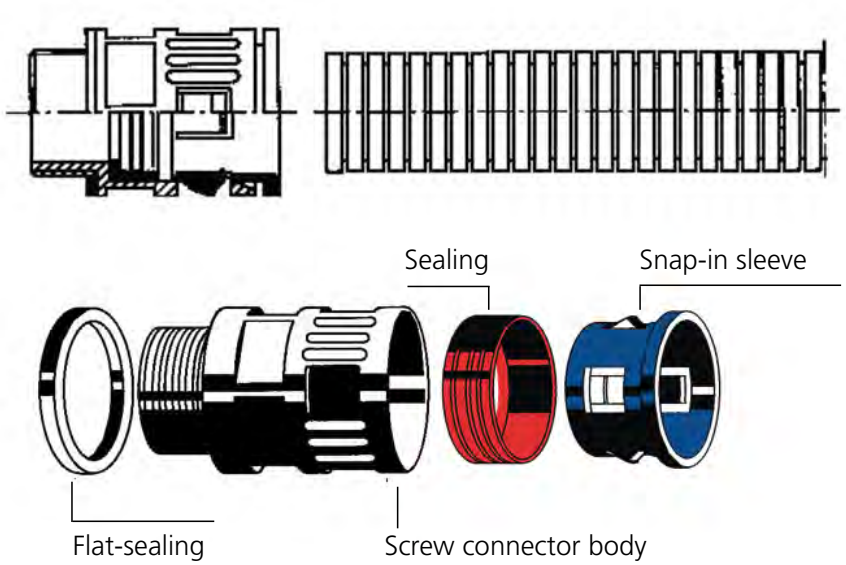
WY-PA6-V0 Polyamide Tubing

Part No.	Conduit Size	Inner Ø (mm)	Outer Ø (mm)	Weight (kg/m+10%)	PU (m/roll)
WY-PA6-V0-AD13.0B	AD13.0	10.0	13.0	0.026	100
WY-PA6-V0-AD15.8B	AD15.8	12.0	15.8	0.038	100
WY-PA6-V0-AD21.2B	AD21.2	17.0	21.2	0.061	50
WY-PA6-V0-AD28.5B	AD28.5	23.0	28.5	0.095	50
WY-PA6-V0-AD34.5B	AD34.5	29.0	34.5	0.125	25
WY-PA6-V0-AD42.5B	AD42.5	36.0	42.5	0.186	25
WY-PA6-V0-AD54.5B	AD54.5	48.0	48.0	0.264	25

Easy to install

Quick to uninstall
Press the ring of the snap-in-sleeve to the connector and pull the tubing out

IP 68 connector structure



Flexible IP 68 Conduit

WEYER

Polyamide Connectors and Clamps

Industrial standard conduit

Quick Screw Connector

Part No.	For conduit size	Outer Ø (mm)	Thread Dimension	Thread length (mm)	Pack Qty
WQG-M12B/AD13.0	AD13.0	13.0	M12×1.5	11.5	50
WQG-M16B/AD15.8	AD15.8	15.8	M16×1.5	12.0	50
WQG-M20B/AD21.2	AD21.2	21.2	M20×1.5	13	50
WQG-M25B/AD28.5	AD28.5	28.5	M25×1.5	13	25
WQG-M32B/AD34.5	AD34.5	34.5	M32×1.5	15	25
WQG-M40B/AD42.5	AD42.5	42.5	M40×1.5	15	10
WQG-M50B/AD54.5	AD54.5	54.5	M50×1.5	16	10

Comes complete with seals and locknuts

Elbow Connector

Part No.	For conduit size	Outer Ø (mm)	Thread dimension	Thread length (mm)	Pack Qty
WQW-M12B/AD13.0	AD13.0	20	M12 x 1.5	11.5	50
WQW-M16B/AD15.8	AD15.8	23	M16 x 1.5	12	50
WQW-M20B/AD21.2	AD21.2	29.5	M20 x 1.5	13	25
WQW-M25B/AD28.5	AD28.5	37	M25 x 1.5	13	25
WQW-M32B/AD34.5	AD34.5	44	M32 x 1.5	15	10
WQW-M40B/AD42.5	AD42.5	52	M40 x 1.5	15	5
WQW-M50B/AD54.5	AD54.5	64	M50 x 1.5	16	4

Comes complete with seals and locknuts

Tubing Clamp

Part No.	For conduit size	Fixing screw	Width (mm)	Pack Qty
SKM-AD13.0	AD13.0	M4	9	100
SKM-AD15.8	AD15.8	M4	9	100
SKM-AD21.2/M5	AS21.2	M5	9	50
SKM-AD28.5	AD28.5	M5	13	25
SKM-AD34.5	AD34.5	M6	13	25
SKM-AD42.5	AD42.5	M6	13	20
SKM-AD54.5	AD54.5	M6	13	20

Mounting Clip

Part No.	For conduit size	Fastening bore hole (mm)	Pack Qty
WQSC-AD13.0B	AD13.0	4.2	50
WQSC-AD15.8B	AD15.8	4.2	50
WQSC-AD21.2B	AD21.2	4.2	50
WQSC-AD28.5B	AD28.5	4.2	25
WQSC-AD34.5B	AD34.5	4.2	25
WQSC-AD42.5B	AD42.5	4.2	10
WQSC-AD54.5B	AD54.5	4.2	10

Flexible IP 68 Conduit

WEYER

Strip-wound Galvanised Metallic Conduit

Industrial standard highly flexible crush-resistant conduit

Construction
Strip-wound galvanised metallic conduit, hooked profile PVC outer sheathing.

Protection class
Conduit: IP 68
Fittings: IP 68 when used with seal

Temperature range
- 25°C to + 80°C. Short term 100°C

Colour
Black.
Grey available on request.

Properties
- UV-resistant
- Flame-retardant VO (UL94)
- Self-extinguishing (FMVSS 302)
- Very flexible
- Compression-resistant
- Highly resistant to acids and oils
- DIN49012

Strip-wound galvanised metallic conduit

Part No.	Conduit size	Inner Ø (mm)	Outer Ø (mm)	Weight Kg/m+10%	Bending radius mm+10%	PU (m/roll)
SPR-PVC-AS-AD14B	AD14	10	14	0.135	40	50m
SPR-PVC-AS-AD17B	AD17	13	17	0.170	45	50m
SPR-PVC-AS-AD21B	AD21	17	21	0.220	58	50m
SPR-PVC-AS-AD27B	AD27	22	27	0.340	72	50m
SPR-PVC-AS-AD36B	AD36	29	36	0.620	98	25m
SPR-PVC-AS- AD45B	AD45	38	45	0.820	118	25m

Fitting Straight - (complete)

Part No.	Inner Ø mm	Thread Dimension	Fits to conduit size	B mm	C mm	D mm	Pack Qty
USP-M12	8.5	M12×1.5	AD 14	23	10	33	50
USP-M16	11.5	M16×1.5	AD 17	27	10	33	50
USP-M20	15.5	M20×1.5	AD 21	31	10	33	50
USP-M25	20.5	M25×1.5	AD 27	39	11	41	50
USP-M32	27.5	M32×1.5	AD 36	48	13	43	20
USP-M40	35.0	M40×1.5	AD 45	57	13	43	10

Lock nuts included.

Cable Management

Cable Entry Systems

for entering pre-terminated cables

The patented cable entry system enables the user to enter, seal and provide strain relief for pre-terminated and standard cables.

The key feature of icotek's patented system is the split frame and split inserts which provide quick, convenient and cost effective routing of pre-terminated and standard cables.

The split frame and split insert alleviate the need to cut and re-wire pre-terminated cables. Therefore, cable warranties are unaffected.

Cables, pipes and conduits with various diameters can be routed due to the split frame and split inserts. When assembled correctly, the split inserts are held tightly within the frame.

Correctly sizing the insert to the cable diameter ensures a high degree of protection (IP65) and provides strain relief.

Benefits

1. **Split system**
   Split inserts are positively guided into the frame. This ensures a tight seal around the cables and strain relief according to EN 50262.
2. **No new punch out tools required**
   Drilling templates, as well as cut outs according to the standard dimensions for multipole connectors (for example from standard Harting, Wieland).
3. **Tight connection**
   Uniquely designed frame and inserts assures a tight, secure unit
4. **Flexibility**
   Standard inserts are designed to accomodate only one cable. Utilizing inserts that pass two and four cables greatly increases packing density.

Advantages

- Warranty of pre-terminated cables remains
- Retrofitting and maintenance can be carried out easily and quickly
- High packing density, wide variety of frames and inserts
- Strain relief according EN 50262
- Vibration proof

Cable Management

Cable Entry Systems

for entering standard cables

Even when entering standard cables icotek offers a wide range of products that offer a lot of advantages in comparison to conventional cable glands.

The compact, slim and innovative design of the icotek system offers a professional appearance and in many applications good strain relief.

Especially suitable for applications where a lot of cables have to be entered into a small space.

Benefits

1. **High packing density**
   The cable entry plates KEL-DPZ and KEL-DP offer the opportunity to enter a large amount of cables through a small space.
2. **Fast and easy assembly**
   The installation of cables is done by pushing the cables through the thin, pierceable membrane.
3. **No new punch out tools needed**
   The KEL-DP range matches exactly the drilling templates, as well as cut outs according to the standard dimensions for multipole connectors (for example from Harting, Wieland).
4. **Tight seal**
   Depending on the product a high sealing rate up to IP68 can be achieved.
5. **Flexibility**
   Due to the large variety of designs and sizes available, there's a solution for every application.
6. **Customized solutions**
   If you can't find what you need in icotek's standard product offering, custom solutions are available upon request.

Advantages

- Assembly within seconds
- High packing density
- Dual sealing of cables according to IP65
- Automatic seal and strain relief for the cable

Cable Management

Shielded Cable Clamps for EMC applications

for EMC applications

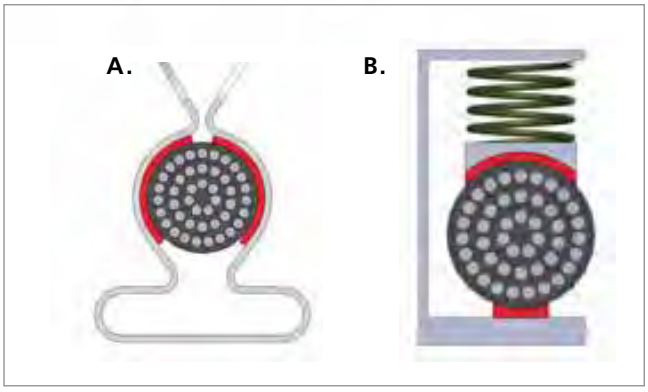
For process measurement and control equipment an increasingly higher level of protection against failure is required.

The shielding and earthing of the cable shields is very important. The area where the cable shield is connected to the cabinet earth is a critical point. It is very important that the connection has a low resistance.

PFSZ/SKL

SFZ/SKL

KEL-EMC-Z



Benefits

1. **Flexible**
   Because of many types of DIN rails and screw type assembly methods, icotek offers numerous mounting options.

2. **Fast and tool-free assembly**
   Strip the cable shield – press into the SKL shield clamp – ready.

3. **Large contact area**
   The SKL shield clamps offer a large contact area to the cable shield (see figure A). In comparison to conventional shield brackets (see figure B) an up to 50% higher contact area can be achieved when using the SKL line. The specified clamping range can be exceeded up to 10%.

4. **Secure hold**
   Properly sized and used in conjunction with cable ties, many products provide strain relief in accordance with EN 50262/62444.

5. **Greatly reduces high frequency interferences**
   In large frequency fields, the SKL shield clamps provide low resistance. Effective range up to 1,000 MHz below 120 Ohms and 10 kHz to 100 MHz significant below 20 Ohms.

Cable Ties

Black Polyester Coated Stainless Steel Cable Ties

316 Grade Stainless Steel

Features

- Fully rounded edges and exclusive easy thread lead-in design provides the ultimate support for cables.
- Self-locking head design speeds installation and locks into place at any length along the cable tie body.
- Provides a strong, durable method of cable bundling.
- Can be used for a wide range of indoor, outdoor, and underground applications (including direct burial).
- Smooth surfaces and rounded edges assures cable protection and worker safety.

Product Specifications

Material
Stainless Steel Grade 316
Fully wrapped with Polyester

Temperature Range
Stainless Steel:
-80°C to +538°C
Polyester Coating:
-40°C to + 85°C

Other sizes available on request

Flammability
Stainless steel part: Non-flammable
Polyester Coating: UL94 V-2

Ultraviolet resistance
Excellent

Chemical resistance
Excellent

Part No.	Description
HT-338	Cable Tie Gun

Part No.	Length (mm)	Width (mm)	Max. Strength Range (kgs)	Min. Diameter (mm)	Max. Diameter (mm)	Pack Qty
TS1-4-46200-316C	200	4.6	45	15	50	100
TS1-4-46360-316C	360	4.6	45	15	102	100
TS1-4-79200-316C	200	7.9	120	15	50	100
TS1-4-79360-316C	360	7.9	120	15	102	100

Ferrules

Single Wire Ferrules (Insulated)

Loose packed Ferrules in re-sealable bags from 0.5mm² to 25mm².

Part No.	Wire size mm²	Colour	Pack size (PCS)
CF050	0.5	White	500
CF075	0.75	Light Blue	500
CF100	1	Red	500
CF150	1.5	Black	500
CF250	2.5	Grey	500
CF400	4	Orange	500
CF600	6	Green	100
CF1000	10	Brown	100
CF1600	16	White	100
CF2500	25	Black	50

Twin Wire Ferrules (Insulated)

Ferrules designed for the termination of two wires in the same ferrule in re-sealable bags from 2 x 0.5mm² to 16mm².

Part No.	Wire size mm²	Colour	Pack size (PCS)
CF050T	2 x 0.5	White	500
CF075T	2 x 0.75	Grey	500
CF100T	2 x 1	Red	500
CF150T	2 x 1.5	Black	500
CF250T	2 x 2.5	Blue	250
CF400T	2 x 4	Grey	100
CF600T	2 x 6	Yellow	100
CF1000T	2 x 10	Red	100
CF1600T	2 x 16	White	50

Single Wire Ferrules Dispenser Pack (Insulated)

Dispenser packs for Automated or Hand Tools from 0.5mm² to 2.5mm².

Part No.	Wire size mm²	Colour	Pack size (PCS)
CF050R	0.5	White	1000
CF075R	0.75	Light Blue	1000
CF100R	1	Red	1000
CF150R	1.5	Black	1000
CF250R	2.5	Grey	500

Labels, Printers and Safety Identification

Sign & Label Printers

Brady's industrial printers and label makers offer reliable, on-demand labeling solutions for any industry. Designed with thermal transfer printing capabilities, Brady's printers create clear, professional-looking labels, signs and tags - with the durability to withstand even the harshest environments. Whether it's a small handheld printer or a large, multi-color industrial printer, Brady has an easy-to-use label printing solution to fit your needs.

Printer Labels & Ribbons

Brady offers thousands of high performance labels that are designed to be used with their benchtop thermal label printers, benchtop sign makers and mobile hand held sign and label printers. Brady's labels can be used for a variety of applications, including wire and cable identification, facility safety, voice and data comm identification, laboratory identification and more.

Wire Markers & Pre-Printed Labels

Brady's pre printer labels and wire and cable identification products include wire labels, heat-shrinkable sleeves, tags, wire marker books and cards, and other cable marking products. Designed for the industrial facility, Brady's wire and cable identification products are proven to withstand harsh environments, including extreme temperatures, liquids, abrasion and more. Cable marking solutions are available in a variety of sizes and colours to ensure that your wires and cables are marked with clear, legible identification.

Signs & Labels

As a global leader in signage, there's no other company that can help you communicate critical information better than Brady. We offer more than 1700 different signs for safety, maintenance and facility identification. Brady signs feature bright colors, bold text and intuitive pictograms to ensure that the communication is highly visible and easily understood. The signs are compliant with the latest Australian standards and regulations and are designed to withstand even the harshest environments.

Lockout Tagout

The world leader in lockout/tagout products and services, Brady offers a broad range of durable, easy-to-use lockout devices that cover most mechanical and electrical applications. Brady's services help companies with limited resources quickly get their program up to speed, ensuring that lockout activities are implemented in a way that promotes optimum safety while maximizing efficiency and reducing downtime.

Pipe Identification

Brady offers a comprehensive collection of pipe and valve marking supplies, tools and identification systems. Clearly marked pipes let workers trace process problems and find solutions faster. Brady's range of Pipe Identification products are designed in accordance with AS 1345-1995. With Brady, you can easily identify pipe content and flow direction with self-sticking labels, valve tags and other high-performance pipe markers that ultimately keep your facility safe and compliant.

Labels, Printers and Safety Identification

BRADY
WHEN PERFORMANCE MATTERS MOST™

Traffic & Parking

Brady's wide range of traffic & parking solutions help you to choose the right products not only for compliance of your parking areas, but to ensure that risks and hazards are reduced or eliminated for traffic and pedestrians through the correct use of signs, road markings, speed humps, barriers and safety mirrors.

Barricades, Tapes & Treads

Site Safety is serious business. Mark your facility at each point of need with Brady's range of high performance visual warning products.

Ensure your safety message is communicated effectively, keeping your employees and visitors safe from harm.

Dangerous Goods & Spill Control

Brady's range of Dangerous Goods and Spill Control solutions can assist in meeting your obligations to provide a safe working environment to your employees. Brady's spill control products ensure that leaks, drips and spills are contained and Brady's Dangerous Goods products warn of the types of chemicals on site and are complient with relevant State amd Territory Legislations.

First Aid

Brady is making it easier for you to assess your workplace First Aid needs and provide market leading solutions to suit your work environment.

From work vehicles, offices, warehouses and building sites to your first aid room facility; we can help you comply with workplace legislation and guidelines.

Workplace Security

Improve the tracking of assets and people in your workplace with Brady's innovative and high-quality security solutions.

Workplace Safety

Brady offers an extensive range of Workplace Safety products that aid in providing a safe working environment. From factories to office environments, Brady has your Workplace Safety needs covered.

Circuit Protection

Miniature Circuit Breakers - AC

MCB Ex9B Series

Range and technical specifications

Poles	1	2	3	4
AS/NZS 60898.1:2004 Approval No. SAA101237EA IEC/EN60898-1 and GB10963.1				

Electrical Specification

Functions		Short circuit protection, overload protection, isolation, control
Rated frequency (Hz)		50/60
Rated working voltage (V AC)	Ue	230/400
Rated current (A)	In	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated insulated voltage (V)	Ui	400
Impulse withstand voltage (kV)	Uimp	4
Current limiting level		3
Instantaneous tripping type	Ex9BN	B/C/D
"	Ex9BH	C/D
Rated short circuit	Ex9BN	6 kA
"	Ex9BH	10 kA
Release type		Thermal magnetic type
Service Life - Mechanical	Actual Value	20000
"	Standard Value	8500
Service Life - Electrical	Actual Value	10000
"	Standard Value	1500

Connection and installation

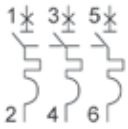
Protection degree					IP20
Lockable					OFF position
Conductor size (mm^2)					≤ 32A 1~25mm^2 ; ≥ 40A, 10-35mm^2
Working temperature (C)					-30 to +70
Resistance to humidity and heat					Class 2
Altitude (m) above sea					≤2000m
Relative humidity					≤95%
Pollution degree					2
Installation environment					Avoid obvious shock and vibration
Installation class					Class III
Mounting					DIN35 rail
Dimensions (mm)		a	18	36	54	72
(WxHxL)		b	89	89	89	89
		c	72	74	74	74
Weight (kg)			0.12	0.24	0.36	0.48

Miniature Circuit Breakers - AC

MCB Ex9BN - B Curve : 6kA

Protection for circuits with moderate inrush currents, mixed power, lighting, heaters and other resistive loads

Part No.	Poles	Rated current (A)	Rated voltage (V AC)	Width (mm)	Pack qty	Type code
86231	1	1	230/400	18	12	Ex9BN 1P B 1A
86232	1	2	230/400	18	12	Ex9BN 1P B 2A
86233	1	3	230/400	18	12	Ex9BN 1P B 3A
86234	1	4	230/400	18	12	Ex9BN 1P B 4A
86235	1	6	230/400	18	12	Ex9BN 1P B 6A
86236	1	10	230/400	18	12	Ex9BN 1P B 10A
86237	1	16	230/400	18	12	Ex9BN 1P B 16A
86238	1	20	230/400	18	12	Ex9BN 1P B 20A
86239	1	25	230/400	18	12	Ex9BN 1P B 25A
86240	1	32	230/400	18	12	Ex9BN 1P B 32A
86241	1	40	230/400	18	12	Ex9BN 1P B 40A
86242	1	50	230/400	18	12	Ex9BN 1P B 50A
86243	1	63	230/400	18	12	Ex9BN 1P B 63A
86244	2	1	400	36	6	Ex9BN 2P B 1A
86245	2	2	400	36	6	Ex9BN 2P B 2A
86246	2	3	400	36	6	Ex9BN 2P B 3A
86247	2	4	400	36	6	Ex9BN 2P B 4A
86248	2	6	400	36	6	Ex9BN 2P B 6A
86249	2	10	400	36	6	Ex9BN 2P B 10A
86250	2	16	400	36	6	Ex9BN 2P B 16A
86251	2	20	400	36	6	Ex9BN 2P B 20A
86252	2	25	400	36	6	Ex9BN 2P B 25A
86253	2	32	400	36	6	Ex9BN 2P B 32A
86254	2	40	400	36	6	Ex9BN 2P B 40A
86255	2	50	400	36	6	Ex9BN 2P B 50A
86256	2	63	400	36	6	Ex9BN 2P B 63A
86257	3	1	400	54	4	Ex9BN 3P B 1A
86258	3	2	400	54	4	Ex9BN 3P B 2A
86259	3	3	400	54	4	Ex9BN 3P B 3A
86260	3	4	400	54	4	Ex9BN 3P B 4A
86261	3	6	400	54	4	Ex9BN 3P B 6A
86262	3	10	400	54	4	Ex9BN 3P B 10A
86263	3	16	400	54	4	Ex9BN 3P B 16A
86264	3	20	400	54	4	Ex9BN 3P B 20A
86265	3	25	400	54	4	Ex9BN 3P B 25A
86266	3	32	400	54	4	Ex9BN 3P B 32A
86267	3	40	400	54	4	Ex9BN 3P B 40A
86268	3	50	400	54	4	Ex9BN 3P B 50A
86269	3	63	400	54	4	Ex9BN 3P B 63A
86270	4	1	400	72	3	Ex9BN 4P B 1A
86271	4	2	400	72	3	Ex9BN 4P B 2A
86272	4	3	400	72	3	Ex9BN 4P B 3A
86273	4	4	400	72	3	Ex9BN 4P B 4A
86274	4	6	400	72	3	Ex9BN 4P B 6A
86275	4	10	400	72	3	Ex9BN 4P B 10A
86276	4	16	400	72	3	Ex9BN 4P B 16A
86277	4	20	400	72	3	Ex9BN 4P B 20A
86278	4	25	400	72	3	Ex9BN 4P B 25A
86279	4	32	400	72	3	Ex9BN 4P B 32A
86280	4	40	400	72	3	Ex9BN 4P B 40A
86281	4	50	400	72	3	Ex9BN 4P B 50A
86282	4	63	400	72	3	Ex9BN 4P B 63A



Miniature Circuit Breakers - AC

MCB Ex9BN - C Curve : 6kA

Protection for circuits with mildly resistive and inductive loads or large amounts of switching

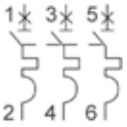
Part No.	Poles	Rated current (A)	Rated voltage (V AC)	Width (mm)	Pack qty	Type code
86283	1	1	230/400	18	12	Ex9BN 1P C 1A
86284	1	2	230/400	18	12	Ex9BN 1P C 2A
86285	1	3	230/400	18	12	Ex9BN 1P C 3A
86286	1	4	230/400	18	12	Ex9BN 1P C 4A
86287	1	6	230/400	18	12	Ex9BN 1P C 6A
86288	1	10	230/400	18	12	Ex9BN 1P C 10A
86289	1	16	230/400	18	12	Ex9BN 1P C 16A
86290	1	20	230/400	18	12	Ex9BN 1P C 20A
86291	1	25	230/400	18	12	Ex9BN 1P C 25A
86292	1	32	230/400	18	12	Ex9BN 1P C 32A
86293	1	40	230/400	18	12	Ex9BN 1P C 40A
86294	1	50	230/400	18	12	Ex9BN 1P C 50A
86295	1	63	230/400	18	12	Ex9BN 1P C 63A
86296	2	1	400	36	6	Ex9BN 2P C1A
86297	2	2	400	36	6	Ex9BN 2P C 2A
86298	2	3	400	36	6	Ex9BN 2P C 3A
86299	2	4	400	36	6	Ex9BN 2P C 4A
86300	2	6	400	36	6	Ex9BN 2P C 6A
86301	2	10	400	36	6	Ex9BN 2P C 10A
86302	2	16	400	36	6	Ex9BN 2P C 16A
86303	2	20	400	36	6	Ex9BN 2P C 20A
86304	2	25	400	36	6	Ex9BN 2P C 25A
86305	2	32	400	36	6	Ex9BN 2P C 32A
86306	2	40	400	36	6	Ex9BN 2P C 40A
86307	2	50	400	36	6	Ex9BN 2P C 50A
86308	2	63	400	36	6	Ex9BN 2P C 63A
86309	3	1	400	54	4	Ex9BN 3P C 1A
86310	3	2	400	54	4	Ex9BN 3P C 2A
86311	3	3	400	54	4	Ex9BN 3P C 3A
86312	3	4	400	54	4	Ex9BN 3P C 4A
86313	3	6	400	54	4	Ex9BN 3P C 6A
86314	3	10	400	54	4	Ex9BN 3P C 10A
86315	3	16	400	54	4	Ex9BN 3P C 16A
86316	3	20	400	54	4	Ex9BN 3P C 20A
86317	3	25	400	54	4	Ex9BN 3P C 25A
86318	3	32	400	54	4	Ex9BN 3P C 32A
86319	3	40	400	54	4	Ex9BN 3P C 40A
86320	3	50	400	54	4	Ex9BN 3P C 50A
86321	3	63	400	54	4	Ex9BN 3P C 63A
86322	4	1	400	72	3	Ex9BN 4P C 1A
86323	4	2	400	72	3	Ex9BN 4P C 2A
86324	4	3	400	72	3	Ex9BN 4P C 3A
86325	4	4	400	72	3	Ex9BN 4P C 4A
86326	4	6	400	72	3	Ex9BN 4P C 6A
86327	4	10	400	72	3	Ex9BN 4P C 10A
86328	4	16	400	72	3	Ex9BN 4P C 16A
86329	4	20	400	72	3	Ex9BN 4P C 20A
86330	4	25	400	72	3	Ex9BN 4P C 25A
86331	4	32	400	72	3	Ex9BN 4P C 32A
86332	4	40	400	72	3	Ex9BN 4P C 40A
86333	4	50	400	72	3	Ex9BN 4P C 50A
86334	4	63	400	72	3	Ex9BN 4P C 63A

Miniature Circuit Breakers - AC

MCB Ex9BH - C Curve : 10kA

Protection for circuits with mildly resistive and inductive loads or large amounts of switching

Part No.	Poles	Rated current (A)	Rated voltage (V AC)	Width (mm)	Pack qty	Type code
86486	1	1	230/400	18	12	Ex9BH 1P C 1A
86487	1	2	230/400	18	12	Ex9BH 1P C 2A
86488	1	3	230/400	18	12	Ex9BH 1P C 3A
86489	1	4	230/400	18	12	Ex9BH 1P C 4A
86490	1	6	230/400	18	12	Ex9BH 1P C 6A
86491	1	10	230/400	18	12	Ex9BH 1P C 10A
86492	1	16	230/400	18	12	Ex9BH 1P C 16A
86493	1	20	230/400	18	12	Ex9BH 1P C 20A
86494	1	25	230/400	18	12	Ex9BH 1P C 25A
86495	1	32	230/400	18	12	Ex9BH 1P C 32A
86496	1	40	230/400	18	12	Ex9BH 1P C 40A
86497	1	50	230/400	18	12	Ex9BH 1P C 50A
86498	1	63	230/400	18	12	Ex9BH 1P C 63A
86499	2	1	400	36	6	Ex9BH 2P C 1A
86500	2	2	400	36	6	Ex9BH 2P C 2A
86501	2	3	400	36	6	Ex9BH 2P C 3A
86502	2	4	400	36	6	Ex9BH 2P C 4A
86503	2	6	400	36	6	Ex9BH 2P C 6A
86504	2	10	400	36	6	Ex9BH 2P C 10A
86505	2	16	400	36	6	Ex9BH 2P C 16A
86506	2	20	400	36	6	Ex9BH 2P C 20A
86507	2	25	400	36	6	Ex9BH 2P C 25A
86508	2	32	400	36	6	Ex9BH 2P C 32A
86509	2	40	400	36	6	Ex9BH 2P C 40A
86510	2	50	400	36	6	Ex9BH 2P C 50A
86511	2	63	400	36	6	Ex9BH 2P C 63A
86512	3	1	400	54	4	Ex9BH 3P C 1A
86513	3	2	400	54	4	Ex9BH 3P C 2A
86514	3	3	400	54	4	Ex9BH 3P C 3A
86515	3	4	400	54	4	Ex9BH 3P C 4A
86516	3	6	400	54	4	Ex9BH 3P C 6A
86517	3	10	400	54	4	Ex9BH 3P C 10A
86518	3	16	400	54	4	Ex9BH 3P C 16A
86519	3	20	400	54	4	Ex9BH 3P C 20A
86520	3	25	400	54	4	Ex9BH 3P C 25A
86521	3	32	400	54	4	Ex9BH 3P C 32A
86522	3	40	400	54	4	Ex9BH 3P C 40A
86523	3	50	400	54	4	Ex9BH 3P C 50A
86524	3	63	400	54	4	Ex9BH 3P C 63A
86525	4	1	400	72	3	Ex9BH 4P C 1A
86526	4	2	400	72	3	Ex9BH 4P C 2A
86527	4	3	400	72	3	Ex9BH 4P C 3A
86528	4	4	400	72	3	Ex9BH 4P C 4A
86529	4	6	400	72	3	Ex9BH 4P C 6A
86530	4	10	400	72	3	Ex9BH 4P C 10A
86531	4	16	400	72	3	Ex9BH 4P C 16A
86532	4	20	400	72	3	Ex9BH 4P C 20A
86533	4	25	400	72	3	Ex9BH 4P C 25A
86534	4	32	400	72	3	Ex9BH 4P C 32A
86535	4	40	400	72	3	Ex9BH 4P C 40A
86536	4	50	400	72	3	Ex9BH 4P C 50A
86537	4	63	400	72	3	Ex9BH 4P C 63A

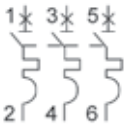


Miniature Circuit Breakers - AC

MCB Ex9BN - D Curve : 6kA

Protection for circuits which have supply loads with high inrush currents such as transformers, gas discharge lamps and motors

Part No.	Poles	Rated current (A)	Rated voltage (V AC)	Width (mm)	Pack qty	Type code
86335	1	1	230/400	18	12	Ex9BN 1P D 1A
86336	1	2	230/400	18	12	Ex9BN 1P D 2A
86337	1	3	230/400	18	12	Ex9BN 1P D 3A
86338	1	4	230/400	18	12	Ex9BN 1P D 4A
86339	1	6	230/400	18	12	Ex9BN 1P D 6A
86340	1	10	230/400	18	12	Ex9BN 1P D 10A
86341	1	16	230/400	18	12	Ex9BN 1P D 16A
86342	1	20	230/400	18	12	Ex9BN 1P D 20A
86343	1	25	230/400	18	12	Ex9BN 1P D 25A
86344	1	32	230/400	18	12	Ex9BN 1P D 32A
86345	1	40	230/400	18	12	Ex9BN 1P D 40A
86345	1	50	230/400	18	12	Ex9BN 1P D 50A
86347	1	63	230/400	18	12	Ex9BN 1P D 63A
86348	2	1	400	36	6	Ex9BN 2P D1A
86349	2	2	400	36	6	Ex9BN 2P D 2A
86350	2	3	400	36	6	Ex9BN 2P D 3A
86351	2	4	400	36	6	Ex9BN 2P D 4A
86352	2	6	400	36	6	Ex9BN 2P D 6A
86353	2	10	400	36	6	Ex9BN 2P D 10A
86354	2	16	400	36	6	Ex9BN 2P D 16A
86355	2	20	400	36	6	Ex9BN 2P D 20A
86356	2	25	400	36	6	Ex9BN 2P D 25A
86357	2	32	400	36	6	Ex9BN 2P D 32A
86358	2	40	400	36	6	Ex9BN 2P D 40A
86359	2	50	400	36	6	Ex9BN 2P D 50A
86360	2	63	400	36	6	Ex9BN 2P D 63A
86361	3	1	400	54	4	Ex9BN 3P D 1A
86362	3	2	400	54	4	Ex9BN 3P D 2A
86363	3	3	400	54	4	Ex9BN 3P D 3A
86364	3	4	400	54	4	Ex9BN 3P D 4A
86365	3	6	400	54	4	Ex9BN 3P D 6A
86366	3	10	400	54	4	Ex9BN 3P D 10A
86367	3	16	400	54	4	Ex9BN 3P D 16A
86368	3	20	400	54	4	Ex9BN 3P D 20A
86369	3	25	400	54	4	Ex9BN 3P D 25A
86370	3	32	400	54	4	Ex9BN 3P D 32A
86371	3	40	400	54	4	Ex9BN 3P D 40A
86372	3	50	400	54	4	Ex9BN 3P D 50A
86373	3	63	400	54	4	Ex9BN 3P D 63A
86374	4	1	400	72	3	Ex9BN 4P D 1A
86375	4	2	400	72	3	Ex9BN 4P D 2A
86376	4	3	400	72	3	Ex9BN 4P D 3A
86377	4	4	400	72	3	Ex9BN 4P D 4A
86378	4	6	400	72	3	Ex9BN 4P D 6A
86379	4	10	400	72	3	Ex9BN 4P D 10A
86380	4	16	400	72	3	Ex9BN 4P D 16A
86381	4	20	400	72	3	Ex9BN 4P D 20A
86382	4	25	400	72	3	Ex9BN 4P D 25A
86383	4	32	400	72	3	Ex9BN 4P D 32A
86384	4	40	400	72	3	Ex9BN 4P D 40A
86385	4	50	400	72	3	Ex9BN 4P D 50A
86386	4	63	400	72	3	Ex9BN 4P D 63A

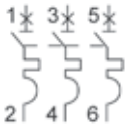


Miniature Circuit Breakers - AC

MCB Ex9BH - D Curve : 10kA

Protection for circuits which have supply loads with high inrush currents such as transformers, gas discharge lamps and motors

Part No.	Poles	Rated current (A)	Rated voltage (V AC)	Width (mm)	Pack qty	Type code
86538	1	1	230/400	18	12	Ex9BH 1P D 1A
86539	1	2	230/400	18	12	Ex9BH 1P D 2A
86540	1	3	230/400	18	12	Ex9BH 1P D 3A
86541	1	4	230/400	18	12	Ex9BH 1P D 4A
86542	1	6	230/400	18	12	Ex9BH 1P D 6A
86543	1	10	230/400	18	12	Ex9BH 1P D 10A
86544	1	16	230/400	18	12	Ex9BH 1P D 16A
86545	1	20	230/400	18	12	Ex9BH 1P D 20A
86546	1	25	230/400	18	12	Ex9BH 1P D 25A
86547	1	32	230/400	18	12	Ex9BH 1P D 32A
86548	1	40	230/400	18	12	Ex9BH 1P D 40A
86549	1	50	230/400	18	12	Ex9BH 1P D 50A
86550	1	63	230/400	18	12	Ex9BH 1P D 63A
86551	2	1	400	36	6	Ex9BH 2P D 1A
86552	2	2	400	36	6	Ex9BH 2P D 2A
86553	2	3	400	36	6	Ex9BH 2P D 3A
86554	2	4	400	36	6	Ex9BH 2P D 4A
86555	2	6	400	36	6	Ex9BH 2P D 6A
86556	2	10	400	36	6	Ex9BH 2P D 10A
86557	2	16	400	36	6	Ex9BH 2P D 16A
86558	2	20	400	36	6	Ex9BH 2P D 20A
86559	2	25	400	36	6	Ex9BH 2P D 25A
86560	2	32	400	36	6	Ex9BH 2P D 32A
86561	2	40	400	36	6	Ex9BH 2P D 40A
86562	2	50	400	36	6	Ex9BH 2P D 50A
86563	2	63	400	36	6	Ex9BH 2P D 63A
86564	3	1	400	54	4	Ex9BH 3P D 1A
86565	3	2	400	54	4	Ex9BH 3P D 2A
86566	3	3	400	54	4	Ex9BH 3P D 3A
86567	3	4	400	54	4	Ex9BH 3P D 4A
86568	3	6	400	54	4	Ex9BH 3P D 6A
86569	3	10	400	54	4	Ex9BH 3P D 10A
86570	3	16	400	54	4	Ex9BH 3P D 16A
86571	3	20	400	54	4	Ex9BH 3P D 20A
86572	3	25	400	54	4	Ex9BH 3P D 25A
86573	3	32	400	54	4	Ex9BH 3P D 32A
86574	3	40	400	54	4	Ex9BH 3P D 40A
86575	3	50	400	54	4	Ex9BH 3P D 50A
86576	3	63	400	54	4	Ex9BH 3P D 63A
86577	4	1	400	72	3	Ex9BH 4P D 1A
86578	4	2	400	72	3	Ex9BH 4P D 2A
86579	4	3	400	72	3	Ex9BH 4P D 3A
86580	4	4	400	72	3	Ex9BH 4P D 4A
86581	4	6	400	72	3	Ex9BH 4P D 6A
86582	4	10	400	72	3	Ex9BH 4P D 10A
86583	4	16	400	72	3	Ex9BH 4P D 16A
86584	4	20	400	72	3	Ex9BH 4P D 20A
86585	4	25	400	72	3	Ex9BH 4P D 25A
86586	4	32	400	72	3	Ex9BH 4P D 32A
86587	4	40	400	72	3	Ex9BH 4P D 40A
86588	4	50	400	72	3	Ex9BH 4P D 50A
86589	4	63	400	72	3	Ex9BH 4P D 63A



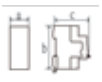
Miniature Circuit Breakers - DC

MCB Ex9BP-N Series

Range and technical specifications

Poles	1	2	3	4
AS60947.2 2005 Approval No. SAA101238EA (IEC/EN 60947-2 GB 14048.2)				

Electrical Specifications					
Rated working voltage (V DC)	Ue	250	500	750	1000
Rated current (A)	In		10-16-20-25-32-40-50-63		
Rated insulation voltage (V DC)	Ui		1000		
Rated implused voltage (kV)	Uimp		4		
Type of breaking		N	N	N	N
Ultimate breaking capacity (kA)	Icu	6	6	6	6
Service breaking capacity (%Icu)	Ics	100%	100%	100%	100%
Curve type			K		
Tripping type			Thermal magnetic type		
Service Life - Mechanical	Actual Value		20000		
"	Standard Value		8500		
Service Life Electrical	Actual Value		2500		
"	Standard Value		1500		

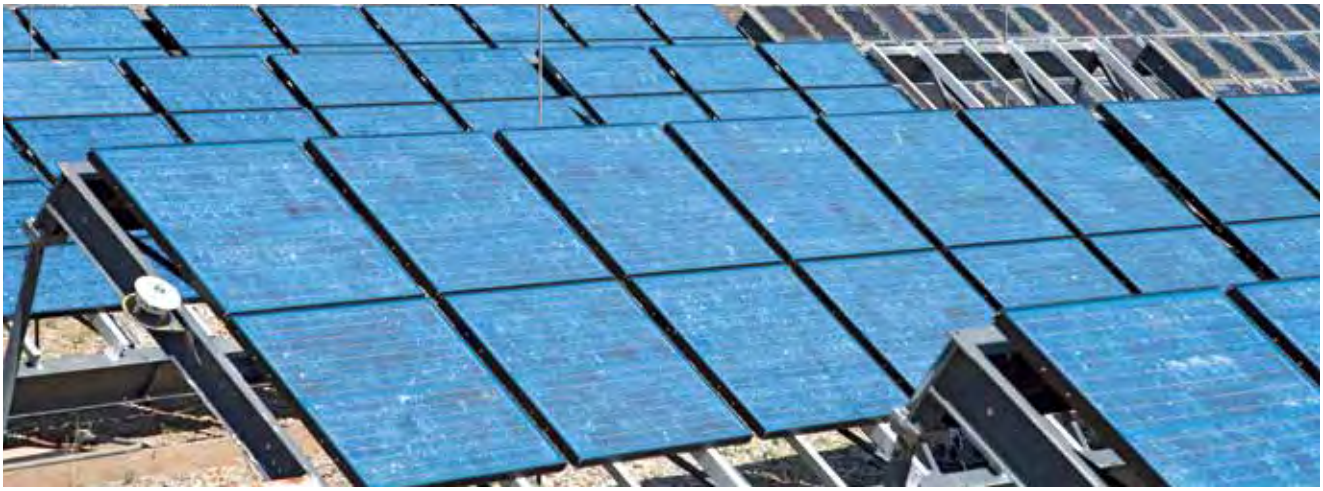
Connection and installation					
Lockable			OFF position		
Conductor size (mm^2)			≤ 32A, 1~25mm^2; ≥ 40A, 10~35mm^2		
Temperature (C)			-20 to +70		
Resistance to humidity and heat			Class 2		
Altitude (m) above sea			≤2000m		
Relative humidity			≤95%		
Protection degree	All sides		IP40		
	Connection terminal		IP20		
Pollution degree			3		
Installation environment			Avoid obvious shock and vibration		
Installation class			Class III		
Mounting			DIN35 rail		
Dimensions (mm) (WxHxL) 	a	18	36	54	72
	b	89	89	89	89
	c	72	74	74	74
Weight (kg)		0.12	0.24	0.36	0.48

Miniature Circuit Breakers - DC

MCB Ex9BP-N for PV - K Curve : 6kA

Non polarized DC MCB's for isolation and protection of DC systems, including PV (solar)

Part No.	Poles	Rated current (A)	Rated voltage (V DC)	Width (mm)	Type code
88063	1	10	250	18	Ex9BP-N 1P K 10A
88064	1	16	250	18	Ex9BP-N 1P K 16A
88065	1	20	250	18	Ex9BP-N 1P K 20A
88066	1	25	250	18	Ex9BP-N 1P K 25A
88127	1	32	250	18	Ex9BP-N 1P K 32A
88128	1	40	250	18	Ex9BP-N 1P K 40A
88129	1	50	250	18	Ex9BP-N 1P K 50A
88130	1	63	250	18	Ex9BP-N 1P K 63A
88067	2	10	500	36	Ex9BP-N 2P K 10A
88068	2	16	500	36	Ex9BP-N 2P K 16A
88069	2	20	500	36	Ex9BP-N 2P K 20A
88070	2	25	500	36	Ex9BP-N 2P K 25A
88131	2	32	500	36	Ex9BP-N 2P K 32A
88132	2	40	500	36	Ex9BP-N 2P K 40A
88133	2	50	500	36	Ex9BP-N 2P K 50A
88134	2	63	500	36	Ex9BP-N 2P K 63A
88071	3	10	750	54	Ex9BP-N 3P K 10A
88072	3	16	750	54	Ex9BP-N 3P K 16A
88073	3	20	750	54	Ex9BP-N 3P K 20A
88074	3	25	750	54	Ex9BP-N 3P K 25A
88135	3	32	750	54	Ex9BP-N 3P K 32A
88136	3	40	750	54	Ex9BP-N 3P K 40A
88137	3	50	750	54	Ex9BP-N 3P K 50A
88138	3	63	750	54	Ex9BP-N 3P K 63A
88075	4	10	1000	72	Ex9BP-N 4P K 10A
88076	4	16	1000	72	Ex9BP-N 4P K 16A
88077	4	20	1000	72	Ex9BP-N 4P K 20A
88078	4	25	1000	72	Ex9BP-N 4P K 25A
88139	4	32	1000	72	Ex9BP-N 4P K 32A
88140	4	40	1000	72	Ex9BP-N 4P K 40A
88141	4	50	1000	72	Ex9BP-N 4P K 50A
88142	4	63	1000	72	Ex9BP-N 4P K 63A



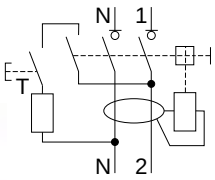
Residual Current Device

RCD Ex9CL-N, 6kA

Safety Switch (RCCB)

- AC type of residual current circuit breaker sensitive on residual AC current
- Without time delay
- Surge current-proof 250 A
- Voltage rating 240V
- IEC61008-1
- SAA 120061EA
- Selective with upstream installed S or S+A type RCD

Wiring diagram



Part No.	Poles	Rated current	Rated residual current	Type
100607	1P + N	25 A	30 mA	Ex9CL-N 2P 25A 30mA
100610	1P + N	40 A	30 mA	Ex9CL-N 2P 40A 30mA
100612	1P + N	40 A	300 mA	Ex9CL-N 2P 40A 300mA

Compact RCBO

Combination RCD/MCB Unit

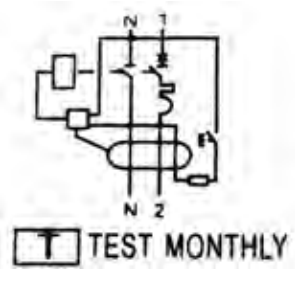
This single pole RCBO is 18mm wide ideal for installation in limited space. With its functions of circuit protection and leakage protection, it provides protection against earth faults, overloads, short circuits and over-voltage in residential, commercial, industrial and other applications.

Characteristics

- Both include A and AC type
- Short circuit interrupting capacity of 6KA
- This type C RCBO can also protect the neutral line and phase line
- Wide current range up to 40A
- Small space and only 18mm for 1P
- High breaking capacity of 6kA
- Wide current specification

Ex9NLE-N	
Standard	**IEC/EN60947-3**
Poles	1P+N
Voltage	240VAC
Current	6, 10, 13, 16, 20, 25, 32, 40A
Tripping Curve	C
Breaking capacity	4.5kA, 6kA
Type of residual current	AC,A
Residual current	30mA
Optional function	Overvoltage protection
Dimension	89x80x18

Wiring diagram



New product

Part No.	Poles	Rated Current	Rated residual current	Type	Qty/Box	Qty/Carton
90551	1P+N	6A	30mA	Ex9NLE-N 1PN C6A 30mA	12	144
90552	1P+N	10A	30mA	Ex9NLE-N 1PN C10A 30mA	12	144
90553	1P+N	16A	30mA	Ex9NLE-N 1PN C16A 30mA	12	144
90554	1P+N	20A	30mA	Ex9NLE-N 1PN C20A 30mA	12	144
90555	1P+N	25A	30mA	Ex9NLE-N 1PN C25A 30mA	12	144
90556	1P+N	32A	30mA	Ex9NLE-N 1PN C32A 30mA	12	144
90703	1P+N	40A	30mA	Ex9NLE-N 1PN C40A 30mA	12	144

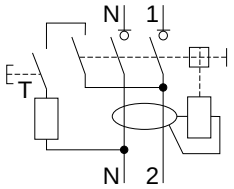
Residual Current Device

RCD Ex9CL-H: 10 kA

Safety Switch (RCCB)

- AC type of residual current circuit breaker sensitive on residual AC current
- Without time delay
- Surge current-proof 250 A
- Voltage rating 240V
- IEC 61008-1
- SAA 120061EA
- Selective with upstream installed S or S+A type RCD

Wiring diagram



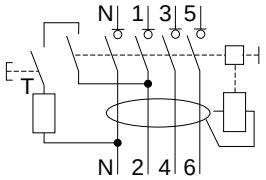
Part No.	Poles	Rated current	Rated residual current	Type
100643	1P + N	25 A	30 mA	Ex9CL-H 2P 25A 30mA
100646	1P + N	40 A	30 mA	Ex9CL-H 2P 40A 30mA
100649	1P + N	63 A	30 mA	Ex9CL-H 2P 63A 30mA
100644	1P + N	25 A	100 mA	Ex9CL-H 2P 25A 100mA
100647	1P + N	40 A	100 mA	Ex9CL-H 2P 40A 100mA
100650	1P + N	63 A	100 mA	Ex9CL-H 2P 63A 100mA
100645	1P + N	25 A	300 mA	Ex9CL-H 2P 25A 300mA
100648	1P + N	40 A	300 mA	Ex9CL-H 2P 40A 300mA
100651	1P + N	63 A	300 mA	Ex9CL-H 2P 63A 300mA

RCD Ex9CL-H: 10 kA

Safety Switch (RCCB)

- AC type of residual current circuit breaker sensitive on residual AC current
- Without time delay
- Surge current-proof 250 A
- Voltage rating 415V
- IEC 61008-1
- SAA 120061EA
- Selective with upstream installed S or S+A type RCD

Wiring diagram



Part No.	Poles	Rated current	Rated residual current	Type
100652	3P + N	25 A	30 mA	Ex9CL-H 4P 25A 30mA
100655	3P + N	40 A	30 mA	Ex9CL-H 4P 40A 30mA
100658	3P + N	63 A	30 mA	Ex9CL-H 4P 63A 30mA
100653	3P + N	25 A	100 mA	Ex9CL-H 4P 25A 100mA
100656	3P + N	40 A	100 mA	Ex9CL-H 4P 40A 100mA
100659	3P + N	63 A	100 mA	Ex9CL-H 4P 63A 100mA
100654	3P + N	25 A	300 mA	Ex9CL-H 4P 25A 300mA
100657	3P + N	40 A	300 mA	Ex9CL-H 4P 40A 300mA
100660	3P + N	63 A	300 mA	Ex9CL-H 4P 63A 300mA

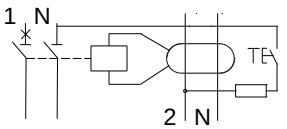
Residual Current Device

RCBO Ex9CBL-N - C Curve: 6 kA

Combination RCD/MCB unit

- Provides overload, short circuit and earth leakage protection
- Without time delay
- Surge current-proof 250 A
- Selective with upstream installed S or S+A type RCD
- IEC 61009
- SAA 120034EA

Wiring diagram



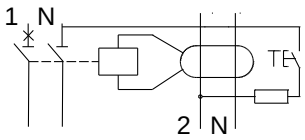
Part No.	Poles	Rated current	Rated residual current	Type
100747	1P + N	6 A	30 mA	Ex9CBL-N 1P+N C6 30mA
100748	1P + N	10 A	30 mA	Ex9CBL-N 1P+N C10 30mA
100749	1P + N	13 A	30 mA	Ex9CBL-N 1P+N C13 30mA
100750	1P + N	16 A	30 mA	Ex9CBL-N 1P+N C16 30mA
100751	1P + N	20 A	30 mA	Ex9CBL-N 1P+N C20 30mA
100752	1P + N	25 A	30mA	Ex9CBL-N 1P+N C25 30mA
100753	1P + N	32 A	30mA	Ex9CBL-N 1P+N C32 30mA
100754	1P + N	40 A	30mA	Ex9CBL-N IP+N C40 30mA

RCBO Ex9CBL-H - C Curve: 10kA

Combination RCD/MCB unit

- Provides overload, short circuit and earth leakage protection
- Without time delay
- Surge current-proof 250 A
- Selective with upstream installed S or S+A type RCD
- IEC 61009
- SAA 120034EA

Wiring diagram



Part No.	Poles	Rated current	Rated residual current	Type
100779	1P + N	6 A	30 mA	Ex9CBL-H 1P+N C6 30mA
100780	1P + N	10 A	30 mA	Ex9CBL-H 1P+N C10 30mA
100781	1P + N	13 A	30 mA	Ex9CBL-H 1P+N C13 30mA
100782	1P + N	16 A	30 mA	Ex9CBL-H 1P+N C16 30mA
100783	1P + N	20 A	30 mA	Ex9CBL-H 1P+N C20 30mA
100784	1P + N	25 A	30 mA	Ex9CBL-H 1P+N C25 30mA
100785	1P + N	32 A	30 mA	Ex9CBL-H 1P+N C32 30mA
100786	1P + N	40 A	30 mA	Ex9CBL-H 1P+N C40 30mA

AC Isolators

Ex9I AC Isolator

Switch Disconnector

- Break and connect circuit on load
- Isolation
- Integrated lock mechanism
- IEC60947-3

Part No.	Poles	Rated current	Type
85011	1	80A	Ex9I1251P80A
85023	3	80A	Ex9I1253P80A

IP40 Consumer Units

Recessed mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60 670 -1: 2002 (1st edition), IEC 60 670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	283 x 232 x 70	396 x 232 x 70	283 x 357 x 70	396 x 357 x 70
No. of poles	12	18	24	36
Part number	103536	103537	103538	103539
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

IP40 Consumer Units

Surface mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60 670 -1: 2002 (1st edition), IEC 60 670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	287 x 236 x 112	396 x 236 x 112	287 x 361 x 112	296 x 361 x 112
No. of poles	12	18	24	36
Part number	103522	103523	103524	103525
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

MCB Accessories

RCD Ex9LE Series

Range and technical specifications

Ex9LE Series add on block
To be used in conjunction with Ex9B MCB's

Accessories combined together.

Poles	1PN	2P	3P	3PN	4P
AS/NZS 61009.1:2004 Inc A1 **Approval No. SAA101239EA** **IEC/EN61009-1, GV16917.1**					

Electrical Specification

Functions		Protection against short current, overload, leakage, over-voltage, isolation and control				
Type of residual current		AC(ensure trip for sudden or slow rise of sinusiodal alternating current)				
Rated frequency (Hz)		50/60				
Rated working voltage (V AC)	Ue	230/400				
Rated residual current (mA)	I	10, 30, 100, 300				
Rated current (A)	In	$I_n \leq 40$, $I_n \leq 63$				
Over-voltage protection of G type		AC 280 ± 5% V (1PN and 2P)				
Delay trip of S type		0.13~0.5s (only for 100mA and 300mA)				
Service Life	Mechanical	16000				
	Electrical	8000				

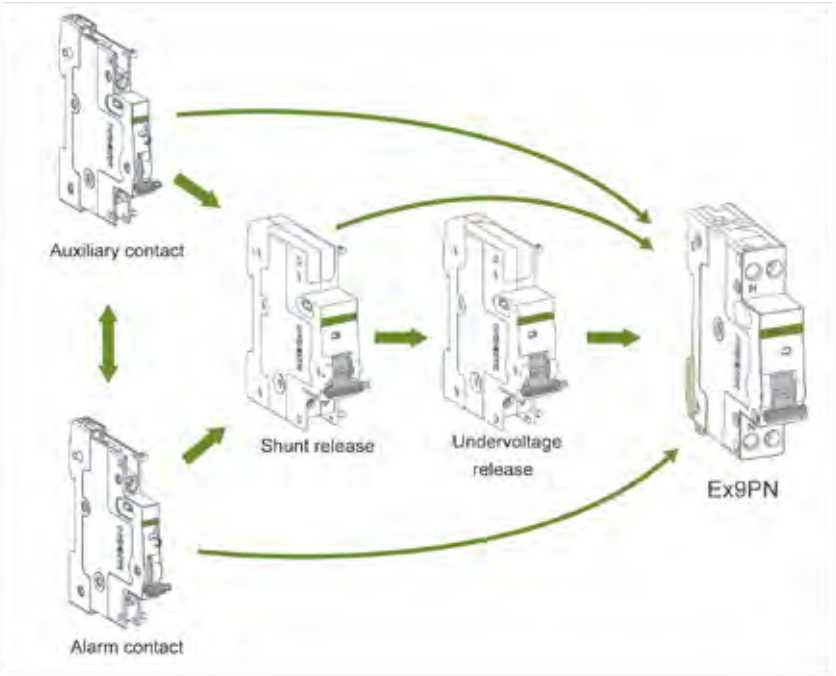
Connection and installation

Protection degree		IP20				
Mounting		DIN35 rail				
Conductor size (mm^2)		≤ 32A 1~25mm^2; ≥ 40A, 10-35mm^2				
Working temperature (C)		-25 to +40				
Resistance to humidity and heat		Class 2				
Altitude (m) above sea		≤2000m				
Relative humidity		≤95%				
Pollution degree		2				
Installation environment		Avoid obvious shock and vibration				
Dimensions (mm) (WxHxL) 	a	54	72	117	117	135
	b	89.5	89.5	89.5	89.5	89.5
	c	73	73	73	73	73

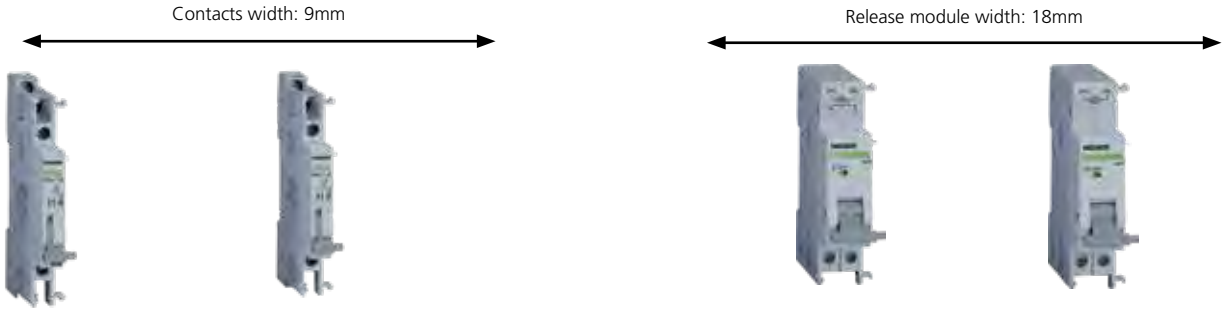
MCB Accessories

Overview

- Full range of modules to provide remote monitoring.
- The special design makes it easy to assemble and install.
- Each MCB can be assembled with 2 release and 3 indicating accessories with 1 group of contacts or 2 indicating modules with 2 goups of contacts.



ExBP/Ex9PN/Ex9BP modules



Alarm contact AL31/AXL31 | Auxilliary contact AX31 | Shunt release SHT31 | Undervoltage release UVT31

Alarm contact AL3111/AXL31

Function

Combine the alarm contact module with an MCB so that when the MCB trips, an audible or visual indicator can be activated to indicate the fault trip. The AXL31 has both the function of an auxiliary and alarm.

Auxilliary contact AX3111/AX3112

Function

Combine the auxilliary contact with the MCB to provide remote indication of a circuit breaker's status: ON or OFF.

Shunt release SHT31/SHT3111

Function

Combine the shunt release module with an MCB to trip the MCB remotely.

Undervoltage release UVT31/ UVT310/UVT3110

Function

Combine the undervoltage release module with an MCB so when the voltage decreases by 70%-35%, the release makes the breaker trip; only when the voltage resumes to 85%-110% does it restore the breaker to an ON status.

Rated current of AL31/AXL31/AX31

	Working voltage (V)	Rated current (A)
AC	240	6
	415	3
DC	24	6
	48	2
	130	1

Locking Device

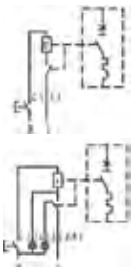
Part No. 86218

MCB Accessories

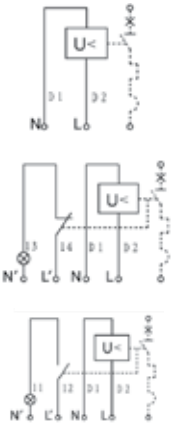
Add on blocks

Shunts, alarms and auxiliaries

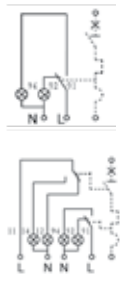
Part No.	Control Voltage V AC	Control Voltage V DC	Width (mm)	Type code	Type
Shunt release SHT31 (without auxilliary contact)					**Shunt Release SHT**
86205	110-415	110 - 130	18	SHT31 110V-415V AC/110V-130V DC	
86206	48	48	18	SHT31 48V AC/DC	
86207	12-24	12-24	18	SHT31 12-24V AC/DC	
Shunt release SHT3111 (with 1NO AND 1NC auxilliary contact)					
86208	110-415	110 - 130	18	SHT3111 110V-415V AC/110V-130V DC	
86209	48	48	18	SHT3111 48V AC/DC	
86210	12-24	12-24	18	SHT3111 12-24V AC/DC	



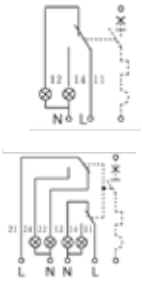
					Undervoltage release UVT
Undervoltage release UVT31 (without auxilliary contact)					
86211	220-240		18	UVT31 220-240V AC	
86212	48	48	18	UVT31 48V AC/DC	
Undervoltage release UVT3101 (with 1NC auxiliary contact)					
86213	220-240		18	UVT3101 220-240V AC	
86214	48	48	18	UVT3101 48V AC/DC	
Undervoltage release UVT3110 (with 1NO auxiliary contact)					
86215	220-240		18	UVT3110-220-240V AC	
86216	48	48	18	UVT3110 48V AC/DC	



					Alarm contact AL/AXL
Alarm contact AL3111 (with 1NC and 1NO)					
86202			9	AL3111	
86204			9	AXL31	



					Auxiliary contact AX
Auxiliary contact AX3111 (with 1NC and 1NO)					
86201			9	AX3111	
Auxiliary contact AX3122 (with 2NC and 2NO)					
86203			9	AX3122	



MCB Accessories

Fork Type Busbar Combs

Space and time-saving for multiple MCB connections

Features:

- Busbars for connection of MCB's
- Shortened versions for 12 modules supplied with end caps
- 1 and 3-phase versions available
- Fork connection points
- 240/400V AC rated

1 metre Busbars

- 1 and 3-phase busbars
- Length 1 metre, can be cut to suit
- 54 connection points
- End caps to be ordered separtely

Part No.	Type	Cross section	Rated current	No. of phases
101446	BBU 1L 10 M54	10mm²	63A	1
101447	BBU 1L 16 M54	16mm²	80A	1
101448	BBU 3L 10 M54	10mm²	63A	3
101449	BBU 3L 16 M54	16mm²	80A	3

Shortened Busbars

- 1 and 3-phase busbars
- Length 12 modules
- 12 connection points
- Supplied complete with end caps

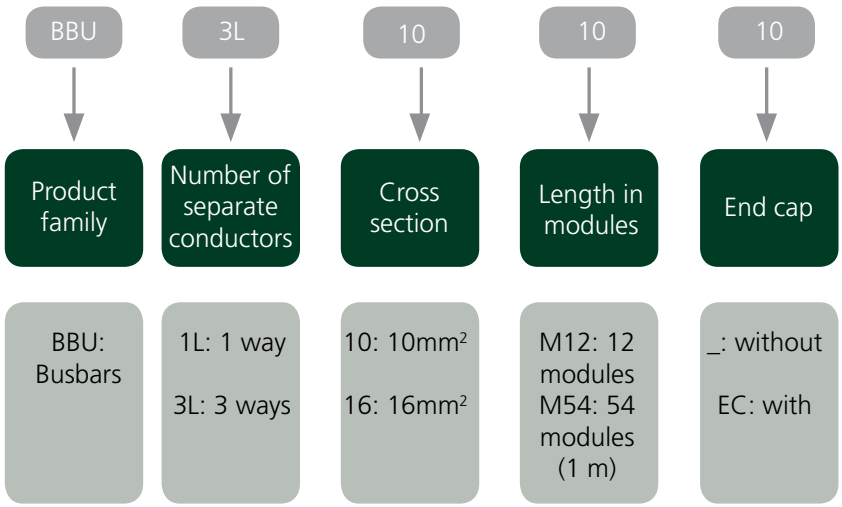
Part No.	Type	Cross section	Rated current	No. of phases
101450	BBU 3L 10 M12 EC	10mm²	63A	3
101451	BBU 3L 16 M12 EC	16mm²	80A	3

End Caps for 1 metre Busbars

- End Caps for 1 and 3-phase Busbars

Part No.	Type	Suits	No. of phases
101452	ECU 1L	BBU 1L	1
101453	ECU 3L	BBU 3L	3

Type



Surge Protection

Surge Protection Devices

Class II

Surge protective devices, are voltage limiting Class II devices which present high impedance when there is no surge.

If a surge occurs, the impedance will drop rapidly to limit the voltage at its output terminals to the specified range.

Approvals

- IEC61643-1
- EN61643-11

AC Type

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Up (kV)	Uc (AC V)	Type
82111	82166	1	30	15	1.3	275	Ex9U2 30 1P 275V
82112	82167	1	30	15	1.5	320	Ex9U2 30 1P 320V
82113	82168	1	30	15	1.8	385	Ex9U2 30 1P 385V
82114	82169	1	30	15	2.2	440	Ex9U2 30 1P 440V

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Up (kV)	Uc (AC V)	Type
82116	82171	2	30	15	1.3	275	Ex9U2 30 2P 275V
82117	82172	2	30	15	1.5	320	Ex9U2 30 2P 320V
82118	82173	2	30	15	1.8	385	Ex9U2 30 2P 385V
82119	82174	2	30	15	2.2	440	Ex9U2 30 2P 440V

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Up (kV)	Uc (AC V)	Type
82121	82176	3	30	15	1.3	275	Ex9U2 30 3P 275V
82122	82177	3	30	15	1.5	320	Ex9U2 30 3P 320V
82123	82178	3	30	15	1.8	385	Ex9U2 30 3P 385V
82124	82179	3	30	15	2.2	440	Ex9U2 30 3P 440V

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Up (kV)	Uc (AC V)	Type
82126	82181	4	30	15	1.3	275	Ex9U2 30 4P 275V
82127	82182	4	30	15	1.5	320	Ex9U2 30 4P 320V
82128	82183	4	30	15	1.8	385	Ex9U2 30 4P 385V
82129	82184	4	30	15	2.2	440	Ex9U2 30 4P 440V

DC Type

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Up (kV)	Uc (DC V)	Type
82731	82732	1	40	20	2	500	Ex9UP 40 1P 500V
82743	82744	3	40	20	3.8	1000	Ex9UP 40 3P 1000V

Moulded Case Circuit Breakers

Product Overview

A compact, award-winning design suitable for a multitude of applications

Thermal-magnetic type

- AC distribution protectgion
- DC distribution protection
- Motor protection

Switch disconnector

- DC switch disconnector
- AC switch disconnetor

Electronic type

- AC distribution protection
- Motor protection

Residual current protection

- AC residual current protection

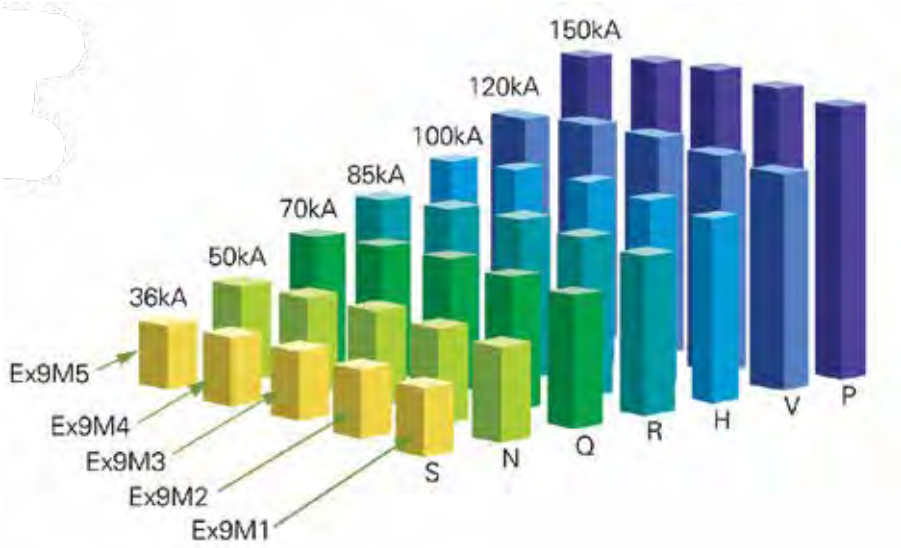
A wide range of breaking capacities exist for each model of circuit breaker, meeting the demands of varying types of protection:

Standard type - S and N
Used in residential building, public buildings and industrial plants

High-breaking capacity type - Q, R and H
Used in industrial production line and key electric power equipment

Current limiting type - V and P
Used in heavy industry and special industry

DC switching voltage
250V DC per pole of device
e.g. 4 pole = 1000V DC



Model	16	20	25	32	40	50	63	80	100	125	160	180	200	225	250	315	350	400	500	630	700	800
Ex9M1	■	■	■	■	■	■	■	■	■	■												
Ex9M2										■	■	■	■	■	■							
Ex9M3															■	■	■	■				
Ex9M4																		■	■	■		
Ex9M5																				■	■	■

Ex9M1 is adjustable for thermal protection, range: $I_R=(0.8 \sim 1.0)I_n$
Ex9M2 is adjustable for thermal magnetic protection, range: $I_R=(0.8 \sim 1.0)I_n$ $I_i=(5 \sim 10)I_n$
Ex9M3 Ex9M4 and Ex9M5 is the same as Ex9M2

Moulded Case Circuit Breakers

Product Overview

A compact, award-winning design suitable for a multitude of applications

Temperature

- Maximum working limits - 25°C to +70°C. Derating applies for below -5°C or above 40°C.

Altitude

- No derating up to 2000m above sea level. Above 2000m derate according to technical data.

Humidity

Up to 90% non-condensing average humidity.
Every product has been tested to requirements given by IEC60068-2-30.

Pollution Level

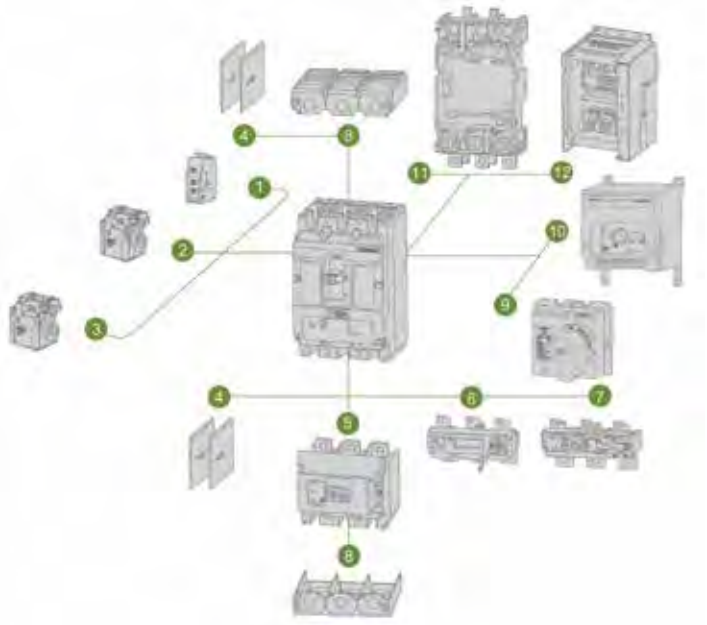
Level 3

International standards

Product standards
IEC 60947-1 (General provisions)
IEC 60947-2 (Circuit breakers)
IEC 60947-3 (Switches, isolation)
IEC 60947-4-1 (Motor starters)
Extreme environmental test standards
IEC 60068-2-1 (Low temperature)
IEC 60068-2-2 (Dry heat)
IEC 60068-2-11 (Salty mist test)
IEC 60068-2-30 (Moist heat)

A complete range of accessories

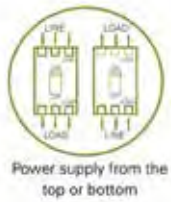
No.	Designation	
1	Auxiliary alarm contact	AX(AL)
2	Under-voltage release	UVT
3	Shunt release	SHT
4	Interface barrier	PHS
5	Residual current protection module	Ex9ML
6	Electronic release	SU20
7	Thermo-(magnetic) release	TM(M)
8	Terminal shield	TCV
9	Manual operating mechanism	ERH/RHD
10	Motor mechanism	MOD
11	Plug-in base	PIA
12	Drawout base	DOB

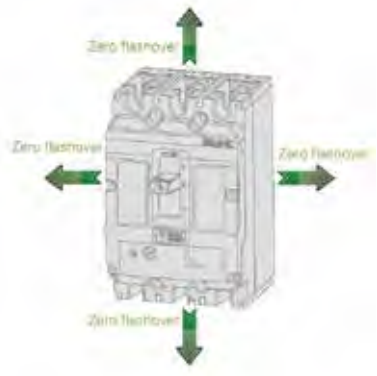


Optimized dimensions

For ease of installation and space-saving considerations, the volume of the Ex9M circuit breaker is designed and manufactured to be compact in size and light in weight, without compromising performance.

- Even for higher current levels, Ex9M maintains a compact size.
- Innovative zero flashover design ensures mounting space is minimised.
- The breakers can be mounted in all attitudes and fed from the top or bottom to increase flexibility in panel designs.





Moulded Case Circuit Breakers

MCCB Ex9M

Thermal Magnetic Type

Part No.	Type	No. of poles	Current rating	Short circuit rating	Frame size
20021	9M1N TM AC20 3P	3	20A	50KA	1
20022	9M1N TM AC25 3P	3	25A	50KA	1
20023	9M1N TM AC32 3P	3	32A	50KA	1
20024	9M1N TM AC40 3P	3	40A	50KA	1
20025	9M1N TM AC50 3P	3	50A	50KA	1
20026	9M1N TM AC63 3P	3	63A	50KA	1
20027	9M1N TM AC80 3P	3	80A	50KA	1
20028	9M1N TM AC100 3P	3	100A	50KA	1
20029	9M1N TM AC125 3P	3	125A	50KA	1
23012	9M2N TM AC125 3P	3	125A	50KA	2
23013	9M2N TM AC160 3P	3	160A	50KA	2

Part No.	Type	No. of poles	Current rating	Short circuit rating	Frame size
23015	9M2N TM AC200 3P	3	200A	50KA	2
23017	9M2N TM AC250 3P	3	250A	50KA	2
25008	9M3N TM AC250 3P	3	250A	50KA	3
25009	9M3N TM AC315 3P	3	315A	50KA	3
25011	9M3N TM AC400 3P	3	400A	50KA	3
26506	9M4N TM AC400 3P	3	400A	50KA	4
26507	9M4N TM AC500 3P	3	500A	50KA	4
26508	9M4N TM AC630 3P	3	630A	50KA	4
27506	9M5N TM AC630 3P	3	630A	50KA	5
27508	9M5N TM AC800 3P	3	800A	50KA	5

Ex9M	1	S	TM	AC	125	3P
Product Code	Rated Frame Current Code	Breaking Capacity Code	Tripping Device Code	AC/DC Code	Rated Current (A)	Poles
Ex9M:AC Protection	1:125A	B:25kA (DC)	TM Thermomagnetic, for protection of general power distribution	AC: Alternating current	125, 100, 80, 63, 50,40, 32, 25, 20, 16	2P
Ex9MD:DC Protection	2:250A	S:36kA	M Magnetic type, for motor protection	DC: Direct current	250, 225, 200, 180, 160,125	3P
	3:400A	N:50kA			400, 350,315,250	4P4T: Neutral protected without on-and-off
	4:630A	Q:70kA			630, 500, 400	4P4I: Neutral protected, without on-and -off
	5:800A	R:85kA			800, 700, 630	4P4U: Neutral unprotected on-and-off
		H:100kA				4P4N: Neutral unprotected without on-and-off
		V:120kA				
		P:150kA (AC)				

1. 2P only for Ex9M1, Ex9M2, Ex9MD1, Ex9MD2
2. Special Product – Please contact DKSH before placing an order

Moulded Case Circuit Breakers

MCCB Ex9M
Electronic Type

Example
Ex9M2S SU20S AC250 3P = Ex9M series MCCB, frame current 250A, breaking capacity 36kA, 3 poles, rated current 250A, with basic electronic distributon proctection trip unit

1 A COM21 communication module is needed to communicate between the Ex9M electronic circuit breaker and a host computer, which gives the capability of adjustment and monitoring of variables.

Ex9M	2	S	AC	250	3P
Product Code	Rated Frame Current Code	Breaking Capacity Code	AC/DC Code	Rated Current (A)	Poles
Ex9M: AC Protection	2:250A	S:36kA	AC: Alternating current	250, 160, 100, 63, 32	3P
	3:400A	N:50kA		400	4P4T: Neutral protected on-and-off 1
	4:630A	Q:70kA		630	4P4I: Neutral unprotected without on-and-off 1
	5:800A	R:85kA		800	4P4U: Neutral unprotected on-and-off 1
		H:100kA			4P4N: Neutral unprotected without on-and-off 1
		V:120kA			
		P:150kA (AC)			

Moulded Case Disconnector

Ex9MSD

Switch Disconnector

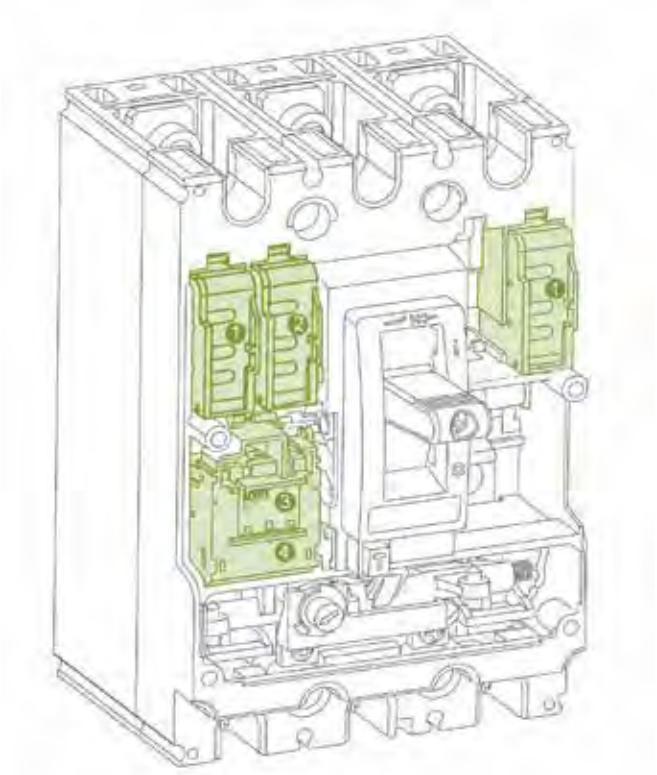
Part No.	Type	No. of poles	Current rating	Short circuit rating	Frame Size
20280	Ex9M125SD AC 3P	3	125A	4.5KA	1
23168	Ex9M250SD AC 3P	3	250A	4.5KA	2
25112	Ex9M400SD AC 3P	3	400A	4.5KA	3
26900	Ex9M630SD AC 3P	3	630A	4.5KA	4
27900	Ex9M800SD AC 3P	3	800A	4.5KA	5

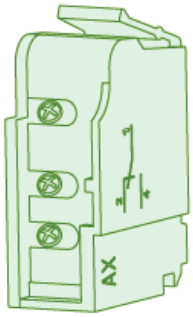
Ex9M	2	SD	AC	3P
Product Code	Rated Frame Current Code	Breaking Capacity	AC/DC Code	Poles
Ex9M	1:125A	SD: Switch disconnector	AC: Alternating current	2P
	2:250A		DC: Direct current	3P
	3:400A			4P
	4:630A			
	5:800A			

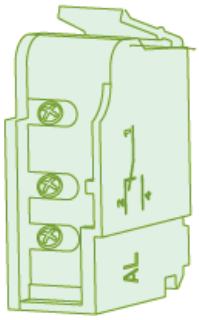
MCCB Accessories

Internal accessories

See page 108 for ordering information







Auxiliary contact (AX)	Alarm contact (AL)	Shunt Release (SHT)	Under-voltage release (UVT)
Indication for the status of a circuit breaker (e.g. opening, closing).	To send an alarm signal when the circuit breaker is tripped.	To control releasing of a circuit breaker remotely.	Under-voltage protection.
Type 1NO, 1NC	**Type** 1NO, 1NC	**Voltage rating** AC 400V AC 230V AC 110V AC 48V DC 220V DC 11V0V DC 48V DC 24V	**Voltage rating** AC 400V AC 230V

MCCB Accessories

External accessories

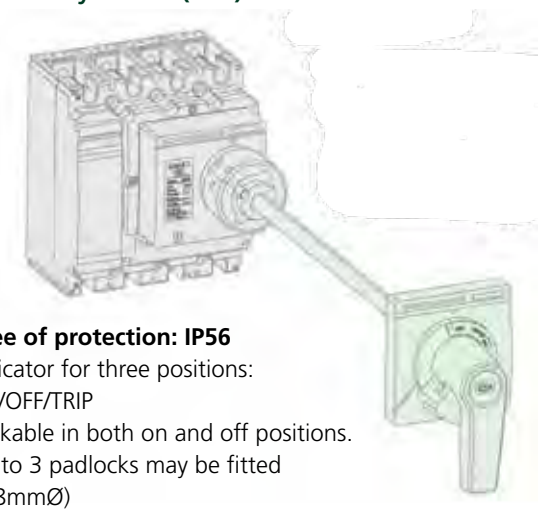
See page 108 for ordering information

Direct rotary handle (DRH)

Degree of protection : IP40

- Indicator for three positions: ON/OFF/TRIP
- Lockable in both on and off positions.
- Up to 3 padlocks may be fitted (5-8mmØ)

Extended rotary handle (ERH)



Degree of protection: IP56

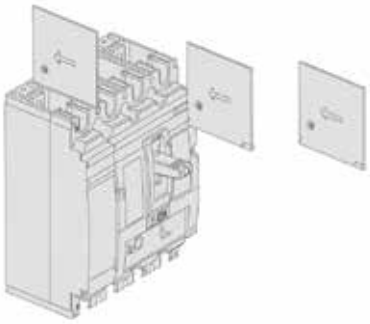
- Indicator for three positions: ON/OFF/TRIP
- Lockable in both on and off positions.
- Up to 3 padlocks may be fitted (5-8mmØ)

Motor mechanism (MOD)

Degree of protection: IP40

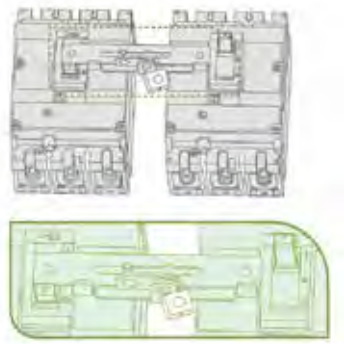
- To control the opening and closing of the circuit breaker remotely
- Device is equipped with a manual override facility

Interface barrier (PHS)



- To improve the safety & insulation performance at the connection terminals.

Mechanical interlock (MIT)



- Used on a dual-circuit power system, ensuring the circuit breakers on both circuits will not close at the same time
- Front installation

MCCB Accessories

Ordering information

Part numbers

Part No.	Type	Suits Frame	Auxilary Contacts	Desription
20297	AX21	1 to 5	1NO,1NC	Auxiliary Contact
20282	AL21	1 to 5	1NO,1NC	Alarm Contact
20302	ERH 21	1	-	Extended Rotary Handle
20306	TCE 21 3P	1	-	Terminal Shields
20290	SHT 21 AC220-240V	1	-	Shunt release 240V AC
20300	UVT 21 AC380-415V	1		Undervoltage Release 415V
23188	ERH 22	2	-	Extended Rotary Handle
23192	TCE 22 3P	2	-	Terminal Shields
23177	SHT 22 AC220-240V	2 to 5	-	Shunt release 240V AC
23186	UVT 22 AC380-415V	2 to 5		Undervoltage Release 415V
25121	ERH 23	3	-	Extended Rotary Handle
25125	TCE 23 3P	3	-	Terminal Shields
26920	ERH 24	4,5	-	Extended Rotary Handle
26904	TCE 24 3P	4,5	-	Terminal Shields

Accessories

Name	Specification	9M1	9M2	9M3	9M4	9M5
Auxiliary contact	AX	AX21	AX21	AX21	AX21	AX21
Alarm contact	AL	AL21	AL21	AL21	AL21	AL21
Shunt release	SHT	SHT21	SHT22	SHT22	SHT22	SHT22
Under-voltage release	UVT	UVT21	UVT22	UVT22	UVT22	UVT22
Direct rotary handle	RHD	RHD21	SHT21	RHD23	RHD24	RHD24
Extended rotary handle	ERH	ERH21	ERH22	ERH23	ERH24	ERH24
Motor mechanism*[1]	MOD	MOD21	MOD22	MOD23	MOD24	MOD24
Handle lock	KLK	KLK21	KLK22	KLK23	KLK24	KLK24
Mechanical interlock	MIT	MIT21	MIT22	MIT23	MIT24	MIT24
Terminal shield	TCV	TCV21	TCV22	TCV23	TCV24	TCV24
Extended terminal shield	TCE	TCE21	TCE22	TCE23	TCE24	TCE24
Rear connection plate	RCP	RCP21	RCP22	RCP23	RCP24	RCP25
Draw-out base	DOB	—	—	DOB23	DOB24	DOB25
Plug-in base	PIA	PIA21	PIA22	PIA23	—	—
Din-rail adaptor	DRA	DRA21	DRA22	—	—	—
Front panel escutcheon	CDP	CDP21	CDP22	CDP23	CDP24	CDP24
Communication module*[2]	COM	COM21	COM21	COM21	COM21	COM21
Battery module*[2]	BAB	BAB21	BAB21	BAB21	BAB21	BAB21

*[1] Only AC operation possible for MOD motor mechanism.
*[2] Suitable for electronic type MCCB only.

Fusing

NH Fuse Switch Disconnectors

Up to 630A

Functions

NH fuse switch disconnectors are used on low voltage electrical systems that require high protection against shortcircuit while securing on load circuit disconnection and isolation.

According to standards

IEC/EN 60 947-3
VDE 0660 / part 100
IEC/EN 60 269-2-1
VDE 0636 / part 201

Base

Manufactured out of re-inforced fiber glass with high thermal stability and self extinguishing halogen free synthetic materials. Copper contacts are galvanic surface coated. Contact springs are made of stainless steel. Symmetrical switch suitable for bottom / top cable terminal connections.

Cover

The switch operating cover consists of re-inforced fiber glass and self extinguishing thermoplastic halogen free material. Supplied with large windows which enable fuse link indicator to be clearly seen. Ergonomic handle for easy operation.

Part No.	Size	Max. Current Rating
713	NH00	160A
733	NH1	250A
743	NH2	400A
753	NH3	630A

General Purpose NH Fuses

80 to 630A (Grey) are designed to protect installations and equipment against overload and short-circuit currents on low voltage electrical circuits.

Gave gG NH fuses are rated at 500V AC and 440V DC.

Part No.	Size	Current Rating
66920080	NH00	80
66920100	NH00	100
66920125	NH00	125
66920160	NH00	160
67120200	NH1	200
67120250	NH1	250
67220315	NH2	315
67220355	NH2	355
67220400	NH2	400
67320500	NH3	500
67320630	NH3	630

Connectors

Multipole Connectors

wieland

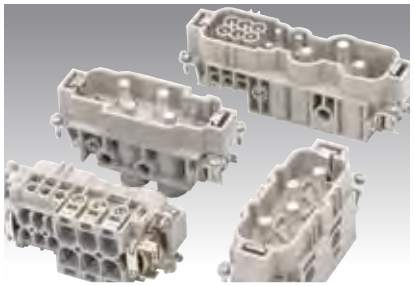
revos Multipoles

Industrial multipole connectors

Industrial multipole connectors are specially designed for applications in extremely rough environments. *revos* handles even the toughest jobs. The powder-coated aluminum housings protect against mechanical wear and prevent ingress of splashing water or dust. Clear assignments when wiring, service-friendliness in the case of maintenance and individual marking options help you to maintain an overview at any time. *revos* makes the installation of machines and industrial systems easier and helps to save time.

revos BASIC

The classical industrial multipole connector. The aluminum die-cast housing with powder-coated surface provides reliable protection; the contact inserts are available in 6 to 128 pole designs. *revos* BASIC copes with the toughest requirements and is therefore suitable for the automotive industry, mechanical and system engineering, for conveyor systems as well as in measuring technology and control engineering.

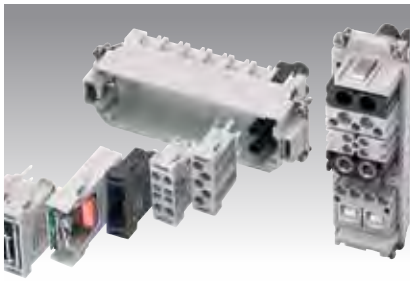


revos POWER

The high-current connector from Wieland Electric. The contact inserts and multipole adapters are designed for currents exceeding 16 A; they are also available in a contact mix with screw connection. The components are perfectly protected inside the *revos* BASIC housings. *revos* POWER is used in mechanical and system engineering for small drives, motors, pumps or frequency converters.

revos HD

revos HD is the specialist for multi-pole connections. The robust housings accomodate contact inserts with 10 to 80 poles and are designed for currents up to 10 A (according to DIN EN 17 5301-801). The strengths of *revos* HD are appreciated not only in mechanical and system engineering, but also in escalators, small motors and injection molding machines.

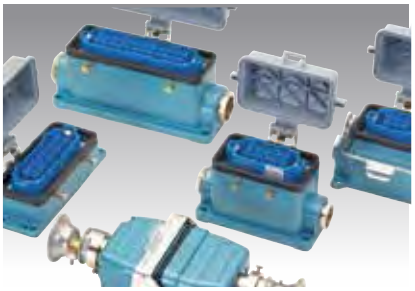


revos FLEX

With this modular and flexible system you can customise your connector to meet the requirements of your application. A clever solutions for all tasks in mechanical and system engineering, measuring technology and control engineering, an ideal connector for all Industrial Automation requirements.

revos MINI

The robust little ones. Thanks to its compact contact inserts with 3 to 8 poles *revos* MINI fits into mechanical, control and switchgear engineering applications as well as small motors and lighting technology. *revos* MINI with its connector housings in zinc die-cast or polyamide withstand even the toughest of application conditions



revos Ex

In hazardous areas such as in mining or the chemical industry electrical components have to cope with special requirements. The *revos* Ex series provides industrial multipole connectors especially for those systems where Ex protection is crucial. The BVS testing institute approved *revos* Ex in zone 1 for intrinsic circuits.

Multipole Connectors

wieland

General design of a *revos* industrial multipole connector

1

2

1. Cable glands

For ***revos*** industrial connectors the following cable glands are available:
- Cable gland without strain relief, protection degree IP54, 7x.xxx.xxxx.0 fully assembled
- Cable glands, protection degree IP68, available as accessories in plastic or brass
- EMC cable glands

2. Hoods

Aluminium die cast alloy, silocon-free finish (housings for ***revos*** and ***revos*** MINI are manufactured from die cast zinc alloy)
- Low and increased height designs available
- Cable entry at the side, on top or at the front
- With or without locking levels

3

3. Female inserts

Available in the following connection techniques:
- Screw connection
- Spring clamp connection
- Crimp connection

4

4. Coding pins

Coding pins, female coding pieces and coding bolts

5

5. Male inserts

Available in the following connection techniques:
- Screw connection
- Spring clamp connection
- Crimp connection

6

7

6. Bases

Aluminium die cast alloy, silicon-free finish (housings for ***revos*** and ***revos*** MINI are manufactured from die cast zinc alloy)
- Low and increased height designs available
- Open-bottom and closed-bottom basis
- Single or double locking lever of plastic, steel or stainless steel
- Coupling for "cable-to-cable" connections

7. Locking levers

Single or double locking lever in plastic, steel or stainless steel design.

Multipole Connectors

wieland

revos BASIC - metric glands

Industrial, heavy duty, 500V, 16A

Double lock levers, IP54 (IP65 with appropriate IP68 cable glands)






	Socket Insert	Plug Insert	Narrow Entry Hood		Top Entry Hood		Narrow Entry Hood with Locking Levers		Top Entry Hood with Locking Levers	
Description	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**
10 Pole + earth	70.300.1040.0	70.310.1040.0	70.350.1035.0	M20	70.352.1035.0	M20	70.355.1035.0	M20	70.357.1035.0	M20
10 Pole + earth	70.300.1040.0	70.310.1040.0	-	-	70.354.1035.0	M25	-	-	-	-
16 Pole + earth	70.300.1640.0	70.310.1640.0	70.350.1635.0	M25	70.352.1635.0	M25	70.355.1635.0	M25	70.357.1635.0	M25
24 Pole + earth	70.300.2440.0	70.310.2440.0	70.350.2435.0	M25	70.354.2435.0	M25	70.355.2435.0	M25	70.357.2435.0	M25
24 Pole + earth	70.300.2440.0	70.310.2440.0	70.350.2435.0	M25	70.354.2435.0	M32	70.355.2435.0	M25	70.357.2435.0	M25
32 Pole + earth	70.300.3253.0	70.310.3253.0	70.350.3235.0	M32	70.352.3235.0	M32	-	-	-	-






	Socket Insert	Plug Insert	Open Entry Base	Double Entry Base		Open Entry Base with Protective Cover	Double Entry Base with Protective Cover	
Description	**Part No.**	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Part No.**	**Gland**
10 Pole + earth	70.300.1040.0	70.310.1040.0	70.320.1028.0	70.330.1035.0	M20	70.325.1028.0	70.340.1035.0	M20
16 Pole + earth	70.300.1640.0	70.310.1640.0	70.320.1628.0	70.330.1635.0	M25	70.325.1628.0	70.340.1635.0	M25
24 Pole + earth	70.300.2440.0	70.310.2440.0	70.320.2428.0	70.330.2435.0	M25	70.325.2428.0	70.340.2435.0	M25
32 Pole + earth	70.300.3253.0	70.310.3253.0	*70.320.3228.0	-	-	-	-	-

Single lock levers, IP54 (IP65 with appropriate IP68 cable glands)






	Socket Insert	Plug Insert	Narrow Entry Hood		Top Entry Hood		Single Entry Base		Single Entry Base with Protective Cover	
Description	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**
6 Pole + earth	70.300.0640.0	70.310.0640.0	70.350.0635.0	M20	70.352.0635.0	M20	-	-	-	-
48 Pole + earth	70.300.4840.0	70.310.4840.0	70.350.4835.0	M32	70.352.4835.0	M32	70.331.4835.0	M32	70.344.4835.1	M40






	Socket Insert	Plug Insert	Open Entry Base	Double Entry Base		Open Entry Base with Protective Cover	Double Entry Base with Protective Cover	
Description	**Part No.**	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Part No.**	**Gland**
6 Pole + earth	70.300.0640.0	70.310.0640.0	70.320.0628.0	70.330.0635.0	M20	70.325.0628.0	70.340.0635.0	M20
48 Pole + earth	70.300.4840.0	70.310.4840.0	*70.320.4828.0	-	-	*70.325.4828.0	-	-

*** These items have metal levers.**

Metric thread	For cable O.D.
M20	3 - 14.5mm
M25	7.5 - 17.5mm
M32	15 - 26.5mm
M40	19 - 27mm

Multipole Connectors

wieland

revos Coupling Hoods

For cable to cable coupling. Metric and PG gland entries

Coupling hoods with Gasket and Levers






Description	(Plastic lever) Part No.	Gland	(Plastic levers) Part No.	Gland	(Metal levers) Part No.	Gland	(Metal levers) Part No.	Gland	Eexi trumpet (Metal lever) Part No.	Gland	Eexi trumpet (Metal levers) Part No.	Gland
6 Pole + earth	70.372.0635.0	M20	-	-	99.547.0000.6	M20	70.372.0628.0	PG13.5	99.741.3329.7	M20	-	-
10 Pole + earth	-	M20	70.372.1035.0	M20	99.548.0000.6	M25	99.700.0120.5	PG21	-	-	99.743.3329.7	M20
10 Pole + earth	-	M20	70.372.1028.0	PG16	99.548.0000.6	M25	99.700.0120.5	PG21	-	-	99.743.3329.7	M20
16 Pole + earth	-	M25	70.372.1635.0	M25	99.549.0000.6	M32	70.372.1628.0	PG21	-	-	99.745.3329.7	M25
24 Pole + earth	-	M25	70.374.2435.0	M32	-	-	-	-	-	-	99.748.3329.7	M32

PG thread	For cable O.D.
PG13.5	6 - 14mm
PG16	7 - 16mm
PG21	11 - 21mm

Metric thread	For cable O.D.
M20	3 - 14.5mm
M25	7.5 - 17.5mm
M32	15 - 26.5mm

revos Mini

Metric Gland Entries

Thanks to its compact contact inserts with 3 to 8 poles *revos* MINI fits into mechanical, control and switchgear engineering applications as well as small motors and lighting technology.

Specifications:

- Screw connect 600V, 10A
- Crimp connect 50V,10A

Screw connect 600V, 10A - crimp connect 50V, 10A






Size	Socket insert screw clamp Part No.	Plug insert screw clamp Part No.	Socket insert crimp w/o contacts Part No.	Plug insert crimp w/o contacts Part No.	Basic single lever Part No.	Gland	Basic double lever Part No.	Gland
3 Pole + earth	73.300.0353.0	73.310.0353.0	-	-	76.350.0736.0	M20	76.352.0736.0	M20
4 Pole + earth	73.300.0453.0	73.310.0453.0	-	-	76.350.0736.0	M20	76.352.0736.0	M20
7 Pole + earth	-	-	*73.700.0753.0	*73.710.0753.0	76.350.0736.0	M20	76.352.0736.0	M20




Size	Closed bottom base Part No.	Gland	Open entry base Part No.	Open entry angled base Part No.	Coupling hood Part No.	Gland
3 Pole + earth	76.322.0736.0	M20	76.320.0729.0	76.321.0729.0	76.372.0736.0	M20
4 Pole + earth	76.322.0736.0	M20	76.320.0729.0	76.321.0729.0	76.372.0736.0	M20
7 Pole + earth	76.322.0736.0	M20	76.320.0729.0	76.321.0729.0	76.372.0736.0	M20

Metric thread	For cable O.D.
M20	3 - 14.5mm

Multipole Connectors

wieland

revos POWER inserts

Contact inserts for currents greater than 16A

revos POWER inserts are available in various configurations from 35A up to 100A current ratings. Voltage ratings from 400V to 690V are available in various mixed pin arrangements.


Voltage	400V
Current	35A
No. of pins	6 Pole + earth
Hood/base size	16 Pole

Part No.	Gender
70.210.0653.0	Male
70.200.0653.0	Female


Voltage	690V / 400V
Current	82A
No. of pins	4 Pole + earth
Hood/base size	16 Pole

Part No.	Gender
72.218.0453.0	Male
72.208.0453.0	Female


Voltage	690V
Current	4x35A + 6x16A
No. of pins	4 / 6 + earth
Hood/base size	16 Pole

Part No.	Gender
72.215.1053.0	Male
72.205.1053.0	Female


Voltage	690V / 400V
Current	6x40A + 6x16A
No. of pins	6 / 6 + earth
Hood/base size	16 Pole

Part No.	Gender
72.215.1253.0	Male
72.205.1253.0	Female


Voltage	690V / 400V
Current	4x82A + 2x16A
No. of pins	4 / 6 + earth
Hood/base size	16 Pole

Part No.	Gender
72.215.0653.0	Male
72.205.0653.0	Female


Voltage	690V / 400V
Current	3x100A + 3x40A + 6x16A
No. of pins	3 / 3 / 6 + earth
Hood/base size	24 Pole

Part No.	Gender
72.213.1253.0	Male
72.203.1253.0	Female

revos Accessories






To Suit	Plastic spare levers Part No.	Cover for hoods/bases with no levers Part No.	Cover for hoods/bases with double levers Part No.	Metric trumpet glands Part No.	Thread	PG trumpet glands Part No.	Thread	Coding pins Part No.
6 Pole + earth	Z5.564.1753.0	Z7.409.7056.0	07.409.7056.0	Z5.507.9621.0	M20	Z5.508.8528.0	PG13.5	05.592.0621.0
10 Pole + earth	Z5.564.1253.0	Z7.409.7156.0	07.409.7156.0	Z5.507.9721.0	M25	Z5.508.6928.0	PG16	05.592.0621.0
16 Pole + earth	Z5.564.1253.0	Z7.409.7256.0	07.409.7256.0	Z5.507.9821.0	M32	Z5.508.7028.0	PG21	05.592.0621.0
24 Pole + earth	Z5.564.1253.0	Z7.409.7356.0	07.409.7356.0	-		-	-	05.592.0621.0






Crimp tool for *Revos* HD	Crimping Die "E"	Contact guide "2"	Extraction tool	Crimp Contacts 0.15mm² - 1.5mm² Socket	Plug
95.101.0800.0	05.502.2400.0	05.502.3200.0	05.502.0000.0	02.124.1029.0	05.544.1029.0

Metric thread	for cable O.D.
M20	3 - 14.5mm
M25	7.5 - 17.5mm
M32	15 - 26.5mm

PG thread	for cable O.D.
PG13.15	6 - 14mm
PG16	7 - 16mm
PG21	11 - 21mm

Multipole Connectors

wieland

revos HD

Crimp Connection, 250V, 10A

Size	Housing size
40 Pole	*Revos* basic 16 Pole
64 Pole	*Revos* basic 24 Pole






Description	Socket Insert for Crimp Contacts Part No.	Plug Insert for Crimp Contacts Part No.	Narrow Entry Hood with Single Lever Part No.	Gland	Top Entry Hood with Single Lever Part No.	Gland	Open Entry Base with Single Lever Part No.	Double Entry Base with Single Lever Part No.	Gland
40 Pole + earth	73.700.4058.0	73.710.4058.0	76.350.4035.0	M25	76.352.4035.0	M25	76.320.4028.0	76.330.4035.0	M25
64 Pole + earth	73.700.6458.0	73.710.6458.0	76.350.6435.0	M25	76.352.6435.0	M25	76.320.2428.0	76.330.6435.0	M25

revos HD

Screw Connection, 250V, 16A, Crimp connection 250V 10A

Single lever version, IP54 (IP65 with appropriate IP68 cable gland)






Description	Female insert Part No.	Male insert Part No.	Top entry hood Part No.	Thread	Narrow entry hood Part No.	Thread	Open entry base Part No.	Double entry base Part No.	Gland
10 Pole + earth	73.300.1053.0	73.310.1053.0	76.352.1535.0	M20	76.350.1535.0	M20	76.320.1528.0	70.330.1535.0	M20
16 Pole + earth	73.300.1653.0	73.310.1653.0	76.352.2535.0	M20	76.353.1535.2	M25	76.320.2528.0	76.330.2535.0	M20
15 Pole + earth	73.700.1553.0	73.710.1553.0	76.350.1535.0	M20	76.352.1535.0	M20	76.320.1528.0	76.330.1535.0	M20
25 Pole + earth	73.700.2553.0	73.710.2553.0	76.350.2535.0	M20	76.352.2535.0	M20	76.320.2528.0	76.330.2535.0	M20

Double lever version, IP54 (IP65 with appropriate IP68 cable gland)






Description	Female insert Part No.	Male insert Part No.	Top entry hood Part No.	Thread	Narrow entry hood Part No.	Thread	Open entry base Part No.	Double entry base Part No.	Gland
32 Pole + earth	73.300.3253.0	73.310.3253.0	73.352.3235.0	M25	73.350.3235.0	M25	73.320.3228.0	73.334.3235.0	M32
32 Pole + earth	-	-	73.354.3235.0	M32	73.353.3235.0	M32	-	-	-

revos HD Coupling Hoods

Single and Double Lever version IP54 (IP65 with appropriate IP68 cable gland)

Single lever version, IP54 (IP65 with appropriate IP68 cable gland)


Description	Coupling hood with ingle lever Part No.	Coupling hood with double levers Part No.	Thread
10 Pole + earth	76.372.1535.0	-	M20
16 Pole + earth	76.372.2535.0	-	M20
15 Pole + earth	76.372.1535.0	-	M20
25 Pole + earth	76.374.2535.0	-	M25
32 Pole + earth	-	73.372.3235.0	M25
50 Pole + earth	-	73.374.3235.0	M32

Size	Housing size
15 Pole	Revos HD 10 Pole
25 Pole	Revos HD 16 Pole
50 Pole	Revos HD 32 Pole

Metric thread	for cable O.D.
M20	3 - 14.5mm
M25	7.5 - 19mm
M32	15 - 26.5mm

revos EEx ia
multipole connectors

Industrial multipole connectors for hazardous areas

revos Ex industrial connectors are designed specifically for use in hazardous locations zone 1.

The use of intrinsically safe circuits (EEx ia I) has been certified by the laboratory BVS. The housing of the revos Ex connectors are made of die-cast zinc to exclude sparks and thus to enable the use in methane-coal dust atmospheres.

Features:

- Die cast zinc alloy
- Small design
- Hood to hood connection
- Only metal locking lever
- Approval according ATEX / BVS (EEx ia I)
- Open and closed housings
- 6 + 48 pole single lever
- 10, 16, 24 double lever

RAILWAY

Mining transportation

MINING

Mining industry

COMMUNICATION

Intrinsically safe transmission of signals

Multipole Connectors

wieland

revos Ex - Metric

Intrinsically safe for hazardous areas, 90V, 16A

Double lock levers, IP54

** For coupling hoods, refer to page 117 **






	Top entry hood trumpet gland strain relief		Top entry hood centric strain relief		Narrow entry hood trumpet gland strain relief		Narrow entry hood centric strain relief		Narrow entry hood with locking levers		Top entry hood with locking levers	
Description	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**
10 Pole + earth	70.352.1036.3	M20	70.352.1036.4	M20	-	-	-	-	*99.743.3329.7	M25	99.743.3329.7	M20
16 Pole + earth	70.352.1636.3	M25	-	-	70.353.1636.3	M32	70.353.1636.4	M25	*99.735.3329.7	M25	99.745.3329.7	M25
24 Pole + earth	70.354.2436.3	M32	-	-	70.350.2436.3	M25	70.350.2436.4	M25	*99.737.3329.7	M25	*99.748.3329.7	M32

*Contrary to picture, these items have centric strain relief glands.






	Socket insert	Plug insert	Open entry base	Double entry base		Open entry base with protective cover	Double entry base with protective cover	
Description	**Part No.**	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Part No.**	**Gland**
10 Pole + earth	72.300.1053.9	72.310.1053.9	70.320.1028.9	70.330.1036.0	M20	70.325.1028.9	70.340.1036.0	M20
16 Pole + earth	72.300.1653.9	72.310.1653.9	70.320.1628.9	-	-	70.325.1628.9	-	-
24 Pole + earth	72.300.2453.9	72.310.2453.9	70.320.2428.9	70.330.2436.0	M25	70.325.2428.9	70.340.2436.0	M25

Single lock levers, IP54

** For coupling hoods, refer to page 117 **






	Top entry hood trumpet gland strain relief		Top entry hood centric strain relief		Narrow entry hood trumpet gland strain relief		Narrow entry hood centric strain relief		Single entry base		Single entry base with protective cover	
Description	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**	**Part No.**	**Gland**
6 Pole + earth	70.352.0636.3	M20	-	-	70.350.0636.3	M20	70.350.0636.4	M20	-	-	-	-
48 Pole + earth	70.352.4836.3	M32	70.354.4836.4	M40	70.350.4836.3	M32	70.353.4836.4	M40	70.331.4836.3	M32	70.344.4836.4	M40






	Socket insert	Plug insert	Open entry base	Double entry base		Open entry base with protective cover	Double entry base with protective cover	
Description	**Part No.**	**Part No.**	**Part No.**	**Part No.**	**Gland**	**Part No.**	**Part No.**	**Gland**
6 Pole + earth	72.300.0653.9	72.310.0653.9	70.320.0628.9	70.330.0636.0	M20	70.325.0628.9	70.340.0636.0	M20
48 Pole + earth	72.300.4853.9	72.310.4853.9	70.320.4828.9	-		70.325.4828.9	-	-

Metric thread	For cable O.D.
M20	3 - 14.5mm
M25	7.5 - 17.5mm
M32	15 - 28.5mm
M40	24 - 34mm

Servo Connectors

EPIC® Circon LS1

Circular and mixed power connector

EPIC® LS1 circular and mixed power connectors have a standard M23 threaded connection housing. They are ideal for power transmission and servo drive applications in the plastics, printing, analytical instrument, robotic, machine tool industries, and any other industrial or commercial application where a compact IP68 rated connector with high voltage and current capability are required.

EPIC® LS1 Connectors are available in five housing arrangements and two contact configurations. Common to all arrangements are a rugged nickel plated zinc body, plastic contact insulation body and sleeve, and gold plated electrical contacts (included with the connector part number). Cable mounted arrangements also include an integrated EMC shield ring, cable clamp and seal.

These connectors are offered with a 5+PE contact configuration for power distribution (5 contacts plus Earth rated at 630 volts and 22 amps), and a 3+PE+4 contact configuration for mixed power and signal requirements for servo motor with brake and feedback applications (3 contacts plus Earth rated 630 volts and 22 amps and 4 contacts rated 250 volts and 7 amps).

5 + PE

LS1 A1	LS1 A3	LS1 A6
76003000	44420058	76083000

LS1 D6	LS1 D6 short	LS1 F6
73000005	76123100	76133000
10.5 – 15.5mm clamp	7.5 – 15.5mm clamp	7.5 – 15.5mm clamp

3 + PE + 4

LS1 A1	LS1 A3	LS1 A6
76004000	44420056	76084000

LS1 D6	LS1 D6 short	LS1 F6
76124000	76124100	76134000
7.5 – 15.5mm clamp	7.5 – 15.5mm clamp	7.5 – 15.5mm clamp

Spare Contacts

Part No.	Replacement crimp contacts	To suit LS1 connector style
74033000	1 mm male 0.14-1.0 mm²	A1, A3
74033100	2 mm male 0.5-2.5 mm²	A1, A3
74034500	1 mm female hyper boloid 0.14-1.0mm²	D6, A6
74034600	2 mm female hyper boloid 0.5-2.5mm²	D6, A6
74034000	1 mm male 0.14-1.0mm²	F6
74034100	2 mm male 0.5-2.5mm²	F6

LS1 & M23 Tooling

Part No.	Description	Notes
1148000	Crimping Tool	Includes tool case
1148300	Locator for EPIC Circon	Must be ordered separately
75017400	LS1 Removal Tool for 1mm contacts	For type A1
75017500	LS1 Removal Tool for 2mm contacts	For type A1
44420078	M23 Removal tool for inserts	For type A, B, G, O

Servo Connectors

EPIC® Circon M23

Circular signal connector

EPIC® CIRCON M23 circular signal connectors have a standard M23 threaded connection housing. They are offered in coupler, connector, and panel mount configurations that satisfy simple cable-to-cable and cable-to-machine or control panel requirements.

The connectors are available with insert configurations for 9, 12, 16, and 17 gold plated crimp or solder contacts. Arrangements up to 150 volts and 14 amps, 360° EMC shield, IP 68 seal.

They are ideal for control signal transmission and servo drive encoder feedback applications in the plastics, printing, analytical instrument, robotic, and machine tool industries, and any other industrial or commercial application where a compact, rugged connector is required.

Cross sections:
1 mm contacts:
crimp: 0.14 – 1.0 mm²
solder: up to 1 mm²

Temperature Range:
-25°C to +125°C

Rated Voltage:
9 poles: 150V
12 poles: 100V
16 poles: 100V
17 poles 50V

Rated Current:
7A for 1.0mm²

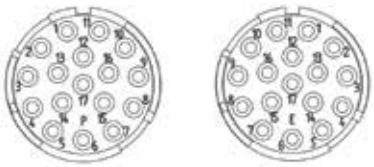
Panel Mount

Cable connector

Orientation	M23 A1	M23 A3	M23 D6	M23 F6
+20° RED	72004200	–	44420038	44420041
N Black	72004000	44420054	44420037	44420040
-20° BLUE	72004100	–	44420036	44420039

Inserts without contacts

No. of poles	P – Part anti-clockwise rotation	E – Part clockwise rotation
9	73002724	73002730
12	73002713	73002719
16	73002700	73002706
17	73008010	73008500



Contact arrangement:
view from mating side

The inserts are suitable for both male and female contacts.
For a complete connection, you need one P insert and one E insert.
P-Part = left turning = anti-clockwise
E-Part = right turning = clockwise

Contacts

Part No.	Description	Style
72400000	1 mm male crimp	EPIC M23 SCEM 1 mm AU 0.14 - 1.0
74200600	1 mm female slot crimp	EPIC M23 BCEMS 1 mm AU 0.14 - 1.0
72402000	1 mm male solder	EPIC M23 SLEM 1 mm AU 1.0
72402600	1 mm female slot solder	EPIC M23 BLEMS 1 mm AU 1.0

Multi Purpose Connectors

wieland

gesis® RST® 20i3

3 Pole, 20A, IP+ rated connector system

Gesis IP+ RST series

Rain, hail, frost, gale force winds - a standard electrical installation connector cannot cope with these conditions. The solution is *gesis*® RST® IP+. The connector system guarantees error-free connections, even in the most unfavourable environmental conditions.

Degree of protection achieved:

IP65 - jet water
IP66 - powerful jet water
IP67 - temporary immersion
IP68 - lasting immersion (3m:2h)
IP69 - high pressure water jets to DIN 400 50

Technical data:

- IP66/68 (3m:2h) IP69K
- 250 V / 20 A
- Screw connection for strandard wires without ferrules
- Wire sizes 0.75 - 6.0mm²
- Halogen-free PA material
- UV-resistant
- Temperature: -40°C to +100°C
- IEC, AS/NZS 61535.1
- Lloyd's registered

Applications:

- Underground tunnels
- Underground parking
- Indoor and outdoor lighting
- Solar technology
- Outdoor festive and event lighting
- Electric pumps and motors
- Construction site lighting
- Ship building

Inline socket (female)

6-10 mm clamping range

Part No.	Connection type
96.031.4053.1	Screw clamp

Panel socket (female)

M25 thread

Part No.	Connection type
96.031.5053.1	Screw clamp

Right angle socket (female)

M25 thread

Part No.	Connection type
96.033.6053.1	Screw clamp

Inline plug (male)

6-10 mm clamping range

Part No.	Connection type
96.032.4053.1	Screw clamp

Panel plug (male)

M25 thread

Part No.	Connection type
96.032.5053.1	Screw clamp

Right angle plug (male)

M25 thread

Part No.	Connection type
96.034.6053.1	Screw clamp

Socket splitter (female)

6-10 mm clamping range

Part No.	Connection type
96.031.4253.1	Screw clamp

Distribution

1 male in - 3 female out

Part No.	Connection type
96.030.0153.1	na

Locking device

Spare part to suit 3+5 pole

Part No.	Connection type
05.583.2953.3	na

Manual release button

Optional

Part No.	Connection type
05.564.8653.1	na

Protective cover

Suit plug

Part No.	Connection type
99.416.6205.2	na

Protective cover

Suit socket

Part No.	Connection type
99.414.6205.2	na

*** NOT SUITABLE FOR PERMANENT OPERATION UNDER WATER**

Multi Purpose Connectors

wieland

gesis® RST 20i5

5 Pole, 20A, IP 68 rated connector system

Degree of protection achieved:

IP65 - jet water
IP66 - powerful jet water
IP67 - temporary immersion
IP68 - lasting immersion (3m:2h)
IP69 - high pressure water jets to DIN 400 50

Inline socket (female)
10-14 mm clamping range

Part No.	Connection type
96.051.4153.1	Screw clamp

Panel socket (female)
M25 thread

Part No.	Connection type
96.051.5053.1	Screw clamp

Right angle socket (female)
M25 thread

Part No.	Connection type
96.053.6053.1	Screw clamp

Inline plug (male)
10-14 mm clamping range

Part No.	Connection type
96.052.4153.1	Screw clamp

Panel plug (male)
M25 thread

Part No.	Connection type
96.052.5053.1	Screw clamp

Right angle plug (male)
M25 thread

Part No.	Connection type
96.054.6053.1	Screw clamp

Socket splitter (female)
6-10 mm clamping range

Part No.	Connection type
96.051.4353.1	Screw clamp

Distribution
Special build

Part No.	Connection type
On request	na

Mounting plate
Suit splitter connector

Part No.	Connection type
01.006.1553.1	na

Manual release button
Optional

Part No.	Connection type
05.564.8653.1	na

Protective cover
Suit plug

Part No.	Connection type
99.532.0000.7	na

Protective cover
Suit socket

Part No.	Connection type
99.530.0000.7	na

Multi Purpose Connectors

wieland

gesis® RST® 25i3 and RST® 25i5

3 - 5 Pole, 25A, IP 68 rated connector system

flame retardant · uv resistant · halogen free · submersible

Degree of protection achieved:

IP65 - jet water
IP66 - powerful jet water
IP67 - temporary immersion
IP68 - lasting immersion (3m:2h)
IP69 - high pressure water jets to DIN 400 50

With its 3 and 5 pole connector system RST 25i3/i5, Wieland offers the optimal solution for AC connections. Preassembled components and IP68 protection enable a fast and safe installation, even under the most adverse conditions. The RST AC system includes connectors for on-site field wiring and device connectors for inverter housings (leading inverter manufacturers already deliver their product with RST connectors installed).

Inverters are often installed in groups, with the same distance between them. The resulting cable lengths repeat from system to system. The AC side can now be installed similarly to the traditional DC module to module interconnection method.

This concept effectively reduces the logistics and installation times to a minimum. This advantage pays off not only for initial installation, but for any subsequent service or add-on work. For servicing, individual inverters can be disconnected from the mains supply by simply unplugging them. The electrical contacts are touch-protected against accidental contact. A quick installation and return to operation ensures a high yield system.

Some leading inverter manufacturers also use a 3 pole, 20 Amp version.

Female cable coupler	
10-14 mm cable OD	96.031.4154.3
13-18 mm cable OD	96.031.4554.3

Male cable coupler	
10-14 mm cable OD	96.032.4154.3
13-18 mm cable OD	96.032.4554.3

Female panel receptacle M25	
Part number	96.031.4054.3

Male panel receptacle M25	
Part number	96.032.5054.3

Female cable coupler	
10-14 mm cable OD	96.051.4154.3
13-18 mm cable OD	96.051.4554.3

Male cable coupler	
10-14 mm cable OD	96.052.4154.3
13-18 mm cable OD	96.052.4554.3

Female panel receptacle M25	
Part number	96.051.5054.3

Male panel receptacle M25	
Part number	96.052.5054.3

Solar Connectors

Multi-Contact MC
STÄUBLI GROUP

MC3 Connector System

EN50521 Compliant, IP67, 1000V DC, 30A

Female cable coupler	
Type	PV-KBT3 II
Part No.	32.0002
Conductor size (mm²)	2 - 4
Cable OD (mm)	4.9 - 7.1

Female cable coupler	
Type	PV-KBT3/6III
Part No.	32.0006
Conductor size (mm²)	6
Cable OD (mm)	6.5 - 9

Female panel receptacle	
Type	PV-ADBP3/GWD
Part No.	32.0052
Conductor size (mm²)	2 - 4

Male cable coupler	
Type	PV-KST3 II
Part No.	32.0003
Conductor size (mm²)	2 - 4
Cable OD (mm)	4.9 - 7.1

Male cable coupler	
Type	PV-KST3/6III
Part No.	32.0007
Conductor size (mm²)	6
Cable OD (mm)	6.5 - 9

Male panel receptacle	
Type	PV-ADSP3/GWD
Part No.	32.0053
Conductor size (mm²)	2 - 4

Branch socket	
Type	PV-AZB3
Part No.	32.0008

Branch plug	
Type	PV-AZS3
Part No.	32.0009

MC3 sealing caps	
Suits female	32.0720
Suits male	32.0721

Preassembled leads

Our preassembled leads are made with high quality ÖLFLEX® PV1-F Solar cable fitted with genuine male and female Multi-Contact connectors. Custom lengths and variations on plug options can be manufactured upon request.

Preassembled leads	4mm² leads	6mm² leads
2 metre	XPMC3PV1F4/2M	XPMC3PV1F6/2M
5 metre	XPMC3PV1F4/5M	XPMC3PV1F6/5M
8 metre	XPMC3PV1F4/8M	XPMC3PV1F6/8M
10 metre	XPMC3PV1F4/10M	XPMC3PV1F6/10M
12 metre	XPMC3PV1F4/12M	XPMC3PV1F6/12M
15 metre	XPMC3PV1F4/15M	XPMC3PV1F6/15M

For more information on Solar products, please refer to the Solar Section on page 178 of this catalogue.

Field assembly tool	
PV-RWZ3	32.6050

Crimp tool	
PV-CZ	32.6008

Solar Connectors

Multi-Contact

STÄUBLI GROUP

MC4 Connector System

EN50521 Compliant IP67, 1000V DC, 30A

Female cable coupler	
Type	PV-KBT4/6 I
Part No.	32.0014P0100
Conductor size (mm²)	4 - 6
Cable OD (mm)	3 - 6

Female cable coupler	
Type	PV-KBT4/6 II
Part No.	32.0016P0001
Conductor size (mm²)	4 - 6
Cable OD (mm)	5.5 - 9

Female cable coupler	
Type	PV-KBT4/10 II
Part No.	32.0034P0001
Conductor size (mm²)	10
Cable OD (mm)	5.5 - 9

Male cable coupler	
Type	PV-KST4/6 I
Part No.	32.0015P0100
Conductor size (mm²)	4 - 6
Cable OD (mm)	3 - 6

Male cable coupler	
Type	PV-KST4/6 II
Part No.	32.0017P0001
Conductor size (mm²)	4 - 6
Cable OD (mm)	5.5 - 9

Male cable coupler	
Type	PV-KST4/10 II
Part No.	32.0035P0001
Conductor size (mm²)	10
Cable OD (mm)	5.5 - 9

Branch socket	
Type	PV-AZB4
Part No.	32.0018

Branch plug	
Type	PV-AZS4
Part No.	32.0019

MC4 sealing caps	
Suits female	32.0716
Suits male	32.0717

Female panel receptacle	
2.5mm² conductor	32.0076P0001
4-6mm² conductor	32.0078P0001

Preassembled leads	4mm² leads	6mm² leads
2 metre	XPMC4PV1F4/2M	XPMC4PV1F6/2M
5 metre	XPMC4PV1F4/5M	XPMC4PV1F6/5M
8 metre	XPMC4PV1F4/8M	XPMC4PV1F6/8M
10 metre	XPMC4PV1F4/10M	XPMC4PV1F6/10M
12 metre	XPMC4PV1F4/12M	XPMC4PV1F6/12M
15 metre	XPMC4PV1F4/15M	XPMC4PV1F6/15M

Male panel receptacle	
2.5mm² conductor	32.0077P0001
4-6mm² conductor	32.0079P0001

MC4 crimp tool	
PV-CZM19100A	32.6020.19100

Open end spanner (pair)	
PV-MS	32.6024

DALI Connector System GST18i5

wieland

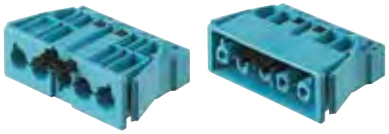
gesis® System

Market leading plug and play soft wiring system

The innovative *gesis*® connector system reduces the requirements of hard wiring by means of pre-assembled installation couplers that simply have to be plugged together. The electrical distribution systems and even signal and bus systems can therefore be integrated into the building in a pluggable design. From the distribution board to the occupants electrical plant, equipment and appliances. The *gesis*® connector system, or as we like to call it; *gesis*® plug and play, is cost-effective in materials and labour and is environmentally sound.

The *gesis*® GST connector system is approved to AS/NZS 61535

Snap in fittings



Male and female connectors

T distributors

Connecting cable assemblies

T distributor stackable

Hard wiring system

- Time and labour intensive
- Limited flexibility
- Building wired for today - not tomorrow
- High material wastage

Soft wiring system - *gesis*® plug & play

- Time savings beginning with the initial installation
- Pre-assembled pluggable components for power and lighting
- Fast implementation of electrical designs and concepts
- Future-proofs building requirements
- Perfect for office and retail store fitouts
- Environmentally sound

MENNEKES®
Plugs for the world

Wiring devices for a world of applications

Features and benefits

Receptacles
Compact units are ideal for panel mount installations. Receptacles have an oversized ground sleeve to prohibit mismating of different voltages.

Plugs
In-line plugs feature non-metallic housings with locking rings and gaskets for watertight protection.

Inlets
Ideal for generator or motor plug interface applications, inlets are compact and can be surface mounted or mounted with available back boxes.

Connectors
In-line connectors feature dead-front construction for safety and use split brass solid sleeves.

CEEform Connectors

MENNEKES®

IP 67 Plugs & Sockets for Reefer Containers

IEC60309-1, IEC60309-2

In container terminals, loading and transfer stations, ports, airports, in warehouses and on board of ships.

Whatever the application, MENNEKES plugs and receptacles prove their worth. Nickel plated contacts and highly heat resistant contact carriers guarantee increased protection against corrosion and overheating.

Receptacles
with highly heat resistant contact carrier and nickel plated contacts, 4 external fixings, one cable entry at top and one blind cable entry (can be cut out) at bottom.

Part No.	Description
2644	4 Pole 32A Receptacles

Receptables
with highly heat resistant contact carrier and nickel plated contacts, switched, with mechanical DUO interlock, may be padlocked in the OFF position.

Part No.	Description
5792A	4 Pole 32A Receptacles

Receptacles
with highly heat resistant contact carrier and nickel plated contacts, switched, with mechanical DUO interlock and DIN rail, may be padlocked in the OFF position.

Part No.	Description
5946A	4 Pole 32A Receptacles

Panel mounted receptacles
with highly heat resistant contact carrier and nickel plated contacts.

Part No.	Description
2123A	4 Pole 32A Panel receptacles

Plugs
single part body, screw terminals, with highly heat resistant contact carrier and nickel plated contacts, cable gland and sealing.

Part No.	Description
2175A	4 Pole 32A Plugs
2175B	4 Pole 32A Plugs

Connectors
with highly heat resistant contact carrier and nickel plated contacts, single part body, screw terminals, cable gland and sealing.

Part No.	Description
2177A	4 Pole 32A Connectors

CEEform Connectors

MENNEKES®

IP 44 plugs and sockets

IEC60309-1, IEC60309-2

Mennekes CEE plugs and receptacles have survived the harshest testing, and are certified by accredited institutions according to relevant national and international standards.

Suitable for indoor and outdoor use applications, Mennekes CEE plugs are polarised and non-reversible. With current ratings available up to 125 amps, they all feature impact and chemical-resistant, non-metallic housings. The range is extensive.

Please contact DKSH for additional requirements not listed here.

Panel mounted receptacles - Straight

Amp	Poles	110V	230V	400V
Colour code				
16	3	1365	1366	1367
16	4	1388	1389	1390
16	5	1384	1386	1385
32	3	1394	1395	1396
32	4	1397	1398	1399
32	5	3449	3454	3451

Panel mounted receptacles - Angled 20°

Amp	Poles	110V	230V	400V
Colour code				
63	3	1146	1147	1148
63	4	1149	1150	1151
63	5	1153	1154	1155
125	3	-	-	-
125	4	-	-	-
125	5	-	-	-

Panel mounted inlets

Amp	Poles	110V	230V	400V
Colour code				
16	3	810	812	—
16	4	—	837	813
16	5	—	—	815
32	3	816	817	—
32	4	—	838	819
32	5	—	—	821

Plugs AM-TOP®

Single part body, screw terminals

Amp	Poles	110V	230V	400V
Colour code				
16	3	247	248	249
16	4	250	251	252
16	5	256	257	3
32	3	259	260	261
32	4	262	263	264
32	5	268	269	4

Connectors AM-TOP®

Single part body, screw terminals

Amp	Poles	110V	230V	400V
Colour code				
16	3	509	510	511
16	4	512	513	514
16	5	518	519	5
32	3	521	522	523
32	4	524	525	526
32	5	530	531	6

Panel mounted inlets

Amp	Poles	110V	230V	400V
Colour code				
63	3	822	1981	—
63	4	—	1984	1982
63	5	—	—	1688
125	3	—	—	—
125	4	—	—	—
125	5	—	—	—

Plugs PowerTOP Xtra

With rubberised grip area, for toughest conditions

Amp	Poles	110V	230V	400V
Colour code				
63	3	13101	13102	—
63	4	—	13105	13106
63	5	—	13111	13112
125	3	—	—	—
125	4	—	—	—
125	5	—	—	—

Connectors ProTOP Xtra

With rubberised grip area, for toughest conditions

Amp	Poles	110V	230V	400V
Colour code				
63	3	14101	14102	—
63	4	—	14105	14106
63	5	—	14111	14112
125	3	—	—	—
125	4	—	—	—
125	5	—	—	—

CEEform Connectors

MENNEKES®

IP 67 plugs and sockets

IEC60309-1, IEC60309-2

Mennekes CEE plugs and receptacles have survived the harshest testing, and are certified by accredited institutions according to relevant national and international standards.

Suitable for indoor and outdoor use applications, Mennekes CEE plugs are polarised and non-reversible. With current ratings available up to 125 amps, they all feature impact and chemical-resistant, non-metallic housings. The range is extensive.

Please contact DKSH for additional requirements not listed here.

Panel mounted receptacles - Straight

Amp	Poles	110V	230V	400V
Colour code				
16	3	217	218	219
16	4	220	221	222
16	5	226	227	228
32	3	229	230	231
32	4	232	233	234
32	5	238	239	240

Panel mounted receptacles - Angled 20°

Amp	Poles	110V	230V	400V
Colour code				
63	3	2179	2180	2181
63	4	203	204	205
63	5	207	208	209
125	3	—	3575	—
125	4	210	211	212
125	5	214	215	216

Panel mounted inlets

Amp	Poles	110V	230V	400V
Colour code				
16	3	825	826	—
16	4	—	839	827
16	5	—	—	829
32	3	830	831	—
32	4	—	840	832
32	5	—	—	834

Plugs AM-TOP®

Single part body, screw terminals

Amp	Poles	110V	230V	400V
Colour code				
16	3	277	278	279
16	4	280	281	282
16	5	286	287	288
32	3	289	290	291
32	4	292	293	294
32	5	298	299	300

Connectors AM-TOP®

Single part body, screw terminals

Amp	Poles	110V	230V	400V
Colour code				
16	3	539	540	541
16	4	542	543	544
16	5	548	549	550
32	3	551	552	553
32	4	554	555	556
32	5	560	561	562

Panel mounted inlets

Amp	Poles	110V	230V	400V
Colour code				
63	3	835	836	—
63	4	—	3704	3656
63	5	—	—	3658
125	3	—	3665	—
125	4	—	3413	3583
125	5	—	—	1983

Plugs PowerTOP Xtra

With rubberised grip area, for toughest conditions

Amp	Poles	110V	230V	400V
Colour code				
63	3	13201	13202	13203
63	4	13204	13205	13206
63	5	13210	13211	13212
125	3	13215	13216	—
125	4	13217	13218	13219
125	5	13223	13224	13225

Connectors PowerTOP Xtra

With rubberised grip area, for toughest conditions

Amp	Poles	110V	230V	400V
Colour code				
63	3	14201	14202	14203
63	4	14204	14205	14206
63	5	14210	14211	14212
125	3	14215	14216	—
125	4	14217	14218	14219
125	5	14223	14224	14225

Single Pole Connectors

Multi-Contact MC
STÄUBLI GROUP

125A, 600V

Engineered for high current industrial applications

Panel receptacles and couplers with nominal contact diameters of Ø 6mm are unipolar plug connectors fitted with proven MC-Multilam technology. These connectors are made of brass (with Cu crimp sleeves) silver plated and plastic insulated.

Designed for continuous current loading as high as 125A, they are used primarily as couplers and connection elements in laboratories, testing facilities, schools and industry for higher-power connections.

The MC Locking system (AR) operates on the "push-pull" principle. It is self – locking when connected. Disconnection is effected by an axially displaceable coupling ring: first push, then pull to disconnect.

Sockets

Panel Socket ID/B6AR-N-S

Connection size	Mating	Part No.
M6 Thread	B	14.0010.**

Panel Socket - AB6AR-S/9.4

Connection size	Mating	Part No.
M6 Thread	B	14.0023.**

Panel Socket - IB6AR

Connection size	Mating	Part No.
M6 Thread	B	

Panel Socket - ID/B6AR-N...S

Cable size (mm²)	Mating	Part No.
10	B	14.0013.**
16	B	14.0014.**
25	B	14.0017.**

Inline Socket - KBT6AR-N/..S

Cable size (mm²)	Mating	Part No.
10	A and B	15.0017.**
16	A and B	15.0020.**
25	A and B	15.0050.**
25 (larger cable OD)	A and B	15.0140.21

Right Angle Socket-KBT6AR-W-N/.S

Cable size (mm²)	Mating	Part No.
10	A and B	15.0078.**
16	A and B	15.0084.**
25	A and B	15.0092.**
25 (larger cable OD)	A and B	15.0141.21

Mating Pairs

When ordering, please ensure that the same mating series is used with plugs & sockets, eg Plug A will only mate with Socket A, Plug A will not mate with Socket B

Touch Protection

Live parts on the plugging side are touch protected in the unmated condition if signified by this symbol

Colour codes

When ordering, always specify the desired colour by adding the respective code after the Part No.
i.e. Replace ** with colour code.

Powerlock Connectors

400A - 660A, 1000V

Engineered for high current industrial applications

The VEAM Power Lock connector series for field installation power distribution system offers the ultimate in safety and reliability under the most severe operating conditions.

Power Lock is available in four standard formats which allow complete hook up through the standard daisy chain principle. There are two Source connectors identified as Panel Source and Line Source **(male contacts)**.

The other two types are Drain connectors, identified as Panel Drain and Line Drain **(female contacts)**.

Maximum current rating (400A)	400A
Maximum current rating (660A)	660A
Cable range (400A)	Max 120mm², min 25mm² (with reducer)
Cable range (660A)	300mm²
Maximum rated voltage to earth:	2 kV AC / 3 kV DC
Minimum flashover:	9.5 kV DC or AC peak
Operating temperature range:	-30°C to +125°C
Insulation resistance:	>5 M ohms @500V DC
Ingress protection (mated):	IP67
Protection against electrical shock:	IP2X
Flammability:	UL94-V0

Mating compability

Line Drain (female)

Panel Source (male)

Line Source (male)

Panel Drain (female)

PBX Sequential Mating System

A robust, space saving PBX Sequential Mating System. Presented in a 19 inch rack format, it guarantees the correct mating for Power lock power distribution connectors (ordered seperately).

The PBX 2U patented cam action ensures the proper sequence of Earth, Neutral, Phase 1, Phase 2 and Phase 3 is adhered to.

The PBX 2U includes, unlocking and locking keys, finger connected contacts and has a lid which provides protection to IP67.

Part No.	Type
PBX-SL-PD-AU-400	Drain
PBX-SL-PS-AU-400	Source
PBX-SL-PD-AU-660	Drain
PBX-SL-PS-AU-660	Source

Powerlock Connectors

400A - 660A, 1000V

Engineered for high current industrial applications

Line Drain (female)

400 Amp Part No.	660 Amp Part No.	Colour
NLDFT1RS120M40A	NLDFT1RC240M40B	Red
NLDFT2WS120M40A	NLDFT2WC240M40B	White
NLDFT3BLS120M40A	NLDFT3BLC240M40B	Blue
NLDFTEGNS120M40A	NLDFTEGNC240M40B	Earth
NLDFTNBKS120M40A	NLDFTNBKC240M40B	Black

Panel Source (male)

400 Amp Part No.	660 Amp Part No.	Colour
NPS1RT4	NPS1RT6	Red
NPS2WT4	NPS2WT6	White
NPS3BLT4	NPS3BLT6	Blue
NPSEGNT4	NPSEGNST6	Earth
NPSNBKT4	NPSNBKT6	Black

Line Source (male)

400 Amp Part No.	660 Amp Part No.	Colour
NLS1RS120M40A	NLS1RC240M40B	Red
NLS2WS120M40A	NLS2WC240M40B	White
NLS3BLS120M40A	NLS3BLC240M40B	Blue
NLSEGNS120M40A	NLSEGNC240M40B	Earth
NLSNBKS120M40A	NLSNBKC240M40B	Black

Panel Drain (female)

400 Amp Part No.	660 Amp Part No.	Colour
NPDFT1RLT4	NPDFT1RLT6	Red
NPDFT2WLT4	NPDFT2WLT6	White
NPDFT3BLLT4	NPDFT3BLT6	Blue
NPDFTEGNLT4	NPDFTEGNLT6	Earth
NPDFTNBKLT4	NPDFTNBKLT6	Black

Accessories

Reduction Kit*

Part No.	Size
A00602830	R95 - R25

*Suits 400A model only

Cottor Pin

Part No.	Suits
L/D S00347	Line drain
L/S S00348	Line source

Release Key

Part No.	Type
39005800046	Blue
LL0023N	Black

Protective Caps IP53

Part No.	Suits
PCLS5M40A/S	Line source
PCLD5M40A/S	Line drain

Protective Caps IP53

Part No.	Suits
PCPS5	Panel source
PCPD5	Panel drain

Neoprene Gasket

Part No.	Suits
A2499001150	All panel connectors

PowerLock Box for Emergency Power Generators

The challenge

When businesses suffer from power failure, key equipment like refrigeration systems, computer systems and even health and safety equipment are at risk.

An emergency generator can quickly restore power to any factory, hospital and shopping center; however safely connecting to the power system can be difficult and time consuming.

The solution

To help quickly restore loss power, ITT Interconnect Solutions created the VEAM PowerLock Box. This box, when fitted in the electrical switch room or sub-station and offers a single easy to use connection point.

With connections for Ground, Neutral and 3-phases, the Power-Lock Box allows cables from a mobile generator to be quickly connected to your power system. Safety is ensured through a keyway controlled connector sequence, finger protected contacts and it can be locked once connected.

Features & Benefits

- Connect with standard 'Powerlock' connectors
- Sequential connecting ensures Ground/Earth is connected first
- 400 amp & 660 amp continuous current options
- Color coded to suit European, North American, and Australian 3 phase standards
- Source and Drain (Power out or Power in) options
- All ports 'keyed' to prevent incorrect connection
- Sealed Security lid optional
- Lock to prevent interference
- 19" x 2U rack mounting or flange mount

Applications

Entertainment
- Stadium lighting
- Special effects
- Field camps
- Power distribution

River Boats
- Power feeds
- Load banks
- 3 phase motors

Emergency Systems
- Mobile generators
- Back-up power systems

Commercial Buildings
- Malls
- Hospitals
- Supermarkets
- Factories

ITT VEAM PowerLock Box

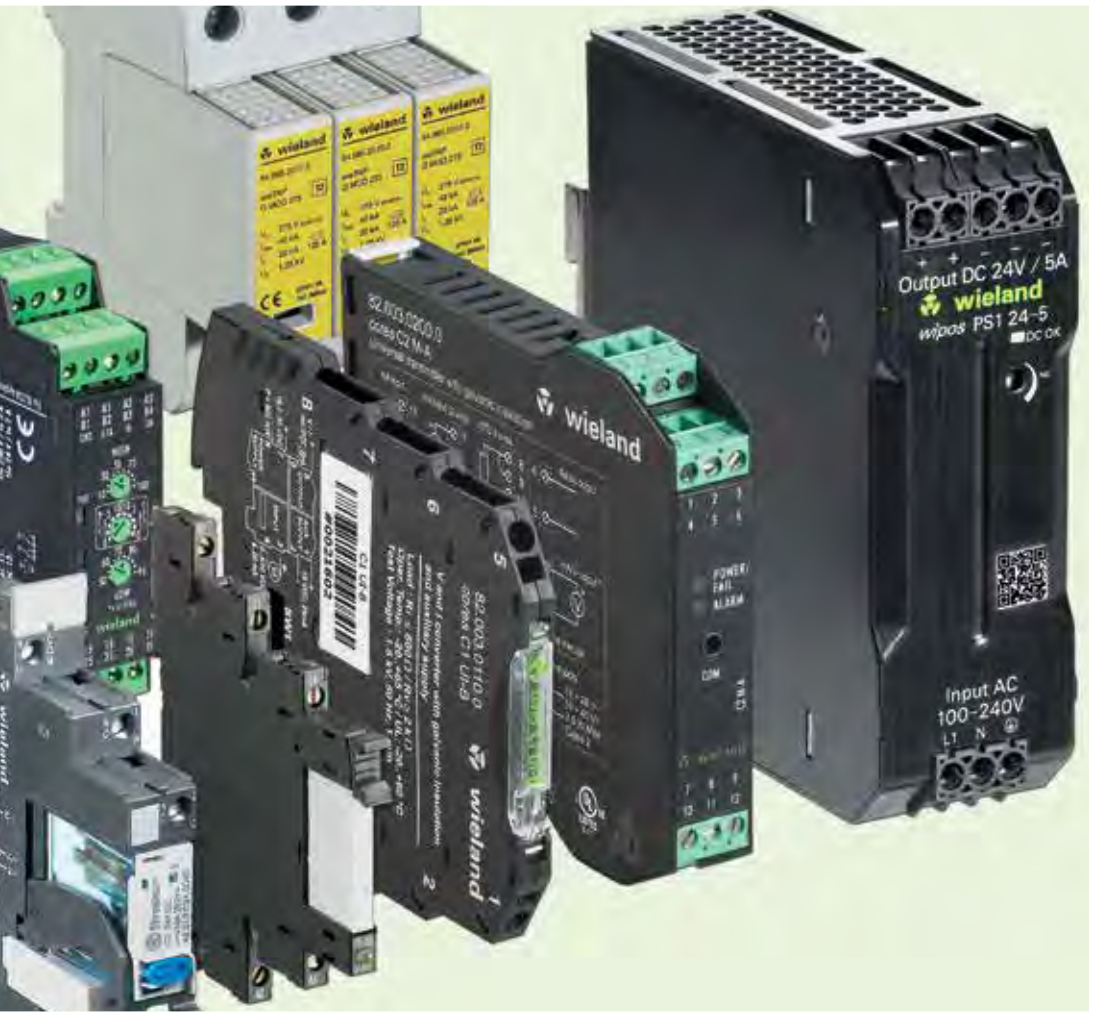
The VEAM Difference

- PowerLock connectors can only be connected in a safe sequence
- Keying prevents incorrect mating
- IP2X Finger protected contacts prevent touching of live parts
- Sealed, lidded and lockable versions
- Environmentally sealed connector ports to protection level IP65

Specifications

Electrical	
Current rating	400 amp or 660 amp continuous
Voltage rating	1000V AC / 1500V DC
Contact material	Brass (400 amp) or Copper (660 amp), silver plated
Housing material	High temperature thermoplastic
Endurance	500 connection cycles
Environmental protection of connector ports	Un-lidded version IP65 when connectors are fitted
	Lidded version IP65 with lid locked or when connectors are fitted
Electrical protection	IP2X (finger safe)
Flammability rating	UL94-V0
Operating temperature	-30°C to +85°C
Color coding	European, North American & Australian 3 phase colour coding
RoHS & WEEE	Compliant
Safety notice	The PowerLock Box should only be installed and operated by suitably qualified persons

Control & Integration



Wieland Terminal Blocks

wieland

Wieland DIN rail terminal blocks - one system - many options

3 PRODUCT FAMILIES, 3 CONNECTION TECHNOLOGIES

Wieland's DIN rail terminal block range is the ultimate choice for every installation wherever a control cabinet or switchboard is required - in machinery or plant engineering, energy generation, industrial automation or building installations.

The flexible DIN rail terminal block system of ***selos*** and ***fasis*** offer optimum handling and harmonised accessories, thus reducing the costs of excessive inventory.

The ***selos*** and ***fasis*** product lines include feed-through terminals and earth terminals with 2, 3, or 4 termination points, multi-tier in two and 3 tier designs, knife-edge disconnect and fuse terminal blocks, with a wide variety and diverse application specific terminals to suit any industry where ever a control cabinet or switchboard is required.

selos WT Screw Terminals

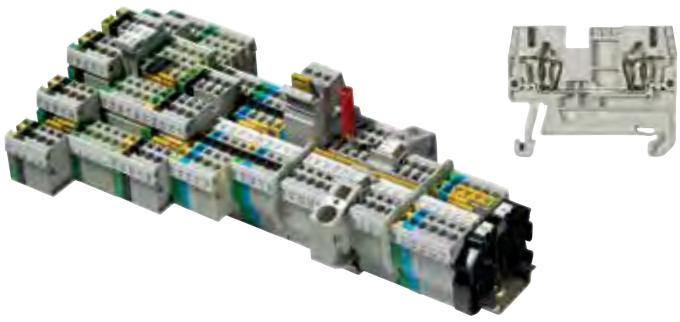
Out with the old - in with the new!
The classic series offers the highest quality in modern screw connection technology due to its unique clamping body design with the focus on customer benefits and increased efficiency in wiring installations and minimising inventory costs.

fasis WTP Terminals Push-In Terminals

Terminate wires easily, directly without the use of a tool! Simply push in and done. An effective and comprehensive concept. The product line includes feed-through and earth terminals with 2, 3 and 4 termination points, as well as multi-tier terminals. Compact design and high performance contact technology reduces installation time and keeps inventory costs to a minimum.

fasis WKFN Spring Terminals

The DIN rail terminals with tension spring technology - easy to operate, saves time and cost during installation; contact force guaranteed, vibration proof and maintenance-free with high contact forces.

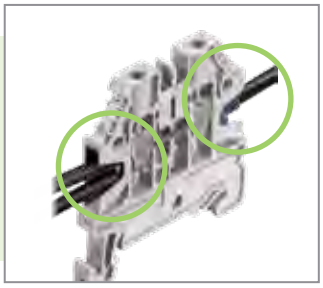


Selos WT

wieland

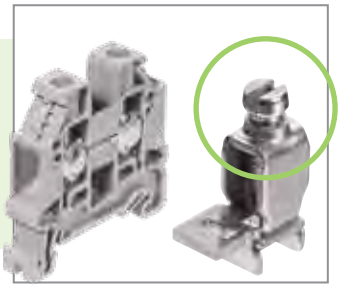
Terminals with screw connection

Simply connect
- Multi-wire connection
- Connect with and without ferrules

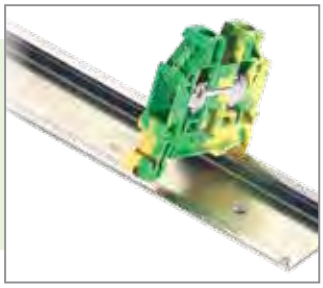


Plug & Play
- Dual jumpering channels
- Plug-in jumper bars
- Plug-in test adapter

Reliable and easy to maintain
- Rugged clamping body design
- One-piece threaded collar
- Stress-free



Time-saving assembly
- Screwless, snap-on ground terminals

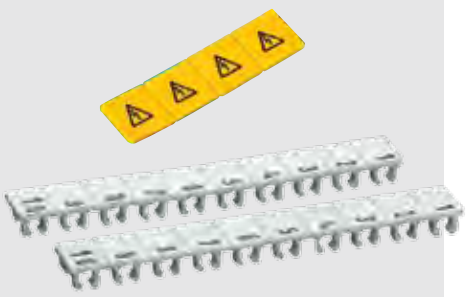


Accessories
Three product families - one accessory

Comprehensive range of jumper bars

Tools

Comprehensive labeling system



Terminals

wieland

Selos WT

Terminals with Screw Connection

flame retardant

halogen free

WT 2.5	Technical Data
Dimensions W x L x H	5mm x 48mm x 48mm
Conductor Flexible	0.14 - 4mm²
Conductor Solid/ Stranded	0.14 - 4mm²
Max. Current	32 A / 4mm²
Rated Voltage	1000 V

Part No.	Description
58.503.0055.0	Terminal Grey
58.503.0055.6	Terminal Blue
58.503.0055.5	Terminal Red
58.503.0055.2	Terminal White
58.503.0055.1	Terminal Black

Accessories	Description
07.313.2555.0	End Plate
07.313.2655.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WT 4mm²	Technical Data
Dimensions W x L x H	6mm x 48mm x 48mm
Conductor Flexible	0.14 - 6mm²
Conductor Solid/ Stranded	0.14 - 6mm²
Max. Current	41 A / 6mm²
Rated Voltage	1000 V

Part No.	Description
58.504.0055.0	Terminal Grey
58.504.0055.6	Terminal Blue
58.504.0055.5	Terminal Red
58.504.0055.2	Terminal White
58.504.0055.1	Terminal Black

Accessories	Description
07.313.2555.0	End Plate
07.313.2655.0	Partition
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

WT 6mm²	Technical Data
Dimensions W x L x H	8mm x 48mm x 48mm
Conductor Flexible	0.2 - 10mm²
Conductor Solid/ Stranded	0.2 - 10mm²
Max. Current	57 A / 10mm²
Rated Voltage	1000 V

Part No.	Description
58.506.0055.0	Terminal Grey
58.506.0055.6	Terminal Blue

Accessories	Description
07.313.2555.0	End Plate
07.313.2655.0	Partition
Z7.282.5227.0	Insulated Jumper 2 pole
Z7.282.5327.0	Insulated Jumper 3 pole
Z7.282.5427.0	Insulated Jumper 4 pole

Selos WT

Earth Terminals with Screw Connection

WT 2.5mm² PE	Technical Data
Dimensions W x L x H	5mm x 48mm x 48mm
Conductor Flexible	0.14 - 4mm²
Conductor Solid/ Stranded	0.14 - 4mm²
Rated Voltage	1000 V

Part No.	Description
58.503.9055.0	EarthTerminal Green/ Yellow
07.313.2555.0	End Plate

WT 4mm² PE	Technical Data
Dimensions W x L x H	6mm x 48mm x 48mm
Conductor Flexible	0.14 - 6mm²
Conductor Solid/ Stranded	0.14 - 6mm²
Rated Voltage	1000 V

Part No.	Description
58.504.9055.0	Earth Terminal Green/Yellow
07.313.2555.0	End Plate

WT 6mm² PE	Technical Data
Dimensions W x L x H	8mm x 48mm x 48mm
Conductor Flexible	0.2 - 10mm²
Conductor Solid/ Stranded	0.2 - 10mm²
Rated Voltage	1000 V

Part No.	Description
58.506.9055.0	Earth Terminal Green/ Yellow
07.313.2555.0	End Plate

Selos WT

Terminals with Screw Connection

WT 10mm²	Technical Data
Dimensions W x L x H	10mm x 48mm x 48mm
Conductor Flexible	0.2 - 10mm²
Conductor Solid/ Stranded	0.2 - 10mm²
Max. Current	57 A
Rated Voltage	1000 V

Part No.	Description
58.510.0055.0	Terminal Grey
58.510.0055.6	Terminal Blue

Accessories	Description
07.313.2555.0	End Plate
07.313.2655.0	Partition
Z7.283.8227.0	Insulated Jumper 2 pole

WT 16mm²	Technical Data
Dimensions W x L x H	12mm x 58mm x 54mm
Conductor Flexible	0.5 - 16mm²
Conductor Solid/ Stranded	0.5 - 16mm²
Max. Current	57 A
Rated Voltage	1000 V

Part No.	Description
58.516.0055.0	Terminal Grey
58.516.0055.6	Terminal Blue

Accessories	Description
07.313.2755.0	End Plate
07.313.2855.0	Partition
Z7.284.4227.0	Insulated Jumper 2 pole

Selos WT

Earth Terminals with Screw Connection

WT 10mm² PE	Technical Data
Dimensions W x L x H	10mm x 48mm x 48mm
Conductor Flexible	0.5 - 16mm²
Conductor Solid/ Stranded	0.5 - 16mm²W
Rated Voltage	1000 V

Part No.	Description
58.510.9055.0	EarthTerminal Green/ Yellow
07.313.2555.0	End Plate

WT 16mm² PE	Technical Data
Dimensions W x L x H	12mm x 58mm x 54mm
Conductor Flexible	4 - 25mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Voltage	1000 V

Part No.	Description
58.516.9055.0	EarthTerminal Green/Yellow
07.313.2755.0	End Plate

Selos WT

Duo Terminals with Screw Connection

Duo	Technical Data
Conductor Flexible	0.14 - 6mm²
Conductor Solid/ Stranded	0.14 - 6mm²
Max. Current	41 A / 6mm²
Rated Voltage	500 V

Part No.	Description
58.504.5155.0	Duo - Terminal Grey 2 / 2
58.504.5155.6	Duo - Terminal Blue 2 / 2
07.313.3155.0	End Plate
07.313.2855.0	Partition

Part No.	Description
58.504.5055.0	Duo - Terminal Grey 1 / 2
58.504.5055.6	Duo - Terminal Blue 1 / 2
07.313.2955.0	End Plate
07.313.2855.0	Partition

Part No.	Description
58.504.9355.0	Duo - Earth Terminal 1 / 2
07.313.2955.0	End Plate

Part No.	Description
58.504.9155.0	Duo - Earth Terminal 2 / 2
07.313.3155.0	End Plate

Terminals

wieland

Selos WKN

Terminals with Screw Connection

WKN 35mm²	Technical Data
Conductor Flexible	10 - 35mm²
Conductor Solid/ Stranded	10 - 50mm²
Max. Current	124 A
Rated Voltage	800 V

Part No.	Description
57.535.0155.0	Terminal Grey
57.535.0155.6	Terminal Blue

Accessories	Description
Fully enclosed	End Plate Grey
Fully enclosed	End Plate Blue
07.311.7855.0	Partition Grey
07.311.7855.6	Partition Blue
Z7.285.2027.0	Jumper Bar (20 Pole)

WKN 70mm²	Technical Data
Conductor Flexible	10 - 70mm²
Conductor Solid/ Stranded	16 - 95mm²
Max. Current	179 A
Rated Voltage	800 V

Part No.	Description
57.570.0155.0	Terminal Grey
57.570.0155.6	Terminal Blue

Accessories	Description
Fully enclosed	End Plate Grey
Fully enclosed	End Plate Blue
07.311.7955.0	Partition Grey
Z7.286.3627.0	Jumper Bar (6 Pole)

WKN 150mm²	Technical Data
Conductor Flexible	35 - 150mm²
Conductor Solid/ Stranded	35 - 185mm²
Max. Current	309 A
Rated Voltage	1000 V

Part No.	Description
57.597.0155.0	Terminal Grey
57.597.0155.6	Terminal Blue

Accessories	Description
Fully enclosed	End Plate Grey
Fully enclosed	End Plate Blue
Fully enclosed	Partition Grey
07.311.1155.6	Partition Blue
Z7.287.1327.0	Jumper Bar (3 Pole)

Selos WK/WKN

Earth Terminals with Screw Connection

WK4 SL / U	Technical Data
Dimensions W x L x H	6mm x 51mm x 48.5mm
Conductor Flexible	0.5 - 4mm²
Conductor Solid/ Stranded	0.5 - 6mm²
Rated Voltage	800 V

Part No.	Description
57.504.9055.0	Earth Terminal

WK6 SL / U	Technical Data
Dimensions W x L x H	8mm x 54mm x 53.5mm
Conductor Flexible	0.5 - 6mm²
Conductor Solid/ Stranded	0.5 - 10mm²
Rated Voltage	800 V

Part No.	Description
57.506.9055.0	Earth Terminal

WKN10 SL / U	Technical Data
Dimensions W x L x H	10mm x 54mm x 55mm
Conductor Flexible	2.5 - 10mm²
Conductor Solid/ Stranded	1.5 - 16mm²
Rated Voltage	800 V

Part No.	Description
57.510.9055.0	Earth Terminal

WKN16 SL / U	Technical Data
Dimensions W x L x H	12mm x 57.5mm x 57.5mm
Conductor Flexible	4 - 16mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Voltage	800 V

Part No.	Description
57.516.9055.0	Earth Terminal

WKN 35 SL / U	Technical Data
Dimensions W x L x H	16mm x 63mm x 67.6mm
Conductor Flexible	10 - 35mm²
Conductor Solid/ Stranded	10 - 50mm²
Rated Voltage	800 V

Part No.	Description
57.535.9055.0	Earth Terminal

WKN 70 SL / U	Technical Data
Dimensions W x L x H	24mm x 75.2mm x 81.2mm
Conductor Flexible	10 - 70mm²
Conductor Solid/ Stranded	16 - 95mm²
Rated Voltage	800 V

Part No.	Description
57.570.9055.0	Earth Terminal

Terminals

wieland

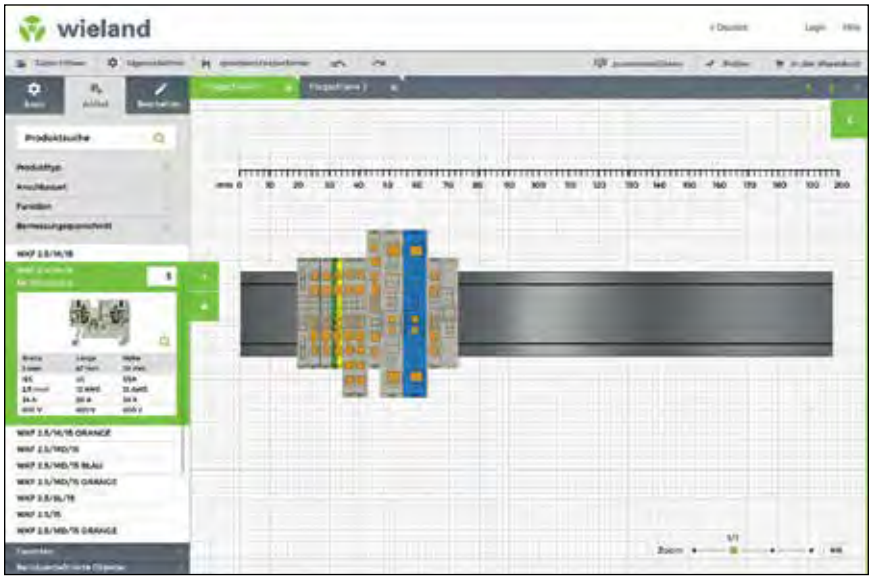
Selos and Fasis Terminal Block Assembly

DKSH offer a comprehensive service portfolio to supplement our products.

Wieland's new planning tool **wieplan** for planning and configuring DIN rail terminals and our express assembly service for complete modules make working with Wieland DIN rail terminals easier and create genuine added value.

wieplan uses computer animations to create documentation for control cabinet projects in the form of drawings, bills of material, and order data.

wieplan



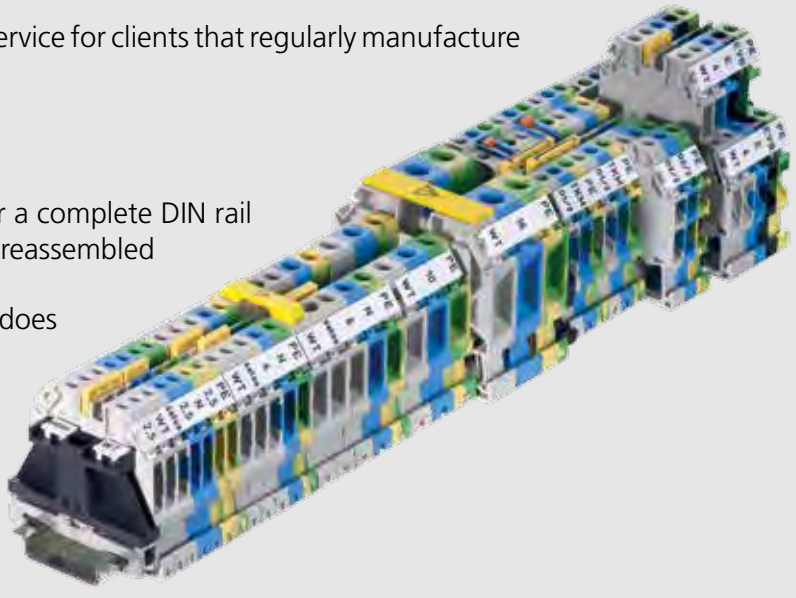
Wieland's online configurator - from idea to completed terminal block assembly. Visit www.wielandinc.com/en-us/service/software/wieplan

Terminal Block Assemblies

Wieland also offers a DIN rail assembly service for clients that regularly manufacture the same assembly.

Benefits:

- Reduced SKU's. One part number for a complete DIN rail assembly with numerous terminals preassembled onto the DIN rail
- Reduced assembly time, as Wieland does the work for you
- More cost effective than carrying hundreds of different terminals, DIN rail and accessories



Terminals

wieland

Selos WK/WKN/WT

Multi-tier and Duo Terminals with Screw Connection

WKN2.5 E/U/VB	Technical Data
Dimensions W x L x H	5mm x 65.8 x 63.9
Conductor Flexible	0.5 - 2.5mm²
Conductor Solid/Stranded	0.5 - 4mm²
Max. Current	24 A
Rated Voltage	500 V

Part No.	Description
57.403.7055.0	Terminal Grey
07.312.1755.0	End Plate
07.312.1855.0	Partition
Z7.280.0027.0	Jumper Bar (80 Pole) Upper Tier Only

WKN2.5 E/U/VB	Technical Data
Dimensions W x L x H	5mm x 65.8 x 63.9
Conductor Flexible	0.5 - 2.5mm²
Conductor Solid/Stranded	0.5 - 4mm²
Max. Current	24 A
Rated Voltage	500 V

Part No.	Description
57.403.6955.1	Terminal Black
07.312.1755.0	End Plate
07.312.1855.0	Partition
Z7.280.3227.0	Jumper Bar (12 Pole)

WK4 /D2/2/U	Technical Data
Conductor Flexible	6mm x 60mm x 48.5mm
Conductor Solid/Stranded	0.5 - 4mm²
Max. Current	0.5 - 6mm²
Rated Voltage	30 A
Rated Voltage	500 V

Part No.	Description
57.504.5155.0	Terminal Grey
07.311.6355.0	End Plate
Z7.281.6027.0	Jumper Bar (70 Pole)

WT4 E	Technical Data
Dimensions W x L x H	6mm x 72mm x 67mm
Conductor Flexible	0.14 - 6mm2
Conductor Solid/Stranded	0.14 - 6mm2
Max. Current	32 A / 4mm2
Rated Voltage	1000 V

Part No.	Description
58.504.7055.0	Terminal Grey
07.313.3355.0	End Plate
07.313.2855.0	Partition
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

WT4 E VB	Technical Data
Dimensions W x L x H	6mm x 72mm x 67mm
Conductor Flexible	0.14 - 6mm2
Conductor Solid/Stranded	0.14 - 6mm2
Max. Current	32 A / 4mm2
Rated Voltage	1000 V

Part No.	Description
58.504.6955.1	Terminal Black
07.313.3355.0	End Plate
07.313.2855.0	Partition
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

WK4 E/SL/U	Technical Data
Dimensions W x L x H	6.2mm x 59mm x 63.2mm
Conductor Flexible	0.5 - 4mm²
Conductor Solid/ Stranded	0.5 - 4mm²
Rated Voltage	400 V

Part No.	Description
57.504.9255.0	Earth Terminal

WK4 E/SL/U	Technical Data
Dimensions W x L x H	6mm x 55.6 x 48.5
Conductor Flexible	0.5 - 4mm²
Rated Voltage	500 V

Part No.	Description
57.504.9155.0	Duo - Earth Terminal 2 / 2

Selos WK

Fused and Disconnect Terminals with Screw Connection

WK 4 TKG.....SIST	Technical Data
Conductor Flexible	0.5 - 4mm²
Conductor Solid/Stranded	0.5 - 6mm²
Max. Current	Refer to Technical Information [1]
Rated Voltage	Refer to Technical Information [2]

Part No.	Description
57.504.4055.0	Fuse Terminal
Z1.299.4055.0	5x20 Fuse Carrier
07.311.6155.0	End Plate
07.311.8155.0	Partition

Note: Terminal & carrier to be ordered separately

WK 4 THSi5x20/U	Technical Data
Conductor Flexible	0.5 - 4mm²
Conductor Solid/Stranded	0.5 - 6mm²
Max. Current	6.3 A [1]
Rated Voltage	800V [2]

Part No.	Description
57.904.5355.0	Fuse Terminal

WK 4 THSi 6.3 X 32 / U	Technical Data
Conductor Flexible	0.5 - 4mm²
Conductor Solid/Stranded	0.5 - 6mm²
Max. Current	6.3 A [1]
Rated Voltage	800V [2]

Part No.	Description
57.904.6355.0	Fuse Terminal

WK 10 Si 5 X 20 / U	Technical Data
Conductor Flexible	1.0 - 10mm²
Conductor Solid/Stranded	1.0 - 16mm²
Max. Current	10 A [1]
Rated Voltage	250V* [2]

Part No.	Description
57.910.5055.0	Fuse Terminal
07.311.4155.0	End Plate
Z7.287.0027.0	Jumper Bar (30 Pole)

WK 10 Si 6.3 X 32 / U	Technical Data
Conductor Flexible	1.0 - 10mm²
Conductor Solid/Stranded	1.0 - 16mm²
Max. Current	10 A [1]
Rated Voltage	500V* [2]

Part No.	Description
57.910.5355.0	Fuse Terminal
07.311.4155.0	End Plate
Z7.287.0027.0	Jumper Bar (30 Pole)

WK 4 / TKM	Technical Data
Conductor Flexible	0.5 - 4mm²
Conductor Solid/ Stranded	0.5 - 6mm²
Max. Current	20 A
Rated Voltage	800 V

Part No.	Description
57.504.2055.0	Disconnect Terminal
07.311.6155.0	End Plate
07.311.8155.0	Partition

Technical information

Depending on the application and the installation method, the circumstances for increased temperature must be checked in the closed fuse holders. Higher ambient temperatures are an additional load for the fuse inserts.

Therefore, the reduction of the rated current must be considered accordingly in these applications.

1. When selecting G fuse inserts, make sure that the specified maximum power loss is not exceeded. The current is determined by the inserted fuse.
2. The voltage range is determined by the built-in LED display.

* Voltage and current are determined by the inserted G-fuse.

Type	Rated voltage	Overload protection		Exclusive short circuit protection	
		Single arrangement	Double arrangement	Single arrangement	Double arrangement
THiS 5x20/25	250V	1.6W	1.6W	4.0W	2.5W
THiS 6.3x32	500V	2.5W	2.5W	4.0W	2.5W
WK 10 SI 5x20	250V	4.0W/6.3A	2.5W/6.3A	4.0W/6.3A	4.0W/6.3A
WK10 SI 6.3x32	500V	4.0W/10A	2.5W/6.3A	4.0W/10A	2.5W/6.3A

Maximum power loss at 23° C ambient temperature (according to DIN EN 60947-7-3)

Fasis WTP

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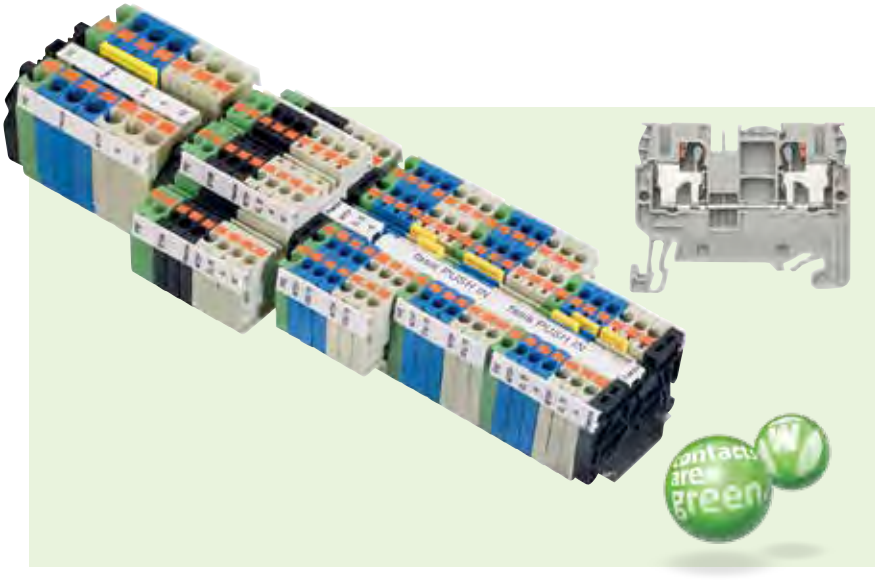
Terminals with Push-In Connection



Connect without tools
- Push-In connection
- Wires connect directly

Integrated release lever
- No mix up of wire entry and screwdriver entry points
- No contact with live parts
- Use of Philips head screwdriver also possible

Marking tags - individual
- Individual labelling with minimum effort
- Ideal for service and maintenance

Plug & Play - Completing the concept
- Dual jumpering channels
- Plug-in jumper bars
- Plug-in test adaptors

Fasis WTP

Terminals with Push-In Connection

WTP 2.5 / 4	Description
Dimensions W x L x H	5mm x 47mm x 38mm
Conductor Flexible	0.2 - 4mm2
Conductor Solid/ Stranded	0.2 - 4mm2
Max. Current	32 A / 4mm2
Rated Voltage	1000 V

Part No.	Description
56.203.0055.0	Terminal Grey
56.203.0055.6	Terminal Blue
56.203.0055.5	Terminal Red
56.203.0055.2	Terminal White
56.203.0055.1	Terminal Black
07.312.6755.0	End Plate
07.312.6855.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WTP 2.5 / 4 PE	Description
Dimensions W x L x H	5mm x 47mm x 38mm
Conductor Flexible	0.2 - 4mm2
Conductor Solid/ Stranded	0.2 - 4mm2
Rated Voltage	1000 V

Part No.	Description
56.203.9055.0	Terminal Grey
07.312.6755.0	End Plate
07.312.6855.0	Partition

Fasis WTP

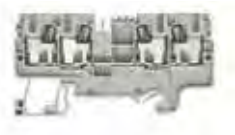
Terminals with Push-In Connection

WTP 6 / 10	Description
Dimensions W x L x H	6mm x 58mm x 44mm
Conductor Flexible	0.2 - 10mm2
Conductor Solid/ Stranded	0.2 - 10mm2
Max. Current	57 A / 10mm2
Rated Voltage	1000 V

Part No.	Description
56.206.0055.0	Terminal Grey
56.206.0055.6	Terminal Blue
56.206.0055.5	Terminal Red
56.206.0055.2	Terminal White
56.206.0055.1	Terminal Black
07.313.4155.0	End Plate
07.313.4255.0	Partition
Z7.282.5227.0	Insulated Jumper 2 pole
Z7.282.5327.0	Insulated Jumper 3 pole
Z7.282.5427.0	Insulated Jumper 4 pole
Z7.282.5527.0	Insulated Jumper 5 pole
Z7.282.6027.0	Insulated Jumper 10 pole

WTP 2.5 / 4 D1 / 2	Description
Dimensions W x L x H	5mm x 60mm x 38mm
Conductor Flexible	0.2 - 4mm2
Conductor Solid/ Stranded	0.2 - 4mm2
Max. Current	32 A / 4mm2
Rated Voltage	1000 V

Part No.A	Description
56.203.5055.0	Terminal Grey
56.203.5055.6	Terminal Blue
07.312.6955.0	End Plate
07.312.7055.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

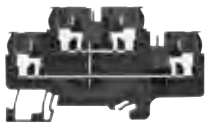


WTP 2.5 / 4 D2 / 2	Description
Dimensions W x L x H	5mm x 72mm x 38mm
Conductor Flexible	0.2 - 4mm2
Conductor Solid/ Stranded	0.2 - 4mm2
Max. Current	32 A / 4mm2
Rated Voltage	1000 V

Part No.	Description
56.203.5155.0	Terminal Grey
56.203.5155.6	Terminal Blue
07.312.7155.0	End Plate
07.312.7255.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WTP 2.5 / 4 E	Description
Dimensions W x L x H	5mm x 82mm x 48mm
Conductor Flexible	0.2 - 4mm²
Conductor Solid/ Stranded	0.2 - 4mm²
Max. Current	24 A / 4mm²
Rated Voltage	1000 V

Part No.	Description
56.203.7055.0	Terminal Grey
07.312.7355.0	End Plate
07.312.7455.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole



WTP 2.5 / 4 E VB	
Dimensions W x L x H	5mm x 82mm x 48mm
Conductor Flexible	0.2 - 4mm²
Conductor Solid/ Stranded	0.2 - 4mm²
Max. Current	24 A / 4mm²
Rated Voltage	1000 V

Part No.	Description
56.203.6955.1	Terminal Black
07.312.7355.0	End Plate
07.312.7455.0	Partition
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WTP 2.5 / 4 E PE	
Dimensions W x L x H	5mm x 82mm x 48mm
Conductor Flexible	0.2 - 4mm²
Conductor Solid/ Stranded	0.2 - 4mm²
Rated Voltage	1000 V

Part No.	Description
56.203.8955.0	Earth Terminal Green/ yellow
07.312.7355.0	End Plate
07.312.7455.0	Partition

Fasis WKFN

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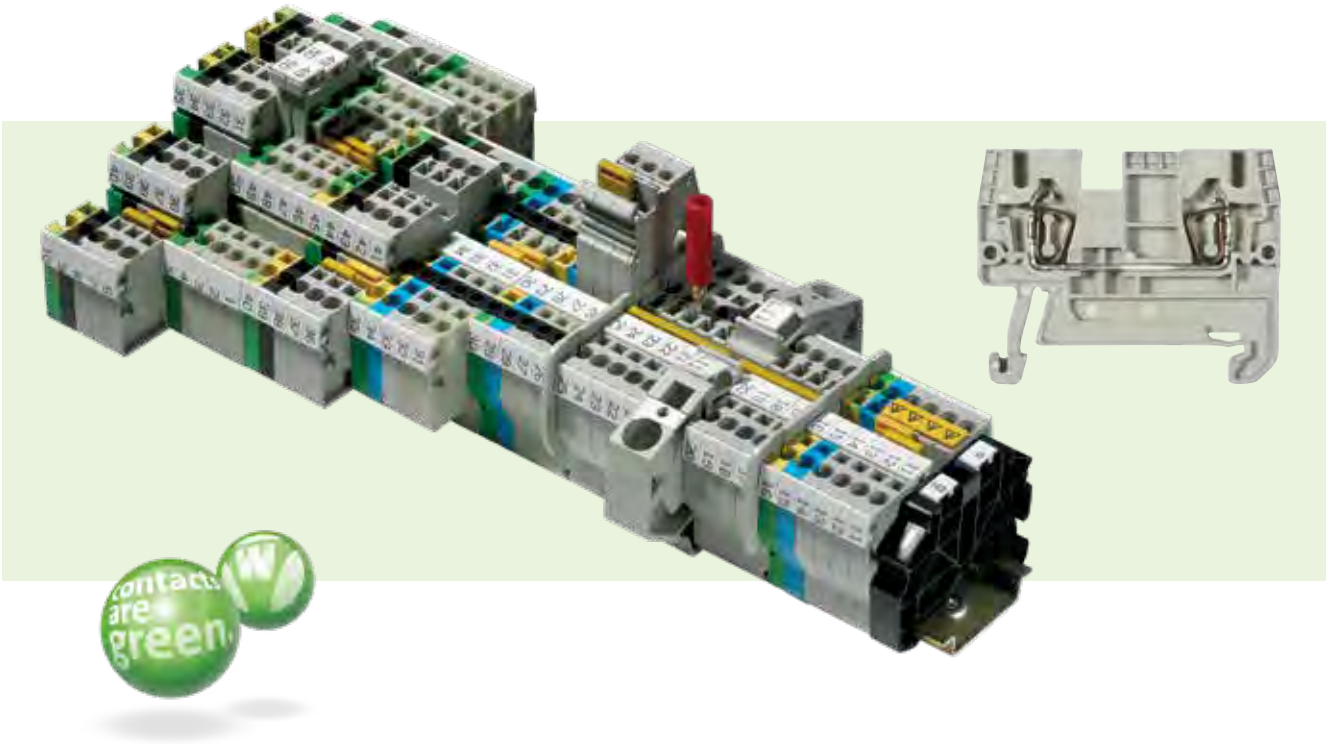
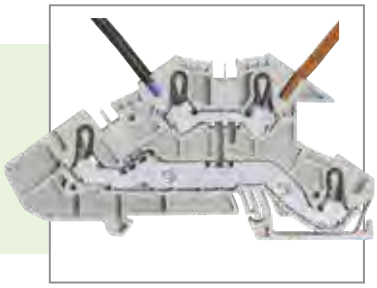
Terminals with Tension Spring Connection



Reliable and easy to maintain
- Tension spring connection resistant to vibration
- Connect with and without ferrules

Marking tags - individual
- Individual labelling with minimum effort
- Ideal for service and maintenance

Connect fine standard wire perfectly
- Simple and secure wire installation using a screwdriver



Plug & Play - Completing the concept
- Dual jumpering channels
- Plug-in jumper bars
- Plug-in test adaptors

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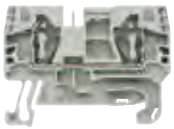
Terminals with Spring Connection

WKFN 2.5mm²	Technical Data
Dimensions W x L x H	5mm x 47mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Current	24 A
Rated Voltage	800 V

Part No.	Description
56.703.0055.0	Terminal Grey
56.703.0055.6	Terminal Blue
07.312.6755.0	End Plate Grey
07.312.6755.6	End Plate Blue
07.312.6855.0	Partition Grey
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole



WKFN 4mm²	Technical Data
Dimensions W x L x H	6mm x 51mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Current	32 A
Rated Voltage	800 V

Part No.	Description
56.704.0055.0	Terminal Grey
56.704.0055.6	Terminal Blue
07.312.9255.0	End Plate Grey
07.312.9255.6	End Plate Blue
07.312.9355.0	Partition Grey
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

WKFN 6mm²	Technical Data
Dimensions W x L x H	8mm x 66mm x 45mm
Conductor Flexible	0.2 - 6mm²
Conductor Solid/ Stranded	1.5 - 10mm²
Rated Current	41 A
Rated Voltage	800 V

Part No.	Description
56.706.0055.0	Terminal Grey
56.706.0055.6	Terminal Blue
07.313.0455.0	End Plate Grey
07.313.0455.6	End Plate Blue
07.313.0555.0	Partition Grey
Z7.282.5227.0	Insulated Jumper 2 pole
Z7.282.5327.0	Insulated Jumper 3 pole
Z7.282.5427.0	Insulated Jumper 4 pole
Z7.282.5527.0	Insulated Jumper 5 pole

Fasis WKFN

Earth Terminals with Spring Connection

WKFN 2.5 SL/35	Technical Data
Dimensions W x L x H	5mm x 47mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Voltage	800 V

Part No.	Description
56.703.9055.0	EarthTerminal Green/Yellow
07.312.6755.0	End Plate

WKFN 4 SL/35	Technical Data
Dimensions W x L x H	6mm x 51mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Voltage	800 V

Part No.	Description
56.704.9055.0	EarthTerminal Green/Yellow
07.312.9255.0	End Plate

WKFN 6 SL/35	Technical Data
Dimensions W x L x H	8mm x 66mm x 45mm
Conductor Flexible	0.2 - 6mm²
Conductor Solid/ Stranded	1.5 - 10mm²
Rated Voltage	800 V

Part No.	Description
56.706.9055.0	EarthTerminal Green/Yellow
07.313.0455.0	End Plate

Terminals

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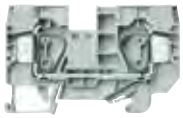
Terminals with Spring Connection

WKFN 10mm²	Technical Data
Dimensions W x L x H	10mm x 72mm x 50mm
Conductor Flexible	0.2 - 10mm²
Conductor Solid/ Stranded	1.5 - 16mm²
Rated Current	57 A
Rated Voltage	800 V

Part No.	Description
56.710.0055.0	Terminal Grey
56.710.0055.0	Terminal Blue
07.313.0855.0	End Plate Grey
07.313.0855.6	End Plate Blue
07.313.0955.0	Partition Grey
Z7.283.8227.0	Insulated Jumper 2 pole



WKFN 16mm²	Technical Data
Dimensions W x L x H	12mm x 79mm x 50mm
Conductor Flexible	0.2 - 16mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Current	76 A
Rated Voltage	1000 V

Part No.	Description
56.716.0055.0	Terminal Grey
56.716.0055.6	Terminal Blue
07.313.1255.0	End Plate Grey
07.313.1255.0	End Plate Blue
07.313.1355.0	Partition Grey
Z7.284.4227.0	Insulated Jumper 2 pole

WKFN 35mm²	Technical Data
Dimensions W x L x H	16mm x 100mm x 59mm
Conductor Flexible	2.5 - 35mm²
Conductor Solid/ Stranded	2.5 - 35mm²
Rated Current	125 A
Rated Voltage	800 V

Part No.	Description
56.735.0053.0	Terminal Grey
56.735.0053.6	Terminal Blue
Z7.285.6227.0	Insulated Jumper 2 pole

Fasis WKFN

Earth Terminals with Spring Connection

WKFN 10 SL/35	Technical Data
Dimensions W x L x H	10mm x 72mm x 50mm
Conductor Flexible	0.2 - 10mm²
Conductor Solid/ Stranded	1.5 - 16mm²
Rated Voltage	1000 V

Part No.	Description
56.710.9055.0	EarthTerminal Green/Yellow
07.313.0855.0	End Plate

WKFN 16 SL/35	Technical Data
Dimensions W x L x H	12mm x 79mm x 50mm
Conductor Flexible	0.2 - 16mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Voltage	1000 V

Part No.	Description
56.716.9055.0	EarthTerminal Green/Yellow
07.313.1255.0	End Plate

WKF 35 SL/35	Technical Data
Dimensions W x L x H	16mm x 100mm x 59mm
Conductor Flexible	2.5 - 35mm²
Conductor Solid/ Stranded	2.5 - 35mm²
Rated Voltage	800 V

Part No.	Description
56.735.9053.0	EarthTerminal Green/Yellow

Fasis WKFN

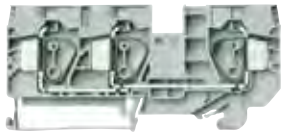
Duo Terminals with Spring Connection

WKFN 2.5 D1/2/35	Technical Data
Dimensions W x L x H	5mm x 60mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Current	24 A
Rated Voltage	800 V

Part No.	Description
56.703.5055.0	Terminal Grey
56.703.5055.6	Terminal Blue
07.312.6955.0	End Plate Grey
07.312.6955.6	End Plate Blue
07.312.7055.0	Partition Grey
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WKFN 4 D1 / 2 / 35	Technical Data
Dimensions W x L x H	6mm x 67mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Current	32 A
Rated Voltage	800 V

Part No.	Description
56.704.5055.0	Terminal Grey
56.704.5055.6	Terminal Blue
07.312.9455.0	End Plate Grey
07.312.9455.6	End Plate Blue
07.312.9555.0	Partition Grey
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole



WKFN 16 D1/2/35	Technical Data
Dimensions W x L x H	12mm x 107mm x 50mm
Conductor Flexible	0.2 - 16mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Current	76 A
Rated Voltage	1000 V

Part No.	Description
56.716.5055.0	Terminal Grey
56.716.5055.6	Terminal Blue
07.313.1455.0	End Plate Grey
07.313.1455.6	End Plate Blue
07.313.1555.0	Partition Grey
Z7.284.4227.0	Insulated Jumper 2 pole

Fasis WKFN

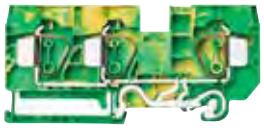
Earth Terminals with Spring Connection

WKFN 2.5 D1/2/SL/35	Technical Data
Dimensions W x L x H	5mm x 60mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Voltage	800 V

Part No.	Description
56.703.9355.0	EarthTerminal Green/ Yellow
07.312.6955.0	End Plate Grey

WKFN 4 D1/2/SL/35	Technical Data
Dimensions W x L x H	6mm x 67mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Voltage	800 V

Part No.	Description
56.704.9355.0	EarthTerminal Green/ Yellow
07.312.9355.0	End Plate Grey



WKFN 16 D1/ 2/SL/35	Technical Data
Dimensions W x L x H	12mm x 107mm x 50mm
Conductor Flexible	0.2 - 16mm²
Conductor Solid/ Stranded	1.5 - 25mm²
Rated Voltage	1000 V

Part No.	Description
56.716.9355.0	EarthTerminal Green/ Yellow
07.313.1455.0	End Plate Grey

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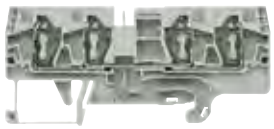
Fasis WKFN

Duo and Multi-Tier Terminals with Spring Connection

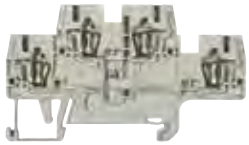


WKFN 2.5 D2 / 2 / 35	Technical Data
Dimensions W x L x H	5mm x 72mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Current	24 A
Rated Voltage	800 V

Part No.	Description
56.703.5155.0	Terminal Grey
56.703.5155.6	Terminal Blue
07.312.7155.0	End Plate Grey
07.312.7155.6	End Plate Blue
07.312.7255.0	Partition Grey
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WKFN 4 D2 / 2 / 35	Technical Data
Dimensions W x L x H	6mm x 82mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Current	32 A
Rated Voltage	800 V

Part No.	Description
56.704.5155.0	Terminal Grey
56.704.5155.6	Terminal Blue
07.312.9055.0	End Plate Grey
07.312.9055.6	End Plate Blue
07.312.9155.0	Partition Grey
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole



WKFN 2.5 E / 35	Technical Data
Dimensions W x L x H	5mm x 82mm x 48mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Current	24 A
Rated Voltage	500 V

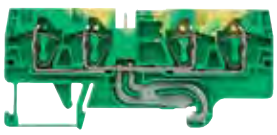
Part No.	Description
56.703.7055.0	Terminal Grey
56.703.7055.6	Terminal Blue
56.703.6955.1	Terminal Black U/L Connected
07.312.7355.0	End Plate Grey
07.312.7455.0	Partition Grey
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

Fasis WKFN

Duo - Earth Terminals with spring connection

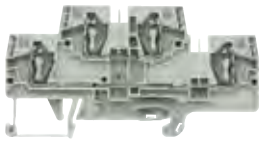
WKFN 2.5 D2/2/SL/35	Technical Data
Dimensions W x L x H	5mm x 72mm x 38mm
Conductor Flexible	0.13 - 2.5mm²
Conductor Solid/ Stranded	0.13 - 4mm²
Rated Voltage	800 V

Part No.	Description
56.703.9155.0	EarthTerminal Green/ Yellow
07.312.7155.0	End Plate Grey



WKFN 4 D2/2/SL/35	Technical Data
Dimensions W x L x H	6mm x 82mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Voltage	800 V

Part No.	Description
56.704.9155.0	EarthTerminal Green/ Yellow
07.312.9055.0	End Plate Grey



WKFN 4 E/35	Technical Data
Rated Current	32 A
Rated Voltage	500 V

Part No.	Description
56.704.7055.0	Terminal Grey
56.704.6955.1	Terminal Black U/L Connected
07.312.9655.0	End Plate Grey
07.312.9755.0	Partition Grey
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

Fasis WKFN

Fused & Disconnect Terminals with Spring Connection

WKFN 4 TKG	Technical Data
Dimensions W x L x H	6mm x 82mm x 38mm
Conductor Flexible	0.13 - 4mm²
Conductor Solid/ Stranded	0.13 - 6mm²
Rated Current	1)
Rated Voltage	500 V

Part No.	Description
56.704.4055.0	Disconnect Terminal Grey
07.312.9055.0	End Plate Grey
07.312.9155.0	Partition Grey
Z1.298.1053.0	Fuse Carier THSI 5 x 20
Z1.298.1653.0	Fuse Carier THSI 6.3 x 32
Z1.299.4055.0	Fuse Carier SiST 5 x 20
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

Part No.	Description
Z1.298.1053	Fuse Carier SiST 5 x 20

Part No.	Description
Z1.298.1653.0	Fuse Carier THSI 6.3 x 32

Part No.	Description
Z1.299.4055.0	Fuse Carier SiST 5 x 20

* Terminal and fuse carrier to be ordered seperately.

WKFN 2.5 TKM/35	Technical Data
Dimensions W x L x H	5mm x 60mm x 38mm
Conductor Flexible	0.14 - 2.5mm²
Conductor Solid/ Stranded	0.2 - 4mm²
Rated Current	20 A
Rated Voltage	630 V

Part No.	Description
56.703.5355.0	Knife disconnect Terminal Grey
07.312.6955.0	End Plate Grey
07.312.7055.0	Partition Grey
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

Technical information

The current is determined by the inserted fuse.

Depending on the application and the installation method, the circumstances for increased temperature must be checked in the closed fuse holders.

Higher ambient temperatures are an additional load for the fuse inserts. Therefore the reduction of the rated current must be considered in these applications.

When selecting G fuse inserts, make sure the specified maximum power is not exceeded.

Type	Rated voltage	Overload protection		Exclusive short circuit protection	
		Single arrangement	Double arrangement	Single arrangement	Double arrangement
THiS 5x20	250V	1.6W	1.6W	4.0W	2.5W
THiwS 6.3x32	500V	2.5W	1.6W	4.0W	2.5W
SIST	250V	1.6W	1.6W	2.5W	1.6W

Maximum power loss at 23° C ambient temperature (according to DIN EN 60947-7-3).

Terminal Accessories

wieland

DIN Rail

Din rail & end brackets

The Wieland mounting Din Rails are available in TS 35 profile, slotted and Non Slotted, they are also available in 7,5 mm and 15mm height, in 2mtr lengths ,the material is steel, galvanised, zinc plated and dichromate, ROHS compliant.

35 x 7.5mm

Part No.	Description
98.300.0000.0	2 metre, non-slotted
98.300.1000.0	2 metre, slotted

35 x 15mm

Part No.	Description
98.370.1000.0	2 metre, slotted

Plastic

Part No.	Description
Z5.523.9353.0	End bracket snap-on

Plastic

Part No.	Description
Z5.522.7453.0	End bracket screw type

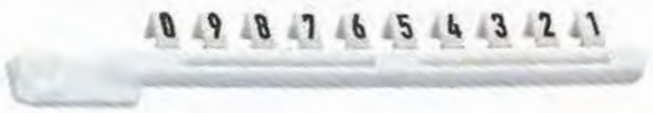
Metal foot

Part No.	Description
Z5.522.8553.0	End bracket screw type

Terminal Markers

Suits all terminals in this catalogue

Supplied as 25 strips of 10 markers, 250 individual markers in total per pack.



Type	Part No.
1	04.841.1150.0
2	04.841.1250.0
3	04.841.1350.0
4	04.841.1450.0
5	04.841.1550.0
6	04.841.1650.0
7	04.841.1750.0
8	04.841.1850.0
9	04.841.1950.0
0	04.841.2050.0
+	04.841.7450.0
-	04.841.7550.0
1-0	04.841.2150.0

Type	Part No.
A	04.841.2250.0
B	04.841.2350.0
C	04.841.2450.0
D	04.841.2550.0
E	04.841.2650.0
F	04.841.2750.0
G	04.841.2850.0
H	04.841.2950.0
I	04.841.3050.0
J	04.841.3150.0
K	04.841.3250.0
L	04.841.3350.0
M	04.841.3450.0

Type	Part No.
N	04.841.3550.0
O	04.841.3650.0
P	04.841.3750.0
Q	04.841.3850.0
R	04.841.3950.0
S	04.841.4050.0
T	04.841.4150.0
U	04.841.4250.0
V	04.841.4350.0
W	04.841.4450.0
X	04.841.4550.0
Y	04.841.4650.0
Z	04.841.4750.0

Terminal Accessories

Jumper Bars

WT, WTP and WFKN Terminals

Plug & Play

- Dual jumpering channels
- Plug-in jumper bars

WT and WKFN 2.5mm² Terminals 5mm wide

Part No.	Description
Z7.280.6227.0	Insulated Jumper 2 pole
Z7.280.6327.0	Insulated Jumper 3 pole
Z7.280.6427.0	Insulated Jumper 4 pole
Z7.280.6527.0	Insulated Jumper 5 pole
Z7.280.6627.0	Insulated Jumper 6 pole
Z7.280.6727.0	Insulated Jumper 7 pole
Z7.280.6827.0	Insulated Jumper 8 pole
Z7.280.6927.0	Insulated Jumper 9 pole
Z7.280.7027.0	Insulated Jumper 10 pole
Z7.280.8027.0	Insulated Jumper 20 pole

WT and WKFN 4mm² Terminals 6mm wide

Part No.	Description
Z7.261.1227.0	Insulated Jumper 2 pole
Z7.261.1327.0	Insulated Jumper 3 pole
Z7.261.1427.0	Insulated Jumper 4 pole
Z7.261.1527.0	Insulated Jumper 5 pole
Z7.261.1627.0	Insulated Jumper 6 pole
Z7.261.1727.0	Insulated Jumper 7 pole
Z7.261.1827.0	Insulated Jumper 8 pole
Z7.261.1927.0	Insulated Jumper 9 pole
Z7.261.2027.0	Insulated Jumper 10 pole

WT and WKFN 6mm² Terminals 8mm wide

Part No.	Description
Z7.282.5227.0	Insulated Jumper 2 pole
Z7.282.5327.0	Insulated Jumper 3 pole
Z7.282.5427.0	Insulated Jumper 4 pole
Z7.282.5527.0	Insulated Jumper 5 pole
Z7.282.6027.0	Insulated Jumper 10 Pole

WT and WKFN 10mm² Terminals 10mm wide

Part No.	Description
Z7.283.8227.0	Insulated Jumper 2 pole

WT and WKFN 16mm2 Terminals 16mm wide

Part No.	Description
Z7.284.4227.0	Insulated Jumper 2 pole

Covers + Warning Symbols

WT, WTP and WFKN Terminals

WKFN range

Part No.	Description
04.343.8353.8	ADF 2.5/4 Yellow
04.343.6153.8	ADF 4/4 Yellow
04.343.6253.8	ADF 6/4 Yellow
04.343.6453.8	ADF 10/4 Yellow
03.343.6653.8	ADF 16/4 Yellow

WKN,35,70, 150/U range

Part No.	Description
04.343.5256.8	AD 16/4 Yellow
04.343.5356.8	AD 24/4 Yellow
04.343.5456.8	AD 28/4 Yellow

WT range

Part No.	Description
04.344.1455.8	ADWT 2.5 Yellow
04.344.1655.8	ADWT 4 Yellow
04.344.1855.8	ADWT 6 & 10 Yellow
04.344.2255.8	ADWT 16 Yellow

Terminal Strips

wieland

Terminal Strips

European style cable termination strips

All parts are captive within the insulating housing. The clamping screws are secured against loosening and provide vibration proof connections. The terminal strips are supplied with the clamping screws in the "open" position. Other sizes are available upon request.

	Type 6E / DS 4 mm² conductor		Type 10E / DS 6 mm² conductor		Type 16E / DS 10 mm² conductor		Type 20E / DS 16 mm² conductor	
No. of poles	Without wire protection	With wire protection	Without wire protection	With wire protection	Without wire protection	With wire protection	Without wire protection	With wire protection
3	21.310.0353.0	21.311.0353.0	21.330.5353.0	21.331.5353.0	21.340.5353.0	21.341.5353.0	21.340.3353.0	21.341.3353.0
5	21.310.0553.0	21.311.0553.0	21.330.5553.0	21.331.5553.0	21.340.5553.0	21.341.5553.0	21.340.3553.0	21.341.3553.0
12	21.310.1253.0	21.311.1253.0	21.330.6253.0	21.331.6253.0	21.340.6253.0	21.341.6253.0	21.340.4253.0	21.341.4253.0

Earth Neutral Bars

Brass Earth Neutral bar, 165 AMP, 2 x M8 studs, 16mm tunnels (2 screw)

Earth Neutral Bar

Part No.	No. of poles	Approximate length (mm)	Part No.	No. of poles	Approximate length (mm)
ENB06	6	103	ENB42	42	353
ENB12	12	143	ENB48	48	395
ENB18	18	185	ENB60	60	479
ENB24	24	227	ENB72	72	563
ENB30	30	269	ENB84	84	647
ENB36	36	311	ENB96	96	745

Earth Neutral Bar Mounts

Part No.	Description
ENB.MOUNT	Insulator Foot with Self Tapping Screws (packet includes 2 feet & 2 screws)

Power Supplies

wieland

Switched-mode power supply

wipos PS1 switched-mode power supply

All Wipos PS1 power supplies are single phase fed auto ranging from 115V to 230V AC.

The supplies have screw terminals and a healthy relay output. They are capable of 100% output up to 60 degrees C.

The stabilised output voltage is adjustable and can hold up for >30m secs in case of supply glitches.

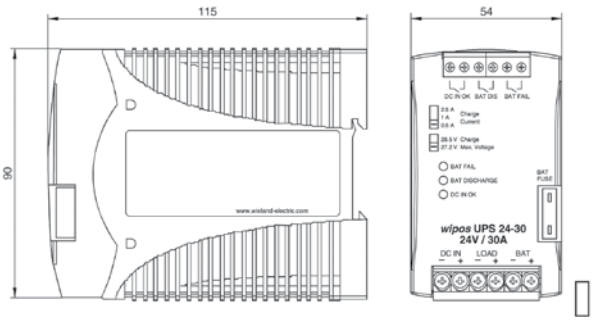
The supplies can be connected in parallel up to a maximum of 3 units to give up to 60A.

Part No.	Type	Description	Current	Parallel Operation	Output Range	Dimensions
81.000.6510.0	Wipos PS1 24-1.25	PS1-24V DC-1.25A Din Mount	1.25A	Yes	21.6 - 27.6V	32.5x90x90
81.000.6520.0	Wipos PS1 24-2.5	PS1- 24V DC-2.5A Din Mount	2.5A	Yes	21.6 - 27.6V	32.5x90x110
81.000.6530.0	Wipos PS1 24-5	PS1-24V DC-5A Din Mount	5A	Yes	21.6 - 27.6V	40x125x122.2
81.000.6150.0	Wipos PS1 24-10	PS1 24V DC-10A Din Mount	10A	Yes	21.6 - 27.6V	60x125x150
81.000.6550.0	Wipos PS1 24-20	PS1 24V DC-20A Din Mount	20A	Yes	21.6 - 27.6V	95x125x150

UPS Module

Wipos DC-UPS 24-30

- UPS Module
- Input: 22.5-28V DC
- Rated output current 30 A
- Built-in battery test function
- Undervoltage, overcharge and polarity protection for battery
- Status indicator LEDs and relay contact signal outputs
- Vertical mount



Part No.	Type	Description	Current	Battery Voltage	Output Range	Dimensions
81.000.6220.0	Wipos UPS 24-30	UPS MODULE (battery) backed	30A	18.7-28V DC	24V DC	54 x 90 x 114

Unmanaged Ethernet Switches

Din Rail Mounted Industrial Switches

Ethernet

The Wienet range of unmanaged Ethernet Switches are an easy to install, low cost, robust solution to distribute Ethernet throughout your control system. Ethernet brings fast deterministic control solutions right to the point they are needed.

The switches are available in a number of ways (ports) in copper wire and fibre optic.

There are also different speed options at 10, 100 and 1000 MBits/second.

Features include:

- Latest technology
- Redundant power supply
- Fully compatible according to IEEE 802.3, including auto-negotiation, auto-crossing (auto-MDI(x)), autosensing and auto-polarity
- Wide input voltage range
- Wide temperature range
- Complete diagnostic via several LED's
- Compact design
- DIN rail mounting or screw fastening
- Robust contruction
- High protection class (min. IP40)

UMS 4-1FM

UMS 6-L

UMS 8-2G

Part No.	Type	Description	Dimensions
83.040.0000.1	Wienet UMS 6-L	6x 10/100 / Plastic body	80 x 45 x 91
83.040.0000.0	Wienet UMS 6	6x 10/100 / Metal body	80 x 45 x 91
83.040.0001.0	Wienet UMS 8	8x 10/100 / metal body	80 x 45 x 91
83.040.0103.0	Wienet UMS 8-2G	8x 10/100 & 2x 10/100/1000 / metal body	119.9 x 53.4 x 145.7
83.040.0106.0	Wienet UMS 8G	8x 10/100/1000 / metal body	80 x 45 x 90
83.040.0002.0	Wienet UMS 4-1FM	4x 10/100 & 1x fiber optic multi mode / metal body	80 x 45 x 90
83.040.0003.0	Wienet UMS 4-1FS	4x 10/100 & 1x fiber optic single mode / metal body	80 x 45 x 90

Patchleads

SFTP CAT 5.e 300MHz

Construction:
Solid core, with foil and overall copper braid screening, grey halogen free sheath with Hirose TM 11 connector.

Part No.	Length (mtr)
CE6647	0.5
CE6648	1
CE6649	1.5
CE6650	2
CE6651	3

Part No.	Length (mtr)
CE6652	5
CE6653	7.5
CE6654	10
CE6655	15
CE6656	20

Relays

wieland

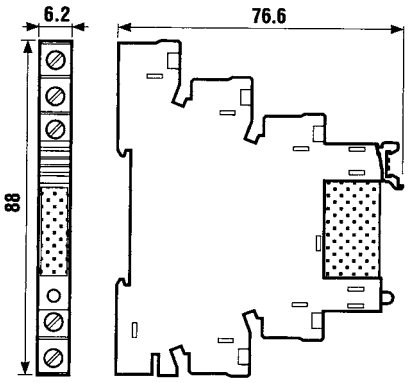
Flare Relays

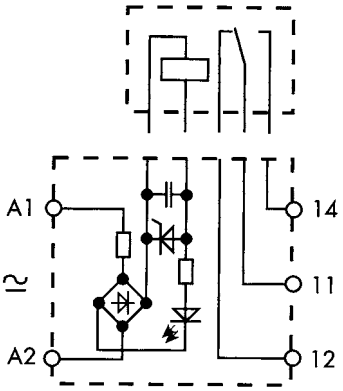
Move series

The Flare Move series pluggable terminal block relays measure only 6.2 mm thick. They offer signal isolation and conversion for use with PLC's and remote I/O systems. Flare relays are specifically designed for quick plug-and-play connections.

A robust connection is ensured with screw clamp termination, and 20-pole jumpering provides a quick solution for high-volume wiring. Because Flare relays are thinner than most other relay types, they are space efficient, saving panel space.

Available in multiple configurations: 12 VDC, 24 VDC, 110 VAC/DC, and 240V AC/DC, with switching voltages up to 250 VAC and switching currents of up to 6A. All relays include built-in DC polarity protection and standard LED indication.





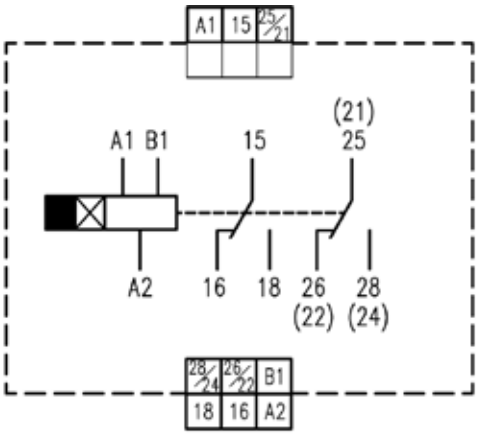
Description	12 V relay module	24 V relay module	240 V relay module
Part No.	80.010.4521.0	80.010.4522.0	80.010.4526.0
Nominal operating voltage	12 V DC	24 V DC	240 V AC/DC (50/60 Hz)
Nominal input current	15.2 mA	9.4 mA	5 mA
Nominal input capacity AC/DC	0.2 W	0.23 W	0.6 W
Connectable via jumper comb (20 pole)	80.063.4029.1	80.063.4029.1	80.063.4029.1
Blank relay marking tags	80.063.4129.3	80.063.4129.3	80.063.4129.3
Status display	LED green	LED green	LED green
Maximum switching voltage	400 V AC	400 V AC	400 V AC
Nominal switching voltage	250 V AC	250 V AC	250 V AC
Maximum switching current	6 A, AC / DC	6 A, AC / DC	6 A, AC / DC
Maximum starting current	30 A (0.5 sec)	30 A (0.5 sec)	30 A (0.5 sec)
Contact material	AgSnO2	AgSnO2	AgSnO2
Rated voltage	250 V	250 V	250 V
Ambient temperature	0 oC…+50 OC	0 oC…+50 OC	0 oC…+50 OC
Storage temperature	-40 oC…+55 0C	-40 oC…+55 0C	-40 oC…+55 oC
Protection type/mounting rail	IP 20 / TS35	IP 20 / TS35	IP 20 / TS35
Terminal range - finely stranded	0.14mm2 – 1.5mm²	0.14mm2 – 1.5mm²	0.14mm2 – 1.5mm²
Terminal range - single core	0.5mm2 – 2.5mm²	0.5mm2 – 2.5mm²	0.5mm2 – 2.5mm²

Timers

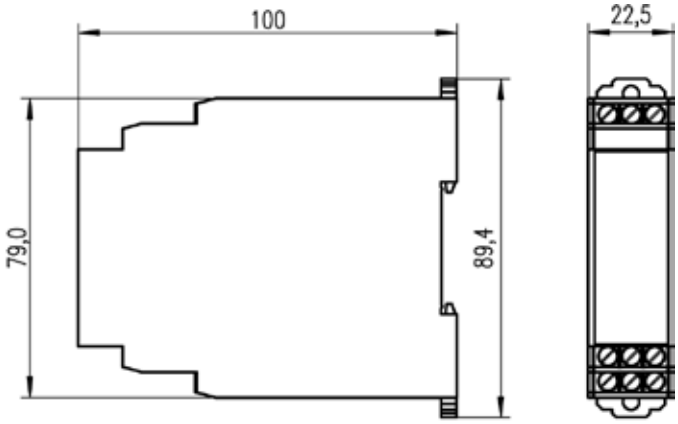
Flare TIME M8-2

Multifunctional time delay 24-240 V AC/DC

- Multi-functional Time Relay
- 8 selectable operating modes
- Multi range time settings
- 8 time ranges
- Synchronous / Time controlled mode selectable (for output 2)
- Multiple voltage supply 20.4 ... 264 V AC/DC
- Mounting width 22.5 mm



Block diagram



Dimensional diagram

Technical data

flare TIME M8-2		Part No. 81.020.0003.0
Input / Control		
Rated supply voltage A1-A2	[UI_N]	24 ... 240 V AC/DC
Voltage range		20.4 ... 265 V AC/DC
Line frequency AC		50/60 Hz
Rated power consumption	[PI_max]	6.6 VA @ 240 V AC, 1.2 W @ 24 V DC
Output / Switching Contact		
Output / Switching Contact		
Contacts		2 changeover contacts
Contact load max.		5 A at 250 V AC / 5 A at 24 V DC, ohmic load
Contact output minimum load		10 mA at 5 V DC
Switching voltage max.		250 V AC / 30 V DC
Rated breaking capacity		see Fig. 1 Load limiting curve (d = distance to adjacent modules) AgNi
Life cycle		100 x 103 operations (5 A at 250 V AC, ohmic load, 360 operations/h)
Time Ranges / Operating Modes		
Time ranges		0.1 s / 1 s / 10 s / 1 m / 10 m / 1 h / 10 h / 100 h
Accuracy of operating time		max. ±1 % of full scale
Setting error max.		±10 % of full scale ±0.05 s
Minimum input signal width		50 ms (start input)
Influence of voltage		max. ±0.5 % of full scale
Influence of temperature		max. ±2 % of full scale

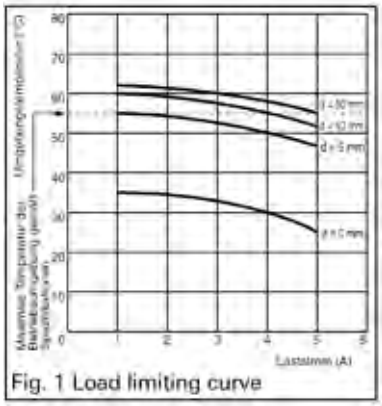


Fig. 1 Load limiting curve

wieland

Technical data

flare TIME M8-2		Part No. 81.020.0003.0
Operating modes (Fig. 2 - e) (4 time functions)		A: ON Delay B: Flicker OFF start C: Single shot and OFF delay B2: Flicker ON start D: OFF delay E: Single shot J: ON delayed single shot, fixed time G: ON/OFF delay
Operating modes for output 2 (Fig. 2 - f) (2 modes)		INST: synchronous to supply voltage TIME: time controlled output
Change of operating mode (Fig. 2 - e)		Without power supply, else error
Functional Display		**(see Fig. 2 Control and display elements)**
LED relay control (Fig. 2 - d)		
Operating voltage off		LED off / n. o. contact open
Operating voltage on		LED slow flashing / n. o. contact open
time running		LED fast flashing / n. o. contact open
time expired		LED on / n. o. contact closed
LED relay contact (Fig. 2 - c)		
Contact open		LED off
Contact closed		LED on
Isolation Property		
Dielectric strength (input/output)		2.000 V AC (50/60 Hz, for 1 min)
Insulation resistance (A1, A2 / contacts)		min 100 MW at 500 V DC
Approvals and Standards		
UL		CURus
CE		EMV 2004/108/EC; Low voltage 2006/95/EC
Safety Standard		EN61812-1
Product Standard		EN61812-1
EMV immunity		EN61000-4-2, /-4-3, /-4-4, /-4-5
EMV emission		EN61000-3-2, /-3-3, EN55011 Class B
Operation / Dimensions / Wiring		
Operating temperature range	[TU]	-20 ... +55 °C
Storage temperature range	[TU]	-40 ... +70 °C
Humidity in operation		25 … 85 % RH
Dimensions (W x H x D)		22.5 x 100 x 79.0 mm
Weight		ca. 120 g
Housing material		Plastic
Mounting on		35 mm rail acc. EN 60715
Cooling		Free convection
IP protection		IP20
Clamp type		Screw clamp
Connector cross section (min.)	solid/stranded	0.2 mm² (AWG24)
Connector cross section (max.)	solid/stranded	2.5 mm² (AWG14)
Strip length		8 mm max.
Recommended torque		0.49 Nm
Terminal Connections		
A1 - A2		Supply voltage
B1 - A2		Control / Start input
15, 16, 18		Changeover contact (relay 1)
25 (21), 26 (22), 28 (24)		Changeover contact (relay 2)
Control Elements		**(see Fig. 2 Control and display elements)**
a - turn switch		Time range (0.1 s, ..., 100 h)
b - turn potentiometer		Time duration (0 ... 12 x time range)
e - turn switch		Operating mode / time function
f - turn switch		Operating mode for output 2

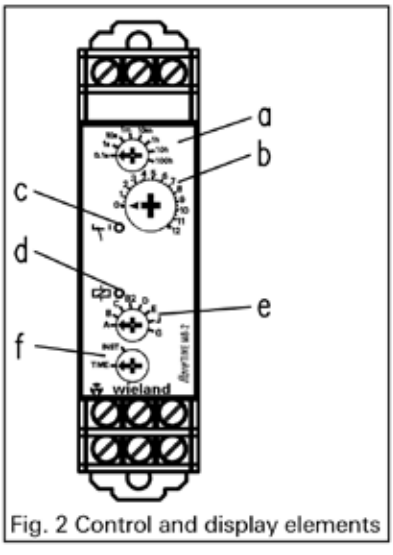


Fig. 2 Control and display elements

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Noark

Contactors and Overload Relays

Miniature Contactor Ex9CS

2.2-5.5kW

Ex9CS contactors combine excellent electrical properties with an extremely compact design. Ideal for space limited installations in both industrial and residential applications.

Specification

Rated operational voltage of main contacts 690 V AC, Ith 20 A, IeAC-1 20 A/690 V Rated frequency 50 Hz.

Features

- Miniature Contactors according to IEC / EN 60947-4-1
- AC-3 rated current, 6, 9 and 12 A at 400 V
- Coil control voltage 24 — 240 V AC
- Rated conditional short circuit current Iq 50 kA
- Suitable for industrial as well as domestic applications
- Mounting onto device rail (DIN) 35mm or onto panel
- 4 pole versions available on request

Type Key

Ex9	CS	06	01	3P	230V
Product family	Product	Rated current AC-3 400V	Built-in auxiliary contacts	Poles (main contacts)	Coil control voltage
Ex9	CS: Miniature contactors	06 : 6 A 09 : 9 A 12 : 12 A	10 : 1 NO 01 : 1 NC _ : without	3, 4, 4/22	24 - 415 V AC

Miniature contactor Ex9CS Versions 06, 09, 12

Front-mounted auxiliary contact unit, 4 contacts AX41

Thermal overload relay Ex9R12

Part No.	Type	No. of poles	Power 380/415V	AC-3 rated current	AC-1 rated current	Auxilary contacts	Coil voltage	Frame size
61121	Ex9CS06 01 3P 24V	3	2.2kW	6A	20A	1 NC	24 V AC	12
61132	Ex9CS06 10 3P 24V	3	2.2kW	6A	20A	1 NO	24 V AC	12
61117	Ex9CS06 01 3P 110V	3	2.2kW	6A	20A	1 NC	110 V AC	12
61128	Ex9CS06 10 3P 110V	3	2.2kW	6A	20A	1 NO	110 V AC	12
61114	Ex9CS06 01 3P 240V	3	2.2kW	6A	20A	1 NC	240V AC	12
61125	Ex9CS06 10 3P 240V	3	2.2kW	6A	20A	1 NO	240V AC	12
61165	Ex9CS09 01 3P 24V	3	4kW	9A	20A	1 NC	24 V AC	12
61176	Ex9CS09 10 3P 24V	3	4kW	9A	20A	1 NO	24 V AC	12
61161	Ex9CS09 01 3P 110V	3	4kW	9A	20A	1 NC	110 V AC	12
61172	Ex9CS09 10 3P 110V	3	4kW	9A	20A	1 NO	110 V AC	12
61158	Ex9CS09 01 3P 240V	3	4kW	9A	20A	1 NC	240 V AC	12
61169	Ex9CS09 10 3P 240V	3	4kW	9A	20A	1 NO	240 V AC	12
61209	Ex9CS12 01 3P 24V	3	5.5kW	12A	20A	1 NC	24 V AC	12
61220	Ex9CS12 10 3P 24V	3	5.5kW	12A	20A	1 NO	24V AC	12
61205	Ex9CS12 01 3P 110V	3	5.5kW	12A	20A	1 NC	110 V AC	12
61216	Ex9CS12 10 3P 110V	3	5.5kW	12A	20A	1 NO	110 V AC	12
61202	Ex9CS12 01 3P 240V	3	5.5kW	12A	20A	1 NC	240 V AC	12
61213	Ex9CS12 10 3P 240V	3	5.5kW	12A	20A	1 NO	240 V AC	12

Auxiliary contacts AX41 See page 167
Thermal overload relays Ex9R12 See page 168

Contactors and Overload Relays

Contactors Ex9C

4kW - 45kW

Ex9C contactors are intended for a multitude of applications up to heavy industrial installations. The contactors are split into 4 frame sizes to optimise electrical and physical dimensions.

Overload relays are tailored to each contactor frame size, and auxiliary accessories are common to all frames.

Specification

- Rated operational voltage of main contacts 690 V AC
- Rated frequency 50 Hz

Features

- Contactors according to IEC / EN 60947-4-1
- Four frame sizes with rated current up to 100 A at 400 V AC-3
- Coil control voltage 24 — 415 V AC
- Rated conditional short circuit current Iq 50 kA
- Suitable mainly for industrial applications, can be used also for domestic ones
- Mounting onto device rail (DIN) 35 mm or 75 mm (frame sizes 38, 65, 100) or onto panel
- 4 pole versions available on request

Frame size 18

Frame size 38

Frame size 65

Frame size 100

Type Key

Ex9	C	i	06	01	3P	230V
Product family	Product	DC or Ac coil	Rated current AC-3 400V	Built-in auxiliary contacts	Poles (main contacts)	Coil control voltage
Ex9	C: Contactors	AC blank i DC coil	9, 12, 18, 25, 32, 38, 40, 50, 65, 80, 100 A	11 : 1 NO + 1 NC 22 : 2 NO + 2 NC	3	24 - 415 V

Contactor Ex9C
Versions 09, 12, 18, 25, 32, 38, 40, 50, 65, 80,100

Side-mounted auxiliary contact unit, 1 NO+1 NC AX4311

Front-mounted auxiliary contact unit, 2/4 contacts AX42

Overload thermal relay Ex9R12, Ex9R38, Ex9R100

Auxiliary contacts AX4311 see page 167
Auxiliary contacts AX42 see page 167
Thermal overload relays Ex9R see page 168

Contactors and Overload Relays

Contactors Ex9C

4kW - 45kW

3 pole

Part No.	Type	Power 380/415V	Rated Current AC-3	Rated Current AC-1	Auxilary Contacts	Coil Voltage	Frame Size
61321	Ex9C09 11 3P 24V	4kW	9A	25A	1NO 1NC	24 V AC	18
61643	Ex9C09i 11 3P 24V DC	4kW	9A	25A	1NO 1NC	24 V DC	18
61317	Ex9C09 11 3P 110V	4kW	9A	25A	1NO 1NC	110 V AC	18
61314	Ex9C09 11 3P 240V	4kW	9A	25A	1NO 1NC	240V AC	18
61311	Ex9C09 11 3P 415V	4kW	9A	25A	1NO 1NC	415 V AC	18
61343	Ex9C12 11 3P 24V	5.5kW	12A	25A	1NO 1NC	24 V AC	18
61653	Ex9C12i 11 3P 24V DC	5.5kW	12A	25A	1NO 1NC	24 V DC	18
61339	Ex9C12 11 3P 110V	5.5kW	12A	25A	1NO 1NC	110 V AC	18
61336	Ex9C12 11 3P 240V	5.5kW	12A	25A	1NO 1NC	240V AC	18
61333	Ex9C12 11 3P 415V	5.5kW	12A	25A	1NO 1NC	415 V AC	18
61387	Ex9C25 11 3P 24V	11kW	25A	40A	1NO 1NC	24 V AC	38
61577	Ex9C25i 11 3P 24V DC	11kW	25A	40A	1NO 1NC	24 V DC	38
61383	Ex9C25 11 3P 110V	11kW	25A	40A	1NO 1NC	110 V AC	38
61380	Ex9C25 11 3P 240V	11kW	25A	40A	1NO 1NC	240V AC	38
61377	Ex9C25 11 3P 415V	11kW	25A	40A	1NO 1NC	415 V AC	38
61409	Ex9C32 11 3P 24V	15kW	32A	50A	1NO 1NC	24 V AC	38
61579	Ex9C32i 11 3P 24V DC	15kW	32A	50A	1NO 1NC	24 V DC	38
61405	Ex9C32 11 3P 110V	15kW	32A	50A	1NO 1NC	110 V AC	38
61402	Ex9C32 11 3P 240V	15kW	32A	50A	1NO 1NC	240V AC	38
61399	Ex9C32 11 3P 415V	15kW	32A	50A	1NO 1NC	415 V AC	38
61453	Ex9C40 11 3P 24V	18.5kW	40A	60A	1NO 1NC	24 V AC	65
61697	Ex9C40i 11 3P 24V AC/DC	18.5kW	40A	60A	1NO 1NC	24 V AC/DC	65
61449	Ex9C40 11 3P 110V	18.5kW	40A	60A	1NO 1NC	110 V AC	65
61446	Ex9C40 11 3P 240V	18.5kW	40A	60A	1NO 1NC	240V AC	65
61443	Ex9C40 11 3P 415V	18.5kW	40A	60A	1NO 1NC	415 V AC	65
61464	Ex9C50 11 3P 24V	22kW	50A	80A	1NO 1NC	24 V AC	65
61460	Ex9C50 11 3P 110V	22kW	50A	80A	1NO 1NC	110 V AC	65
61457	Ex9C50 11 3P 240V	22kW	50A	80A	1NO 1NC	240V AC	65
61454	Ex9C50 11 3P 415V	22kW	50A	80A	1NO 1NC	415 V AC	65
61465	Ex9C65 11 3P 415V	30kW	50A	80A	1NO 1NC	415 V AC	65
61475	Ex9C65 11 3P 24V	30kW	65A	80A	1NO 1NC	24 V AC	65
61705	Ex9C65i 11 3P 24V AC/DC	30kW	65A	80A	1NO 1NC	24 V AC/DC	65
61471	Ex9C65 11 3P 110V	30kW	65A	80A	1NO 1NC	110 V AC	65
61468	Ex9C65 11 3P 240V	30kW	65A	80A	1NO 1NC	240V AC	65
61486	Ex9C80 11 3P 24V	37kW	80A	125A	1NO 1NC	24 V AC	100
61710	Ex9C80i 11 3P 24V AC/DC	37kW	80A	125A	1NO 1NC	24 V AC/DC	100
61482	Ex9C80 11 3P 110V	37kW	80A	125A	1NO 1NC	110 V AC	100
61479	Ex9C80 11 3P 240V	37kW	80A	125A	1NO 1NC	240V AC	100
61476	Ex9C80 11 3P 415V	37kW	80A	125A	1NO 1NC	415 V AC	100
61497	Ex9C100 11 3P 24V	45kW	100A	125A	1NO 1NC	24 V AC	100
61715	Ex9C100i 11 3P 24V AC/DC	45kW	100A	125A	1NO 1NC	24 V AC/DC	100
61493	Ex9C100 11 3P 110V	45kW	100A	125A	1NO 1NC	110 V AC	100
61490	Ex9C100 11 3P 240V	45kW	100A	125A	1NO 1NC	240V AC	100
61487	Ex9C100 11 3P 415V	45kW	100A	125A	1NO 1NC	415 V AC	100

Contactors and Overload Relays

Contactors Ex9C

72kW - 250kW

Ex9C contactors are intended for a multitude of applications up to heavy industrial installations. The contactors are split into 4 frame sizes to optimise electrical and physical dimensions.

Overload relays are tailored to each contactor frame size, and auxiliary accessories are common to all frames.

Specification

- Rated operational voltage of main contacts 690 V AC
- Rated frequency 50 Hz

Features

- Contactors according to IEC / EN 60947-4-1
- Four frame sizes with rated current up to 100 A at 400 V AC-3
- Coil control voltage 24 — 415 V AC
- Rated conditional short circuit current Iq 50 kA
- Suitable mainly for industrial applications, can be used also for domestic ones
- Mounting onto device rail (DIN) 35 mm or 75 mm (frame sizes 38, 65, 100) or onto panel
- 4 pole versions available on request

3 pole

Part No.	Type	Power 380/415V	Rated Current AC-3	Rated Current AC-1	Auxilary Contacts	Coil Voltage	Frame Size
62559	Ex9C150 22 3P 24V AC/DC	75KW	150A	185A	2NO 2NC	24V ACDC	150
62555	Ex9C150 22 3P 110V AC/DC	75KW	150A	185A	2NO 2NC	110V ACDC	150
62551	Ex9C150 22 3P 240V AC/DC	75KW	150A	185A	2NO 2NC	240V ACDC	150
62548	Ex9C150 22 3P 415V AC/DC	75KW	150A	185A	2NO 2NC	415VACDC	150
62571	Ex9C185 22 3P 24V AC/DC	90KW	185A	215A	2NO 2NC	24V ACDC	185
62567	Ex9C185 22 3P 110V AC/DC	90KW	185A	215A	2NO 2NC	110V ACDC	185
62563	Ex9C185 22 3P 240V AC/DC	90KW	185A	215A	2NO 2NC	240V ACDC	185
62560	Ex9C185 22 3P 415V AC/DC	90KW	185A	215A	2NO 2NC	415VACDC	185
62583	Ex9C225 22 3P 24V AC/DC	110KW	225A	275A	2NO 2NC	24V ACDC	225
62579	Ex9C225 22 3P 110V AC/DC	110KW	225A	275A	2NO 2NC	110V ACDC	225
62575	Ex9C225 22 3P 240V AC/DC	110KW	225A	275A	2NO 2NC	240V ACDC	225
62572	Ex9C225 22 3P 415V AC/DC	110KW	225A	275A	2NO 2NC	415VACDC	225
62595	Ex9C265 22 3P 24V AC/DC	132KW	265A	330A	2NO 2NC	24V ACDC	265
62591	Ex9C265 22 3P 110V AC/DC	132KW	265A	330A	2NO 2NC	110V ACDC	265
62587	Ex9C265 22 3P 240V AC/DC	132KW	265A	330A	2NO 2NC	240V ACDC	265
62584	Ex9C265 22 3P 415V AC/DC	132KW	265A	330A	2NO 2NC	415VACDC	265
62607	Ex9C300 22 3P 24V AC/DC	160KW	300A	330A	2NO 2NC	24V ACDC	300
62603	Ex9C300 22 3P 110V AC/DC	160KW	300A	330A	2NO 2NC	110V ACDC	300
62599	Ex9C300 22 3P 240V AC/DC	160KW	300A	330A	2NO 2NC	240V ACDC	300
62596	Ex9C300 22 3P 415V AC/DC	160KW	300A	330A	2NO 2NC	415VACDC	300
62619	Ex9C400 22 3P 24V AC/DC	220KW	400A	430A	2NO 2NC	24V ACDC	400
62615	Ex9C400 22 3P 110V AC/DC	220KW	400A	430A	2NO 2NC	110V ACDC	400
62611	Ex9C400 22 3P 240V AC/DC	220KW	400A	430A	2NO 2NC	240V ACDC	400
62608	Ex9C400 22 3P 415V AC/DC	220KW	400A	430A	2NO 2NC	415VACDC	400
62631	Ex9C500 22 3P 24V AC/DC	250KW	500A	610A	2NO 2NC	24V ACDC	500
62627	Ex9C500 22 3P 110V AC/DC	250KW	500A	610A	2NO 2NC	110V ACDC	500
62623	Ex9C500 22 3P 240V AC/DC	250KW	500A	610A	2NO 2NC	240V ACDC	500

Accessories

Suits Ex9CS

AX41.. auxiliary contact units are designed for Miniature Contactors Ex9CS.

With each contactor, one AX41 unit can be used. Auxiliary contact units are available with four contacts with all posible contact combinations.

- Front-mounted auxiliary contacts for Ex9CS
- Miniature Contactors Ex9CS can be used with one unit of front-mounted auxiliary contact unit

Miniature Contactors Ex9CS

Ex9CS
Version 06, 09, 12

AX41..
Max. 1 unit

Part No.	Type	Suits Frame Size	Auxilary Contacts	Mounting	Function
61017	AX4122	12	2NO 2NC	Front	Instantaneous
61019	AX4140	12	4NO	Front	Instantaneous
61051	MIT41 3P/4P L	12	NA	Side	Mechanical Interlock

Accessories

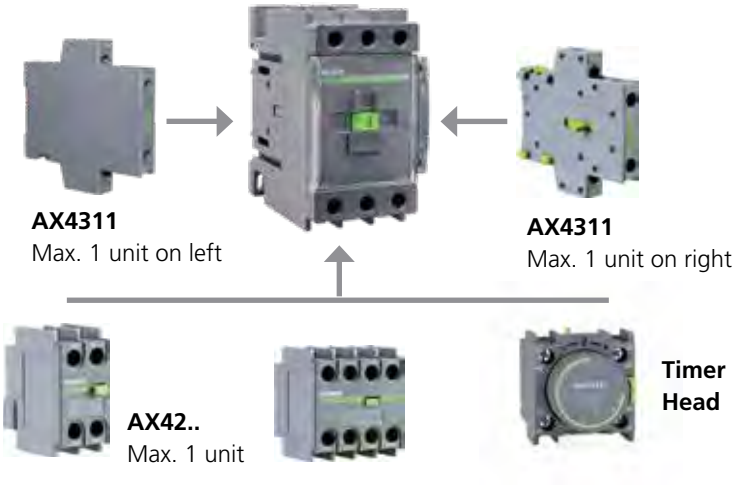
Suits Ex9C

Contactors Ex9C (all frame sizes) share accessories (except Miniature ones Ex9CS). Every Contactor can be equipped with one front-mounted auxiliary contact AX42.. and two units of side-mounted ones AX4311 (one from the left, the other from the right).

- Front and side-mounted auxiliary contacts for Ex9C
- Contactors Ex9C can be simultaneously equipped with one front-mounted contact unit and two side-mounted units
- Installation of an auxiliary contact unit does not preclude the installation of a thermal overload relay Ex9R

Contactors Ex9C

Ex9C
Size 09 to 500



AX4311
Max. 1 unit on left

AX4311
Max. 1 unit on right

AX42..
Max. 1 unit

Timer Head

Part No.	Type	Suit Frame Size	Auxilary Contacts	Mounting	Function
61021	AX4211	18 to 500	1NO 1NC	Front	Instantaneous
61025	AX4222	18 to 500	2NO 2NC	Front	Instantaneous
61027	AX4240	18 to 500	4NO	Front	Instantaneous
61028	AX4311	18 to 100	1NO 1NC	Side	Instantaneous
61030	AX4411	150 to 500	1NO 1NC	Side	Instantaneous
66021	TDD41B	18 to 500	1TNO 1TNC	Front	Delay On 0.1-30S
66024	TDD42B	18 to 500	1TNO 1TNC	Front	Delay Off 0.1-30S
61052	MIT42 3P L	18 to 38	NA	Side	Mechanical Interlock
61053	MIT43 3P L	40 to 100	NA	Side	Mechanical Interlock
61054	MIT44 3P L	150 to 500	NA	Side	Mechanical Interlock

Contactors and Overload Relays

Thermal Overload Relays Ex9R

0.1 - 500A

Ex9R thermal overload relays are designed primarily for protection of motors. These relays can be either combined directly with contactors or used as a stand-alone device with an AD5 adaptor.

IEC/EN 60947-4-1
3 pole versions
Tripping class 10A
Rated operational voltage 690VAC, 50/60Hz

Part No.	Type	Suits Frame Size	Overload current settings	Auxilary Contacts
66111	Ex9R12 0.16A	12	0.1-0.16A	1NO 1NC
66112	Ex9R12 0.25A	12	0.16-0.25A	1NO 1NC
66113	Ex9R12 0.4A	12	0.25-0.4A	1NO 1NC
66114	Ex9R12 0.63A	12	0.4-0.63A	1NO 1NC
66115	Ex9R12 1A	12	0.63-1 A	1NO 1NC
66116	Ex9R12 1.6A	12	1-1.6 A	1NO 1NC
66117	Ex9R12 2.5A	12	1.6-2.5 A	1NO 1NC
66118	Ex9R12 4A	12	2.5-4.0A	1NO 1NC
66119	Ex9R12 6A	12	4.0-6.0A	1NO 1NC
66120	Ex9R12 8A	12	5.5-8.0A	1NO 1NC
66121	Ex9R12 10A	12	7.0-10A	1NO 1NC
66122	Ex9R12 12A	12	9.0-12A	1NO 1NC
66123	Ex9R38 4A	18 to 38	2.5-4.0A	1NO 1NC
66124	Ex9R38 6A	18 to 38	4.0-6.0A	1NO 1NC
66125	Ex9R38 8A	18 to 38	5.5-8.0A	1NO 1NC
66126	Ex9R38 10A	18 to 38	7-10A	1NO 1NC
66127	Ex9R38 13A	18 to 38	9-13A	1NO 1NC
66128	Ex9R38 18A	18 to 38	12-18A	1NO 1NC
66129	Ex9R38 24A	18 to 38	16-24A	1NO 1NC
66130	Ex9R38 32A	18 to 38	23-32A	1NO 1NC
66133	Ex9R100 40A	40 to 100	30-40A	1NO 1NC
66134	Ex9R100 50A	40 to 100	37-50A	1NO 1NC
66135	Ex9R100 65A	40 to 100	48-65A	1NO 1NC
66136	Ex9R100 70A	40 to 100	55-70A	1NO 1NC
66137	Ex9R100 80A	40 to 100	63-80A	1NO 1NC
66138	Ex9R100 100A	40 to 100	80-100A	1NO 1NC
66139	Ex9R185 115A	150 to 185	80-115A	1NO 1NC
66140	Ex9R185 150A	150 to 185	110-150A	1NO 1NC
66141	Ex9R185 185A	150 to 185	140-185A	1NO 1NC
66142	Ex9R500 225A	225 to 500	160-250A	1NO 1NC
66143	Ex9R500 300A	225 to 500	210-300A	1NO 1NC
66144	Ex9R500 400A	225 to 500	280-400A	1NO 1NC
66145	Ex9R500 500A	225 to 500	380-500A	1NO 1NC

Ex9R500

Frame current: 500A

Accessories for Overload Relays Ex9R

Adaptors

- Adaptors for stand-alone applications of the overload relays
- Enables mounting of the overload relay onto 35 mm DIN rail
- Equipped with a set of terminals for wire connection of the relay at both sides

Part No.	Type	Suit Frame Size
66001	AD51	12
66002	AD52	18 to 38
66003	AD53	65 to 100
66004	AD54	150 to 185
66005	AD55	225 to 500

Contactors and Overload Relays

Star Delta Starter

Where supply limitations will not tolerate inrush currents associated with direct online starters, an assisted 'Star Delta Starter' can be employed. The following table gives the components required to build these assemblies.

Ratings
415V, 3 phase, 50/60Hz

Star Delta KW Rating	Rated Current	Line Contactor	Delta Contactor	Star Contactor	Timer	Interlock	Inside Delta OL Setting	Thermal Overload
7.5KW	15.5A	Ex9C0911	Ex9C0911	Ex9C0911	TDD41B	MIT42 3P L	9A	Ex9R38 10A
9KW	20A	Ex9C1211	Ex9C1211	Ex9C0911	TDD41B	MIT42 3P L	12A	Ex9R38 13A
15KW	31A	Ex9C1811	Ex9C1811	Ex9C1211	TDD41B	MIT42 3P L	18A	Ex9R38 24A
18.5KW	43A	Ex9C2511	Ex9C2511	Ex9C1211	TDD41B	MIT42 3P L	25A	Ex9R38 32A
25KW	55A	Ex9C3211	Ex9C3211	Ex9C2511	TDD41B	MIT42 3P L	32A	Ex9R38 38A
30KW	65A	Ex9C3811	Ex9C3811	Ex9C2511	TDD41B	MIT42 3P L	38A	Ex9R38 38A
33KW	69A	Ex9C4011	Ex9C4011	Ex9C4011	TDD41B	MIT43 3P L	40A	Ex9R100 40A
45KW	86A	Ex9C5011	Ex9C5011	Ex9C4011	TDD41B	MIT43 3P L	50A	Ex9R100 65A
59KW	112A	Ex9C6511	Ex9C6511	Ex9C4011	TDD41B	MIT43 3P L	65A	Ex9R100 70A
75KW	138A	Ex9C8011	Ex9C8011	Ex9C5011	TDD41B	MIT43 3P L	80A	Ex9R100 100A
85KW	160A	Ex9C10011	Ex9C10011	Ex9C6511	TDD41B	MIT43 3P L	93A	Ex9R100 100A
See page	-	165	165	165	167	167	-	168

Installation Contactors Ex9CH

Ex9CH series Installation Contactors are suitable for household and building modular distribution boards. They are mainly used in building automation processes for switching and controlling lighting, heating systems, ventilation, pumps, heating pumps and other applications. Optical indicator on the front side indicates status of the contacts and voltage on control coil.

Part No.	AC-1 Rated Current	No of Contacts	Coil voltage (AC)	Width (Module spaces)
102398	20A	2 NO	24v 50Hz	1
102399	20A	2 NO	230V 50Hz	1
102405	20A	2 NC	230V 50Hz	1
102402	20A	1NO 1NC	230V 50Hz	1
102413	25A	2NO 2NC	24v 50Hz	2
102411	25A	4NO	24v 50Hz	2
102414	25A	2NO 2NC	230V 50Hz	2
102412	25A	4NO	230V 50Hz	2
102420	40A	4NO	230V 50Hz	3
102427	63A	4NO	230V 50Hz	3

Enclosures

ETA Enclosures

Innovative enclosure solutions for industrial and electronic applications

ETA is an established company that strongly believes in evolution, whose objective is to design and produce high quality enclosure solutions, combining innovation with the experience gained over 35 years of activity.

Founded in 1978 in Italy, with 40 years of experience in steel, stainless steel and extruded aluminium production, more than 200 operating staff and 30 million euro turnover, ETA Group represents a safe and recognized benchmark for the global enclosures market as a manufacturer of high quality innovative solutions for industrial automation, harsh environments, LV power distribution and Information technology.

In 2016, ETA opened its third manufacturing unit, thus proudly widening and covering a total area of 70.000m^2. Thanks to this new investment, ETA Group will consists of HQ, 3 manufacturing units and 1 logistic center in Italy, 1 manufacturing unit in Romania, 2 sales subsidiaries in Europe (UK and France), 1 representative office in Saint Petersburg, 1 branch office in Cyprus (for the Middle East market) and an extensive sales network throughout Italy and around the world in more than 40 countries

ST Range - Wall mounting boxes with blank door

IP66

Features

Wide range of dimensions: over 40 enclosures with plain door,19 models with glazed door, enclosures with single plain door, double door with rod locking system and enclosure with single glazed door.

1. Mounting plate included.
2. Main accessories: plinth, internal door kit and modular chassis, wall-mounting brackets, door stop kit.
3. Optional accessories: micro perforated plates, louvered cable entry plates and pole mounting kit.
4. Terminal boxes in 5 different versions, with screwed cover, clear cover, for bus system, flanged, with hinged cover.
5. Rack enclosures from 3 to 21 units in 450 and 550 mm depths.
6. Protection rating for ST boxes: IP66 - Nema 4 (single blank door) Nema 12 (double blank door and plexidoor) - IK10.
7. High quality epoxy-polyester powder finish. Colour RAL 7035.

Characteristics

Enclosure and door manufactured from 1.5 mm thick sheet steel. Mounting plate manufactured from 2.5mm thick sendzimir sheet steel.

Supply

Box supplied with:
door provided with locking system with Ø 3mm double bar key and 2 zincpassivated rails to be fixed
mounting plate
cable entry plate with sealing gasket
screws for earth connection and mounting accessories

Protection Rating

IP66 complying with IEC EN62208; EN62262
NEMA 4 complying with UL508A; UL50
protection degree guaranteed by the two-component polyurethane foam seal
impact resistance IK10 complying with IEC EN62208; EN62262

Paint Finish

ETA standard epoxy polyester powder coating. Enclosure and door: colour RAL 7035 textured finish.

Steel Enclosures

ST Series - Wall Mounting Boxes with Blank Door

IP66

SINGLE DOOR BOX

ST Code	Box Dimensions			Number of Locks
	Width	Height	Depth	
200				
WM2315	200	300	150	1
300				
WM3315	300	300	150	1
WM3415	300	400	150	1
WM3420	300	400	200	1
WM3515	300	500	150	1
WM3520	300	500	200	1
400				
WM4315	400	300	150	1
WM4320	400	300	200	1
WM4420	400	400	200	1
WM4515	400	500	150	1
WM4520	400	500	200	1
WM4525	400	500	250	1
WM4620	400	600	200	2
WM4625	400	600	250	2
WM4640	400	600	400	2
500				
WM5520	500	500	200	1
WM5720	500	700	200	2
WM5725	500	700	250	2

ST Code	Box Dimensions			Number of Locks
	Width	Height	Depth	
600				
WM6420	600	400	200	1
WM6430	600	400	300	1
WM6620	600	600	200	2
WM6630	600	600	300	2
WM6640	600	600	400	2
WM6820	600	800	200	2
WM6825	600	800	250	2
WM6830	600	800	300	2
WM6840	600	800	400	2
WM61025	600	1000	250	2
WM61030	600	1000	300	2
WM61040	600	1000	400	2
800				
WM8830	800	800	300	2
WM8840	800	800	400	2
WM81030	800	1000	300	2
WM81040	800	1000	400	2

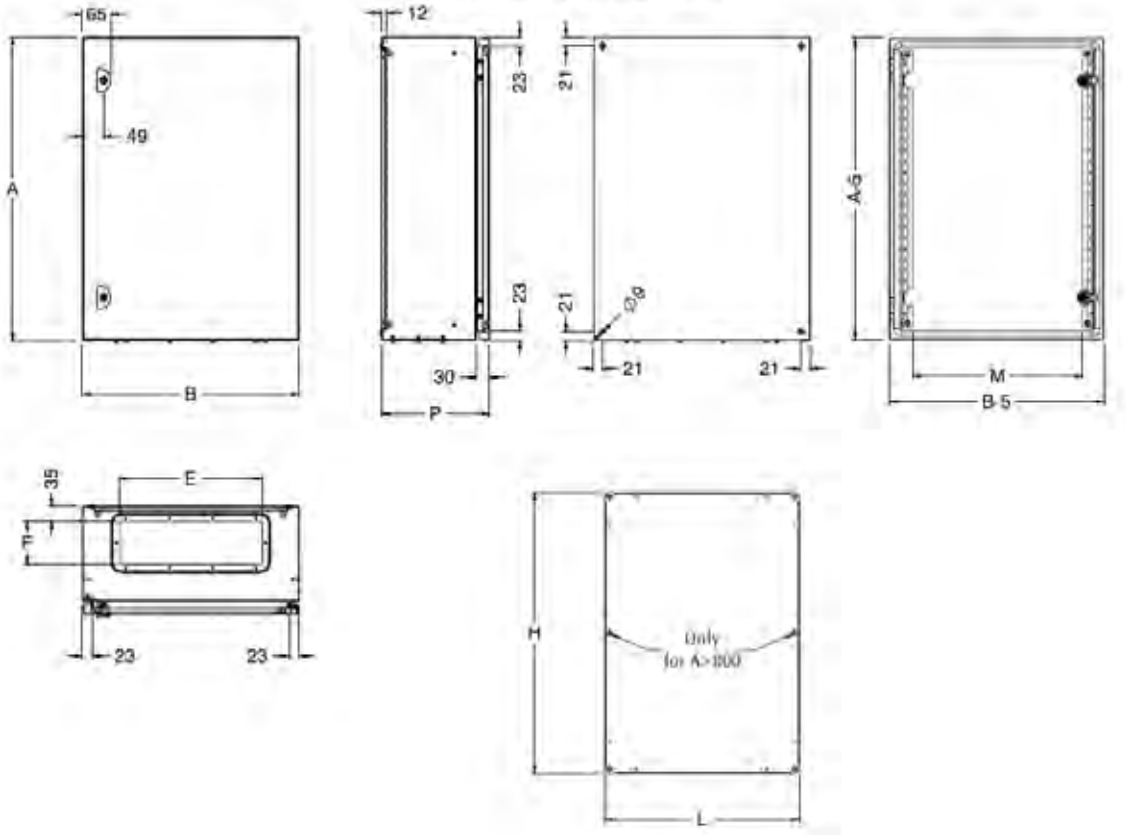
ST Code	Box Dimensions			Number of Locks
	Width	Height	Depth	
600				
WM61230	600	1200	300	Rod System
800				
WM81230	800	1200	300	Rod System

Steel Enclosures

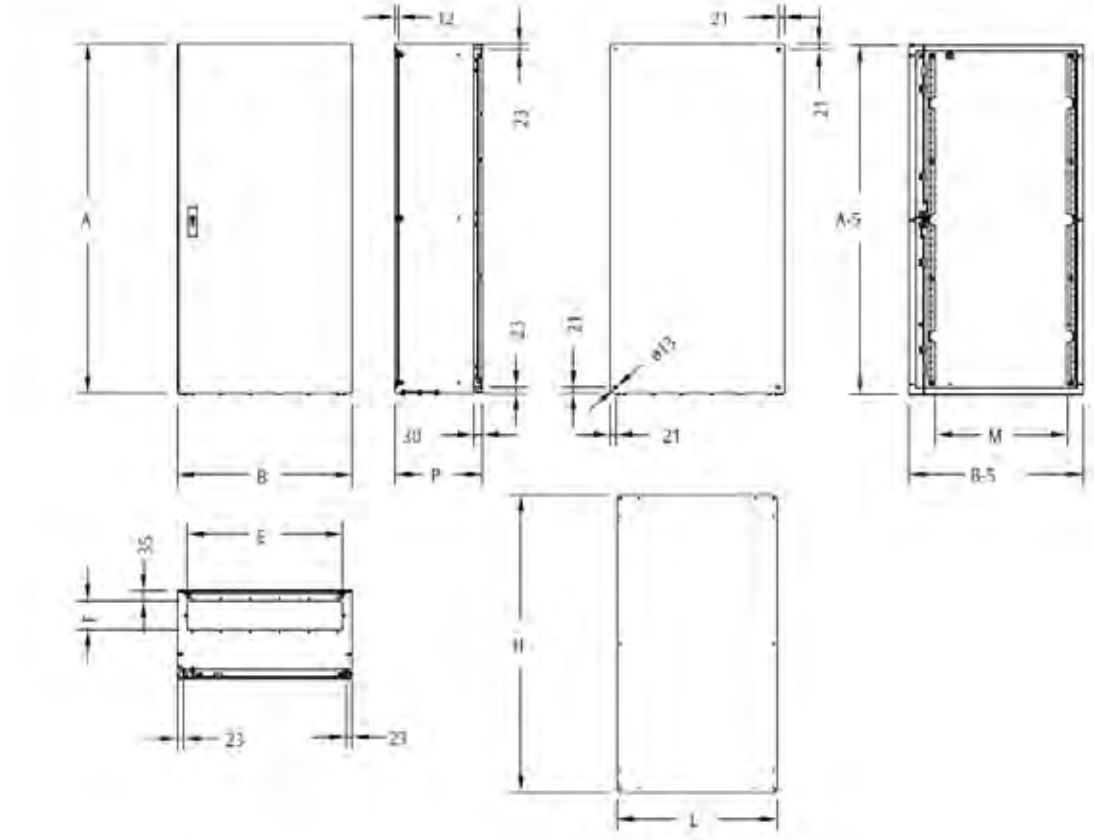
ST Series - Locking Systems for Wall Mounting Boxes

IP66

Box with standard locking system



Box with rod system



Steel Enclosures

SDV Series - Terminal Boxes with Screwed Lid

IP66

Characteristics

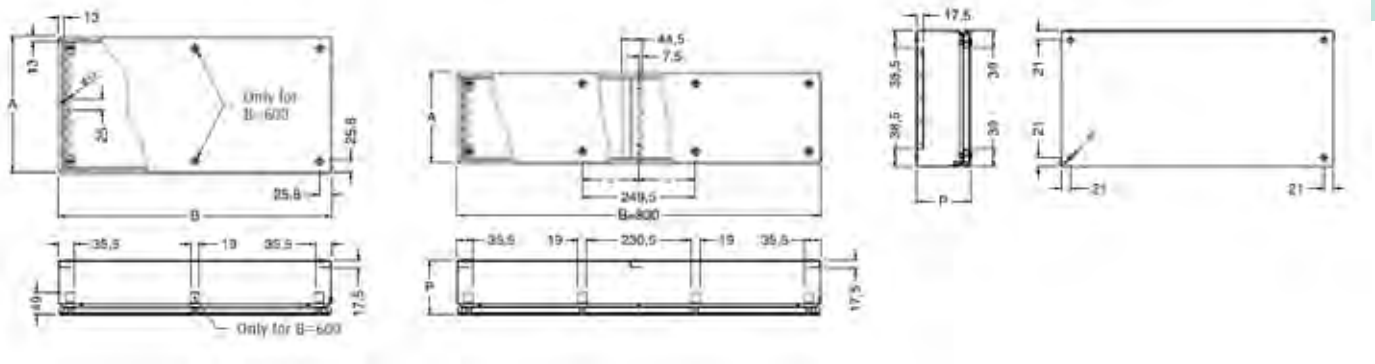
Box and lid manufactured from 1.2mm thick sheet steel. Box provided with holes for fixing optional hinges and lid fixed with captive screws.

Paint finish

ETA standard epoxy polyester powder coating.
Colour: RAL 7035 textured finish.

Protection rating

- IP66 complying with IEC EN62208; EN62262
- NEMA 4 complying with UL508A; UL50
- Protection degree guaranteed by the two-component polyurethane foam seal
- Impact resistance IK10 complying with IEC EN62208; EN62262



TERMINAL BOXES

SDV Code	Dimensions			Mounting Plate
	Width	Height	Depth	Part No.
TB1108	150	150	80	MP11
TB2208	200	200	80	MP22
TB3208	300	200	80	MP32
TB4208	400	200	80	MP42
TB5208	500	200	80	MP52
TB6208	600	200	80	MP62
TB8208	800	200	80	MP82
TB1112	150	150	120	MP11
TB2212	200	200	120	MP22
TB3112	300	150	120	MP31
TB3212	300	200	120	MP32

TERMINAL BOXES

SDV Code	Dimensions			Mounting Plate
	Width	Height	Depth	Part No.
TB3312	300	300	120	MP33
TB4212	400	200	120	MP42
TB4312	400	300	120	MP43
TB4412	400	400	120	MP44
TB5212	500	200	120	MP52
TB5312	500	300	120	MP53
TB6212	600	200	120	MP62
TB6312	600	300	120	MP63
TB6412	600	400	120	MP64
TB8212	800	200	120	MP82
TB8412	800	400	120	MP84

Steel Enclosures

Accessories

Mounting Plate - SDPA

Characteristics
Manufactured from 2.0 mm thick sendzimir sheet steel.

Supply
Includes 1 piece.

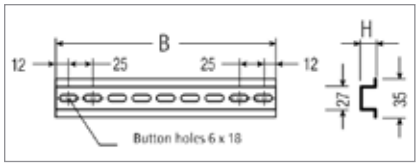
Mounting Plate

	Box Dimensions		Mounting Plate Dimensions	
Part No.	Width	Height	W	W
SDPA-11	150	150	126	120
SDPA-22	200	200	176	170
SDPA-31	300	150	276	120
SDPA-32	300	200	276	170
SDPA-33	300	300	276	270
SDPA-42	400	200	376	170
SDPA-43	400	300	376	270
SDPA-44	400	400	376	370
SDPA-52	500	200	476	170
SDPA-53	500	300	476	270
SDPA-62	600	200	576	170
SDPA-63	600	300	576	270
SDPA-64	600	400	576	370
SDPA-82	800	200	776	170
SDPA-84	800	400	776	370

Inner Rails - SDWA

Characteristics
Manufactured from sendzimir sheet steel bars.

Supply
Includes 10 pieces.



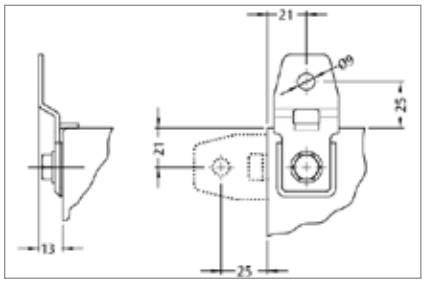
Inner Rails

Part No.	Box width	B	H
SDWA-013	150	125	7.5
SDWA-015	200	175	7.5
SDWA-020	300	275	7.5
SDWA-025	400	375	7.5
SDWA-030	500	475	7.5
SDWA-035	600	575	15
SDWA-040	800	775	15

Wall Mounting Brackets - SDWC-010

Characteristics
Manufactured from 2.5 mm thick zincpassivated sheet steel.

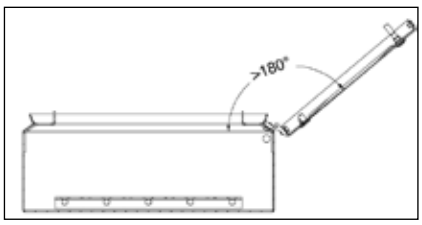
Supply
Includes 4 pieces.



Hinges - SDWA-005

Characteristics
Manufactured from white zincpassivated alloy.

Supply
Includes 6 pieces with mounting accessories.



Plastic Consumer Enclosures

IP40 Consumer Units

Recessed mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60 670 -1: 2002 (1st edition), IEC 60 670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	283 x 232 x 70	396 x 232 x 70	283 x 357 x 70	396 x 357 x 70
No. of poles	12	18	24	36
Part number	103536	103537	103538	103539
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

IP40 Consumer Units

Surface mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60 670 -1: 2002 (1st edition), IEC 60 670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	287 x 236 x 112	396 x 236 x 112	287 x 361 x 112	296 x 361 x 112
No. of poles	12	18	24	36
Part number	103522	103523	103524	103525
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

IP65 Consumer Units

Without earth neutral bar

Technical characteristics

- Material: Acrylonitrile Styrene Acrylate (ASA)
- Complies with: IEC 60670-1:2002 IEC 60670-24:2005
- Rated voltage: 1000VDC
- Resistance of insulating material to fire (glow wire test): 650°C
- Tamper evident security seal provisions
- Optional key lock available
- Made in Europe.

Description	4 Pole	8 Pole	12 Pole	24 Pole	36 Pole
Dimensions (mm)	127 x 200 x 120	200 x 200 x 120	318 x 258 x 142	318 x 383 x 142	318 x 507 x 142
No. of poles	4	8	12	24	36
Part number	N4D	N8D	N12D	N24D	N36D
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP	LOCKDP
ENB to suit	-	-	103547	103547	103547

Solar

Our commitment to industry

Since 1990 DKSH has been serving the Australian renewable energy industry with innovative and quality Balance of System (BoS) solutions and value-add services.

DKSH is the exclusive Australian distributor for a diverse range of products from reputable manufacturers who are leaders in their field and have long, stable corporate backgrounds.

We continually strive to offer products with the highest standards of quality, on-time delivery and cost-effectiveness - all important factors our customers need to succeed.

Our solutions are considered in the industry as "best-in-class" and we are privileged to have supported over 4,500 MW of solar projects in Australia across the residential, commercial and large scale segments.

Our partners

Multi-Contact MC STÄUBLI GROUP · STÄUBLI · Kraus & Naimer BLUE LINE switchgear · RALOS · HIS · BYSON · TFKable

wiley · HELUKABEL · noark · POWERBLOX · Gawe solartec · SOLAR SPACER

Connectors

Genuine MC4 Connector System

MC4 Cable Couplers

The components of the MC4 connector system for photovoltaics are designed to allow time-saving and safe serial and parallel wiring of PV modules for building-integrated and free-standing solar installations. Coupler housing (insulator) and contact pin are supplied as a pair under the one part number.

Technical Data	
Voltage Rating	1000 V DC (IEC),1500V DC (2Pfg2330)*
Temperature Range	-40° C to + 850° C
Ingress Protection (mated)	IP65, IP68 (1hr/1m)
Type of termination	Crimp
Flame Class	UL94-V0
Approvals	TUV, UL

* 2Pfg2330 : only approved for locations with restricted access

PV-KBT4 Range

Female (socket) Cable Coupler	Conductor size (mm²)	Cable OD clamping range (mm)	Current rating (A)
32.0010P0001	2.5	5.0 - 6.0	22.5
32.0014P0100	4 - 6	5.5 - 7.4	39
32.0016P0001	4 - 6	5.9 - 8.8	39
32.0034P0001	10	5.9 - 8.8	45

PV-KST4 Range

Male (plug) Cable Coupler	Conductor size (mm²)	Cable OD clamping range (mm)	Current rating (A)
32.0011P0001	2.5	5.0 - 6.0	22.5
32.0015P0100	4 - 6	5.5 - 7.4	39
32.0017P0001	4 - 6	5.9 - 8.8	39
32.0035P0001	10	5.9 - 8.8	45

MC4 Branch Plugs

Branch plugs and sockets are an economical method of joining 2 strings in parallel. The IP rated connectors make for a safe and reliable connection and save running 2 cables on the long return path from the far end of the PV array, saving time and money.

PV-AZB4

Branch socket

32.0018	2 x Female - 1 x Male

PV-AZS4

Branch plug

32.0019	2 x Male - 1 x Female

MC4 Panel Receptacles

MC4 panel-receptacle connectors are the interface between an inverter or junction box or preassembled cable. M12 locknut is supplied with unit for fast, efficient mounting. Protection class IP68 guarantees the highest connection safety.

PV-ADBP4 Range

Female panel receptacle

32.0076P0001	2.5mm² conductor
32.0078P0001	4-6mm² conductor
32.0107P0001	Socket Pin

PV-ADSP4 Range

Male panel receptacle

32.0077P0001	2.5mm² conductor
32.0079P0001	4-6mm² conductor
32.0507P0001	Plug pin

Connectors

Multi-Contact MC STÄUBLI GROUP STÄUBLI

Genuine MC4-EVO 2 Connector System

IEC 62852 Approved, 1500V DC

MC4-EVO 2 Cable Couplers

The components of the MC4-EVO 2 connector system for photovoltaics are designed to allow time-saving and safe serial and parallel wiring of PV modules for building-integrated and free-standing solar installations. Coupler housing (insulator) and contact pin are supplied as a pair under the one part number.

Features:

- The MC4-EVO2 is fully intermateable with the MC4 connector family
- Guaranteed intermateability with the MC4 connector family by Multi-Contact and certified by TÜV as well as recognized by UL
- International Certifications for 1500 V IEC, 1000 V UL recognized and JET

Technical Data	
Voltage Rating	1000 V DC / 1500 V DC (IEC) 600 V DC / 1000 V DC (UL) 1500V DC (JET)
Rated Current	22 A (1,5 mm²) 39 A (2,5 mm² / 14 AWG) 45 A (4,0 mm² / 12 AWG) 53 A (6,0 mm² / 10 AWG) 69 A (10,0 mm² / 8 AWG)
Test Voltage	12 kV (1000V), 16kV (1500V)
Ambient Temperature Range	-40 to + 85°C
Degree of protection, mated	IP 65 / IP68 (1m/1h)
Type of termination	Crimping
Connector system	MC4 (full intermateable with existing MC4 Family)
Contact material	Copper, tin plated
Contact resistance	≤ 0,35 mΩ
Additional environmental protection	Ammonia resistance according TÜV
Certifications	UL recognized according to UL6703 E349713 TÜV Rheinland certified according to FDIS IEC 62852 R60083124

PV-KBT4-EVO 2 Range

Female (socket) Cable Coupler	Conductor size (mm²)	Cable OD clamping range (mm)	Current rating (A)
32.0086P0001	4 - 6	4.7 - 6.4	45 - 53
32.0088P0001	4 - 6	6.4 - 8.4	45 - 53
32.0092P0001	10	6.4 - 8.4	69

PV-KST4-EVO 2 Range

Male (plug) Cable Coupler	Conductor size (mm²)	Cable OD clamping range (mm)	Current rating (A)
32.0087P0001	4 - 6	4.7 - 6.4	45 - 53
32.0089P0001	4 - 6	6.4 - 8.4	45 - 53
32.0093P0001	10	6.4 - 8.4	69

PV-ADB4-EVO 2

Female (socket) Cable Coupler	Conductor size (mm²)	Current rating (A)
32.0022P0001	4 - 6	42A 4.0mm², 47A 6.0mm²

PV-ADS4-EVO 2

Male (plug) Cable Coupler	Conductor size (mm²)	Current rating (A)
32.0023P0001	4 - 6	42A 4.0mm², 47A 6.0mm²

Connectors

Custom lengths also available

Multi-Contact | MC | STÄUBLI GROUP | STÄUBLI

Genuine MC4 Connector System

EN50521 Compliant IP68, 1500V DC

Preassembled leads

Our preassembled leads are made with TUV certified DC solar cable and fitted with genuine male and female Multi-Contact connectors. Custom lengths and variations on plug options can be manufactured upon request.

Preassembled leads	4mm² leads	6mm² leads
2 metre	XPMC4EN4/2M	XPMC4EN6/2M
5 metre	XPMC4EN4/5M	XPMC4EN6/5M
8 metre	XPMC4EN4/8M	XPMC4EN6/8M
10 metre	XPMC4EN4/10M	XPMC4EN6/10M
12 metre	XPMC4EN4/12M	XPMC4EN6/12M
15 metre	XPMC4EN4/15M	XPMC4EN6/15M

Safety lock clip MC4

The pluggable safety lock clip secures the MC4 plug connection and can only be unlocked with the tool PV-MS.

32.5280	PV-SSH4 Lock Clip

MC4 sealing caps

Sealing caps provide IP protection to plugged MC4 connectors.

32.0716	Suits female
32.0717	Suits male

Open end spanner (pair)

To tighten and unscrew the cable gland and to open the locking device of the connection

32.6024	PV-MS Spanner

Tooling

Stripping pliers

32.6027	PV-AZM Stripping Pliers

MC4 crimp tool (includes locator and insert)

32.6020.19100	2.5, 4, 6mm² Crimp Tool

Low cost MC4 crimp tool

32.6025	2.5, 4, 6mm² crimp tool

Spare parts for tooling

Insert to suit 32.6020.19100

32.6021.20100	4, 10mm² Crimp Die

Insert to suit 32.6020.19100

32.6021.19100	2.5, 4, 6mm² Crimp Die

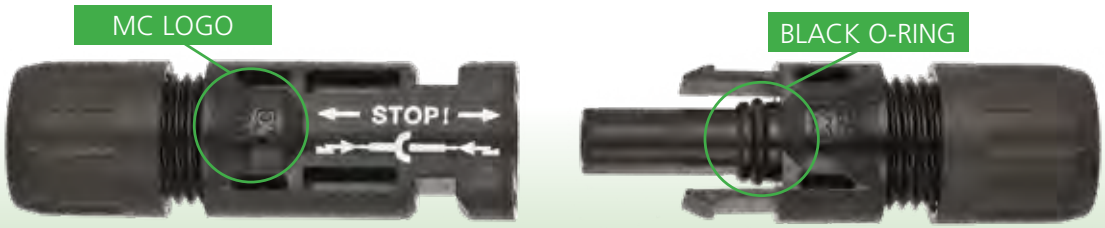
Locator to suit 32.6020.19100

32.6040	PV-LOC

If it's not STAÜBLI
it's not MC4

Why would you risk it for the cost of just a few cents more?
Ask for the name you can trust, demand genuine MC4 connectors.

ORIGINAL MC4
MADE IN SWITZERLAND



✓ GENUINE MC ✓ PROVEN QUALITY ✓ FULLY TESTED ✓ RELIABLE

COPY
MADE WHERE?

✗ INFERIOR COPY ✗ INFERIOR QUALITY ✗ CAN BE DISASTROUS ✗ RISK TO WARRANTIES

A growing number of suspect copies of Staübli's MC4 Solar components have recently appeared on the market. Stringent testing* has revealed substantial deficiencies in quality resulting in compromised safety and impaired system performance.

*A temperature increase test by the TÜV Rheinland with copied PV connectors from various manufacturers showed significant differences in higher temperature.
This was in stark contrast to the excellent results of the MC4 -PV connectors.

Multi-Contact
MC
STÄUBLI GROUP

STÄUBLI

DC Solar Cable

Electron beam cross-linked solar PV single core cable

Description
These cables are developed according to TUV EN50618 requirements and designed to meet the rigours of the outdoor application environment to provide long term durability and flexibility, combined with ease of installation.

Single core solar cables provide a durable, high performance interconnection solution between photovoltaic (PV) panels and from the panels to the inverter.

Direct burial applicable, high water-resistant performance.

Sheath colour
Black

Inner insulation
XLPE (White)

Sheath insulation
XLPO (Crosslinked Polyolefin)

Nominal voltage
1500 V/max. 1800 V (U0) (IEC)

Test voltage according to EN 50395-6
6,5 kV AC / 15 kV DC (5 min.)

Rated voltage
1500 V DC IEC

Rated current
55 A (4.0 mm²), 70 A (6.0 mm²), 98A (10mm2)

Insulation resistance of the complete cable
≥ 1000 MΩkm in accordance to EN 50395-8.2

Ambient temperature
–40°C ...+90°C

Maximum conductor temperature
max. +120 °C

Bending radius
Dynamic: >5 × OD, Static >4 x OD

Resistant to
UV: HD 605/A1 / Ozone: EN 50396
Acids, alcalis and oil (IRM902)

TUV Approvals
Approval according to EN50618
H1Z2Z2-K
JBT 10696.9.2011 (termite-resistant)
R50359551
Certified and compliant to TUV 2PfG 1169/08.07 PV1-F

Packaging
Standard: 500m or 1000m drum.
Other packaging available on request.

Marking
Meter marked.

> 25 YEARS LIFE EXPECTANCY

Part No.	Conductor cross section mm²	Approx. overall Ø mm	Strand design: Number x Ø (mm)	Conductor resistance/20°C Ω / km	Jacket colour	Approvals	Reel weight (kg)	Reel Size
SC1C4TEN500	1 x 4	5.4	52 x Ø 0.30	5.09	Black	TUV EN50618	29	500m
SC1C6TEN500	1 x 6	6.0	78 x Ø 0.30	3.39	Black	TUV EN50618	39	500m
SC1C10TEN500	1 x 10	7.2	77 x Ø 0.40	1.95	Black	TUV EN50618	62	500m
SC1C4TEN1000	1 x 4	5.4	52 x Ø 0.30	5.09	Black	TUV EN50618	58	1000m
SC1C6TEN1000	1 x 6	6.0	78 x Ø 0.30	3.39	Black	TUV EN50618	78	1000m
SC1C10TEN1000	1 x 10	7.2	77 x Ø 0.40	1.95	Black	TUV EN50618	124	1000m

Larger conductor sizes also available - see page 187 for details.

DC Solar Cable

RALOS

Electron beam cross-linked Solar PV twin core cable

Description:
These cables are developed according to PV1-F requirements and designed to meet the rigours of the outdoor application environment and provide long term durability and flexibility, combined with ease of installation.

Inner insulation:
XLPE (Black, Red)

Sheath insulation:
XLPE (Crosslinked Polyethylene)

Nominal voltage:
U0 / U: 0,6 / 1 kV AC / max. 1.5 kV DC

Test voltage according to EN 50395-6:
6,5 kV AC / 15 kV DC (5 min.)

Rated current:
55 A (4.0 mm²), 70 A (6.0 mm²)

Insulation resistance of the complete cable:
≥ 1000 MΩkm in accordance to EN 50395-8.2

Ambient temperature:
–40 °C ...+90 °C

Bending radius:
Dynamic: >4 × OD

Resistance to... tested according to IEC 60811-2-1
Acids and alkali

Approvals:
T50400254 (tested according to 2PfG 1169/08.2007)

Packaging:
Standard: 100m and 500m drums.
Meter marked.

Marking:
RALOS CABLE 0.9/1.8KV DC 2X6 SQ.MM DC SOLAR CABLE RED TÜV 2PfG 1169 PV1-F TYPE APPROVED.

Part No.	Conductor cross section mm²	Conductor Ø mm	Outer Ø mm	Strand design: Number x Ø (mm)	Conductor resistance/ 20°C Ω / km	Insulation colours	Jacket colour	Approvals	Reel Size
RC2C4T100	2 x 4.0	2.4	9.4 x 4.6	52 x Ø 0.30	5.09	Black / Red	Black	TUV	100m
RC2C4T500	2 x 4.0	2.4	9.4 x 4.6	52 x Ø 0.30	5.09	Black / Red	Black	TUV	500m
RC2C6T100	2 x 6.0	3.06	10.8 x 5.3	78 x Ø 0.30	3.39	Black / Red	Black	TUV	100m
RC2C6T500	2 x 6.0	3.06	10.8 x 5.3	78 x Ø 0.30	3.39	Black / Red	Black	TUV	500m
RC2C10T100	2 x 10.0	4.6	16.9 x 8.3	84 x Ø 0.40	1.95	Black / Red	Black	TUV	100m
RC2C10T500	2 x 10.0	4.6	16.9 x 8.3	84 x Ø 0.40	1.95	Black / Red	Black	TUV	500m

Construction
Constructed using fine stranded tinned copper conductors insulated with a temperature-resistant, halogen-free cross-linked co-polymer compound and protected by an outer sheath of flame-retardant, abrasion and UV-resistant, halogen-free cross-linked co-polymer.

Rated voltage
AC 1000V, DC 1500V (max)

Temperature range
Ambient -40°C to +90°C

Approvals
EN 50618 H1Z2Z2-K IEC 62930

Minimum bending radius
Flexing: 5 x cable diameter
Fixed: 4 x cable diameter

Marking
Meter marked

> 25 YEARS LIFE EXPECTANCY

Part No.	Conductor cross section mm²	Conductor Ø mm²	Outer Ø mm²	Conductor resistance 20°C Ω / km	Insulation color	Jacket color	Approval type	Drum size	Drum weight (approx.)
RC2C4EN100	2 x 4	2.4	5.4 x 11.1	5.09	White / Red	Black	EN 50618	100m	62 kg
RC2C6EN100	2 x 6	3.0	6.0 x 12.0	3.39	White / Red	Black	EN 50618	100m	81 kg
RC2C4EN500	2 x 4	2.4	5.4 x 11.1	5.09	White / Red	Black	EN 50618	500m	128 kg
RC2C6EN500	2 x 6	3.0	6.0 x 12.0	3.39	White / Red	Black	EN 50618	500m	165 kg

DC Solar Cable

Electron beam cross-linked solar PV DC string cable - single core

Description
The Byson DC Solar cables provide the optimal cable connection between the solar modules and from the solar modules to the inverter or DC main cable. These cables are insulated by a high-temperature cross-linked polymer jacket to provide maximum performance and durability for 25 years.

Construction
Constructed using class 5, fine stranded tinned copper conductors insulated with a high temperature resistant, halogen-free cross-linked co-polymer compound and protected by an outer sheath of flame-retardant, weather, abrasion and UV-resistant, halogen-free black cross-linked co-polymer.

Rated voltage
AC 1000V, DC 1500V (max)

Temperature range
Ambient -40°C to +90°C

Approvals
TUV EN50618 H1Z2Z2-K
Certificate No. R 50357489

IEC 62930 : 2017
Certificate No. R 50404890
JBT 10696.9.2011 (Termite resistant)

Minimum bending radius
Flexing: 5 x cable diameter
Fixed: 4 x cable diameter

Drum sizes (metres)
Standard - 500m and 1,000m
Other sizes (up to 12km) - available on request

Marking
Meter marked

Features
- Acid and alkaline-resistant
- Suitable for permanent outdoor use
- Suitable for direct burial
- High water resistant performance
- Inner sheath has contrasting colour to easily identify any damage to outer sheath

> 25 YEARS LIFE EXPECTANCY

Part No.	Conductor cross section mm²	Conductor Ø mm²	Outer Ø mm²	Conductor resistance 20°C Ω / km	Insulation color	Jacket color	TUV Approval	Drum size	Drum weight (approx.)
BC1C16EN500	1 x 16	5.1	8.7	1.24	White	Black	EN 50618	500m	99 kg
BC1C25EN500	1 x 25	6.3	10.4	0.79	White	Black	EN 50618	500m	130 kg
BC1C35EN500	1 x 35	7.6	12.2	0.57	White	Black	EN 50618	500m	178 kg
BC1C16EN1000	1 x 16	5.1	8.7	1.24	White	Black	EN 50618	1000m	194kg
BC1C25EN1000	1 x 25	6.3	10.4	0.79	White	Black	EN 50618	1000m	268 kg
BC1C35EN1000	1 x 35	7.6	12.2	0.57	White	Black	EN 50618	1000m	367 kg

Earth cable - single core

> 25 YEARS LIFE EXPECTANCY

Part No.	Conductor cross section mm²	Conductor Ø mm²	Outer Ø mm²	Conductor resistance 20°C Ω / km	Insulation color	Jacket color	Approval Type	Drum size	Drum weight (approx.)
BCE1C4IEC100	1 x 4	2.4	4.82	5.09	White	Grn / Ylw	IEC	100m	29 kg
BCE1C6IEC100	1 x 6	3.0	5.53	3.39	White	Grn / Ylw	IEC	100m	39 kg
BCE1C4IEC500	1 x 4	2.4	4.82	5.09	White	Grn / Ylw	IEC	500m	58 kg
BCE1C6IEC500	1 x 6	3.0	5.53	3.39	White	Grn / Ylw	IEC	500m	78 kg

Approvals: IEC 60332, IEC 60228, IEC 60754, IEC 61034

DC Solar Cable

Electron beam cross-linked solar PV DC string cable - single core

Termite-resistant

Description
The Byson Termite Resistant DC Solar cables are specifically designed for direct burial and are the optimum solution to termite attack.

Construction
Constructed using class 5, fine stranded tinned copper conductors insulated with Polyamide (Type PA6) and high temperature resistant, halogen-free cross-linked co-polymer compound and protected by an outer sheath of flame-retardant, weather, abrasion and UV-resistant, halogen-free black cross-linked co-polymer.

Rated voltage
AC 1000V, DC 1500V (max)

Temperature range
Ambient -40°C to +90°C

Approvals
TUV EN50618 H1Z2Z2-K
Certificate No. R 50357489

IEC 62930, 60228,60332, 60754

Minimum bending radius
Flexing: 5 x cable diameter
Fixed: 4 x cable diameter

Marking
Meter marked

Drum sizes (metres)
Standard - 1,000m
Option of up to 12,000m

Features
- Suitable for direct burial, anti-termite
- Acid and alkaline-resistant
- High water resistant performance
- Inner sheath has contrasting colour to easily identify any damage to outer sheath

> 25 YEARS LIFE EXPECTANCY

Part No.	Conductor cross section mm²	Outer Ø mm²	Conductor resistance 20°C Ω / km	Insulation color	Jacket color	Polyamide	TUV Approval	Drum size	Drum weight (approx.)
BC1C4NEN1000	1 x 4	5.7 +/-0.4mm	5.09	White	Black	PA6	EN 50618	1000m	62 kg
BC1C6NEN1000	1 x 6	6.3 +/-0.5mm	3.39	White	Black	PA6	EN 50618	1000m	84 kg
BC1C10NEN1000	1 x 10	7.5 +/-0.5mm	1.95	White	Black	PA6	EN 50618	1000m	134 kg

Rubber Cable

R-E-110 Rubber SDI Cable

Highly flexible single conductor, SDI, halogen free power cable

Construction
Class 6 super fine copper conductors, EPR thermosetting compound type R-E-110 insulation, halogen-free, low smoke, flame and heat retardant, UV, oil, chemical and weather-resistant orange thermosetting compound R-E-110 sheath. Other colours available on request subject to minimum order quantity and lead time.

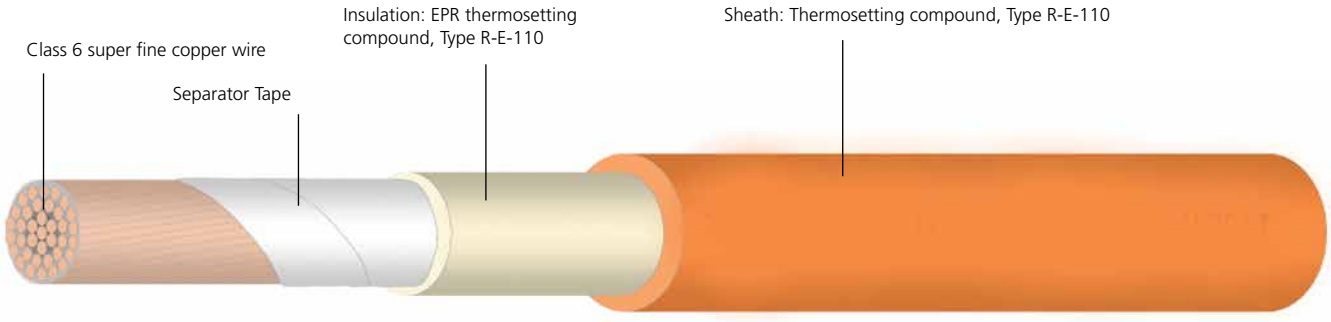
Approvals
AS/NZS 5000:1, IEC 60228
AS/NZS 3808, 3008
IEC 61034-2, IEC 60754-2

Minimum Bending Radius
Fixed: 6 x cable diameter
Flexing: 10 x cable diameter

Nominal Voltage
0.6/1 kV AC
0.9/1.5 kV DC

Features
- UV resistant
- Halogen free
- 110° rated

Temperature Range
Fixed: -40°C to +110°C
Flexing: -25°C to +90°C



Part No.	Nominal conductor area mm² and number of cores		Stranding	Current rating* (AMPS)	Approx. overall Ø mm	Approx. weight kg/km
G-012568	10mm²	1 core	301 x 0.2	80	8.65	149
G-012569	16mm²	1 core	470 x 0.2	105	9.80	202
G-012570	25mm²	1 core	726 x 0.2	139	11.35	293
G-012571	35mm²	1 core	1040 x 0.2	172	12.70	390
G-022907	50mm²	1 core	1499 x 0.2	217	14.35	535
G-012573	70mm²	1 core	2165 x 0.2	273	16.30	725
G-012574	95mm²	1 core	2745 x 0.2	329	18.70	870
G-012575	120mm²	1 core	1554 x 0.3	390	20.65	1205
G-012576	150mm²	1 core	1961 x 0.3	450	23.00	1500
G-012577	185mm²	1 core	2331 x 0.3	516	25.45	1840
G-012579	240mm²	1 core	3172 x 0.3	620	28.30	2350
G-012581	300mm²	1 core	3965 x 0.3	714	31.15	2915
G-012582	400mm²	1 core	5246 x 0.3	855	34.90	3817

*AS/NZS 3008.1.1:2009 Table 9 (Fixed-Unenclosed, Touching, Flexible Copper Conductor) 110°C operating temperature, 40°C air temperature, 25°C soil temperature.

Rubber Cable

Rubber Cable

H07RN-F power and control cable

Construction
Class 5 tinned copper conductors, colour or number coded ethylene-propylene rubber insulating material, flame-retardant, UV, ozone and oil-resistant black rubber sheath, metre marked.

Minimum Bending Radius
Flexing: 4 x cable diameter (up to 12mm Ø)
5 x cable diameter (12-20mm Ø)
6 x cable diameter (over 20mm Ø)
Fixed: 3 x cable diameter (up to 12mm Ø)
4 x cable diameter (over 12mm Ø)

Features
- Submersible to 500 metres
- UV resistant
- Oil resistant
- Tinned conductors

Temperature Range
-40°C to +90°C

Nominal Voltage
0.6/1 kV AC
0.9/1.5 kV DC

Colour Coding
Colour coding of power conductors comply to HD 308 , DIN VDE 0293- 308.
- 2-core: Blue and brown
- 3-core: Blue, brown, green-yellow
- 4-core: Brown, black, grey, green-yellow
- 5-core: Blue, brown, black, grey
- Above 5-core: Black numbered cores with a green-yellow earth core

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
G-022938	16mm²	1 core	11.1	248
G-022940	25mm²	1 core	12.9	356
G-022944	35mm²	1 core	14.3	476
G-022945	50mm²	1 core	16.8	657
G-022946	70 mm²	1 core	19.0	884

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
G-023032	95 mm²	1 core	21.9	1156
G-023033	120mm²	1 core	23.4	1420
G-023034	150mm²	1 core	26.0	1762
G-023035	185mm²	1 core	29.1	2145
G-023036	240mm²	1 core	31.2	2720

Earth

Flexible rubber earth cable to AS/NZS 3808

Construction
Class 5 super fine tinned copper wire. Green/yellow ozone, oil & UV resistant, halogen-free and flame-retardant type X-HF-110 metre marked insulation.

Minimum Bending Radius
Fixed: 4 x cable diameter

Nominal Voltage
0.6/1kV AC
0.9/1.5kV DC

Features
- UV-resistant
- Halogen-free
- 110° rated

Temperature Range
-40°C to +110°C

Part No.	Nominal conductor area mm² and number of cores		Drum size	Approx. overall Ø mm	Approx. weight kg/km
HF1X4GN/YW	4mm²	1 core	100m	3.9	57
HF1X6GN/YW	6mm²	1 core	100m	4.4	73
HF1X10GN/YW	10mm²	1 core	100m	5.4	102
HF1X16GN/YW	16mm²	1 core	100m	6.4	150
HF1X25GN/YW	25mm²	1 core	100m	7.9	232

Part No.	Nominal conductor area mm² and number of cores		Drum size	Approx. overall Ø mm	Approx. weight kg/km
HF1X35GN/YW	35mm²	1 core	100m	9.1	321
HF1X50GN/YW	50mm²	1 core	100m	10.6	457
HF1X70GN/YW	70mm²	1 core	100m	12.9	645
HF1X95GN/YW	95mm²	1 core	100m	14.6	841
HF1X120GN/YW	120mm²	1 core	100m	16.4	1076

Rubber Cable

ARISTONCAVI

3.3kV 110° Single Core SDI

Highly flexible single core, SDI, 3.3kV rubber cable

Construction

Class 5 fine wire stranded tinned copper conductors, EPR insulated (white), sheathed with a 5GM3 rubber compound (Black), rated to 110°C, metre marked.

Application

Suitable for the wiring of traction vehicles, switchboard wiring, and submersible pump applications.

Features

- UV resistant
- Oil resistant
- Varnish resistant
- Submersible to 100 metres
- Abrasion resistant
- Tinned copper conductors

Minimum Bending Radius

Flexing: 5 x cable diameter
Fixed: 4 x cable diameter

Nominal Voltage

1.9 / 3.3kV AC
2.8 / 4.6kV DC
Test Voltage: 6kV

Temperature Range

Flexing: -25°C to +110°C
Fixed: -35°C to +110°C

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm minimum	Approx. overall Ø mm maximum	Approx weight kg/km
A009085	1.5mm²	1 core	5.5	7.0	50
A009086	2.5mm²	1 core	5.9	7.5	65
A009087	4mm²	1 core	6.4	8.0	80
A009088	6mm²	1 core	7.0	8.6	105
A009089	10mm²	1 core	8.2	10.0	155
A009090	16mm²	1 core	9.2	11.1	215
A009091	25mm²	1 core	11.3	13.4	330
A009092	35mm²	1 core	12.5	14.6	430
A009093	50mm²	1 core	14.1	16.4	590
A009044	70mm²	1 core	15.9	18.3	785
A009045	95mm²	1 core	18.2	20.8	1030
A009046	120mm²	1 core	19.6	22.4	1300
A009047	150mm²	1 core	21.7	24.7	1560
A009048	185mm²	1 core	23.6	26.7	1930
A009049	240mm²	1 core	26.3	29.7	2390
A009050	300mm²	1 core	29.3	32.9	3040
A009051	400mm²	1 core	32.5	36.4	3960
A009052	500mm²	1 core	36.5	40.7	5150

Orange Circular

Power Cable

Australian standard power distribution cable

Cable Construction
Class 2 stranding, coloured PVC insulation, flame retardant, UV resistant orange PVC sheath and metre marked.

Minimum Bending Radius
≤ 25mm2 4 x cable diameter
≥ 35mm2 6 x cable diameter

Nominal Voltage
0.6/1 kV AC
0.9/1.5kV DC

Temperature Range:
-30°C to +90°C

Colour Coding
- 2 core + earth : Red, Black, Green/Yellow
- 3 core + earth : Red, White, Blue, Green/Yellow
- 4 core + earth : Red, White, Blue, Black, Green/Yellow

Features
- UV resistant
- Non compacted conductors
- Oil & chemical resistant
- Flame retardant
- Metre marked

Part No.	Nominal conductor area mm² and number of cores		Approx. overall Ø mm	Approx. weight kg/km
2 core + earth				
OC3G1.5	1.5mm²	2 core + earth	10.10	146
OC3G2.5	2.5mm²	2 core + earth	11.20	192
OC3G4	4mm²	2 core + earth	12.50	253
OC3G6	6mm²	2 core + earth	13.00	299
OC3G10	10mm²	2 core + earth	15.10	432
OC3G16	16mm²	2 core + earth	16.90	599
3 core + earth				
OC4G1.5	1.5mm²	3 core + earth	11.00	175
OC4G2.5	2.5mm²	3 core + earth	12.10	231
OC4G4	4mm²	3 core + earth	13.80	314
OC4G6	6mm²	3 core + earth	14.50	379
OC4G10	10mm²	3 core + earth	16.80	553
OC4G16	16mm²	3 core + earth	18.90	778
OC4G25	25mm²	3 core + earth	22.10	1136
OC4G35	35mm²	3 core + earth	24.60	1519
OC4G50	50mm²	3 core + earth	28.30	2050
OC4G70	70mm²	3 core + earth	31.90	2825
4 core + earth				
OC5G1.5	1.5mm²	4 core + earth	11.90	211
OC5G2.5	2.5mm²	4 core + earth	13.20	280
OC5G4	4mm²	4 core + earth	15.20	389
OC5G6	6mm²	4 core + earth	15.90	474
OC5G10	10mm²	4 core + earth	18.50	696
OC5G16	16mm²	4 core + earth	20.90	989
OC5G25	25mm²	4 core + earth	24.80	1464
OC5G35	35mm²	4 core + earth	27.50	1933
OC5G50	50mm²	4 core + earth	32.00	2625
OC5G70	70mm²	4 core + earth	36.20	3628

PA6-VO Polyamide (nylon) Conduit

Industrial standard medium duty conduit

Construction
Internally and externally corrugated PA6-VO plastic tubing.

Temperature range
-40°C to +115°C. Short term 150°C.

Material
Polyamide 6

Colour
Black

Protection class
IP 68

Properties
- Flame-retardant VO (UL94)
- Gas and liquid-tight
- Highly flexible
- Stretch and crush-resistant
- Glossy surface
- Wind-resistant high mechanical strength
- Resistant to oil, acids and solvents
- Anti-friction
- UV-resistant
- Self-extinguishing (FMVSS 302)
- Medium wall thickness
- Halogen, phosphor and cadmium-free
- Passed RoHS

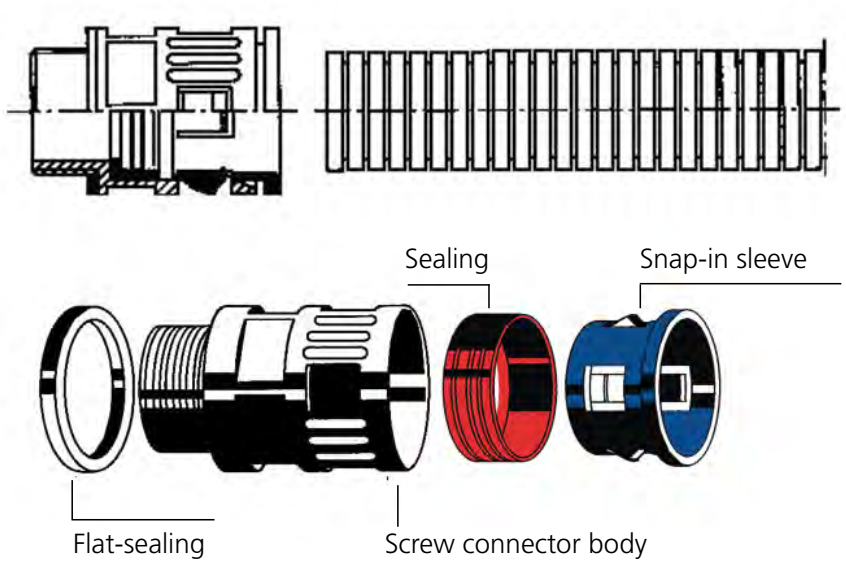
WY-PA6-V0 Polyamide Tubing

Part No.	Conduit Size	Inner Ø (mm)	Outer Ø (mm)	Weight (kg/m+10%)	PU (m/roll)
WY-PA6-V0-AD13.0B	AD13.0	10.0	13.0	0.026	100
WY-PA6-V0-AD15.8B	AD15.8	12.0	15.8	0.038	100
WY-PA6-V0-AD21.2B	AD21.2	17.0	21.2	0.061	50
WY-PA6-V0-AD28.5B	AD28.5	23.0	28.5	0.095	50
WY-PA6-V0-AD34.5B	AD34.5	29.0	34.5	0.125	25
WY-PA6-V0-AD42.5B	AD42.5	36.0	42.5	0.186	25
WY-PA6-V0-AD54.5B	AD54.5	48.0	48.0	0.264	25

Easy to install

Quick to uninstall
Press the ring of the snap-in-sleeve to the connector and pull the tubing out

IP 68 connector structure



WEYER

Polyamide Connectors and Clamps

Industrial standard conduit

Quick Screw Connector

Part No.	For conduit size	Outer Ø (mm)	Thread Dimension	Thread length (mm)	Pack Qty
WQG-M12B/AD13.0	AD13.0	13.0	M12×1.5	11.5	50
WQG-M16B/AD15.8	AD15.8	15.8	M16×1.5	12.0	50
WQG-M20B/AD21.2	AD21.2	21.2	M20×1.5	13	50
WQG-M25B/AD28.5	AD28.5	28.5	M25×1.5	13	25
WQG-M32B/AD34.5	AD34.5	34.5	M32×1.5	15	25
WQG-M40B/AD42.5	AD42.5	42.5	M40×1.5	15	10
WQG-M50B/AD54.5	AD54.5	54.5	M50×1.5	16	10

Comes complete with seals and locknuts

Elbow Connector

Part No.	For conduit size	Outer Ø (mm)	Thread dimension	Thread length (mm)	Pack Qty
WQW-M12B/AD13.0	AD13.0	20	M12 x 1.5	11.5	50
WQW-M16B/AD15.8	AD15.8	23	M16 x 1.5	12	50
WQW-M20B/AD21.2	AD21.2	29.5	M20 x 1.5	13	25
WQW-M25B/AD28.5	AD28.5	37	M25 x 1.5	13	25
WQW-M32B/AD34.5	AD34.5	44	M32 x 1.5	15	10
WQW-M40B/AD42.5	AD42.5	52	M40 x 1.5	15	5
WQW-M50B/AD54.5	AD54.5	64	M50 x 1.5	16	4

Comes complete with seals and locknuts

Tubing Clamp

Part No.	For conduit size	Fixing screw	Width (mm)	Pack Qty
SKM-AD13.0	AD13.0	M4	9	100
SKM-AD15.8	AD15.8	M4	9	100
SKM-AD21.2/M5	AS21.2	M5	9	50
SKM-AD28.5	AD28.5	M5	13	25
SKM-AD34.5	AD34.5	M6	13	25
SKM-AD42.5	AD42.5	M6	13	20
SKM-AD54.5	AD54.5	M6	13	20

Mounting Clip

Part No.	For conduit size	Fastening bore hole (mm)	Pack Qty
WQSC-AD13.0B	AD13.0	4.2	50
WQSC-AD15.8B	AD15.8	4.2	50
WQSC-AD21.2B	AD21.2	4.2	50
WQSC-AD28.5B	AD28.5	4.2	25
WQSC-AD34.5B	AD34.5	4.2	25
WQSC-AD42.5B	AD42.5	4.2	10
WQSC-AD54.5B	AD54.5	4.2	10

Cable Management

Nylon Cable Glands

Material:
Body: Polyamide

Temperature range:
-20°C to +100°C

Protection class:
IP 68

Supplied with locknut	Metric thread	Cable Ø range (mm)
53111206	M 12	3.5 – 7
53111216	M 16	4.5 – 10
53111226	M 20	7 – 13
53111236	M 25	9 – 17
53111246	M 32	11 – 21
53111256	M 40	19 – 28
53111266	M 50	27 – 35
53111270C	M 63	34 – 45

Cable Glands without Locknuts for Quick Assembly

The most innovative cable insertion system on the market for very fast, highly flexible assembly.
Simply click in - turn to left - turn to right - finished. Result: fixed, centred, strain relief, and IP68 protection in seconds.

Material:
Body: Special polyamide

Temperature range:
-20°C to +100°C

Protection class:
IP 68 - 5 bar

Part No.	Size	Colour	Cable Ø range (mm)	Pack size
53112923	M 12	Black	3.5 - 7	50
53112882	M 16	Black	5 - 9	50
53112687	M 20	Light grey	7 - 13	25
53112883	M 20	Black	7 - 13	25
53112688	M 25	Light grey	9 - 17	25
53112884	M 25	Black	9 - 17	25

Multi Hole Insert

Turns the cable gland into a multiple gland. A sealing ring with several holes is used in place of the inner sealing insert to enable several cables to be fed simultaneously through one gland whilst retaining IP68.

Part No.	Suits gland	No. of cables x cable Ø mm
53320250	M 20	2 x 5
53320260	M 20	2 x 6
53320353	M 20	3 x 5.3
53325260	M 25	2 x 6
53325350	M 25	3 x 5
53325360	M 25	3 x 6
53325370	M 25	3 x 7
53325450	M 25	4 x 5
53325540	M 25	5 x 4

Part No.	Suits gland	No. of cables x cable Ø mm
53332270	M 32	2 x 7
53332280	M 32	2 x 8
53332290	M 32	2 x 9
53332370	M 32	3 x 7
53332380	M 32	3 x 8
53332460	M 32	4 x 6
53332470	M 32	4 x 7
53332560	M 32	5 x 6
53332460	M 32	4 x 6

Cable Management

Black Polyester Coated Stainless Steel Cable Ties

316 Grade Stainless Steel

Features

- Fully rounded edges and exclusive easy thread lead-in design provides the ultimate support for network cables.
- Self-locking head design speeds installation and locks into place at any length along the cable tie body.
- Provides a strong, durable method of cable bundling.
- Can be used for a wide range of indoor, outdoor, and underground applications (including direct burial).
- Smooth surfaces and rounded edges assures cable protection and worker safety.

Product Specifications

Material
Stainless Steel Grade 316
Fully wrapped with Polyester Resin

Temperature Range
Stainless Steel:
-80°C to +538°C
Polyester Coating:
-40°C to +130°C

Water absorption
Stainless steel part: none

Ultraviolet resistance
Excellent

Part No.	Description
HT-338	Cable Tie Gun

Other sizes available upon request.

Part No.	Length (mm)	Width (mm)	Max. Strength Range (kgs)	Min. Diameter (mm)	Max. Diameter (mm)	Pack Qty
TS1-4-46200-316C	200	4.6	45	15	50	100
TS1-4-46360-316C	360	4.6	45	15	102	100
TS1-4-79200-316C	200	7.9	120	15	50	100
TS1-4-79360-316C	360	7.9	120	15	102	100

Solar PV Installation Tool

Designed to assist with installation of solar PV Modules, this spacer enables rapid installation and will maintain uniform with the array to give your job a professional finish.

Solar Spacer allows you to achieve a consistent pattern when fixing modules and helps to ensure that all panels are laid equidistant from each other (providing a symmetrical finish - as you or your customer would expect).

Colour	DKSH Part No.	Description	Compatible with
	SSYEL20	Solar Spacer 20mm X 20mm spacing, Bright Yellow	Schettler and Sunlock
	SSRED17	Solar Spacer 17mm X 17mm spacing, Bright Red	Clenergy, Antai
	SSBLK20	Solar Spacer 20mm X 10mm spacing, Black	Schettler (Built for landscape)
	SSBLU22.5	Solar Spacer 22.5mm X 22.5mm spacing, Blue	Radiant

Cable Management

Cable Clips

Long-lasting, wire management clips

Engineered for high quality wire management solutions, the Wiley Cable Clips simplify wire management and create a cleaner look to solar PV arrays. Able to last a lifetime, the corrosion resistant 304 stainless steel clips are a durable solution for all environments. Coined edges prevent damage to cable insulation.

The design is easy to install and no tools are required. Clips can be used in a wide variety of mounting configurations (including 90-degree) for module and rail applications. Custom designs are available upon request.

Features and Benefits

- Reliability for use throughout the lifetime of the PV system
- UL1565 Listed as positioning device
- Accomodates a broad range of cable combinations and sizes
- Compatible on modules with flange thickness range 1.3 to 2.5mm
- High quality wire management solutions
- Constructed of corrosion resistant 304 stainless steel
- Dual wire compartments
- Wide variety of mounting configurations
- Special tab for easy installation & removal
- Coined edges to prevent damage to cable insulation
- Custom designs are available upon request
- Multiuse capabalities
- Can be reused, unlike cable ties

Rail Clips

	Part No.	Length (mm)	Width (mm)	Height (mm)	Wire
	ACC-R2	37.41	10.00	20.50	1-2 micron inverter trunk cables or 1-2 AC cables Wire diameter : 1 wire - min. 6.2mm / max. 14mm or 2 wires - min. 4.1mm / max. 11mm
	ACC-R2-E	30.10	12.50	16.81	1-2 micro inverter trunk cables or 1-2 AC cables Wire diamter : 1 wire - min. 4.1mm / max. 14mm or 2 wires - min. 4.1mm / max. 11mm
	ACC-R4	39.46	10.00	16.05	1-4 wires PV wires Wire diameter : min. 4.1mm / max. 7.49mm
	ACC-RBC15	23.00	16.50	12.00	Snap into rail channels of all designs. Micro inverter trunk cables, AC cable or PV cable. Fits bundles of wires up to 15mm diameter. Rail channel width: 6.35mm to 13.5mm

Cable Management

Cable Clips

Long-lasting, wire management clips

Module Frame Clips

	Part No.	Length (mm)	Width (mm)	Height (mm)	Wire
	ACC	16.85	10.00	10.00	1-2 PV wire Wire diameter: min 4.1mm / max 6.7mm Module thickness range: 1.5-2.5mm
	ACC-PV	18.42	10.00	12.60	1-2 PV wires Wire diameter: min 4.1mm / max 7.49mm Module thickness range: 1.5-2.5mm
	ACC-FLD	19.00	10.00	12.70	1-2 PV wire Wire diameter: min 4.1mm / max 7.49mm Module thickness range: 1.5-2.5mm
	ACC-FPV	23.33	12.50	14.22	1-2 PV wire Wire diameter: min 4.1mm / max 8.50mm Module thickness range: 1.3-3.5mm

90° Module Frame Clips

	Part No.	Length (mm)	Width (mm)	Height (mm)	Wire
	ACC-F90-1	20.58	13.08	14.22	1-2 PV wire Wire diameter: min 4.1mm / max 7.49mm Module Thickness Range: 1.5-2.5mm
	ACC-F2-90	29.49	10.51	15.10	1-2 micro inverter trunk cables or 1-2 AC cables Wire diameter: 1 wire - min 4.1mm / max 14mm or 2 wires - min 4.1mm / max 11mm
	ACC-F4-90	34.72	10.51	14.31	1-4 wires PV wires Wire diameter: min 4.1mm / max 7.49mm Module thickness range: 1.5-2.5mm
	ACC-F1-270	23.50	10.00	19.55	2 PV wires or 1 Micro Inverter Trunk Wire diameter: min 4.1mm / max 14mm Module thickness range: 1.5-2.5mm

Installation examples

ACC-FPV

ACC-F90-1

ACC-F90-1

WEEB Washer

Washer, Electrical Equipment Bond

The WEEB line of products is designed to bond solar PV modules to mounting structures and create an electrical path to ground. WEEBs eliminate the need for older, more costly grounding methods and greatly reduce the amount of labor and materials used in installations.

The innovative WEEB design removes the need to run ground wire to each individual module and eliminates the need for surface preparation on anodized aluminum components.

To install, WEEBs are placed between PV modules and mounting rails at clamping points or at bolted connections. When anti-seize is applied and the hardware is tightened down to the appropriate torque spec, the WEEBs' specialized teeth embed into anodized aluminum, galvanized steel, or any electrically conductive metal to establish a gas tight electrical connection.

Data

- Material: 304 stainless steel
- Listed to ANSI-UL 467 by Intertek ETL for use in Canada and the USA
- Maximum electrical equipment ground conductor size when used with 2 WEEBs contacting each module in an assembly: 6 AWG
- Outdoor rated.

What is a WEEB?

The WEEB (Washer, Electrical Equipment Bond) is the first production part specifically intended for use in grounding photovoltaic systems. There is a family of WEEB parts, one for each kind of photovoltaic mounting system. The WEEBs are used to bond photovoltaic modules to the mounting structure. A ground is connected to the resulting composite structure so that the photovoltaic modules are also grounded. This is more technically described in NEC sections 250.136 and 250.134 and discussed at the company website, http://www.wellc.com/WEEB_nec.html.

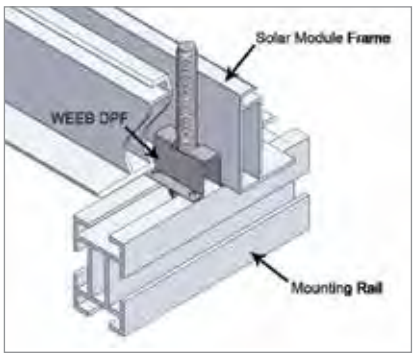
How much current can WEEBs carry?

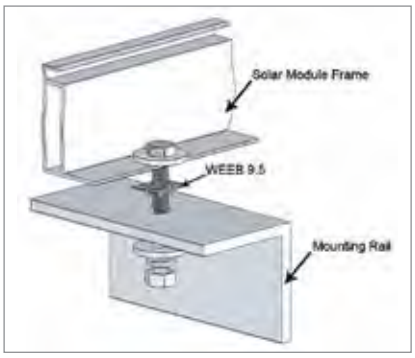
All WEEBs are tested to carry a current of 1530 Amperes for 6 seconds. This is much more than any photovoltaic module can source and is why the WEEBs offer better lightning protection than previous grounding methods. All WEEBS meet ANSI/UL 467, standard for grounding and bonding equipment.

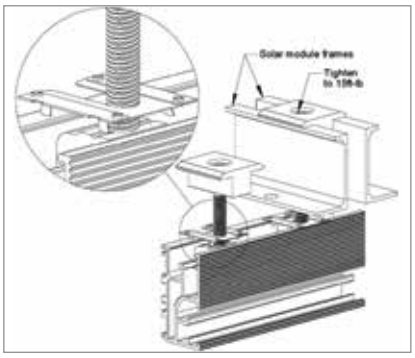
Why should I use it?

- It saves you time! No more running ground wire to every PV module
- It's safe... meets ANSI/UL467 requirements for bonding/grounding systems
- It's reliable
- Patented design features stainless steel teeth that pierce into anodized aluminum, providing a gas tight connection which prevents oxidation and gives more consistent results than the method of scraping off the anodized coating by hand and using star washers.

The products use patent pending technology for bonding anodized aluminum surfaces together. Bonding PV modules to a mounting structure removes the need to wire the modules separately: just the mounting structure needs to be wired to ground.







Earthing

WEEB Washer

Washer, Electrical Equipment Bond


WEEB UMC


WEEB PMC


WEEB DMC


WEEB WMC


WEEB WMR1


WEEB SMC2


WEEB 9.5


WEEB 9.5NL


WEEB 11.5


WEEB CMC

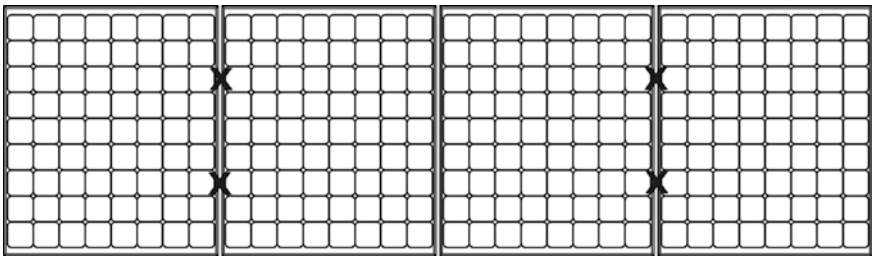

WEEB KMC


WEEB JJR


WEEB SSF


WEEB DPF

Company	Mounting System	WEEB -	LUG and B.J.
AET	T6 w/ box modules	ATF	6.7
Array Technologies	Wattsun Micro MW Horizontal Beam Tracker	WMR1/ WMR2	
BP Solar	BP Solar	SMC2	8.0
Conergy	SolarGiant III	CSG/ Electriwedge	6.7
Conergy	SunTop	CMC	8.2
Clenergy	PV-ezRack PV Mounting Systems	CMC	15.8
DP & W	Ground Mount	9.5/ 9.5NL	6.7
DP & W	Multi-Pole Mount	DMC/ 11.5/ 9.5NL	6.7
DP & W	Top-of-Pole Mount	9.5/ 9.5NL	6.7
DP & W	Power-Fab CRS	9.5/ 11.5/ DPF/ WMC	8.0
DP & W	Power Grid	DPF/ WMC	8.0
DP & W	Power Rail	DMC	6.7
DP & W	Power Rail P6	DPF	8.0
HES-Home Energy Solutions	Fast Rack	DPF	8.0
IronRidge	XLR	DMC	6.7
IronRidge	XRS	DMC	6.7
JAC Products	JacRack	JJR	8.0
K2 Systems	K2 Systems	KMC	6.7
Lumos	Powermount Racking System w/ box modules***	UMC	6.7
NCP	NCP Solar Mounting System	DPF	8.0
NorthGrid	NorthGrid Solar Mounting System	DPF	8.0
Professional Solar Products	RoofTrac	PMC	6.7
ProtekPark Solar	ProtekPark Solar -depends on clamp and module***	DMC or UMC	6.7
RBI Solar	Ground Mount w/ box modules***	UMC	6.7
Schletter	Eco 05, Solo 05 and Profil 05	SMC2	8.0
Schuco	ezFlatRoof 2.0/ ezGroundMount 2.0	SMC2	8.0
SolarCity	Heavy Duty Rail - depends on clamp***	UMC or DMC	6.7
Solar Liberty	Dynoraxx	SSF	6.7
Sollega	InstaRack	11.5	6.7
SnapNrack	PV Mounting System w/ box modules	PMC	6.7
SunEarth	Comprail PV Racking	SCR	6.7
SunEarth	Solar Strut	SSR	6.7
Sunmodo	Ez Helio***	UMC	6.7
Terrafix Solarpark	Terrafix Solarpark	SMC2	8.0
T.R.A.-Mage	Tegra	SMC2	8.0
TTI	TTI w/ box modules	WMC	6.7
Unirac	RapidRac G10	9.5	6.7
Unirac	SolarMount w/ box modules or Sanyo low lip***	UMC or DMC	6.7
Unirac	SolarMount-I w/ box modules	UGC-2	6.7



X Denotes place to install WEEB washers.

*****A WEEB-UMC can only be used in applications with modules frames that have a "boxed" cross-section. Refer to Installation Manuals for compatibility and details: http://www.we-llc.com/WEEB_datasheets.html**

Lugs

WEEB, Lay-in Lug, and Hardware

The lug consists of a WEEB (Washer, Electrical Equipment Bond), lay-in lug, and hardware. It is used with one solid or stranded copper wire (6AWG to 14AWG), or two copper wires (10AWG to 12AWG) to provide a continuous ground on photovoltaic solar systems. Unlike traditional lay-in lugs, the lug does not require surface preparation of a rail or module to install.

The lug is installed using a 1/4"-20 stainless steel screw which embeds the specialized WEEB teeth into anodized aluminum, galvanized steel, or any electrically conductive metal to establish a gas tight electrical connection.

The tin-plated lug assures minimum contact resistance and protection against corrosion. The copper wire is secured by a 1/4"-28 stainless steel screw, which is horizontal to the tang for easy access when mounted under a PV module. The low profile of the lug allows it to be installed in a variety of positions and comes with hardware to mount it to a rail or through a 1/4 inch clearance hole.

Data

- Material: 304 Stainless Steel, tin-plated copper, outdoor rated
- Low profile design
- Multiple equipment ground conductor allowance: One 14 AWG to 6 AWG or two 10 AWG, two 12 AWG
- Listed to ANSI/UL 467 by Intertek ETL.

WEEB LUG6.7A

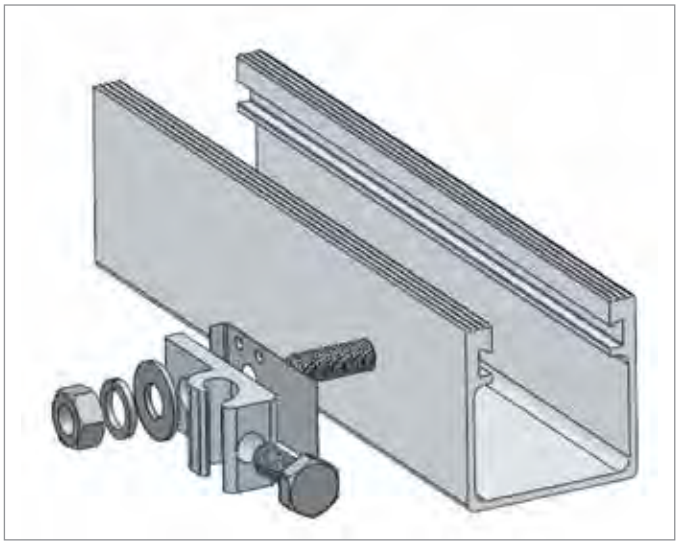
Comes with: Lug 6.7, WEEB 6.7,
1/4"-28 terminal screw, washers
and 1/4"-20 mounting hardware

WEEB LUG8.0

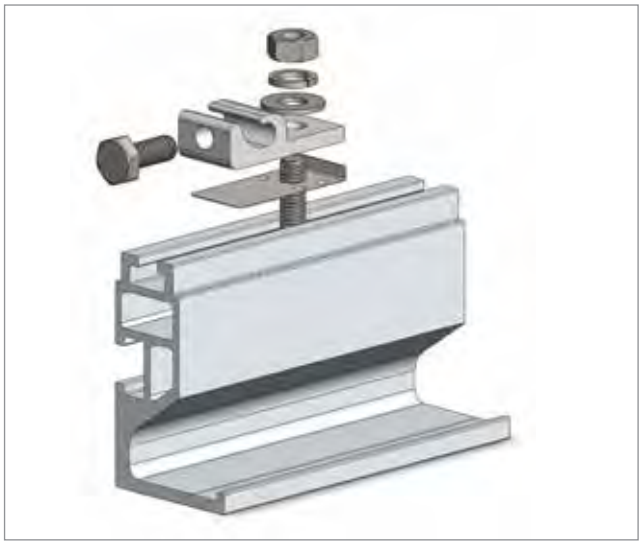
Comes with: Lug 8.0, WEEB 8.0,
1/4"-28 terminal screw
• No mounting hardware included.
(Uses 5/16" hardware.)

WEEB LUG15.8

Comes with: Lug 15.8, WEEB 15.8
1/4"-28 terminal screw
• No mounting hardware included.
(Uses 5/16" hardware.)



Pro Solar Roof Trac



DP&W Power Rail

Earthing

Bonding Jumpers

WEEB, Bonding Jumpers

The Bonding Jumper is used to create an electrical connection between two pieces of anodized aluminum, galvanized steel, or any electrically conductive metal which has been mechanically spliced. Long spans of mounting rails are sometimes constructed from two shorter rail sections.

Manufacturers may recommend that a floating splice be used to allow for thermal expansion. A floating splice is rigidly attached to only one rail, and allows the rails to expand and contract in line with each other. In such cases, via NEC code, it is also necessary to make an electrical splice, which can be done with a WEEB Bonding Jumper.

The Bonding Jumper is constructed of tin plated, braided copper wire with a WEEB attached at each end of the Jumper. The WEEBs provide a reliable, gas tight electrical connection, and the braided copper wire allows for thermal expansion. The examples below illustrate two ways to install the WEEB Bonding Jumper.

WEEB BJ6.7A

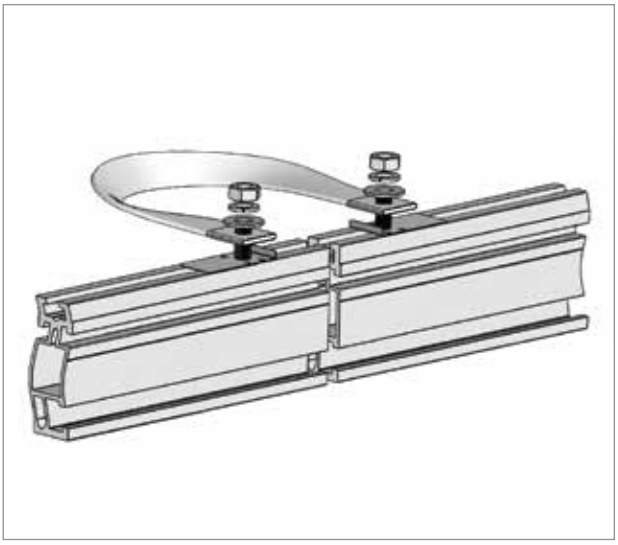
Comes with: 9" bonding jumper,
2 WEEB 6.7, washers and 1/4"-20
mounting hardware

WEEB BJ8.0

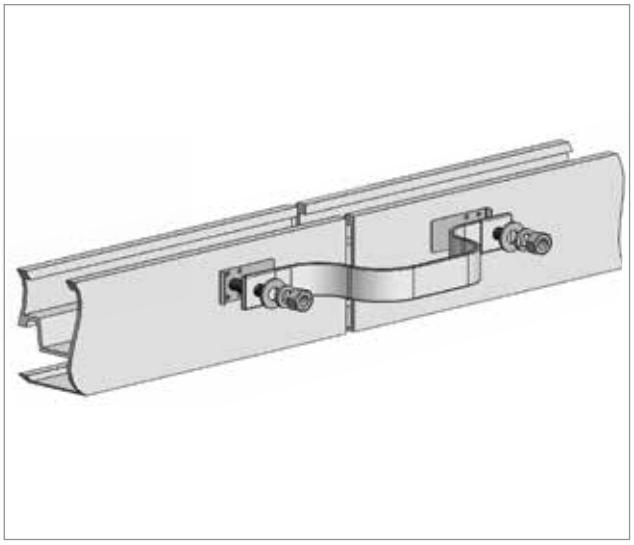
Comes with: 6" bonding jumper, 2 WEEB 8.0
No hardware included
(Uses 5/16" mounting hardware)

WEEB BJ8.2

Available from Conergy



Unirac SolarMount



AEE SnapNRack

AC Circuit Breakers

AC Circuit Breakers

6kA C Curve

The Ex9BN series of miniature circuit breakers provides isolation and protection for AC systems. Also available in different breaking capacities, tripping curves and current ratings.

Tripping Curve
- C Type

Breaking Capacity
- 6 kA

Standards and approvals
- IEC/EN/AS60898-1
- GB10963.1
- SAA101237EA

Electrical Specifications		
Rated insulation voltage (V)	Ui	690
Rated impulse voltage (kV)	Uimp	4
Ultimate breaking capacity (kA)	Icu	6
Curve type		C
Tripping type		Thermal magnetic type
Service Life - Mechanical	Actual Value	20000
"	Standard Value	4000
Service Life Electrical	Actual Value	10000
"	Standard Value	4000
Conductor size (mm^2)		1~35mm^2
Temperature (°C)		-20 to +70

Current Rating (A)	1 pole	2 pole	3 pole
10	86288	86301	86314
16	86289	86302	86315
20	86290	86303	86316
25	86291	86304	86317
32	86292	86305	86318
40	86293	86306	86319
50	86294	86307	86320
63	86295	86308	86321

DC Circuit Breakers

500V and 1000V DC Circuit Breakers

Non-polarised

The Ex9BP-N series of miniature circuit breakers from Noark Electric, are non polarised and available in 2 and 4 pole designs.

The 4 pole design is already looped internally, saving time in wiring and minimising errors.

DC switching voltage
250V DC per pole
e.g. 4 pole = 1000V DC

Standards and approvals
- IEC/EN/AS60947-2
- GB14048.2
- SAA101238EA

Locking Device
Part No. 86218

Electrical Specifications		
Rated insulation voltage (V DC)	Ui	1000
Rated impulse voltage (kV)	Uimp	4
Ultimate breaking capacity (kA)	Icu	6
Curve type		K
Tripping type		Thermal magnetic type
Service Life - Mechanical	Actual Value	20000
"	Standard Value	8500
Service Life Electrical	Actual Value	10000
"	Standard Value	1500
Conductor size (mm^2)		1~35mm^2
Temperature (°C)		-20 to +70

Current Rating (A)	2 pole 500V DC	4 pole 1000V DC
10	10000146	10000162
16	10000147	10000163
20	10000148	10000164
25	10000149	10000165
32	10000150	10000166
40	10000151	10000167
50	10000152	10000168
63	10000153	10000169

Surge Protection

Surge Protection Devices

Class II

Surge protective devices, are voltage limiting Class II devices which present high impedance when there is no surge.

If a surge occurs, the impedance will drop rapidly to limit the voltage at its output terminals to the specified range.

Approvals
- IEC61643-1.
- EN61643-11.

DC Type

Part No.	Remote signalling Part No.	Poles	Imax (kA)	In (kA)	Uc (DC V)	Type
108016	108017	1	40	20	600	Ex9UEP 20P 1P 600
108022	108023	3	40	20	1200	Ex9UEP 20P 3P 1200

Spare Plug-in Module

Part No.	Suitable for	Type
108024	108016	Ex9UEP 20P 1P 600
108027	108022	Ex9UEP 20P 3P 1200

DC Circuit Breakers

High Current, Non-Polarised

The Ex9MD range of moulded case circuit breakers (MCCB) provide high current breaking capabilities for DC circuits.

Used primarily on battery banks, these MCCBs provide a more serviceable approach to protection than standard NH fuse bases.

Features:

- 5 frame sizes - 80A to 800A
- High breaking capacity
- Installation flexibility
- Field installable accessories
- Certified to EN 60947

DC switching voltage

250V DC per pole e.g. 2 pole = 500V DC

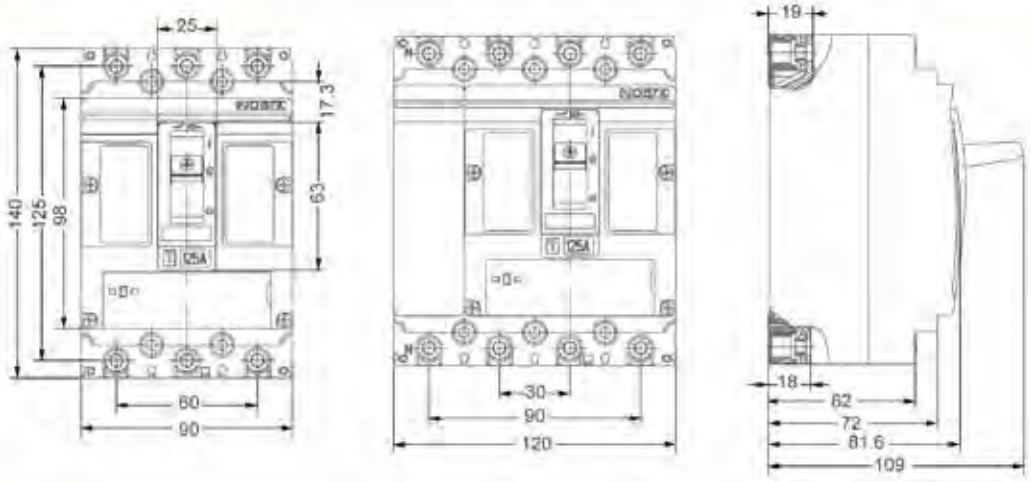
Part No.	Type	Current rating	Number of poles	Total voltage DC	Frame size	Dimensions L x W x H
28707	EX9MD1B TM DC80 2P	80A	2	500V	1	90 x 140 x 109
28708	EX9MD1B TM DC100 2P	100A	2	500V	1	90 x 140 x 109
28709	EX9MD1B TM DC125 2P	125A	2	500V	1	90 x 140 x 109
28901	EX9MD2B TM DC160 2P	160A	2	500V	2	105 x 157 x 126
28902	EX9MD2B TM DC180 2P	180A	2	500V	2	105 x 157 x 126
28903	EX9MD2B TM DC200 2P	200A	2	500V	2	105 x 157 x 126
28905	EX9MD2B TM DC250 2P	250A	2	500V	2	105 x 157 x 126
26025	EX9MD3B TM DC315 3P	315A	3	750V	3	140 x 225 x 172
26027	EX9MD3B TM DC400 3P	400A	3	750V	3	140 x 225 x 172
27019	EX9MD4B TM DC500 3P	500A	3	750V	4	195 x 300 x 142
27020	EX9MD4B TM DC630 3P	630A	3	750V	4	195 x 300 x 142
28019	EX9MD5B TM DC700 3P	700A	3	750V	5	195 x 300 x 142
28020	EX9MD55 TM DC800 3P	800A	3	750V	5	195 x 300 x 142

Accessories

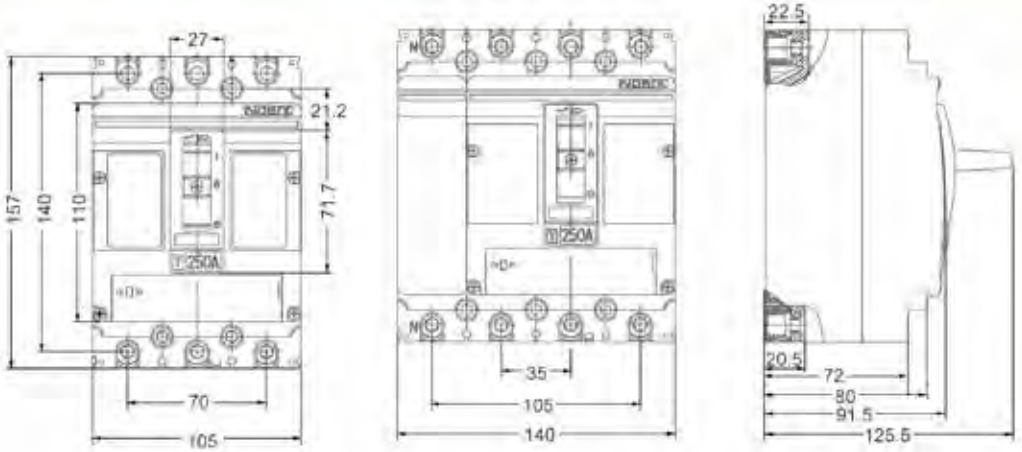
Part No.	Type	Suits frame	Auxilary contacts	Desription
20297	AX21	1 to 5	1NO,1NC	Auxiliary Contact
20282	AL21	1 to 5	1NO,1NC	Alarm Contact
20302	ERH 21	1	-	Extended Rotary Handle
20306	TCE 21 3P	1	-	Terminal Shields
20290	SHT 21 AC220-240V	1	-	Shunt release 240V AC
20300	UVT 21 AC380-415V	1		Undervoltage Release 415V
23188	ERH 22	2	-	Extended Rotary Handle
23192	TCE 22 3P	2	-	Terminal Shields
23177	SHT 22 AC220-240V	2 to 5	-	Shunt release 240V AC
23186	UVT 22 AC380-415V	2 to 5		Undervoltage Release 415V
25121	ERH 23	3	-	Extended Rotary Handle
25125	TCE 23 3P	3	-	Terminal Shields
26920	ERH 24	4,5	-	Extended Rotary Handle
26904	TCE 24 3P	4,5	-	Terminal Shields

DC Circuit Breakers

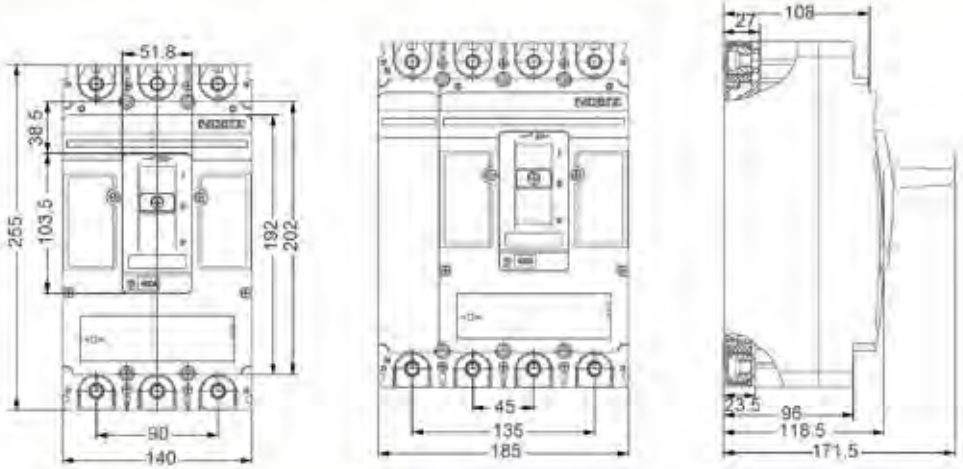
DIMENSIONS 80A - 125A



DIMENSIONS 160A - 250A



DIMENSIONS 315A - 400A



DC Isolators

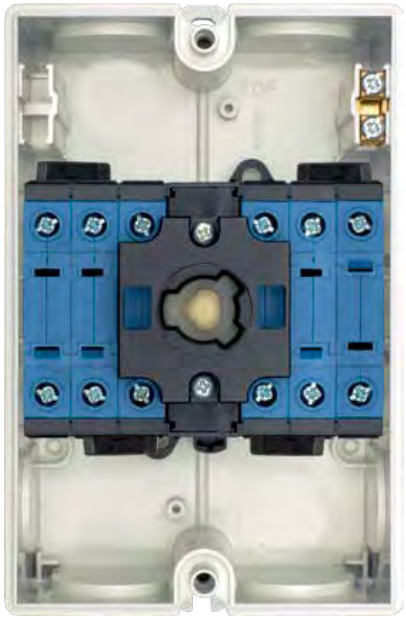
Kraus & Naimer
BLUE LINE switchgear

DC switch disconnectors for solar photovoltaic (PV)

25A, 40A and 58A

Description

The German made, non-polarised range of switch disconnectors are designed for DC applications. The KFD25, KGD40 and KGD58 have been specifically selected for the demands of the Australian market. Available as DIN rail mount or in UV stabilized plastic enclosures with red/yellow padlockable handle and with a degree of protection to IP 66/67, they can be installed in the most arduous of environments.



Designed for Australian conditions

Technical specifications

- Utilisation Category DC-21B, DC-PV2
- Enclosure made from self-extinguishing material and conforms to UL94-VO
- Plastic enclosed unit: IP67
- Non polarised, switchable under load
- Compliant with:
  - AS/NZS 5033 : 2014
  - EN 60947-3 respectively VDE 0660 Part 107
  - IEC 60364-7-712 : 2002
- Touch protected terminals
- Lockable in OFF position with padlock.
- UV resistant
- Enclosed unit retains IP67 rating regardless of mounting position; vertically, horizontally or sideways
- External mounts

Made in Germany

ESV Approved

Part No.	Mounting	Dimensions (mm)	Entries	Type Code
110363011	25 Amp DIN mount	76 x 55 x 45	N/A	KFD25 T306/AUP0025 VE2
110348987	25 Amp IP67 enclosure	132 x 85 x 64	4 x M25 & 2x M20 threaded	KFD25 T206/AUP0013 KT11V
110457907	25 Amp IP67 enclosure	190 x 100 x93	6 x M25 knockouts	KFD25B T206/AUP0013 KL11V
110567982	40 Amp DIN mount	100 x 80 x 75	N/A	KGD40B TD106/AUP0035 VE2
110560552	40 Amp IP67 enclosure	250 x 145 x 124	2 x M25 & 4 x M25/M40 knockouts	KGD40B TD206/AUP0033 KL11V
110598648	58 Amp DIN mount	135 x 80 x 75	N/A	KGD58B TD104/AUP0039 VE2
110598647	58 Amp IP67 enclosure	250 x 145 x 124	2 x M25 & 4 x M25/M40 knockouts	KGD58B TD204/AUP0038 KL11V

DC Isolators

Kraus & Naimer
BLUE LINE switchgear

Part No.	Type Code: KFD25	Rated Value						
110348987	Ambient Temperature	80°C	80°C	80°C	80°C	70°C	60°C	50°C
2 Pole - 3 contacts per circuit	Operational Current DC-21B	**7 A**	**9 A**	**12 A**	**14 A**	**19 A**	**24 A**	**25 A**
(2 x 3 in series)	1.2 x Voc 2 pole	1500 V	1500 V	1500 V	1500 V	1380 V	1200 V	1000 V
	1.2 x Voc on each side	1200 V	1100 V	1000 V	900 V	690 V	600 V	510 V
	Insulation Voltage	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V
	Ambient Temperature	80°C	80°C	80°C	80°C	80°C	70°C	70°C
	Operational Current DC-PV2	**3 A**	**4 A**	**8 A**	**9 A**	**13 A**	**17 A**	**19 A**
	1.2 x Voc 2 pole	1500 V	1500 V	1500 V	1500 V	1380 V	1200 V	1000 V
	1.2 x Voc on each side	1200 V	1100 V	1000 V	900 V	690 V	600 V	510 V
	Insulation Voltage	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V

Part No.	Type Code: KFD25	Rated Value						
110457907	Ambient Temperature	80°C	80°C	80°C	80°C	70°C	60°C	50°C
2 Pole - 3 contacts per circuit	Operational Current DC-21B	**7 A**	**9 A**	**12 A**	**14 A**	**19 A**	**24 A**	**25 A**
(2 x 3 in series)	1.2 x Voc 2 pole	1500 V	1500 V	1500 V	1500 V	1380 V	1200 V	1000 V
	1.2 x Voc on each side	1200 V	1100 V	1000 V	900 V	690 V	600 V	510 V
	Insulation Voltage	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V
	Ambient Temperature	80°C	80°C	80°C	80°C	80°C	70°C	70°C
	Operational Current DC-PV2	**3 A**	**4 A**	**8 A**	**9 A**	**13 A**	**17 A**	**19 A**
	1.2 x Voc 2 pole	1500 V	1500 V	1500 V	1500 V	1380 V	1200 V	1000 V
	1.2 x Voc on each side	1200 V	1100 V	1000 V	900 V	690 V	600 V	510 V
	Insulation Voltage	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V	1500 V

Part No.	Type Code: KGD40B	Rated Value		
110560552	Ambient Temperature	80°C	70°C	60°C
2 Pole - 3 contacts per circuit	Operational Current DC-21B	**20 A**	**30 A**	**40 A**
(2 x 3 in series)	1.2 x Voc 2 pole	1000 V	1000 V	1000 V
	1.2 x Voc on each side	1000 V	750 V	600 V
	Insulation Voltage	1000 V	1000 V	1000 V
	Ambient Temperature	80°C	70°C	60°C
	Operational Current DC-PV2	**20 A**	**30 A**	**40 A**
	1.2 x Voc 2 pole	1000 V	1000 V	1000 V
	1.2 x Voc on each side	1000 V	750 V	560 V
	Insulation Voltage	1000 V	1000 V	1000 V

Part No.	Type Code: KGD58B	Rated Value		
110598647	Ambient Temperature	80°C	60°C	50°C
2 Pole - 4 contacts per circuit	Operational Current DC-21B	**40 A**	**58 A**	**63 A**
(2 x 4 in series)	1.2 x Voc 2 pole	1000 V	1000 V	800 V
	1.2 x Voc on each side	500 V	500 V	400 V
	Insulation Voltage	1000 V	1000 V	1000 V
	Ambient Temperature	80°C	60°C	50°C
	Operational Current DC-PV2	**40 A**	**58 A**	**63 A**
	1.2 x Voc 2 pole	700 V	700 V	600 V
	1.2 x Voc on each side	350 V	350 V	300 V
	Insulation Voltage	1000 V	1000 V	1000 V

Fully assembled models also available
- plug & play
- flying leads
- other customer-specific requirements

String Combiners

HIS*box* DC Combiner 1500V DC

Description

Designed and manufactured in Germany, the HIS*box* DC Combiners are fully optimized and made of industrial components, specifically for your PV system. This gives you the greatest possible customization in keeping with the industrial standard, and at a fair price.

Features

- Designed, manufactured and tested according to IEC61439-1; -2
- Further country specific set-ups such as UTE, NEN 101:2015 are available on request
- Overvoltage protection; Load break switches; optionally with remote switching
- Modular concept with countless possible combinations
- Robust housing for outdoor use. Up to IP65, UV-stable incl. pressure equalization valve

Customer specific solutions also available.

Order No.	HDC-04-16-FF-011-	HDC-04-20-FF-011-	HDC-04-24-FF-011-	HDC-04-32-FF-011-
Max. string input	16	20	24	32
Nominal voltage (Ue)	1000V DC & 1500V DC			
Max. rated current (InA)	250 A	315 A	315 A	500 A
Load Break Switch	2 pole; DC-21B (IEC60947)			
Fuses	Plus and minus pole fused with gPV fuse-links 10x38mm (acc. IEC 60269-6)			
Overvoltage protection	Type 1+2 (Max. discharge current Imax (8/20) µs: 40kA / Rated discharge current (8/20) µs: 15kA)			
DC output and connection	M8 tubular cable lugs (e.g. 35-120mm² Cu /Al)	M12 tubular cable lugs up to max. 400mm² or 2x240mm² per pole		
Installation	Open air, in shade (protected from rain and direct sunlight), upto IP65			
Standard	CE in conformity with IEC 61439-1/-2			

HIS*box* AC Combiner

Description

Feed the power of your string inverters together in a HISbox AC Combiner. As well as a multitude of standard solutions, the HIS Renewables Development and Construction team offers customer specific solutions. By means of a simple check list, you can specify your requirements. Among other things, the following points are relevant.

NH00-Fused switch disconnect busbar

Order No.	HAC-AA-03X-
No. of inverter	AA -> 2-8 inverter
Nominal voltage (Ue)	230V AC / 400AC (50 Hz grid frequency)
Short circuit withstand current	10kA
Inverter fuse protection	3 pole NH00-Fused switch disconnect Imax 160A
Fuse protection	Without, direct connection to common busbar (optional incl. NH-Load Break Switch or power circuit breakers)
Overvoltage protection	Optional incl. Type 1+2+3 incl. appropriate protective fuse
Installation	Open air, in shade (protected from rain and direct sunlight), upto IP65
Standard	CE in conformity with IEC 61439-1/-2

NH00-Fuse isolator

Order No.	HAC-AA-03X-
No. of inverter	AA -> 2-8 inverter
Nominal voltage (Ue)	230V AC / 400AC (50 Hz grid frequency)
Short circuit withstand current	25kA
Inverter fuse protection	3 pole NH00-Fuse isolator Imax 160A (optional incl. residual current circuit breaker)
Fuse protection	3 pole power circuit breakers 630A (optional 4 pole fuse protection)
Overvoltage protection	Optional incl. Type 1+2+3 incl. pre fuse
Installation	Open air, in shade (protected from rain and direct sunlight), upto IP65
Standard	CE in conformity with IEC 61439-1/-2

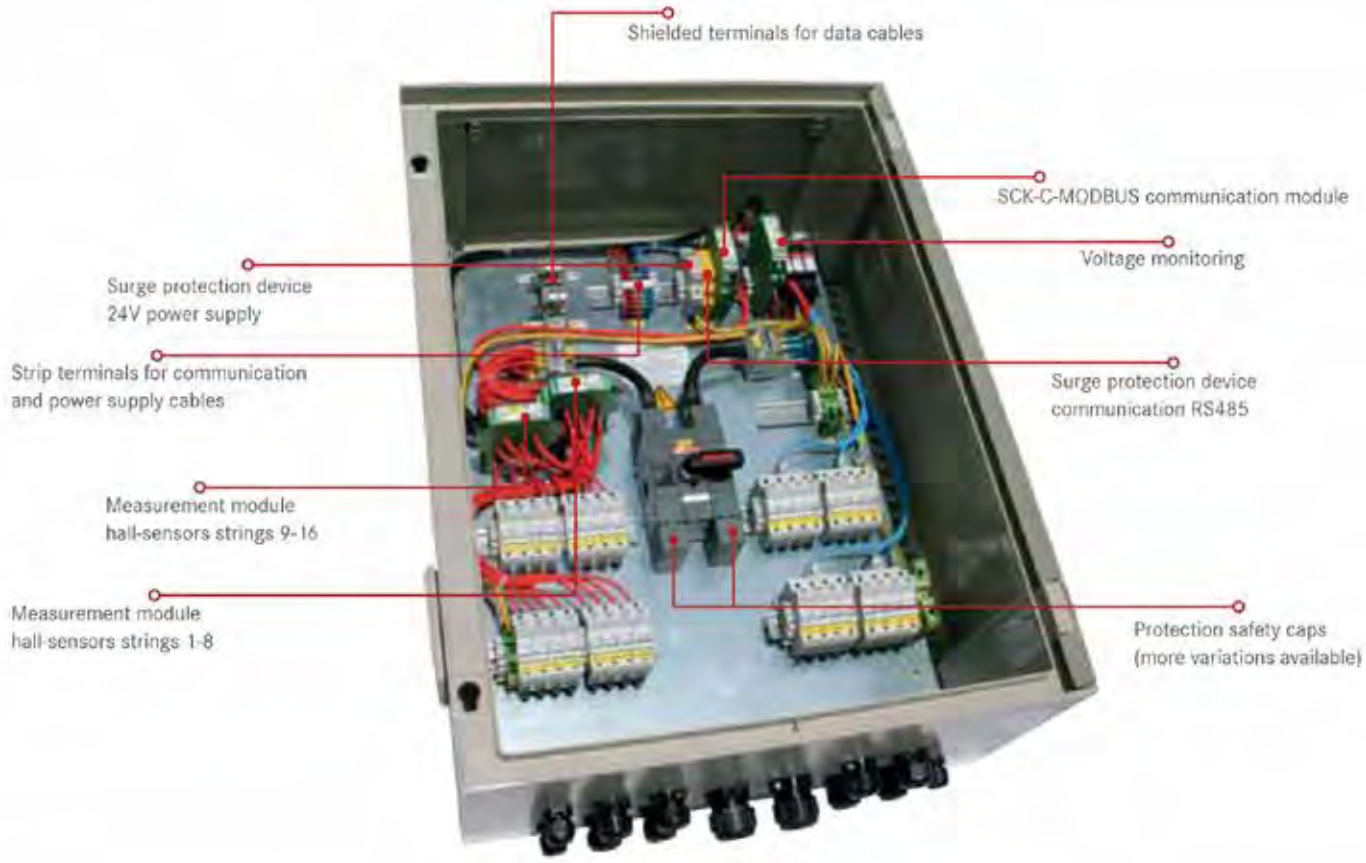
On request: Custom built plugs, terminals for communication wiring and ready made connection and communication cables.

String Monitoring

HIS*box* DC Monitoring - 1500 V DC

Description

Monitor and optimize your system's yield and safety with string-specific HIS*box*®-Monitoring-SCK. We offer optimized solutions for your PV-plant including the necessary protective gear, according to Australian requirements. We offer the complete solution in the well-established HIS*box*® quality with all the requisite protective, isolation and surge facilities.



Order No.	HMP-08-16	HMP-12-12	HMP-12-24	HMP-16-16	HMP-20-20	HMP-24-24
Measurement channels	8	12	16	20	24	
Max. string input	16	12	24	16	20	24
Nominal rated voltage (Ue)	1000V DC & 1500V DC					
ΣRated current (Ie)	200 A	150 A	300 A	200 A	300 A	300 A
Measurement technology	Current: max. 25A <1%, voltage monitoring: 1500V <1,5%, power supply:24V, IOs: 4xDigiIn, 1x PT100 Input, 1x0..10V Input,1x0..20mA Input					
Communication	RS485 (MODBUS RTU)					
Load Break Switch	2 pole; DC-21B (IEC60947)					
Fuses	Plus and minus pole fused with gPV fuse-links 10x85mm (acc. IEC 60269-6)					
Surge protection device	Type 1+2					
DC output and connection	M12 tubular cable lugs up to max. 400mm² or 2x240mm² per pole					
Dimension -1000V	845x635x300	845x635x300	845x635x300	845x635x300	845x635x300	845x635x300
Dimension -1500V	1056x852x350	On request	1056x852x350	1056x852x350	1056x852x350	1056x852x350
Housing type	GRP – Glassfibre reinforced Polyester enclorsue (acc. IEC 62208); UV- and ozone stabile; incl. compensation ventile					
Installation	Open air, in shade (protected from rain and direct sunlight), upto IP65; IK10					
Standard	CE in conformity with IEC 61439-1/-2					

Cable Assembly and Harnesses

HIS*kon* Splitter

Description

Minimize the amount of installation work and increase operational safety with customized ready-to-plug cables for your system.

By using modern welding technology and high quality components an optimum interconnection can be achieved with lowest contact losses.

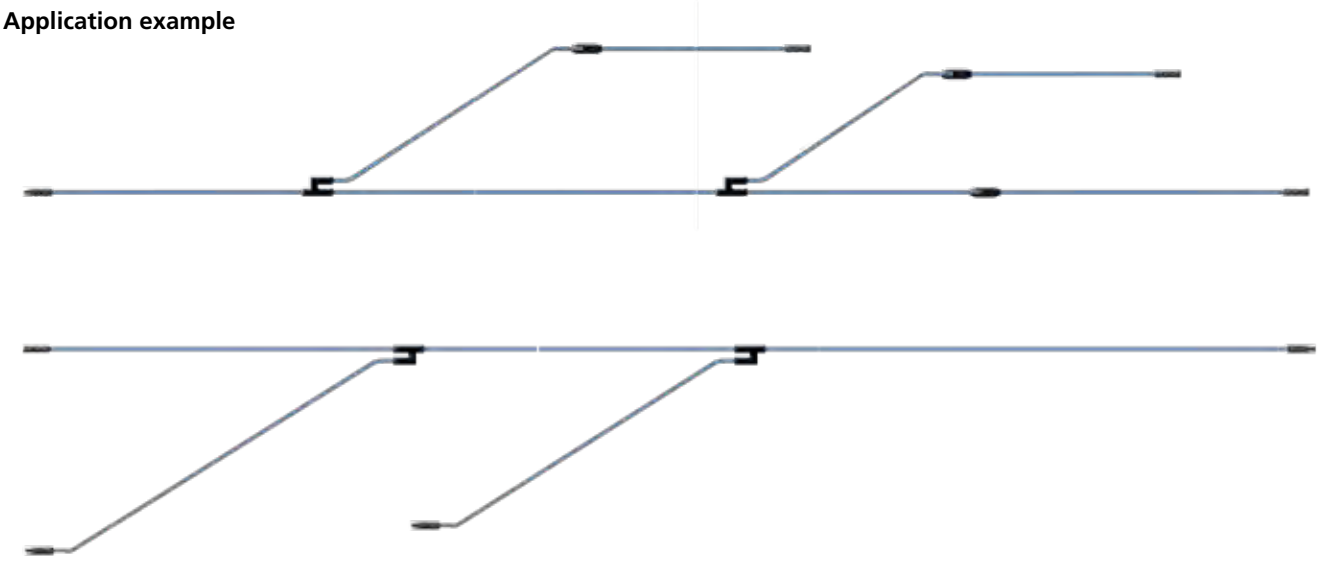
Technical Data	
Nominal voltage	1500V DC
Max. currrent ampacity	Without connectors, Single layed, free in air at 90°C: 4,0mm²Σ39,5 A; 6,0mm² -> 49,7 A; 10,0mm² -> 69,58 A (acc. IEC 60364-5-52)
IP-Class of cable splitter	IP65/68 (1m/24h) (Take note of connector´s IP-protection!)
Protection class	II (reinforced Insulation) acc. IEC 61140
Flame class	Self-extinguishing UL94-V2
Temperature range	Ambient temperature -40° C to +90°C (without mechanical impact)
Termination of splitter	Monitored resistance welding process. Direct connection
Molding material	Specialised material, UV-stabile for outdoor usage
Termination	MC4, MC4-EVO2, Amphenol H4/UTX, Phoenix Sunclix, Hosiden HSC

HIS*kon* Pre-assembled String Cable Harnesses

Your benefits

- Ready to plug in, no wasted off-cuts and field assembly
- Monitored crimp quality and reduced contact resistance
- Completely identifiable cable systems to prevent reserve polarity
- Fast on-site execution

Application example



In-line Fuse Assembly

HIS*kon* In-line fuse 1500V DC

Description
Reduce installation time and cost with a ready-to-plug in-line fuse connector.

The fully moulded construction provides weather tight housing preventing moisture from getting to the fuse construction. The in-line fuse connector provides the needed electrical protection to prevent damage to the solar array should a ground fault occur.

Part No.
ILF.15A.1500V.MC4

Features
- Rugged, low cost solution
- Replace combiner boxes
- 1A to 20A current rating available
- Single-pole, Non-Serviceable
- Genuine Multi-Contact connectors (MC4)

Product Specifications

Volts	1500V DC
Amps	15 A
Flammability Rating	VO per UL94-V2
Protection rating	IP68
Fuse-link	gPV 10x85 IEC-60296-6
Temperature	Ambient temperature -40°C to +50°C

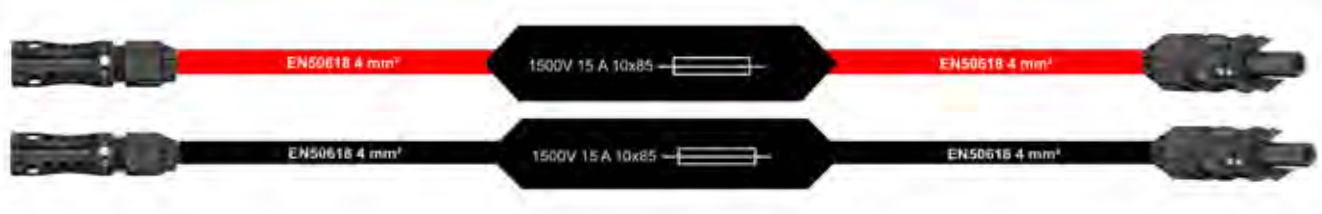
More options available

Amps (fuse-link)	2A, 4A, 10A, 20A
Connectors	MC, MC4-EVO 2

HIS*kon* In-line fuse assembly 1500V DC

Do you need to fit fuses to your PV system? As well as the protection in the inverter or combiner box, you can safeguard DC-strings with an in-line fuse. Moreover we offer you the possibility of also connecting several strings on the cable level with our U- or E-distributors permitting connection in parallel and the ability to protect each string individually.

Technical Data	
Cable	Solar cable H1Z2Z2-K (1500V DC); Minimum length each side 160mm
Fuse-link	1000V DC : gPV 10x38 acc. IEC 60269-6 (If=1,45)
	1500V DC : gPV 10x85 acc. IEC-60296-6 (If=1,45)
Termination options	MC4, MC-EVO2, Amphenol H4, Amphenol UTX, Phoenix Contact Sunclix, Hosiden HSC
Nominal voltage	1000V DC (10x38mm); 1500V DC (10x85mm)
Rated current (fuse-link)	2-20A (Derating factors and manufacturers guideline for fuse-links applies)
Insulation material	Special-Hotmelt, UV-stable, IP68 (please take note of connector's IP-protection)
Flame class	Self-extinguishing UL94-V2
Temperature range	Ambient temperature: -40°C to +50°C;



Fusing

gPV Series Fuses

1000V DC, 10 x 38mm fuse

gPV Series Fuses

A range of 10 x 38mm fuse links specifically designed for the protection and isolation of photovoltaic strings. The fuse links are capable of interrupting low overcurrents associated with faulted PV (reverse current, multi-array fault) string arrays.

Part No.	Rating
30F2PV	2 A 1000V DC
30F6PV	6 A 1000V DC
30F8PV	8 A 1000V DC
30F10PV	10 A 1000V DC
30F12PV	12 A 1000V DC
30F15PV	15 A 1000V DC
30F20PV	20 A 1000V DC

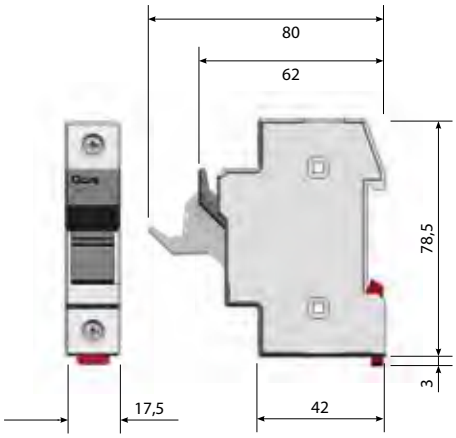
DIN Rail Mount Fuse Carriers

1000V DC, 10 x 38mm fuse

Solartec Fuse Carriers

Solartec fuse carriers from Gave are rated at 1000V DC and feature a low profile making them ideal for fitting inside low profile terminal boxes for rooftop mounting. Available in one pole and two pole versions.

Part No.	Description
211PV	Single pole PV Fuse Holder
212PV	Double pole PV Fuse Holder

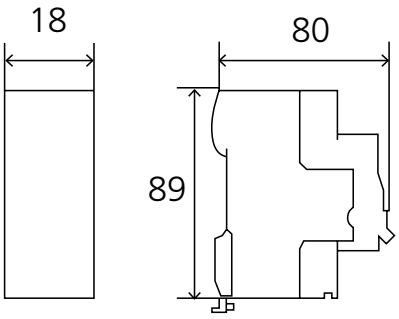


Noark Fuse Carriers

Noark fuse carriers are rated at 1000V DC and feature a profile similar to a circuit breaker, making them ideal for fitting inside a consumer unit. Noark fuse holders also include a built in fuse integrity indicator which lights up if a fuse blows, simplifying the process of fault finding in multi-string arrays. Available in one pole and two pole versions.

Part No.	Description
85500	Single pole PV Fuse Holder
85515	Double pole PV Fuse Holder

Includes fuse integrity indicator.



Fusing

NH Fuse Switch Disconnectors

For Use on Stand Alone Systems Incorporating Battery Banks

Functions

NH fuse switch disconnectors are used on low voltage electrical systems that require high protection against shortcircuit while securing on load circuit disconnection and isolation.

According to standards

IEC/EN 60 947-3
VDE 0660 / part 100
IEC/EN 60 269-2-1
VDE 0636 / part 201

Base

Manufactured out of re-inforced fiber glass with high thermal stability and self extinguishing halogen free synthetic materials. Copper contacts are galvanic surface coated. Contact springs are made of stainless steel. Symmetrical switch suitable for bottom / top cable terminal connections.

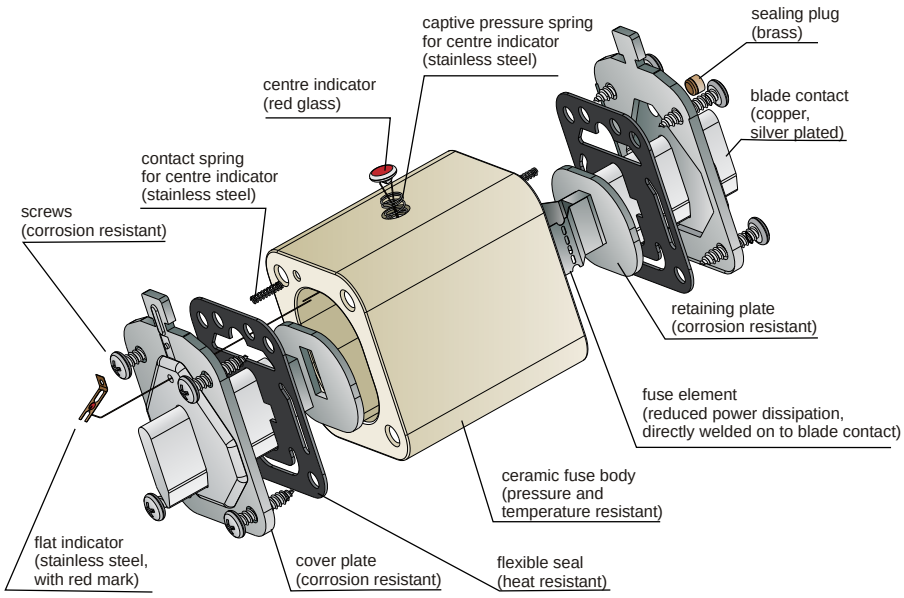
Cover

The switch operating cover consists of re-inforced fiber glass and self extinguishing thermoplastic halogen free material. Supplied with large windows which enable fuse link indicator to be clearly seen. Ergonomic handle for easy operation.

Part No.	Size	Max. Current Rating
713	NH00	160A
733	NH1	250A
743	NH2	400A
753	NH3	630A

NH Fuses

Industrial fuses are designed to protect installations and equipment against overload and short-circuit currents on low voltage electrical circuits. Gave gG NH fuses are rated at 500V AC and 440V DC.



Part No.	Size	Current Rating
66920080	NH00	80
66920100	NH00	100
66920125	NH00	125
66920160	NH00	160
67120200	NH1	200
67120250	NH1	250
67220315	NH2	315
67220355	NH2	355
67220400	NH2	400
67320500	NH3	500
67320630	NH3	630

Enclosures

IP65 Consumer Units

UV-resistant

Description

The PV Power IP65 enclosures are manufactured in Europe from ASA (Acrylonitrile Styrene Acrylate). ASA material is extremely tough with good chemical resistance and thermal stability, UV stabilized, and outstanding resistance to weather and aging.

Available from 4 pole to 36 pole with blanking plates included for unused pole spaces. These enclosures are fitted with a small handle for locking the door and can be retrofitted with a key lock assembly.

Each enclosure is equipped with multiple metric knockouts in numerous sizes, in top, bottom and sides for extra versatility.

Technical characteristics

- Material: Acrylonitrile Styrene Acrylate (ASA)
- Complies with: IEC 60670-1:2002 IEC 60670-24:2005
- Rated voltage: 1000VDC
- Resistance of insulating material to fire (glow wire test): 650°C
- Tamper evident security seal provisions
- Protection degree IP65
- Insulation class II
- Optional key lock available
- Made in Europe
- UV stabilised

Description	4 Pole	8 Pole	12 Pole	24 Pole	36 Pole
Dimensions (mm)	127 x 200 x 120	200 x 200 x 120	318 x 258 x 142	318 x 383 x 142	318 x 507 x 142
No. of poles	4	8	12	24	36
Part No.	N4D	N8D	N12D	N24D	N36D
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP	LOCKDP
ENB to suit	-	-	103547	103547	103547

Enclosures

IP40 Consumer Units

Modern Design

Description

The modern European styling of these IP40 consumer units from Noark will satisfy the most discerning home owner.

They are made in Europe and manufactured form high quality ABS materials. The IP40 consumer units are supplied complete with fork bars for fast and easy termination of circuit breakers and are available in both surface and recessed mounting styles.

IP40 Consumer Units

Surface mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60670 -1: 2002 (1st edition), IEC 60670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	287 x 236 x 112	396 x 236 x 112	287 x 361 x 112	296 x 361 x 112
No. of poles	12	18	24	36
Part number	103522	103523	103524	103525
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

IP40 Consumer Units

Recessed mounting

Technical characteristics

- Material: Acrylonitrile Butadiene Styrene (ABS)
- According to: IEC 60670 -1: 2002 (1st edition), IEC 60670-24:2005 (1st edition)
- Temperature range: -25°C to +60°C
- Rated voltage: AC 400V
- Resistance of insulating material to fire (glow wire test): 650°C
- Earth neutral bars included
- Made in Europe.

Description	12 Pole	18 Pole	24 Pole	36 Pole
Dimensions (mm)	283 x 232 x 70	396 x 232 x 70	283 x 357 x 70	396 x 357 x 70
No. of poles	12	18	24	36
Part number	103536	103537	103538	103539
Key lock to suit	LOCKDP	LOCKDP	LOCKDP	LOCKDP

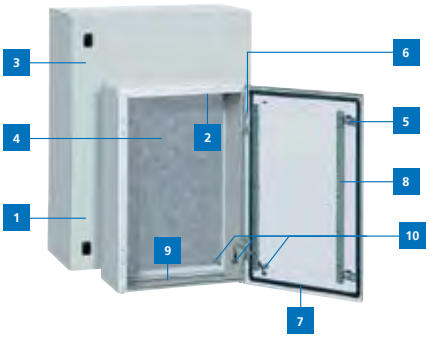
Enclosures

Wall mount - A series

Single door IP65

- Robust construction in sheet steel, powder-coated (RAL7035).
- Mounting plate and base mounted gland plate included.
- Direct earth contact via copper plated mounting studs.
- Door opens to approximately 140o and easily changed right/left hand mounting.
- Stainless steel also available, upon request

Part No.	Size W x H x D (mm)	Internal depth	Mounting plate W x H (mm)	Weight (kg)
A1000	400 x 400 x 210	195	370 x 350	13.5
A1020	400 x 600 x 210	195	370 x 550	17.5
A2145	400 x 500 x 210	195	370 x 450	17.0
A1021	600 x 400 x 210	195	570 x 350	17.5
A1027	500 x 700 x 210	195	470 x 650	24.9
A1030	600 x 600 x 210	195	570 x 550	24.9
A1040	600 x 800 x 210	195	570 x 750	31.7
AE1020	400 x 600 x 250	235	370 x 550	17.8
AE1027	500 x 700 x 250	235	470 x 650	24.9
AE1030	600 x 600 x 250	235	570 x 550	24.3
AE1040	600 x 800 x 250	235	570 x 750	31.2
AT1020	400 x 600 x 300	285	370 x 550	19.1
AT1021	600 x 400 x 300	285	570 x 350	19.1
AT1025	500 x 500 x 300	285	470 x 450	22.1
AT1030	600 x 600 x 300	285	570 x 550	27.6



Product features

1 Constructions in 1.5 mm sheet steel. Powder-coated RAL 7035, textured.
2 Box with narrow bevelled edge.
3 One piece. Machine-welded corners.
4 Galvanised mounting plate (2.5 mm) included in all model ranges.
5 Standard lock systems with 3 mm-double bolt inserts.
6 Hinged door versions with concealed hinges approx. 140° opening.
7 Door featuring integral rubber sealing gasket (foamed)/high protection rating IP 65-EN60529. 2-door version IP 55.
8 Perforated galvanised door rails guarantee optimal mounting possibilities.
9 Includes gland plates in the base.
10 Earthing studs for door, enclosure and mounting plate.

Ventilation plugs

IP68 Plugs to Reduce Condensation

Pressure equaliser to prevent condensation within IP rated enclosures.

Waterproof enclosures with an IP rating greater than IP67 can form condensation when air pressure changes with weather conditions. To compensate for this, a ventilation plug should be fitted which compensates for changes in air pressure through a waterproof membrane.

The high quality, breathable and watertight PES membrane provides continuous pressure exchange between the enclosure and its surrounding environment, and ensures protection against humidity. The high water resistance of the membrane enables a protection rating of IP66, IP67 and IP69K.

Part No.	Thread size
ZB5054	M12

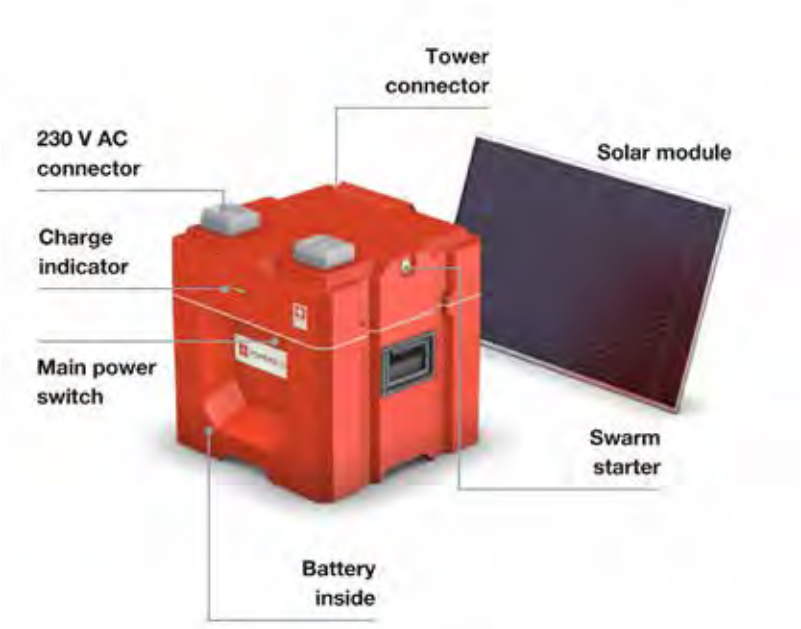
Energy Storage

Power wherever you are

The Power-Blox PBX200, the first product that was developed based on our swarm technology, is a revolutionary modular energy system producing alternating current from 200 W up to the Kilowatt range, which serves as a "portable socket" to off-grid energy demands. Its modularity allows it to produce and easily scale electricity.

The system is Plug & Power and requires no configuration, specific know-how or maintenance. It consists of intelligent energy cubes with an integrated battery (available as lead or lithium-ion version). Each cube provides 200 Watt of alternating current and can be powered by a solar unit or from any external source (such as solar, wind, hydrothermal, biomass, or a generator etc.) to supply a household or small commercial business with electricity. Power-Blox acts as universal energy interface and can be combined with various external energy sources or storage devices.

The Power-Blox PBX200



- 230 V AC/200 W true sinus inverter
- 100 Ah solar battery
- MPP solar charger
- Swarm-/mini-grid enabled
- 4 x stacking sockets
- Integrated stacking cable
- Grid/generator connector
- 12 V DC/3 A (cigarette lighter socket)
- 2 x USB output

Part No.	Model/Description	Battery (included)	Type	Cycle	Expected lifetime
32.0200-50015	Power-Blox PBX-200 Pb	2 x Hoppecke 12V 58 AH	Lead Acid	2500	3-5 yrs
32.0200-50025	Power-Blox PBX-200 Li	2 x Li-Ion 12V 50 AH	Lithium-Ion	5000	>10 years
32.0200-50400	10M, MC4 solar cable lead	-	-	-	-

Energy Storage

Multi-Contact MC STÄUBLI GROUP STÄUBLI

Nearly unlimited scalability

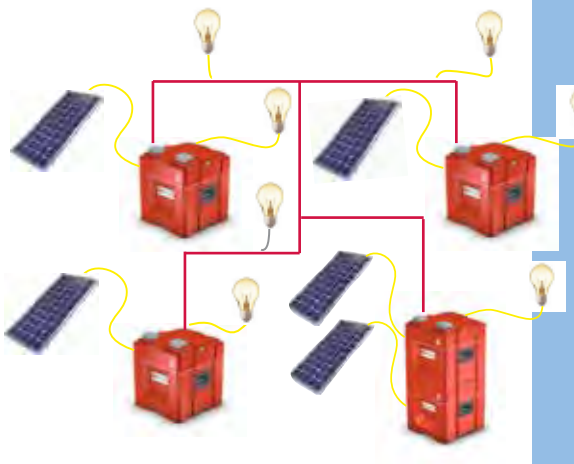
The nearly endless scalability of the Power-Blox system represents a breakthrough in energy technology. It allows scalable growth based on increasing energy requirements, without the need of modifying/replacing existing installations.

Technical Data

Inverter	PBX200 Pb	PBX200 Li
Rated grid voltage	230 V	
Rated frequency	50 Hz	
Harmonic distortion	< 4%	
Continuous power at 25	200 W	
Power for 5 sec. at 25	230 W	
Power for 3 sec. at 25	370 W	
Maximum load	Up to short-circuit	
Cos Ø	0.1 to 1	
Grid/generator input		
Input voltage	230 V ± 15%	
Frequency range	47-64 Hz	
Grid charger current	5 A	
Charging characteristics	IUoU [1]	Li BMS [1]
Resettable fuse	10 A	
Transfer connectors		
Transfer voltage	230 V ± 15%	
Frequency range	47-64 Hz	
Resettable fuse	10 A	
Solar input		
Solar charger type	MPP [2]	
Input voltage range	30-45 V	
PV current	8 A	
Maximum PV power	250 W	
Recommended PV power	200 W	
Charging characteristics	IUoU [1], temperature regulated	Li BMS [1], temperature regulated
Battery		
Included batteries	2 x Hoppecke sun power VR M 12 V 58	2 x Li-Ion batteries 12 V 50 AH
Battery technology	Lead acid/AGM [3]	Lithium/LiFePo4 [4]
Internal battery voltage	24 V	
Cycle stability	2500 cycles	5000 cycles
Expected lifetime	3-5 years	> 10 years
DC output		
Cigarette lighter socket	12 V, 3 A	
USB socket	2 x 5 V, 2 A	
Connectors		
Solar	powerCON TRUE1 inlet/clamps	
Transfer/stacking	powerCON inlet/clamps	
Transfer cable	1.3 m cable with powerCON plug	
Grid/generator	Grid socket C14, 10 A/clamps	
Clamps	Tool-less Phoenix clamps, 0.2-6 mm2	

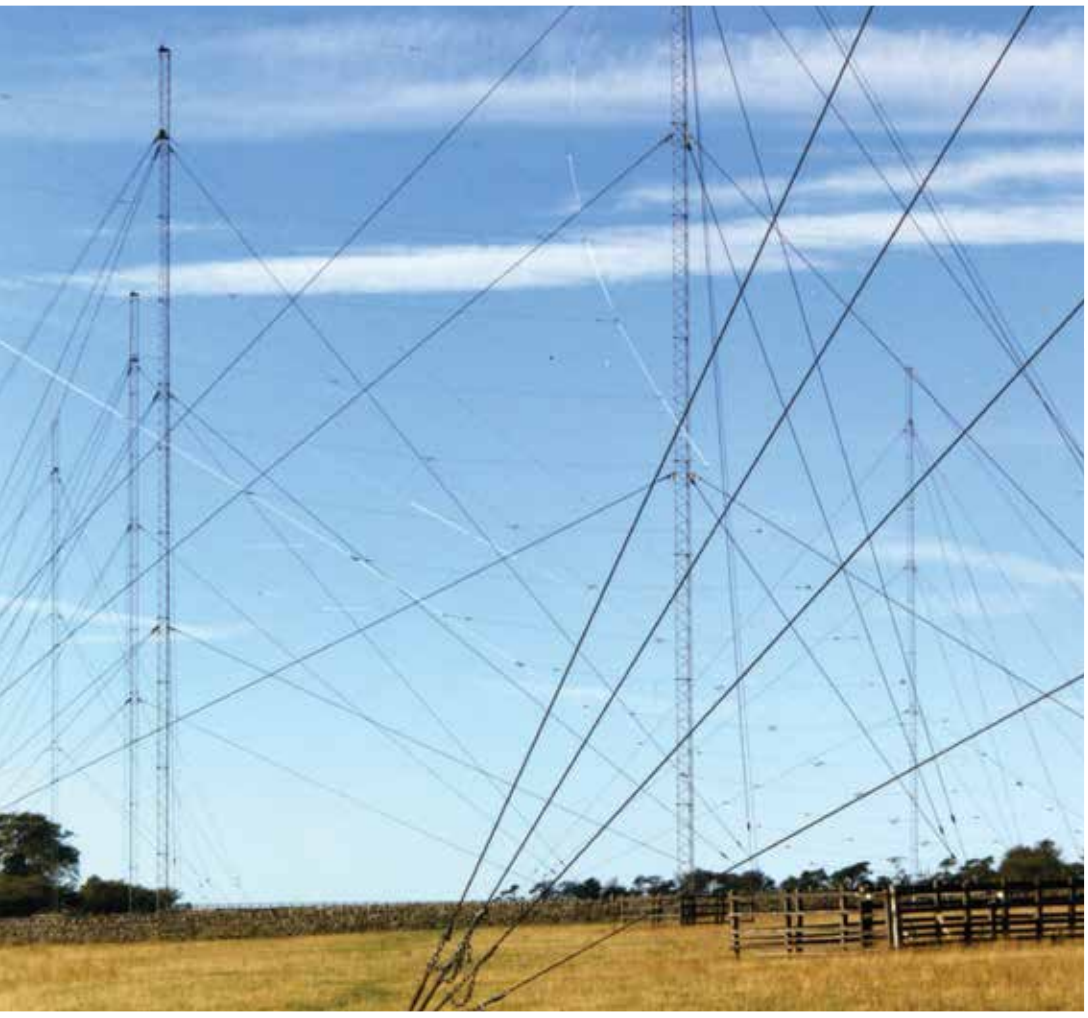
Standalone Power-Blox
Instant plug & power
Directly supplies 230 V AC

Stacking Power-Blox
Get more energy and power.
Expand by stacking units.



Build a swarm grid
More units increase the stability and power of the grid. Every consumer in the system can use the full power of all units.

Suspension Systems



Suspension Systems

Linear COMPOSITES

PARAFIL® Rope

High strength synthetic rope

Introduction

PARAFIL® is the original parallel laid fibre synthetic rope which was first conceived and manufactured in 1967.

PARAFIL® ropes consist of a closely packed core of high strength synthetic fibres lying parallel to each other, and encased in a tough and durable polymeric sheath.

The parallel fibre structure ensures that PARAFIL® ropes have high strength and modulus characteristics coupled with an excellent tension-tension fatigue performance and low creep.

PARAFIL® ropes are used throughout the world mainly as;

- Catenary Support Systems
- Insulating Guys
- Urban Transport Systems
- Sub-Sea
- Marine
- Structural applications

PARAFIL® ropes have termination end fittings which were specifically designed by Linear Composites Limited (LCL) in conjunction with Cambridge University, to maximise the rope efficiency. It is essential that LCL termination fittings are used with PARAFIL®.

LCL terminations are designed and constructed from the highest quality materials which are machined to precise dimensions and tolerances.

By using LCL termination fittings customers can be confident that the PARAFIL® will perform to the properties detailed within the company's literature. PARAFIL® and LCL terminations have a proven 40 plus year performance in a vast number of end uses.

PARAFIL® benefits, when compared to metallic/synthetic alternatives, include;

- High strength-to-weight ratio
- Excellent chemical resistance
- High UV resistance
- Excellent fatigue characteristics
- Stability over a wide temperature range.
- Electrical insulation
- Virtually maintenance free
- Non corrosive
- Low friction surface
- Low creep properties
- Easily removed and replaced
- Proven termination technology
- Tested to loads of 1,500 tonnes

The unique method of manufacture produces a rope with a diverse blend of physical and chemical characteristics.

PARAFIL® Types

PARAFIL® is constructed from five standard fibre types. However, each of these is available with a choice of polymeric sheaths to suit varying applications. These include:

- Specially formulated polyethylene, which is suitable for most applications (sheath material A)
- EVA copolymer that is more flexible and stress-crack resistant (sheath material C)
- Polyester elastomer that offers higher resistance to heat and abrasion (sheath material H)
- Flame retardant, cross linked polymer sheath is available (sheath material X).

Tensile properties

The tensile properties given are based on the cross sectional area of fibre in the core. The tensile properties are determined solely by the type and quantity of fibre used in the core and are independant of sheath type.

Rope	Tensile Strength at NBL	Elastic Modulus (Youngs)
Type A	6300 kg/cm² 0.6 kN/mm²	100,000 kg/cm² 9.8 kN/mm²
Type F	19,600 kg/cm² 1.9 kN/mm²	793,000 kg/cm² 77.7 kN/mm²
Type G	19,600 kg/cm² 1.9 kN/mm²	1,290,000 kg/cm² 125.6 kN/mm²

All Type A ropes have the same core and therefore the same tensile properties.
This is also true for the Type F & G series of ropes

Suspension Systems

Linear COMPOSITES

PARAFIL® Rope

Applications

Insulating guys, catenaries and support systems

The first applications for PARAFIL® were in the antennae and electrical industries, as insulating guys, catenaries, and support systems, where the tensile properties, excellent insulating properties and resistance to UV degradation ensure a long and essentially maintenance free life.

Periodically the PARAFIL® ropes from this earliest installation have been replaced so that the ropes can be evaluated after extended service. To date no significant property changes have been detected.

Urban transport systems

It was a natural evolution from the antennae and electrical industries to the use of PARAFIL® in urban transport systems where the same attributes are put to good use in supporting tram and trolley bus overhead conductors.

There is a rapidly growing demand for efficient pollution free urban transport systems all over the world. PARAFIL® is playing an ever increasing role in this market, where Type A and Type F versions are utilized.

Marine applications

PARAFIL® ropes have been used in marine application for over 20 years, for buoy moorings, ship and yacht rigging, guard rails and tow ropes etc. The specially engineered tensile properties, together with the inherent low weight, freedom from corrosion and excellent tension-tension fatigue resistance ensures long life and ease of handling.

The polyethylene sheath of PARAFIL® is not affected by seawater, and is unlikely to attract marine debris.

Again PARAFIL® mooring ropes have been recovered after extensive service: the ropes were clean and showed no loss of tensile properties.

When used in ships rigging PARAFIL® is unaffected by sunlight and seawater, and the smooth polyethylene surface ensures the minimum build up, and easy release of ice, no matter how severe the conditions.

Suspension Systems

Linear COMPOSITES

PARAFIL® Rope

Applications

Structural applications

The high strength to weight ratio, together with its high modulus, low extension and good tension-tension fatigue life make PARAFIL® an attractive material for many structural applications. The first "all plastic" bridge was built in UK in 1992, with PARAFIL® playing a major part.

Built on the cable-stay priciple, PARAFIL® has been used to span the River Tay in Scotland, and is some 60 metres in length between the towers. Both 15 tonne and 22.5 tonne Type G PARAFIL® were used. PARAFIL® has long been thought of as an ideal material for such applications.

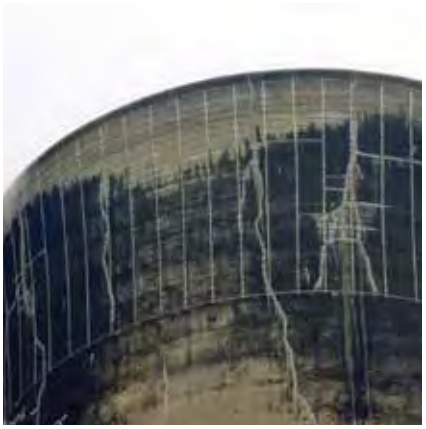
Pre-stressing tendons

Long before the cable stay bridge opportunity came along to demonstrate the versatility of PARAFIL®, it had already been used to repair concrete structures.

Based on high strength, high modulus aramid fibres, PARAFIL® has many attributes for use as external, unbonded, pre-stressing tendons in concrete beams. PARAFIL® is also ideal for roof support systems.

Many of its properties are clearly attractive; high strength to weight ratio, excellent chemical resistance, high UV resistance, excellent fatigue characteristics and safety over a wide temerature range.

The cooling tower (pic right) was repaired using 30 circumferential tendons of 10.5 tonne Type G PARAFIL®. The extreme atmospheric conditions called for enhanced durability.



The future for PARAFIL®

Two technologies have been blended together to bring about the success of the PARAFIL® system: the compact core of parallel fibres encased in a tough and durable polymeric sheath and the specially designed termination technique.

When PARAFIL® ropes are correctly terminated and subjected to test they invariably break in the body of the rope, and not at the terminations. This guarantees that the fibre properties are used as efficiently and effectively as possible.

No other system matches this performance.

Suspension Systems

Linear COMPOSITES

PARAFIL® Rope

High strength synthetic rope

Type A	Type A/C	Nominal Diameter (mm)	Nominal Breaking Load (tonnes)	Fibre Core Diameter (mm)	Fibre Core Cross Sectional area (mm²)	Approx Weight in Air (kg)
RL1112	N/A	4	0.3	3.0	5.19	1.2
RL1002	RL1021	7	0.5	3.7	7.97	3.7
RL1003	RL1022	8.5	1	5.3	15.94	5.4
RL1004	RL1023	11	2	7.5	31.88	9.4
RL1005	RL1024	13.5	3.5	10	55.8	14.5
RL1006	RL1025	17	5	12	79.7	22
RL1007	RL1026	20	7.5	15	119.6	30
RL1008	RL1027	22	10	17	159.4	37
RL1009	RL1028	27.5	15	22	239.1	56
RL1010	RL1029	31	20	24	318.8	73
RL1011	RL1030	36	30	29	478.2	99

Terminators to suit rope

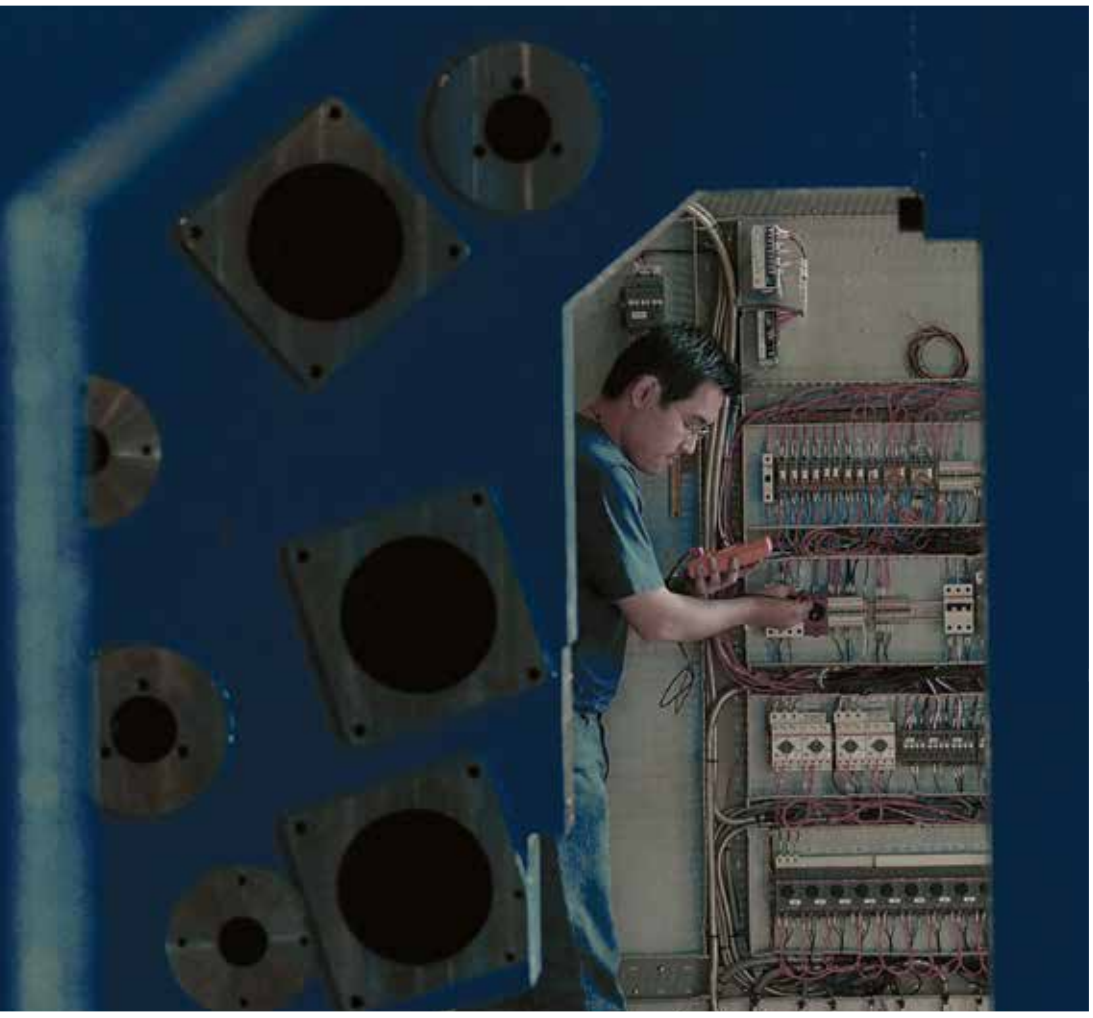
Nominal Diameter	Nominal Breaking Load	Aluminium	Galvanised Steel	Stainless Steel
7	0.5	RL1501	RL1521	RL1541
8.5	1	RL1502	RL1522	RL1542
11	2	RL1503	RL1523	RL1543
13.5	3.5	RL1504	RL1524	RL1544
17	5	RL1505	RL1525	RL1555
20	7.5	RL1506	RL1526	RL1556
22	10	RL1507	RL1527	RL1557
27.5	15	RL1508	RL1528	RL1558

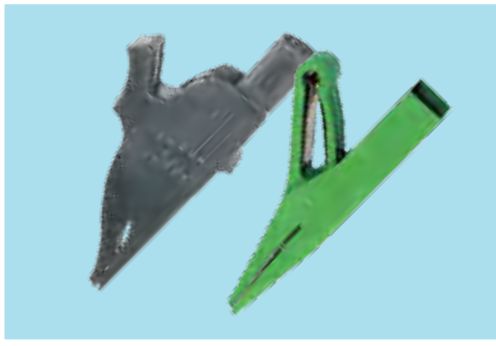
Type F	Type F/C	Nominal Diameter (mm)	Nominal Breaking Load (tonnes)	Fibre Core Diameter (mm)	Fibre Core Cross Sectional area (mm²)	Approx Weight in Air (kg)
RL1147	N/A	4	0.75	3.0	4.8	1.2
RL1041	RL1060	7	1.5	4.0	7.64	3.7
RL1042	RL1061	8.5	3	5.4	15.28	5.4
RL1043	RL1062	11	6	7.6	30.55	9.1
RL1044	RL1063	13.5	10.5	10	53.47	14.9
RL1045	RL1064	17	15	12.5	76.38	21.5
RL1046	RL1065	20	22.5	15	114.6	30
RL1047	RL1066	22	30	17	152.8	37
Upon Request	Upon Request	27.5	45	21.5	229.2	60
Upon Request	Upon Request	31	60	24	305.5	72
Upon Request	Upon Request	36	90	29	458.3	100

Terminators to suit rope

Nominal Diameter	Nominal Breaking Load	Aluminium	Galvanised Steel	Stainless Steel
4	0.75	RL1560	N/A	N/A
7	1.5	RL1561	RL1571	RL1581
8.5	3	RL1562	RL1572	RL1582
11	6	RL1563	RL1573	RL1583
13.5	10.5	RL1564	RL1574	RL1584
17	15	RL1565	RL1575	RL1585
20	22.5	RL1566	RL1576	RL1586

Test & Measure





Test & Measure

Test leads and accessories

Multi-Contact high quality test leads & accessories

Multi-Contact and HCK, have become synonymous worldwide with safe, high quality testing, measuring and diagnostic equipment accessories.

All our **safety range** of test accessories are touch-protected according to IEC/EN standard 61010-031

Our Test & Measurement product family includes:

- a complete line of insulated test accessories that meet and exceed today's stringent safety requirements
- test accessories for high-frequency engineering
- a wide range of highly flexible wire

Key features

- Diameters: 0.63 to 6mm
- Current: up to 125A
- Voltage: up to 1500V
- Low contact resistance
- Gold, nickel or silver plated
- Multilam™ equipped

The Ø 4 mm system is the most widely used plug connection system in many fields of electrical engineering. Be it in electrical installations, the electrical trade, industry, the laboratory and training field or as accessories for test and measuring instruments – the Ø 4 mm system is in use everywhere.

The components are robust, easy to handle, and have a sufficient current-carrying capacity for most applications. We have included just a few sample products from our range of test leads, plugs, sockets, test probes, test clips and adapters, if these don't meet your application please contact us for more information or a catalogue.

Colour codes:

These colour codes are applicable for all Multi-Contact products.

Measurement Categories

According to IEC/EN 61010-031

To facilitate the assignment of test accessories to the appropriate applications, standard IEC/EN 61010-031 has established a number of categories which define where they can be used in the power supply network and to lay down appropriate requirements for each category.

Formerly (until 2002), the measurement categories now defined in standard IEC/EN 61010-031 were designated as overvoltage categories. This term originated from the fact that the classification was based primarily upon the overvoltages (surges) that were likely to occur in the mains supply.

Actually the measurement categories differ not so much in the level of the expected transient values as with regard to the available energy in each test category in the event of a short circuit.

In a higher measurement category more energy can be released than in a lower one, with results that may even have an explosive like character with very serious consequences for the user.

In standard EN 61010-031 there are four different test categories, abbreviated "CAT". The category CAT followed by a number from I to IV is stated in our catalogues with the rated voltage, and also marked on the products.

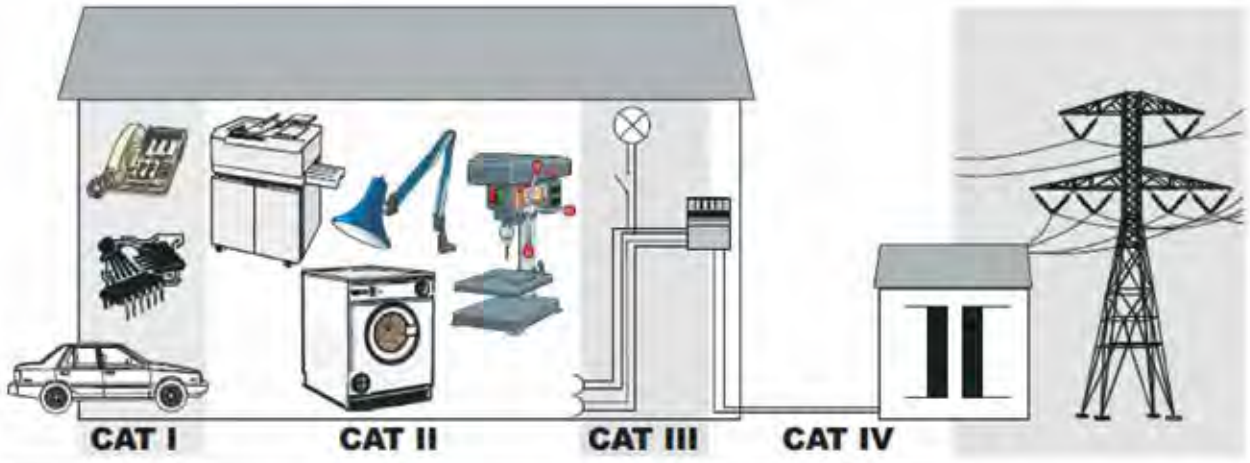
As a general rule, the higher the CAT rating, the higher the safety requirement that applies to the product. One exception is CAT I

CAT I:
Applies to test objects that are not connected to the mains. Here, either no overvoltages occur or only quite specific ones which are not, however, specified in the insulation coordination.
In order to establish the requirements for this CAT, it is therefore necessary to know what overvoltages can occur.

CAT II:
Applies to measurements on equipment that is connected to the mains or supplied from the mains without constituting a part of the mains installation.
Examples: electrical equipment between appliance and power socket, or inside electrical equipment such as domestic appliances (Repair shops).

CAT III:
Applies to measurements inside the house or building installation:
Examples: installations in buildings, contactors, protective devices, switches, power sockets (electricians).

CAT IV:
Applies to measurements at the supply source of the installation.
Examples: Secondary side of medium-voltage transformers, electricity meters, connection to overhead lines (employees of power distribution companies).



Overview of measurement categories according to IEC/EN 61010-031 (VDE 0411-031)

Test Leads

Multi-Contact
STÄUBLI GROUP

4mm Banana Plug Leads

Super flexible test leads

Description:
Highly flexible test leads with silicone insulation and stackable Ø4mm gold plated Multilam® plugs on both ends.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
28.0074.10021	LK425-A/SIL 4mm BLK Lead 100cm	30 VAC ~ 60 VDC	32A	2.5mm²	100cm	Au	Silicone
28.0074.10022	LK425-A/SIL 4mm Red Lead 100cm	30 VAC ~ 60 VDC	32A	2.5mm²	100cm	Au	Silicone

Description:
Highly flexible test leads with PVC insulation and stackable Ø4mm nickel plated Multilam® plugs with rigid insulating sleeves on both ends.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
28.0124.10021	SLK425-E 4mm BLK Lead 100cm	600 V, CAT III ~ 1000 V, CAT II	32A	2.5mm²	100cm	Ni	PVC
28.0124.10022	SLK425-E 4mm Red Lead 100cm	600 V, CAT III ~ 1000 V, CAT II	32A	2.5mm²	100cm	Ni	PVC
28.0124.20021	SLK425-E 4mm BLK Lead 200cm	600 V, CAT III ~ 1000 V, CAT II	32A	2.5mm²	200cm	Ni	PVC
28.0124.20022	SLK425-E 4mm Red Lead 200cm	600 V, CAT III ~ 1000 V, CAT II	32A	2.5mm²	200cm	Ni	PVC

Description:
Highly flexible test leads with silicone insulation especially suitable for connecting electrical apparatus not (yet) equipped with safety sockets. With stackable Ø4mm Multilam® plugs on both ends with protective collar and retractable sleeve to prevent accidental touching.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9408.20021	XZG425/SIL 4mm BLK Lead 200cm	600 V, CAT II	32A	2.5mm²	200cm	Ni	Silicone
66.9408.20022	XZG425/SIL 4mm Red Lead 200cm	600 V, CAT II	32A	2.5mm²	200cm	Ni	Silicone

Description:
Highly flexible fused test leads with silicone insulation with in-line Ø4mm Multilam® plugs with rigid insulating sleeves on both ends. The two-part screw connector accepts a 6.3 x 32 mm fuse.
The fuse is not supplied.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9395.15021	XSMS-419 4mm BLK fused Lead 150cm	1000 V, CAT IV	*8A	1mm²	150cm	Ni	Silicone
66.9395.15022	XSMS-419 4mm Red fused Lead 150cm	1000 V, CAT IV	*8A	1mm²	150cm	Ni	Silicone

***Up to 8A, depends on size of fuse fitted**

Test Leads

Multi-Contact

STÄUBLI GROUP

4mm Banana Plug Leads

Super flexible test leads

Description:

Highly flexible test leads with PVC insulation with in-line Ø4mm Multilam® plug with rigid insulating sleeves on both ends.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9634.20021	XMF-402 4mm BLK Lead 200cm	1000 V, CAT II	15A	0.75mm²	200cm	Ni	PVC
66.9634.20022	XMF-402 4mm Red Lead 200cm	1000 V, CAT II	15A	0.75mm²	200cm	Ni	PVC
66.9634.20025	XMF-402 4mm Green Lead 200cm	1000 V, CAT II	15A	0.75mm²	200cm	Ni	PVC

Description:

Highly flexible test leads with silicone insulation. One end with in-line nickel plated Ø4mm Multilam® plug with rigid insulating sleeve. The other end with right-angled nickel plated Ø4mm Multilam® plug with rigid insulating sleeve.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9006.10021	XMS-484 4mm BLK Lead 100cm	1000 V, CAT III	19A	1mm²	100cm	Ni	Silicone
66.9006.10022	XMS-484 4mm RED Lead 100cm	1000 V, CAT III	19A	1mm²	100cm	Ni	Silicone

Description:

Highly flexible test lead. One end with nickle plated Ø4mm test probe with spring-loaded Multilam®, the other end with right-angled nickel plated Ø4mm Multilam® plug with rigid insulating sleeve. Supplied with protective cap.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9007.10021	XPS-484 4mm BLK Lead 100cm	1000 V, CAT III	20A	1mm²	100cm	Ni	Silicone
66.9007.10022	XPS-484 4mm Red Lead 100cm	1000 V, CAT III	20A	1mm²	100cm	Ni	Silicone

Description:

Highly flexible test leads. One end with Ø2mm test probe made of stainless steel with a thread for use with screw-on accessories, offering various contacting possibilities. The other end right angled Ø4mm Multilam® plug with rigid insulating sleeve. Supplied with protective cap.

Part No.	Description	Rated voltage	Current	Lead cross section	Length	Plating	Lead material
66.9645.10021	XPF-480/2G 4mm BLK Lead 100cm	1000 V, CAT II	15A	0.75mm²	100cm	Ni	PVC
66.9645.10022	XPF-480/2G 4mm Red Lead 100cm	1000 V, CAT II	15A	0.75mm²	100cm	Ni	PVC

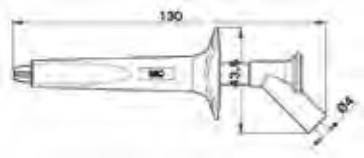
Test Clips

Multi-Contact MC STÄUBLI GROUP

Extended Reach Clips

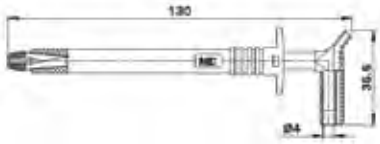
High quality test clips for use with Ø4mm test leads

Description:
Test clip with steel jaws especially for connections to ground rails and thick cables. For increased safety when making connections, the jaws are insulated on the outside. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.



Part No.	Description	Rated voltage	Current	Length
66.9474.21	AB200 4mm Black Test Clip	1000 V, CAT IV	20A	130mm
66.9474.22	AB200 4mm Red Test Clip	1000 V, CAT IV	20A	130mm

Description:
Test clip with steel jaws especially for connections to ground rails and thick cables. For increased safety when making connections, the jaws are insulated on the outside. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.

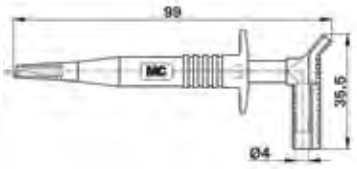


Part No.	Description	Rated voltage	Current	Length
66.9750.21	Minigrip-XCI Black 4mm Safety Test Clip	1000 V, CAT II	16A	130mm
66.9750.22	Minigrip-XCI Red 4mm Safety Test Clip	1000 V, CAT II	16A	130mm

Description:
Test clip with flexible shaft and spring wire grabber (stainless steel) for a good contact to pins and wires in inaccessible places. The shaft is Silicone insulated and guarantees good heat resistance and flexibility even at low temperatures. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.

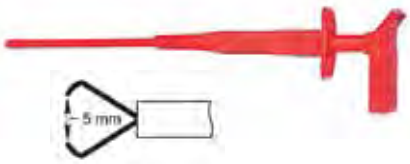
Part No.	Description	Rated voltage	Current	Length
66.9117.21	GRIP-B/100 4mm BLK Safety Test Clip	1000 V, CAT III	1A	195mm
66.9117.22	GRIP-B/100 4mm Red Safety Test Clip	1000 V, CAT III	1A	195mm

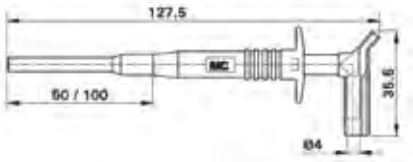
Description:
Test connector with rigid hook clip made of steel for hooking onto wires. Ø 4 mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.



Part No.	Description	Rated voltage	Current	Length
66.9746.21	Minigrip-XA Black 4mm Safety Test Clip	1000 V, CAT II	3A	99mm
66.9746.22	Minigrip-XA Red 4mm Safety Test Clip	1000 V, CAT II	3A	99mm

Description:
Test clip with flexible shaft and spring wire grabber (stainless steel) for a good contact to pins and wires in inaccessible places. The shaft is Silicone insulated and guarantees good heat resistance and flexibility even at low temperatures. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.





Part No.	Description	Rated voltage	Current	Length
66.9747.21	Minigrip-XB/50 BLK 4mm Safety Test Clip	1000 V, CAT II	1A	127.5mm
66.9747.22	Minigrip-XB/50 Red 4mm Safety Test Clip	1000 V, CAT II	1A	127.5mm

Test Clips

Multi-Contact MC STÄUBLI GROUP

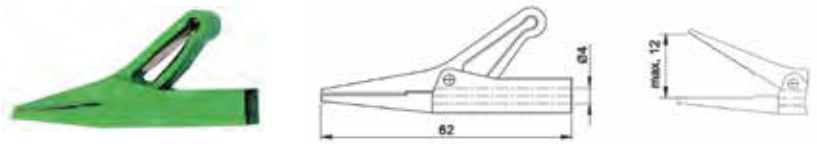
Crocodile Clips

High quality test clips for use with Ø4mm test leads

Description:
Uninsulated test clip with Ø 4 mm rigid socket. Steel. Connection also possible with screw clamp or soldering.

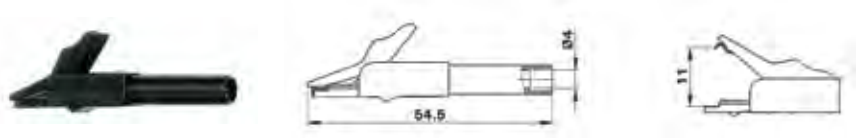
Part No.	Description	Rated voltage	Current	Length
24.0149	AGK20 4mm Uninsulated Test Clip	30 VAC ~ 60 VDC	10A	50mm

Description:
Test clip with Ø4mm rigid socket. Brass. Sharp toothed, pointed jaws. The upper jaw is insulated.



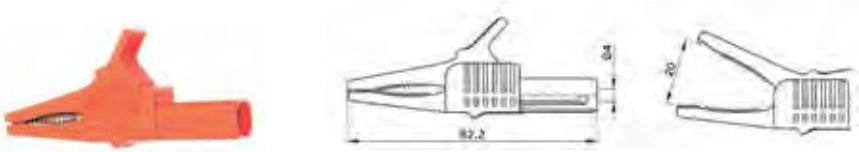
Part No.	Description	Rated voltage	Current	Length
64.9209.21	APK-4 4mm BLK Test Clip	30 VAC ~ 60 VDC	10A	62mm
64.9209.22	APK-4 4mm Red Test Clip	30 VAC ~ 60 VDC	10A	62mm

Description:
Small, slim crocodile clip made of brass with all-round insulation. Toothed jaws for wide grip with surface for fine wire. Ø4mm rigid socket in insulator accepting spring-loaded Ø4mm plugs with rigid insulating sleeves.



Part No.	Description	Rated voltage	Current	Length
24.0157.21	SAGK4-K 4mm BLK Safety Alligator Clip	300 V, CAT II	15A	54.5mm
24.0157.22	SAGK4-K 4mm Red Safety Alligator Clip	300 V, CAT II	15A	54.5mm

Description:
Crocodile clip made of brass with all-round insulation. Toothed jaws for wide grip with surface for fine wire. Ø 4 mm rigid socket in insulator accepting spring-loaded Ø4mm plugs with rigid insulating sleeves.



Part No.	Description	Rated voltage	Current	Length
66.9755.21	XKK-1001 4mm BLK Alligator Clip	1000 V, CAT II	32A	82.2mm
66.9755.22	XKK-1001 4mm Red Alligator Clip	1000 V, CAT II	32A	82.2mm
66.9755.23	XKK-1001 4mm Blue Alligator Clip	1000 V, CAT II	32A	82.2mm
66.9755.24	XKK-1001 4mm Yellow Alligator Clip	1000 V, CAT II	32A	82.2mm
66.9755.25	XKK-1001 4mm Green Alligator Clip	1000 V, CAT II	32A	82.2mm

Description:
Dolphin clip made of brass with all-round insulation. Toothed jaws for wide grip with surface for fine wire. Ø4mm rigid socket in insulator accepting spring-loaded Ø4mm plugs with rigid insulating sleeve.

Part No.	Description	Rated voltage	Current	Length
66.9575.21	XDK-1033 4mm BLK Safety Alligator Clip	1000 V, CAT III	32A	92mm
66.9575.22	XDK-1033 4mm Red Safety Alligator Clip	1000 V, CAT III	32A	92mm

Probes & Adaptors

Multi-Contact MC STÄUBLI GROUP

Multimeter Probes

High quality test probes for use with Ø4mm test leads

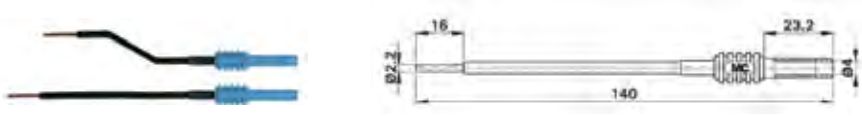
Description:
Test probes with stainless steel tip and handle guard chamfered on both sides. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve. Supplied with protective cap.

Part No.	Description	Rated voltage	Current	Length
24.0235.21	SPP4-S 4mm BLK Safety Test Probe	1000 V, CAT III	≤1A	122mm
24.0235.22	SPP4-S 4mm Red Safety Test Probe	1000 V, CAT III	≤1A	122mm

Description:
Ø4mm test probe with spring-loaded Multilam®. Handle guard chamfered on both sides. Ø4mm rigid socket in handle accepting spring-loaded Ø4mm plugs with rigid insulating sleeve. Supplied with protective cap.

Part No.	Description	Rated voltage	Current	Length
24.0232.21	SPP4-L 4mm BLK Safety Test Probe	1000 V, CAT III	32A	140mm
24.0232.22	SPP4-L 4mm Red Safety Test Probe	1000 V, CAT III	32A	140mm

Description:
Insulated flexible copper conductor, suitable for many types of screw clamp connections, e.g rail mounted terminals. Ø4mm rigid socket in insulator, made of brass, accepting springloaded Ø4mm plugs with rigid insulating sleeve.

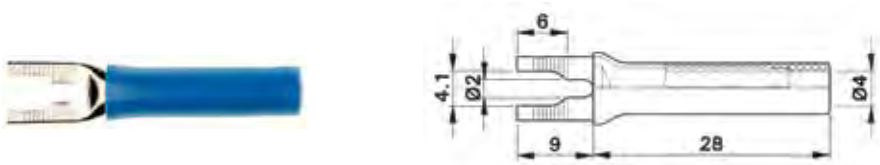


Part No.	Description	Rated voltage	Current	Length
66.9135.21	XRKA Black Safety Terminal Adaptor	1000 V, CAT II	32A	140mm
66.9135.22	XRKA Red Safety Terminal Adaptor	1000 V, CAT II	32A	140mm

Adaptors

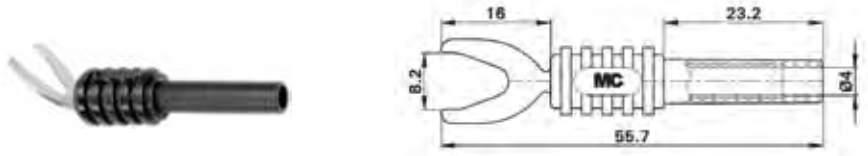
High quality adaptors for use with Ø4mm test leads

Description:
Cable lug adapter, made of brass for permanent installation, e. g. for connecting screw terminals. Ø4mm rigid socket in insulator accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve. Fork lug can be bent once to 90°.



Part No.	Description	Rated voltage	Current	Length
23.0480.21	B4-I/KS 4mm BLK Safety Cable Lug	1000 V, CAT II	20A	37mm
23.0480.22	B4-I/KS 4mm Red Safety Cable Lug	1000 V, CAT II	20A	37mm

Description:
Cable lug adapter, made of brass for permanent installation, e. g. for connecting screw terminals. Ø4mm rigid socket in insulator accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve. Fork lug can be bent once to 90°.



Part No.	Description	Rated voltage	Current	Length
66.9126.21	XKS-A BLK Safety Lug Adaptor	1000 V, CAT II	20A	55.7mm
66.9126.22	XKS-A Red Safety Lug Adaptor	1000 V, CAT II	20A	55.7mm

Probes & Adaptors

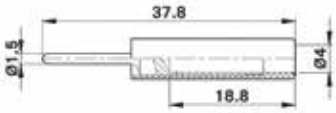
Multi-Contact MC STÄUBLI GROUP

Adaptors

High quality adaptors for use with Ø4mm test leads

Description:

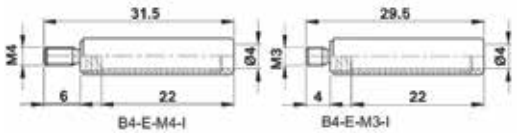
Solid round brass pin especially suitable for the screw connection to electricity meter clips. Can be bent once to 90°. Ø 4 mm rigid socket in insulator, accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve.



Part No.	Description	Rated voltage	Current	Length
23.0240.21	B4-I/S1.5 BLK Test Adaptor	600 V, CAT III	20A	37.8mm
23.0240.22	B4-I/S1.5 Red Test Adaptor	600 V, CAT III	20A	37.8mm

Description:

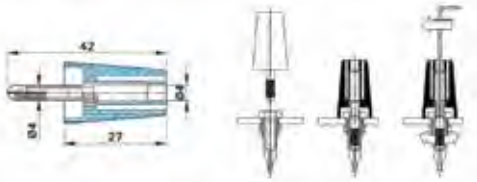
Insulated screw-in adapter with external thread for screw connection to threaded holes. Machined brass. Ø 4 mm rigid socket in insulator accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve. Socket with internal slot for screwdriver.



Part No.	Description	Rated voltage	Current	Thread
23.1031.21	B4-E-M3-I 4mm BLK Screw-In Adaptor	1000 V, CAT II	32A	M3
23.1031.22	B4-E-M3-I 4mm Red Screw-In Adaptor	1000 V, CAT II	32A	M3
23.1031.23	B4-E-M3-I 4mm Blue Screw-In Adaptor	1000 V, CAT II	32A	M3
23.1031.24	B4-E-M3-I 4mm Yellow Screw-In Adaptor	1000 V, CAT II	32A	M3
23.1033.21	B4-E-M4-I 4mm BLK Screw-In Adaptor	1000 V, CAT II	32A	M4
23.1033.22	B4-E-M4-I 4mm Red Screw-In Adaptor	1000 V, CAT II	32A	M4
23.1033.23	B4-E-M4-I 4mm Blue Screw-In Adaptor	1000 V, CAT II	32A	M4

Description:

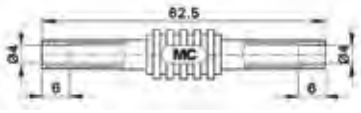
Adapter, made of brass can be screw-mounted into Ø4mm sockets. The expandable Ø4mm plug of this adapter can be locked into the socket by tightening the grub screw. Assembled, the adapter offers complete touch-proof protection. Ø4mm rigid socket in insulator accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve.



Part No.	Description	Rated voltage	Current	Thread
24.0161.20	A-SLK4-N 4mm Earth Adaptor	1000 V, CAT II	32A	M3
24.0161.21	A-SLK4-N 4mm Black Adaptor	1000 V, CAT II	32A	M3
24.0161.22	A-SLK4-N 4mm Red Adaptor	1000 V, CAT II	32A	M3
24.0161.23	A-SLK4-N 4mm Blue Adaptor	1000 V, CAT II	32A	M3
24.0161.29	A-SLK4-N 4mm White Adaptor	1000 V, CAT II	32A	M4

Description:

Insulated lead coupler, made of brass. Both ends suitable for accepting spring-loaded Ø4mm plugs with rigid insulating sleeve, designed to join test leads together.



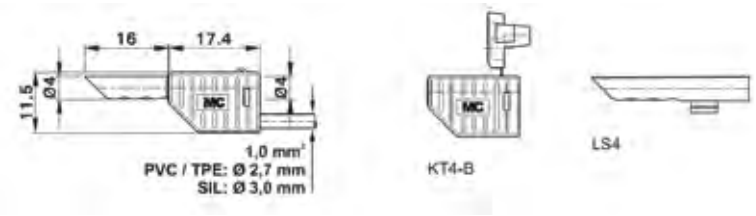
Part No.	Description	Rated voltage	Current	Length
66.9123.21	XHK 4mm BLK Safety Lead Coupler	1000 V, CAT II	32A	62.5mm
66.9123.22	XHK 4mm Red Safety Lead Coupler	1000 V, CAT II	32A	62.5mm

Banana Plugs

Multi-Contact MC STÄUBLI GROUP

Stackable Ø 4 mm Banana Plugs

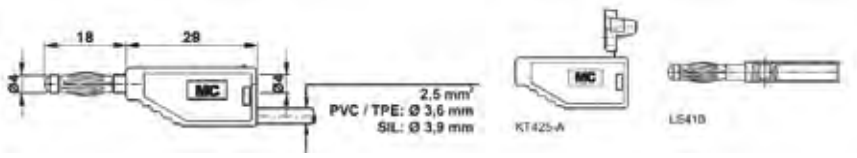
30 V AC / 60 V DC



Description:
Stackable Ø 4 mm hollow plugs for self assembly of test leads. Solder connection. Contact and insulator to be ordered seperately.

Part No.	Description	Rated voltage	Current	Colour codes
22.1005	LS4 Plug contact 1mm²	30 VAC ~ 60 VDC	19A	na
22.2060.**	KT4-B Insulator	30 VAC ~ 60 VDC	19A	21 22 23 24 25 29

****add colour code to part number**



Description:
Stackable Ø 4 mm plugs with spring-loaded Multilam® for self-assembly of test leads. Solder connection. Contact and insulator to be ordered seperately.

Part No.	Description	Rated voltage	Current	Colour codes
22.1010	LS410 Plug contact 2.5mm²	30 VAC ~ 60 VDC	32A	na
22.2160.**	KT425-A Insulator	30 VAC ~ 60 VDC	32A	21 22 23 24 25 29

****add colour code to part number**

Stackable Safety Ø 4 mm Banana Plugs

Complete safety plug

Description:
Stackable Ø 4 mm plugs with spring-loaded Multilam® for self-assembly of test leads. With retractable sleeve to prevent accidental touching. As a result of the protective collar, the clearances and creepage distances allow test leads equipped with this plug also to be safely connected to older test instruments not yet fitted with safety sockets up to 600V, CATII in conformity with the standards. Screw connection.

Part No.	Description	Rated voltage	Current	Colour codes
66.9328.**	XZGL-425 Stackable safety plug	600 V, CAT II	32A	21 22 23 24 25

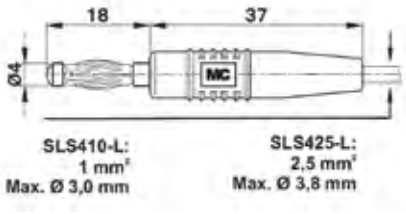
****add colour code to part number**

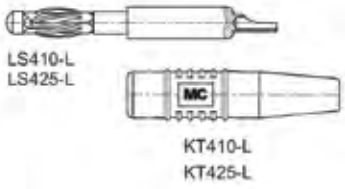
Banana Plugs

Multi-Contact
STÄUBLI GROUP

Inline Ø 4 mm Banana Plugs

30 V AC / 60 V DC





Description:
In-line Ø 4 mm plugs with spring-loaded Multilam® for self-assembly of test leads. Soft insulator. Solder connection. Contact and insulator to be ordered seperately.

Part No.	Description	Rated voltage	Current	Colour codes
22.1015	LS410-L Plug contact 1mm²	30 VAC ~ 60 VDC	19A	na
22.2190**	KT410-L Insulator	30 VAC ~ 60 VDC	19A	21 22

****add colour code to part number**

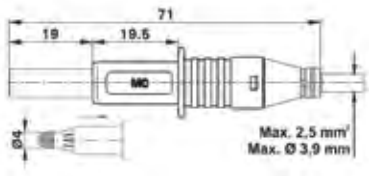
Part No.	Description	Rated voltage	Current	Colour codes
22.1015	LS425-L Plug contact 2.5mm²	30 VAC ~ 60 VDC	32A	na
22.2190**	KT425-L Insulator	30 VAC ~ 60 VDC	32A	21 22

****add colour code to part number**

Inline Safety Ø 4 mm Banana Plugs

Complete safety plug

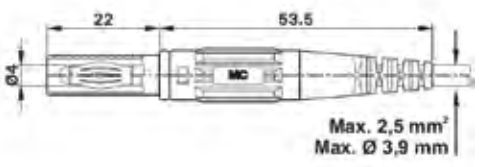
Description:
In-line Ø 4 mm plug with spring-loaded Multilam® for self-assembly of test leads. With retractable sleeve to prevent accidental touching. As a result of the protective collar, the clearances and creepage distances allow test leads equipped with this plug also to be safely connected to older test instruments not yet fitted with safety sockets up to 600 V, CAT II in conformity with the standards. Screw connection.



Part No.	Description	Rated voltage	Current	Colour codes
66.9584.**	X-GL-425 inline safety plug	600 V, CAT II	32A	21 22

****add colour code to part number**

Description:
In-line Ø 4 mm plug with spring-loaded Multilam® for self-assembly of test leads. With rigid insulating sleeve.
Screw connection.



Part No.	Description	Rated voltage	Current	Colour codes
66.9196.**	XL-410 inline safety plug	1000 V, CAT II	32A	21 22

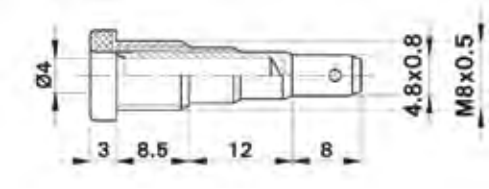
****add colour code to part number**

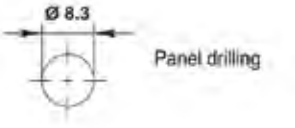
Banana Sockets

Multi-Contact MC
STÄUBLI GROUP

Ø 4 mm Sockets

30 V AC / 60 V DC





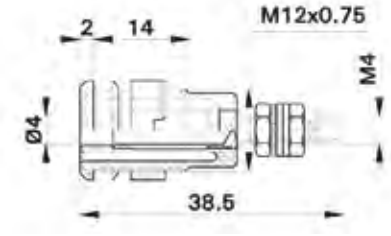
Description:
Insulated Ø 4 mm rigid socket. Machined brass. Metal thread jacket on the insulation. The socket can be screw-mounted in predrilled panels. Available with hexagonal nut. Flat connecting tab 4.8 mm x 0.8mm

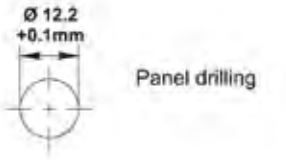
Part No.	Description	Rated voltage	Current	Colour codes
23.0190.**	LB-I4R-A 4mm Panel Mount Socket	30 VAC ~ 60 VDC	25A	21 22

****add colour code to part number**

Safety Ø 4 mm Sockets

Complete safety socket

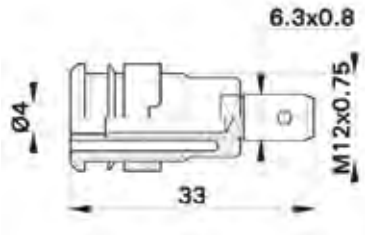


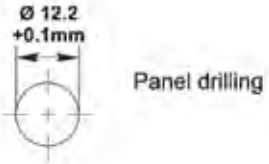


Description:
Insulated Ø 4 mm rigid sockets accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve. Machined brass, gold-plated. The socket is screwed into predrilled panels of plastic, metal etc. Connection: Threaded bolt M4 and soldering hole.

Part No.	Description	Rated voltage	Current	Colour codes
23.3020.**	SLB4-G 4mm Safety Screw- In Socket	1000 V, CAT III	32A	21 22 23 24 25 29

****add colour code to part number**





Description:
Insulated Ø 4 mm rigid sockets accepting spring-loaded Ø 4 mm plugs with rigid insulating sleeve. Machined brass, gold-plated. The socket is screwed into predrilled panels of plastic, metal etc. Flat connecting tab 6.3 mm x 0.8 mm.

Part No.	Description	Rated voltage	Current	Colour codes
23.3060.**	SLB4-F6.3 4mm Safety Socket	1000 V, CAT III	32A	21 22

****add colour code to part number**

Oscilloscope Probes

Multi-Contact

STÄUBLI GROUP

High Frequency Measurements

Probes & Connectors

This product range includes passive and active high-frequency test probes (HF probes) and accessories as well as touch-protected BNC plug connectors, leads, adapters and converters.

The use of a coaxial connecting cable with a particularly low capacitance, together with modifications in the interior of the probe, results in a further improvement in the electrical characteristics (e.g. a lower input capacity) compared with the tried and tested Isoprobe® II generation of probes.

SET Isoprobe® III - 10:1 ECO

The basic set Isoprobe® III - 10:1 ECO includes a basic set of accessories for effecting safe and accurate high-frequency measurements. Good value for money.

Max. 600 V, CAT III (600 V, CAT IV)

68.9558.28

SET Isoprobe® III - 10:1 HF

The Isoprobe® III - 10:1 HF set includes an extensive range of accessories for the needs of the professionally equipped test engineer.

Max. 1000 V, CAT III (600 V, CAT IV)

68.9556.28

SET Isoprobe® II - DEM-BNC

Demodulator test probe set, designed for measurements on high-frequency signals using an ordinary multimeter. The adapter XF-SS/4 which is supplied with the set also enables the probe to be connected to measuring instruments with Ø 4 mm safety sockets.

DC 250V, AC 50 V_{PP}

68.9840.25

SET Isoprobe® III - 100:1

Test probe set for safe measurements at high voltages. Due to the low input capacity and high input impedance of the probe, the Set Isoprobe® III - 100:1 is also particularly suited for measurements on sensitive circuits.

Max. 1000 V, CAT III (600 V, CAT IV)

68.9559.23

SET Actiprobe - I - 1050
50Ω Impedance

SET Actiprobe - I - 10
≥ 100 kΩ Impedance

Our sets with active test probes consist of a test probe of the series Actiprobe - I, together with a selection of accessories (ES Version). The active probes of the Actiprobe - I series with their wide frequency range are designed for professional applications in high-frequency technology. There are different versions available: For high-impedance or 50 Ω scope input, AC- or switchable AC/DC versions.

AC/DC Version	68.9466	**AC/DC Version**	68.9467
AC Version	68.9462	**AC Version**	68.9461

Male BNC to Ø 4mm

Female BNC to Ø 4mm

Two-pole touch-protected adapters with Ø 4 mm connectors linked to the BNC system. Versions with BNC male or female connector and rigid Ø 4 mm sockets or Ø 4 mm Multilam plugs with rigid insulating sleeve. The contact pins and sockets of the inner conductor of the BNC plug connector are in gold-plated brass.

4mm Plug	67.9535.21	**4mm Plug**	67.9537.21
4mm Socket	67.9536.21	**4mm Socket**	67.9538.21

Test & Measure Cable

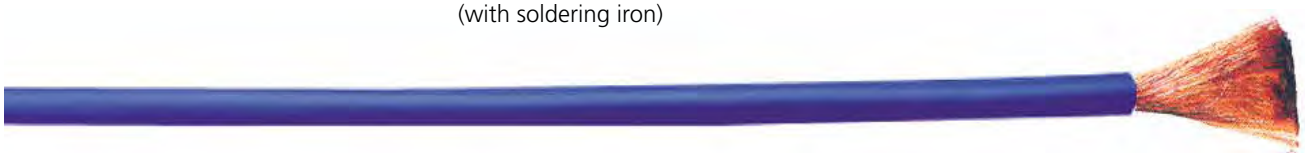
Multi-Contact MC STÄUBLI GROUP

Silivolt® - E

Super flexible silicone wire

Construction:
Super flexible stranding, silicone insulation. 100 mtr rolls.

Temperature Range:
-80°C up to +150°C
-80°C up to +250°C for several hours
-80°C up to +300°C temporary contact (with soldering iron)



Part No.	Nominal conductor area mm²	Stranding	Approx overall Ø mm	Nominal voltage V	Test voltage Vac	Nominal current @ 40°C A	Available colours
61.7550.100*	0.15	39 x 0.07	1.0	150	2000	6	21-27 & 29
61.7551.100*	0.25	66 x 0.07	1.7	300	2000	9	21-27 & 29
61.7552.100*	0.5	129 x 0.07	2.3	300	2000	10	21-27 & 29
61.7553.100*	0.75	196 x 0.07	2.7	600	2500	15	20-27 & 29
61.7554.100*	1	259 x 0.07	3.0	600	2500	19	20-27 & 29
61.7555.100*	1.5	392 x 0.07	3.4	600	2500	24	20-27 & 29
61.7556.100*	2.5	651 x 0.07	3.9	600	2500	32	20-27 & 29

Silistrom®

Super flexible silicone wire

Construction:
Super flexible stranding, with reinforced silicone insulation.
*Add colour code to part number

Temperature Range:
-80°C up to +90°C

Part No.	Nominal conductor area mm²	Stranding	Approx overall Ø mm	Nominal voltage V	Test voltage Vac	Nominal current @ 40°C A	Spool Length mtr	Available colours
61.7611.100.*	4	1036 x 0.07	5.4	1500	8000	42	100	21-23, 33
61.7612.100.*	6	1548 x 0.07	6.2	1500	8000	54	100	21-23, 33
61.7613.001.*	10	2556 x 0.07	9	1500	8000	75	Cut to length	21-23, 33
61.7614.001.*	16	4116 x 0.07	10.5	1500	8000	100	Cut to length	21-23, 33
61.7615.001.*	25	6384 x 0.07	11.8	1500	8000	130	Cut to length	21-23, 33
61.7616.001.*	35	9324 x 0.07	13.3	1500	8000	160	Cut to length	33
61.7617.001.*	50	13024 x 0.07	14.9	1500	8000	200	Cut to length	33
61.7618.001.*	70	8967 x 0.10	16.4	1500	8000	245	Cut to length	33
61.7619.001.*	95	12103 x 0.10	19	1500	8000	290	Cut to length	33

Test & Measure Cable

Multi-Contact MC STÄUBLI GROUP

Flexivolt® -E

Super flexible PVC wire

Construction:

Super flexible stranding, PVC insulation.
100 mtr rolls.

Temperature Range:

-10°C up to +70°C

Part No.	Nominal conductor area mm²	Stranding	Approx overall Ø mm	Nominal voltage V	Test voltage Vac	Nominal current @ 40°C	Available colours
60.7001.100*	0.10	26 x 0.07	1.0	150	2000	2	21-27 & 29
22.0060.100*	0.127	65 x 0.05	1.0	50	600	3	21-29
60.7002.100*	0.15	39 x 0.07	1.5	500	2200	4	21-27 & 29
60.7041.100*	0.17	84 x 0.05	1.4	50	600	4	21-25 & 29
60.7003.100*	0.25	66 x 0.07	1.7	500	2200	6	21-27 & 29
60.7013.100*	0.25	129 x 0.05	1.4	300	2000	6	21-29
60.7004.100*	0.5	129 x 0.07	2.1	500	2200	10	21-29
60.7005.100*	0.5	256 x 0.05	2.1	500	2200	10	20-29
60.7006.100*	0.75	196 x 0.07	2.3	500	2200	15	20-27 & 29
60.7008.100*	1	259 x 0.07	2.7	750	3500	19	20-27 & 29
60.7009.100*	1	511 x 0.05	2.7	750	3500	19	20-29
60.7010.100*	1.5	392 x 0.07	3.0	750	3500	24	20-29
60.7012.100*	2.5	651 x 0.07	3.6	750	3500	32	20-29

Part Numbers:

Please add the colour code below to part number where marked with *

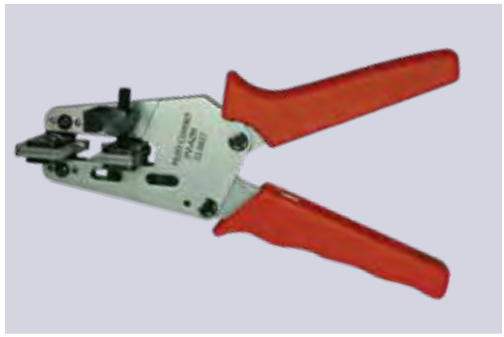
Colour codes:

These colour codes are applicable for all Multi-Contact products
(33 = Transparent)

More cable:

Multi-Contact manufactures a large range of highly flexible cables. More information can be found on the Multi-Contact website;
www.multi-contact.com

Tools



Solar Connector Tools

Multi-Contact MC STÄUBLI GROUP

Tools for Solar Connectors

Crimping and Assembly for MC3 and MC4

MC3 Tools

Field Assembly Tools

Designed for assembly of MC3 connectors, makes for simple insertion of the crimped contact into rubber backshell of connector.

MC3 Crimp Tool
Designed to crimp 2.5mm² and 4mm² cable to MC3 connectors.

MC3 Field assembly tool	
PV-RWZ3	32.6050

MC3 Crimp tool	
PV-CZ	32.6008

MC4 Tools

MC4 Crimp Tool

MC4 crimp tool, designed to crimp 2.5mm², 4mm², and 6mm² cable.

Open End Spanners
To tighten and unscrew the cable gland and to open the locking device of the connection.

MC4 crimp tool	
PV-CZM19100A	32.6020.19100

MC4 Open end spanner (pair)	
PV-MS	32.6024

Accessories

MC3 and MC4 Tools

An insert and locator will allow the MC4 crimp tool to also crimp MC3 connectors.

Insert suit PV-CZM19100A for MC3	
PV-ES-CZM-16100	32.6021.16100

Locator suit PV-CZM19100A for MC3	
PV-LOC-A	32.6039

Stripping Tool

Designed for Solar Cable

Cable stripping tool designed specifically for solar cable, with length stop for conductor cross sections 1,5mm², 2,5mm², 4mm², 6mm² and 10mm².

Stripping pliers	
PV-AZM	32.6027.156

Cable Duct & DIN Rail Cutters

Cable Duct Cutter

For Fast, Accurate Cutting of Cable Ducts to Length

Features

- Cuts cable ducts precisely, easily and silently, burr-free. No rework is required.
- Your workplace remains clean at all times because no chips are produced when cutting.
- A 1m long scale with length stop ensures cutting exactly to length.
- The hardened cutting blade has a cutting width of 125 mm.
- A blade guard ensures safe operation.
- The DC 125 has been TÜV-tested.
- The DC125 improves safety.

Cable Duct Cutter

Model No. DC 125	
Cutting width	125 mm
Length stop	Max. 1000mm
Dimensions (L x W x H)	1290 x 290 x 760mm
Weight	10.5 kg

DIN Rail Cutter

For Fast, Accurate Cutting of DIN Rails to length

Features

- For cutting support rails (DIN rails) to length all DIN rail sizes TS35 and TS15, regardless of material or height.
- DIN rails can be cut to the desired length quickly and burr free.
- RC 300 requires little force, so anyone can operate it.
- A 1m long scale with length stop ensures the DIN rails are cut exactly to length.
- The workplace remains clean and free of swarf.
- The RC 300 improves safety.

DIN Rail Cutter

Model No. RC 300	
Cuts profiles to EN 60715	TH 35-15 / TH 35-7,5 / TH 15-15.5
Max. Gauge length:	Max. 1000mm
Dimension (L x W x H)	1090 x 150 x 760mm
Weight	8.3kg

Benchtop Tools for Stripping and Crimping Cable Ferrules

Electric Crimper

Model No. EC 65

The EC 65 is compact and lightweight, yet rugged. It is well suited for complex cable harness assemblies. The EC 65 is ideal to securely crimp wires and cable terminals such as:

- Cable ferrules to 50mm²
- Cable lugs to 10mm²
- Pre-insulated terminals to 6mm²

Technical Data

Dimensions (W x H x D)	140 x 220 x 320 mm
Weight of EC 65	10 kg
Weight of foot pedal	1,2 kg
Max. press capacity	10 kN
Pressing time	1 s
Counter	6-digit LCD display
Mains connection	230 V
Power consumption	160 VA

Automatic Stripper and Crimper

Model No. MC 25

The extremely lightweight and portable Automatic Stripper and Crimper MC 25 strips and crimps the insulation in 1.5 seconds.

Processes cable ferrules with a cross section of 0.5 to 2.5mm² and a standard length of 8mm.

- Rapid change over of dies.

Technical Data

Mains power	230 V
Power input	80 VA
Operating range	0,5 - 2,5 mm² / 20 -14 AWG
Wire end sleeves	in accordance with DIN 46 228 part 4 tape mounted
Crimp section	trapezoidal
Cycle	1.5 s approx.
Control	microprocessor-controlled cam drive
Unit Counter	LCD display
Changing applicators	under 10 s
Dimensions	165 x 270 x 320 mm (W x H x D)
Weight:	12 kg

Pneumatic Crimpers

AC 25/25 T and AC 100/100 T pneumatic crimpers crimp cable ferrules quickly and without effort.

The AC 25 and AC 100 are lightweight and easy to use. The crimping mechanism is easily activated, making it perfectly suited for work in control cabinets, switchboards and electrical equipment.

The table top versions AC 25 T and AC 100 T are actuated by a foot switch, allowing the operator to use both hands. These versions are perfect for bench work such as cable assemblies.

Model No. AC 25	
Crimp range	0,25–2,5 mm² / 24–14 AWG
Weight	400 g
Dimensions	Ø 44 x 200 mm
Includes	2m Spiral hose

Model No. AC 25T	
Crimp range	0,25–2,5 mm² / 24–14 AWG
Weight	1000 g
Dimensions	Ø 140 x 200 x 70mm
Includes	Spiral hose, foot switch and table clamp

Benchtop Tools for Stripping and Crimping Cable Ferrules

Automatic Stripper and Crimper

Model No. MC 40

The electro-pneumatic controlled automatic strip and crimp machines MC 40 is used for processing loose insulated cable ferrules.

The MC 40 is equipped as standard with the tooling for cross sections of 0.5 / 0.75 / 1.0 / 1.5mm².

- Optional add-on kits are available on request for processing cross-sections of 0.25 / 0.34 / 2.5 / 4mm².

Technical Data

Cross section	0,5-1,5 mm² / 24-16 AWG
Length of crimp	8 mm (Option 6, 10, 12 mm)
Add-on kit 0,25	0,25-0,34 mm² - 6 / 8 mm
Add-on Kit 2,5	2,5 mm² - 8 / 10 / 12mm
Add-on kit 4,0	4 mm² - 10mm
Full cycle	1,5 sec.
Stripping blades	V-Form
Power supply	AC 230 V
Compressed air supply	5 bar / 72 psi.
Dimension (L x W x H)	405 x 240 x 490mm
Weight	29kg

Wire Stripper

Model No. CS 60

Convenient wire stripping 0.08 - 6mm². The settings are shown on a large display with clear graphics to enable intuitive operation.

The setting knobs are clearly positioned on the front panel.

- Short feed-in lengths and a clearly visible working area facilitate fast, effortless work.

Technical Data

Stripping diameter:	0,08-6 mm² / 28-10 AWG
max. cale O.D.:	6 mm
Stripping length (X):	3-20 mm
Partial stripping length:	2-20 mm
Feed-in length:	15 mm plus X
Cycle Time (full strip):	0,3 sec.
Stripping blades:	V-Form
Power Supply:	AC 230 V
Dimension (L x W x H):	363 x 141 x 221 mm
Weight:	9,5kg
Weight:	29kg

Pneumatic Crimpers

Model No. AC 100

Crimp range	4–10 mm² / 12–8 AWG
Weight	400 g
Dimensions	Ø 44 x 200 mm
Includes	2m Spiral hose

Model No. AC 100T

Crimp range	4–10 mm² / 12–8 AWG
Weight	1000 g
Dimensions	Ø 140 x 200 x 70mm
Includes	Spiral hose, foot switch and table clamp

Tooling

Knockout Tools

Hand hydraulic punch drivers and knockout punches

icotek now offers a small-sized hand hydraulic punch driver without hose which allows quick and easy punching of rectangular, square or round holes. The holes fit exactly the cut-out dimensions of most icotek cable entry systems. When you have to punch several holes, this hand hydraulic punch driver is much faster than manual wrench-style punches.

Advantages & Benefits

- Maximum flexibility due to 360° head rotation
- Triple splitting punches for easier slug removal
- Compact, lightweight aluminium design (2 kg) for fast and easy operation
- High hydraulic force (60 kN, 600 bar) for easy punching
- High quality foamed plastic storage case

- Punch driver also suitable for punches by other manufacturers.

Punching capabilities

max. 3 mm mild steel (sheet steel), aluminium, plastics.

Hand hydraulic punch driver

Due to its high hydraulic force the compact, lightweight hand hydraulic punch driver makes it easy to punch holes into mild steel, aluminium or plastics with a max. sheet thickness of 3 mm. The cylinder of the punch driver rotates 360° on 3 axles. Therefore, maximum flexibility even in hard-to-reach places is provided.

Punch driver set PRO 16-32

with knockout die set metric M16-M32

Scope of delivery

- 1 hand hydraulic punch driver (weight: 2 kg)
- 1 draw stud Ø 9.5mm (3/8" UNF) to Ø 19mm (3/4" UNF), L: 110 mm
- 1 draw stud Ø 19mm (3/4" UNF), L: 130mm
- 1 spacer
- 1 tube lubricant
- 1 HSS co pilot drill (multi step drill)
- 1 each knockout punch M16 | M20 | M25 | M32
- 1 robust plastic storage case
- **Part No. 80005**

Punch driver set PRO 16-63

with knockout die set metric M16-M63

Scope of delivery

- 1 hand hydraulic punch driver (weight: 2 kg)
- 1 draw stud Ø 9.5mm (3/8" UNF) to Ø 19mm (3/4" UNF), L: 110 mm
- 1 draw stud Ø 19 mm (3/4" UNF), L: 130 mm
- 1 spacer
- 1 tube lubricant
- 1 HSS co pilot drill (multi step drill)
- 1 each knockout punch M16 | M20 | M25 | M32 | M40 | M50 | M63
- 1 robust plastic storage case
- **Part No. 80006**

Punch driver set BASIC

Scope of delivery

- 1 hand hydraulic punch driver (weight: 2 kg)
- 1 draw stud Ø 9.5mm (3/8" UNF) to Ø 19mm (3/4" UNF), L: 110 mm
- 1 draw stud Ø 19mm (3/4" UNF), L: 130mm
- 1 spacer
- 1 tube lubricant
- 1 HSS co pilot drill (multi step drill)
- 1 robust plastic storage case
- **Part No. 80000**

Knockout Tools

Hand hydraulic punch drivers and knockout punches

Rectangular & square punches

Rectangular & square knockout punches for heavy multi-pin industrial connectors and many icotek cable entry components.

Part No.	Type	Cut-out size	Max. sheet thickness	For cut-out of connector	PU
80050	Punch B	46 x 46 mm	3 mm	-	1
80051	Punch 10	36 x 65 mm	3 mm	10-pin	1
80052	Punch 16	36 x 86 mm	3 mm	16-pin	1
80053	Punch 24	36 x 112 mm	3 mm	24-pin	1
80054	Punch 24-XL	46 x 112 mm	3 mm	24-pin	1

Round punches

Round knockout punches for cut-outs M16 - M63 and PG 16. Suitable for cable glands and round cable entry plates.

Part No.	Type	Cut-out diameter	Max. sheet thickness	Thread	PU
80020	Punch M16	16.2 mm	2 mm	9.5 mm	1
80021	Punch M20	20.4 mm	2 mm	9.5 mm	1
80022	Punch M25	25.4 mm	2 mm	9.5 mm	1
80023	Punch M32	32.5 mm	3 mm	19 mm	1
80024	Punch M40	40.5 mm	3 mm	19 mm	1
80025	Punch M50	50.5 mm	3 mm	19 mm	1
80026	Punch M63	63.5 mm	3 mm	19 mm	1

Knockout punches

icotek offers round knockout punches for cut-outs PG 16, M16, M20, M25, M32, M40, M50 and M63. This self-centering knockout punches split slugs into 3 pieces for easy slug removal. The special cutting geometry of the punches reduces the cutting pressure and therefore the required effort.

Technical Data

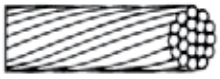
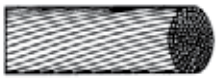
Technical Data

Conductor Stranding

VDE 0295 resp. from 0.5mm² in accordance with IEC 60228

Cross section in mm²	Multi-strands VDE 0295 Class 2	Multi-wire conductors	Fine-wire conductors VDE 0295 Class 5	Superfine strands VDE 0295 Class 6			
0,14				~18 x 0,10	~ 18 x 0,1	~ 36 x 0,07	~ 72 x 0,05
0,25			~ 14 x 0,15	~ 32 x 0,10	~ 32 x 0,1	~ 65 x 0,07	~ 128 x 0,05
0,34		7 x 0,25	~ 19 x 0,15	~ 42 x 0,10	~ 42 x 0,1	~ 88 x 0,07	~ 174 x 0,05
0,38		7 x 0,27	~ 12 x 0,20	~ 21 x 0,15	~ 48 x 0,1	~ 100 x 0,07	~ 194 x 0,05
0,5	7 x 0,30	7 x 0,30	~ 16 x 0,20	~ 28 x 0,15	~ 64 x 0,1	~ 131 x 0,07	~ 256 x 0,05
0,75	7 x 0,37	7 x 0,37	~ 24 x 0,20	~ 42 x 0,15	~ 96 x 0,1	~ 195 x 0,07	~ 384 x 0,05
1,0	7 x 0,43	7 x 0,43	~ 32 x 0,20	~ 56 x 0,15	~ 128 x 0,1	~ 260 x 0,07	~ 512 x 0,05
1,5	7 x 0,52	7 x 0,52	~ 30 x 0,25	~ 84 x 0,15	~ 192 x 0,1	~ 392 x 0,07	~ 768 x 0,05
2,5	7 x 0,67	~ 19 x 0,41	~ 50 x 0,25	~ 140 x 0,15	~ 320 x 0,1	~ 651 x 0,07	~ 1280 x 0,05
4	7 x 0,85	~ 19 x 0,52	~ 56 x 0,30	~ 224 x 0,15	~ 512 x 0,1	~ 1040 x 0,07	
6	7 x 1,05	~ 19 x 0,64	~ 84 x 0,30	~ 192 x 0,20	~ 768 x 0,1	~ 1560 x 0,07	
10	7 x 1,35	~ 49 x 0,51	~ 80 x 0,40	~ 320 x 0,20	~ 1280 x 0,1	~ 2600 x 0,07	
16	7 x 1,70	~ 49 x 0,65	~ 128 x 0,40	~ 512 x 0,20	~ 2048 x 0,1		
25	7 x 2,13	~ 84 x 0,62	~ 200 x 0,40	~ 800 x 0,20	~ 3200 x 0,1		
35	7 x 2,52	~ 133 x 0,58	~ 280 x 0,40	~ 1120 x 0,20			
50	~ 19 x 1,83	~ 133 x 0,69	~ 400 x 0,40	~ 705 x 0,30			
70	~ 19 x 2,17	~ 189 x 0,69	~ 356 x 0,50	~ 990 x 0,30			
95	~ 19 x 2,52	~ 259 x 0,69	~ 485 x 0,50	~ 1340 x 0,30			
120	~ 37 x 2,03	~ 336 x 0,67	~ 614 x 0,50	~ 1690 x 0,30			
150	~ 37 x 2,27	~ 392 x 0,69	~ 765 x 0,50	~ 2123 x 0,30			
185	~ 37 x 2,52	~ 494 x 0,69	~ 944 x 0,50	~ 1470 x 0,40			
240	~ 61 x 2,24	~ 627 x 0,70	~ 1225 x 0,50	~ 1905 x 0,40			
300	~ 61 x 2,50	~ 790 x 0,70	~ 1530 x 0,50	~ 2385 x 0,40			
400	~ 61 x 2,89		~ 2035 x 0,50				
500	~ 61 x 3,23		~ 1768 x 0,60				
630	~ 91 x 3,23		~ 2286 x 0,60				



The number of wires in columns 3-7 is optional. VDE 0295 specifies only the maximum diameter of the individual wires and the maximum resistance assigned to the cross-section.

AWG Conversion Chart

British and US dimensions for cables and leads

According to US regulations the dimensions of copper conductors for power and data transmission purpose are usually expressed in AWG Nos. The corresponding values are:

AWG No.	Diameter section mm	Cross geometric (mm²)	Conductor resistance (Ω/km)
24	0,511	0,205	89,2
26	0,405	0,128	146
28	0,320	0,0804	232
30	0,255	0,0507	350
32	0,203	0,0324	578
34	0,160	0,0200	899
36	0,127	0,0127	1426
38	0,102	0.00811	2255

AWG No.	Diameter section mm	Cross geometric (mm²)	Conductor resistance (Ω/km)
8	3,26	8,37	2,36
10	2,59	5,26	3,64
12	2,05	3,31	5,41
14	1,63	2,08	8,79
16	1,29	1,31	14,7
18	1,024	0,823	23,0
20	0,813	0,519	34,5
22	0,643	0,324	54,8

Technical Data

Minimum size of copper earth conductors

AS/NZS 3000

Nominal area active conductors mm²	For copper active conductors mm²	Nominal area active conductors mm²	For copper active conductors mm²	Nominal area active conductors mm²	For copper active conductors mm²
1	*1.0	25	6	185	70
1.5	*1.5	35	10	240	95
2.5	2.5	50	16	300	120
4	2.5	70	25	400	** ≥120
6	2.5	95	25	500	** ≥120
10	4	120	35	630	** ≥120
16	6	150	50		

***Refer Wiring Rules, AS/NZS 3000 regarding 1.5 earthing conductors. ** A larger earthing conductor may be required to satisfy Clause 5.3.3.1.1**

Core colour code according to VDE0293/308/HD 308 SW

Conductor code for colour coded low voltage multiconductor cables and cords

Number of conductors	Cables and cords having protective conductor (Abbreviations: J or G)	Cables and cords without protective conductor (Abbreviations: O or X)	Cables having concentric conductor design
2	-	BU/BN	BU/BN
3	GNYE/BN/BU	BN/BK/GY	BN/BK/GY
3a	-	BU/BN/BK	BU/BN/BK
4	GNYE/BN/BK/GY	BU/BN/BK/GY	BU/BN/BK/GY
4a	GNYE/BU/BN/BK	-	-
5	GNYE/BU/BN/BK/GY	BU/BN/BK/GY/BK	BU/BN/BK/GY/BK
6 and more	GNYE/BK having printed numbers	BK having printed numbers	BK having printed numbers

Technical Data

Power Rating

H07 TFK 2 core, TFK 3 and 4 core cables

Conductor Size	Unenclosed				Enclosed	
	Spaced		Touching		Non-metallic wiring enclosure in air	
						
mm²	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible
1.0	19	16	18	15	16	14
1.5	24	20	23	19	20	17
2.5	32	27	30	26	27	23
4.0	43	36	40	34	35	29
6	55	46	51	43	44	37
10	78	66	72	61	62	52
16	103	87	96	81	80	67
25	136	116	128	108	106	89
35	169	144	158	135	129	111
50	213	182	199	170	163	136
70	269	230	251	214	207	173

Power Rating

R-E-110 TFK single core cables

Conductor Size	Unenclosed						Enclosed	
	Spaced		Spaced from surface		Touching		Wiring enclosure in air	
								
mm²	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible
6	73	70	70	61	57	57	56	50
10	102	99	98	85	80	80	77	70
16	135	130	129	112	105	105	102	91
25	178	173	170	149	139	139	133	121
35	221	214	210	184	172	172	167	148
50	279	270	263	233	218	217	207	190
70	351	340	329	292	273	273	263	234
95	422	410	395	353	329	329	312	277
120	500	487	466	418	390	390	364	331
150	577	562	536	482	450	450	426	378
185	660	644	611	553	516	516	481	438
240	794	775	732	665	621	620	583	538
300	916	895	841	766	716	714	–	612
400	1105	1079	1006	918	860	855	–	757
500	1290	1260	1164	1064	999	990	–	864
630	1529	1493	1359	1240	1168	1154	–	993

As per AS/NZS 3008.1.1:2009

Technical Data

Power Rating

H07 TFK single core cables

Conductor Size	Unenclosed						Enclosed	
	Spaced		Spaced from surface		Touching		Wiring enclosure in air	
								
mm²	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible	Cu Flexible
6	59	57	58	49	46	46	46	41
10	83	80	81	69	64	64	64	55
16	110	106	106	91	85	85	82	73
25	147	142	141	121	114	114	109	94
35	183	177	174	151	141	141	132	118
50	231	223	218	191	178	178	167	144
70	292	283	274	241	225	225	204	183
95	351	341	328	290	271	271	248	214
120	418	406	389	346	322	322	286	256
150	483	470	448	400	373	372	336	291
185	555	540	512	459	428	427	377	334
240	668	651	613	553	515	514	452	391
300	772	752	705	637	594	591	–	458
400	933	909	843	764	715	709	–	533
500	1090	1062	975	884	830	821	–	630
630	1288	1256	1135	1030	969	956	–	719

As per AS/NZS 3008.1.1:2009

Technical Data

Core colour code according to DIN 47100

DIN 47100/January 1998 - Colour code for twisted pairs

Pair No.	Colour a-core	Colour b-core
1	white	brown
2	green	yellow
3	grey	pink
4	blue	red
5	black	violet
6	grey/pink	red/blue
7	white/green	brown/green
8	white/yellow	yellow/brown
9	white/grey	grey/brown
10	white/pink	pink/brown
11	white/blue	brown/blue
12	white/red	brown/red

Pair No.	Colour a-core	Colour b-core
13	white/black	brown/black
14	grey/green	yellow/grey
15	pink/green	yellow/pink
16	green/blue	yellow/blue
17	green/red	yellow/red
18	green/black	yellow/black
19	grau/blue	pink/blue
20	grau/red	pink/red
21	grau/black	pink/black
22	blau/black	red/black
23-44	see 1-22	see 1-22
45-66	see 1-22	see 1-22

Each pair comprises one a-core and one b-core. From 23 pairs upwards the marking repeats for the first time and from 45 pairs upwards for the second time. The fi rst colour is always the basic colour of the core and the second colour is printed in rings.

Core colour code according to DIN 47100

In contrast to DIN without colour repetition after the 44th core - non twisted

Core No.	Colour
1	white
2	brown
3	green
4	yellow
5	grey
6	pink
7	blue
8	red
9	black
10	violet
11	grey/pink
12	red/blue
13	white/green
14	brown/green
15	white/yellow
16	yellow/brown

Core No.	Colour
17	white/grey
18	grey/brown
19	white/pink
20	pink/brown
21	white/blue
22	brown/blue
23	white/red
24	brown/red
25	white/black
26	brown/black
27	grey/green
28	yellow/grey
29	pink/green
30	yellow/pink
31	green/blue
32	yellow/blue

Core No.	Colour
33	green/red
34	yellow/red
35	green/black
36	yellow/black
37	grey/blue
38	pink/blue
39	grey/red
40	pink/red
41	grey/black
42	pink/black
43	blue/black
44	red/black
45	white/brown/black
46	yellow/green/black
47	grey/pink/black
48	red/blue/black

Core No.	Colour
49	white/green/black
50	brown/green/black
51	white/yellow/black
52	yellow/brown/black
53	white/grey/black
54	grey/brown/black
55	white/pink/black
56	pink/brown/black
57	white/blue/black
58	brown/blue/black
59	white/red/black
60	brown/red/black
61	black /white

Exception: 4-core cord: white, yellow, brown, green.

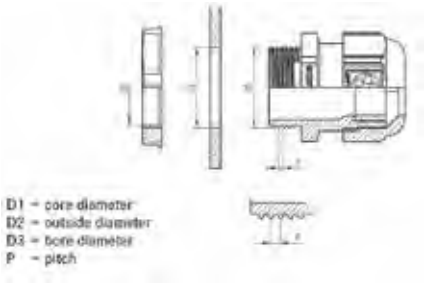
Technical Data

Thread dimensions for cable glands

Thread & bore dimensions - technical data for assembly

Metric thread	ø D1	P	ø D2	Nominal Thread ø D3
M12 x 1,5	12	1,5	10,6	12,3-0,2
M16 x 1,5	16	1,5	14,6	16,3-0,2
M20 x 1,5	20	1,5	18,6	20,3-0,2
M25 x 1,5	25	1,5	23,6	25,3-0,2
M32 x 1,5	32	1,5	30,6	32,3-0,2
M40 x 1,5	40	1,5	38,6	40,4-0,3
M50 x 1,5	50	1,5	48,6	50,4-0,3
M63 x 1,5	63	1,5	61,6	63,4-0,3

PG thread	ø D1	P	ø D2	Nominal thread ø D3
PG 7	12,5	1,27	11,3	13,0±0,2
PG 9	15,2	1,41	13,9	15,7±0,2
PG 11	18,6	1,41	17,3	19,0±0,2
PG 13,5	20,4	1,41	19,1	21,0±0,2
PG 16	22,5	1,41	21,2	23,0±0,2
PG 21	28,3	1,558	26,8	28,8±0,2
PG 29	37,0	1,558	35,5	37,5±0,3
PG 36	47,0	1,558	45,5	47,5±0,3
PG 42	54,0	1,558	52,5	54,5±0,3
PG 48	59,3	1,558	57,8	59,8±0,3



Ingress Protection

IP ratings explained

IP 6 8

First Number (Solid objects)

Second Number (Liquid)

First number (Protection against solid objects)	
0	No protection
1	Protected against solids objects over 50mm (e.g. accidental touch by hands)
2	Protected against solids objects over 12.5mm (e.g. fingers)
3	Protected against solids objects over 2.5mm
4	Protected against solids objects over 1mm
5	Protected against dust (no harmful deposit)
6	Totally protected against dust

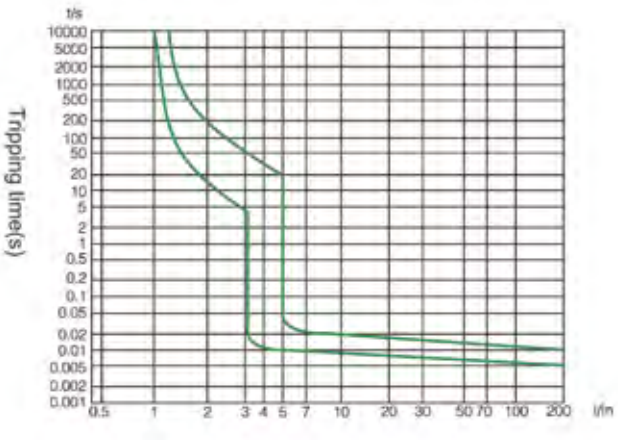
Second number (Protection against liquids)	
0	No protection
1	Protected against vertically falling drops of water
2	Protected against drops of water up to 15° from the vertical
3	Protected against drops of water up to 60° from the vertical
4	Protected against splashes of water from all directions
5	Protected against low pressure jets of water from all directions
6	Protected against strong jets of water similiar to seawaves
7	Protected against the effects of temporary immersion
8	Protected against the effects of continual immersion

Technical Data

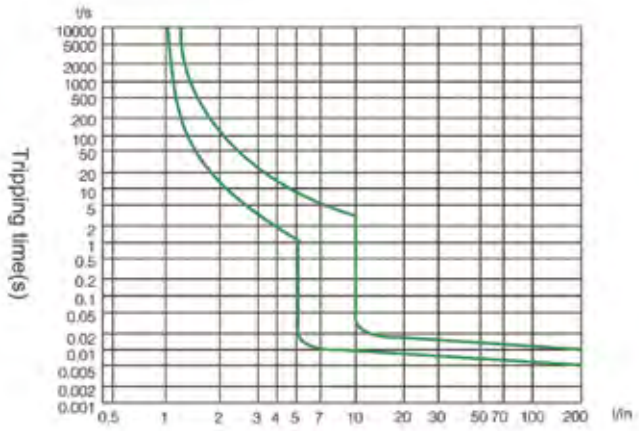
Tripping characteristics curve of Ex9M MCB

Tripping Characteristics - AC

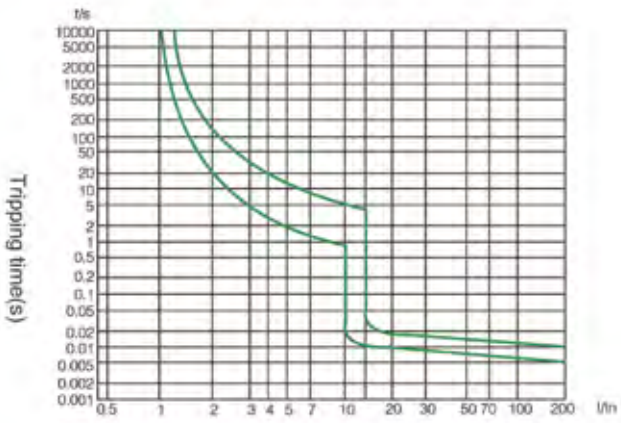
Curve B (Ex9B&Ex9PN)



Curve C (Ex9B&Ex9PN)

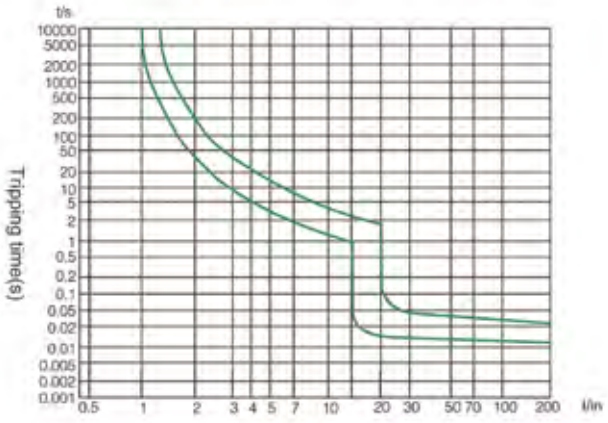


Curve D (Ex9B)



Tripping Characteristics - DC

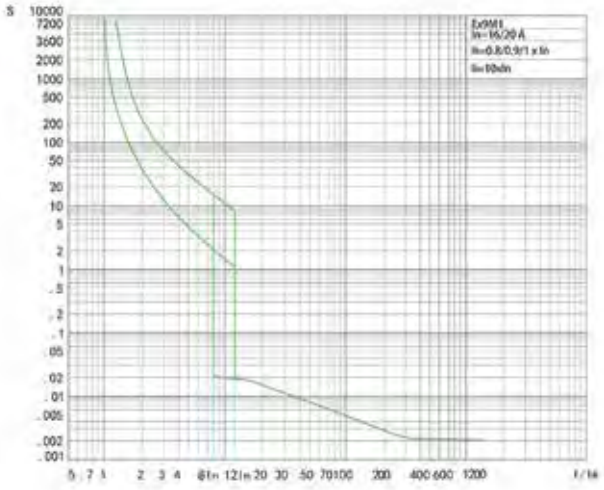
Curve K (Ex9BP)



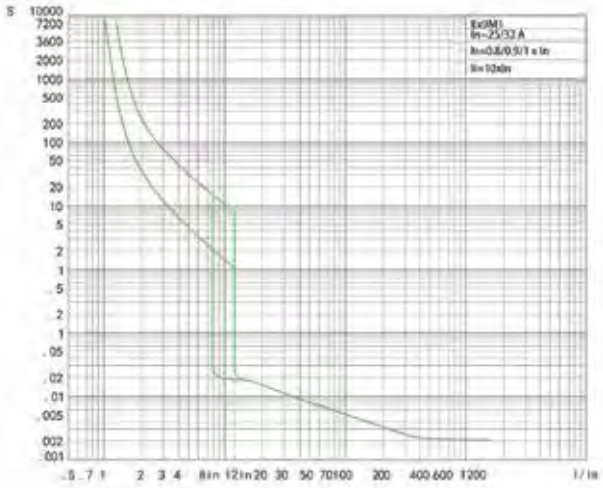
Technical Data

Tripping characteristics curve of Ex9M MCCB - AC

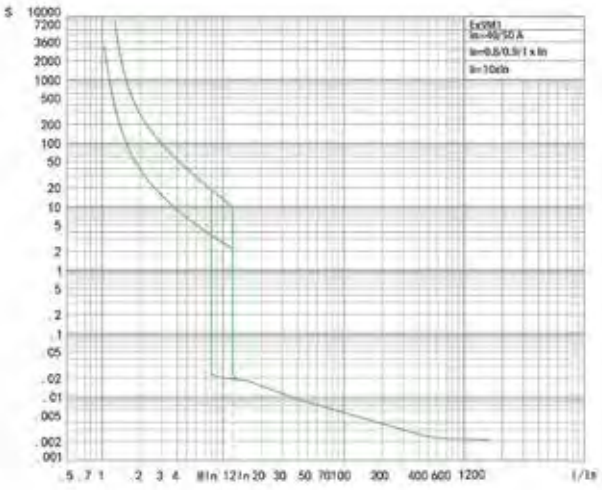
Ex9M1 (16A, 20A)



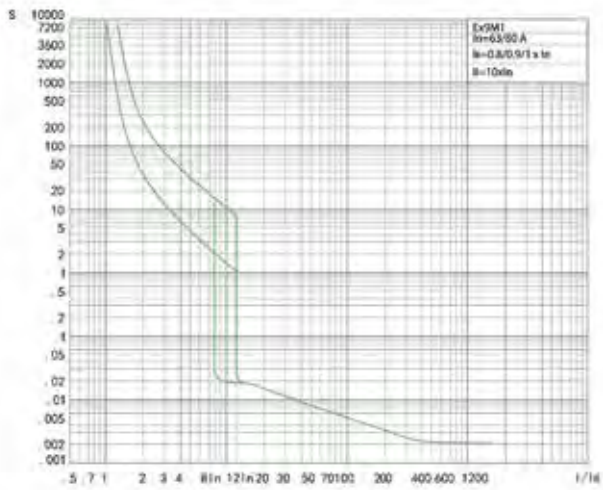
Ex9M1 (25A, 32A)



Ex9M1(40A, 50A)



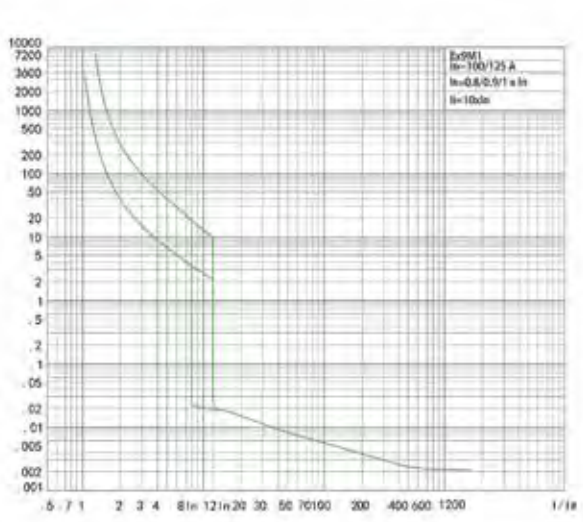
Ex9M1(63/80A)



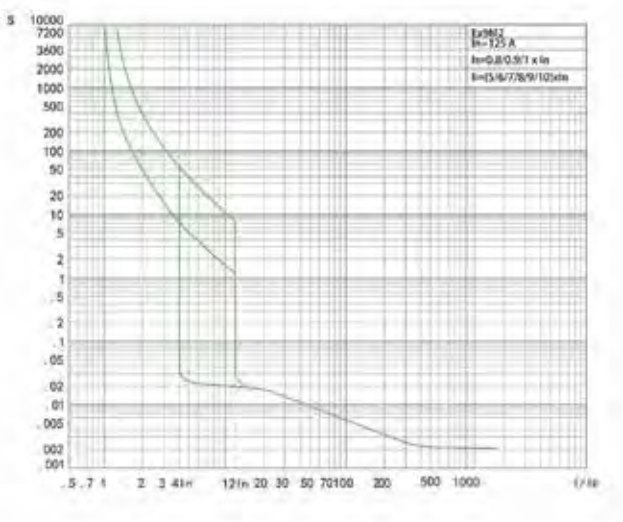
Technical Data

Tripping characteristics curve of Ex9M MCCB - AC

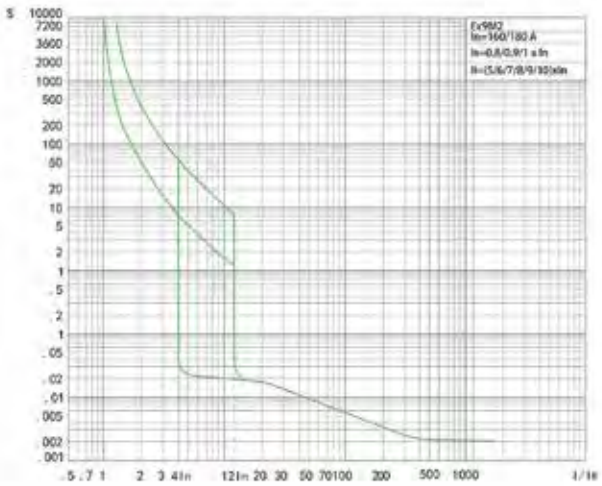
Ex9M1 (100A, 125A)



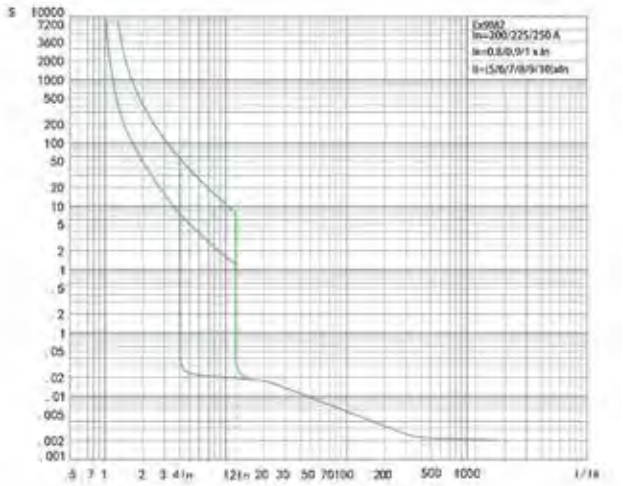
EX9M2 (125A)



Ex9M2 (160A 180A)



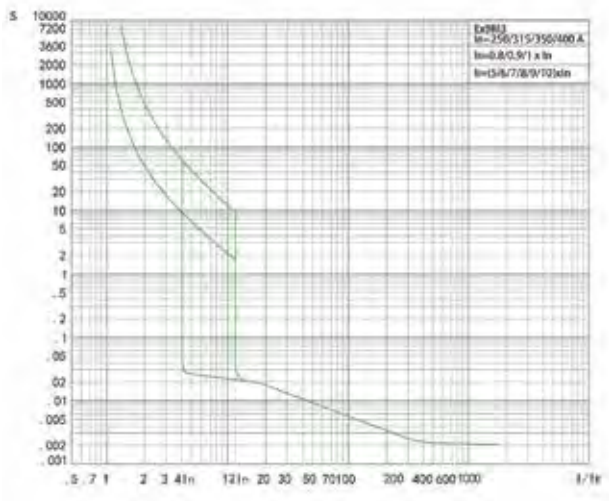
Ex9M2 (200A 225A 250A)



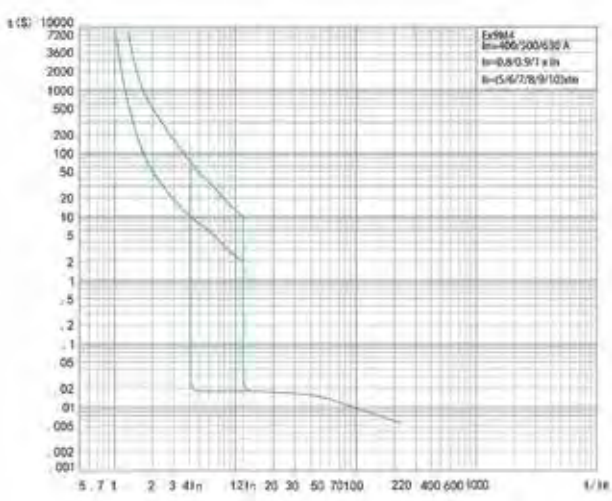
Technical Data

Tripping characteristics curve of Ex9M MCCB - AC

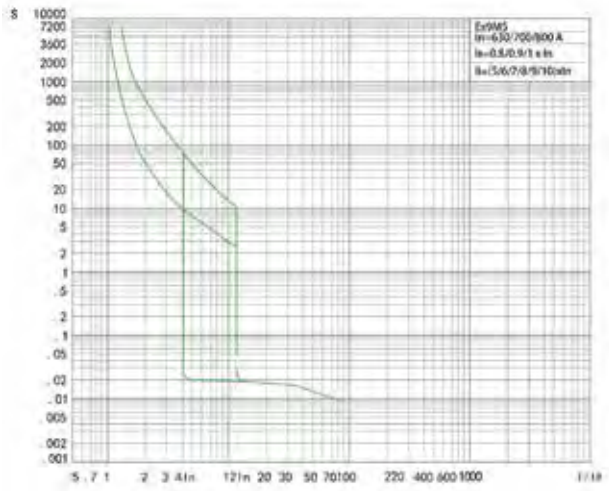
Ex9M3 (250A 400A)



Ex9M4 (400A 500A 630A)



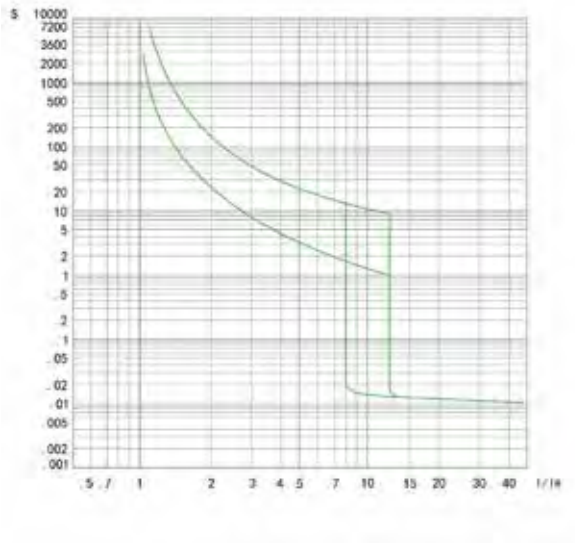
Ex9M5 (630A 700A 800A)



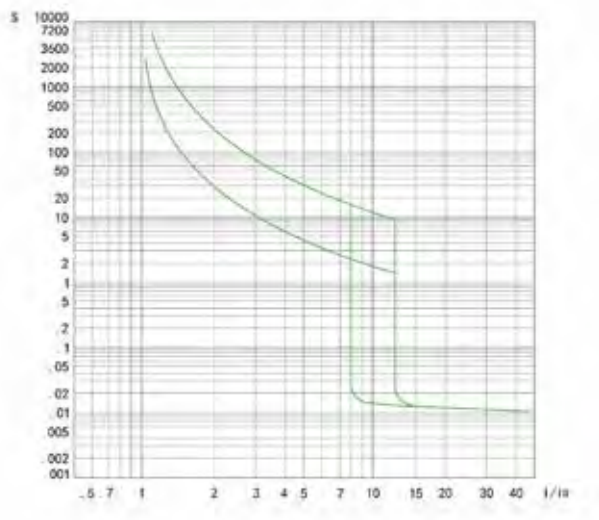
Technical Data

Tripping characteristics curve of Ex9M MCCB - DC

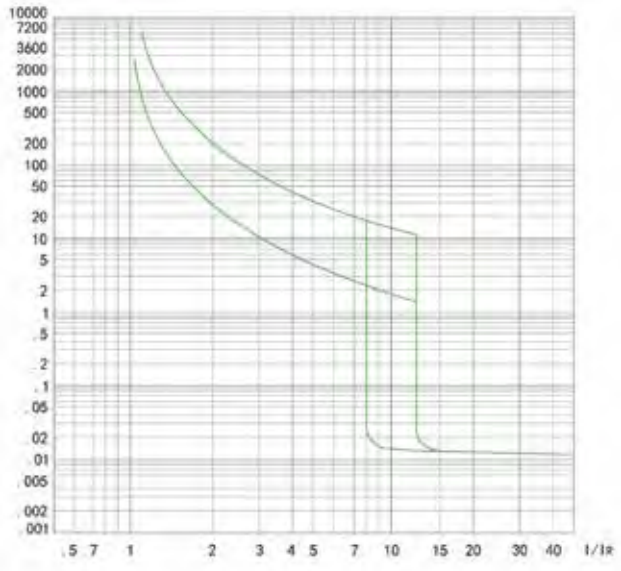
Ex9MD1 (125A)



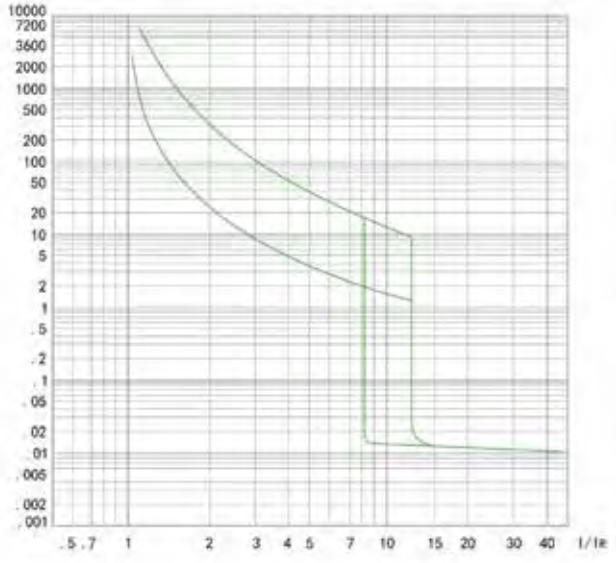
Ex9MD2 (250A)



Ex9MD3 (400A)



Ex9MD4 (630A)



Technical Data

Units of measurement

Handy conversion factors

The basic units are in the english gravitational system:
length (ft) – force (lbf = Lb) – time (s)

In the english absolute system:
length (ft) – mass (lb) – time (s)

Length dimensions

1 mil	=	0,0254 mm
1 inch (in;")	=	25,4 mm
1 foot (ft;')	=	0,305 m
1 yard (yd)	=	0,914 m
1 chain (ch)	=	20,1 m
1 statue mile	=	1,61 km
1 nautical mile	=	1,835 km
1 statute mile	=	1760 yards

Cubic dimensions

1 cubic inch	=	16,39 cm^3
1 cubic foot	=	0,0283 m^3
1 cubic yard	=	0,765 mm^3
1 US liquid gallon	=	3,79 l
1 pint	=	0,473 l
1 quart	=	0,946 l
1 brit gallon	=	4,53 l
1 barrel	=	119,2 l

Area dimensions

1 circ. mil (CM)	=	0,507 · 10–3 mm^2
1 kcmil (MCM)	=	0,5067 mm^2
1 square inch (sq. in.)	=	645,16 mm^2
1 square foot (sg.ft.)	=	0,0929 m^2
1 square yard	=	0,836 m^2
1 acre	=	0,00405 km^2
1 square mile	=	2,59 km^2
1 m2	=	10,764 sq. ft.

Mass units
English gravitation system:
1 slug = 1 lbs · s^2/ft

English absolute system:
1 pound = 1 lb

1 slug = 32,174 lb, mit 32,174 ft/s^2
as the standard value of acceleration due to gravity

1 grain	=	64,80 mg
1 dram	=	1,770 g
1 ounce (oz)	=	16 drams= 28,35 g
1 pound (lb)	=	16 oz=453,59 g
1 stone	=	14 lbs=6,35 kg
1 US ton (short ton)	=	0,907 t
1 Brit. ton (long ton)	=	,016 t

Units of force
English gravitational system:
pound-force 1 lbf = 1 Lb

English absolute system:
poundal 1 pdl = 1 lb · ft/s2

1 lbf = 32,174 pdl – 9.80665 lb · m/s2

Conversion to metric units:

1 pound-force (lbf)	=	0,454 kp
1 Brit. ton-force	=	1016 kp
1 poundal (pdl)	=	0,1383 N
1 lbf	=	4,445 N

Electrical unit per unit length:

1µf per mile	=	0,62 µF/km
1 megohm per mile	=	1,61 MΩ · km
1 megohm / 1000 ft	=	3,28 Ω · km
1 ohm per 1000 yd	=	1,0936 Ω/km

Weight per unit length

1 lb per foot	=	1,488 kg/m
1 lb per yard	=	0,469 kg/m
1 lb per mile	=	0,282 kg/m

Density

1 lb/ft3	=	16,02 kg/m^3

Weight (specific weight)

1 lbf/ft3	=	16,02 kp/m^3

Copper wire weight per mile

lb/mile	Ø mm
5	0,404
6,5	0,51
7,5	0,55
10	0,64
20	0,90
40	1,27

Units of energy

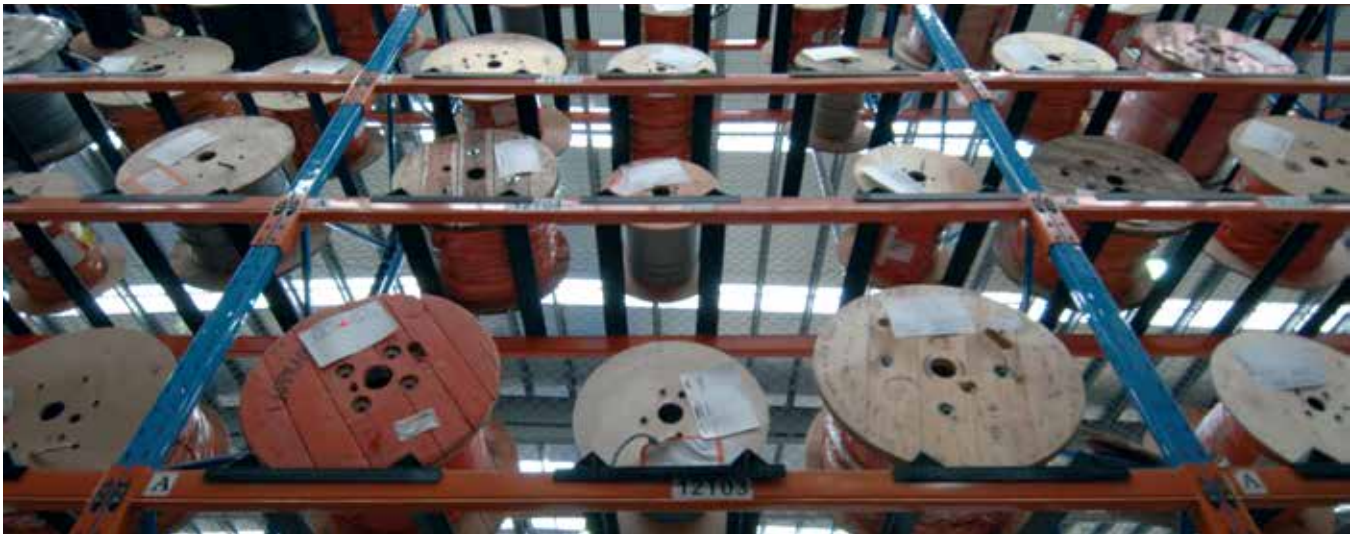
1 horsepower	=	0,746 kW (H.P.)
1 brit. therm. unit	=	0,252 kcal

The insulation wall thickness is often expressed in n/64 inches, 1/64 inch being roughly equaled to 0.4 mm.

Further dimensions for wire weights and for electrical field strengths:

lbf pr. MFeet	=	1,488 kg/km
lbf pr. Mile	=	0,282 kg/km

40 V/mil	=	1,6 kV/mm
80 V/mil	=	3,2 kV/mm
100 V/mil	=	4,0 kV/mm
250 V/mil	=	10,0 kV/mm



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