

NEW e | BOOK
ITEMS



electro | dynamic






















etelec[®]
electrical technology







Inside the new **EVO** series

KEY











Connectors | Terminal blocks | Accessories

-  Compression connector
-  Screw connector a vite
-  Shear bolt connector
-  Insulated compression connector
-  Heat shrink insulated compression connector
-  2-pole spring-clamp terminal block
-  3-pole screw-type terminal block
-  3-pole spring-clamp terminal block
-  3-pole screw-type terminal strip
-  3-pole screw-type terminal block
-  5-pole spring-clamp terminal block
-  5-pole screw-type terminal block
-  U-shape screw-type connector
-  U-shape insulated screw-type connector
-  C-shape compression connector
-  H-shape screw-type connector
-  3-pole screw-type branching terminal block
-  5-pole screw-type branching terminal strip
-  Modular cores separator for 2-, 3-, 4- or 5-pole cables
-  Cable strain relief system
-  Armour continuity restoration kit






Joint type

-  straight
-  parallel branch
-  T-branch
-  Y-branch




Certifications | Compliance

-  CE Marking
-  IMQ Mark
Istituto Italiano del Marchio di Qualità
-  RINA Approved
Registro Italiano Navale ed Aeronautico
-  TÜV-Rheinland Certification
-  Bureau Veritas Certification
-  CSA Approved
-  Compliant to UE Directive 2015/863 (RoHS 3)
-  Halogen Free
-  Approved for ATEX environments
-  FM Approved







Numbers of cable cores

-  single-core cable
-  2-core cable
-  3-core cable
-  4-core cable
-  5-core cable

Heat shrink tubing

-  2:1 Shrink ratio
-  3:1 Shrink ratio
-  4:1 Shrink ratio

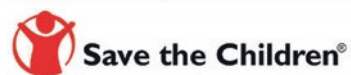
Available colours

-  Black
-  Brown
-  Clear
-  Blue
-  Yellow
-  Green/Yellow
-  Green
-  Grey
-  Red
-  White



CHOOSE ETELEC, CHOOSE WELL.

Be part of **Save The Children** project **RISCRIVIAMO IL FUTURO** by choosing Etelec products.
Join Etelec in helping Italian children get out of **educational poverty**.



Talk about the environment...

step by step



Production processes rethinking was the first step towards the **requalification of the raw materials used**, and brought an **overall reduction of 30% in the use of plastic**.

A first step towards an ever more sustainable future.

Stay with us, we will keep you updated.

energetic

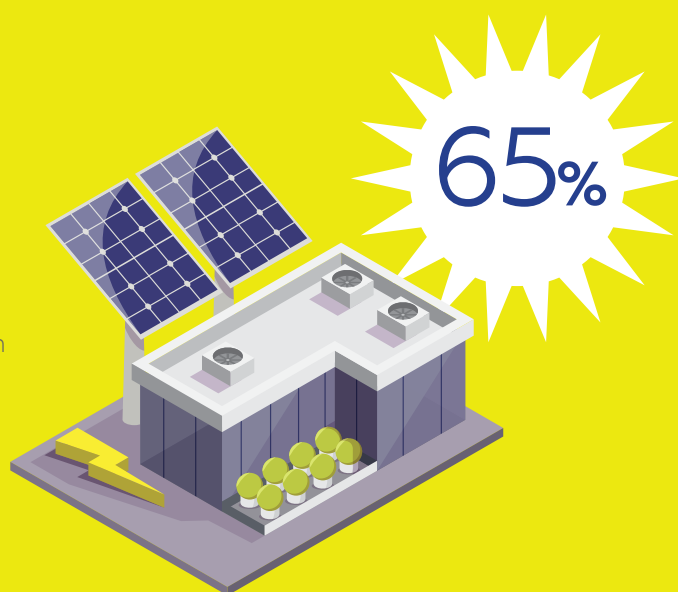
A company, its beating heart and its thinking mind, obviously **need energy**.

Of the **best possible quality**, of course.

This is why we equipped our company with a photovoltaic system that powers our production processes by currently providing **65% of the required energy**, and which will see the completion of a design process that will bring **total energy independence**.

This process will allow us to **return the energy consumed to the environment**, less impacting and cleaner.

A new energy, and available again.



WEEE collecting

We made **available to all our staff a quick collection and disposal service for WEEE and exhausted batteries**, and providing for their correct disposal.

Because any change must start with ourselves.

And by those around us.



...and **be committed** to the environment.
when we talk about real actions, we want to tell how we got involved to try doing our part for an environment that, today more than ever, needs **virtuous approaches by us all**.



on **paper** and in **reality**

When it comes to recycled papers, we cannot trust only words, but concrete data must guarantee and support the raw material and that of our "good intentions".

All our paper supports are printed on Recytal Polyedra recycled paper, certified and produced from recycled and completely recyclable paper, or on similar supports certified to be recyclable and come from recycled sources.



recycled carton **100%**

Paper counts. Increasingly. This is why this fantastic **material has become the leading player of most of our packaging**, produced from **recycled and 100% recyclable paper**, thus allowing us to **considerably limit the use of plastic materials**, in favor of a eco-friendlier disposal cycle.

compost blisters

Our blisters, "smart" packaging par excellence, are now produced in **PLA, the bioplastic of vegetable origin, fully compostable**.

no plastic, please

Sometimes we make a virtue out of necessity, and sometimes a stylistic choice can be dictated, not only by a need, but also and above all by an opportunity; and it is in this way that in order to continue on the path we have taken, **we eliminated any type of plastic coating** in packaging and paper supports, to favor, of course, their complete **recyclability**.

MP One, **friendly** by its nature



Besides being **an absolute innovation** in the field of **insulating fillers**, MP One winks at the greatest possible sustainability, starting with the **gel, as one of the most eco-friendly fillers available**, to the **elimination of plastic items** (double bottle, jug and stirring stick), assembling everything in a **single container**, packed in a **box made from 100% recycled paper and 100% recyclable**.

MP One, **the first and only**, from every point of view.

flo-pack **bio natural**



Attention to details is part of the change necessary to trace a new **eco-sustainable** workpath.

Our attention has been directed towards packaging materials: Etelec has chosen that its so-called **"packing peanuts"**, usually made of polystyrene, **has to be made of flo-pack**, a material based on corn starch, water and air, completely **soluble** in water.

less is **more**

Automatic packaging lines allow our products to be organized, right up to the final shipping packaging, keeping **maximum optimization of package dimensions**; allowing an appreciable **reduction in the shipment volumes** and a consequent **reduction in the environmental impact** of the transports.

Less transport, less emission of exhaust gases into the environment.

Something less can be much more.





at the roots of **sustainability**



5000
TREES



in
5
YEARS

up to the creation of a forest

Together with Treedom, with the "Adopt a tree" campaign, we decided to concretely plant the new roots of a new eco-sustainability and **to allow our partners and customers to help us in doing so**. In **Guatemala, Haiti, Ecuador, Kenya and Tanzania** there will be **fruit trees** that bear **our and your name**, which can be cared for and followed in remote until the formation of the **Etelec Forest**. A fundamental purpose with which **to grow, together with business, new vital realities**.

the **grass** on the other side

Thinking big means first and foremost confronting against the closest needs; so we **adopted an urban green space** near our headquarters, **redeveloping it and equipping it** with new benches and an internal pedestrian paths to enjoy small and pleasant walks.



We take care weekly of this area which, after years of neglect and decay, is now livable and usable again for the whole neighborhood.

Respect and love for nature are concepts that start from afar, even from the first steps, right from **the garden that adorns the heart of our production site**, placed in the middle of the offices, the production area and the warehouses.

ELECTRICAL INSULATING FILLERS

Comparison table

Re-enterable single-bottle gel

MPONE® - two-component single-bottle gel

Re-enterable two-component gel

MPGEL® PLUS - fast cross-linking two-component gel

CRYSTALGEL® - crystal-clear two-component gel

REPLAYGEL® - repositionable two-component gel

18	Re-enterable single-component gel	
	ONE GEL® - single-component Gel in ready to use cartridge	27
22	Re-enterable two-component resin	
	RESIL® - Re-enterable two-component Resin	29
25	Solid final-state resin	
26	RS® - two-component polyurethane resin in bags	30
26	RS-5000 - three-component epoxy resin in buckets	31

LOW VOLTAGE

01 | JOINTS AND CONNECTING DEVICES

Gel pre-filled joints and connecting devices

EVO® - IP68 straight and branch connecting devices

EVO® - IP68 straight joints

EVO® - IP68 branch joints

SHARK® SIXEIGHT® Series - IP68 straight joints

SHARK® Serie Classic Series- IPX8 straight joints

SHARK® 400 Series / 600 Series- IPX8 branch joints

SHELL BOX® FLAT SERIES - IPX8 connecting devices with Wago® compact lever connectors

Gel pre-filled protecting devices

MINIBOX - IPX8 protection devices

Solid final-state cast resin joints

SUBMARINE® Straight Series - straight joints

SUBMARINE® Branch Series - Y-branch joints

Heat shrink joints

SEALJOINT® C - straight joints with shear bolt connectors

SEALJOINT® - straight joints

SEALJOINT® FIRE - fire-resistant straight joints

SEALJOINT® D - branch joints with wrap-around sheath

SEALJOINT® FIRE D - fire-resistant branch joints

Heat shrink joints

for control/signal cables

SEALJOINT® S - for armoured and non-armoured cables

SEALJOINT® FIRE S - fire-resistant for armoured and non-armoured cables

02 | JUNCTION BOXES

JUBOX - junction boxes for IP68 solutions

03 | HEAT-SHRINK TUBINGS

In spool

GTUC / GTGV - thin-wall - in spool

GTMS - medium-wall - in spool

ROLLBOX® - in dispenser box

In bar

TUBINGS® - thin-wall

miniTUBINGS® - thin-wall - assorted pre-cut pieces box

GTUM - resistant to moisture - flexible - with sealant

SEALINGS® - medium-wall with sealant

GTAS - thick-wall with sealant

GTCR - wrap-around sheath with sealant

GTRF - fire-resistant

Anticorrosive for pole protection

GTPA - for poles to be installed

RJS - for already installed poles

Application tooling for heat shrink tubing

04 | HEAT-SHRINK TERMINATIONS AND PRE-MOULDED PARTS

TTBT - low voltage heat shrink terminations

CTC - heat shrink sealing caps for single-core cables

TBT - breakout boots for 2- to 5-core cables

05 | CONNECTING ELEMENTS

SPRING BOX® - insulated lever connectors

SP - spring-clamp terminal blocks

TBOX® - insulated multiway terminal strips

Straight-through connectors and terminal blocks

CP - insulated compression connectors

CTT - insulated heat-shrink compression connectors

MC - screw-type connectors

MC-RJ - screw-type terminal blocks for straight joints

MR - shear-bolt connectors

MH - screw terminal strip

SC - compression connectors

Branch connectors and terminal blocks

MU - U-shape screw-type connectors

MU-RJ - screw-type terminal blocks

BH - H-shape screw-type connectors

BC - G-shape compression connectors

Armour continuity restoration

BEK - armour continuity restoration kit for low voltage cables

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40	GTMS - medium-wall - in spool	85
44	ROLLBOX® - in dispenser box	86
44	In bar	
46	TUBINGS® - thin-wall	88
48	miniTUBINGS® - thin-wall - assorted pre-cut pieces box	90
52	GTUM - resistant to moisture - flexible - with sealant	91
	SEALINGS® - medium-wall with sealant	92
56	GTAS - thick-wall with sealant	94
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58	GTRF - fire-resistant	97
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	BEK - armour continuity restoration kit for low voltage cables	119

TAPES

PVC insulating tapes

ISOEL® 8900 - IMQ certified PVC insulating adhesive tapes

ISOEL® 633 - high-performance PVC insulating adhesive tape

Self-amalgamating insulating tapes

ISOEL® EPR - EPR self-amalgamating insulating tapes

ISOFIL® 626 - butyl rubber insulating filler mastic tape

Special-purpose tapes

ISOALL® - aluminium foil tape with adhesive

CABLE PULLING LUBRICANTS

01 | CABLE PULLING LUBRICANTS

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MEDIUM VOLTAGE

Medium voltage product table

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02 | JOINTS

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04 | CONNECTING ELEMENTS

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Connectors

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FIXING AND CABLING

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HEATING CABLES

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01 | CONSTANT-POWER HEATING CABLES

Pipe and tanks tracing

EASY TRACE® - constant power heating cable kit	192
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Ramps and pavements tracing

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02 | SELF-REGULATING HEATING CABLES

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Pipe and tanks tracing

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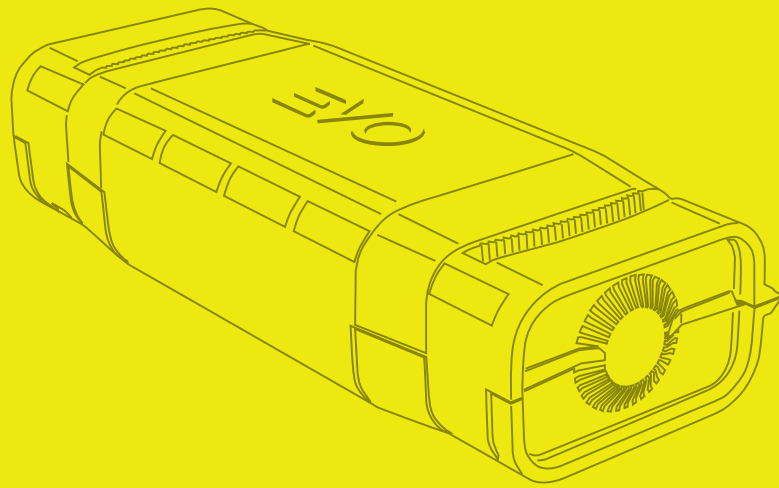
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NEW

The goal isn't
innovation.
The goal is
effectiveness.
We strive
for innovation
because we want
to be effective.

Tim Stevens



EVO
the Power Line

NEW
2022



EVO

the Power Line

The leap in category

The new series of **IP68 gel-insulated joints and connecting devices**. A **whole innovative** product, an idea that transforms a consolidated concept into an **absolute novelty**, which has the advantage of ensuring **safety, performance, speed and ease of use**.

Seven sizes and nine versions, **all equipped with spring clamp or screw type terminal blocks**.

The new **EVO range**

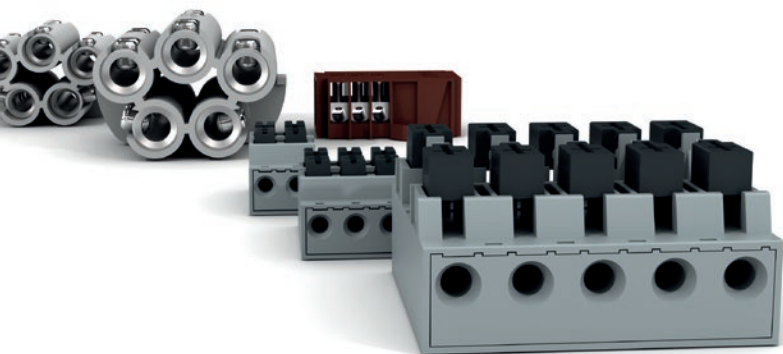
Nine models to enhance the characteristics of **simplicity** and **reliability**, with one eye on the experiences of the past and one towards the innovations of a completely new future.

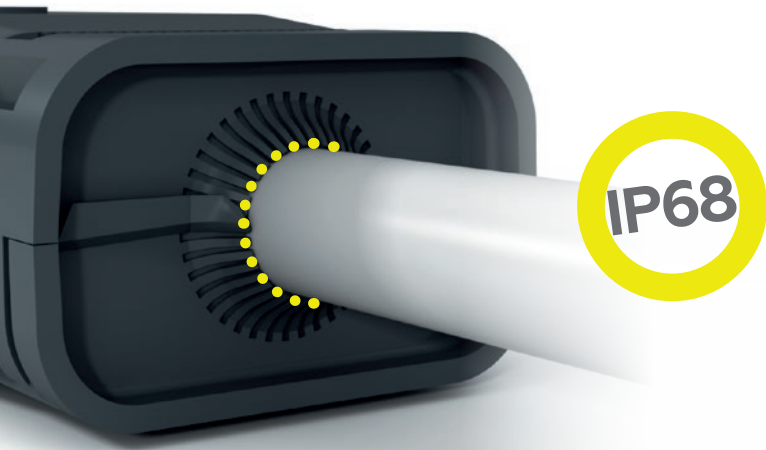
EVO, the **new** Etelec **range** to **satisfy every need**.



Each to his **own**

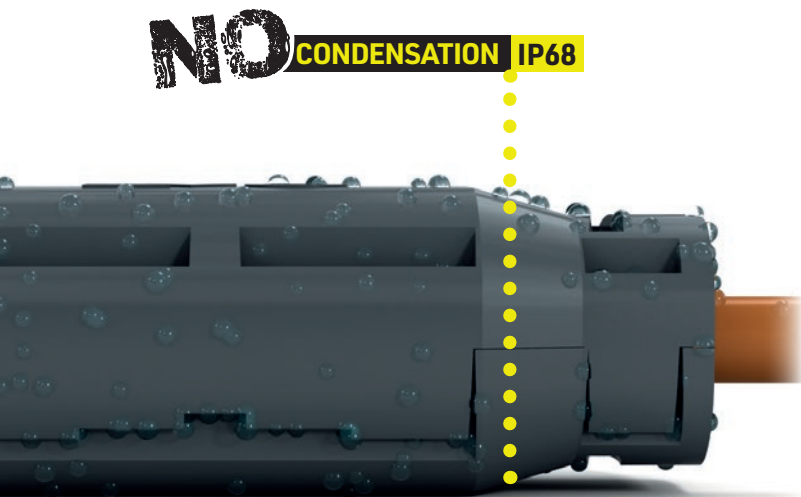
Six straight and three branch models, with screw-type or spring-clamp terminal blocks, **certified by Bureau Veritas**, for an **easier and faster** installation.





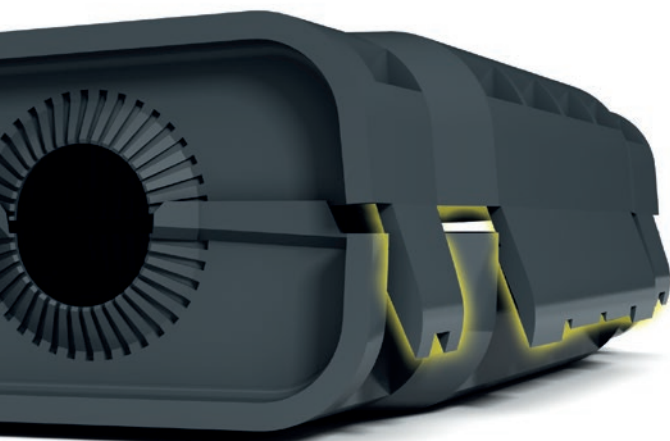
Maximum protection

The **new and patented flexible cable housing seats** adapt to the different cable diameters for which each device is designed and, **combined with the gel insulating features**, made it possible to certify, **without the use of cable glands** or additional components to pre-thread on cables, the **IP68 degree of protection** (according to the EN 60529 Standard), that is to say maximum protection against water and dust.



No condensation

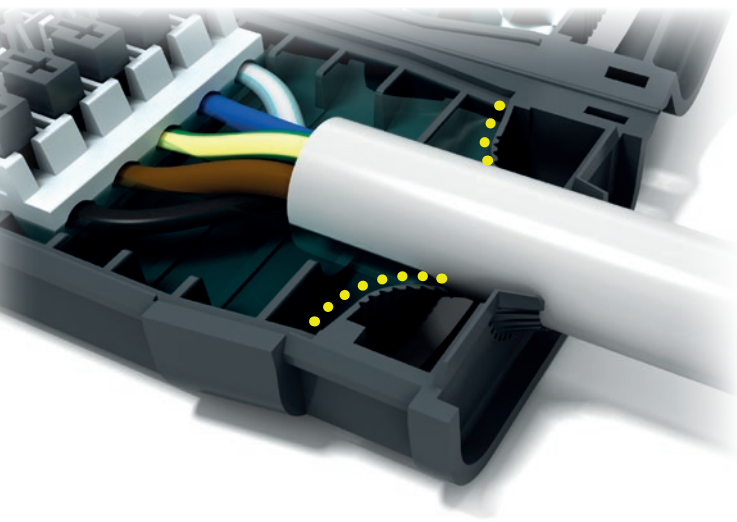
Gel also **prevents moisture from rising through the cables** due to capillary action and the formation of condensation inside the equipment.



Warranty seal

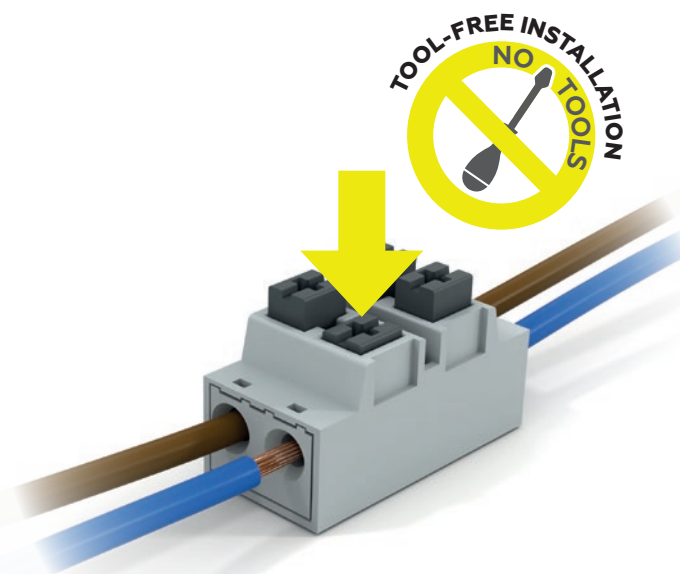


New snap-closing system, which **prevents the reopening of the shell** without the use of a tool, avoiding the need for cable ties or other similar systems.



New breakable walls

the new sloped and curved breakable walls shape allows an even **faster** and **error-free installation**.



Simply fast

The new spring-clamp terminal blocks don't require tools for installation, which becomes **simpler, time-saving,** and **ensures the application of the correct clamping force** also on small-size wires.

Eco logical

100% recyclable cardboard boxes and blisters, made of PLA, the bioplastic of vegetable origin fully compostable, for a **plastic-free packaging,** which lead us to a future that is already present.



Discover more about EVO on
next pages and on page 36
and 40 of this e|Book



EVO 03D



EVO 02



EVO 04



EVO Joints

EVO gel-insulated joints (**EVO 02, EVO 03, EVO 04, EVO 05, EVO 02D, EVO 03D**) allow connections **with IP68 degree of protection** on a wide range of energy cables, with cross-section up to $5 \times 16 \text{ mm}^2$ (straight) and up to $3 \times 4 \text{ mm}^2$ (branch).

EVO joints combine a renewed design (thanks to ergonomic lines) with the features that have always distinguished the technology of Etelec pre-filled gel joints, as simple and fast installation, reliability over time and respect for the environment.

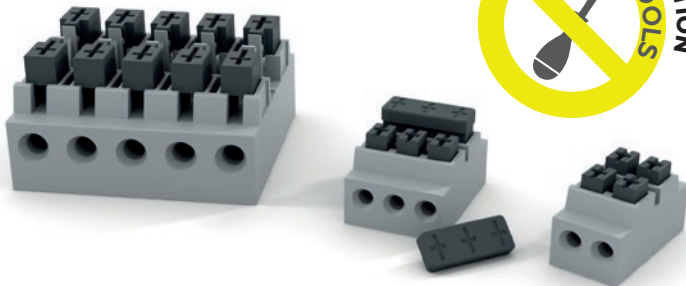
EVO 02D and EVO 03D models are wall-mountable

New spring-clamp terminal blocks

Tried-and-tested screw-type terminal blocks are joined by **new spring-clamp terminal blocks**, for a **simpler and quicker tool-free installation**.

The removable push-button plate of **EVO 02** allows to insert **all three conductors of the cable at the same time**.

The five-core spring terminal block of **EVO 04** is equipped with a **new patented lock-unlock button system**, which allows to easily connect the five cores of the cable at the same time.



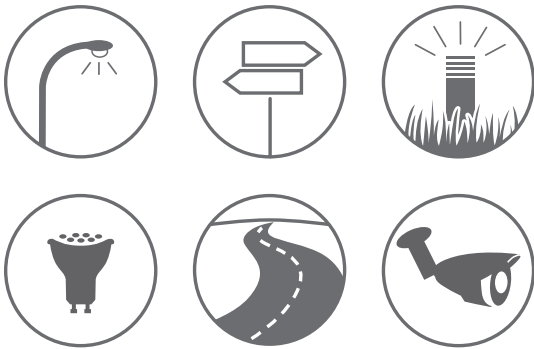
All EVO joints terminal blocks comply with Directive 2014/35/EU (LVD) according to EN 60998 Standard, with Bureau Veritas certification.

→ EVO joints technical features on page 40

EVO 01D



EVO 01



EVO Devices

EVO gel-insulated connecting devices (**EVO PX**, **EVO 01**, **EVO 01D**) allow making straight and branch connections on the most commonly used cables in electrical installations and wiring, with cross-section up to $3 \times 2.5 \text{ mm}^2$.

EVO 01D model is wall-mountable

Dedicated solutions

Specifically designed for small cables applications, EVO devices can be used for:

- LED lighting systems
- road and carriageway signs
- gardens, fountains, ground lighting of passages
- residential and ambient indoor lighting
- video surveillance systems
- industrial and domestic automation (barriers, gates)
- telephone and telecommunication systems
- loose cables on false ceilings or outdoor, in place of junction boxes

EVO PX as small as a pixel

The **smallest connecting device in the range**. It's conceived and designed for **small-section cables** and for **tight installation spaces**.

EVO PX: only 68 mm long and 24 mm large, small almost as a pixel!

EVO PX



EVO devices technical features on page 36

01 GEL AND RESIN



electrical | insulating | fillers |

download
PDF

SINGLE-BOTTLE GEL FILLER



MP ONE®
Re-enterable single-bottle two-component gel 22

TWO-COMPONENT GEL FILLERS



MP GEL® PLUS
Fast cross-linking re-enterable two-component gel 25



CRYSTALGEL®
Crystal-clear re-enterable two-component gel 26



REPLAYGEL®
Repositionable re-enterable two-component gel 26

SINGLE-COMPONENT GEL FILLER



ONE GEL®
Re-enterable single-component gel
in cartridge 27

TWO-COMPONENT RESIN FILLER



RESIL®
Re-enterable two-component resin
rubber-like final state 29

SOLID FINAL-STATE RESIN FILLERS



RS®
Solid final state
two-component polyurethane resin
in bags 30



RS-5000
Solid final state
three-component epoxy resin
in buckets 31



FILLERS

FOR ELECTRICAL INSULATION


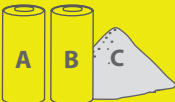
RE-ENTERABLE GELS

		TWO-COMPONENT				SINGLE-COMPONENT
		 ALL IN ONE GEL				
		re-enterable single-bottle	re-enterable fast cross-linking	re-enterable crystal-clear	re-enterable repositionable	re-enterable ready to use
		> page 22	> page 25	> page 26	> page 26	> page 27
Pot life		3 min	5 min	12 min	12 min	-
Curing time		8 min	12 min	24 min	25 min	-
Operating temperature range		-60 °C / +200 °C	-60 °C / +200 °C	-60 °C / +200 °C	-60 °C / +200 °C	-60 °C / +200 °C
	volume (liters)	ref.				
SINGLE-BOTTLE 	0.300	MP103				
	0.600	MP106				
	0.900	MP109				
CARTRIDGE 	0.300					ONEGEL
BOTTLES 	0.300		MP0030			
	0.500		MP0050			
	1.0		MP0100	MP0200	MP3100	
	2.0			MP2200		
BAGS 	0.170		MP170			
	0.240		MP240			
	0.420		MP420			
	0.600		MP600			
TANKS 	10.0		MP1000			

RUBBER-LIKE FINAL STATE RE-ENTERABLE RESIN

		TWO-COMPONENT
		resil
		re-enterable
		> page 29
Pot life		12 min
Curing time		25 min
Operating temperature range		-40 °C / +180 °C
	volume (liters)	
BOTTLES		
	1.0	RE0100
TANKS		
	4.0	RE0400

SOLID FINAL STATE RESINS

		TWO-COMPONENT	THREE-COMPONENT
		RS SOLID-STATE RESIN	RS5000
		polyurethane	epoxy quartz-loaded
		> page 30	> page 31
Pot life		15 min	15 min
Curing time		25 min	50 min
Operating temperature range		-25 °C / +130 °C	-25 °C / +130 °C
	volume (liters)	ref.	
BAGS			
	0.146	RS0150	
	0.220	RS0300	
	0.290	RS0400	
	0.400	RS0550	
	0.470	RS0650	
	1.200	RS1650	
BUCKETS			
	4.40		RS5000

TWIST&GO

patented technology

Custom cap design allow using a single bottle for both storing and mixing the product without using jugs or other containers.



5 steps

Five simple steps for an innovative mixing system.

Component quantities are preset, to ensure a **correct, error- and waste-free application**, maximizing product yield.



The **one and only** **two-component** gel in one single bottle

Etelec and **MP One®**, **quality, research** and **innovation**, that will **change** the way you work.

Etelec always chooses **nature** and today, with **MP One®**, even more forcefully by **eliminating** production of additional **containers to be disposed of**, such as bottles, jugs and palettes for mixing and opting for **cardboard packaging** made from **100% recycled** materials and **100% recyclable**, which becomes the real protagonist together with the content.

With **MP One®**, removing means adding.

Adding awareness of a responsible and conscious choice, placing **nature in the foreground**, in everything and for everyone.



DISCOVER MORE





Single-bottle two-component re-enterable gel filler for electrical insulation



TWIST&GO Patented technology

The special MPone® cap makes it possible to use a single bottle to store and mix the gel without the use of jugs or other containers

APPLICATIONS

- Filling of junction boxes
- Insulation of electrical connections
- Insulation of electronic boards and components
- Protection of connections against weathering (rain, moisture), against dust and intrusion of animals, bugs and leaves

KEY FEATURES

- **Twist&Go patented technology**
- Maximum practicality and rapidity of use
- **Suitable for use in challenging installation conditions** (ladders, decks, scaffolding) and when there is no support surface for product mixing
- Error-free (the quantities of the two components are preset)
- Extra fast cross-linking
- **Eco-friendlier:** fewer containers and packaging to dispose of (bottles, jug, stirring stick)
- All the key features that have made MPgel® a successful product



Curing time at 23 °C
8 minutes

Dielectric strength
25,5 kV/mm

Colour
light blue

Operating temperature range
-60 °C / +200 °C



Patented technology



Extra fast cross-linking



Excellent electrical insulation



High moisture protection



Re-enterable and removable



Low viscosity
Easy pouring



Unlimited shelf life



Non-irritant



Odourless and solvent-free



Compliant to EU
Directive 2015/863
(RoHS 3)



Halogen free



Eco-friendly



Non hazardous EU
Reg. 1272/2008 (CLP)

Twist and Go Technology

- 1**

Remove the white tear-off safety ring that prevents accidental opening of the capsule containing the second component, which also guarantees product integrity
- 2**

Screw the top yellow cap all the way on. Check that the blue component is released into the bottle
- 3**

Shake the bottle for 15 seconds to obtain an even blue mixture that can be checked through the MIXING COLOR CHECK display window
- 4**

Unscrew the cap completely to open the bottle
- 5**

Pour into the enclosure to be filled

Something less, so much more.

Etelec always chooses **nature** and today, with **MP One®**, even more forcefully by **eliminating** production of additional **containers to be disposed of**, such as bottles, jugs and palettes for mixing, and opting for **cardboard packaging** made from **100% recycled** materials and **100% recyclable**.

With **MP One®**, removing means adding.

Adding awareness of a responsible and conscious choice, placing **nature in the foreground**, in everything and for everyone.



Available sizes

	ref.	item	package (litres)	min./mult. ord.qty (pk)	watch video
	MP103	MP One 300	300 ml	12	
	MP106	MP One 600	600 ml	12	
	MP109	MP One 900	900 ml	12	

TWO-COMPONENT GEL FILLERS FOR ELECTRICAL INSULATION AND SEALING



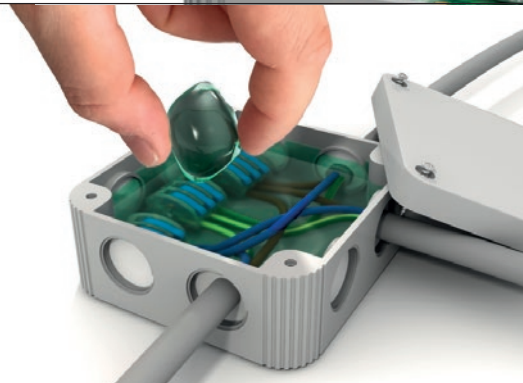
Fast cross-linking
12 minutes at 23°C



Crystal clear
to keep visible the connection
and the content of the enclosure



Repositionable
quickly reagglomerates even after
first installation



APPLICATIONS

- Filling of junction boxes
- Insulation of electrical connections
- Insulation of electronic boards and components
- Protection of connections against weathering (rain, moisture), dust and intrusion of animals, bugs and leaves



May be partially used



High
electrical insulation



High
moisture protection



Re-entrance



Unlimited
shelf life



Compliant to EU
Directive 2015/863
(RoHS 3)



Halogen free



Eco-friendly



NON-HAZARDOUS
EU Reg. no. 1272/2008
(CLP)



Non-irritant



Odourless
and solvent-free



Fast cross-linking re-enterable two-component gel filler for electrical insulation



Fast cross-linking
12 minutes at 23°C
Short downtime of power line



Bottles	ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
	MP0050	MPgel 50	0,5	12	
	MP0100	MPgel 100	1	12	



CONTENTS

- Two separate clear bottles
- 1 litre graduated jug
- Stirring stick

Bags	ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
	MP170	MPgel 170	0,170	4	
	MP240	MPgel 200	0,200	4	
	MP420	MPgel 420	0,420	4	
	MP600	MPgel 600	0,600	4	



CONTENTS

- Bag with removable baffle
- Pouring spout with Perforation Pouring System (PPS)

Tanks	ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
	MP1000	MPgel 1000	10	1	



CONTENTS

- Two separate tanks
- 1 Litre graduated jug
- Stirring stick

crystalgel[®]

Crystal clear

re-enterable two-component gel filler for electrical insulation



Crystal clear

Crystalgel[®] is suitable for applications where the connection and the content of the box shall be kept visible



CONTENTS

- Two separate clear bottles
- 1 litre graduated jug

ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
MP0200	CRYSTALGEL 1L	1	12	
MP2200	CRYSTALGEL 2L	2	12	

replaygel[®]

Repositionable

re-enterable two-component gel filler for electrical insulation



Repositionable

Thanks to its innovative formulation, **Replaygel**[®] can be **repositioned** even long afterwards initial curing: **Replaygel**[®] easily and quickly re-agglomerates while retaining its insulation and protection features



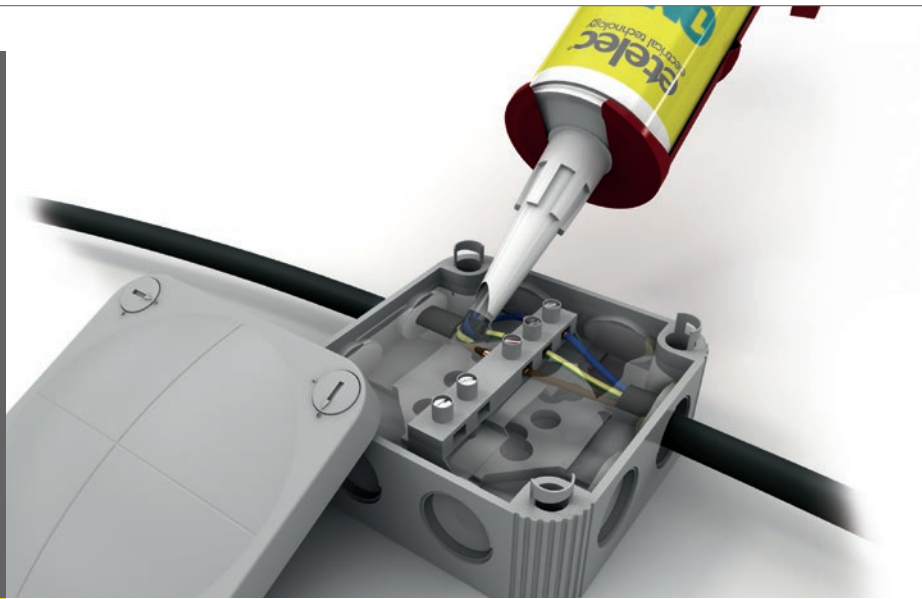
CONTENTS

- Two separate clear bottles
- 1 Litre graduated jug

ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
MP3100	REPLAYLGEL 1L	1	12	



Ready to use ONE GEL® is already cross-linked and supplied in cartridges for common silicone guns, for a fast and waste-free application



APPLICATIONS

- Filling of junction boxes
- Insulation of electrical connections
- Insulation of electronic boards and components
- **Designed for applications with hard-to-reach enclosures or connections**
- **Best suited for vertical or upended applications**
- Suitable for use in civil and industrial applications



ref.	item	volume (liters)	min. /mult. ordin. (pcs)	watch video
ONEGEL	ONE GEL	0,3	24	

Dielectric strength
25 kV/mm

Colour
clear blue

Operating temperature range
-60 °C / +200 °C

Resistivity (IEC 60093)
10 GΩ/mm

Penetration (ISO 2137)
300 mm / cono da 100 g

Density (ISO 3219)
0,97 kg/l

Volume reduction
< 0,01%



READY TO USE
No component to be mixed



Vertical application



Excellent electrical insulation



High moisture protection



Re-enterable and removable



Unlimited shelf life



Non-irritant



Odourless and solvent-free



Compliant to EU Directive 2015/863 (RoHS 3)



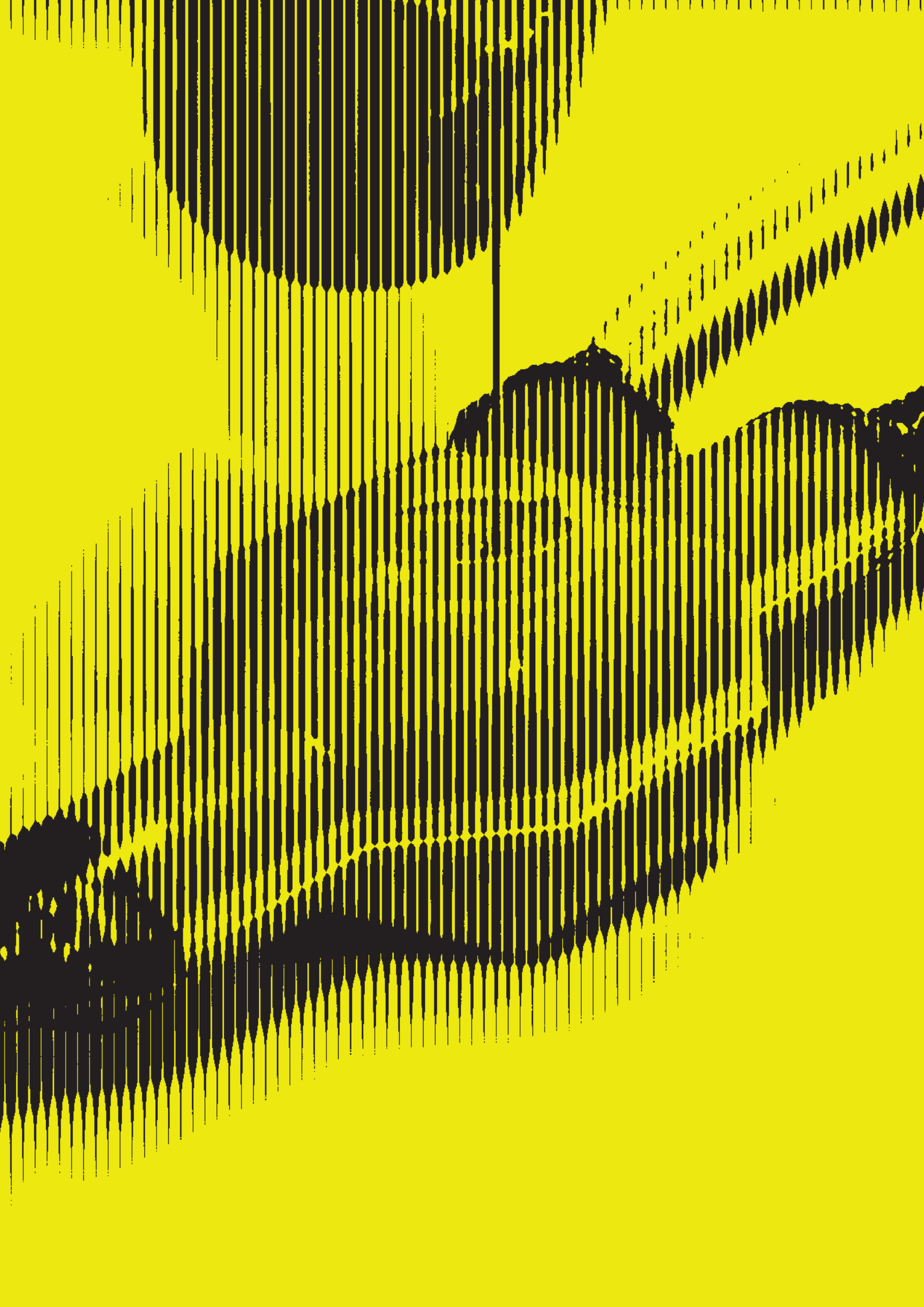
Halogen free



Eco-friendly

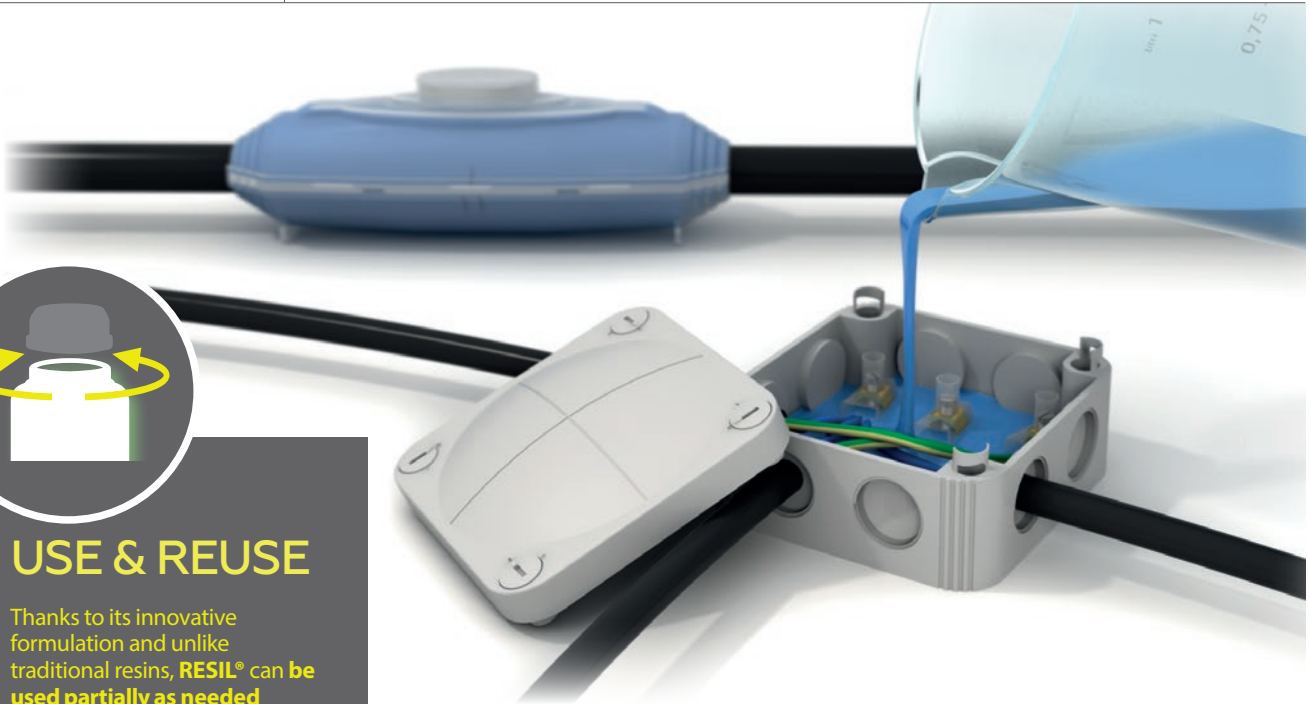


Non-hazardous EU Reg. no. 1272/2008 (CLP)





Re-enterable two-component resin
rubber-like final state
for electrical insulation and filling



USE & REUSE

Thanks to its innovative formulation and unlike traditional resins, **RESIL® can be used partially as needed** and the unused product can be kept for **subsequent use**: no waste, **maximum yield and versatility**.



APPLICATIONS

- Filling of junction boxes
- Insulation of electrical connections

KEY FEATURES

- **May be partially used as needed**
- Fast and non-exothermic cross-linking
- **Re-enterable**
- **Non-toxic (isocyanate-free)**
- Non-hygroscopic
- Good mechanical strength thanks to rubber-like final state

CONTENTS

- Two separate clear bottles
- 1 litre (RE0100) and 5 litre (RE0400) graduated jug



Eco-friendly

ref.	item	volume (liters)	min./mult. ord.qty. (cf)	watch video
RE0100	Resil 100	1,0	12	
RE0400	Resil 400	4,0	1	



Solid final state
two-component polyurethane resin
in bags with pouring spout *



High
mechanical
protection
thanks to solid
final state



APPLICATIONS

- Filling and electrical insulation of enclosures

KEY FEATURES

- Watertight sealing of connection and enclosure
- Excellent mechanical protection
- Fluid and homogeneous pouring with no accidental spillage

CONTENTS

- Bag with removable baffle
- Pouring spout with Perforation Pouring System (PPS) *
- Instructions

ref.	item	volume (liters)	pkg. (pcs)	min./mult. ord. (pcs)
RS0150	RS 150	0,146	1	4
RS0300	RS 300	0,220	1	4
RS0400	RS 400	0,290	1	4
RS0550	RS 550	0,400	1	4
RS0650	RS 650	0,470	1	4
RS1650	RS 1650	1,200	1	1

Dielectric strength
> 20 kV/mm

Pot life at 23 °C
15 min

Curing time at 23 °C
25 min

Density
1,37 g/cm³

Hardness
SHORE D 55

Storage temperature
+5 °C / + 40 °C

Shelf life
3 anni

* Except RS150



High
mechanical
protection



High mechanical protection thanks to solid final state



APPLICATIONS

- Filling and electrical insulation of enclosures
- Best suited (thanks to quartz aggregate) for filling large volumes

KEY FEATURES

- Watertight sealing of connection and enclosure
- Excellent mechanical protection

CONTENTS

- Can of resin
- Can of hardener
- Bag of quartz powder
- Stirring stick

ref.	item	volume (liters)	pkg. (pcs)	min./mult. ord. (pcs)
RS5000	RS 5000	4,40	1	1

Dielectric strength
> 20 kV/mm

Pot life at 23 °C
15 min

Curing time at 23 °C
50 min

Density
1,14 g/cm³

Hardness
SHORE D 85

Colour
grey

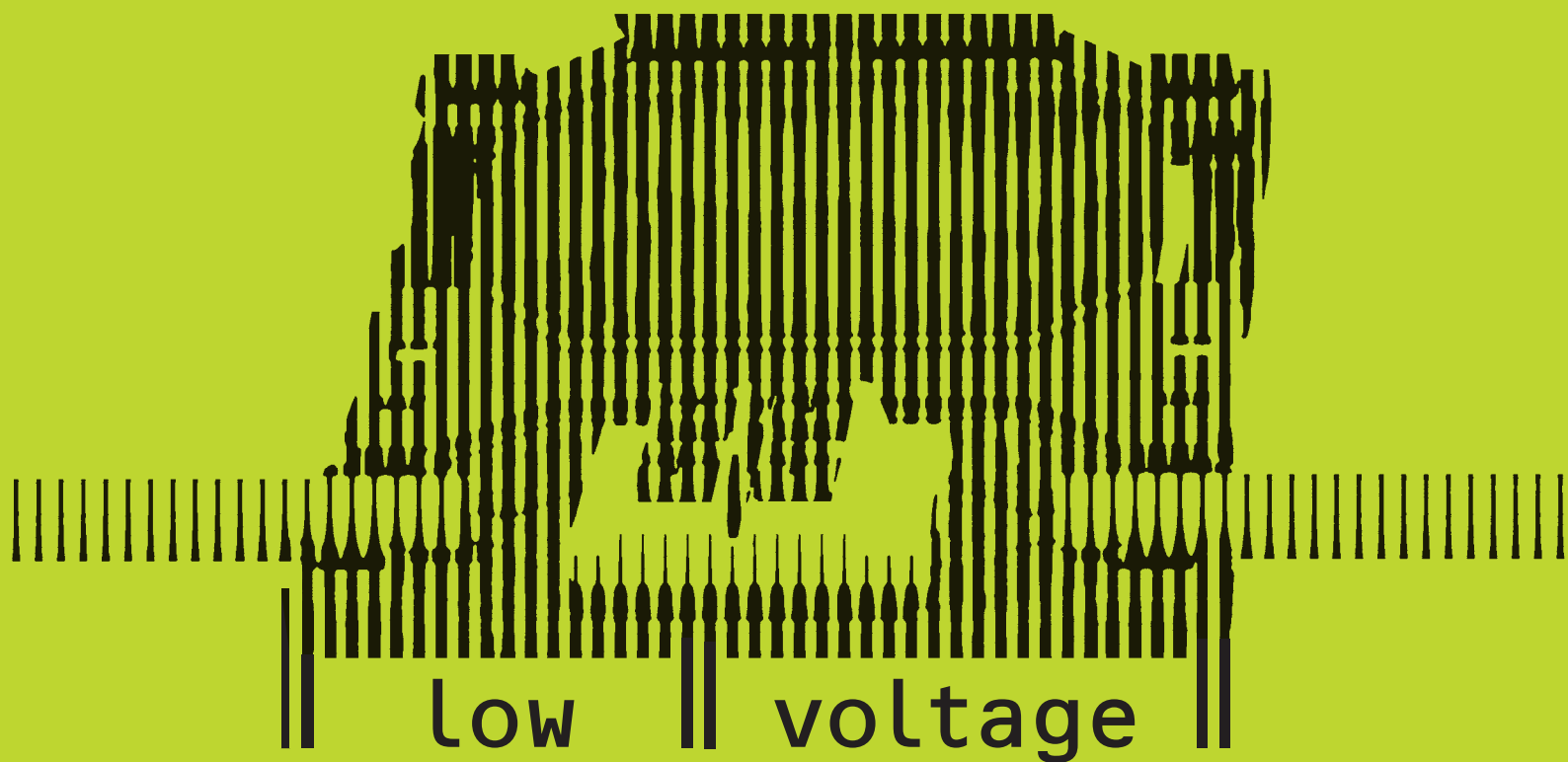
Storage temperature
+5 °C / + 40 °C

Shelf life
2 years



High mechanical protection

01 JOINTS AND CONNECTING DEVICES



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PDF

GEL PRE-FILLED CONNECTING DEVICES



STRAIGHT
BRANCH



EVO®
IP68 gel-insulated connecting devices
straight and branch

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GEL PRE-FILLED JOINTS



STRAIGHT



EVO®
IP68 gel-insulated straight joints

40

BRANCH



EVO®
IP68 gel-insulated branch joints

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STRAIGHT



SHARK® SIXEIGHT® SERIES
IP68 gel-insulated straight joints

46



STRAIGHT

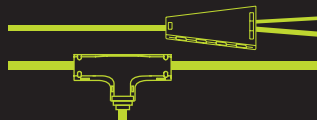


SHARK® CLASSIC SERIES
IMQ-certified gel-insulated straight joints

48



BRANCH



SHARK® - Gel-insulated branch joints
600 SERIES- Y-branch
400 SERIES- T-branch

52

GEL PRE-FILLED CONNECTING DEVICES



BRANCH



SHELL BOX® FLAT SERIES
Gel- pre-filled IPX8 connecting devices
with Wago® compact lever connectors

56

GEL PRE-FILLED PROTECTING DEVICES

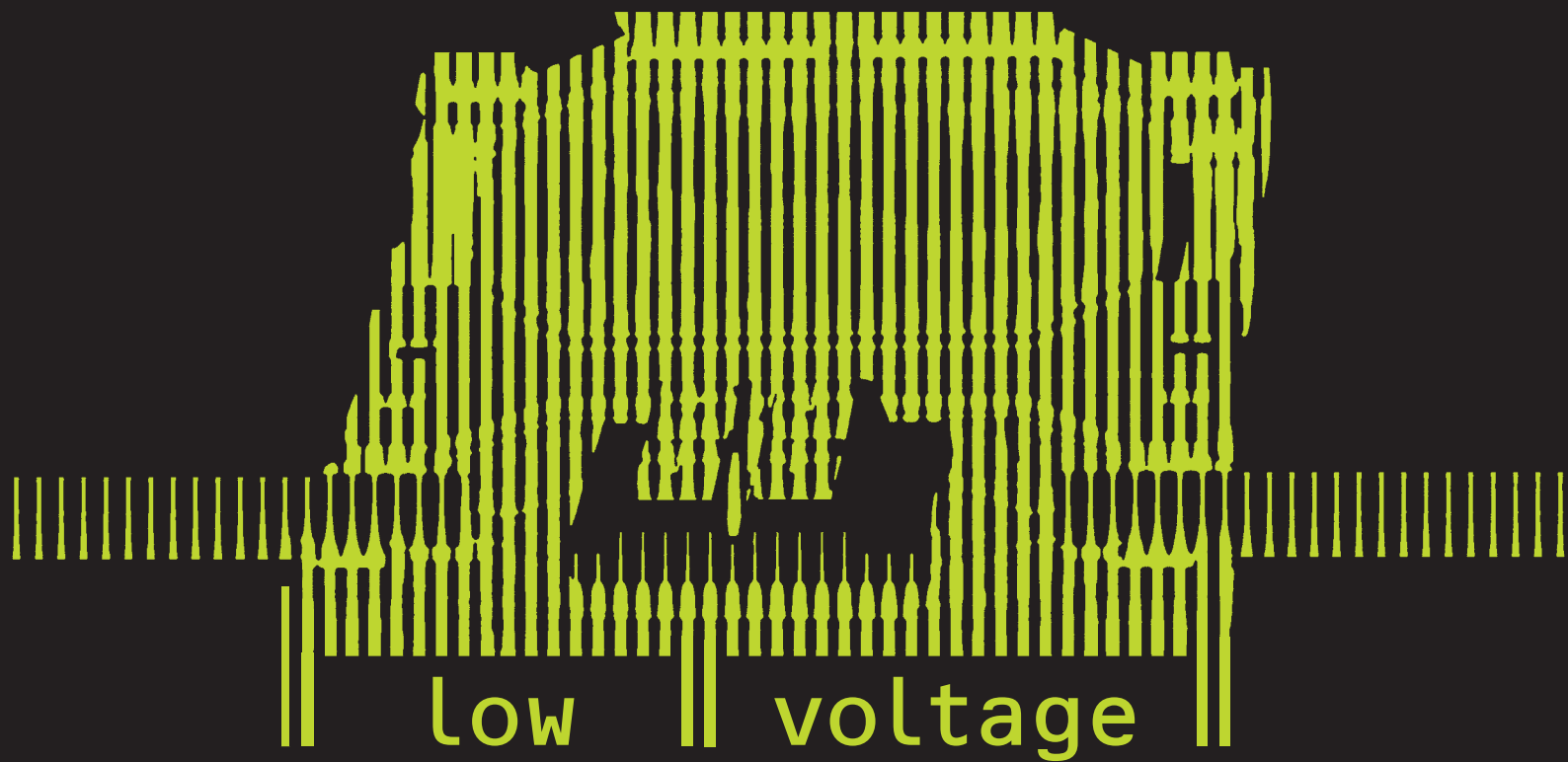


MINIBOX®
Gel- pre-filled IPX8 protecting devices

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01 JOINTS AND CONNECTING DEVICES

FOLLOWS FROM PAGE 33



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SOLID FINAL STATE CAST RESIN JOINTS



STRAIGHT



SUBMARINE®

solid final state polyurethane cast resin joints

straight

60



BRANCH



Y-branch

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HEAT-SHRINK JOINTS



STRAIGHT



SEALJOINT® C

Heat-shrink straight joints with shear bolt connectors

64



SEALJOINT®

Heat-shrink straight joints

65



SEALJOINT® FIRE

Fire-resistant heat-shrink straight joints

66



BRANCH



SEALJOINT® D

Heat-shrink branch joints with wrap-around sheath

68



SEALJOINT® FIRE D

Fire-resistant heat-shrink branch joints with wrap-around sheath

69

HEAT-SHRINK JOINTS FOR CONTROL AND SIGNAL CABLES



STRAIGHT



SEALJOINT® S

Heat-shrink joints for control and signal cables

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SEALJOINT® FIRE S

Fire-resistant Heat-shrink joints for control and signal cables

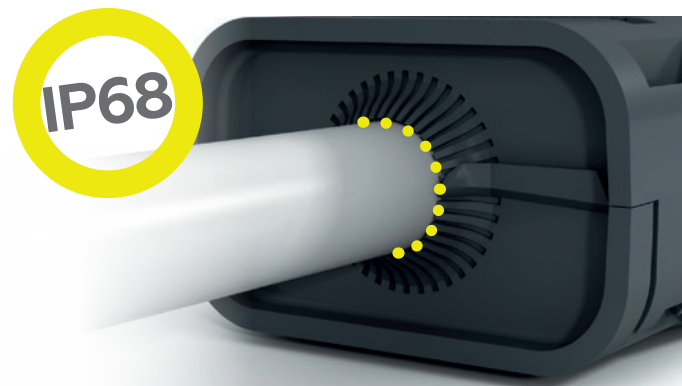
71



EVO[®] is the new range of gel-insulated connecting devices, which allows making straight and branch connections with **IP68 Degree of protection** on the widespread cable types in electrical wiring, with cross-sections up to $3 \times 2,5 \text{ mm}^2$.

IP68 Total protection

The brand new and patented **flexible cable housing seats** adapt to the different cable diameters for which each device is designed and, combined with the gel insulating features, made it possible to certify the **IP68 degree of protection** (according to the EN 60529 Standard), that is to say **maximum protection against water and dust without the use of cable glands or additional components** to pre-thread on cables.



Dedicated solutions

EVO[®] range include **connecting devices** specifically designed for civil/residential installations, including LED lighting systems, and are optimized for the relevant cable types, for both straight (**EVO PX and EVO 01**, for two- and three-core cables up to $2,5 \text{ mm}^2$) and branch connections (**EVO 1D**, for three-core cables up to $2,5 \text{ mm}^2$).

EVO[®] devices are also suited for connecting, insulating and protecting small cross-section cables, also in presence of water, in many applications, like:

- LED lighting systems
- road and carriageway signs
- gardens, fountains, ground lighting of passages
- residential and ambient indoor lighting
- video surveillance systems
- industrial and domestic automation (barriers, gates)
- telephone and telecommunications systems
- loose cables on false ceilings or outdoor, in place of junction boxes



Compact size

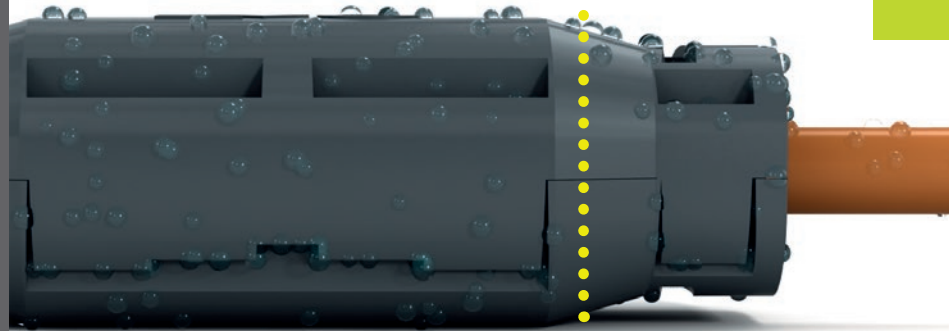
EVO[®] devices have da **especially small dimensions**, which make them suitable in tight installation spaces, or in cable ducts or poles (EVO PX).



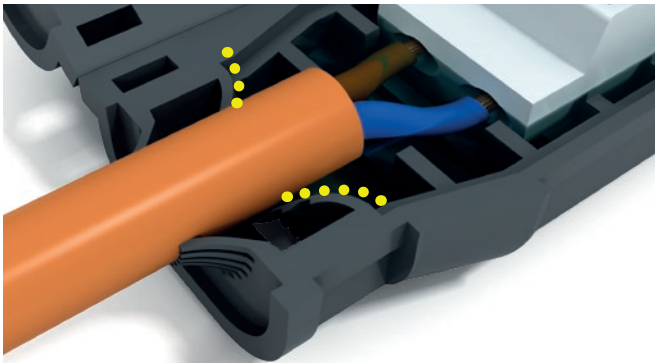
**Zero Capillarity,
no condensation**

The pre-filled gel retains its insulation and protection features over time. It also prevents moisture from rising through the cables due to capillary action and the formation of condensation inside the equipment, which is a frequent failure cause, especially of LED lighting appliances.

NO CONDENSATION IP68

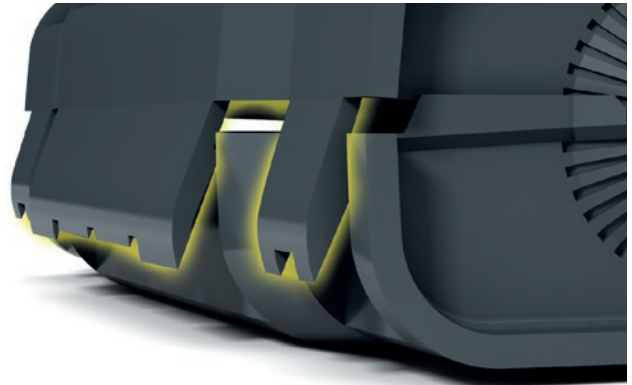


New breakable walls



The new sloped and curved breakable walls shape allows an even faster and error-free installation

New snap-closing system



All the key features of gel technology



Ready to use
no filler
to cast



Eco-friendly
respect the
environment



**Unlimited
shelf life**



Re-enterable
thanks to the soft final
state of the gel

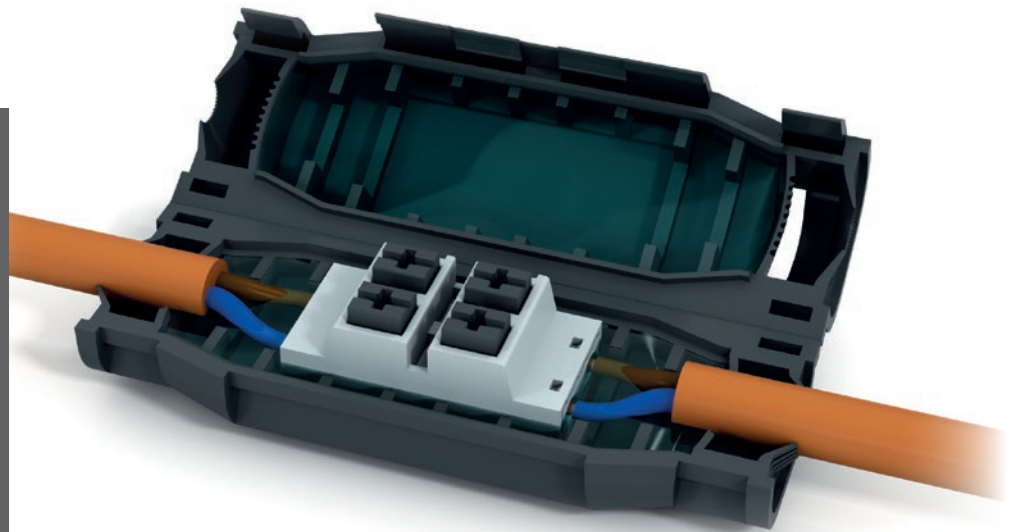


Non-toxic
safe for
installators



EVO PX

The **smallest connecting device** in the range. Conceived and designed for **small-section cables** and for **tight installation spaces**. Only **68 mm** long and **24 mm** large, as small as a pixel!



APPLICATIONS

- IP68 straight and branch connections on 300/500 V low voltage cables up to 3 cores
- Suitable for connecting, insulating and protecting, also in presence of water: LED lighting systems, road and carriageway signs, gardens, fountains, ground lighting of passages, residential and ambient indoor lighting, video surveillance systems, industrial and domestic automation (barriers, gates), telephone and telecommunications systems
- Loose cables on false ceilings or outdoor, in place of junction boxes
- Installation in cable ducts, poles (EVO PX)

KEY FEATURES

- **IP68 total protection against water, dust, debris and weathering**
- No rising of moisture through cables by capillarity
- **Pre-filled: no gel or resin to cast**
- **No cable glands or other component to thread on cables**
- Quick and reliable installation in tight spaces without special tools
- **Compact size**
- Fixing holes for wall-mount (EVO 01D)
- 3 models for use on many cable types

Degree of protection (EN 60529)
IP68

Compliance
CEI EN 60998

Rated voltage
450 V

Self-extinguishing
EN 60695-2-11

Low smoke and toxic gases emission
CEI 20-37/2-1
CEI 20-37/4

Operating temperature range
-20 °C / +90 °C



CE Marking



Total protection



Zero capillarity



Double insulation



Small size



Re-enterable



Unlimited shelf life



Directive EU 2015/863
(RoHS 3) Compliant



Non-toxic



Eco-friendly



cores	ref.	item	conductor cross-section range (mm ²)	cable diameter (mm)	device rated voltage and current	cable rated voltage U ₀ /U	included connector	dimensions (mm)			min./mult. ord. q.ty (pcs)	watch video
								L	W	H		
Straight												
●●	EV100	EVO PX	0.5 – 1.5	4.5 – 6.5	450 V 24 A	300/500V		68 × 24 × 22	1	12		
●●●	EV101	EVO 01	0.75 – 2.5	6 – 8	450 V 24 A	300/500V		72 × 28 × 24	1	12		



cores	ref.	item	conductor cross-section range (mm ²)	cable diameter (mm)	rated voltage and current	cable rated voltage U ₀ /U	included terminal block	dimensions (mm)			min./mult. ord. q.ty (pcs)	watch video
								L	W	H		
T-branch												
●●●	EV201D	EVO 01D	m. 1 – 2.5 b.	6 – 8	450 V 24 A	300/500V		73 × 73 × 23	1	6		

INCLUDED CONNECTORS / TERMINAL BLOCKS



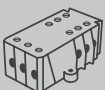
2-pole spring connector (p. 109)
EN 60998-2-2 compliant

for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections



3-pole screw connector

for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections



3-pole screw terminal block

for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium branch connections

NOTE

m. main cable
b. branch cable

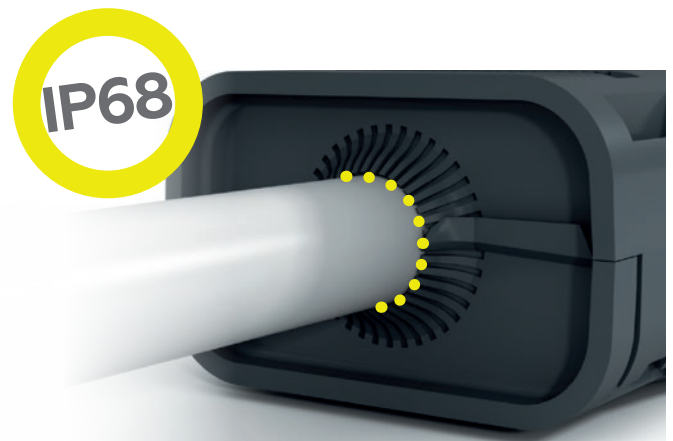


EVO[®] is the new range of gel-insulated joints, which allows straight and branch connections with **IP68 degree of protection** on the most widespread cable types in electrical wiring, with cross-sections up to up to $5 \times 16 \text{ mm}^2$ (straight) and up to $3 \times 4 \text{ mm}^2$ (branch).

EVO[®] joints are characterized by a renewed design with ergonomic lines, and retain all the distinguishing features of gel pre-filled technology, like easy and quick installation, reliability over time and respect for the environment.

IP68 Total protection

The brand new and patented **flexible cable housing seats** adapt to the different cable diameters for which each joint is designed and, combined with the gel insulating features, made it possible to certify the **IP68 degree of protection** (according to the EN 60529 Standard) **without the use of cable glands or additional components** to pre-thread on cables, that is to say **maximum protection against water and dust**.

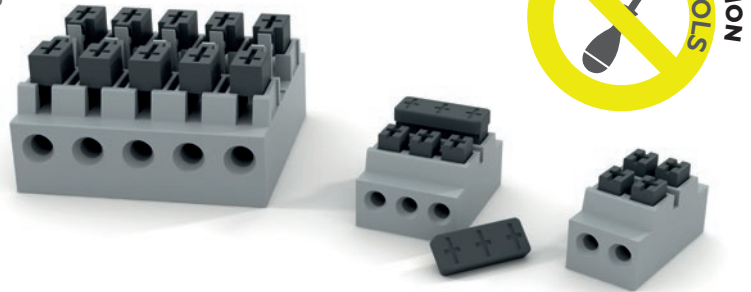


New spring-clamp terminal blocks

Tried-and-tested screw-type terminal blocks are joined, on most used models, by new 2-, 3- or 5-poles spring-clamp terminal blocks.

The pushbutton plate supplied with **EVO 02** allows to easily push simultaneously all three spring actuating buttons, allowing to **insert all three cable wires at the same time**.

The **5-pole spring terminal block** supplied with **EVO 04**, for cables up to 6 mm², is equipped with a **patented new button lock/unlock system**, which allows to **easily connect all five cable wires at the same time**.

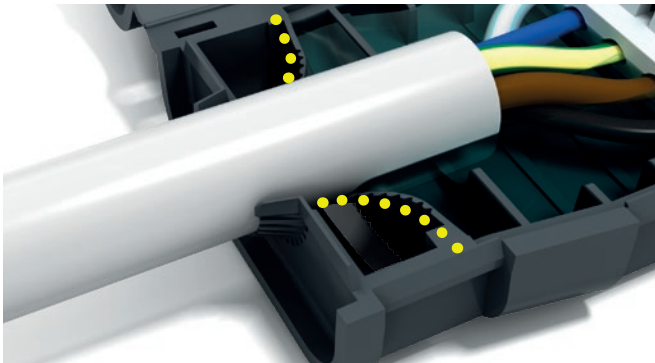


Spring-clamp technology doesn't require tools, thus making installation even simpler and quicker, and avoiding possible errors caused, with screw-type clamping units, by the application of an incorrect torque.



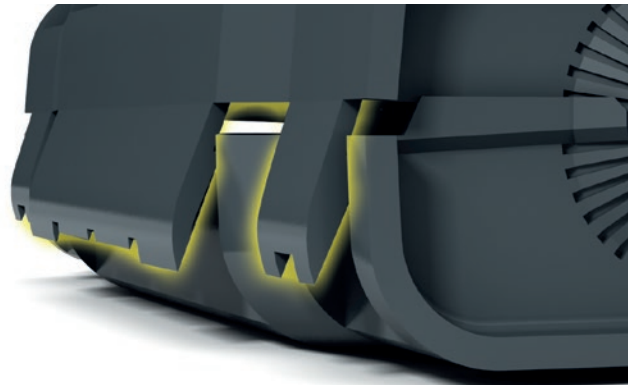
Spring-clamp and screw-type terminal blocks of EVO joints **complies to 2014/35/EU Directive (LVD) according to EN 60998 Standard**, with Bureau Veritas certification.

New breakable walls



the new sloped and curved breakable walls shape allows an even faster and error-free installation.

New snap-closing system



All the key features of gel technology



Ready to use
no filler
to cast



Eco-friendly
respect the
environment



**Unlimited
shelf life**



Re-enterable
thanks to the soft final
state of the gel



Non-toxic
safe for
installators



APPLICATIONS

- IP68 straight joints on 0.6/1 kV low voltage cables up to 5 cores
- Installation: directly buried, overhead, in cable ducts
- Temporary installations

KEY FEATURES

- **IP68 total protection against water and dust**
- **Spring-clamp terminal blocks** (EVO 02 and EVO 04)
- Quicker and easier installation thanks to improved breakable walls
- **Pre-filled: no gel or resin to cast**
- Ready to use
- Good mechanical strength
- 4 models for use on most widespread cable types

Degree of protection (CEI EN 60529)
IP68

Compliance
CEI EN 50393

Self-extinguishing
EN 60695-2-11

Low smoke and toxic gases emission
CEI 20-37/2-1
CEI 20-37/4

Operating temperature range
-20 °C / +90 °C



CE Marking



Total protection



Double insulation



Ready to use



Re-enterable



Unlimited shelf life



Compliant to EU Directive 2015/863 (RoHS 3)

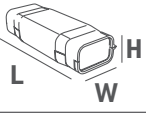






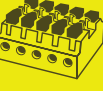





Non-toxic

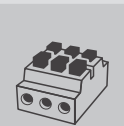


Eco-friendly

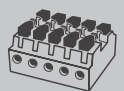


cores	ref.	item	conductor cross-section range (mm ²)	cable diameter (mm)	included terminal block	dimensions (mm) 	pkg. (pcs)	min./mult. ord. q.ty (pcs)	watch video
Straight joints									
	EV102	EVO 02	1.5 – 2.5	10 – 13		80 × 35 × 28	1	12	
	EV103	EVO 03	1.5 – 6	13 – 17		145 × 56 × 35	1	1	
	EV104	EVO 04	2.5 – 6	14 – 22		183 × 70 × 42	1	1	
	EV105	EVO 05	4 – 16	14 – 22		183 × 70 × 42	1	1	

INCLUDED TERMINAL BLOCKS



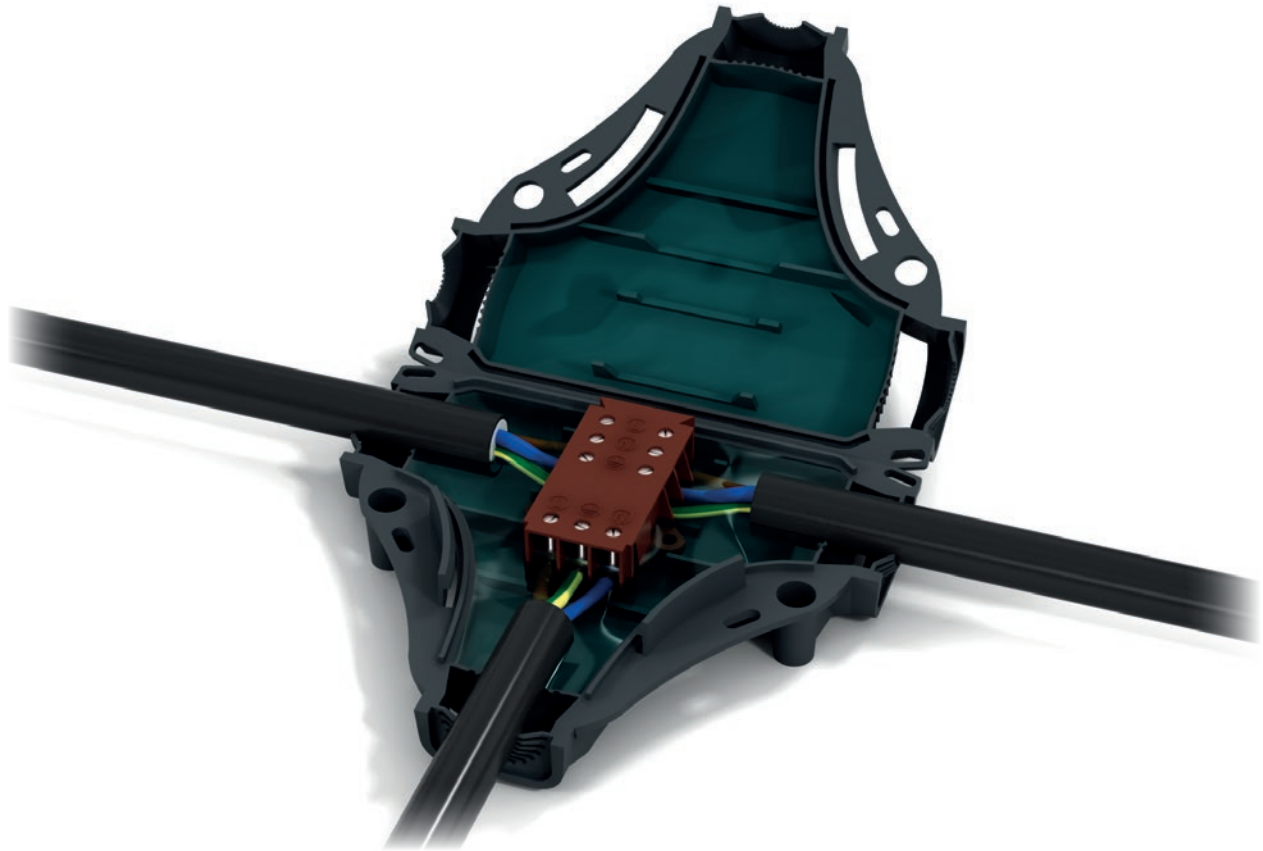
3-pole spring terminal block (p. 109)
EN 60998-2-2 compliant
for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections
pushbutton plate included



5-pole spring terminal block (p. 109)
EN 60998-2-2 compliant
with button lock/unlock system
for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections



MC-RJ 5-pole spring terminal block (p. 112)
EN 60998-2-1 compliant
for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections
(hex key included)



APPLICATIONS

- IP68 branch joints on 0.6/1 kV low voltage cables up to 3 cores
- Installation: directly buried, overhead, in cable ducts
- Temporary installations

KEY FEATURES

- **IP68 total protection against water and dust**
- Quicker and easier installation thanks to improved breakable walls
- **Pre-filled: no gel or resin to cast**
- Ready to use
- Good mechanical strength
- fixing holes for wall mounting

Degree of protection (EN 60529)
IP68

Compliance
CEI EN 50393

Self-extinguishing
EN 60695-2-11

Low smoke
and toxic gases emission
CEI 20-37/2-1
CEI 20-37/4

Operating temperature range
-20 °C / +90 °C



CE Marking



Total protection



Double insulation



Ready to use



Re-enterable



Senza
scadenza



Conforme alla
Direttiva UE
2015/863 (RoHS 3)



Non-toxic



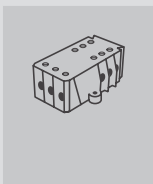
Eco-friendly



JOINTS AND
CONNECTING DEVICES

cores	ref.	item	conductor cross-section range (mm ²)	cable diameter (mm)	cabl rated voltage U ₀ /U	included terminal block	dimensions (mm) 	pkg. (pcs)	min./mult. ord. q.ty (pcs)	watch video
T-branch joints										
	EV202D	EVO 02D	m.	1,5 – 4	10 – 13	0,6/1 kV		105 × 90 × 28	1 6	
			b.	1 – 2,5	6 – 8	300/500 V				
	EV203D	EVO 03D	m.	1,5 – 4	10 – 13	0,6/1 kV		105 × 90 × 28	1 1	
			b.							

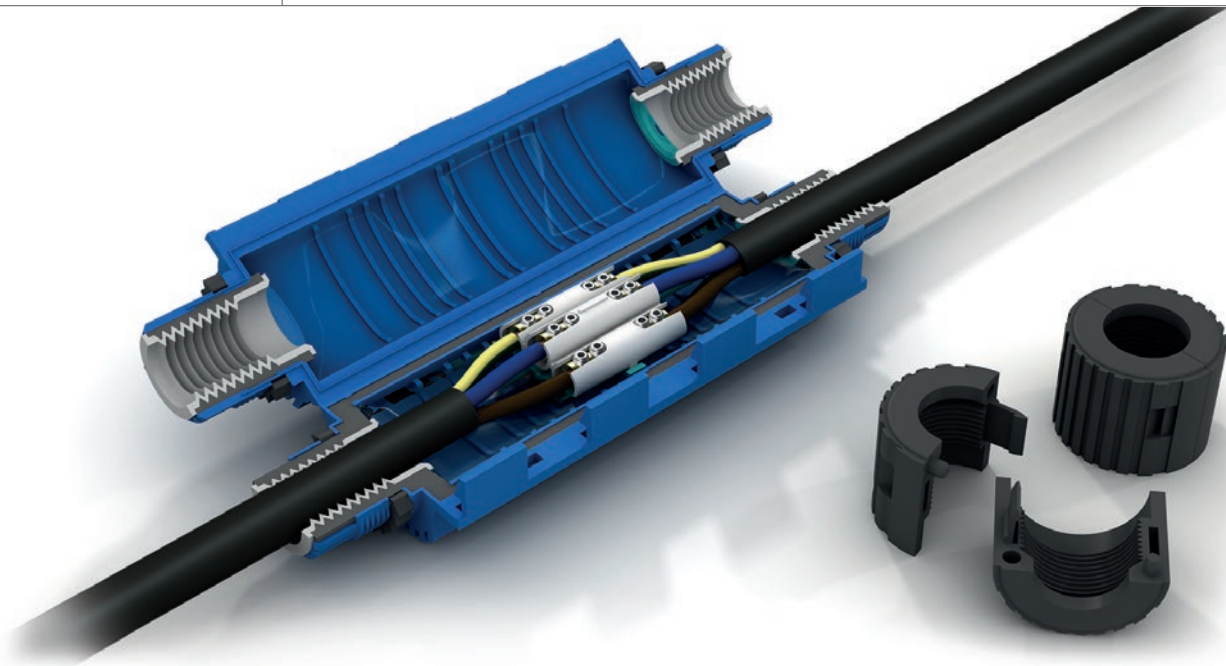
INCLUDED TERMINAL BLOCK



3-pole screw terminal block
for copper-to-copper, aluminium-to-aluminium
and copper-to-aluminium branch connections

NOTE

- m. main cable
- b. branch cable

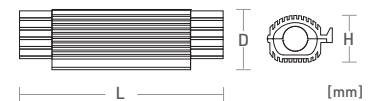


APPLICATIONS

- IP68 straight joint for low voltage cables up to 0,6/1 kV
- Continuous immersion installation
- Installation: directly buried, overhead, in cable ducts
- Temporary installations

KEY FEATURES

- **Total protection from water and dust penetration**
- **Pre-filled: no resin or gel to cast**
- Ready to install
- Good mechanical strength
- **No accidental access to live parts (IEC EN 60364)**
- 3 sizes and 6 connectors/terminal blocks for use with wide types of cables



size	dimensions (mm) L x D x H
size 1	190 x 60 x 47
size 2	235 x 69 x 49
size 3	310 x 88 x 60

Degree of protection
(IEC EN 60529)
IP68 at 10 meters

Compliant to Standard
for low voltage joints 0.6/1 kV
EN 50393

Self-extinguishing
EN 60695-2-11

Low smoke
and toxic gases emission
CEI 20-37/2-1
CEI 20-37/4

Operating temperature range
-20 °C / +90 °C



CE Marking



Total protection



Double insulation



Continuous immersion



Ready to use



Re-enterable



Unlimited shelf life



Compliant to
Directive
EU 2015/863 (RoHS 3)



Non-toxic



Eco-friendly



cores	ref.	item	conductor cross-section range (mm ²)	included connector/terminal block	size	cable diameter range (mm)	pkg. (pcs)	min./mult. ord. q.ty (pcs)	watch video
●	SH6801A	SHARK 6801A	25 – 50	MR0050	size 1	12 – 18	1	1	
	SH6802B	SHARK 6802	50 – 95	MR0051	size 2	14 – 21	1	1	
●●	SH6801B	SHARK 6801B	2,5 – 6	MH0306	size 1	12 – 18	1	1	
	SH6801C	SHARK 6801C	2,5 – 6	MC0506RJ	size 1	12 – 18	1	1	
●●●	SH6802A	SHARK 6802A	2,5 – 10	MC0510RJ	size 2	14 – 21	1	1	
	SH6803A	SHARK 6803A	10 – 25	MC0525RJ	size 3	20 – 30	1	1	

Also available versions without terminal blocks (ref. SH6801, SH6802 and SH6803)

CONNECTORS/TERMINAL BLOCKS SPECIFICATIONS



MR connectors with shear bolts (p. 113) for **copper-to-copper**, **aluminium-to-aluminium** and **copper-to-aluminium** connections



MH terminal block (p. 113) Compliant to EN 60998 - CSA/UL - VDE for **copper-to-copper** and **aluminium-to-aluminium** connections



MC-RJ Insulated terminal block with screw (p. 112) for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections (hex key included)

Armour continuity restoration kit BEK for armoured cables (p. 119) available separately

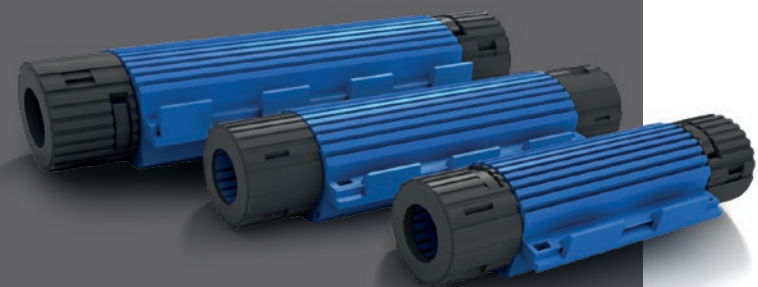
NOTES

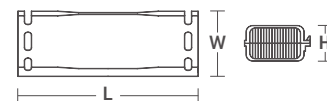
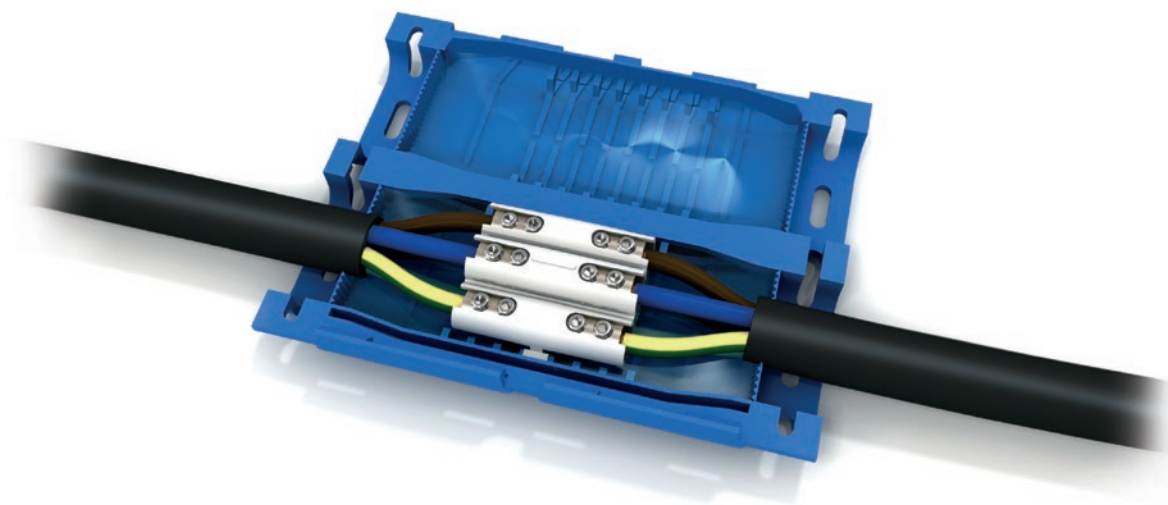
- Choose the appropriate connector according to cables cross-section

Award-winning technology and design



Shark SIXEIGHT® has been selected by the Permanent Observatory of Design of the ADI (the Industrial Design Association) for inclusion in the ADI Design Index, ADI's annual publication that brings together the best Italian design.





APPLICATIONS

- Straight joints for low voltage cable up to 0.6/1 kV
- Installation: directly buried, underground, overhead, in cable ducts
- Street lighting systems

KEY FEATURES

- **Pre-filled: no resin or gel to cast**
- Ready to install
- Excellent electrical insulation
- Good mechanical strength
- **No accidental access to live parts (IEC EN 60364)**
- Unlimited shelf life
- **6 sizes, 12 versions** and a **complete range of connectors** for use with multiple types of cables

size	dimensions (mm)
	L × W × H
size 0	72 × 40 × 23
size 1	86 × 47 × 27
size 2	145 × 50 × 29
size 3	146 × 55 × 35
size 4	180 × 69 × 40
size 5	240 × 75 × 43

Compliant to Standard for low voltage joints 0.6/1 kV
EN 50393

Self-extinguishing
EN 60695-2-11

Low smoke and toxic gases emission
CEI 20-37/2-1
CEI 20-37/4

Degree of protection equivalente a IPX8
(1 meter depth immersion test, EN 50393 art. 8.7)

Operating temperature range
-20 °C / +90 °C



CE Marking



IMQ Certified



RINA Certified



Double insulation



Ready to use



Re-enterable



Unlimited shelf life



Compliant to Directive EU 2015/863 (RoHS 3)



Non-toxic



Eco-friendly

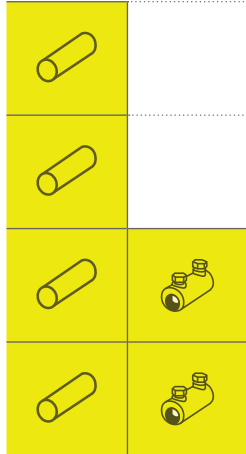


Recommended connectors

scan the QR-code to download connector selection table

SC series (page 114) | MR series (page 113)

cores	ref.	item	conductor cross-section range (mm ²)	included accessories	size	pkg. (pcs)	min./mult. ord. q.ty (pcs)	watch video
	SH0125	SHARK 125	2.5 – 10		size 0	1	12	
	SH0150	SHARK 150	6 – 25		size 1	1	12	
	SH1406	SHARK 406/S	10 – 50	-	size 2	1	9	
	SH1410	SHARK 410/S	70 – 150	-	size 3	1	9	
	SH1416	SHARK 416/S	95 – 185	-	size 4	1	6	
	SH1525	SHARK 525/S	95 – 240	-	size 5	1	1	



Also available versions without terminal blocks and with core separator

INCLUDED ACCESSORIES



U-shape connector with hex grub screw for **copper-to-copper** connections (hex key included)



Insulated terminal blocks with hex grub screws for **copper-to-copper**, **aluminium-to-aluminium** and **copper-to-aluminium** connections (hex key included)



Three-core terminal block Compliant to EN 60998 - CSA/UL - VDE (p. 113)



Insulated terminal blocks (p. 112) with hex grub screws for **copper-to-copper**, **aluminium-to-aluminium** and **copper-to-aluminium** connections (hex key included)

RECOMMENDED CONNECTORS



SC compression connector (p. 114) for copper-to-copper and aluminium-to-aluminium connections



MR series shear bolt connector (p. 113) for **copper-to-copper**, **aluminium-to-aluminium** and **copper-to-aluminium** connections



MC series screw-type connector (p. 112) for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections

NOTE

Each kit include nylon ties and installation instructions

In versions without connector/terminal block, listed sections refer to suggested connectors
f. flexible conductor, r. rigid conductor



cores	ref.	item	conductor cross-section range (mm ²)	included accessories	size	pkg. (pcs)	min./mult. ord. (pcs)	watch video
	SH0315BL	SHARK 315	0.5 – 1.5		size 0	1	12	
	SH0325	SHARK 325	1.5 – 2.5		size 1	1	12	
	SH0306	SHARK 306	1.5 – 6		size 2	1	1	-
	SH0506	SHARK 506	1.5 – 6		size 3	1	1	
	SH0516	SHARK 516	6 – 16		size 4	1	1	
	SH0525	SHARK 525	f. 6 – 16 r. 6 – 25		size 5	1	1	

Optional accessories

	SRC001	SRC 1	Cable strain relief system for size 4 e size 5 joints	1	1	
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Suggested connectors

Scan QR-code to select proper connector based on joint type and cable cross-section

MR series shear bolt connectors (page 113)

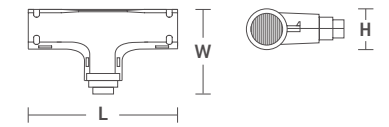
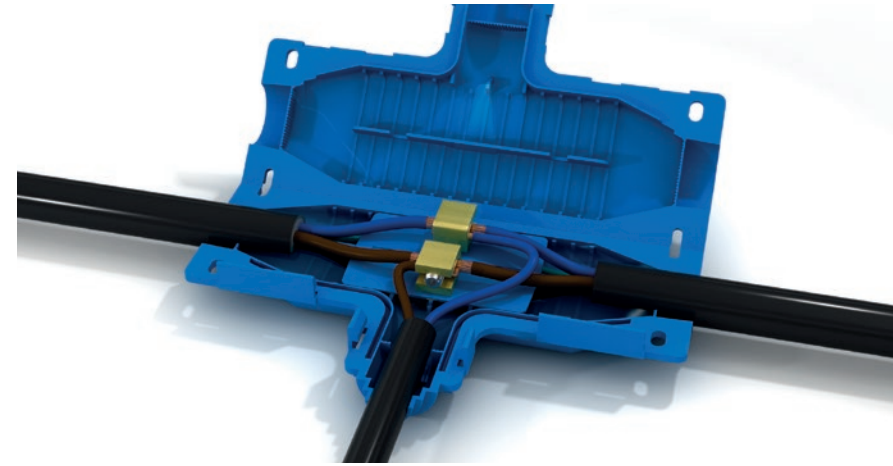


SC series compression connectors (page 114)





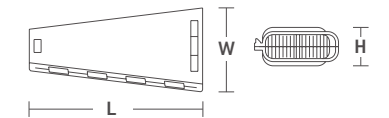
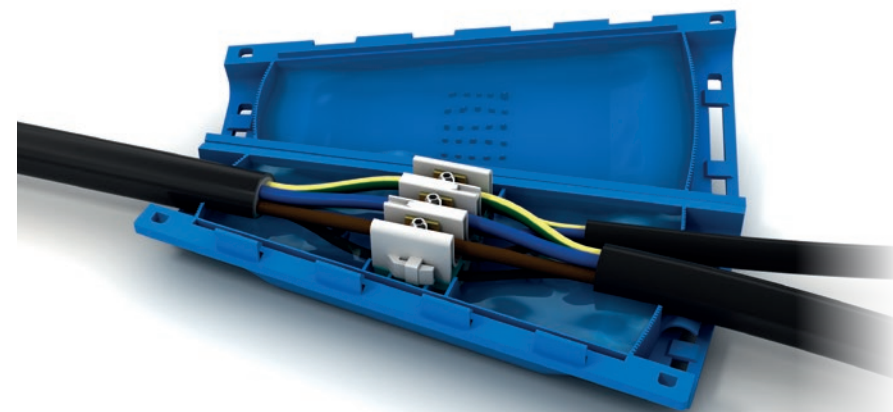
400 Series T-branch



size	dimensions (mm)
	L x W x H
size 1T	210 x 125 x 49
size 2T	250 x 143 x 46



600 Series Y-branch



size	dimensions (mm)
	L x W x H
size 1Y	145 x 70 x 32
size 2Y	220 x 110 x 53
size 3Y	260 x 130 x 65

APPLICATIONS

- Low voltage branch cable joints up to 0.6/1 kV
- Types of installation: directly buried, overhead, in cable ducts
- Street, tunnel lighting systems

KEY FEATURES

- **Pre-filled: no resin or gel to cast**
- Ready to install
- **Branch joint with uninterrupted main cable**
- Excellent electrical insulation and good mechanical strength
- **No accidental access to live parts (IEC EN 60364)**
- Unlimited shelf life
- **2 types, 5 sizes, 9 versions** and a **complete range of connectors/terminal blocks** for use with multiple types of cables



400 Series recommended connectors



BC series
compression
connectors (page 118)



Scan the QR-code to select suitable connector based on joint and cable cross-section



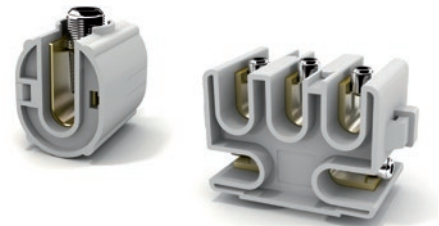
MU series
screw connectors
(page 116)



Scan the QR-code to select suitable connector based on joint and cable cross-section

600 Series included connectors and terminal blocks

Shark[®] 600 Series joints include connectors and terminal blocks for branching the main cable without interruptions. They have brass conductors with hex grub screw and UL 94 V2 self-extinguishing class PA 6.6 insulating body



Compliant to Standard for
0.6/1 kV low voltage joints
EN 50393

Self-extinguishing
EN 60695-2-11

Low smoke and toxic
gases emission
CEI 20-37/2-1
CEI 20-37/4

Degree of protection
equivalent to IPX8
(1 meter depth immersion test,
EN 50393 art. 8.7)

Operating temperature range
-20 °C / +90 °C



CE Marking



IMQ Certified
(400 series)



RINA Certified
(400 series)



Double insulation



Ready to use



Re-enterable



Unlimited
shelf life



Compliant to
Directive
EU 2015/863 (RoHS 3)



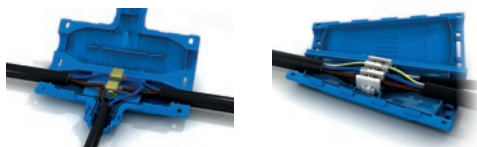
Non-toxic



Eco-friendly



Halogen free



Suggested Connectors

scan QR-code to download connector selection table



BC (page118) MU (page116)

cores / branch type	ref.	item	cross-section range* (mm ²)		included accessories	size	pkg. (pcs)	min./mult. ord. q.ty (pcs)	watch video
			main cable	branch cable					
	SH0125	SHARK 125	6 – 25	1.5 – 10		size 0	1 12		
	SH0150	SHARK 150	10 – 50	2.5 – 35		size 1	1 12		
	SH6150	SHARK 150Y	10 – 35 r. 10 – 50 f.	2.5 – 25		size 1Y	1 1		
	SH1425	SHARK 425/S	70 – 150	10 – 50	–	size 1T	1 1		
	SH1435	SHARK 435/S	95 – 240	50 – 120	–	size 2T	1 1		

INSTALLATION ACCESSORIES



Screw-type insulated connector for copper-to-copper connections without interrupting main cable (hex key included)



Connettore ad U con serraggio a brugola for copper-to-copper connections without interrupting main cable (hex key included)



5-pole screw-type terminal block for copper-to-copper connections without interrupting main cable (hex key included)



Separatore delle fasi

SUGGESTED CONNECTORS



BC series C-shape compression connector (p. 118) for copper-to-copper and aluminium-to-aluminium connections without interrupting main cable



MU series connector (p. 116) for copper-to-copper connections without interrupting main cable (hex key included)



Suggested Connectors

scan QR-code to download connector selection table



BC (page118) **MU** (page116)



cores / branch type	ref.	item	cross-section range* (mm ²)		included accessories	size	pkg. (pcs)		min./mult. ord. q.ty (pcs)	watch video
			main cable	branch cable						
	SH0425	SHARK 425	6 – 25	1.5 – 16		size 1T	1	1		
	SH0435	SHARK 435	10 – 35	2.5 – 25		size 2T	1	1		
	SH6516	SHARK 516Y	6 r.	2.5 – 16		size 2Y	1	1		
			6 – 16 f.							
	SH6535	SHARK 535Y	10 – 25 r.	2.5 – 25		size 3Y	1	1		
			16 – 35 f.							

Optional accessories

	SRC001	SRC 1	Cable strain relief system for size 4 e size 5 joints	1	1	-	
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NOTES

* Listed cross-sections refer to installations with recommended connectors with uninterrupted main cable

r. rigid conductor, f. flexible conductor

SHARK 125: for 25 mm² main cable, max branch cable is 6 mm²

SHARK 150Y:
for 35 mm² main cable, max branch cable is 10 mm²
for 50 mm² main cable, max branch cable is 6 mm²

SHARK 150:
for 50 mm² main cable, max branch cable is 6 mm²

NOTE

- BEK Series armour bonding kit (p. 119) available for armoured cables
- All kits include cable ties and instructions



Protection against water and weathering thanks to silicone gel that ensures **IPX8 degree of protection** in an even more compact device, thanks to the use of **Wago series 221 connectors**

APPLICATIONS

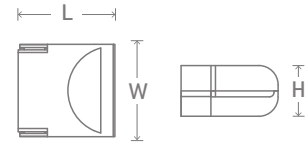
- Connection, insulation and protection of small cross-section cables, also in presence of water (lighting equipment, door, window and gate automation, telephone and telecommunication systems, audio systems)
- Creation of overhead junction boxes on false ceilings or outdoors
- Termination insulation of live cables

KEY FEATURES

- **Extra-compact dimensions, suitable for installation in very narrow spaces**
- Complete protection from water, dust, debris and weathering
- **Flexible and breakable walls:** adaptable to cables and ensure the gel leakage only where necessary to ensure the sealing of the connection
- Work on each conductor individually
- Quick and reliable installation with no special tools thanks to spring-clamp technology
- Handy packaging in blisters
- **3 sizes and 5 versions** for maximum versatility of application

FEATURES

- Rigid plastic polymer shell with snap closure, pre-filled with silicone gel
- **Insulated compact connectors with Wago 221 splicing clamping**
- Clear blister packaging with Eurohole



size	dimensions (mm)
	W x L x H
size 1	31,4 x 32 x 16
size 2	42,5 x 32 x 16
size 3	51,5 x 32 x 16

WAGO is a registered trademark of WAGO Verwaltungsgesellschaft mbH

Degree of protection (EN 60529)
IPX8

Self-extinguishing
EN 60695-2-11

Rated insulation voltage
450 V

Rated current
32 A

Conductor cross-section (rigid and flexible)
0,2 - 4 mm² (24-12 AWG)



CE Marking



Compact size



Degree of protection



Double insulation



Simple installation



Re-enterable



Unlimited shelf life



Directive EU 2015/863 (RoHS 3) Compliant



Non-toxic



Eco-friendly



watch video

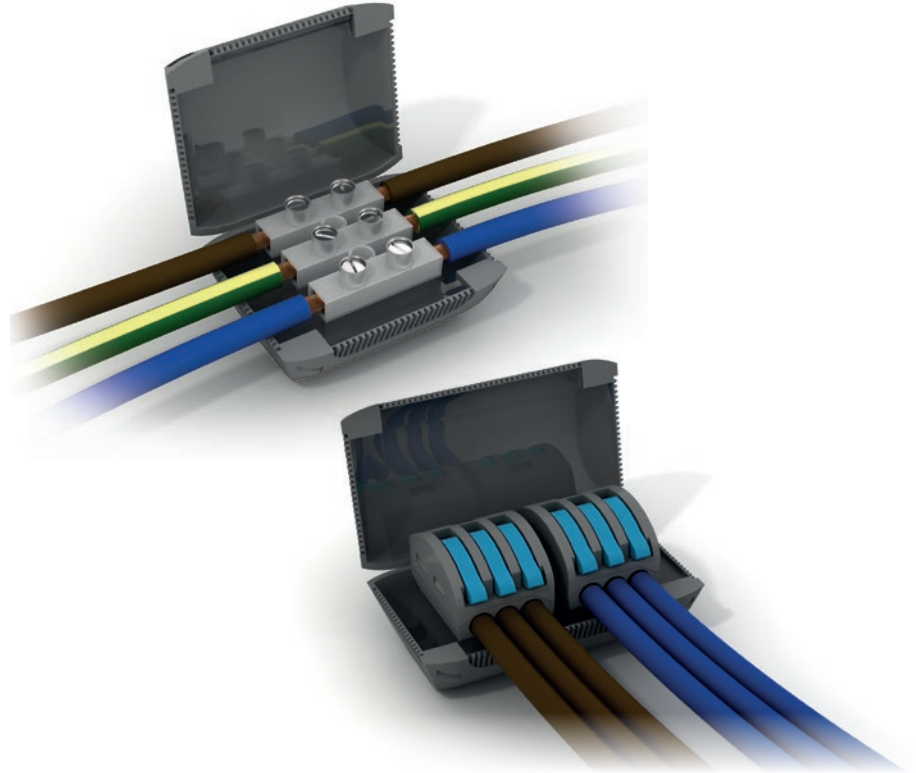


size	ref.	item	included connectors	conductor cross-section (mm ²)	pkg. (pcs)	min./mult. ord. (cf)
size 1		MJBF113 Shell Box 113 FLAT	1 x  3 vie	0,2 – 4	1	12
size 2		MJBF215 Shell Box 215 FLAT	1 x  5 vie	0,2 – 4	1	12
		MJBF222 Shell Box 222 FLAT	2 x  2 vie	0,2 – 4	1	12
size 3		MJBF323 Shell Box 323 FLAT	2 x  3 vie	0,2 – 4	1	12
		MJBF332 Shell Box 332 FLAT	3 x  2 vie	0,2 – 4	1	12



Maximum flexibility of use

for a wide range of connectors thanks to **cable inputs on three sides**



APPLICATIONS

- Insulation and protection, even in the presence of water, of electrical connections, audio/video, telecommunications, home automation and similar

KEY FEATURES

- **Maximum flexibility of use: cable inputs on 3 sides**
- Can be used with multiple types of: electrical connectors (lever connectors, TBOX®, terminal blocks, ledstrip connectors), audio/video (BNC, type F, video surveillance system connectors, balun, balanced audio cables) home automation
- **Flexible and breakable walls:** adaptable to cables and ensure the gel leakage only where necessary to ensure the sealing of the connection
- Ready to install
- Compact design
- **Reliability of gel technology**

FEATURES

- Rigid plastic polymer shell with snap closure, pre-filled with silicone gel
- **3 sizes** for use with a wide range of connectors
- Clear blister packaging with Eurohole

Degree of protection (EN 60529)
IPX8

Operating temperature range
-20 °C / +90 °C



CE Marking



Degree of protection



Re-enterable



Unlimited shelf life



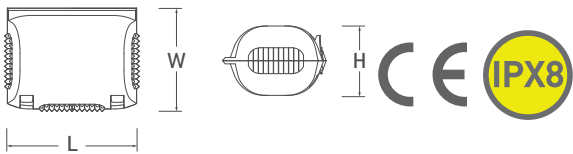
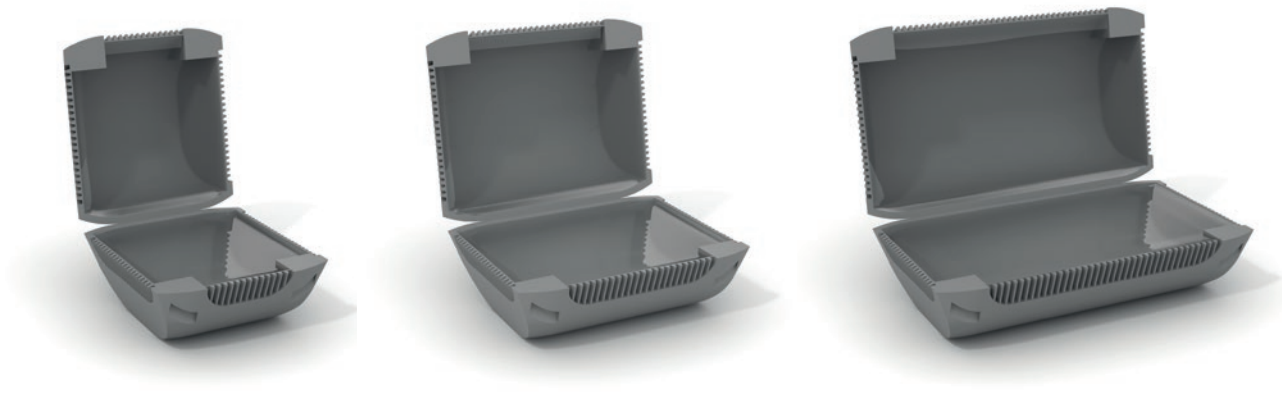
Directive EU 2015/863 (RoHS 3) Compliant



Non-toxic



Eco-friendly



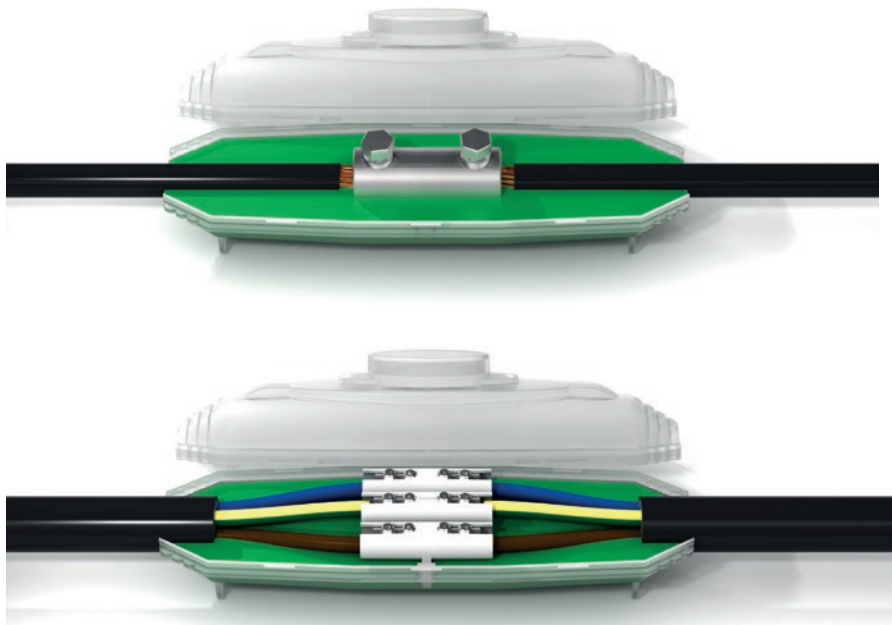
watch video

ref.	item	dimensions L x W x H (mm)	pkg. (pcs)	min. / mult. ord. q.ty (pcs)	recommended compatible connectors				
					compact lever 4 mm ²	compact lever 6 mm ²	SpringBox®	TBOX®	terminal strip
MBX01	MiniBox 1	36,2 x 32,8 x 22	1	12	1 x	1 x	1 x	2 x 2,5 mm ²	-
					1 x	-	1 x		
MBX02	MiniBox 2	42,6 x 32,8 x 22	1	12	2 x	1 x	2 x	3 x 2,5 mm ²	1 x 2,5 mm ²
					1 x	1 x	1 x		
					1 x	-	1 x		
MBX03	MiniBox 3	56,9 x 32,8 x 22	1	12	3 x	2 x	3 x	4 x 2,5 mm ²	1 x 2,5 mm ²
					2 x	1 x	2 x		
					1 x	1 x	1 x	3 x 4 mm ²	



High mechanical resistance

Polyurethane resin provides Submarine® joints with a high mechanical resistance and great protection against corrosion in all installation conditions



! NEW



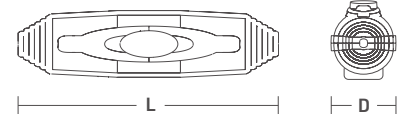
Patented modular separator for cables with 2-3-4-5 cores

APPLICATIONS

- Straight joints on low voltage cables up to 0.6/1 kV and up to 5 cores
- Installation: in cable ducts, buried, overhead, submersed
- Street lighting systems

KEY FEATURES

- **High mechanical resistance**
- **Patented modular separator for two-core, three-core, four-core or five-core cables**
- Pouring spout with Direct Injection Casting System (SciD) (except SKA0)
- Excellent electrical insulation
- Excellent protection against corrosion
- Two clear half-shells with snap-closure
- **8 sizes and 11 versions** for cables up to 1000 mm²



size	dimensions (mm) L × D
size 0	190 × 45
size 1	191 × 51
size 2	240 × 62
size 3S	357 × 62
size 3	325 × 95
size 4	520 × 100
size 5	670 × 120
size 6	870 × 200

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393

Operating temperature range
-20 °C / +90 °C

Solid final state polyurethane resin

Shelf life **3 years**



CE Marking



Double insulation



High mechanical resistance

Solid state cast resin straight joints

for cables up to 5 cores



Suggested connectors

scan QR-code to download connector selection table



cores	ref.	item	conductor cross-section range* (mm ²)	size	included accessories	cable diameter range (mm)	min./mult. ord. q.ty (pcs)	watch video	SC series (page 114)	MR series (page 113)	MC series (page 112)
●	SKA0	SKA0	6 – 50	size 0		8 – 26	10				
	SKA1	SKA1	6 – 70	size 1		7 – 30	4		•	•	•
	SKA2	SKA2	25 – 185	size 2		8 – 35	4		•	•	• (upto 25 mm ²)
	SKA3S	SKA3S	50 – 185	size 3S		23 – 35	1		•	•	
	SKA3	SKA3	95 – 400	size 3		20 – 54	1		•	• (upto 300 mm ²)	
	SKA4	SKA4	240 – 500	size 4		33 – 60	1		•	• (upto 300 mm ²)	
	SKA5	SKA5	400 – 630	size 5		45 – 73	1		•		
	SKA6	SKA6	500 – 1000	size 6		55 – 80	1		•		
●●	A00406	A0-0406	1,5 – 6	size 0		8 – 26	10				
	SKA0	SKA0	1,5 – 10			8 – 26	10		•		•
	A10410	A1-0410	1,5 – 10	size 1		7 – 30	4				
	SKA1	SKA1	2,5 – 16			7 – 30	4		•		•
	A20425	A2-0425	2,5 – 25	size 2		8 – 35	4				
	SKA2	SKA2	4 – 25			8 – 35	4		•		•
	SKA3S	SKA3S	25 – 50	size 3S		23 – 35	1		•		• (25 mm ²)
	SKA3	SKA3	25 – 95	size 3		20 – 54	1		•		• (25 mm ²)
SKA4	SKA4	120 – 150	size 4		33 – 60	1	•				
●●●	SKA5	SKA5	185 – 300	size 5		45 – 73	1		•		
	SKA6	SKA6	400	size 6		55 – 80	1		•		

JOINTS AND CONNECTING DEVICES

INCLUDED ACCESSORIES



Terminal blocks with hex grub screw for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections (hex key included)



Patented modular separator for two-core, three-core, four-core or five-core cables



KIT CONTENTS

- Two clear half-shells with snap-closure
- Solid final state two-component polyurethane resin in bags
- **Pouring spout with Direct Injection Casting system (SciD)** (except SKA0)
- Insulating tape
- Protective gloves (except SKA0)
- Installation instructions

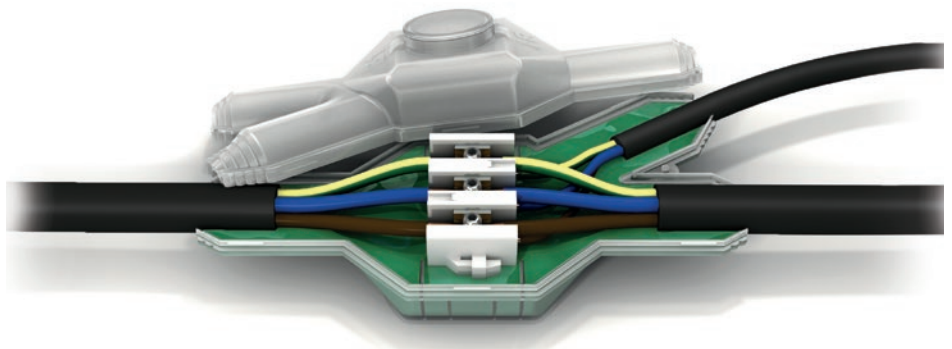
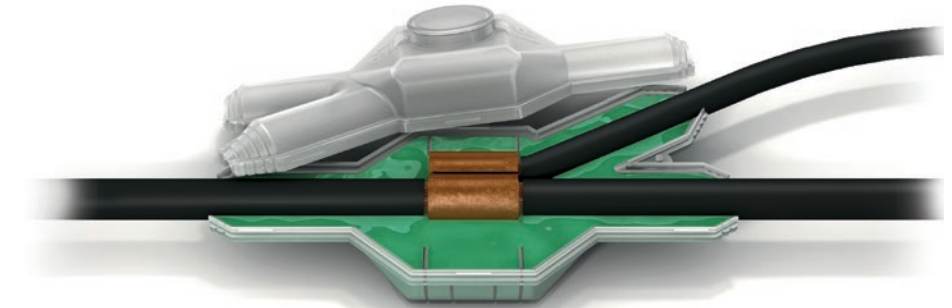
NOTE

* Listed cross-sections refer to installations with recommended connectors

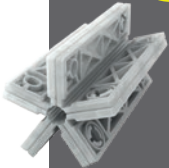


High mechanical resistance

Polyurethane resin provides Submarine® joints with a high mechanical resistance and great protection against corrosion in all installation conditions



! NEW



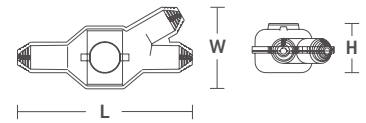
Patented modular separator for cables with 2-3-4-5 cores

APPLICATIONS

- Branch joints on low voltage cables up to 0.6/1 kV and up to 5 cores
- Installation: in cable ducts, buried, overhead, submersed
- Street lighting systems

KEY FEATURES

- **High mechanical resistance**
- **Patented modular separator for two-core, three-core, four-core or five-core cables** (except SKB0)
- Pouring spout with Direct Injection Casting System (SciD) (except SKB0)
- Excellent electrical insulation
- Excellent protection against corrosion
- Two clear half-shells with snap-closure
- **6 sizes and 9 versions** for cables up to 630 mm²



size	dimensions (mm) L × W × H
size 0	155 × 72 × 45
size 1	200 × 94 × 55
size 2	240 × 113 × 68
size 3	360 × 155 × 90
size 4	298 × 128 × 128
size 5	430 × 130 × 130

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393

Operating temperature range
-20 °C / +90 °C

Solid final state
polyurethane resin

Shelf life **3 years**



CE Marking



Double insulation



High mechanical resistance

Solid state cast resin branch joints

for cables up to 5 cores



cores	ref.	item	cross-section range* (mm ²)		size	included accessories	cable diameter range (mm)		min./mult. pkg. ord. q.ty (pcs)
			main	branch			pass.	deriv.	
●	SKB0	SKB0	1.5 – 50	1.5 – 50	size 0	–	8 – 19		1 6
	SKB1	SKB1	4 – 70	4 – 70	size 1		7 – 23		1 4
	SKB2	SKB2	35 – 150	35 – 150	size 2		12 – 27		1 1
	SKB3	SKB3	50 – 400	50 – 400	size 3		13 – 45		1 1
	SKB4	SKB4	300 – 500	70 – 300	size 4		30 – 52	17 – 34	1 1
	SKB5	SKB5	300 – 630	70 – 400	size 5		30 – 58	17 – 42	1 1
●●	B10406	B1-0406	4 – 6	2.5 – 6	size 1		7 – 23		1 4
	SKB1	SKB1	4 – 6	2.5 – 6			7 – 23		1 4
	B20416	B2-0416	6 – 16	2.5 – 16	size 2		12 – 27		1 1
	SKB2	SKB2	6 – 25	2.5 – 25			12 – 27		1 1
	B30435	B3-0435	10 – 35	2.5 – 25	size 3		13 – 45		1 1
	SKB3	SKB3	25 – 70	10 – 35			13 – 45		1 1
	SKB4	SKB4	50 – 150	10 – 50	size 4		30 – 52	17 – 34	1 1
●●●	SKB0	SKB0	1.5 – 4	1.5 – 4	size 0	–	8 – 19		1 6
	SKB3	SKB3	25 - 95	25 - 95	size 3		13 – 45		1 1
	SKB5	SKB5	95 – 185	10 – 70	size 5		30 – 58	17 – 42	1 1

Suggested connectors

scan QR-code to download connector selection table

BC series (page 118)

watch video

●

●

●

● (up to 300 mm²)

● (300 mm²)

● (300 mm²)

●

●

●

●

●

●

●

JOINTS AND CONNECTING DEVICES

INCLUDED ACCESSORIES

five-core terminal block for **copper-copper connections without interrupting main cable**

Patented modular separator for two-core, three-core, **four-core** or **five-core cables**

KIT CONTENTS

- Two clear half-shells with snap-closure
- Solid final state two-component polyurethane resin in bags
- Pouring spout with Direct Injection Casting system (SciD)** (except SKB0)
- Insulating tape
- Protective gloves (except SKB0)
- Installation instructions

NOTE

* Listed cross-sections refer to installations with recommended connectors



MR series shear bolt connectors included for cables up to 5 cores



APPLICATIONS

- Straight joints for low voltage cables up to 0.6/1 kV
- Installation: submersed, buried, in cable ducts
- **Best suited for joints on submerged pumps**

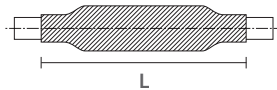
Available on request versions for different cross-sections and number of cores

KEY FEATURES

- **Specifically designed for use with included shear bolt connectors MR series** (page 113)
- Simplified installation
- Available for a wide range of cross-sections
- Resistant to chemical agents and weathering
- Excellent electrical insulation and sealing of the joint
- Good mechanical strength
- UV resistant

KIT CONTENTS

- Heat shrink tubings for cores insulation
- Outer heat shrink tubing with sealant
- **MR series shear bolt connectors page 113) suitable for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections**



cores	ref.	item	conductor cross-section (mm ²)	included connectors	joint length L (mm)	pkg. (pcs)	min./ mult. ord. (pcs)	watch video
	SJ1050C	Sealjoint 1050 C	25 – 50	1 ×	250	1	1	
	SJ1095C	Sealjoint 1095 C	50 – 95	1 ×	330	1	1	
	SJ1240C	Sealjoint 1240 C	95 – 240	1 ×	500	1	1	
	SJ1300C	Sealjoint 1300 C	150 – 300	1 ×	500	1	1	
	SJ5050C	Sealjoint 5050 C	25 – 50	5 ×	500	1	1	
	SJ5095C	Sealjoint 5095 C	50 – 95	5 ×	750	1	1	
	SJ5240C	Sealjoint 5240 C	95 – 240	5 ×	1000	1	1	
	SJ5300C	Sealjoint 5300 C	150 – 300	5 ×	1000	1	1	

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393



CE Marking

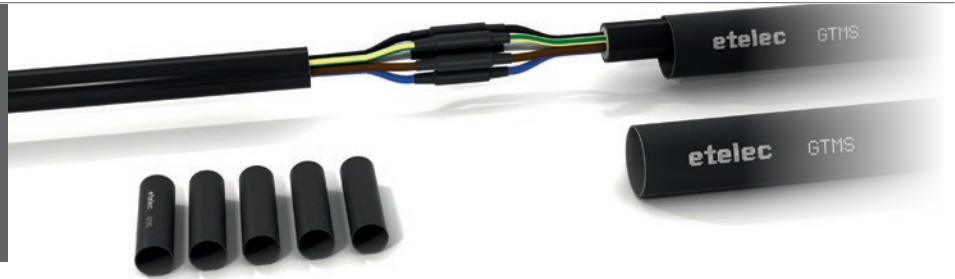


Unlimited shelf life





For cables up to 5 cores



APPLICATIONS

- Straight joints for low voltage cables up to 0.6/1 kV
- Installation: submersed, buried, in cable ducts
- **Best suited for joints on submerged pumps**

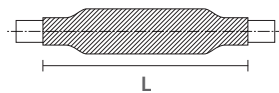
Versions available for armoured cables (GBT-A series) and with concentric neutral (GBT-N series)

KEY FEATURES

- Compact size
- Available for a wide range of cross-sections
- Resistant to chemical agents and weathering
- Excellent electrical insulation and sealing of the joint
- Good mechanical strength
- UV resistant

KIT CONTENTS

- Heat shrink tubings for cores insulation
- Outer heat shrink tubing with sealant



Recommended connectors

scan QR-code to download connector selection table

cores	ref.	item	conductor cross-section (mm ²)	joint length L (mm)	pkg. (pcs)	min./mult. ord. (pcs)	watch video		
	SJ1016	Sealjoint 1016	10 – 16	200	1	1			
	SJ1070	Sealjoint 1070	25 – 70	250	1	1			
	SJ1150	Sealjoint 1150	95 – 150	330	1	1			
	SJ1300	Sealjoint 1300	185 – 300	330	1	1			
	SJ5006	Sealjoint 5006	1,5 – 6	200	1	1			
	SJ5016	Sealjoint 5016	10 – 16	330	1	1			
	SJ5035	Sealjoint 5035	25 – 35	500	1	1			
	SJ5070	Sealjoint 5070	50 – 70	500	1	1			
	SJ5150	Sealjoint 5150	95 – 150	1000	1	1			
	SJ5300	Sealjoint 5300	185 – 300	1000	1	1			

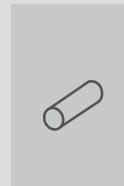
Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393



CE Marking



Unlimited shelf life



OPTIONAL CONNECTORS

SC series compression connectors (p. 114)
for copper-to-copper and aluminium-to-aluminium connections

Heat shrink fire-resistant straight joints

for armoured or unarmoured cables up to 5 cores

Compression connectors optionally available



Seajoint FIRE joints are specifically designed to ensure operation of fire resistant cables, even in the presence of fire



APPLICATIONS

- Straight joints on low voltage cables up to 0.6/1 kV armoured or unarmoured
- Emergency and safety systems on ships, in tunnels, underground and crowded places

KEY FEATURES

- Compact size
- Excellent electrical insulation and sealing
- Resistant to chemical agents, weathering and UV rays
- Good mechanical strength

KIT CONTENTS

- Heat shrink tubings for cores insulation
- Fire resistant components
- Outer heat shrink tubing with sealant
- **Armour restoration kit** (in SJ-FA series)

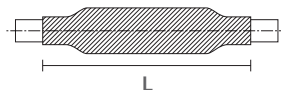


Recommended connectors

scan QR-code to download connector selection table



SC series (p. 114)



cores	ref.	item	conductor cross-section (mm ²)	included accessories	joint length L (mm)	pkg. (pcs)	min./mult. ord. q.ty (pcs)
SJ-F		joints for unarmoured cables					
	SJ5004F	Seajoint Fire 5004	1,5 – 4	-	300	1	1
	SJ5016F	Seajoint Fire 5016	6 – 16	-	300	1	1
	SJ5050F	Seajoint Fire 5050	25 – 50	-	500	1	1
	SJ5150F	Seajoint Fire 5150	70 – 150	-	500	1	1
SJ-FA		joints for armoured cables					
	SJ5004FA	Seajoint Fire 5004 A	1,5 – 4		300	1	1
	SJ5016FA	Seajoint Fire 5016 A	6 – 16		375	1	1
	SJ5050FA	Seajoint Fire 5050 A	25 – 50		500	1	1
	SJ5150FA	Seajoint Fire 5150 A	70 – 150		750	1	1

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393

Compliant to fire resistant Standards
CEI 20-36/2
IEC 60331-21

* GN-RF series for cables up to 4 cores



Fire resistant



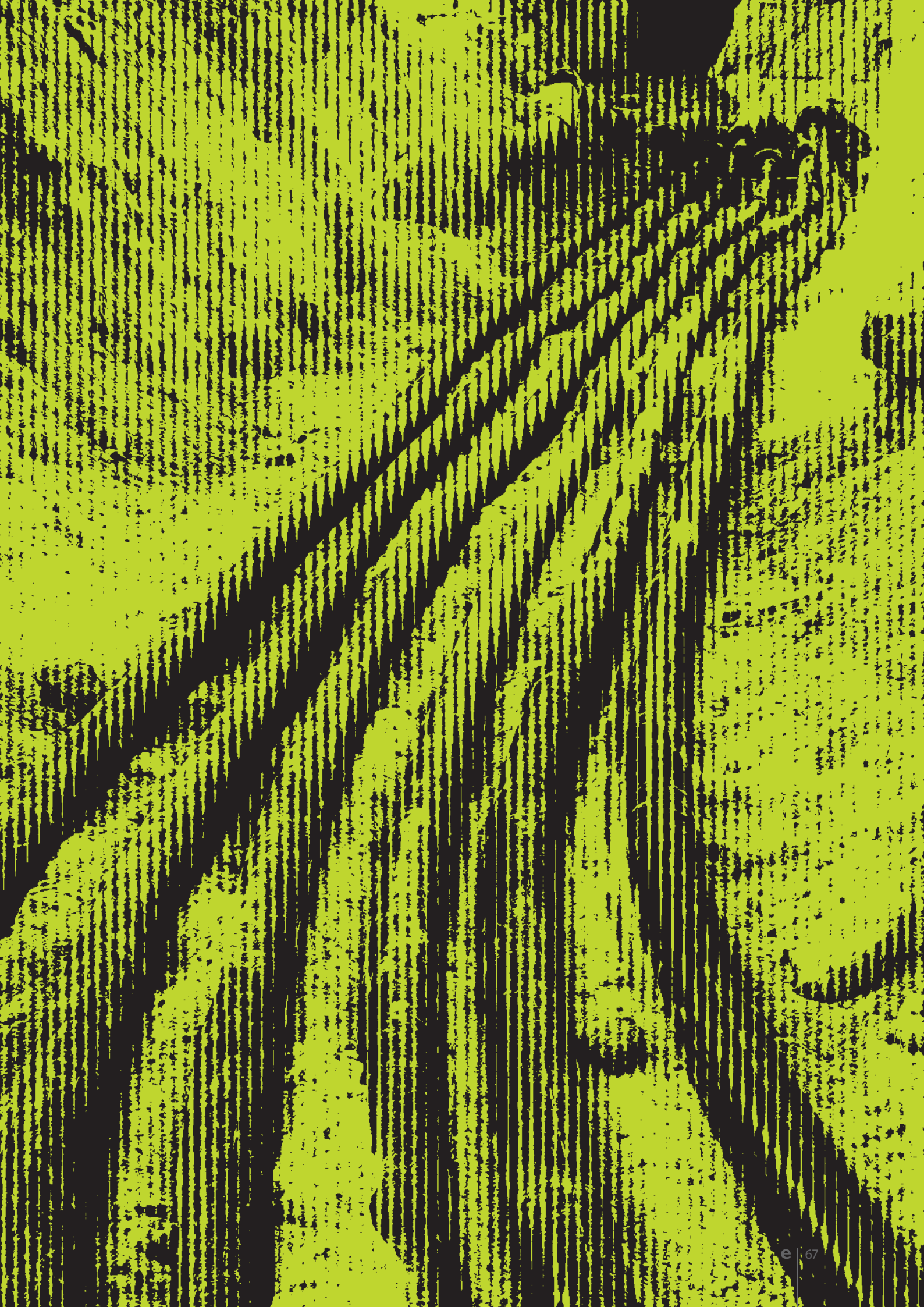
RINA Approved *



CE Marking



Unlimited shelf life



Heat shrink branch joints with wrap-around sheath

for cables up to 5 cores

Compression connectors optionally available

Suitable for branch connections without interrupting main cable



APPLICATIONS

- Branch joint on low voltage cables up to 0.6/1 kV
- Installation: submersed, buried, in cable ducts

KEY FEATURES

- Compact size
- Excellent electrical insulation and sealing of the joint
- Resistant to weathering, chemical agents and UV rays
- Good mechanical strength
- Available for a wide range of cross-sections

KIT CONTENTS

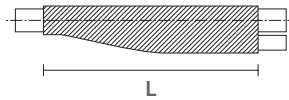
- Heat shrink tape for core insulation
- **Thick wall heat shrink tubing with sealant and steel hinge**

Recommended connectors

scan QR-code to download connector selection table



BC series
(page 118)



cores	ref.	item	conductor cross-section (mm ²)		joint length L (mm)	min./mult. ord. q.ty (pcs)	watch video
			main cable	branch cable			
●	SJ5010D	Sealjoint 5010 D	● 4 – 50	● 2,5 – 50	250	1	
●	SJ5025D	Sealjoint 5025 D	● 50 – 120	● 6 – 120	250	1	
	SJ5050D	Sealjoint 5050 D	● 150 – 300	● 6 – 300	500	1	
●●●	SJ5010D	Sealjoint 5010 D	●●● 1,5 – 10	●●● 1,5	250	1	
●●●	SJ5025D	Sealjoint 5025 D	●●● 16 – 25	●●● 2,5	250	1	
●●●	SJ5050D	Sealjoint 5050 D	●●● 25 – 50	●●● 2,5 – 25	500	1	

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393



CE Marking



Unlimited shelf life



OPTIONAL CONNECTORS

C-shape compression connector BC series (p. 118)
for copper-to-copper and aluminium-to-aluminium connections

Heat shrink fire-resistant branch joints with wrap-around sheath for cables up to 5 cores

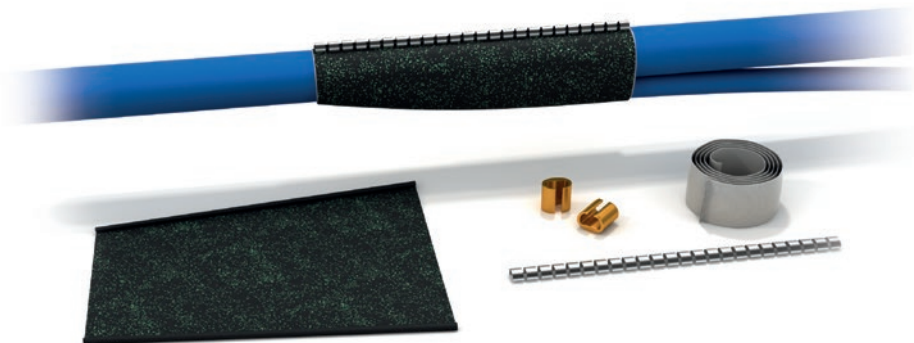
Compression connectors included



SealJoint FIRE joints Series are specifically designed to ensure operation of fire resistant cables, even in the presence of fire

APPLICATIONS

- Branch joint on low voltage cables up to 0.6/1 kV
- Emergency and safety systems on ships
- Tunnels, underground and other highly crowded places

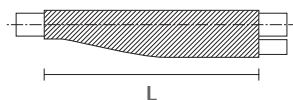


KEY FEATURES

- Compact size
- Excellent electrical insulation and sealing of the joint
- Resistant to weathering, chemical agents and UV rays
- Good mechanical strength

KIT CONTENTS

- Components for cores insulation
- Fire resistant components
- Fire resistant wrap-around sheath with sealant
- **C-shape compression connectors**



cores	ref.	item	conductor cross-section (mm ²)		included connectors	joint length L (mm)	min./mult. ord. qty (pcs)
			main cable	branch cable			
	SJ5010FDC	Sealjoint Fire 5010 D	1,5 – 10	1,5 – 2,5	2 ×	300	1
	SJ5016FDC	Sealjoint Fire 5016 D	1,5 – 16	1,5 – 2,5			

Compliant to Standard for 0.6/1 kV low voltage joints
EN 50393

Compliant to fire resistant standards
CEI 20-36/2
IEC 60331-21



Fire resistant



CE Marking



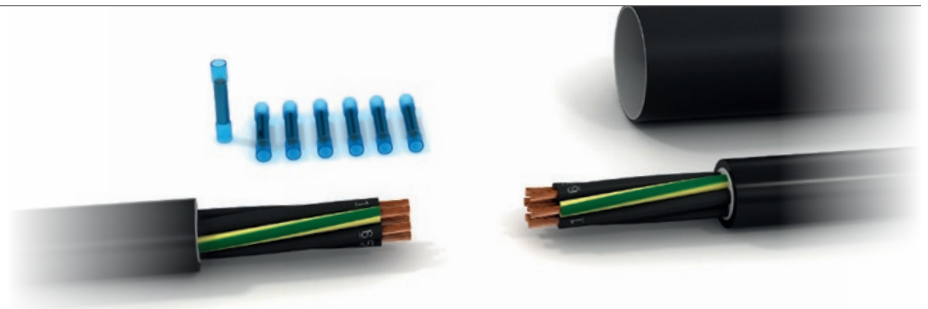
Unlimited shelf life



For signal and control cables up to 30 cores

APPLICATIONS

- Straight joint for low voltage signal/control cables
- Immersion, buried, in cable ducts installation

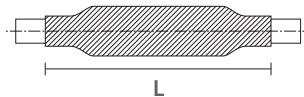


KEY FEATURES

- Compact size
- Resistant to chemical agents and weathering
- Excellent electrical insulation and sealing of the joint
- Good mechanical strength
- UV resistant

KIT CONTENTS

- Outer tubing with sealant
- **Insulated compression connectors** for each core
- **Armour restoration kit** (in SJ-FA series)



cores	ref.	item	conductor cross-section range (mm ²)	included connectors/accessories	joint length L (mm)	pkg. (pcs)	min./mult. ord. q.ty (pcs)
SJ-S joints for unarmoured cables							
4 – 7	SJ0007S	Sealjoint 007 S	1,5 – 2,5	7 ×	-	250	1 1
8 – 14	SJ0014S	Sealjoint 014 S		14 ×	-	330	1 1
16 – 30	SJ0030S	Sealjoint 030 S		30 ×	-	500	1 1
SJ-SA joints for armoured cables							
4 – 7	SJ0007SA	Sealjoint 007 SA	1,5 – 2,5	7 ×	-	330	1 1
8 – 14	SJ0014SA	Sealjoint 014 SA		14 ×	-	330	1 1
16 – 30	SJ0030SA	Sealjoint 030 SA		30 ×	-	500	1 1

Compliant to Standard for 0.6/1 kV low voltage joints **EN 50393**



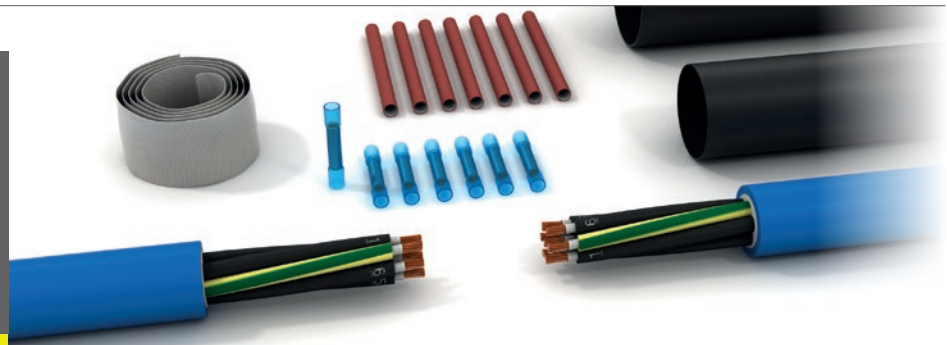
CE Marking



Unlimited shelf life



Specifically designed to ensure operation of fire resistant signal and control cables, even in the presence of fire



APPLICATIONS

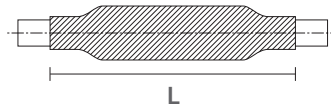
- Straight joint for low voltage signal/control cables
- Immersion, buried, in cable ducts installation

KEY FEATURES

- Compact size
- Resistant to chemical agents and weathering
- Excellent electrical insulation and sealing of the joint
- Good mechanical strength
- UV resistant

KIT CONTENTS

- Fire resistant outer tubing with sealant
- Fire resistant components
- **Insulated compression connectors** for each conductor
- **Armour restoration kit** (in SJ-FA series)



cores	ref.	item	conductor cross-section range (mm ²)	included connectors/accessories	joint length L (mm)	pkg. (pcs)	min./mult. ord. q.ty (pcs)
-------	------	------	--	---------------------------------	---------------------	------------	----------------------------

SJ-FS joints for unarmoured cables

4 – 7	SJ0007FS	Sealjoint Fire 007 S	1,5 – 2,5	7 ×	-	330	1 1
8 – 14	SJ0014FS	Sealjoint Fire 014 S		14 ×	-	330	1 1
16 – 30	SJ0030FS	Sealjoint Fire 030 S		30 ×	-	500	1 1

SJ-FSA joints for armoured cables

4 – 7	SJ0007FSA	Sealjoint Fire 007 SA	1,5 – 2,5	7 ×		375	1 1
8 – 14	SJ0014FSA	Sealjoint Fire 014 SA		14 ×		375	1 1
16 – 30	SJ0030FSA	Sealjoint Fire 030 SA		30 ×		500	1 1

Compliant to Standard for 0.6/1 kV low voltage joints **EN 50393**

Compliant to fire resistant Standards **CEI 20-36/2 IEC 60331-21**

* GN-RF Series



Fire resistant



RINA Approved *

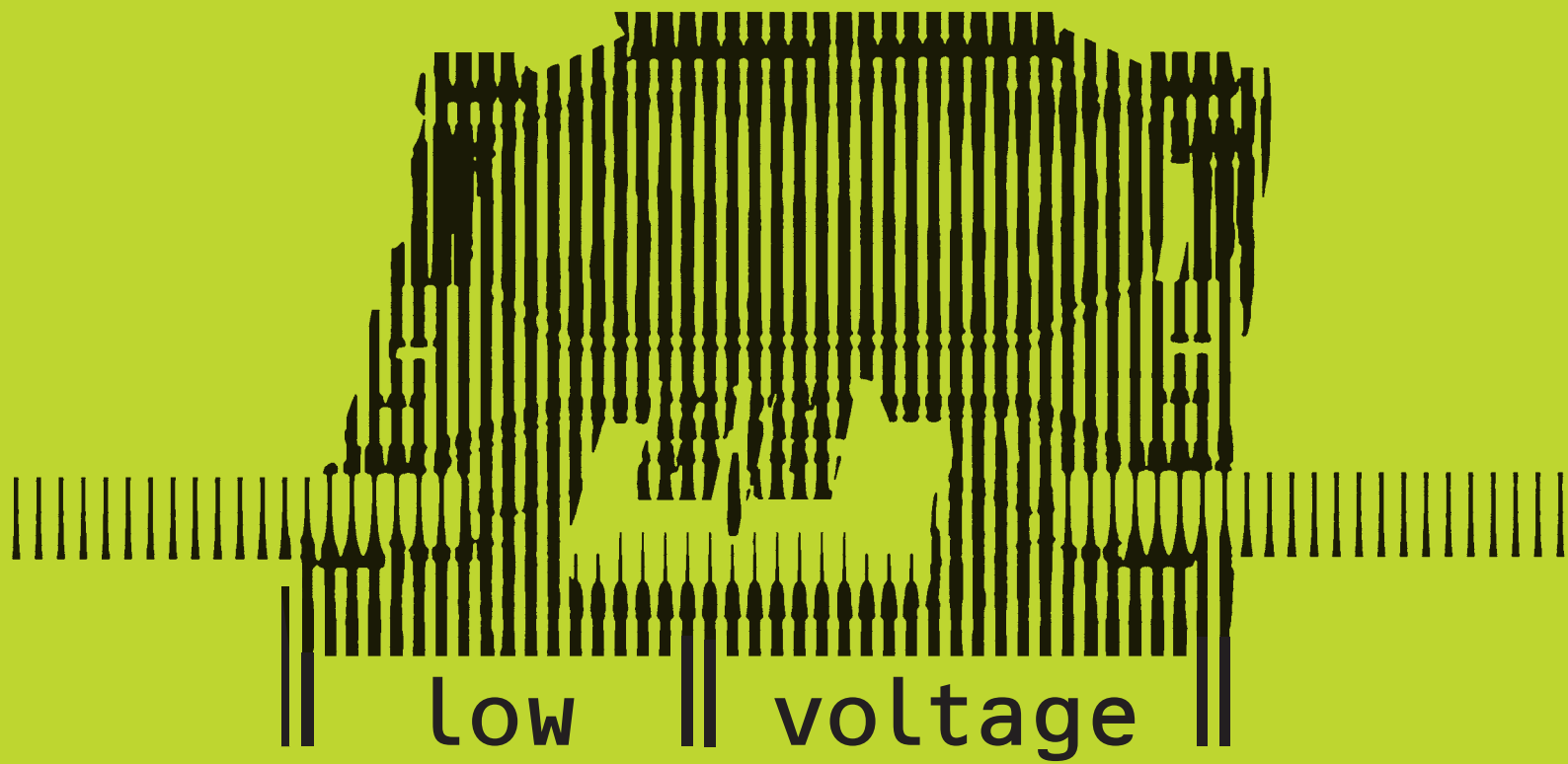


CE Marking



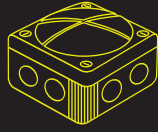
Unlimited shelf life

02 JUNCTION BOXES



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PDF

JUNCTION BOXES



JUBOX
Junction boxes for IP68 solutions

74



**IP68 solution
without cable
glands**

JuBox boxes, used in combination with Etelec insulating fillers, allows to reach an **IP68 protection degree rating without the use of cable glands**

KEY FEATURES

- Versatility:
IP66 by perforating membranes;
IP67 with cable glands
(which automatically remove the membrane) without locking nuts;
IP68 with Etelec filler and no cable glands
- Easy and quick installation:
no special tools needed
- Compact design
- For both indoor or outdoor
- Weathering, ozone and UV resistant

FEATURES

- Polypropylene (PP) shell, with thermoplastic elastomeric (TPE) flexible seals and membranes
- Cable entries with **flexible self-sealing perforation membranes and thread for optional cable glands without locking nuts**
- Cable back entries with flexible self-sealing perforation membranes (except JuBox 2)
- Integrated cover locking screws, quick stroke, in plastic material
- 4 rear fixing holes
- Mounting bracket with quick-connect clip included

Compliant to Low Voltage Directive 2014/35/EU (LVD) in accordance with **EN 60670-1** **EN 60670-22**

Degree of protection (EN 60529)

IP66

IP67 with the use of cable glands
IP68 (15 metri) with the use of filler and without the use of cable glands

Flame retardant (Glow-wire test)
750 °C

Operating temperature range
-30 °C / +100 °C

Installation temperature
-5 °C / +60 °C

Cable diameter (see table)
3 - 17 mm

Integrated threading for cable gland (see table)
M20 × 1,5
M25 × 1,5



IP68
with Etelec® fillers


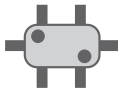

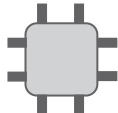

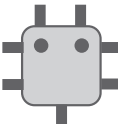

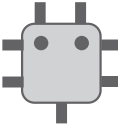


Compliant to Directive EU 2015/863 (RoHS 3)































Halogen free



watch
video



















ref.	item	dimensions L × P × H (mm)	cable openings			volume (liters)	pkg. (pcs)	min. / mult. ord. q.ty (pcs)
			position	thread	cable diameter (mm)			
	JBX049 JUBOX 1	85 × 49 × 51		M20	3 – 12	0,10	4	4
	JBX085 JUBOX 2	85 × 85 × 51		M20	3 – 12	0,20	2	2
	JBX095 JUBOX 3	95 × 95 × 60		M20	3 – 12	0,32	2	2
	JBX110 JUBOX 4	110 × 110 × 66		M20 (rear) M25 (side)	5 – 17	0,55	1	1

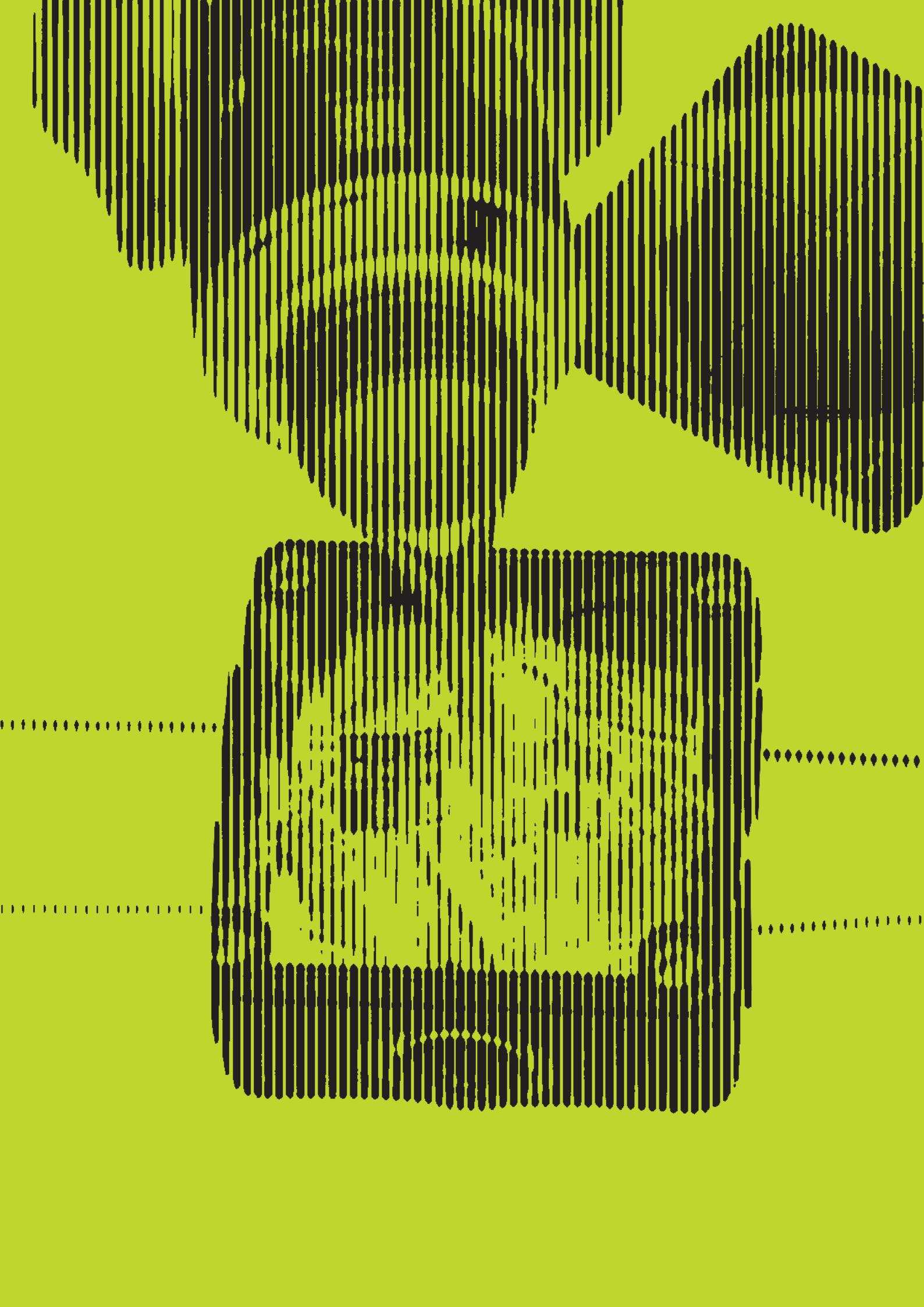
Application hints

	Suggested number and type of lever connectors	connection type				
		straight	branch	2x straight	straight + branch	2x branch
		cable formation (max cores no. × max cross-section)				
JuBox 1						
	3 ×  (4 mm ² - 3 ways)	 2,5 mm ²	 2,5 mm ²	-	-	-
JuBox 2						
	4 ×  (4 mm ² - 3 ways)	 2,5 mm ²	 2,5 mm ²	 2,5 mm ²	 2,5 mm ²	-
JuBox 3						
	6 ×  (4 mm ² - 3 ways)	 2,5 mm ²	 2,5 mm ²	 2,5 mm	 2,5 mm	 2,5 mm
JuBox 4						
	8 ×  (4 mm ² - 3 ways)	 4 mm ²	 2,5 mm ²	 4 mm ²	 2,5 mm ²	 2,5 mm ²
	8 ×  (6 mm ² - 3 ways)	 6 mm ²	 6 mm	 6 mm ²	 6 mm ²	 6 mm ²

NOTE - Straight connections are also achievable with 2-ways lever connectors

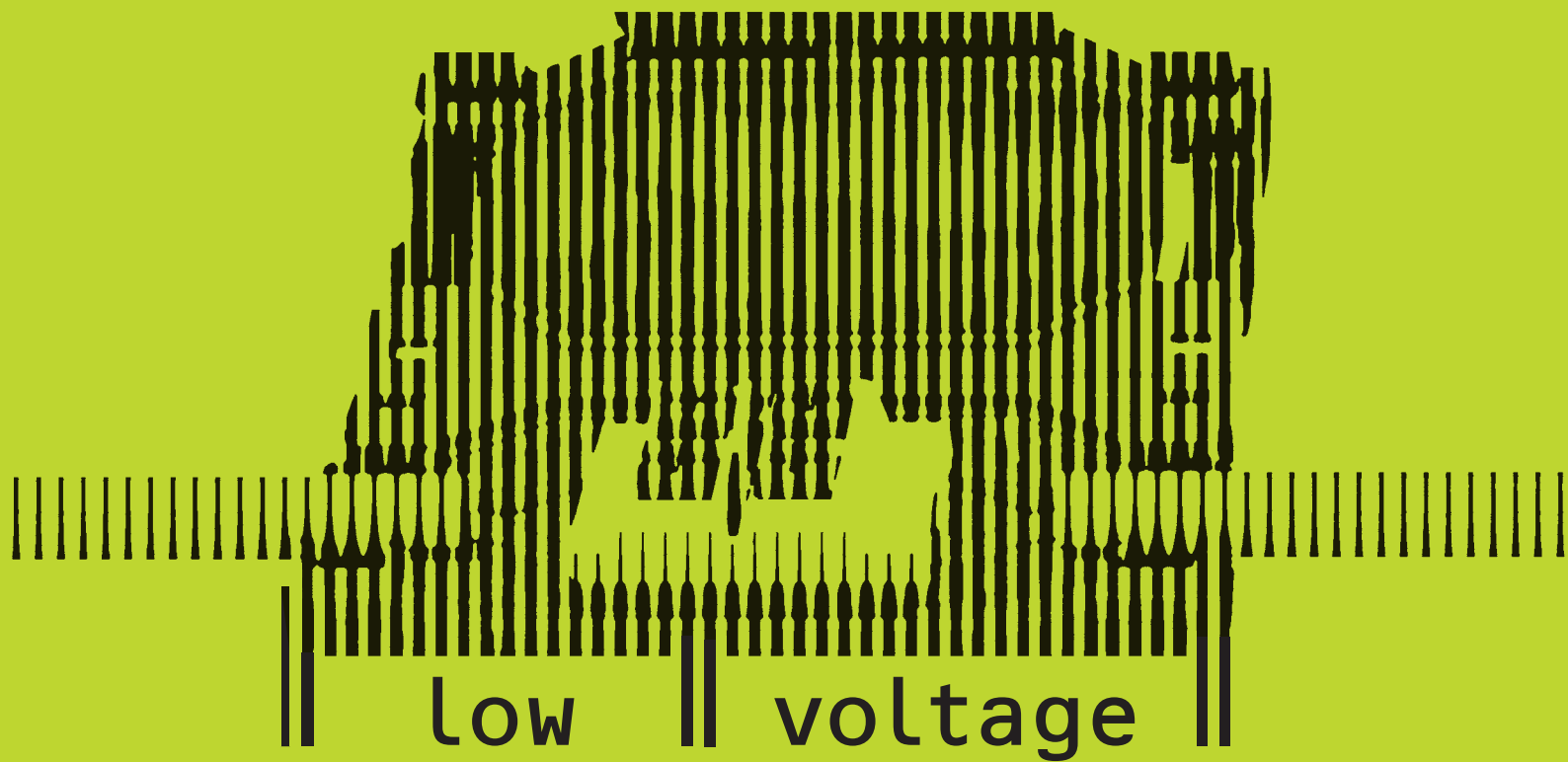
Application hints

		connection type	
		4-way branch	5-way branch
			
Suggested number and type of lever connectors		cable formation (max cores no. × max cross-section)	
JuBox 1			
	-	-	-
JuBox 2			
	3 ×  (4 mm ² - 5 ways)	 1,5 mm ²	 1,5 mm ²
JuBox 3			
	3 ×  (4 mm ² - 5 ways)	 2,5 mm ²	 1,5 mm ²
JuBox 4			
	3 ×  (4 mm ² - 5 ways)	 4 mm ²	 4 mm ²
	3 ×  (6 mm ² - 5 ways)	 6 mm ²	 6 mm ²





03 HEAT-SHRINK TUBINGS



download
PDF

HEAT SHRINK TUBINGS IN SPOOL



GTUC/GTGV
thin wall - black and coloured

82



GTMS
medium wall

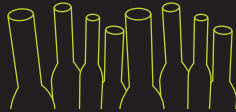
85



ROLLBOX®
thin wall - dispenser box

86

HEAT SHRINK TUBINGS IN BARS



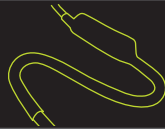
TUBINGS®
thin wall - black and coloured

88



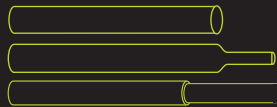
miniTUBINGS®
thin wall - assorted precut pieces case

90



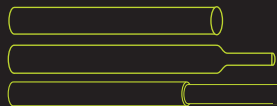
GTUM
resistant to moisture
flexible - with sealant

91



SEALINGS®
medium wall
bars with sealant

92



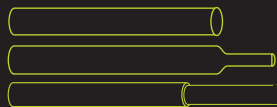
GTAS
thick wall
bars with sealant

94



GTCR
wrap-around sheath
with sealant

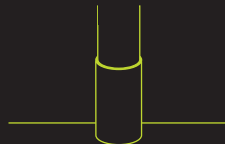
96



GTRF
fire resistant
bars

97

ANTICORROSIVE HEAT SHRINK TUBINGS FOR POLE PROTECTION

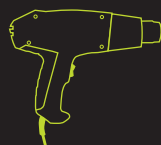


GTPA
tubing for poles to be installed

98

RJS
sheath for already installed poles

APPLICATION TOOLING FOR HEAT SHRINK TUBING



Heat-shrink application
tools

99



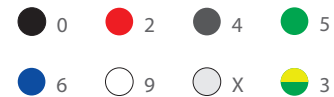
APPLICATIONS

- Electrical insulation up to 0.6/1 kV
- Protection against abrasion and corrosion of electrical cables and conductors
- Reconstruction of low voltage cable insulation
- Identification of cables and electrical conductors

KEY FEATURES

- Excellent mechanical protection
- Resistant to weathering
- Excellent electrical insulation
- High tensile strength
- UV resistant
- Suitable for use in place of adhesive or self-amalgamating insulating tapes

AVAILABLE COLOURS



Thin wall
cross-linked polyolefin

Shrink ratio
2:1

Good flexibility

Operating temperature
-55 °C / +125 °C

Minimum shrink
temperature
70 °C

Dielectric strength (UL 224)
17 kV/mm

Tensile strength (UL 224)
14.8 MPa

Elongation (UL 224)
460 %

After ageing (UL 224)
Tensile strength
14.5 MPa
Elongation
480 %



Shrink ratio



Self-extinguishing
(except GTUC-X)




Compliant
to Directive
EU 2015/863 (RoHS 3)




Halogen free

Thin wall heat shrink tubing in spool

2:1 cross-linked polyolefin

GTUC 	item *	D/d (mm)	thickness t (mm)	cable diameter range min-max (mm)	colour						spool length (m)	min./ mult. ord.qty (m)	
					BLACK	RED	YELLOW	GREEN	BLUE	WHITE			CLEAR
					0	2	4	5	6	9			X
					ref.								
	GTUC-1,2/0,6	1,2/0,6	0,45	0,7 – 1,1	GT0012	GT2012	GT4012	GT5012	GT6012	GT9012	GTX012	300	300
	GTUC-1,6/0,8	1,6/0,8	0,45	1 – 1,4	GT0016	GT2016	GT4016	GT5016	GT6016	GT9016	GTX016	300	300
	GTUC-2,4/1,2	2,4/1,2	0,50	1,4 – 2,2	GT0024	GT2024	GT4024	GT5024	GT6024	GT9024	GTX024	150	150
	GTUC-3,2/1,6	3,2/1,6	0,50	1,9 – 2,9	GT0032	GT2032	GT4032	GT5032	GT6032	GT9032	GTX032	150	150
	GTUC-4,8/2,4	4,8/2,4	0,50	2,9 – 4,3	GT0048	GT2048	GT4048	GT5048	GT6048	GT9048	GTX048	150	150
	GTUC-6,4/3,2	6,4/3,2	0,65	3,8 – 5,8	GT0064	GT2064	GT4064	GT5064	GT6064	GT9064	GTX064	75	75
	GTUC-9,5/4,8	9,5/4,8	0,65	5,7 – 8,6	GT0095	GT2095	GT4095	GT5095	GT6095	GT9095	GTX095	75	75
	GTUC-12,7/6,4	12,7/6,4	0,65	7,7 – 11,4	GT0127	GT2127	GT4127	GT5127	GT6127	GT9127	GTX127	75	75
	GTUC-19/9,5	19/9,5	0,75	11,4 – 17,1	GT0019	GT2019	GT4019	GT5019	GT6019	GT9019	GTX019	75	75
	GTUC-25,4/12,7	25,4/12,7	0,90	15,2 – 22,9	GT0254	GT2254	GT4254	GT5254	GT6254	GT9254	GTX254	30	30
	GTUC-38/19	38/19	1,00	22,8 – 34,2	GT0038	GT2038	GT4038	GT5038	GT6038	GT9038	GTX038	30	30
	GTUC-51/25,4	51/25,4	1,15	30,5 – 45,9	GT0051	GT2051	GT4051	GT5051	GT6051	GT9051	GTX051	30	30
	GTUC-76/38	76/38	1,27	45,6 – 68,4	GT0076	GT2076	GT4076	GT5076	GT6076	GT9076	GTX076	15	15
	GTUC-102/51	102/51	1,40	61,2 – 91,8	GT0102	GT2102	GT4102	GT5102	GT6102	GT9102	GTX102	15	15

* Add colour suffix to complete item identification
(e.g. GTUC-1.2/0.6-0)

GTGV 	item	D/d (mm)	thickness t (mm)	cable diameter range min-max (mm)	colour	spool length (m)	min./ mult. ord.qty (m)
					YELLOW/GREEN		
					ref.		
	GTGV-3/1,5	3/1,5	0,51	1,8 – 2,7	GT3003	150	150
	GTGV-6/3	6/3	0,58	3,6 – 5,4	GT3006	75	75
	GTGV-8/4	8/4	0,64	4,8 – 7,2	GT3008	75	75
	GTGV-10/5	10/5	0,64	6 – 9	GT3010	75	75
	GTGV-12/6	12/6	0,64	7,2 – 10,8	GT3012	75	75
	GTGV-19/9	19/9	0,76	11 – 17	GT3019	75	75
	GTGV-26/13	26/13	0,89	15,6 – 23,4	GT3026	30	30
	GTGV-38/19	38/19	1,00	22,8 – 34,2	GT3038	30	30



D Supplied diameter (before shrinkage)
d Recovered diameter (after free shrinkage)
t Recovered thickness (after free shrinkage)

HEAT-SHRINK
TUBING

GTMS

Medium wall heat shrink tubing in spool

3:1 cross-linked polyolefin



APPLICATIONS

- Electrical insulation of low voltage conductors, cables and accessories up to 0.6/1 kV
- Sealing and protection against abrasion and corrosion on low and medium voltage cables and cable accessories
- Reliable in harsh climatic conditions and in polluted environments

KEY FEATURES

- Excellent mechanical protection
- Resistant to weathering
- Excellent electrical insulation
- High tensile strength
- UV resistant
- Suitable for use in place of adhesive or self-amalgamating insulating tapes

3:1

ref.	item	D/d (mm)	thickness T (mm)	t (mm)	cable/wire diameter range (mm)	spool length (m)	min./mult. ord. qty (m)
GT30010	GTMS-10/3-A/U	10/3	0,3	1,0	3,5 – 9	40	40
GT30016	GTMS-16/5-A/U	16/5	0,3	1,4	5,5 – 14,5	40	40
GT30025	GTMS-25/8-A/U	25/8	0,4	2,0	9 – 22,5	40	40
GT30035	GTMS-35/12-A/U	35/12	0,4	2,0	13 – 31,5	30	30
GT30050	GTMS-50/16-A/U	50/16	0,5	2,0	18 – 45	25	25
GT30063	GTMS-63/19-A/U	63/19	0,6	2,4	21 – 57	15	15
GT30075	GTMS-75/22-A/U	75/22	0,6	2,7	24 – 68	10	10



Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
350 % (min)

Hardness (ISO 868)
≥ 45 shore D

Heat resistance (IEC 60216)
120 °C (min)

Dielectric strength (IEC 60243)
≥ 10 kV/mm (min)

Volume resistivity (IEC 60093)
1×10¹⁰ Ω·cm (min)

Water absorption (ISO 62 method 1) ≤0.25% (max) after 14 days at 23 °C

Low temperature Flexibility (ASTM D2671 procedure C)
No cracking after 4 hours at -40°C

Accelerated ageing (ISO 188) (7 days at 150 °C)

Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
350 % (min)

Resistance to liquids (ISO 1817) (7 days in transformer oil at 23 °C)

Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
300 % (min)



Shrink ratio



Directive EU 2015/863 (RoHS 3) Compliant



Halogen free

Rollbox®

Thin wall heat shrink tubing in dispenser box

2:1 cross-linked polyolefin



HEAT-SHRINK TUBING

HEAT-SHRINK TUBING

APPLICATIONS

- Electrical insulation up to 0.6/1 kV
- Protection against abrasion and corrosion of electrical cables and conductors
- Reconstruction of low voltage cable insulation
- Identification of cables and electrical conductors

KEY FEATURES

- Excellent mechanical protection
- High tensile strength
- Resistant to weathering
- UV resistant
- Excellent electrical insulation
- Suitable for use in place of adhesive or self-amalgamating insulating tapes

AVAILABLE COLOURS

- BK ● RD
- BE ● YG



5 × Rollbox® Colour Black

HL1606
Hot air gun TOO INCLUDED

ref.	kit contents	min./mult. ord. qty (pk)
KT1064	5 assorted size black Rollbox (2 × RB0032, 1 × RB0048, 1 × RB0064, 1 × RB0095) Electric hot air gun Air-on HL1606 2000 W (p. 99) INCLUDED	1

Thin wall cross-linked polyolefin

Shrink ratio
2:1

Good flexibility

Operating temperature
-55 °C / +125 °C

Minimum shrink temperature
70 °C

Dielectric strength (UL 224)
17 kV/mm

Tensile strength (UL 224)
14.8 MPa

Elongation (UL 224)
460 %

After ageing (UL 224)

Tensile strength
14.5 MPa

Elongation
480 %



Shrink ratio



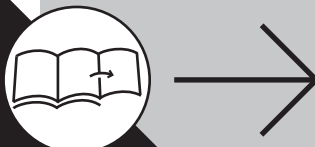
Self-extinguishing



Compliant to Directive EU 2015/863 (RoHS 3)



Halogen free



Tubing selection table

item *	D/d (mm)	thickness t (mm)	cable/wire diameter range (mm)
ROLLBOX 1,6	1,6/0,8	0,45	1 – 1,4
ROLLBOX 2,4	2,4/1,2	0,50	1,4 – 2,2
ROLLBOX 3,2	3,2/1,6	0,50	1,9 – 2,9
ROLLBOX 4,8	4,8/2,4	0,50	2,9 – 4,3
ROLLBOX 6,4	6,4/3,2	0,65	3,8 – 5,8
ROLLBOX 9,5	9,5/4,8	0,65	5,7 – 8,6
ROLLBOX 12,7	12,7/6,4	0,65	7,7 – 11,4
ROLLBOX 19	19/9,5	0,75	11,4 – 17,1
ROLLBOX 25,4	25,4/12,7	0,90	15,2 – 22,9

2:1 item *	Colour			length (m)	min./mult. ord. qty (pk)
	BLACK BK	RED RD	BLUE BE		
	ref.				
ROLLBOX 1,6	RB0016	RB2016	RB6016	10	1
ROLLBOX 2,4	RB0024	RB2024	RB6024	10	1
ROLLBOX 3,2	RB0032	RB2032	RB6032	10	1
ROLLBOX 4,8	RB0048	RB2048	RB6048	10	1
ROLLBOX 6,4	RB0064	RB2064	RB6064	8	1
ROLLBOX 9,5	RB0095	RB2095	RB6095	6	1
ROLLBOX 12,7	RB0127	RB2127	RB6127	5	1
ROLLBOX 19	RB0019	RB2019	RB6019	5	1
ROLLBOX 25,4	RB0254	RB2254	RB6254	4	1

2:1 item	Colour	length (m)	min./mult. ord. qty (pk)
	YELLOW/GREEN YG		
	ref.		
ROLLBOX 6,4 YG	RB3064	5	1
ROLLBOX 9,5 YG	RB3095	3	1
ROLLBOX 12,7 YG	RB3127	3	1
ROLLBOX 19 YG	RB3019	2	1
ROLLBOX 25,4 YG	RB3254	1,5	1

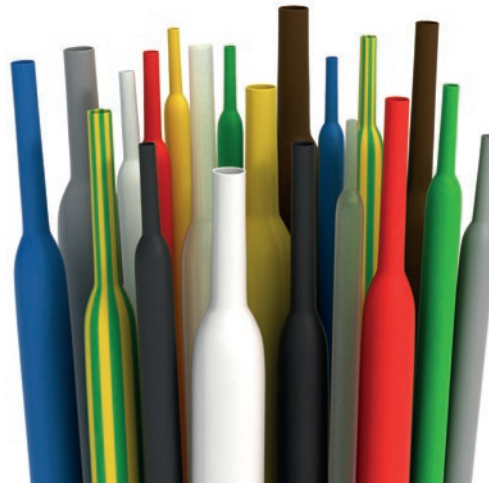
* Add colour suffix to complete item identification (e.g. ROLLBOX 1.6 BK)



- D** Supplied diameter (before shrinkage)
- d** Recovered diameter (after free shrinkage)
- t** Recovered thickness (after free shrinkage)



Packed
in minibags



Tubì bundle kit TOO® voltage detector INCLUDED



ref.	kit contents	min./ mult. ord. (cf)
KT1082	20 assorted black Tubings® with carton package GT1107 3,2/1,6 mm 5 pcs. GT1109 6,4/3,2 mm 5 pcs. GT1110 9,5/4,8 mm 5 pcs. GT1111 12,7/6,4 mm 5 pcs. TOO® digital voltage detector INCLUDED CAT III 1000 V with integrated LED light	1

APPLICATIONS

- Electrical insulation up to 0.6/1 kV
- Protection against abrasion and corrosion of electrical cables and conductors
- Reconstruction of low voltage cable insulation
- Identification of cables and electrical conductors

KEY FEATURES

- Mechanical protection
- Resistant to weathering
- Excellent electrical insulation
- High tensile strength
- UV resistant
- Suitable for use in place of adhesive or self-amalgamating insulating tapes
- Individually labelled for easy identification

AVAILABLE COLOURS

- BK ● RD ○ WH ● BE
- TR ● YE ● VE ● GR
- BW ● YG

Thin wall
cross-linked polyolefin

Shrink ratio
2:1

Good flexibility

Operating temperature
-55 °C / +125 °C

Minimum shrink temperature
70 °C

Dielectric strength (UL 224)
17 kV/mm

Tensile strength (UL 224)
14.8 MPa

Elongation (UL 224)
460 %

After ageing (UL 224)
Tensile strength **14.5 MPa**
Elongation **480 %**



Shrink ratio



Self-extinguishing
(except GTUC/B-TR)



Compliant to Directive
EU 2015/863 (RoHS 3)



Halogen free

Tubing selection table

item *	D/d (mm)	thickness (mm)	bar length (m)	cable/wire diameter range (mm)
GTUC/B-2,4/1,2	2.4/1.2	0.50	1.0	1.4 – 2.2
GTUC/B-3,2/1,6	3.2/1.6	0.50	1.0	1.9 – 2.9
GTUC/B-4,8/2,4	4.8/2.4	0.50	1.0	2.9 – 4.3
GTUC/B-6,4/3,2	6.4/3.2	0.65	1.0	3.8 – 5.8
GTUC/B-9,5/4,8	9.5/4.8	0.65	1.0	5.7 – 8.6
GTUC/B-12,7/6,4	12.7/6.4	0.65	1.0	7.7 – 11.4
GTUC/B-19/9,5	19/9.5	0.75	1.0	11.4 – 17.1
GTUC/B-25,4/12,7	25.4/12.7	0.90	1.0	15.2 – 22.9
GTUC/B-38/19	38/19	1.00	1.0	22.8 – 34.2
GTUC/B-51/25,4	51/25.4	1.15	1.0	30.5 – 45.9



2:1	colour	min./mult. ord. qty (pcs)	colour								min./mult. ord. qty (pcs)
	BLACK ● BK		RED ● RD	WHITE ● WH	BLUE ● BE	CLEAR ● TR	YELLOW ● YE	GREEN ● VE	GREY ● GR	BROWN ● BW	
item *	ref.		ref.								
GTUC/B-2,4/1,2	GT1106	5 5	GT1116	GT1126	GT1136	GT1146	GT1156	GT1166	GT1176	GT1186	5 5
GTUC/B-3,2/1,6	GT1107	5 5	GT1117	GT1127	GT1137	GT1147	GT1157	GT1167	GT1177	GT1187	5 5
GTUC/B-4,8/2,4	GT1108	5 5	GT1118	GT1128	GT1138	GT1148	GT1158	GT1168	GT1178	GT1188	5 5
GTUC/B-6,4/3,2	GT1109	5 5	GT1119	GT1129	GT1139	GT1149	GT1159	GT1169	GT1179	GT1189	5 5
GTUC/B-9,5/4,8	GT1110	5 5	GT1120	GT1130	GT1140	GT1150	GT1160	GT1170	GT1180	GT1190	5 5
GTUC/B-12,7/6,4	GT1111	5 5	GT1121	GT1131	GT1141	GT1151	GT1161	GT1171	GT1181	GT1191	5 5
GTUC/B-19/9,5	GT1112	5 5	GT1122	GT1132	GT1142	GT1152	GT1162	GT1172	GT1182	GT1192	5 5
GTUC/B-25,4/12,7	GT1113	3 3	GT1123	GT1133	GT1143	GT1153	GT1163	GT1173	GT1183	GT1193	3 3
GTUC/B-38/19	GT1114	2 2	GT1124	GT1134	GT1144	GT1154	GT1164	GT1174	GT1184	GT1194	2 2
GTUC/B-51/25,4	GT1115	1 1	GT1125	GT1135	GT1145	GT1155	GT1165	GT1175	GT1185	GT1195	1 1

* Add colour suffix to complete item identification (e.g. GTUC/B-2,4/1,2-BK)

2:1	colour	length (m)	min./mult. ord. qty (m)
item	YELLOW / GREEN ● YG		
item	ref.		
GTUC/B-3,2/1,6-YG	GT1197	1.0	5 5
GTUC/B-4,8/2,4-YG	GT1198	1.0	5 5
GTUC/B-6,4/3,2-YG	GT1199	1.0	5 5
GTUC/B-9,5/4,8-YG	GT1200	1.0	5 5
GTUC/B-12,7/6,4-YG	GT1201	1.0	5 5
GTUC/B-19/9,5-YG	GT1202	1.0	5 5
GTUC/B-25,4/12,7-YG	GT1203	1.0	3 3
GTUC/B-38/19-YG	GT1204	1.0	2 2



D Supplied diameter (before shrinkage)
d Recovered diameter (after free shrinkage)
t Recovered thickness (after free shrinkage)



APPLICATIONS

- Electrical insulation up to 0.6/1 kV
- Protection against abrasion and corrosion of electrical cables and conductors
- Reconstruction of low voltage cable insulation
- Identification of cables and electrical conductors

KEY FEATURES

- Excellent mechanical protection
- Resistant to weathering
- Excellent electrical insulation
- High tensile strength
- UV resistant
- Suitable for use in place of adhesive or self-amalgamating insulating tapes
- Assorted size and colour
- Handy 6-compartment case

FEATURES

- 170 precut pieces each 100 mm long
- 6 sizes (D/d in mm): 2.4/1.2 - 3.2/1.6 - 4.8/2.4 - 6.4/3.2 - 9.5/4.8 - 12.7/6.4
- **miniTUBINGS colour: each size is assorted with all colours (black, red, white, blue, yellow)**



ref.	item	colours	piece length (mm)	pack. (pcs)	min./mult. ord. (pk)
TUBOX001	miniTUBINGS black	●	100	170	12
TUBOX002	miniTUBINGS colour	● ● ● ● ●	100	170	12

Thin wall cross-linked polyolefin

Shrink ratio
2:1

Good flexibility

Operating temperature
-55 °C / +125 °C

Minimum shrink temperature
70 °C

Dielectric strength (UL 224)
17 kV/mm

Tensile strength (UL 224)
14.8 MPa

Elongation (UL 224)
460 %

After ageing (UL 224)
Tensile strength **14.5 MPa**
Elongation **480 %**



Shrink ratio



Self-extinguishing



Compliant to Directive
EU 2015/863 (RoHS 3)



Halogen free

GTUM

Moisture resistant flexible heat shrink tubing

cross-linked polyolefin with sealant - 1.2 meter bars



APPLICATIONS


- Electrical insulation up to 0.6/1 kV
- Sealing and protection against abrasion and corrosion of electrical cables and conductors **with wide varying diameter or irregular shape**
- Reconstruction of low voltage cable insulation

FEATURES


- Cross-linked polyolefin
- Hot melt sealant internally coated
- High shrink ratio (3:1 or 4:1)
- Excellent flexibility
- Approvals: UL E85381, MIL-DTL-23053/4 Class 3
- Black

HEAT-SHRINK TUBING

3:1 shrink ratio

	ref.	item	D/d (mm)	bar length (m)	thickness t (mm)	cable diameter range (mm)	min./mult. ord. qty (pcs)
	GT7003	GTUM-3/1-0	3/1	1.2	1.00	1.4 – 2.6	5 pcs
	GT7006	GTUM-6/2-0	6/2	1.2	1.00	2.8 – 5.2	5 pcs
	GT7009	GTUM-9/3-0	9/3	1.2	1.40	4.2 – 7.8	5 pcs
	GT7012	GTUM-12/4-0	12/4	1.2	1.78	5.6 – 10.4	5 pcs
	GT7019	GTUM-19/6-0	19/6	1.2	2.25	8.6 – 16.4	5 pcs
	GT7024	GTUM-24/8-0	24/8	1.2	2.54	11.2 – 20.8	5 pcs

4:1 shrink ratio

	ref.	item	D/d (mm)	bar length (m)	thickness t (mm)	cable diameter range (mm)	min./mult. ord. qty (pcs)
	GT7104	GTUM-4/1-0	4/1	1.2	1.00	1.6 – 3.4	5 pcs
	GT7108	GTUM-8/2-0	8/2	1.2	1.00	3.2 – 6.8	5 pcs
	GT7112	GTUM-12/3-0	12/3	1.2	1.40	4.8 – 10.2	5 pcs
	GT7116	GTUM-16/4-0	16/4	1.2	1.78	6.4 – 13.6	5 pcs
	GT7124	GTUM-24/6-0	24/6	1.2	2.25	9.6 – 20.4	5 pcs
	GT7132	GTUM-32/8-0	32/8	1.2	2.54	12.8 – 27.2	5 pcs
	GT7152	GTUM-52/13-0	52/13	1.2	2.54	20.8 – 44.2	5 pcs

Dielectric strength (IEC 60243)
120 kV/cm (min)

Density (ISO 1183 metodo A)
1,0-1,2 g/cm³

Tensile strength (ISO37)
9 MPa (min)

Elongation (ISO 37)
300 % (min)



D Supplied diameter (before shrinkage)
d Recovered diameter (after free shrinkage)
t Recovered thickness (after free shrinkage)



Compliant to Directive
EU 2015/863 (RoHS 3)



Hot melt sealant

Sealings tubings are internally coated with hot melt sealant, which ensures effective moisture sealing even in presence of irregular shapes and surfaces



APPLICATIONS

- Electrical insulation of low voltage conductors, cables and accessories up to 0.6/1 kV
- Sealing and protection against abrasion and corrosion on low and medium voltage cables, accessories and components.
- Reliable in harsh climatic conditions and in polluted environments
- Continuous immersion installations

KEY FEATURES

- Medium wall cross-linked polyolefin with high electrical performance and mechanical strength
- UV-stabilized against irradiation and weathering
- Carbon black additivated
- Halogen-, silicone-, lead- and aluminium-free
- Non-toxic, non-corrosive
- Colour black
- Unlimited shelf life

Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
350 % (min)

Hardness (ISO 868)
≥ 45 shore D

Heat resistance (IEC 60216)
(tubing without sealant)
120 °C (min)

Dielectric strength (IEC 60243)
≥ 10 kV/mm (min)

Volume resistivity (IEC 60093)
1×10¹⁰ Ω·cm (min)

Water absorption
(ISO 62 method 1)
≤0.25% (max)
after 14 days at 23 °C

Low temperature flexibility
(ASTM D2671 procedure C)
No cracking after 4 hours at -40°C

Accelerated ageing (ISO 188)
(7 days at 150 °C)

Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
350 % (min)

Resistance to liquids (ISO 1817)
(7 days in transformer oil at 23 °C)

Tensile strength (ISO37)
14 MPa (min)

Elongation (ISO 37)
300 % (min)




Shrink ratio



Compliant to Directive
EU 2015/863 (RoHS 3)



Halogen free

3:1	ref.	item	D/d (mm)	bar length (m)	thickness		cable diameter range (mm)	pack. (pcs)	min./ mult. ord. qty (pcs)
					T (mm)	t (mm)			
	GT31010	GTMS-10/3-1000/S	10/3	1.0	0.3	1.0	3.5 – 9	10	10
	GT31016	GTMS-16/5-1000/S	16/5	1.0	0.3	1.4	5.5 – 14.5	10	10
	GT31025	GTMS-25/8-1000/S	25/8	1.0	0.4	2.0	9 – 22.5	10	10
	GT31035	GTMS-35/12-1000/S	35/12	1.0	0.4	2.0	13 – 31.5	10	10
	GT31050	GTMS-50/16-1000/S	50/16	1.0	0.5	2.0	18 – 45	5	5
	GT31063	GTMS-63/19-1000/S	63/19	1.0	0.6	2.4	21 – 57	5	5
	GT31075	GTMS-75/22-1000/S	75/22	1.0	0.6	2.7	24 – 68	5	5
	GT31085	GTMS-85/25-1000/S	85/25	1.0	0.6	2.8	28 – 77	1	1
	GT31095	GTMS-95/29-1000/S	95/29	1.0	0.7	3.1	32 – 86	1	1
	GT31115	GTMS-115/34-1000/S	115/34	1.0	0.7	3.1	37 – 104	1	1
	GT31140	GTMS-140/42-1000/S	140/42	1.0	0.7	3.1	46 – 126	1	1
	GT31160	GTMS-160/50-1000/S	160/50	1.0	0.7	3.2	55 – 144	1	1
	GT31180	GTMS-180/60-1000/S	180/60	1.0	0.7	3.2	66 – 162	1	1



- D** Supplied diameter (before shrinkage)
- T** Thickness before shrinkage
- d** Recovered diameter (after free shrinkage)
- t** Recovered thickness (after free shrinkage)

GTAS

Thick wall heat shrink tubing sealant coated

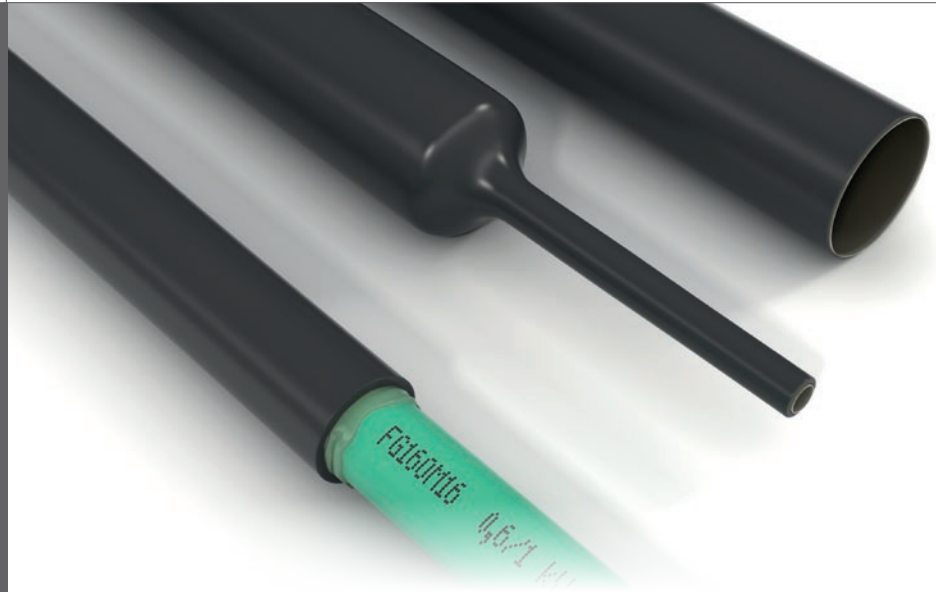
4:1 cross-linked polyolefin - 1 meter bars

HEAT-SHRINK
TUBING



Hot melt sealant

GTAS tubings are internally coated with hot melt sealant, which ensures effective moisture sealing even in presence of irregular shapes and surfaces



APPLICATIONS

- Electrical insulation of low voltage conductors, cables and accessories up to 0.6/1 kV
- Sealing and mechanical protection against corrosion on low, medium and high voltage cables, accessories and components
- Reliable in harsh climatic conditions and in polluted environments
- Continuous immersion installations
- Suitable for marine, offshore and shipbuilding applications

FEATURES

- Thick wall cross-linked polyolefin with high electrical performance and mechanical strength
- With hot melt sealant
- UV-stabilized against irradiation and weathering
- Carbon black additivated
- Halogen-, silicone-, lead- and aluminium-free
- Non-toxic, non-corrosive
- Black
- Unlimited shelf life

Operating temperature
-40 °C / +100 °C

Shrink temperature
> 120 °C

Low temperature flexibility
(ASTM D 2671 procedure C)
No cracking after 4 hours at -40°C

Dielectric strength (IEC 60243)
≥ 10 kV/mm (min)

Volume resistivity (IEC 60093)
1×10¹⁰ Ω·cm (min)

Dielectric constant (IEC 60250)
5.0 (max)

Density (ISO 1183 method A)
0.8–1.0 g/cm³

Hardness (ISO 868)
≥ 45 shore D

Longitudinal shrink after free recovery
≤ -10%

Tensile strength (ISO37)
12 MPa (min)

Elongation (ISO 37)
350 % (min)

Water absorption (ISO 62 method 1)
≤ 0.25% (max) after 14 days at 23 °C

Accelerated ageing (ISO 188)
(7 days at 150 °C)

Tensile strength (ISO37)
12 MPa (min)

Elongation (ISO 37)
350 % (min)



Shrink ratio




Compliant to Directive
EU 2015/863 (RoHS 3)



Halogen free

GTAS

Thick wall heat shrink tubing sealant coated 4:1 cross-linked polyolefin - 1 meter bars

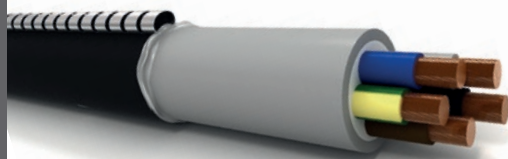
4:1	ref.	item	D/d (mm)	bar length (m)	thickness		cable diameter range (mm)	pack. (pcs)	min./ mult. ord. qty (pcs)
					T (mm)	t (mm)			
	GT40009	GTAS-12/3-1000/S	12/3	1.0	0.7	2.0	3.5 – 10	10	10
	GT40013	GTAS-16/4-1000/S	16/4	1.0	0.8	2.4	4.5 – 14	10	10
	GT40020	GTAS-24/6-1000/S	24/6	1.0	0.8	2.7	6.5 – 22	10	10
	GT40033	GTAS-34/8-1000/S	34/8	1.0	1.2	4.0	9 – 31	10	10
	GT40043	GTAS-48/12-1000/S	48/12	1.0	1.3	4.5	13 – 44	5	5
	GT40051	GTAS-56/16-1000/S	56/16	1.0	1.0	4.4	17.5 – 50	5	5
	GT40070	GTAS-70/20-1000/S	70/20	1.0	1.0	4.4	22 – 63	5	5
	GT40085	GTAS-90/25-1000/S	90/25	1.0	1.0	4.3	27 – 81	1	1
	GT40105	GTAS-110/30-1000/S	110/30	1.0	1.0	4.3	33 – 100	1	1
	GT40130	GTAS-130/35-1000/S	130/35	1.0	1.0	4.3	38 – 118	1	1
	GT40160	GTAS-160/50-1000/S	160/50	1.0	1.0	4.3	55 – 144	1	1
	GT40180	GTAS-180/50-1000/S	180/50	1.0	1.0	4.3	55 – 162	1	1

HEAT-SHRINK
TUBING



- D** Supplied diameter (before shrinkage)
- T** Thickness before shrinkage
- d** Recovered diameter (after free shrinkage)
- t** Recovered thickness (after free shrinkage)

GTCR tubings are suitable for repair of outer jacket of already installed electrical cables and connections



APPLICATIONS

- Permanent repair (in low voltage) of outer jacket of already installed electrical cables and connections
- Electrical insulation of low voltage cables and accessories up to 0.6/1 kV
- Repair, sealing and protection of Medium Voltage cables

KEY FEATURES

- Quick installation
- Excellent electrical features
- High mechanical strength and abrasion resistance
- Suitable for use in place of adhesive or self-amalgamating insulating tapes

FEATURES

- Thick wall **cross-linked polyolefin** with hot melt sealant
- UV-stabilized against irradiation and weathering
- Carbon black additivated
- Halogen-, silicone-, lead- and aluminium-free
- Non-toxic – non-corrosive
- Shrink ratio > 3:1
- Black



ref.	item	D/d (mm)	length (m)	thickness T (mm) t (mm)		cable/wire diameter range (mm)	pack. (pcs)	min./mult ord. qty (pcs)
GT41034	GTCR-35/9-1000/S	35/9	1.0	0.3	2.4	11 – 21	1	1
GT41053	GTCR-54/15-1000/S	54/15	1.0	0.3	2.0	17 – 32	1	1
GT41084	GTCR-86/21-1000/S	86/21	1.0	0.3	2.0	24 – 50	1	1
GT41107	GTCR-108/27-1000/S	108/27	1.0	0.3	2.0	31 – 65	1	1
GT41143	GTCR-144/28-1000/S	144/28	1.0	0.3	1.8	33 – 86	1	1
GT41198	GTCR-203/50-1000/S	203/50	1.0	0.3	2.1	56 – 120	1	1
GT41250	GTCR-257/91-1000/S	257/91	1.0	0.4	1.7	103 – 150	1	1

Operating temperature
-30 °C / +100 °C

Shrink temperature
> 120 °C

Low temperature flexibility (ASTM D 2671 procedure C)
No cracking
after 4 hours at -40°C

Dielectric strength (IEC 60243)
≥ 10 kV/mm (min)

Volume resistivity (IEC 60093)
1×10¹⁰ Ω·cm (min)

Dielectric constant (IEC 60250)
5.0 (max)

Density (ISO 1183 method A)
1.0-1.2 g/cm³

Hardness (ISO 868)
≥ 50 shore D

Tensile strength (ISO37)
15 MPa (min)

Elongation (ISO 37)
350 % (min)



D Supplied diameter (before shrinkage)
T Thickness before shrinkage
d Recovered diameter (after free shrinkage)
t Recovered thickness (after free shrinkage)

Water absorption (ISO 62 method 1)
≤0.5% (max)
after 14 days at 23 °C

Accelerated ageing (ISO 188) (7 days at 150 °C)

Tensile strength (ISO37)
12 MPa (min)

Elongation (ISO 37)
300 % (min)



Shrink ratio



Compliant to Directive EU 2015/863 (RoHS 3)



Halogen free

Heat shrink tubing for fire hazard environments

thick wall cross-linked polyolefin - 1.5 m bars

GTRF tubings are suitable for use in safety and emergency networks which requires circuit service integrity and/or insulation in fire hazard environments




APPLICATIONS

- Electrical insulation of conductors, cables and accessories in low voltage applications up to 0.6/1 kV
- Mechanical protection of low and medium voltage cables
- **Suitable for use in emergency and safety systems on ships, in tunnels, underground, public buildings, power plants, and in low fire hazard environments**

FEATURES

- Thick wall cross-linked polyolefin
- High electrical and mechanical resistance
- Halogen-, lead- and aluminium-free
- Non-corrosive
- UV-stabilized against irradiation
- Black

	ref.	item	D/d (mm)	bar length (m)	thickness		cable/wire diameter range (mm)	pack. (pcs)	min./mult ord. qty (pcs)
					T (mm)	t (mm)			
	GT50008	GTRF-8/3-1500/U	8/3	1.5	0.6	2.0	3.5 – 7	1	1
	GT50016	GTRF-16/5-1500/U	16/5	1.5	0.7	2.4	5.5 – 14.5	1	1
	GT50024	GTRF-24/8-1500/U	24/8	1.5	0.9	2.9	9 – 21.5	1	1
	GT50032	GTRF-32/12-1500/U	32/12	1.5	1.0	4.0	13 – 29	1	1
	GT50045	GTRF-45/16-1500/U	45/16	1.5	1.0	4.0	17.5 – 40.5	1	1
	GT50060	GTRF-60/22-1500/U	60/22	1.5	1.0	4.0	24 – 54	1	1
	GT50070	GTRF-70/25-1500/U	70/25	1.5	1.0	4.0	27.5 – 63	1	1

Dielectric strength (IEC 60243)
10 kV/mm (min)

Volume resistivity (IEC 60093)
1×10¹⁰ Ω·cm (min)

Operating temperature
-40 °C / 120 °C

Flammability and flame propagation test (EN 60332-1)
pass

Smoke density test (IEC 61034)
pass

Temperature index (NES 715 Type B)
250 °C (min)

Longitudinal shrink after free recovery
≤ -15%

Density (ISO 1183 method A)
1.5 g/cm³

Tensile strength (ISO37)
8 MPa (min)

Elongation (ISO 37)
200 % (min)

Corrosion (ASTM D 2671 proc. A)
No corrosion after 16 hours at 150 °C

Low temperature flexibility (ASTM D 2671 procedure C)
No cracking after 4 hours at -40 °C

Hardness (ISO 868)
≥ 40 SHORE D



- D** Supplied diameter (before shrinkage)
- T** Thickness before shrinkage
- d** Recovered diameter (after free shrinkage)
- t** Recovered thickness (after free shrinkage)



Shrink ratio



Compliant to Directive EU 2015/863 (RoHS 3)



Halogen free

GTPA

Anticorrosive heat shrink tubing for pole protection

Sleeve for pole installation

APPLICATIONS

- Protection against corrosion of metal poles
- Street lighting
- Electric traction
- Traffic lights
- Signs and signals



FEATURES

- Thick wall cross-linked polyolefin
- With hot melt sealant
- Black

ref.	item	D/d (mm)	height (mm)	pole diameter range (mm)	min./mult. ord. qty (pcs)
PA0801	GTPA-90/50-450	90/25		60 – 70	1
PA1121	GTPA-125/60-450	125/60		85 – 105	1
PA1501	GTPA-150/60-450	150/60	450	85 – 130	1
PA1961	GTPA-200/75-450	200/75		145 – 180	1
PA2521	GTPA-252/95-450	252/95		175 – 230	1



- D** Supplied diameter (before shrinkage)
d Recovered diameter (after free shrinkage)

RJS

Anticorrosive heat shrink sheath for pole protection

for already installed poles

APPLICATIONS

- Protection against corrosion of metal poles
- Street lighting
- Electric traction
- Traffic lights
- Signs and signals

RJS Spool for poles already installed

ref.	item	spool length (m)	height (mm)	min./mult. ord. qty (m)
PA0430	RJS-30MX430	30	430	30

FEATURES

- Thick wall cross-linked polyolefin
- With hot melt sealant
- Black

WPCP Closing patch for RJS

ref.	item	width (mm)	height (mm)	min./mult. ord. qty (pcs)
PA4381	WPCP-IV-100X430	100	430	5

APPLICATION TOOLING FOR HEAT SHRINK TUBING

AB 76 BR

Gas powered portable hot air tool



APPLICATIONS

- Installation of heat shrink tubing and accessories

FEATURES

- Autonomy of 1 hour and 30 minutes
- Maximum temperature at burner output 750 °C
- 340 g gas refill capsule (AC 19 BP)

ref.	item	min./mult. ord. qty (pcs)
AB76BR	AB 76 BR	1
AC19BP	AC 19 BP	12

HL1606

Air·on portable electric hot air gun



APPLICATIONS

- Installation of heat shrink tubing and accessories

FEATURES

- 2 temperature and air flow levels: 350 °C (250 l/min) or 550 °C (550 l/min)
- Air flow reduction nozzle included
- Power: 2000 W

ref.	item	min./mult. ord. qty (pcs)
HL1606	Air·on	1

HL1610

Air·on portable electric hot air gun with temperature adjustment and display



APPLICATIONS

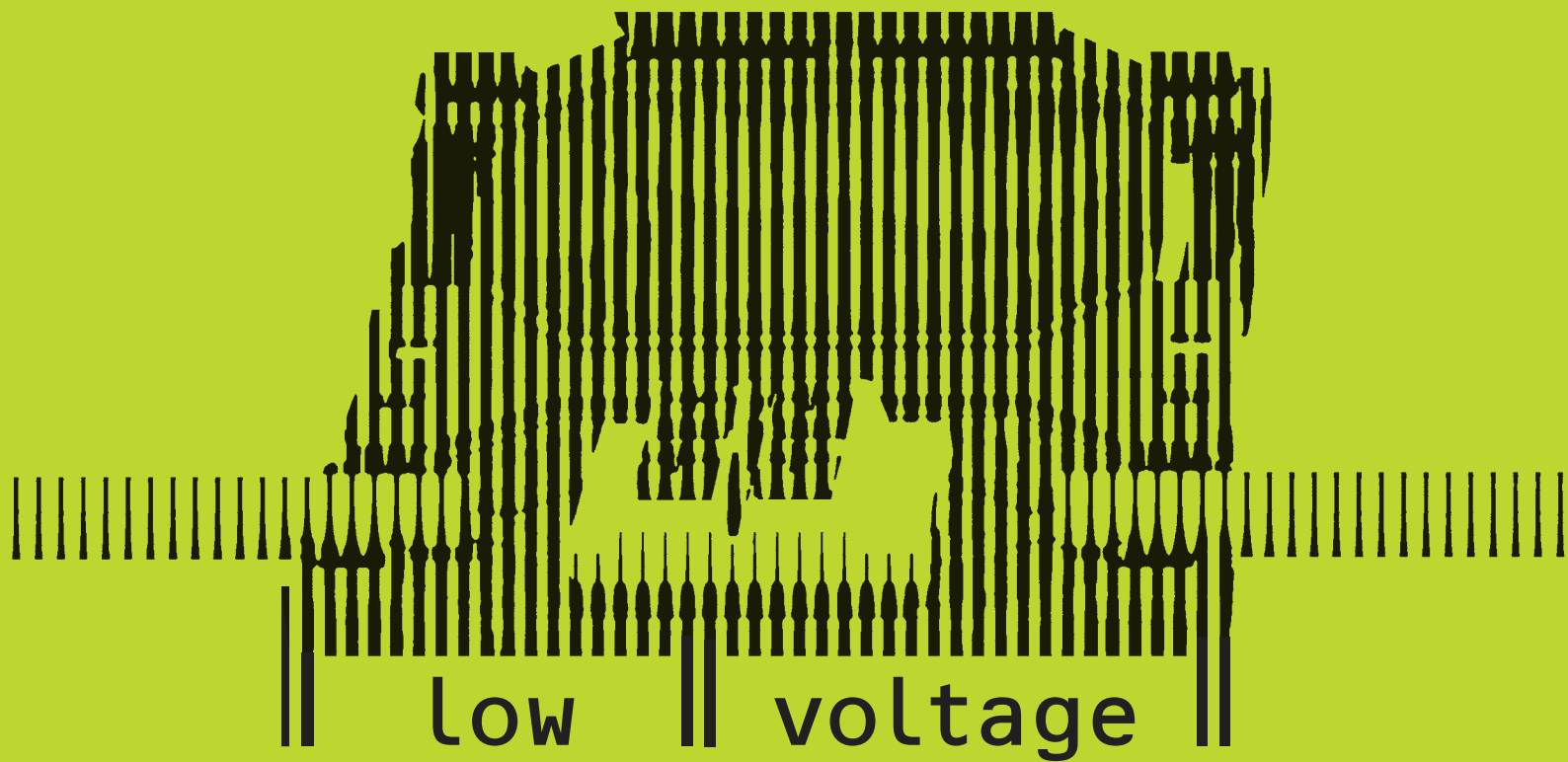
- Installation of heat shrink tubing and accessories

FEATURES

- Buttons and LCD display for temperature adjustment
- Air flow temperature: 50-450/650 °C
- Air flow adjustable on 2 levels: 250 or 550 l/min
- Air flow reduction nozzle included
- Power: 2000 W

ref.	item	min./mult. ord. qty (pcs)
HL1610	Air·on display	1

04 HEAT-SHRINK TERMINATIONS AND PRE-MOULDED PARTS



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PDF

HEAT SHRINK TERMINATIONS



TTBT
Low voltage heat shrink terminations

102

HEAT SHRINK PRE-MOULDED PARTS



CTC
Sealing caps for single-core cables

103



TBT
Breakout boots for 2- to 5-core cables

104






APPLICATIONS

- Termination for low voltage 3, 4 and 5-core cables up to 0.6/1 kV

KIT CONTENTS

- Heat shrink tubing for lug protection
- TBT heat shrink part in polyolefin with hot melt sealant

cores	ref.	item	conductor cross-section range (mm ²)	min./mult. ord. qty (pcs)
	TTBT3016	TTBT-3/16	4 – 16	1
	TTBT3050	TTBT-3/50	25 – 50	1
	TTBT3150	TTBT-3/150	70 – 150	1
	TTBT3300	TTBT-3/300	185 – 300	1
	TTBT4016	TTBT-4/16	4 – 16	1
	TTBT4050	TTBT-4/50	25 – 50	1
	TTBT4150	TTBT-4/150	70 – 150	1
	TTBT4300	TTBT-4/300	185 – 300	1
	TTBT5010	TTBT-5/10	4 – 10	1
	TTBT5050	TTBT-5/50	16 – 50	1
	TTBT5095	TTBT-5/95	70 – 95	1
	TTBT5240	TTBT-5/240	120 – 240	1

Dielectric strength (IEC 60243)
100 kV/cm

Volume resistivity (IEC 60093)
1×10¹² Ω·cm

Density (ISO 1183 method A)
1.0–1.3 g/cm³

Hardness (ISO 868)
40–60 SHORE D

Tensile strength (ISO37)
10.5 MPa (min)

Elongation (ISO 37)
300 % (min)

Low temperature flexibility (ASTM D 2671)
No cracking
after 4 hours at –40°C

Water absorption (ISO 62 method 1)
0.5% max
after 14 days at 23 °C

Accelerated ageing (ISO 188)
after 7 days at 150 °C

Tensile strength (ISO37)
8.5 MPa (min)

Elongation (ISO 37)
100 % (min)

Heat shrink sealing caps for low voltage single-core cables polyolefin with hot melt sealant



APPLICATIONS

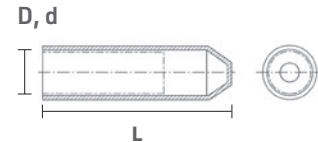
- Cable end sealing for low voltage single-core cables up to 0.6/1 kV
- Sealing and protection of cable end during transportation and laying

KEY FEATURES

- Excellent mechanical protection
- Resistant to chemical agents and weathering
- Excellent electrical insulation
- Excellent sealing
- UV resistant

cores	ref.	item	cable diameter range (mm)	D/d (mm)	L (mm)	pk. (pcs)	min./mult. ord. qty (pcs)
	PP00104	CTC-10/4	4 – 8	12/4	40	3	3
	PP02075	CTC-20/7,5	8 – 16	20/7,5	55	3	3
	PP03515	CTC-35/15	16 – 35	40/15	90	3	3
●	PP05525	CTC-55/25	25 – 47	55/25	125	3	3
	PP07532	CTC-75/32	35 – 68	75/32	140	3	3
	PP10045	CTC-100/45	45 – 90	100/45	160	3	3
	PP12070	CTC-120/70	64 – 120	130/60	160	3	3

- D** Supplied diameter
L Minimum supply length
d Recovered diameter after free shrinkage



Dielectric strength (ASTM D149)
12 kV/mm (min)

Volume resistivity (ASTM D257)
1×10¹⁴ Ω·cm (min)

Relative permittivity (ASTM D150)
5 (max)

Density (ASTM D792)
1.05±0.2 g/cm³

Hardness (ASTM D2240)
45±10 SHORE D

Tensile strength (ASTM D638)
12 MPa (min)

Elongation (ASTM D638)
350 % (min)

Low temperature flexibility (ASTM D2671)
No cracking
after 4 hours at -40°C

Continuous operating temperature (IEC 60216)
-40 °C / +110 °C

Water absorption (ASTM D570)
0.2% max

Accelerated ageing (ASTM D2671)
after 500 hours at 120°C

Tensile strength (ASTM D638)
11 MPa (min)

Elongation (ASTM D638)
300 % (min)

Heat shrink pre-moulded parts

breakout boot for low voltage 2 to 5 core cables
polyolefin with hot melt sealant



APPLICATIONS

- Sealing and protection of cable crutch in low voltage multi-core cables up to 0.6/1 kV from 2 to 5 cores

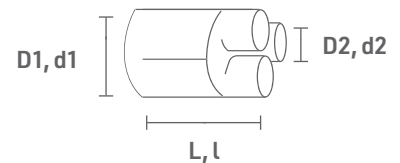
KEY FEATURES

- Excellent mechanical protection
- Resistant to chemical agents and weathering
- Excellent electrical insulation
- Excellent sealing
- UV resistant



cores	ref.	item	conductor cross-section range (mm ²)	D1/d1 (mm)	D2/d2 (mm)	L/l (mm)	pk. (pcs)	min./mult. ord. qty (pcs)
TBT/B		2-core cable breakout boot						
	PP20025	TBT/B-25	5 – 25	32/10	14/4	70/85	3	3
⊙	PP20150	TBT/B-150	35 – 150	60/20	24/7	95/120	3	3
	PP20300	TBT/B-300	185 – 300	70/22	30/8	95/120	3	3
TBT/T		3-core cable breakout boot						
	PP30035	TBT/T-35	4 – 35	36/14	15/4	80/100	3	3
	PP30150	TBT/T-150	50 – 150	60/20	25/8	160/188	3	3
⊙	PP30300	TBT/T-300	185 – 300	80/30	36/13	185/215	3	3
	PP30500	TBT/T-500	185 – 500	110/45	55/21	200/235	3	3
	PP30630	TBT/T-630	400 – 630	140/56	68/28	215/250	3	3

D1, D2 Supplied diameter
d1, d2 Recovered diameter (after free shrinkage)
L Supplied length (minimum)
l Recovered length (after free shrinkage)



TBT/T Application table for sealing cable crutch in Medium Voltage cables

item	application diameter (mm)		rated voltage $U_0/U (U_m)$ (kV)				
			3.6/6 (7.2)	6/10 (12)	8.7/15 (17.5)	12/20 (24)	18/30 (36)
	outer sheath	core insulation	conductor cross-section (mm ²)				
TBT/T-150	23-58	11-22	10-120	10-70	16-50	16-25	-
TBT/T-300	30-77	15-32	50-240	25-150	25-150	25-95	25-50
TBT/T-500	48-105	25-48	95-500	70-400	35-300	35-300	35-180
TBT/T-630	62-160	32-54	95-630	70-500	35-400	35-400	35-400

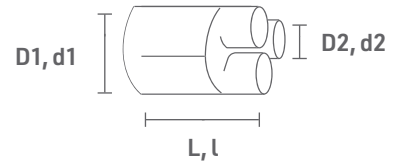
Heat shrink pre-moulded parts

breakout boot for low voltage 2 to 5 core cables
polyolefin with hot melt sealant



cores	ref.	item	conductor cross-section range (mm ²)	D1/d1 (mm)	D2/d2 (mm)	L/l (mm)	pk. (pcs)	min./mult. ord. qty (pcs)
TBT/Q 4-core cable breakout boot								
	PP40035	TBT/Q-35	4 – 35	41/16	14/4	80/100	3	3
	PP40070	TBT/Q-70	50 – 70	50/17	17/4	80/95	3	3
	PP40150	TBT/Q-150	95 – 150	58/26	20/7	140/170	3	3
	PP40300	TBT/Q-300	185 – 300	125/44	40/14	170/208	3	3
TBT/P 5-core cable breakout boot								
	PP50010	TBT/P-10	4 – 10	32/11	10/3	55/75	3	3
	PP50050	TBT/P-50	16 – 50	57/17	15/4	80/110	3	3
	PP50095	TBT/P-95	70 – 95	80/32	26/8	155/190	3	3
	PP50240	TBT/P-240	120 – 240	100/33	32/8	145/190	3	3

D1, D2 Supplied diameter
d1, d2 Recovered diameter (after free shrinkage)
L Supplied length (minimum)
l Recovered length (after free shrinkage)



Dielectric strength (ASTM D149)
12 kV/mm (min)

Volume resistivity (ASTM D257)
1×10¹⁴ Ω·cm (min)

Relative dielectric constant (ASTM D150)
5 (max)

Density (ASTM D792)
1.05±0.2 g/cm³

Hardness (ASTM D2240)
45±10 SHORE D

Tensile strength (ASTM D638)
12 MPa (min)

Elongation (ASTM D638)
350 % (min)

Low temperature flexibility (ASTM D2671)
No cracking
after 4 hours at -40°C

Continuous operating temperature (IEC 60216)
-40 °C / +110 °C

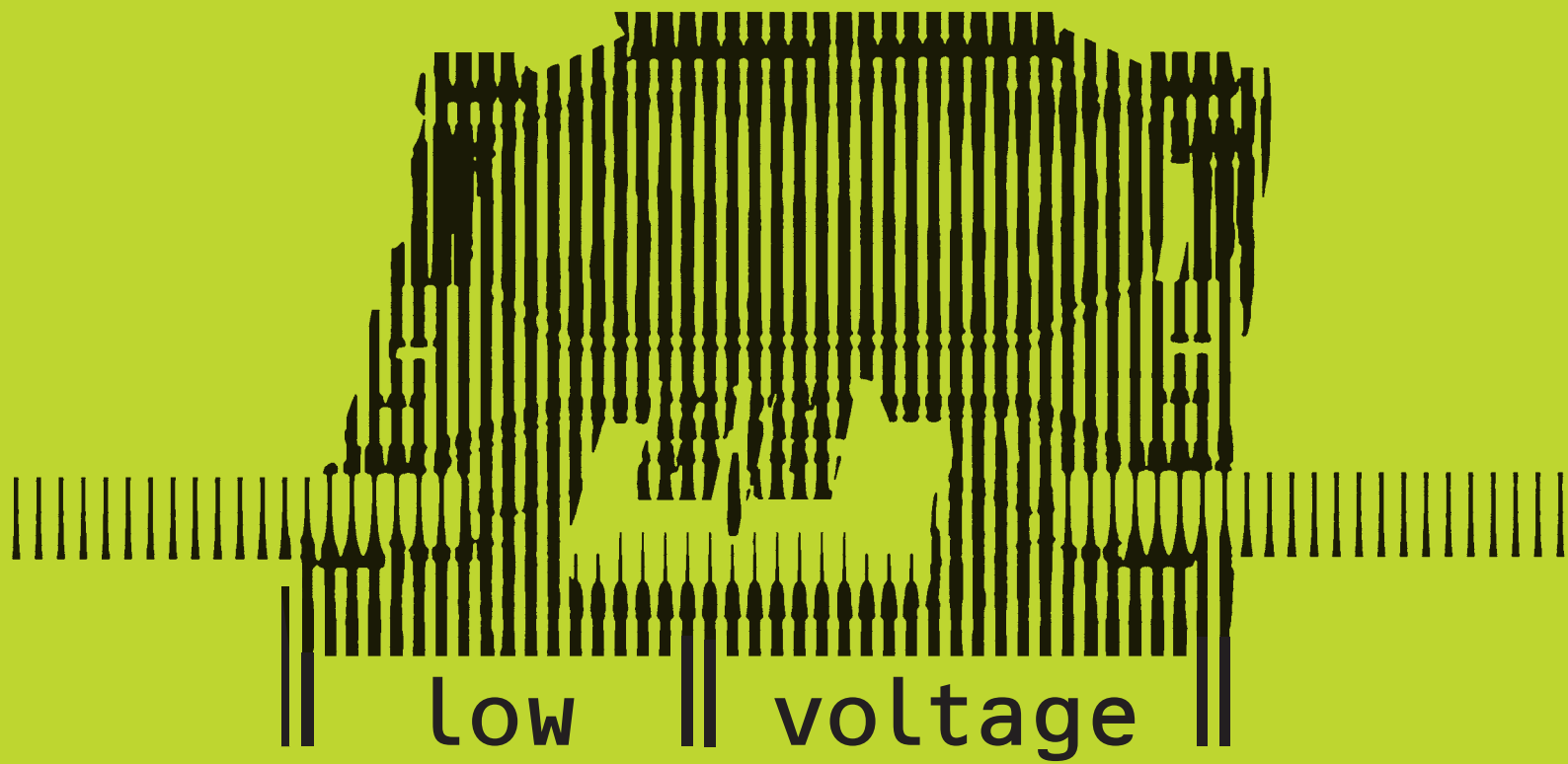
Water absorption (ASTM D570)
0.2% max

Accelerated ageing (ASTM D2671)
after 500 hours at 120°C

Tensile strength (ASTM D638)
11 MPa (min)

Elongation (ASTM D638)
300 % (min)

05 CONNECTING ELEMENTS



download
PDF



SPRING BOX®
Insulated lever connectors

108



SP
Spring-clamp terminal blocks

109



TBOX®
Insulated multiway terminal strips

110

STRAIGHT-THROUGH CONNECTORS AND TERMINAL BLOCKS

		CP Insulated compression connectors for straight connections	111
		CTT Insulated heat-shrink compression connectors for straight connections	111
		MC Screw-type inline connectors for straight connections	112
		MC-RJ Screw-type terminal blocks for straight joints	112
		MR shear-bolt inline connectors for straight connections	113
		MH Screw terminal strip for straight joints	113
		SC Compression connectors for straight connections	114

BRANCH CONNECTORS AND TERMINAL BLOCKS

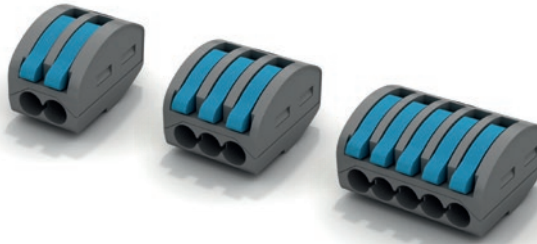
		MU U-shape screw-type connectors for straight and branch connections	116
		MU-RJ Screw-type terminal blocks for branch joints	116
		BH H-shape screw-type connectors for straight and branch connections	117
		BC C-shape compression connectors for branch connections	118

ARMOUR CONTINUITY RESTORATION

		BEK Armour continuity restoration kit for low voltage cables	119
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APPLICATIONS

- Low voltage small cross-section cables connection (lighting fixtures, automation for windows, doors and gates)
- Telephone system and telecommunications cables connection,
- Audio systems and radio cable connection
- Termination insulation of live cables

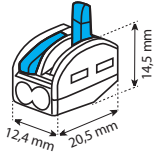
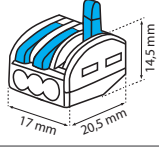
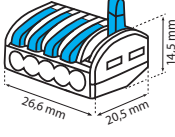


FEATURES

- Compliant to Low Voltage Directive 2014/35/EU - **TÜV-Rheinland Certified**
- Degree of protection IP20
- Integrated voltage test point

5-pack minibags



ref.	item	number of ways	cross-section (mm ²)	rated voltage / rated current	dimensions	pack. (pcs)	min. / mult. ord. qty (pcs)
SBOX2	Spring Box 2	2	0.2 – 4	600 V 32 A		60	60
SBOX3	Spring Box 3	3	0.2 – 4	600 V 32 A		40	40
SBOX5	Spring Box 5	5	0.2 – 4	600 V 32 A		35	35



TAKE IT fast

SpringBox[®] assorted insulated lever connectors

TOOL ALWAYS INCLUDED

ref.	kit contents	min. / mult. ord. qty (pk)
KT1071	Spring Box 2 - 30 pcs Spring Box 3 - 50 pcs Spring Box 5 - 50 pcs + TOOL INCLUDED	10/5

Compliance
EN 60947-7-1
EN 60998-2-2

Rated voltage
600 V

Rated current
32 A

Conductor cross-section (rigid and flexible)
0.2 – 4 mm²

Degree of protection
IP20



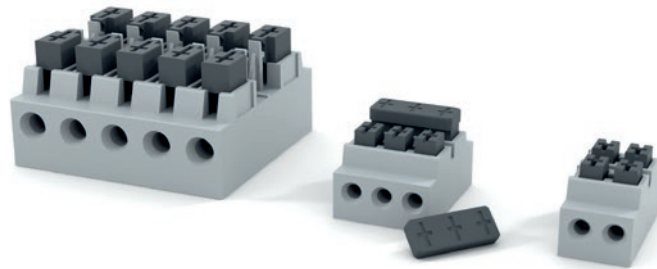
CE Marking



TÜV-Rheinland Certified



Compliant to Directive 2011/65/EU (RoHS 2)



APPLICATIONS

- Straight connection of electrical wires and cables
- Wire connection in joints, connecting devices and junction boxes

KEY FEATURES

- Simplified installation, quick and reliable thanks to spring technology that doesn't require tools and ensures application of the correct wire clamping torque
- **Pushbutton plate** to ease pushing all buttons at once and inserting all conductors at once (**SP325**)
- **Patented lock/unlock system of each button Sistema di blocco/sblocco per ciascun pulsante brevettato** for easily inserting several conductors at once (**SP510**)
- "Push-in" insert for rigid conductors

FEATURES

- Compliant to Low Voltage Directive 2014/35/EU (LVD) according to EN 60998-1 and EN 60998-2-2 Standards - **Bureau Veritas Certified**
- IP20 Degree of protection

cores	ref.	item	cross-section range* (mm ²)	rated voltage and current	conductor material			dimensions L x W x H (mm)	min./mult. ord. q.ty (pcs)	
					Cu/Cu	Al/Al	Cu/Al		pkg. (pcs)	ord. q.ty (pcs)
	SP225	SP 225	0.5 – 2.5	450 V 24 A	•	•	•	27 x 13 x 17	10	10
	SP325	SP 325	0.5 – 2.5	450 V 24 A	•	•	•	27 x 20 x 17	10	10
	SP510	SP 510	f. 1.5 – 6 r. 1.5 – 10	450 V 57 A	•	•	•	45 x 50 x 26	1	1

* f. flexible conductor
r. rigid conductor

Compliance
EN 60998-1
EN 60998-2-2

Rated voltage
450 V

Degree of protection
IP20



CE Marking



Bureau Veritas
Certified

APPLICATIONS

- Connections of low voltage cables in junction boxes or overhead (e.g. lighting fixtures, ceilings) in residential buildings

FEATURES

- Clear polycarbonate body
- Brass contacts
- Galvanized steel screws with slotted head (from TBOX 15 to TBOX 100), or Phillips head (TBOX 160)
- Galvanized steel hex grub screws (TBOX 250, TBOX 360)
- Degree of protection IP20
- IMQ Certified – CE Marking



10-way terminal block

ref.	item	cross-section (mm ²)	rated voltage (V)	rated current (A)	pack. (pcs)	min. / mult. ord. qty (pcs)
TBOX015	TBOX 015	1.5	450	24	10	100
TBOX025	TBOX 025	2.5		24	10	100
TBOX040	TBOX 040	4		32	10	100
TBOX060	TBOX 060	6	500	41	10	100
TBOX100	TBOX 100	10		57	5	50
TBOX160	TBOX 160	16		76	5	50

number of allowed conductors		
2*	3	4
conductor cross-section (mm ²)		
1.5	1	0.75
2.5	1.5	1
4	2.5	1.5
6	4	2.5
10	6	4
16	10	6

* Cross-section of two allowed conductors equals rated cross-section



1-way connectors

ref.	item	cross-section (mm ²)	rated voltage (V)	rated current (A)	pack. (pcs)	min. / mult. ord. qty (pcs)
TBOX250	TBOX 250	25	500	101	5	50
TBOX350	TBOX 350	35		125	5	50

number of allowed conductors		
2*	3	4
conductor cross-section (mm ²)		
25	16	10
35	25	16



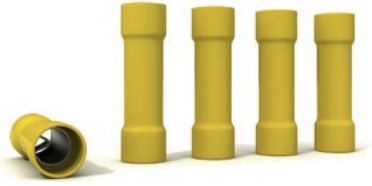
TAKE it fast

50 x TBOX® 10-way assorted terminal blocks

TOOL ALWAYS INCLUDED

ref.	kit contents	min. / mult. ord. qty (pk)
KT1067	TBOX 040 - 20 pcs TBOX 060 - 20 pcs TBOX 100 - 10 pcs + TOOL INCLUDED	10/5

Suitable for **copper-to-copper and aluminium-to-aluminium** connections



APPLICATIONS



- Straight connection and insulation of 0.6/1 kV conductors

KEY FEATURES

- Range-taking (multi-section)
- Simple, quick and reliable installation

FEATURES

- Tinned copper conductor bodies
- Supplied in 5 pcs package

cores	ref.	item	conductor cross-section range (mm ²)	conductor material			length (mm)	colour	pkg. (pcs)	min./mult. ord. q.ty (pk)
				Cu/Cu	Al/Al	Cu/Al				
	5 ×  CP0306	CP 306	2,5 – 6	•	•	–	40	giallo	5	5

Maximum protection of **conductors** thanks to internal hot melt sealant lining



APPLICATIONS


- Straight connection and insulation of 0.6/1 kV electric conductors

KEY FEATURES

- Range-taking (Multi-section)
- Simple, quick and reliable installation
- Sealing against water and moisture, condensation and corrosion
- Protection against vibrations
- Visual inspection of the connection through transparent body

FEATURES

- Polyolefin outer insulating body
- Internal hot melt sealant lining
- Operating temperature: from –55 °C to 125 °C

cores	ref.	item	conductor section min-max (mm ²)	conductor material			length (mm)	colour	pack. (pcs)	min./mult. ord. q.ty (pk)
				Cu/Cu	Al/Al	Cu/Al				
	CT0515	CTT 0,5/1,5	0.5 – 1.5	•	•	–	35	red	100	1
	CT1525	CTT 1,5/2,5	1.5 – 2.5	•	•	–	35	blue	100	1
	CT0306	CTT 3/6	4 – 6	•	•	–	40	yellow	50	1

Suitable for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections



APPLICATIONS

- Straight connection of electric cable conductors up to 0.6/1 kV
- Suitable for use in Shark Classic (page 48) and Submarine (page 60) joints

KEY FEATURES

- No crimping tool required for installation

FEATURES

- Tinned aluminium body
- Steel hex grub screws

cores	ref.	item	conductor cross-section range (mm ²)	conductor material			length (mm)	pack. (pcs)	min./mult. ord. qty (pcs)
				Cu/Cu	Al/Al	Cu/Al			
	MC0010	MC10	1.5 – 10	•	•	•	30	10	10
	MC0025	MC25	2.5 – 25	•	•	•	40	10	10



Suitable for copper-to-copper, aluminium-to-aluminium and copper-to-aluminium connections



APPLICATIONS

- Straight connection of electric cable conductors up to 0.6/1 kV
- Suitable for use in Shark Sixeight (page 46) joints

KEY FEATURES

- No crimping tool required for installation
- Hex key included
- **Compliant to Standard EN 60998-2-1** (certified by Bureau Veritas)

FEATURES

- PA insulating body
 - Tinned aluminium clamping units
 - Steel hex grub screws
- * *f. flexible conductor*
r. rigid conductor

cores	ref.	item	conductor cross-section range (mm ²)	conductor material			length (mm)	pack. (pcs)	min./mult. ord. qty (pcs)
				Cu/Cu	Al/Al	Cu/Al			
	MC0306RJ	MC306-RJ	1.5 – 10	•	•	•	40	1	1
	MC0506RJ	MC506-RJ	1.5 – 6	•	•	•	40	1	1
	MC0510RJ	MC510-RJ	f. 1.5 – 6 r. 1.5 – 10	•	•	•	40	1	1
	MC0525RJ	MC525-RJ	f. 2.5 – 16 r. 2.5 – 25	•	•	•	50	1	1

Suitable for **copper-to-copper**, **aluminium-to-aluminium** and **copper-to-aluminium** connections



APPLICATIONS


- Straight connection of electric cable conductors up to 0.6/1 kV
- Suitable for use in Shark Sixeight (page 46), Shark Classic (page 48) and Submarine (page 60) joints

KEY FEATURES

- No crimping tool required for installation
- Bolt head shearing ensures the application of correct tightening torque

FEATURES

- Tinned aluminium body
- Steel shear head bolts

cores	ref.	item	conductor cross-section range (mm ²)	conductor material			length (mm)	pack. (pcs)	min./mult. ord. qty (pcs)
				Cu/Cu	Al/Al	Cu/Al			
	MR0050	MR 10	6 – 50	•	•	•	53	1	1
	MR0051	MR 11	50 – 95	•	•	•	58	1	1
	MR0052	MR 12	95 – 240	•	•	•	119	1	1
	MR0053	MR 13	150 – 300	•	•	•	130	1	1

Screw-type terminal strip for straight joints

Suitable for **copper-to-copper** and **aluminium-to-aluminium** connections



APPLICATIONS


- Straight connection of electric cable conductors up to 0.6/1 kV
- Suitable for use in Shark Sixeight® (page 46) joints

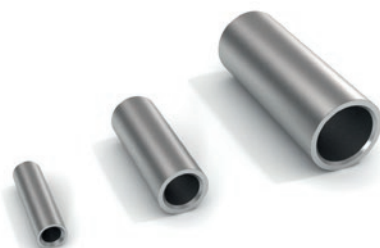
KEY FEATURES

- No crimping tool required
- Installation with a common slotted screwdriver

FEATURES

- PA insulating body
- Tinned aluminium clamping units
- Steel slot head screws
- Rated current 20 A
- Compliant to EN 60998-2-1
- CSA/UL and VDE approved

cores	ref.	item	conductor cross-section range (mm ²)	conductor material			length (mm)	pack. (pcs)	min./mult. ord. qty (pcs)
				Cu/Cu	Al/Al	Cu/Al			
	MH0306	MH 306	2.5 – 6	•	•	–	40	10	10

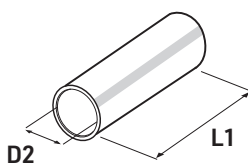


APPLICATIONS

- Straight connection of electric cable conductors up to 0.6/1 kV
- Suitable for copper-to-copper and aluminium-to-aluminium connections
- Suitable for use in Shark Sixeight (page 46), Shark Classic (page 48), Submarine (page 60), Sealjoint (page 65) and Sealjoint Fire (page 66) joints

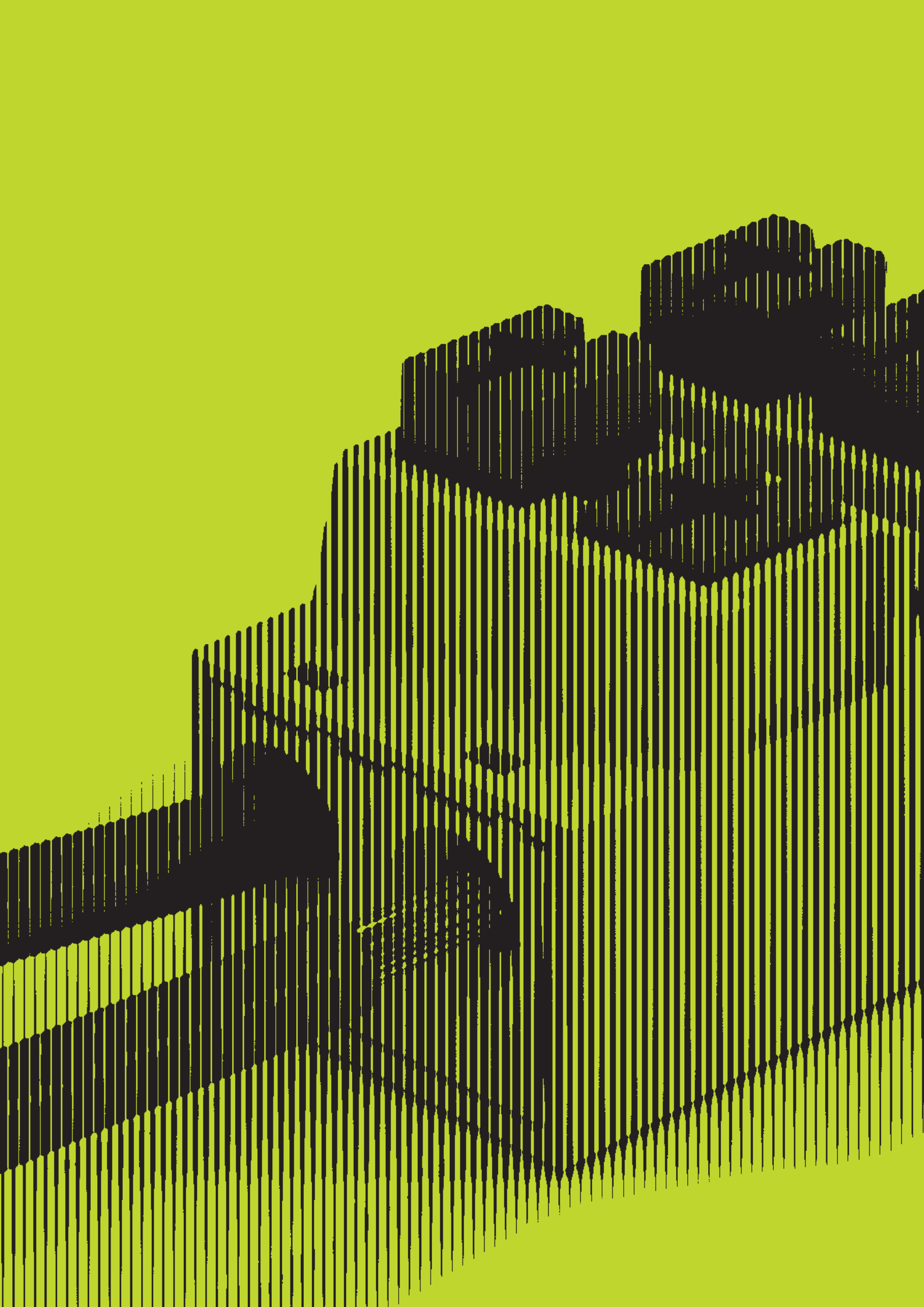
FEATURES

- Tinned copper
- Bevelled at both ends for easier conductor insertion



cores	ref.	item	conductor cross-section range (mm ²)	conductor materials			inner diameter D2 (mm)	length L1 (mm)	pack. (pcs)	min./mult. ord. qty (pcs)
				Cu/Cu	Al/Al	Cu/Al				
	SC001	SC 1,5	1.5	●	●	–	1.6	15	50	50
	SC002	SC 2,5	2.5	●	●	–	2.3	15	50	50
	SC006	SC 6	4 – 6	●	●	–	3.6	22	20	20
	SC010	SC 10	10	●	●	–	4.6	25	20	20
	SC016	SC 16	16	●	●	–	5.8	27	20	20
	SC025	SC 25	25	●	●	–	7	29	10	10
	SC035	SC 35	35	●	●	–	8.9	33	10	10
	SC050	SC 50	50	●	●	–	10	37	10	10
	SC070	SC 70	70	●	●	–	11.3	39	5	5
	SC095	SC 95	95	●	●	–	13.5	43	5	5
	SC120	SC 120	120	●	●	–	15.2	47	5	5
	SC150	SC 150	150	●	●	–	16.7	58	5	5
	SC185	SC 185	185	●	●	–	19.2	64	5	5
	SC240	SC 240	240	●	●	–	21.1	75	5	5
	SC300	SC 300	300	●	●	–	23.7	90	1	1
	SC400	SC 400	400	●	●	–	27	94	1	1
	SC500	SC 500	500	●	●	–	30.3	98	1	1
	SC630	SC 630	630	●	●	–	33.4	105	1	1
	SC800	SC 800	800	●	●	–	38	112	1	1
	SC999	SC 1000	1000	●	●	–	44	120	1	1





U-shape connector with hex grub screw for straight and branch connections

Suitable for **branch connections without interrupting main cable**



APPLICATIONS

- Straight and branch connection of copper conductors up to 0.6/1 kV
- Suitable for use in Shark Classic (page 52) joints

KEY FEATURES

- No crimping tool required for installation

Cross-sections evaluated for uninterrupted main cable

FEATURES

- **MU-6/10 e MU-16/35**
Brass conductor body with steel hex grub screw
- **MU-10/25-AI**
Tinned brass conductor body with plastic insulation and two steel hex grub screws

cores	ref.	item	conductor cross-section range (mm ²)		conductor materials			dimensions length × width × hgt. (mm)	pack. (pcs)	min./mult. ord. qty (pcs)	
			main	branch	Cu/Cu	Al/Al	Cu/Al				
	●	MU0610	MU-6/10	2.5-25	1.5-10	•	-	-	13 × 12 × 15	10	10
	●	MU1635	MU-16/35	2.5-50	1.5-35	•	-	-	20 × 15 × 22	10	10
	●	MU1025AI	MU-10/25-AI	10-25	2.5-25	•	•	-	45 × 18 × 32	10	10

MU-RJ

Insulated terminal blocks with hex grub screw for branch joints

Suitable for **branch connections without interrupting main cable**



APPLICATIONS

- Straight and branch connection of copper conductors up to 0.6/1 kV

KEY FEATURES

- No crimping tool required for installation
- Hex key included

FEATURES

- PA insulating body
- Brass clamping units
- Steel hex grub screws

cores	ref.	item	conductor cross-section range (mm ²)		conductor materials			length (mm)	pack. (pcs)	min./mult. ord. qty (pcs)	
			main	branch	Cu/Cu	Al/Al	Cu/Al				
	●	MU5P0610RJ	MU50610-RJ	6 – 16	2.5 – 16	•	-	-	32	1	1
	●	MU5P1635RJ	MU51635-RJ	16 – 35	2.5 – 35	•	-	-	38	1	1

BH

H-shape connector with hex grub screw

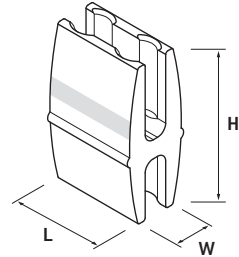
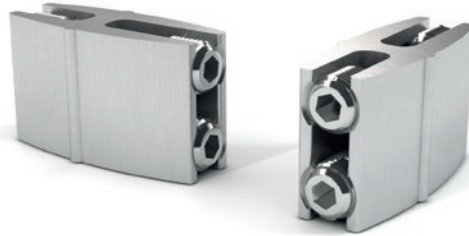
tinned aluminium
for branch connections

! NEW

Suitable for
**copper-to-aluminium
branch connections**

APPLICATIONS

- Branch connection of 0.6/1 kV low voltage wires
- Suitable for **copper-to-copper, aluminium-to-aluminium, and copper-to-aluminium connections**




KEY FEATURES

- Suitable for **copper-to-aluminium branch connections**

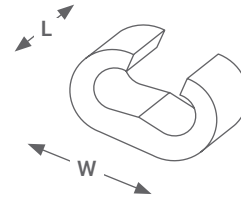
FEATURES

- Tinned aluminium
- Two hex grub screw

CONNECTING ELEMENTS

cores	ref.	item	conductor cross-section range (mm ²)		conductor materials			dimensions L × W × H (mm)	pkg. (pcs)	min./mult. ord. q.ty (pcs)
			main	branch	Cu/Cu	Al/Al	Cu/Al			
	! NEW BH1616A	BH-16/16-A	6-16	6-16	•	•	•	20 × 15 × 35	10	10

C-shape compression connectors for branch connections



APPLICATIONS


- Branch connection of low voltage conductors up to 0.6/1 kV
- Suitable for use in Shark Classic (p. 52), Submarine (p. 62) and Sealjoint D (page 68) joints

KEY FEATURES

- Complete range for most commonly used cable cross-sections
- Suitable for copper-to-copper and aluminium-to-aluminium connections

FEATURES

- Tinned copper

cores	ref.	item	conductor cross-section range (mm ²)		conductor materials			size L × W (mm)	pack. (pcs)	min./mult. ord. q.ty (pk)
			main	branch	Cu/Cu	Al/Al	Cu/Al			
	BC006006	BC 6-6	2.5-6	1.5-6	●	●	–	9 × 10	20	20
	BC010010	BC 10-10	10	1.5-10	●	●	–	12 × 11.8	20	20
	BC016016	BC 16-16	16	1.5-16	●	●	–	17 × 19.4	20	20
	BC025010	BC 25-10	16-25	1.5-10	●	●	–	17 × 18.6	10	10
	BC025016	BC 25-16	16-25	1.5-16	●	●	–	17 × 18.6	10	10
	BC025025	BC 25-25	25	16-25	●	●	–	17 × 20.6	10	10
	BC035035	BC 35-35	35	25-35	●	●	–	20.5 × 26.6	5	5
	BC050050	BC 50-50	50	25-50	●	●	–	20.5 × 26.6	5	5
	BC070035	BC 70-35	50-70	6-35	●	●	–	24 × 31.4	5	5
	BC070070	BC 70-70	50-70	50-70	●	●	–	24 × 31.4	5	5
	BC095035	BC 95-35	95	6-35	●	●	–	25 × 41.2	5	5
	BC095070	BC 95-70	95	35-70	●	●	–	25 × 40.9	5	5
	BC095095	BC 95-95	95	95	●	●	–	29 × 40.9	5	5
	BC120120	BC 120-120	120	25-120	●	●	–	30 × 44.6	5	5
	BC150150	BC 150-150	150	120-150	●	●	–	31 × 45.3	5	5
	BC185095	BC 185-95	150-185	16-95	●	●	–	31 × 44.4	1	1
	BC185185	BC 185-185	185	185	●	●	–	22.6 × 68	1	1
	BC240120	BC 240-120	240	240	●	●	–	25 × 69	1	1
	BC240240	BC 240-240	240	120	●	●	–	25 × 69	1	1
BC300300	BC 300-300	300	300	●	●	–	30 × 65	1	1	

Armour continuity restoration kit for low voltage cables








APPLICATIONS

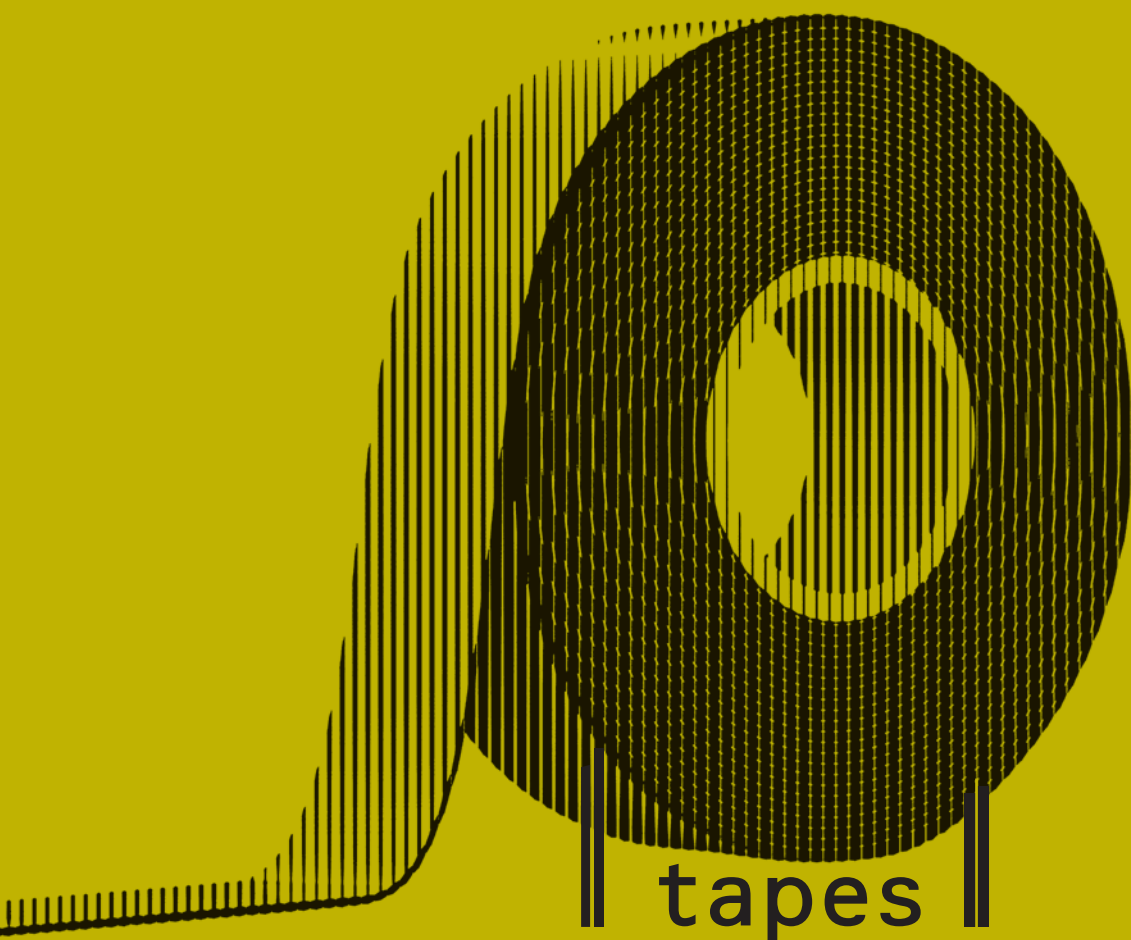
- Electrical connection restoration of cable armour in low voltage joints

FEATURES

- 2 steel constant force springs
- Tinned copper braid

ref.	item	cable diameter range (mm)	cores					pack. (pcs)	min./mult. ord. qty (pcs)
									
			conductor cross-section (mm ²)						
BEKA1	BEKA1	12 – 20	10 - 25	1.5 - 10	1.5 - 10	1.5 - 10	1.5 - 6	1	1
BEKA2	BEKA2	17 – 28	16 - 150	-	10 - 35	6 - 25	4 - 16	1	1
BEKA3	BEKA3	25 – 40	95 - 300	-	25 - 95	25 - 95	25 - 95	1	1
BEKA4	BEKA4	40 – 60	240 - 400	-	70 - 150	70 - 150	95 - 120	1	1
BEKA5	BEKA5	50 – 75	400 - 500	-	150 - 300	150 - 300	150 - 300	1	1

01 PVC, SELF-AMALGAMATING AND SPECIAL TAPES



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PVC INSULATING TAPES



ISOEL® 8900
IMQ certified PVC insulating adhesive tapes

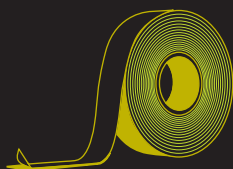
122



ISOEL® 633
High-performance PVC insulating adhesive tape

124

SELF-AMALGAMATING INSULATING TAPES



ISOEL® EPR
EPR self-amalgamating insulating tapes

125



ISOFIL® 626
Butyl rubber insulating filler mastic tape

126

SPECIAL TAPES



ISOALL®
Aluminium foil tape with adhesive

127



APPLICATIONS

- Insulation, protection and identification of electrical connections, low voltage joints and cables up to 0.6/1 kV
- Suitable for application in all areas of civil and industrial electrical and electromechanical installations

KEY FEATURES

- Excellent electrical insulation
- Highly conformable
- Good resistance to abrasion, corrosion and moisture



TAKE IT fast

20 × NA4019
Black ISOEL[®] PVC tape

TOOL
ALWAYS
INCLUDED

ref.	kit contents	min./ mult. ord.(cf)
NA4019K1	NA4019 - ISOEL 8900 black PVC insulating tape 19 mm × 25 m - 20 pcs TOOL INCLUDED	20/5

Compliant to
EN 60454-3-1

Self-extinguishing (EN 60454)

Operating temperature
0 °C / +105 °C

Dielectric strength (EN 60454)
40 kV/mm

Tensile strength (EN 60454)
30 N/10 mm

Elongation (EN 60454)
180% - 170 %

Adhesiveness (EN 60454)
1.8 N/10 mm

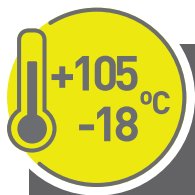


IMQ
Certified

Tape selection table

	Colour									min./ mult. ord. q.ty (pcs)
	BLACK ● BK	BLUE ● BE	GREY ● GR	RED ● RD	WHITE ○ WH	BROWN ● BW	GREEN ● VE	YELLOW ● YE	YELLOW/ GREEN ● YG	
15 × 10 (15 mm × 10 m × 0.15 mm)	NA4015	NA4115	NA4215	NA4315	NA4415	NA4515	NA4715	NA4815	NA4615	100
19 × 25 (19 mm × 25 m × 0.15 mm)	NA4019	NA4119	NA4219	NA4319	NA4419	NA4519	NA4719	NA4819	NA4619	120
25 × 25 (25 mm × 25 m × 0.15 mm)	NA4025	NA4125	NA4225	NA4325	NA4425	NA4525	NA4725	NA4825	NA4625	96





Suitable for use at low temperatures

APPLICATIONS

- Suitable for application in all areas of civil and industrial electrical and electromechanical installations
- Insulation of electrical connections
- Protection of joints and low voltage cables up to 0.6/1 kV
- Primary electrical insulation for branches up to 600 V



KEY FEATURES

- Suitable for use at low temperatures
- Excellent electrical insulation
- Highly conformable
- Good resistance to abrasion, corrosion, and moisture
- Supplied in plastic protective case

ref.	item	width x length (mm x m)	thickness (mm)	colour	min. / mult. ord. qty (pcs)
NA5633	ISOEL 633	19 x 20	0.18	BLACK	10

Compliant to
EN 60454-3-1
ASTM D3005

Self-extinguishing (EN 60454)

Operating temperature
-18 °C / +105 °C

Dielectric strength (EN 60454)
40 kV/mm

Tensile strength (EN 60454)
35 N/10 mm

Elongation (EN 60454)
180 %

Adhesiveness (EN 60454)
1.8 N/10 mm



CSA
Certified

Complete range of sizes




APPLICATIONS

- Electrical insulation and protection of conductors, surfaces, cables and electrical connections in general up to 69 kV
- Compatible with a wide range of cable insulation plastics and rubbers (polyethylene, PVC, butyl, neoprene)

KEY FEATURES

- Excellent electrical and mechanical properties
- Highly stable under all installation conditions
- **Quickly amalgamates without the need for heat or external pressure**
- Good resistance to abrasion, corrosion, and moisture

ref.	item	width x length (mm x m)	thickness (mm)	colour	min. / mult. ord. qty (pcs)
NA4623	ISOEL 623	19 x 9.1	0.50	BLACK 	10
NA4723	ISOEL 723	19 x 9.1	0.75		10
NA4823	ISOEL 823	25 x 9.1			8
NA4923	ISOEL 923	38 x 9.1			6
NA5023	ISOEL 1023	51 x 9.1			4

Tensile strength (BS 903)
2.2 MPa

Operating temperature
-40 °C / +90 °C

Elongation (BS 903)
800 %
(650 % for ISOEL EPR 623)

Volume resistivity (ASTM D257)
1x10¹³ Ω m
(> 1x10¹¹ Ω m for ISOEL EPR 623)

Dielectric strength (ASTM D150)
38 kV/mm
(> 38 kV/mm for ISOEL EPR 623)

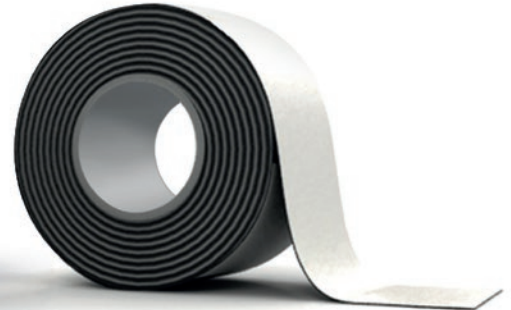


Directive EU 2015/863
(RoHS 3) Compliant



Halogen free

ISOFIL® 626
ensures excellent electrical insulation and protection from moisture in all installation conditions



APPLICATIONS

- Sealing and reconstruction of all electrical insulation padding

KEY FEATURES

- Excellent electrical and mechanical properties
- High stability in all installation condition
- Resistant to water and ozone
- Supplied in plastic protective case

ref.	item	width x length (mm x m)	thickness (mm)	colour	min. / mult. ord. qty (pcs)
NA4626	ISOFIL 626	38 x 1.5	3.2	BLACK ●	5

Tensile strength
> 3.5×10^4 Pa

Elongation
> 500%

Water absorption
< 1%

Operating temperature
-40 °C / +70 °C

Volume resistivity
> 10^{14} Ω cm



APPLICATIONS

- Fixing of heating cables to pipes and tanks
- Heating cable protection without insulation
- Improvement of cable heating performance on plastic pipes

KEY FEATURES

- Highly conformable
- Good mechanical strength

ref.	item	width x length (mm x m)	thickness (mm)	min. / mult. ord. qty (pcs)
NA9050	ISOALL	50 x 50	0.065	1

Tensile strength
(AFERA 4004)
13.5 N/cm

Elongation
(AFERA 4005)
2.5 %

Adhesiveness on steel
(AFERA 4001)
10 N/cm

Adhesiveness on backing
(AFERA 4001)
8 N/cm

Operating temperature
-20 °C / +110 °C

01 CABLE-PULLING LUBRICANTS



Lubricants

download
PDF



FLO® 950
Cable-pulling lubricant gel

130



LO® 350
Cable-pulling lubricant emulsion

131

Also applicable directly in cable ducts thanks to its gel formulation



APPLICATIONS

- Suitable for all types of electrical and telecommunication cables
- Application in pipes and tubing, even with curves and difficult ascents, and in vertically-laid cables

KEY FEATURES

- Applicable on all types of cable jacket **and also directly in cable conduits**
- Easy application by hand
- Excellent frictional reduction
- Slow drying
- No stains or residue
- Non-toxic and non-hazardous
- Chemically inert
- Odourless

ref.	item	volume (litres)	min. / mult. ord. qty (pcs)
FL9500	FLO 950	0.950	12

Friction coefficient with PVC cables
0.11

pH
6 - 7

Operating temperature
-5 °C / +50 °C

Storage temperature
+5 °C / +30 °C

Provides a high **frictional resistance** on all types of outer cable tubing



APPLICATIONS

- Suitable for all types of electrical and telecommunication cables
- Application in pipes and tubing, even with curves and difficult ascents, and in vertically-laid cables

KEY FEATURES

- Applicable on all types of cable jacket
- Reduces 70% of friction
- Easy application
- Non-toxic and non-hazardous
- Chemically inert
- Odourless

ref.	item	volume (litres)	min. / mult. ord. qty (pcs)
FL3500	FLO 350	1.0	12



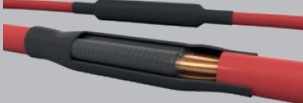

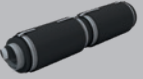
Frictional reduction
70%

pH
6 - 7

Operating temperature
-5 °C / +50 °C

Storage temperature
+5 °C / +30 °C

MEDIUM VOLTAGE

		TERMINATIONS			JOINTS						
HEAT-SHRINK	SINGLE-CORE	 TTMT-I page 136	 TTMT-E page 136	ENEL-approved  TMMT page 146	SINGLE-CORE	 JTMT-1X page 152	ENEL-approved  JTMT page 158				
		 TTMT-3I page 138	 TTMT-3E page 138			THREE-CORE	 JTMT-3X page 153				
				TRANSITION	JTMT-3X-1X JTMT-1X-1C JTMT-1X-3C JTMT-3CC-1X page 156						
	COLD-SHRINK	SINGLE-CORE	 TAMT-L page 140	 TAMT-I page 140	 TAMT-E page 140	ENEL-approved  TAMT page 147	SINGLE-CORE	 JAMT-1X page 154	 JAMT-1XM page 155	ENEL-approved  JAMT-1X page 159	
			SEPARABLE CONNECTORS	250 A TYPE A	 TSD page 142	 TSS page 142					
					630 A TYPE C	 TS-R page 144		 TS-CA page 145	ENEL-approved  TS page 148		

TUBINGS AND TAPES

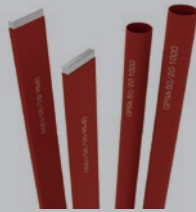
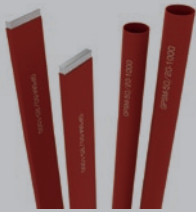
24 kV

36 kV

SPOOL



BAR



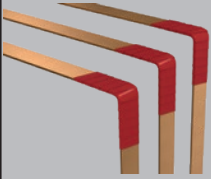
GPSM

page 162

GPSA

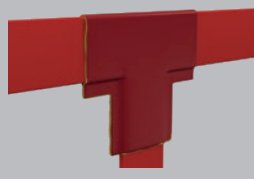
page 164

TAPE / SHEET



NTMT

page 166



FTMT

page 167

CONNECTING ELEMENTS

LUGS

CONNECTORS

MECHANICAL
SHEAR BOLT



CRMT

page 170



GRMT

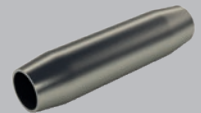
page 172

COMPRESSION



CMMT

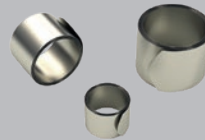
page 171



GMMT

page 173

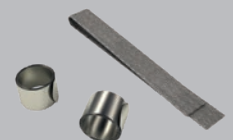
CONTACT
SPRINGS



RS034

page 174

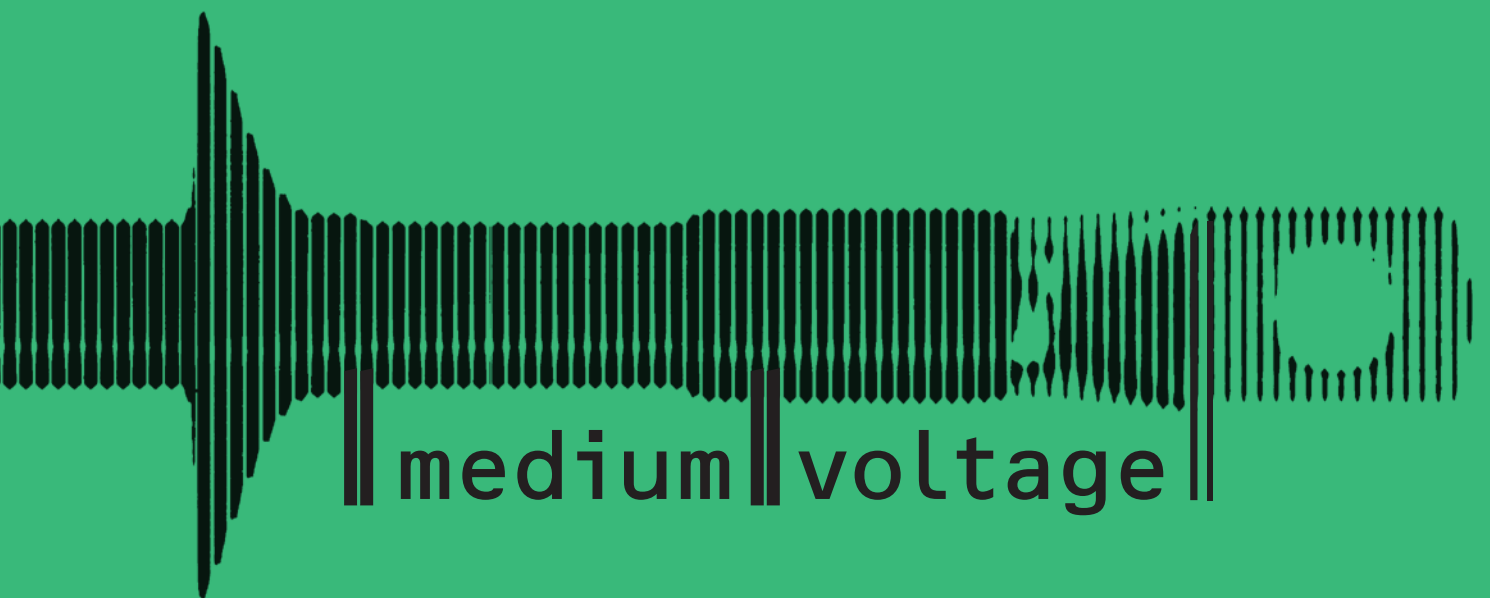
ARMOUR
RESTORATION KIT



ARMT-JTMT

page 175

01 TERMINATIONS



|| medium || voltage ||

download
PDF

HEAT SHRINK TERMINATIONS



TTMT
single-core · for indoor and outdoor

136



TTMT-3
three-core · for indoor and outdoor

138

COLD SHRINK TERMINATIONS



TAMT-L
single-core · indoor shedless



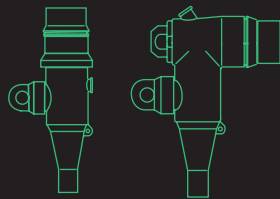
TAMT-I
single-core · indoor with sheds

140



TAMT-E
single-core · outdoor with sheds

SEPARABLE CONNECTORS

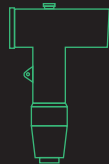


250 A - Type A interface

TSD
straight

142

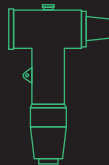
TSS
elbow



630 A - Type C interface

TS
coupling T-body asymmetric

144



630 A

TS-CA
for TS termination coupling connection

145

ENEL-APPROVED TERMINATIONS



ENEL-approved heat shrink terminations

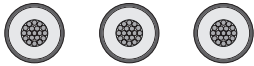
146

ENEL-approved cold shrink terminations

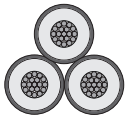
147

ENEL-approved separable connectors

148



3 x single-core polymeric cables



triplex polymeric cable



TTMT-I

TTMT-E

CRMT shear bolt lugs series (page 170) and CMMT compression lugs series (page 171) available separately

ENEL-approved terminations on page 146

KEY FEATURES

- Reliable under harsh installation conditions
- Ability to cover a wide range of cross sections with a single item
- Reduced storage costs
- Unlimited shelf life

KIT CONTENTS

Kit for three single-core terminations contains:

- Stress control tubes
- Anti-tracking oversheath
- Heat-shrink sheds (in 24 and 36 kV kits and in all outdoor kits)
- Sealing tapes
- Installation instructions

Available on request:

Armoured cables version (add suffix A to reference, e.g. TT070501A)

Aluminium tube screen cables version (add suffix H5 to reference, e.g. TT070501H5)

Rated voltage
 $U_0/U (U_m)$
up to 18/30 (36) kV

Cable formation
3 ×

Suitable for:
1-core or triplex polymeric-insulated cables (PVC, EPR, PE, XLPE) with wire or tape screen.

H5 version suitable also for aluminium tube screen

Compliance
CENELEC HD 629.1 S2



watch
video

	Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	conductor cross-section range min-max (mm ²)	termination length (mm)	* Recommended Cu/Al shear bolt lug CRMT series
	TTMT-I 3 × indoor single-core						
	3.6/6	7.2 kV	TT070501	TTMT-7/50-I	16 – 50	300	CRMT 25/95
			TT071201	TTMT-7/120-I	70 – 120		CRMT 35/150
			TT072401	TTMT-7/240-I	150 – 240		CRMT 95/240
			TT075001	TTMT-7/500-I	300 – 500		CRMT 185/400
			TT079991	TTMT-7/1000-I	630 – 1000		-
	6/10	12 kV	TT170251	TTMT-17/25-I	16 – 25	370	CRMT 25/95
			TT170701	TTMT-17/70-I	35 – 70		CRMT 25/95
			TT172401	TTMT-17/240-I	95 – 240		CRMT 95/240
			TT174001	TTMT-17/400-I	300 – 400		CRMT 185/400
			TT178001	TTMT-17/800-I	500 – 800		-
	12/20	24 kV	TT240701	TTMT-24/70-I	25 – 70	450	CRMT 25/95
			TT242401	TTMT-24/240-I	95 – 240		CRMT 95/240
			TT244001	TTMT-24/400-I	300 – 400		CRMT 185/400
			TT248001	TTMT-24/800-I	500 – 800		-
	18/30	36 kV	TT360951	TTMT-36/95-I	35 – 95	520	CRMT 25/95
TT361851			TTMT-36/185-I	120 – 185	CRMT 95/240		
TT365001			TTMT-36/500-I	240 – 500	CRMT 185/400		

	TTMT-E 3 × outdoor single-core						
	8.7/15	17.5 kV	TT170252	TTMT-17/25-E	16 – 25	450	CRMT 25/95
			TT170702	TTMT-17/70-E	35 – 70		CRMT 25/95
			TT172402	TTMT-17/240-E	95 – 240		CRMT 95/240
			TT174002	TTMT-17/400-E	300 – 400		CRMT 185/400
			TT178002	TTMT-17/800-E	500 – 800		-
	12/20	24 kV	TT240702	TTMT-24/70-E	25 – 70	520	CRMT 25/95
			TT242402	TTMT-24/240-E	95 – 240		CRMT 95/240
			TT244002	TTMT-24/400-E	300 – 400		CRMT 185/400
			TT248002	TTMT-24/800-E	500 – 800		-
	18/30	36 kV	TT360952	TTMT-36/95-E	50 – 95	720	CRMT 25/95
			TT361852	TTMT-36/185-E	120 – 185		CRMT 95/240
			TT365002	TTMT-36/500-E	240 – 500		CRMT 185/400

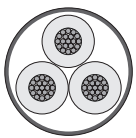
NOTES

- * CRMT series shear bolt lug (page 170) and CMMT series compression lugs (page 171) available separately
- TTMT packaging: 3 single-core termination - minimum and multiple ord.qty 1 pack

MEDIUM VOLTAGE

TTMT-3

Medium Voltage Heat shrink terminations for **three-core** polymeric cables up to 36 kV



three-core
polymeric cable



TTMT-3I

TTMT-3E

MEDIUM VOLTAGE

CRMT shear bolt lugs (page 170)
and CMMT compression lugs
(page 171) available separately

KEY FEATURES

- Reliable under harsh installation conditions
- Ability to cover a wide range of cross sections with a single item
- Reduced storage costs
- Unlimited shelf life

KIT CONTENTS

One three-core termination kit, contains

- Stress control tubes
- Anti-tracking oversheath
- Heat-shrink sheds
- Sealing tapes
- Installation instructions

Available on request:

Armoured cables version (add suffix **A** to reference, e.g. TT070503A)

Rated voltage
 U_0/U_m
up to 18/30 (36) kV

Cable formation
1 ×

Suitable for:
1-core or triplex
polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen


Compliance
CENELEC HD 629.1 S2


TTMT-3

Medium Voltage Heat shrink terminations for **three-core** polymeric cables up to 36 kV



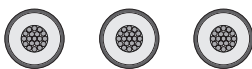
watch
video

	Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	conductor cross-section range min-max (mm ²)	termination length (mm)	* Recommended Cu/Al shear bolt lug CRMT series
TTMT-3I 1 × indoor three-cores							
	3.6/6	7.2 kV	TT070503	TTMT-7/50-3I	16 – 50	450	CRMT 25/95
			TT071203	TTMT-7/120-3I	70 – 120		CRMT 35/150
			TT072403	TTMT-7/240-3I	150 – 240		CRMT 95/240
			TT075003	TTMT-7/500-3I	300 – 500		CRMT 185/400
			TT079993	TTMT-7/1000-3I	630 – 1000		-
	8.7/15	17.5 kV	TT170253	TTMT-17/25-3I	16 – 25	520	CRMT 25/95
			TT170703	TTMT-17/70-3I	35 – 70		CRMT 25/95
			TT172403	TTMT-17/240-3I	95 – 240		CRMT 95/240
			TT174003	TTMT-17/400-3I	300 – 400		CRMT 185/400
	12/20	24 kV	TT178003	TTMT-17/800-3I	400 – 800	-	
TT240703			TTMT-24/70-3I	25 – 70	520	CRMT 25/95	
TT242403			TTMT-24/240-3I	95 – 240		CRMT 95/240	
TT244003			TTMT-24/400-3I	300 – 400		CRMT 185/400	
18/30	36 kV	TT360953	TTMT-36/95-3I	35 – 95	720	CRMT 25/95	
		TT361853	TTMT-36/185-3I	120 – 185		CRMT 95/240	
		TT365003	TTMT-36/500-3I	240 – 500		CRMT 185/400	

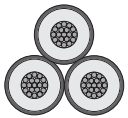
TTMT-3E 1 × outdoor three-cores							
	8.7/15	17.5 kV	TT170256	TTMT-17/25-3E	16 – 25	720	CRMT 25/95
			TT170706	TTMT-17/70-3E	35 – 70		CRMT 25/95
			TT172406	TTMT-17/240-3E	95 – 240		CRMT 95/240
			TT174006	TTMT-17/400-3E	300 – 400		CRMT 185/400
			TT178006	TTMT-17/800-3E	500 – 800		-
	12/20	24 kV	TT240706	TTMT-24/70-3E	25 – 70	900	CRMT 25/95
			TT242406	TTMT-24/240-3E	95 – 240		CRMT 95/240
			TT244006	TTMT-24/400-3E	300 – 400		CRMT 185/400
	18/30	36 kV	TT360956	TTMT-36/95-3E	50 – 95	900	CRMT 25/95
			TT361856	TTMT-36/185-3E	120 – 185		CRMT 95/240
TT365006			TTMT-36/500-3E	240 – 500	CRMT 185/400		

NOTE * CRMT series shear bolt lug (page 170) and CMMT series compression lugs (page 171) available separately
• TTMT-3 packaging: 1 three-core termination - minimum and multiple ord.qty 1 pack

MEDIUM VOLTAGE



3 x single-core polymeric cables



triplex polymeric cable



TAMT-L

TAMT-I · TAMT-E

CRMT shear bolt lugs (page 170) and CMMT compression lugs (page 171) available separately

ENEL-approved terminations on page 147

KEY FEATURES

- Quick installation
- Range-taking: a single item covers a wide range of cross sections
- No heat, flame or special tools required for the installation
- Integrated sheds (TTMT-E and TTMT-I)
- Shedless space-saving design, suited for tight-spaced cabinets (TTMT-L)
- Reliable also in polluted environments
- Reduced installation costs

KIT CONTENTS

- Kit for three single-core terminations, each contains
- Silicone rubber body for insulation and electric field control with anti-tracking features.
 - Insulating filler tapes
 - Liquid silicone lubricant
 - Installation instructions

Available on request:

Armoured cables version (add suffix **A** to reference, e.g. TB240701A)

Aluminium tube screen cables version (add suffix **H5** to reference, e.g. TB240701H5)







Rated voltage
 $U_0/U (U_m)$
up to 18/30 (36) kV

Cable formation
3 × 

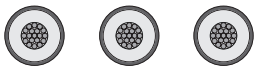
Suitable for:
1-core or triplex polymeric-insulated cables (PVC, EPR, PE, XLPE) with wire or tape screen, or aluminium tube screen (H5 versions)

Installation
indoor (TAMT-L, TAMT-I)
outdoor (TAMT-E)

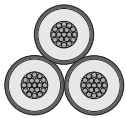
Compliance
CENELEC HD 629.1 S2

	Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	sez. conduttori min-max (mm ²)	cable insulation diameter min - max (mm)	terminat. length (mm)	* Recommended Cu/Al shear bolt lug CRMT series
TAMT-L 3 × single-core indoor • shedless								
  watch video	8.7/15	17.5 kV	TB240951	TAMT-24/95-L	25 – 120	14 – 25	320	CRMT 25/95
			TB242401	TAMT-24/240-L	95 – 240	19 – 40		CRMT 95/240
	12/20	24 kV	TB240951	TAMT-24/95-L	25 – 95	14 – 25		CRMT 25/95
			TB242401	TAMT-24/240-L	95 – 240	19 – 40		CRMT 95/240
TAMT-I 3 × single-core indoor • with sheds								
  watch video	8.7/15	17.5 kV	TB240701	TAMT-24/95-I	25 – 120	14 – 25	305	CRMT 35/150
			TB241851	TAMT-24/300-I	95 – 400	19 – 40	310	CRMT 95/240 CRMT 120/300 CRMT 185/400
			TB244001	TAMT-24/630-I	300 – 630	30 – 50	410	CRMT 185/400
	12/20	24 kV	TB240701	TAMT-24/95-I	25 – 95	14 – 25	305	CRMT 25/95
			TB241851	TAMT-24/300-I	95 – 300	19 – 40	310	CRMT 95/240 CRMT 120/300
			TB244001	TAMT-24/630-I	400 – 630	30 – 50	410	CRMT 185/400
18/30	36 kV	TB360951	TAMT-36/50-I	35 – 50	14 – 25	385	CRMT 25/95	
		TB363001	TAMT-36/300-I	70 – 300	19 – 40	390	CRMT 95/240 CRMT 120/300	
		TB366001	TAMT-36/630-I	400 – 630	30 – 50	410	CRMT 185/400	
TAMT-E 3 × single-core outdoor • with sheds								
  watch video	8.7/15	17.5 kV	TB240702	TAMT-24/95-E	25 – 120	14 – 25	385	CRMT 35/150 CRMT 25/95
			TB241852	TAMT-24/300-E	95 – 400	19 – 40	390	CRMT 95/240 CRMT 120/300 CRMT 185/400
			TB244002	TAMT-24/630-E	300 – 630	30 – 50	410	CRMT 185/400
	12/20	24 kV	TB240702	TAMT-24/95-E	25 – 95	14 – 25	385	CRMT 35/150 CRMT 25/95
			TB241852	TAMT-24/300-E	95 – 300	19 – 40	390	CRMT 95/240 CRMT 120/300
			TB244002	TAMT-24/630-E	400 – 630	30 – 50	410	CRMT 185/400
18/30	36 kV	TB360952	TAMT-36/50-E	35 – 50	14 – 25	385	CRMT 25/95	
		TB363002	TAMT-36/300-E	70 – 300	19 – 40	390	CRMT 95/240 CRMT 120/300	
		TB366002	TAMT-36/630-E	400 – 630	30 – 50	410	CRMT 185/400	

NOTE * CRMT series shear bolt lug (page 170) and CMMT series compression lugs (page 171) available separately
 • TAMT packaging: 3 single-core termination - minimum and multiple ord.qty 1 pack



3 x single-core polymeric cables



triplex polymeric cable



TSD

TSS

APPLICATIONS

- Connection of polymeric MV cables to electrical equipment with outer cone insulators according to IEC EN 50180 and IEC EN 50181

KIT CONTENTS

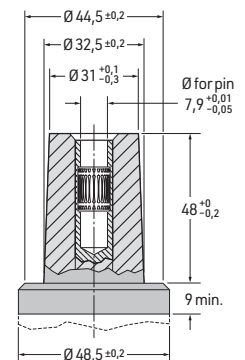
Kit for three single-core terminations, each contains

- Moulded EPDM insulating body with outer semi-conductive screen surface
- Termination lug and contact pin suitable for cables with copper and aluminium conductors
- Sealing mastic
- Self-amalgamating tape
- Lubricant
- Insulated earth wire
- Bail system
- Assembly accessories and instructions

ENEL-approved versions available on request

Type A Interface 250 A

dimensions in mm



Rated voltage
 $U_0/U (U_m)$
12/20 (24) kV

Cable formation
3 ×

Suitable for:
1-core or triplex polymeric-insulated cables (PVC, EPR, PE, XLPE) with wire or tape screen

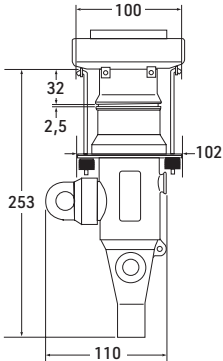
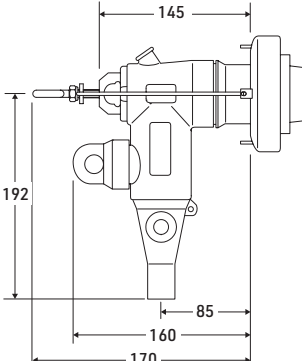
Rated current
250 A
Interface
type A
Installation
indoor/outdoor

Compliance
CENELEC HD 629.1 S2
IEC 60502-4

Medium Voltage Separable screened connectors

for single-core polymeric cables $U_m = 24 \text{ kV}$

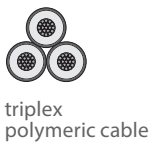
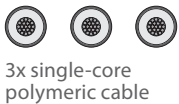
type A interface - 250 A - straight and elbow

	Rated voltage U_o/U (kV)	voltage class U_m	ref.	item	conductor cross-section range (mm ²)	cable insulation diameter range (mm)
 <p>dimensions in mm</p>	12/20	24 kV	TSD 3 × single-core 250 A straight			
			TD250016	TSD250-16/A	16	13.5 – 17.4
			TD250017	TSD250-16/B		16.3 – 20.8
			TD250025	TSD250-25/A	25	13.5 – 17.4
			TD250026	TSD250-25/B		16.3 – 20.8
			TD250035	TSD250-35/A	35	13.5 – 17.4
			TD250036	TSD250-35/B		16.3 – 20.8
			TD250037	TSD250-35/C		19.6 – 24.1
			TD250050	TSD250-50/A	50	13.5 – 17.4
			TD250051	TSD250-50/B		16.3 – 20.8
			TD250052	TSD250-50/C		19.6 – 24.1
			TD250070	TSD250-70/A	70	16.3 – 20.8
			TD250071	TSD250-70/B		19.6 – 24.1
			TD250095	TSD250-95/A	95	16.3 – 20.8
			TD250096	TSD250-95/B		19.6 – 24.1
			 <p>dimensions in mm</p>	12/20	24 kV	TSS 3 × single-core 250 A elbow
TS250016	TSS250-16/A	16				13.5 – 17.4
TS250017	TSS250-16/B					16.3 – 20.8
TS250025	TSS250-25/A	25				13.5 – 17.4
TS250026	TSS250-25/B					16.3 – 20.8
TS250035	TSS250-35/A	35				13.5 – 17.4
TS250036	TSS250-35/B					16.3 – 20.8
TS250037	TSS250-35/C					19.6 – 24.1
TS250050	TSS250-50/A	50				13.5 – 17.4
TS250051	TSS250-50/B					16.3 – 20.8
TS250052	TSS250-50/C					19.6 – 24.1
TS250053	TSS250-50/D					23.1 – 28.7
TS250070	TSS250-70/A	70				16.3 – 20.8
TS250071	TSS250-70/B					19.6 – 24.1
TS250072	TSS250-70/C					23.1 – 28.7
TS250095	TSS250-95/A	95				16.3 – 20.8
TS250096	TSS250-95/B		19.6 – 24.1			
TS250097	TSS250-95/C		23.1 – 28.7			
TS250098	TSS250-95/D		27.9 – 33.5			
TS250120	TSS250-120/A	120	19.6 – 24.1			
TS250121	TSS250-120/B		23.1 – 28.7			
TS250122	TSS250-120/C		27.9 – 33.5			

NOTE TSD and TSS Packaging: 3 single-core terminations - minimum and multiple ord.qty 1 pack

TS-R

Medium Voltage screened separable connectors asymmetrical T-body for polymeric single-core cables 24 kV - Type C interface - 630 A



APPLICATIONS

- Connection of polymeric MV cables to electrical equipment with outer cone insulators unified according to IEC EN 50180 and IEC EN 50181

ENEL-approved terminations
on page 148

Versions available on request
for maximum voltage $U_m = 36$ kV
and symmetrical versions

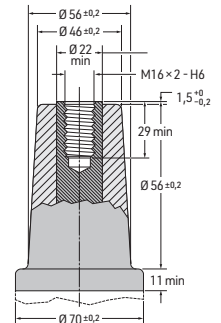
KIT CONTENTS

Kit for 3 single-core terminations, each contains

- Moulded EPDM insulating body with outer semi-conductive screen surface
- Termination lug and contact pin for cables with copper or aluminium conductors
- Sealing mastic
- Self-amalgamating tape
- Insulated earth wire
- Lubricant, accessories and instructions

Type C Interface 630 A

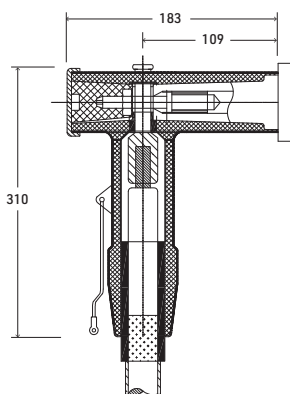
dimensions in mm



Rated voltage U_0/U_m (kV)	voltage class U_m	ref.	item	conductor cross-section range (mm ²)	cable insulation diameter min-max (mm)
12/20	24 kV	TS630025095	TS630-24/25-95-R	25-95	16.3 - 24.1
		TS630120185	TS630-24/120-185-R	120-185	20.0 - 27.0
		TS630240300	TS630-24/240-300-R	240-300	24.9 - 32.6

TS-R

3 × single-core 630 A • mechanical shear bolt lug



dimensions in mm

NOTES TS Packaging: 3 single-core terminations - minimum and multiple ord.qty 1 pack

MEDIUM VOLTAGE

Rated voltage
 U_0/U_m
12/20 (24) kV

Cable formation
3 ×

Suitable for:
1-core or triplex
polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen

Rated current
630 A
Type C Interface
Installation
indoor/outdoor

Compliance
CENELEC HD 629.1 S2
IEC 60502-4

TS-CA

Medium Voltage screened separable connectors for coupling connection

24 kV polymeric single-core cables - 630 A



APPLICATIONS

- Extruded MV cable connection to the back of TS-R series asymmetrical T-separable terminations

KIT CONTENTS

Kit for 3 single-core terminations, each contains

- Moulded EPDM insulating body with outer semi-conductive screen surface
- Termination lug and contact pin for cables with copper or aluminium conductors
- Sealing mastic
- Self-amalgamating tape
- Insulated earth wire
- Lubricant, accessories and instructions

Available on request versions for $U_m = 36$ kV voltage class



3x single-core polymeric cable

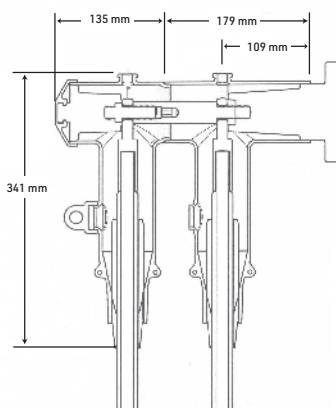


triplex polymeric cable

Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	conductor cross-section range (mm ²)	cable insulation diameter min-max (mm)
12/20	24 kV	TC630025	TSCA-630-24/25	25	
		TC630035	TSCA-630-24/35	35	16.3 – 19.3
		TC630050	TSCA-630-24/50	50	
		TC630070	TSCA-630-24/70	70	18.3 – 21.0
		TC630095	TSCA-630-24/95	95	20.0 – 24.1
		TC630120	TSCA-630-24/120	120	
		TC630150	TSCA-630-24/150	150	23.1 – 27.0
		TC630185	TSCA-630-24/185	185	
		TC630240	TSCA-630-24/240	240	24.9 – 28.9
		TC630300	TSCA-630-24/300	300	27.7 – 32.6

TS-CA

3 × single-core 630 A • coupling



dimensions in mm

NOTES TS-CA Packaging: 3 single-core terminations - minimum and multiple ord.qty 1 pack

Rated voltage U_0/U (U_m)
12/20 (24) kV

Cable formation



Suitable for:
1-core or triplex polymeric-insulated cables (PVC, EPR, PE, XLPE) with wire or tape screen

Installation
indoor/outdoor

Compliance
**CENELEC HD 629.1 S2
IEC 60502-4**

**ENEL-
approved**

Medium Voltage heat-shrink terminations for single-core polymeric cables



1 x single-core
polymeric cable



Rated voltage U_0/U (kV)	voltage class U_m	installation type	ref.	item	cable type *	conductor cross-section range (mm ²)	ENEL reference	pkg. (pcs)	min./mult. ord. qty (pk)
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1 × single-core heat shrink termination for wire screen cable

12/20	24 kV	indoor	TM273045	TMMT-24/50-I/U		25 – 50	273045	1	1
			TM273049	TMMT-24/630-I/U	(A)RE4H1R(X) (A)RG7H1R(X) (A)RG26H1M16	400 – 630	273049	1	1
		outdoor	TM273065	TMMT-24/185-E/U		50 – 185	273065	1	1

1 × single-core heat shrink termination for aluminium tube screen cable

12/20	24 kV	indoor	TM273040	TMMT-24/185-I/U-H5	ARE4H5E(X) (A)RP1H5E(X)	70 – 240	273040 includes 273046 273048	1	1
		outdoor	TM273064	TMMT-24/185-E/U-H5		70 – 240	273064	1	1

1 × single-core heat shrink termination for triplex cable

12/20	24 kV	indoor	TM273044	TMMT-24/150-I/U	ARG7H5EXY	70 – 150	273044	1	1
		outdoor	TM273066	TMMT-24/150-E/U			273066	1	1

* According to CEI-UNEL 35011 Standard

NOTES

Termination lugs not included

Packaging: 1 single-core termination - minimum and multiple ord.qty 1 pack

**ENEL-
approved**

Medium Voltage cold shrink terminations for single-core polymeric cables



1 x single-core
polymeric cable



Rated voltage U_0/U (kV)	voltage class U_m	installation type	ref.	item	cable type *	conductor cross-section range (mm ²)	ENEL reference	ENEL spec.	pkg. (pcs)	min./mult. ord. qty (pk)
1 × single-core cold shrink termination for wire screen or aluminium tube screen cable										
12/20	24 kV	indoor	TB273041	TAMT-24/240-I/U-H5	(A)RE4H1R(X) (A)RG7H1R(X) (A)RG26H1M16	95 –240	273041	GSCC005	1	1
		outdoor	TB273069	TAMT-24/240-E/U-H5	ARE4H5E(X) (A)RP1H5E(X)	95 –240	273069	GSCC005	1	1

* According to CEI-UNEL 35011 Standard

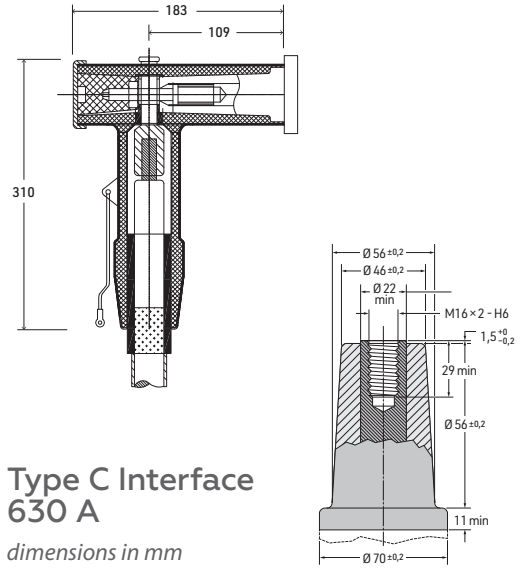
NOTES

Termination lugs not included

Packaging: 1 single-core termination - minimum and multiple ord.qty 1 pack

**ENEL-
approved**

T-body screened separable connectors
24 kV - type C interface - 630 A
 for polymeric single-core cables



**Type C Interface
630 A**
 dimensions in mm



1 x single-core
polymeric cable

Rated voltage U_0/U (kV)	voltage class U_m	install. type	ref.	item	cable type *	conductor cross-section range (mm ²)	ENEL reference	termination lug type	pkg. (pcs)	min./ mult. ord. qty (pk)
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1 × single-core separable connector
 for **wire screen** cables or **aluminium tube screen** cables

12/20	24 kV	indoor/ outdoor	TS273226	TS630-24/120/R-H5	(A)RE4H1R(X) (A)RG7H1R(X) (A)RG26H1M16	70 – 120	273226 (replaces 273252)	mechanical lug	1	1
			TS273247	TS630-24/185/R-H5	ARE4H5E(X) (A)RP1H5E(X)	150 – 185	273247 (replaces 273253)		1	1

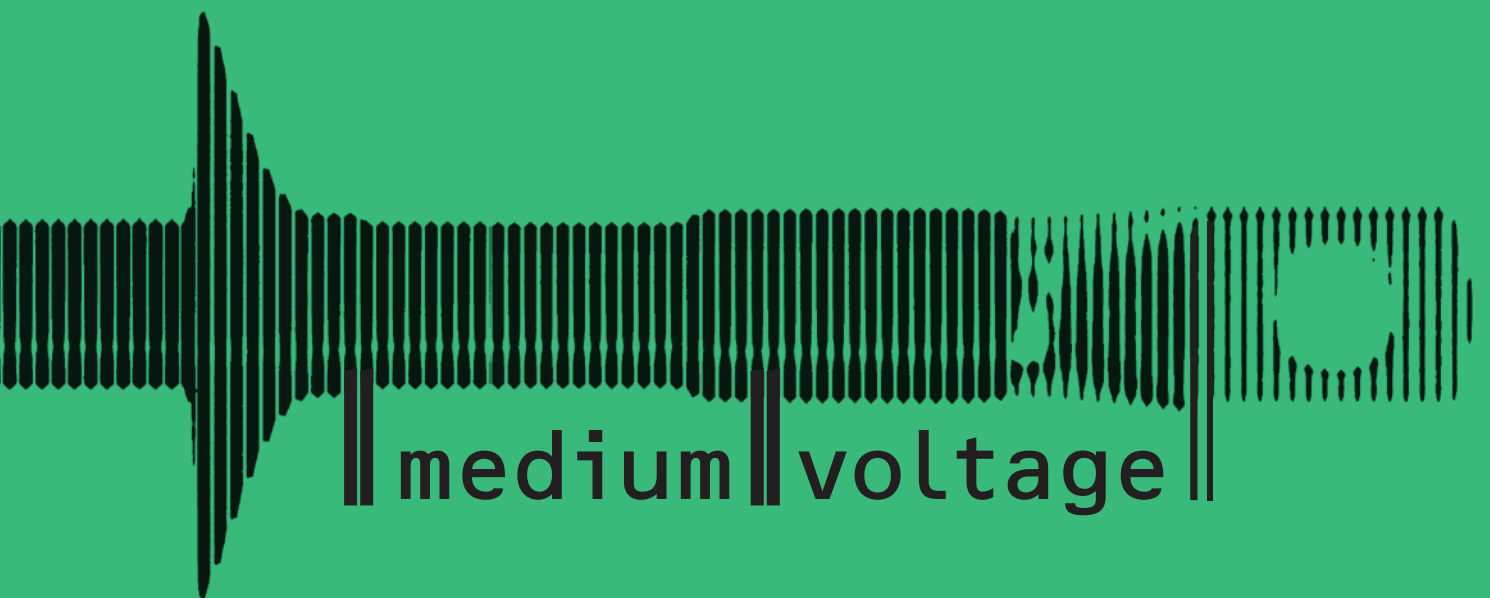
* According to CEI-UNEL 35011 Standard

Other versions available on request

NOTES Packaging: 1 single-core termination - minimum and multiple ord.qty 1 pack



02 JOINTS



download
PDF

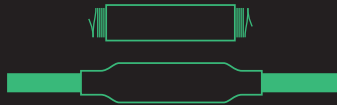
HEAT SHRINK JOINTS



Heat shrink joints
JTMT-1X - single-core
JTMT-3X - three-core

152
153

COLD SHRINK JOINTS



Cold shrink joints
JAMT-1X single-core
JAMT-1XM single-core- all-in-one

154
155

HEAT SHRINK TRANSITION JOINTS



Heat shrink transition joints

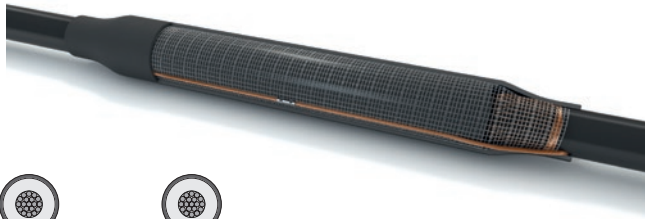
156

ENEL -APPROVED JOINTS



ENEL-approved joints
Heat shrink
Cold shrink

158
159



Single-core polymeric cable



Single-core polymeric cable

ENEL-approved joints on page 158

KEY FEATURES

- Ability to cover a wide range of cross sections with a single item
- Reliable under harsh installation conditions
- Compact size
- Reduced storage costs
- Unlimited shelf life

KIT CONTENTS

- Kit for one single-core joint with:
- Double wall heat shrink tubing
 - Tinned copper braid
 - Outer sheath with sealant
 - Assembly instructions



watch video

GMMT series shear bolt connectors * (page 172) or GMMT series compression (page 173) available separately
For armoured cables, ARM-JTMT armor continuity kit available separately (page 175)

Rated voltage U_0/U_m (kV)	voltage class U_m	ref.	item	conductor cross-sec min-max (mm ²)	joint length (mm)	(*) Connector shear Cu/Al GRMT series recommended
JTMT-1X						
1 × single-core						
3,6/6	7,2 kV	JT070701	JTMT-7/70-1X	10 – 70	400	–
8,7/15	17,5 kV	JT170501	JTMT-17/50-1X	25 – 50	600	GRMT 25/95
		JT171201	JTMT-17/120-1X	50 – 120	600	GRMT 35/150
		JT172401	JTMT-17/240-1X	120 – 240	700	GRMT 95/240
		JT173001	JTMT-17/300-1X	300	750	GRMT 120/300
12/20	24 kV	JT240951	JTMT-24/95-1X	25 – 95	650	GRMT 25/95
		JT242401	JTMT-24/240-1X	95 – 240	700	GRMT 95/240
		JT245001	JTMT-24/500-1X	240 – 500	800	GRMT 185/400
		JT248001	JTMT-24/800-1X	500 – 800	800	–
18/30	36 kV	JT361501	JTMT-36/150-1X	35 – 150	1000	GRMT 35/150
		JT363001	JTMT-36/300-1X	150 – 300	1000	GRMT 120/300
		JT366301	JTMT-36/630-1X	400 – 630	1000	GRMT 185/400

NOTES: JTMT-1X Packaging: 1 single-core joint - min. and mult. ord.: 1 pack

Rated voltage
 U_0/U_m
up to **18/30 (36) kV**

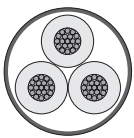
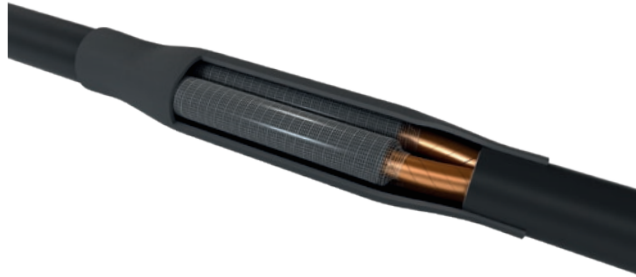
Cable formation

1 ×

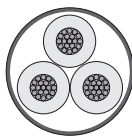
Suitable for:
1-core or triplex
polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen.

H5 version suitable also for
aluminium tube screen

Compliance
CENELEC HD 629.1 S2



Three-core polymeric cable



Three-core polymeric cable

KEY FEATURES

- Ability to cover a wide range of cross sections with a single item
- Reliable under harsh installation conditions
- Compact size
- Reduced storage costs
- Unlimited shelf life

KIT CONTENTS

- Kit for one three-core joint with:
- Double wall heat shrink tubing
 - Tinned copper braids
 - Outer sheaths with sealant
 - Assembly instructions

GMMT series shear bolt connectors * (page 172) or GMMT series compression (page 173) available separately
For armoured cables, ARM-JTMT armor continuity kit available separately (page 175)



watch video

Versions available on request
for voltage class $U_m = 36$ kV

Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	conductor cross-sec min-max (mm ²)	joint length (mm)	(*) Connector shear Cu/Al GRMT series recommended
JTMT-3X						
1 × three-core						
8,7/15	17,5 kV	JT170503	JTMT-17/50-3X	25 – 50	1250	GRMT 25/95
		JT171203	JTMT-17/120-3X	50 – 120	1300	GRMT 35/150
		JT172403	JTMT-17/240-3X	120 – 240	1500	GRMT 95/240
12/20	24 kV	JT240953	JTMT-24/95-3X	25 – 95	1500	GRMT 25/95
		JT242403	JTMT-24/240-3X	95 – 240	1600	GRMT 95/240
		JT244003	JTMT-24/400-3X	300 – 400	1600	GRMT 185/400

NOTES: JTMT-3X Packaging: 1 three-core joint - min. and mult. ord.: 1 kit

Rated voltage
 U_0/U (U_m)
up to 12/20 (24) kV

Cable formation

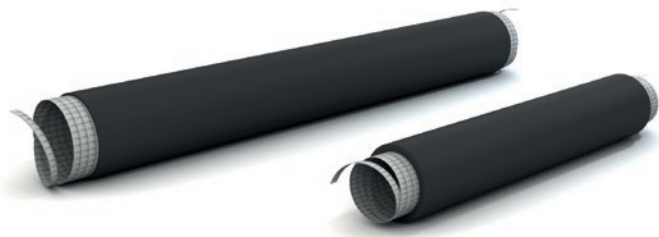


Suitable for:
3-core polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen.

Compliance
CENELEC HD 629.1 S2

JAMT-1X

Cold shrink joints for Medium Voltage for polymeric **single-core cables** up to 36 kV



Single-core polymeric cable



Single-core polymeric cable

ENEL-approved joints on page 159

KEY FEATURES

- Quick installation
- Ability to cover a wide range of cross sections with a single item
- No heat, flame or special tools required for the installation
- Reliable under harsh installation conditions
- Compact design
- Suitable for all laying conditions

KIT CONTENTS

Kit for **one single-core joint** with:

- Mechanical connector with shear bolts
- Cold shrink junction body in silicone rubber
- Cold shrink protection tube for outer sealing
- Silicone rubber filler and sealing tape
- Liquid silicone lubricant
- Tinned copper braid
- Assembly instructions



watch video

rated voltage U_0/U_m (kV)	voltage class U_m	ref.	item	conductor cross-sec min-max (mm ²)	cable insulation diameter min-max (mm)	length (mm)
12/20	24 kV	JA240951	JAMT-24/95-1X	25 – 95	13,8 – 27,0	600
		JA242401	JAMT-24/240-1X	70 – 240	18,4 – 36,0	600
		JA243001	JAMT-24/300-1X	150 – 300	25,3 – 49,5	600
18/30	36 kV	JA360951	JAMT-36/95-1X	25 – 95	13,8 – 27,0	600
		JA362401	JAMT-36/240-1X	70 – 240	20,8 – 36,0	600
		JA363001	JAMT-36/300-1X	150 – 300	25,3 – 49,5	600

NOTES JAMT-1X Packaging: 1 single-core joint - min. and mult. ord.: 1 pack

Rated voltage
 U_0/U_m
up to 18/30 (36) kV

Cable formation
1 ×

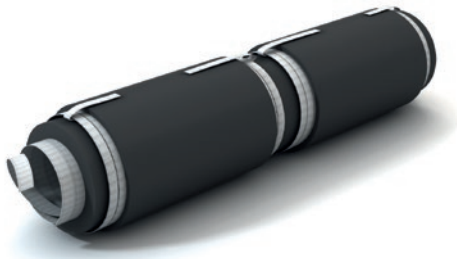
Suitable for:
1-core or triplex
polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen.

H5 version suitable also for
aluminium tube screen

Compliance
CENELEC HD 629.1 S2

JAMT-1XM

All-in-one cold shrink joints for Medium Voltage
for polymeric **single-core cables** up to 36 kV



KEY FEATURES

- Maximum rapidity of installation
- No heat, flame or special tools required for installation
- Ability to cover a wide range of cross sections with a single item
- Reliable under harsh installation conditions
- Compact design
- Suitable for all laying conditions



Single-core
polymeric cable



Single-core
polymeric cable

ENEL-approved joints on page 159

KIT CONTENTS

Kit for **one single-core joint** with:

- Mechanical connector with shear bolts
- Cold shrink junction body in silicone rubber integrated with cold shrink body for outer sealing and with tinned copper braid
- Silicone rubber filler and sealing tape
- Liquid silicone lubricant
- Assembly instructions
- Continuity restoration component of aluminium tube screen (1XM-H5 version)



watch
video

rated voltage U_0/U_m (kV)	voltage class U_m	ref.	item	conductor cross-sec min-max (mm ²)	cable insulation diameter min-max (mm)	length (mm)
JAMT-1XM 1 × single-core for cables with wire screen or tapes						
12/20	24 kV	JA362401C	JAMT-36/240-1XM	70 – 240	18,4 – 36,0	450
18/30	36 kV					
JAMT-1XM-H5 1 × single-core for cables with aluminium tube screen						
12/20	24 kV	JA362401D	JAMT-36/240-1XM-H5	70 – 240	20,8 – 36,0	450
18/30	36 kV					

NOTES JAMT-1XM Packaging: 1 single-core joint - min. and mult. ord.: 1 pack

Rated voltage
 U_0/U_m
up to 18/30 (36) kV

Cable formation

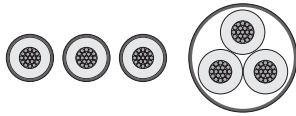
1 ×

Suitable for:
1-core or triplex
polymeric-insulated cables
(PVC, EPR, PE, XLPE)
with wire or tape screen.

H5 version suitable also for
aluminium tube screen

Compliance
CENELEC HD 629.1 S2

24 kV Transition joint between 3 polymeric single-core cables and 1 polymeric three-core cable



3 single-core polymeric cables (A)RG7H1R

1 three-core polymeric cable (A)RG7H10R

ref.	item	section min-max (mm ²)	min. ord. qty (pcs)	mult. ord. qty (pcs)
JT240956	JTMT-24/95-3X-1X	25 – 70	1	1
JT242406	JTMT-24/240-3X-1X	95 – 240	1	1
JT245006	JTMT-24/500-3X-1X	240 – 500	1	1

recommended Cu/Al Connector shear GRMT series (*)

GRMT 25/95

GRMT 95/240

GRMT 185/400

24 kV Transition joint between polymeric single-core cables and single-core paper cable



1 single-core polymeric cable (A)RG7H1R



1 single-core paper cable (A)RC1HLR(X)

ref.	item	section min-max (mm ²)	min. ord. qty (pcs)	mult. ord. qty (pcs)
JT240257	JTMT-24/25-1X-1C	25 – 95	1	1
JT242407	JTMT-24/240-1X-1C	95 – 240	1	1
JT244007	JTMT-24/400-1X-1C	240 – 500	1	1

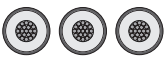
recommended Cu/Al Connector shear GRMT series (*)

GRMT 25/95

GRMT 95/240

GRMT 185/400

24 kV Transition joint between 3 polymeric single-core cables and three-core paper cable



3 single-core polymeric cables (A)RG7H1R



1 three-core paper cable (A)RC1HLOR(X)

ref.	item	section min-max (mm ²)	min. ord. qty (pcs)	mult. ord. qty (pcs)
JT240258	JTMT-24/25-1X-3C	25	1	1
JT242408	JTMT-24/240-1X-3C	50 – 240	1	1
JT244008	JTMT-24/400-1X-3C	300 – 400	1	1

recommended Cu/Al Connector shear GRMT series (*)

GRMT 25/95

GRMT 95/240

GRMT 185/400

17,5 kV Transition joint between 3 single-core polymeric cables and three-core paper belted cable



3 single-core polymeric cables (A)RG7H1R



1 three-core belted paper cable (A)SCOLR

ref.	item	section min-max (mm ²)	min. ord. qty (pcs)	mult. ord. qty (pcs)
JT170709	JTMT-17/70-3CC-1X	25 – 70	1	1
JT171509	JTMT-17/150-3CC-1X	50 – 150	1	1
JT173009	JTMT-17/300-3CC-1X	240 – 300	1	1
JT175009	JTMT-17/500-3CC-1X	400 – 500	1	1

Compliance
CENELEC HD 629.2 S2

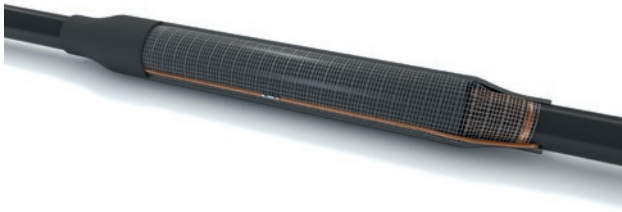
Listed cable designations according to CEI-UNEL 35011 Standard are an example of the types of cables on which the joints can be installed

* GRMT shear bolt connectors available separately (page 172) or with GMMT series compression (page 173)



**ENEL-
approved**

Heat shrink joints for Medium Voltage for polymeric single-core cables



Single-core
polymeric cable



Single-core
polymeric cable

rated voltage U_0/U (kV)	voltage class U_m	ref.	item	cable type *	conductor cross-section range (mm ²)	ENEL reference	ENEL technical specification	pkg. (pcs)	min./ mult. ord. q.ty (pk)
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1 × Heat shrink **single-core joint** for wire screen cables

12/20	24 kV	JT271071	JTMT-24/185-I/U	(A)RE4H1R(X) (A)RG7H1R(X) (A)RG26H1M16	50 – 185	271071	DJ 4376/1	1	1
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1 × Heat shrink **single-core joint** for cables with aluminium tube screen

12/20	24 kV	JT271021	JTMT-24/185-I/U-H5	ARE4H5E(X) (A)RP1H5E(X)	70 – 185	271021	DJ 4387/2	1	1
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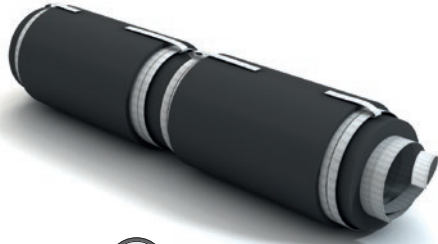
1 × Heat shrink **single-core joint** for triplex cables

12/20	24 kV	JT271072	JTMT-24/150-I/U-H5	ARG7H5EXY	35 – 150	271072	DJ 4376/2	1	1
-------	--------------	-----------------	--------------------	-----------	----------	--------	-----------	---	---

NOTE Connectors not included

**ENEL-
approved**

**Cold shrink joints
Medium Voltage**
for polymeric single-core cables



Single-core
polymeric cable



Single-core
polymeric cable

Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	cable type*	conductor cross-section (mm ²)	ENEL reference	ENEL technical specification	pkg. (pcs)	min./mult. ord. qty (pk)
----------------------------------	------------------------	------	------	-------------	---	----------------	------------------------------	------------	--------------------------

1 × Cold shrink single-core joint
for wire screen cables or aluminum tube screen cables

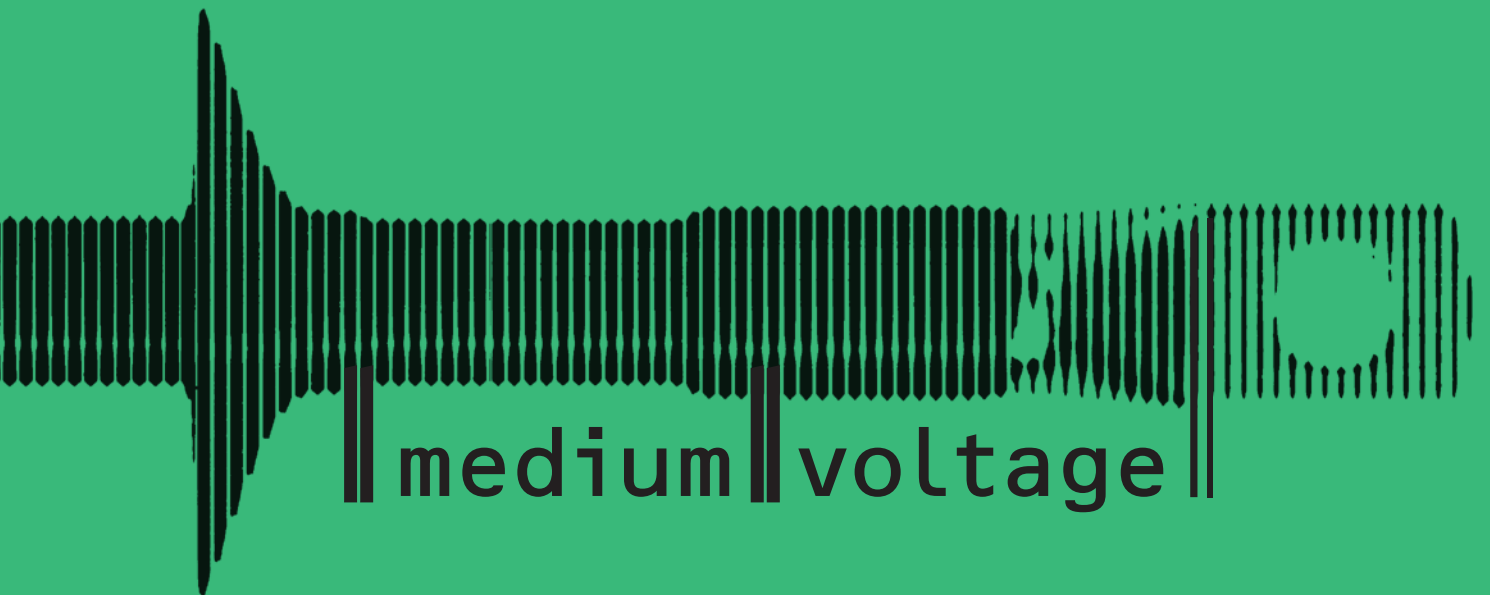
12/20	24 kV	JA271030	JAMT-36/240-I/U-H5	(A)RE4H1R(X) (A)RG7H1R(X) (A)RG26H1M16 ARE4H5E(X)(Y) (A)RP1H5E(X) (A)RC4HLRX	95 – 240	271030	NCDJ 4388 GSCC004	1	1
18/30									

* According to CEI-UNEL 35011 Standard

NOTE Connector included

MEDIUM VOLTAGE

03 HEAT SHRINK TUBING AND TAPES FOR BUSBAR INSULATION

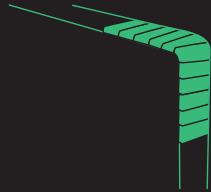


download
PDF



Heat shrink tubing in spool and in bars
for Medium Voltage busbar insulation
GPSM for busbars up to 24 kV
GPSA for busbars up to 36 kV

162
164



NTMT
Heat shrink tapes
for Medium Voltage busbar insulation

166



FTMT
Heat shrink sheets
for Medium Voltage busbar insulation

167



APPLICATIONS

- Copper or aluminium busbar insulation in MV cabinets with maximum voltage 24 kV

KEY FEATURES

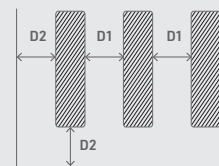
- Protection against accidental contacts
- Highly flexible after heat shrinking to facilitate busbar bends
- High mechanical resistance
- Distance reduction up to 45% between busbars

SPECIFICATIONS

- Solvent resistant
- UV resistant
- Resistant to weathering
- Halogen free
- Tubing reference and size printed on each bar (GPSM-1000)

Typical clearances between rectangular busbars for indoor applications

maximum voltage (voltage class) U_m	clearance (mm)		clearance with GPSM (mm)	
	D1	D2	D1	D2
12 kV	120	120	65	75
24 kV	220	220	115	150



D1 Phase-phase clearance
D2 Phase-ground clearance

Rated voltage $U_0/U (U_m)$
up to 12/20 (24) kV

Dielectric strength (IEC 60243)
200 kV/cm

Volume resistivity (IEC 60093)
 $2 \times 10^8 \text{ M}\Omega \cdot \text{cm}$

Relative dielectric constant
(IEC 60250)
3.0

Tensile strength (ISO 37)
14 MPa

Elongation (ISO 37)
500 %


Density (ISO R1183)
 1.1 g/cm^3

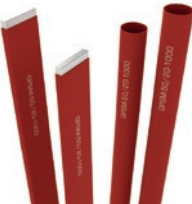
Water absorption (ISO R62)
0.3 %
(after 14 days at 23 °C)

Accelerated ageing
(after 168 h at 120 °C) (ISO 188)

tensile strength (ISO37)
12 MPa

Elongation (ISO 37)
400 %

GPSM-A/U		spool			Allowed busbar size		
ref.	item	D/d (mm)	spool length (m)	min./mult. ord. qty (m)	A+B (mm) min – max	C (mm) min – max	
	GP0015	GPSM-15/6-A/U	15/6	30	30	12 – 18	6,5 – 12
	GP0030	GPSM-30/12-A/U	30/12	30	30	22 – 38	13,5 – 25
	GP0050	GPSM-50/20-A/U	50/20	30	30	36 – 65	22 – 43
	GP0075	GPSM-75/30-A/U	75/30	20	20	55 – 95	33 – 63
	GP0100	GPSM-100/40-A/U	100/40	25	25	70 – 130	44 – 86
	GP0120	GPSM-120/50-A/U	120/50	25	25	90 – 165	55 – 105
	GP0175	GPSM-175/70-A/U	175/70	15	15	125 – 235	80 – 150
	GP0205	GPSM-205/110-A/U	205/110	10	10	200 – 276	127 – 190

GPSM-1000		1 meter bars			Allowed busbar size		
ref.	item	D/d (mm)	length (m)	min./mult. ord. qty (m)	A+B (mm) min – max	C (mm) min – max	
	GP2015	GPSM-15/6-1000	15/6	1	1	12 – 18	6,5 – 12
	GP2030	GPSM-30/12-1000	30/12	1	1	22 – 38	13,5 – 25
	GP2050	GPSM-50/20-1000	50/20	1	1	36 – 65	22 – 43
	GP2075	GPSM-75/30-1000	75/30	1	1	55 – 95	33 – 63
	GP2100	GPSM-100/40-1000	100/40	1	1	70 – 130	44 – 86
	GP2120	GPSM-120/50-1000	120/50	1	1	90 – 165	55 – 105
	GP2175	GPSM-175/70-1000	175/70	1	1	125 – 235	80 – 150
	GP2205	GPSM-205/110-1000	205/110	1	1	200 – 276	127 – 190



D Diameter before shrinkage
d Diameter after free shrinkage

- A Rectangular busbar longer side
- B Rectangular busbar shorter side
- C Round busbar diameter

MEDIUM VOLTAGE



APPLICATIONS

- Copper or aluminium busbar insulation in MV cabinets with maximum voltage 36 kV

KEY FEATURES

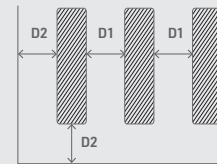
- Protection against accidental contacts
- Highly flexible after heat shrinking to facilitate busbar bends
- High mechanical resistance
- Distance reduction up to 65% between busbars

SPECIFICATIONS

- Solvent resistant
- UV resistant
- Resistant to weathering
- Halogen free
- Tubing reference and size printed on each bar (GPSA-1000)

Typical clearances between rectangular busbars for indoor applications

maximum voltage (voltage class) U_m	clearance (mm)		clearance with GPSA (mm)	
	D1	D2	D1	D2
12	120	120	35	45
24	220	220	70	100
36	320	320	140	190



D1 Phase-phase clearance
D2 Phase-ground clearance

MEDIUM VOLTAGE

Rated voltage $U_0/U (U_m)$
up to 18/30 (36) kV

Dielectric strength (IEC 60243)
200 kV/cm

Resistività volumetrica (IEC 60093)
 $2 \times 10^8 \text{ M}\Omega \cdot \text{cm}$

Costante dielettrica relativa
(IEC 60250)
3,0

Tensile strength (ISO 37)
14 MPa

Elongation (ISO 37)
500 %

Density (ISO R1183)
 $1,1 \text{ g/cm}^3$

Water absorption (ISO R62)
0,3 %
(after 14 days at 23 °C)

Accelerated ageing
(after 168 h at 120 °C) (ISO 188)

Tensile strength (ISO 37)
12 MPa

Elongation (ISO 37)
400 %

GPSA-A/U

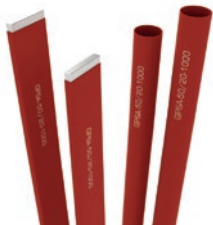
spool



ref.	item	D/d (mm)	spool length (m)	min./mult. ord. qty (m)	Allowed busbar size	
					A+B (mm) min – max	C (mm) min – max
GP1025	GPSA-25/10-A/U	25/10	25	25	17 – 28	11 – 20
GP1040	GPSA-40/16-A/U	40/16	20	20	28 – 45	18 – 32
GP1065	GPSA-65/25-A/U	65/25	15	15	44 – 69	28 – 47
GP1100	GPSA-100/40-A/U	100/40	15	15	69 – 102	44 – 72
GP1150	GPSA-150/60-A/U	150/60	15	15	102 – 148	65 – 105
GP1175	GPSA-175/80-A/U	175/80	10	10	133 – 196	85 – 125

GPSA-1000

1 meter bars

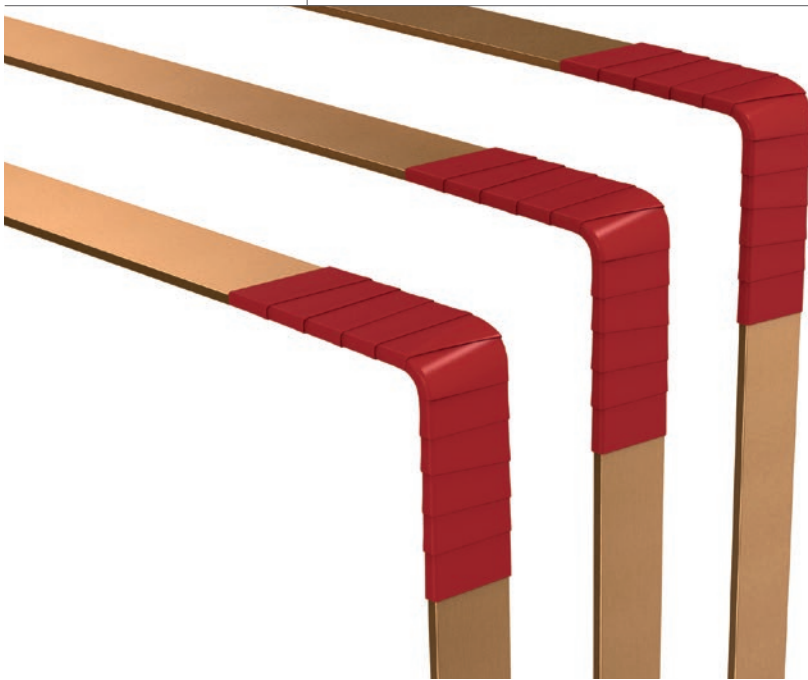


ref.	item	D/d (mm)	length (m)	min./mult. ord. qty (m)	Allowed busbar size	
					A+B (mm) min – max	C (mm) min – max
GP3025	GPSA-25/10-1000	25/10	1	1	17 – 28	11 – 20
GP3040	GPSA-40/16-1000	40/16	1	1	28 – 45	18 – 32
GP3065	GPSA-65/25-1000	65/25	1	1	44 – 69	28 – 47
GP3100	GPSA-100/40-1000	100/40	1	1	69 – 102	44 – 72
GP3150	GPSA-150/60-1000	150/60	1	1	102 – 148	65 – 105
GP3175	GPSA-175/80-1000	175/80	1	1	133 – 196	85 – 125



D Diameter before shrinkage
d Diameter after free shrinkage

- A Rectangular busbar longer side
- B Rectangular busbar shorter side
- C Round busbar diameter



APPLICATIONS

- Medium Voltage busbar insulation and copper or aluminium connections with complex shape

KEY FEATURES

- Protection against accidental contacts
- High mechanical resistance

FEATURES

- Supplied in spool
- Hot melt sealant on one side
- Flame installation with overlap of 2/3 the width
- Solvent resistant
- UV resistant
- Resistant to weathering
- Halogen free

ref.	item	height (mm)	spool length (m)	min. / mult. ord.qty (m)
NT0012	NTMT-12-A	25	10	10
NT0014	NTMT-14-A	50	10	10
NT0015	NTMT-15-A	75	10	10
NT0016	NTMT-16-A	100	10	10

Dielectric strength (IEC 60243)
160 kV/cm

Volume resistivity (IEC 60093)
1×10⁸ MΩ·cm

Relative dielectric constant (IEC 60250)
3.0

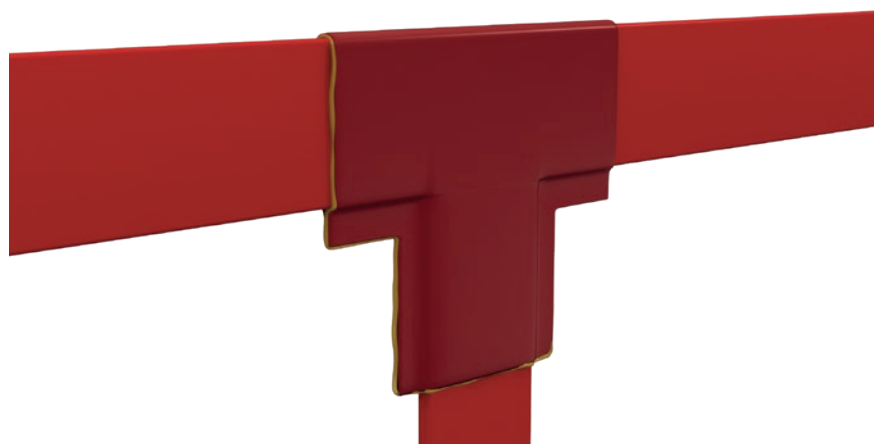
Tensile strength (ISO37)
15 MPa

Elongation (ISO 37)
400 %

Density (ISO R1183)
1.0 g/cm³

Water absorption (ISO R62)
(after 14 days at 23 °C)
< 1 %

Copper corrosion (ASTM D2671)
none



APPLICATIONS

- Medium Voltage busbar insulation and copper or aluminium connections with complex shape where the use of tubing or tapes is not possible

KEY FEATURES

- Protection against accidental contacts

FEATURES

- Solvent resistant
- UV resistant
- Resistant to weathering
- Halogen free

FTMT-05

Supplied in packages with 3 sheets 660 × 500 mm each

FTMT-10

- Supplied in 660 mm × 10 m spool

ref.	item	dimensions (m)	package (pcs)	min. / mult. ord.qty (pk)
FT0005	FTMT-05	0,660 × 0,5	3	3
FT0010	FTMT-10	0,660 × 10	1	1

Dielectric strength (IEC 60243)
200 kV/cm

Volume resistivity (IEC 60093)
1×10⁹ MΩ·cm

Relative dielectric constant (IEC 60250)
3.4

Tensile strength (ISO37)
6 MPa

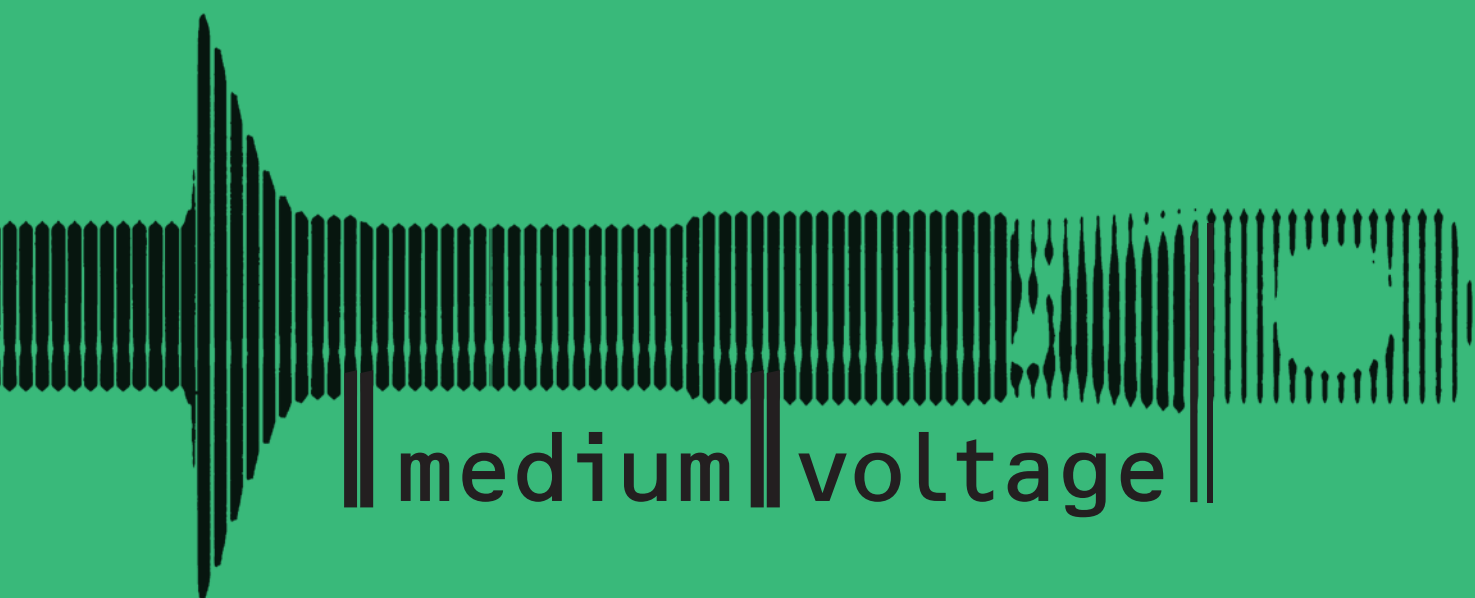
Elongation (ISO 37)
590 %

Density (ISO R1183)
1.1 g/cm³

Water absorption (ISO R62) (after 14 days at 23 °C)
0.5 %

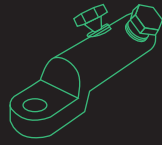
Copper corrosion (ASTM D2671)
none

04 CONNECTING ELEMENTS



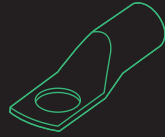
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TERMINATION LUGS



CRMT
Mechanical shear bolt termination lugs

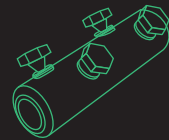
170



CMMT
Compression termination lugs

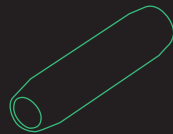
171

CONNECTORS



GRMT
Mechanical shear bolt connectors

172



GMMT
Compression connectors

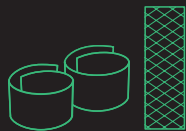
173

CONNECTING ACCESSORIES



RS034
Steel contact spring
for Medium Voltage cable armour and shielding

174



ARM-JTMT
Armour restoration kit for Medium Voltage cables

175

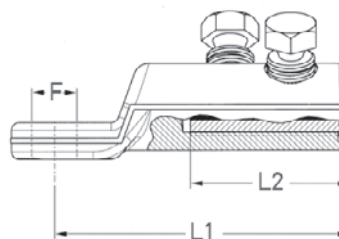
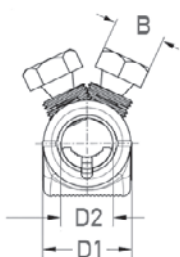


APPLICATIONS

- Termination of copper or aluminium conductors of Medium Voltage cables

FEATURES

- Tinned aluminium
- Range taking** (multiple sections)
- Adapter for application on smaller cable sizes
- No crimping tool required for installation



ref.	item	conductor cross-section (mm ²)	hole diameter F (mm)	number contact bolts	size head bolts B (mm)	cable conductor material	dimensions (mm)				min./mult. ord. qty (pcs)
							length L1	ext. diam. D1	length int. L2	int. diam. D2	
CR025095F13	CRMT 25/95-13	25 – 95	13	1	14	Cu, Al	60	24	30	12,8	1
CR035150F13	CRMT 35/150-13	35 – 150	13	1	17	Cu, Al	86	28	35	15,8	1
CR095240F13	CRMT 95/240-13	95 – 240	13	2	19	Cu, Al	112	33	60	20	1
CR095240F17	CRMT 95/240-17	95 – 240	17	2	19	Cu, Al	112	33	60	20	1
CR120300F13	CRMT 120/300-13	120 – 300	13	2	22	Cu, Al	115	37	65	24	1
CR120300F17	CRMT 120/300-17	120 – 300	17	2	22	Cu, Al	115	37	65	24	1
CR185400F13	CRMT 185/400-13	185 – 400	13	3	22	Cu, Al	137	42	80	25,5	1
CR185400F17	CRMT 185/400-17	185 – 400	17	3	22	Cu, Al	137	42	80	25,5	1

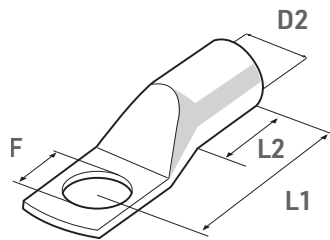


APPLICATIONS

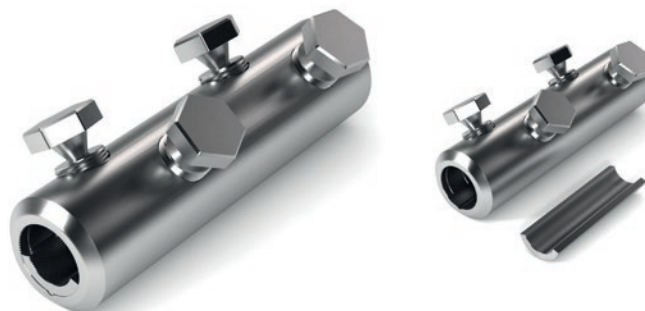
- Termination of copper conductors of Medium Voltage cables

FEATURES

- Tin-plated copper
- Double-crimping long body



ref.	item	conductor cross-section (mm ²)	hole diameter F (mm)	cable conductor material	dimensions (mm)			min./mult. ord. qty (pcs)
					length L1	length internal L2	internal diameter D2	
CM2535	CMMT 25	25	12	Cu	38	17,5	7	1
CM3040	CMMT 35	35	12	Cu	44	23	9	1
CM0050	CMMT 50	50	12	Cu	48	25	10	1
CM7080	CMMT 70	70	12	Cu	53	30	12	1
CM9510	CMMT 95	95	12	Cu	60,5	34	13,7	1
CM0120	CMMT 120	120	12	Cu	63	38	15,2	1
CM0150	CMMT 150	150	12	Cu	70	42	16,7	1
CM0185	CMMT 185	185	12	Cu	83	48	19,2	1
CM0240	CMMT 240	240	14	Cu	93	53	21,2	1
CM0300	CMMT 300	300	14	Cu	94	59	23,7	1

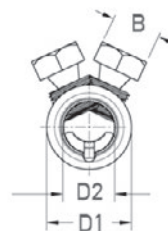
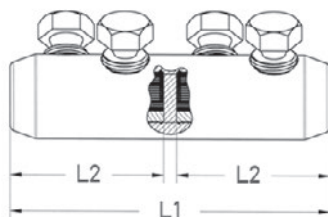


APPLICATIONS

- Connection of copper or aluminium conductors of Medium Voltage cables

FEATURES

- Tinned aluminium
- **Range-taking** (multiple sections)
- Suitable for aluminium-to-aluminium, aluminium-to-copper and copper-to-copper connections
- With solid center stop
- Adapter for application on different cross-section cables
- No crimping tool required for installation



ref.	item	conductor cross-section range (mm ²)	number bolts of contact	size head bolts B (mm)	conductor material	dimensions (mm)				min./mult. ord. qty (pcs)
						length L1	ext. diam. D1	length int. L2	int. diam. D2	
GR025095	GRMT 25/95	25 – 95	2	14	Cu, Al	65	24	30	12,8	1
GR035150	GRMT 35/150	35 – 150	2	17	Cu, Al	80	28	35	15,8	1
GR095240	GRMT 95/240	95 – 240	4	19	Cu, Al	125	33	60	20	1
GR120300	GRMT 120/300	120 – 300	4	22	Cu, Al	140	37	65	24	1
GR185400	GRMT 185/400	185 – 400	6	22	Cu, Al	170	42	80	25,5	1

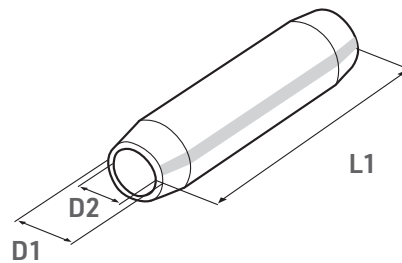


APPLICATIONS

- Connection of copper conductors of Medium Voltage cables

FEATURES

- Tin-plated copper



ref.	item	conductor cross-section (mm ²)	cable conductor material	dimensions (mm)			min./mult. ord. qty (pcs)
				length connector L1	outer diameter D1	internal diameter D2	
GM2535	GMMT 25	25	Cu	60	11	7	1
GM3040	GMMT 35	35	Cu	60	12,5	8,2	1
GM0050	GMMT 50	50	Cu	60	14,5	10	1
GM6370	GMMT 70	70	Cu	70	16,5	11,5	1
GM9510	GMMT 95	95	Cu	80	20	12	1
GM0150	GMMT 120/150	120–150	Cu	80	20	13,5	1
GM0185	GMMT 185	185	Cu	80	23	15	1
GM0240	GMMT 240	240	Cu	100	26,5	19,3	1



APPLICATIONS

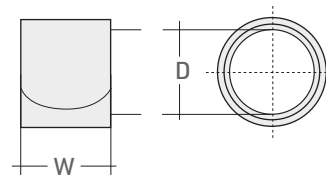
- Continuity restoration of metal armours and shields

KEY FEATURES

- Safe electrical contact thanks to the spring closing force
- Installation without soldering

FEATURES

- Stainless steel spring



width W	ref.	item	wrap diameter min-max (mm)	length (mm)	diameter D (mm)	min./mult. ord. qty (pcs)
13 mm	RS034A	RS034-A	12 – 20	280	10	1
	RS034K	RS034-K	12 – 20	400	10	1
	RS034B	RS034-B	17 – 28	400	14	1
	RS034C	RS034-C	25 – 40	570	20	1
	RS034D	RS034-D	36 – 60	850	30	1
25 mm	RS034E	RS034-E	17 – 29	570	14	1
	RS034N	RS034-N	25 – 34	650	19	1
	RS034F	RS034-F	30 – 39	700	22	1
	RS034M	RS034-M	33 – 45	850	25	1
	RS034G	RS034-G	40 – 60	950	30	1
30 mm	RS034H	RS034-H	50 – 75	1100	38	1
	RS034I	RS034-I	50 – 75	1350	38	1
	RS034L	RS034-L	57 – 85	1350	45	1
	RS034O	RS034-O	85 – 110	1500	70	1





APPLICATIONS

- Continuity restoration of metal armours and shields

KIT CONTENTS

- no. 2 steel constant force contact springs
- Tinned copper braid

Rated voltage U_0/U (kV)	voltage class U_m	ref.	item	diameter of application (mm)	cores		min. / mult. ord. qty (pcs)
							
					conductor cross-section* (mm ²)		
8.7/15	17.5 kV	ARMJT2540	ARM-JTMT 25/40	25 – 40	25 – 150	–	1
		ARMJT4060	ARM-JTMT 40/60	40 – 60	150 – 400	16 – 50	1
		ARMJT5075	ARM-JTMT 50/75	50 – 75	500 – 630	35 – 120	1
		ARMJT5785	ARM-JTMT 57/85	57 – 85	–	95 – 240	1
		ARMJT85110	ARM-JTMT 85/110	85 – 110	–	300	1
12/20	24 kV	ARMJT2540	ARM-JTMT 25/40	25 – 40	25 – 95	–	1
		ARMJT4060	ARM-JTMT 40/60	40 – 60	120 – 300	–	1
		ARMJT5075	ARM-JTMT 50/75	50 – 75	400 – 630	35 – 95	1
		ARMJT5785	ARM-JTMT 57/85	57 – 85	–	50 – 185	1
		ARMJT85110	ARM-JTMT 85/110	85 – 110	–	240 – 300	1
18/30	36 kV	ARMJT2540	ARM-JTMT 25/40	25 – 40	35 – 95	–	1
		ARMJT4060	ARM-JTMT 40/60	40 – 60	120 – 400	–	1
		ARMJT5075	ARM-JTMT 50/75	50 – 75	400 – 630	–	1
		ARMJT5785	ARM-JTMT 57/85	57 – 85	–	35 – 95	1
		ARMJT85110	ARM-JTMT 85/110	85 – 110	–	120 – 300	1

* Allowed indicative conductor cross-sections referred to single-core cables type RG7H1ANR and three-core cables type RG7H1OZR

01 PLUGS, CABLE TIES, MOUNTING BASES, COLLARS, TOOLS, BRAIDED SLEEVING



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PDF

EXPANSION PLUGS



TX
Wall plugs for light duty fixings

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CABLE TIES, MOUNTS AND FIXING COLLARS



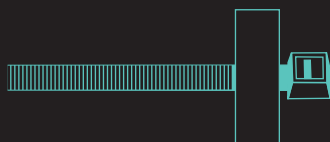
Nylon cable ties
FB - white
FN - black

180



Nylon adhesive base mounts
BB - white
BN - black

182



FBT
Identification cable ties

182



FGS
Saddle mount ties - grey

183



CL
Nylon cable collars

184

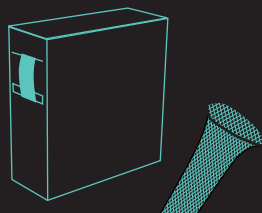
TOOLS FOR CABLE TIES AND COLLAR APPLICATION



UFF-8 / UFC-9
Tools for cable ties and collar application

185

POLYESTER BRAIDED SLEEVING



Polyester braided sleeving
COBRABOX® - in dispenser box
RHB - in spool

186

TX

Nylon plug with 4-way expansion for light duty fixings

anti-twist fins
near the collar



collar
that prevents the plug from slipping
into the drill hole, and allows a flush-
mounted installation



four-way
expansion
ensures uniform force distribution
and guarantees high load-bearing
values in all building material

APPLICATIONS

- Light duty fixings on most common building materials: concrete, natural stone, solid and perforated bricks, hollow blocks made from lightweight concrete, reinforced concrete, plasterboard panels

Nylon (PA) 6.6
premium-grade

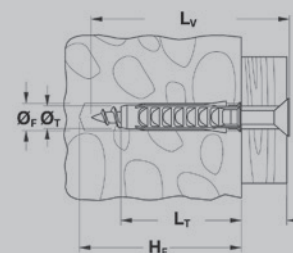
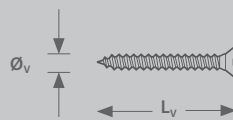
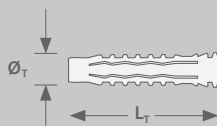
Anti-twist fins
near the collar

Compliant to ETAG 020 Annex A

4-way expansion body

Flush-to-wall installation

item	plug		screw diameter × length (mm × mm)	drill		minimum drill depth (mm)	recommended load	
	diameter \varnothing_T (mm)	length L_T (mm)		diameter \varnothing_F (mm)	depth H_F (mm)		concrete class \geq C20/25 (daN)	solid brick (daN)
TX 5	5	25	4 × 30	5	30	25	30	16
TX 6	6	30	4,5 × 40	6	40	35	65	22
TX 8	8	40	5 × 45	8	50	45	75	42
TX 10	10	50	6 × 60	10	60	55	125	80



TX

Nylon plug with 4-way expansion for light duty fixings



TA

carton boxes



ref.	item	plug Ø × L (mm)	screw Ø × L (mm)	pack. (pcs)	min. /mult. ord. qty (pk)
TA0000	TX 5	5 × 25	4 × 30	100	20
TA0001	TX 6	6 × 30	4,5 × 40	100	60
TA0002	TX 8	8 × 40	5 × 45	50	10
TA0003	TX 10	10 × 50	6 × 60	25	10

TAK

buckets

ref.	item	plug Ø × L (mm)	screw Ø × L (mm)	pack. (pcs)	min. /mult. ord. qty (pk)
TAK505	TX 5	5 × 25	4 × 30	500	10
TAK300	TX 6	6 × 30	4,5 × 40	300	10
TAK500				500	12



**TOOL
always included**



FB
FN

Nylon cable ties

white (FB) / black (FN)



PA 6.6

Quality materials

High quality polyamide 6.6 (also known as nylon 6.6), which ensures: **sturdiness, rigidity** and hardness, **dimensional stability**, also in the presence of temperature variations, and **abrasion resistance**



Eco-friendly

Compliant to EU Directive 2015/863 (RoHS 3)
Halogen Free

EN 62275

Standard Compliant

International Standard **IEC EN 62275** relating to cable ties for electrical

installations defines the requirements and tests to accurately determine its features such as **installation diameters**, and **installation and operating temperatures, flame propagation** and **tensile strength** both under normal conditions and after thermal cycles

Tensile strength

It is the main parameter when choosing a cable tie. In accordance with IEC CEI EN 62275 it is expressed in **Newton**, where $1 \text{ N} = 1 \text{ kg} \times 9.81 \text{ m/s}^2$. To obtain the load value in kg starting from the one shown in Newton, simply divide the latter by 9.81 (i.e. by 10, with good approximation).

For example, 220 N corresponds to a maximum load of about 22 kg (more precisely $22.4 = 220 / 9.81$)

Compliance **CEI EN 62275**

Self-extinguishing (UL 94) **V2**

Operating temperature range
-40 °C / +85 °C

180 | e



CE Marking



Directive EU 2015/863
(RoHS 3) Compliant



Halogen free

APPLICATIONS

- Wiring and fixing of cables, flexible hoses and pipes
- Also suitable for outdoor applications (FN series)

FEATURES

- Nylon (PA 6.6)
- Carbon black additivated (FN series)



FB
white



FN
black

size length x width (mm)	bundle diameter min-max (mm)	tensile strength (N) *	pack. (pcs)	min./mult. ord. (pk)
75 x 2,5	2 - 13	80	100	150
100 x 2,5	3 - 20	80	100	150
135 x 2,5	3 - 32	80	100	125
160 x 2,5	4 - 39	80	100	100
200 x 2,5	4 - 50	80	100	100
140 x 3,5	3 - 33	180	100	100
200 x 3,5	5 - 47	180	100	60
280 x 3,5	7 - 75	180	100	65
360 x 3,5	7 - 96	180	100	40
160 x 4,5	5 - 35	220	100	50
180 x 4,5	4 - 45	220	100	50
200 x 4,5	5 - 47	220	100	50
250 x 4,5	5 - 62	220	100	50
280 x 4,5	7 - 70	220	100	50
360 x 4,5	7 - 96	220	100	40
380 x 4,5	7 - 101	220	100	35
430 x 4,5	7 - 115	220	100	25
200 x 7,5	7 - 47	530	100	25
240 x 7,5	7 - 56	530	100	20
280 x 7,5	8 - 68	530	100	20
360 x 7,5	8 - 92	530	100	15
450 x 7,5	11 - 117	530	100	10
540 x 7,5	15 - 147	530	100	10
750 x 7,5	12 - 205	530	100	1

ref./ item

ref./ item

FB07525

FN07525

FB10025

FN10025

FB13525

FN13525

FB16025

FN16025

FB20025

FN20025

FB14035

FN14035

FB20035

FN20035

FB28035

FN28035

FB36035

FN36035

FB16045

FN16045

FB18045

FN18045

FB20045

FN20045

FB25045

FN25045

FB28045

FN28045

FB36045

FN36045

FB38045

FN38045

FB43045

FN43045

FB20075

FN20075

FB24075

FN24075

FB28075

FN28075

FB36075

FN36075

FB45075

FN45075

FB54075

FN54075

FB75075

FN75075

* 1 kg ≈ 10 N

BB
BN

Adhesive base mounts for cable ties

4 ways - nylon white (BB) / black (BN)

APPLICATIONS

- Flat surface anchoring of FB and FN cable ties
- Also suitable for outdoor applications (FN series)

FEATURES

- Nylon (PA 6.6)
- Carbon black additivated (BN series)



BB
white

BN
black

dimensions (mm)	diametro di legatura min-max (mm)	larghezza fascetta (mm)	resistenza a trazione (N) *	pkg. (pcs)	min./mult. ord. (cf)	ref./ item	ref./ item
19 × 19	2 – 13	4	10	100	15	BB19194	BN19194
27 × 27	3 – 20	6	16	100	15	BB27276	BN27276

* 1 kg ≈ 10 N

Compliance **EN 62275**

Self-extinguishing (UL 94) **V2**

Operating temperature range **-40 °C / +85 °C**



CE Marking



Directive EU 2015/863 (RoHS 3) Compliant



Halogen free

FBT

Nylon cable ties with marking tab

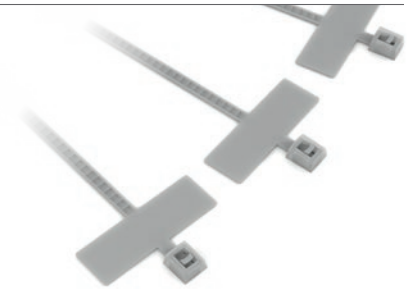
white

APPLICATIONS

- Cabling, fixing and identification of cables, flexible hoses and pipes

FEATURES

- Identification tag 25 × 8 mm with writable surface
- Nylon (PA) 6.6
- Colour: white



ref.	item	dimensions (mm)	bundle diameter min-max (mm)	tensile strength (N) *	pack. (pcs)	min./mult. ord. (pk)
FBT10025	FBT10025	100 × 2,5	3 - 20	80	100	150

* 1 kg ≈ 10 N

Self-extinguishing (UL 94) **V2**

Operating temperature range **-40 °C / +85 °C**



CE Marking



Directive EU 2015/863 (RoHS 3) Compliant



Halogen free

APPLICATIONS

- Fixing of plastic or metal rigid cable duct pipes

FEATURES

- Nylon (PA) 6.6
- Grey RAL 7035
- Fixing slot hole with plugs



ref.	item	dimensions (mm)	pipe diameter min-max (mm)	tensile strength (N) *	pack. (pcs)	min./mult. ord. (pk)
FGS16575	FGS16575	170 × 7,0	12 - 35	360	100	20
FGS28575	FGS28575	285 × 7,5	30 - 63	530	100	20

* 1 kg ≈ 10 N

Compliance **EN 62275**

Self-extinguishing (UL 94)
V2

Operating temperature range
-40 °C / +85 °C



CE Marking



Directive EU 2015/863
(RoHS 3) Compliant



Halogen free



TAKE IT fast

KT1074

FGS saddle mount ties
TX 6 wall plugs

100 pcs

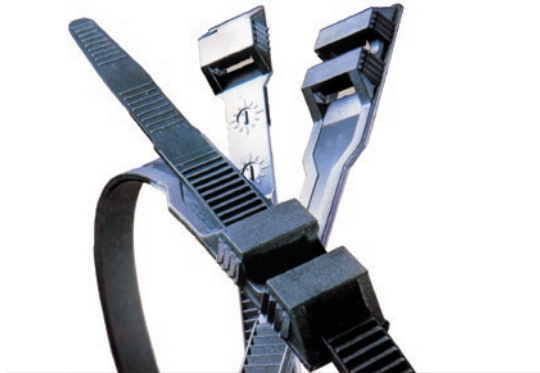
ref.	kit contents	min./mult. ord. (pk)
KT1074	FGS16575 - 100 pcs Saddle mount ties 170 × 7.0 mm TX 6 - 100 pz Nylon wall plugs 6 × 30 mm with screw 4,5 × 40 mm	20/5



CL

Nylon double-locking cable collars

black



APPLICATIONS

- Wiring and fixing of cables, flexible hoses and pipes
- Also suitable for outdoor installation and marine environments

KEY FEATURES

- High mechanical resistance
- Chemical resistance to solvents, gasoline, hydrocarbons (at low temperatures and in low concentration)

SPECIFICATIONS

- Nylon (PA) 6.6
- Colour: Black

dimensions (mm)	ref.	item	bundle diameter min-max (mm)	tensile strength (N) *	pack. (pcs)	min./mult. ord. (pk)
180 × 9	CL1809	CL1809	4 - 40	350	100	10
265 × 9	CL2659	CL2659	6 - 78	540	100	10
360 × 9	CL3609	CL3609	6 - 100	540	100	10
500 × 9	CL5009	CL5009	6 - 150	540	100	5

* 1 kg ≈ 10 N

Self-extinguishing (UL 94)
V2

Operating temperature range
-40 °C / +85 °C



CE Marking



Directive EU 2015/863 (RoHS 3)
Compliant



Halogen free

UFF-8

Cable ties application tool

APPLICATIONS

- Installation of cable ties up to 8 mm wide

FEATURES

- Adjustable tension force from 2.5 to 14 kg
- Cutting of exceeding tie residue



ref.	item	min./mult. ord. qty (pcs)
UF0008	UFF-8	1

UFC-9

Collars application tool

APPLICATIONS

- Installation of collars up to 9 mm wide

FEATURES

- Adjustable tension force from 2.5 to 14 kg
- Cutting of exceeding collar residue



ref.	item	min./mult. ord. qty (pcs)
UF0009	UFC-9	1

Polyester braided sleeving

in spool and in dispenser box



APPLICATIONS

- Protection and wrapping a wide assortment of electrical, electronic and telephone cables
- Civil, industrial, and automotive applications

KEY FEATURES

- High mechanical resistance
- Removable
- Good resistance to chemicals
- Good UV resistance

Premium quality monofilament polyester

Self-extinguishing (UL 94) **HB**

Continuous operating temperature **-50 °C / +170 °C**

Melting temperature **260 °C**

Tensile strength (ISO37) **4.80 kg/mm²**

Elongation (ISO 37) **28-35 %**

Specific weight (ISO 1183) **1.38 g/cm³**

Water absorption (ASTM D570) **0.5% max**



Directive EU 2015/863 (RoHS 3) Compliant



Halogen free



Non-toxic

Polyester braided sleeving

in spool and in dispenser box

RHB



item *	Colour		nominal diameter (mm)	bundle diameter min-max (mm)	length (m)	min./mult. ord. (m)
	BLACK ● BK	GREY ● GR				
	ref.					
RHB 03	RH1003	RH2003	3	2 - 8	200	200
RHB 04	RH1004	RH2004	4	3 - 9		200
RHB 05	RH1005	RH2005	5	4 - 11	100	100
RHB 06	RH1006	RH2006	6	5 - 15		100
RHB 08	RH1008	RH2008	8	6 - 18		100
RHB 10	RH1010	RH2010	10	8 - 21		100
RHB 12	RH1012	RH2012	12	10 - 20		100
RHB 15	RH1015	RH2015	15	12 - 29		100
RHB 20	RH1020	RH2020	20	15 - 33	50	50
RHB 25	RH1025	RH2025	25	20 - 45		50
RHB 30	RH1030	RH2030	30	25 - 48		50
RHB 40	RH1040	RH2040	40	35 - 60		50
RHB 50	RH1050	RH2050	50	45 - 75		50

* To complete item description, add the corresponding colour code at the end (e.g. RHB 03 BK for the black 3 mm sleeving)

Cobradox®



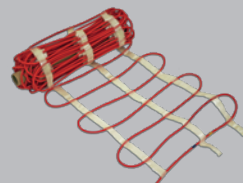
item	Colour	nominal diameter (mm)	bundle diameter min-max (mm)	length (m)	min./mult. ord. (m)
	GREY ●				
	ref.				
COBRABOX 03	CB2003	3	2 - 8	25	1
COBRABOX 04	CB2004	4	3 - 9	25	1
COBRABOX 05	CB2005	5	4 - 11	25	1
COBRABOX 06	CB2006	6	5 - 15	25	1
COBRABOX 08	CB2008	8	6 - 18	20	1
COBRABOX 10	CB2010	10	8 - 21	20	1
COBRABOX 12	CB2012	12	10 - 20	10	1
COBRABOX 15	CB2015	15	12 - 29	10	1
COBRABOX 20	CB2020	20	15 - 33	10	1
COBRABOX 25	CB2025	25	20 - 45	10	1
COBRABOX 30	CB2030	30	25 - 48	5	1
COBRABOX 40	CB2040	40	35 - 60	3	1
COBRABOX 50	CB2050	50	45 - 75	3	1

HEATING CABLES SELECTION TABLE

CONSTANT POWER



EASY TRACE[®]
pre-assembled kit
for small pipes



HOT TRACE
Pre-assembled
heating mat

ANTI-FREEZE
PROTECTION
PIPES AND TANKS



EASY02

EASY04

EASY08

EASY12

EASY18

page
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TRACING OF RAMPS
AND PAVEMENTS



HTRC04

HTRC08

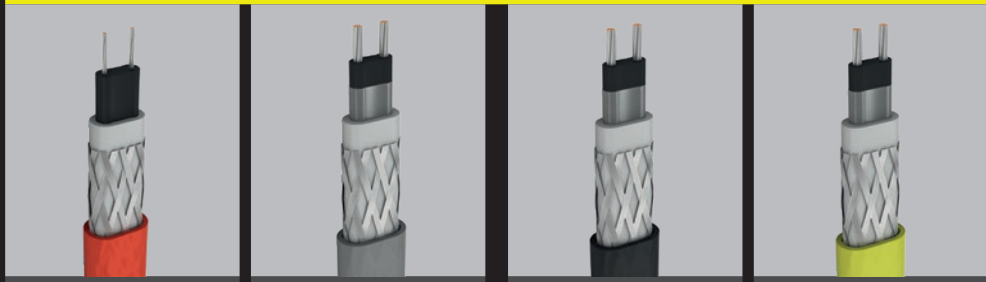
HTRC12

HTRC14

HTRC20

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AUTOREGOLANTI



HTC-S
compact
up to 85 °C

**HTC-P
HTC-H**
up to 85 °C

**HTC-PX
HTC-HX**
up to 85 °C

HTC-FF
in fluoropolymer
up to 195 °C

**ANTI-FREEZE
ROTECTION
PIPES AND TANKS**



HTC10S
page 200

HTC18S

HTC10P
HTC15P
HTC25P
HTC33H

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HTC16PX
HTC26PX
HTC33HX
HTC39HX

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HTC20FF
HTC30FF
HTC45FF
HTC60FF

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**PIPES AND TANKS
TEMPERATURE
MAINTENANCE**



HTC10P
HTC15P
HTC25P
HTC33H

page 201

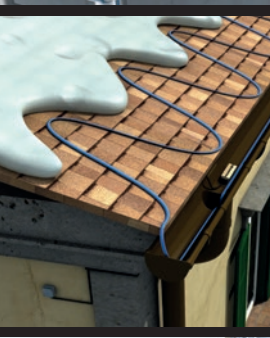
HTC16PX
HTC26PX
HTC33HX
HTC39HX

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HTC20FF
HTC30FF
HTC45FF
HTC60FF

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**TRACING OF
ROOFS AND GUTTERS**



HTC25P
HTC33H

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**TRACING OF RAMPS
AND PAVEMENTS**



HTC33H
HTC50H

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01 CONSTANT-POWER HEATING CABLES



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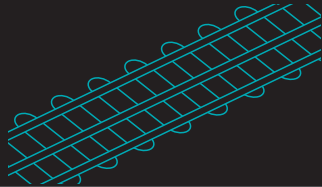
PIPE TRACING



EASY TRACE®
Constant power heating cable kit
pre-assembled

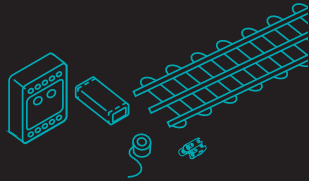
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TRACING OF RAMPS AND PAVEMENTS



HOT TRACE
Constant power heating mat

194



KT1040
Constant power heating mat kit
complete with accessories

195



EASY TRACE®

Constant power heating cable kit pre-assembled for anti-freeze protection of pipes



Ready to use
EASY TRACE®
heating cable kits are
supplied pre-assembled
with a Schuko plug and
a contact thermostat

APPLICATIONS

- Anti-freeze protection of metal or plastic pipes with a diameter up to 38 mm



KEY FEATURES

- Ready to use
- Simple installation

FEATURES

- 15 W/m constant power heating cable kit pre-assembled with:
- power cable (2 m)
 - Schuko plug
 - contact thermostat

ref.	item	length (m)	total power (W)	min. / mult. order (pcs)
EASY02	EASY02	2	35	1
EASY04	EASY04	4	71	1
EASY08	EASY08	8	117	1
EASY12	EASY12	12	187	1
EASY18	EASY18	18	275	1

Nominal power output
15 W/m

Supply voltage
230 Vac

Degree of protection (CEI EN 60529)
IPX7

Outer sheath
PVC

Thermostat on/off
+3 °C / +13 °C

Cable cross dimensions
8 × 5.5 mm

1.

Before installing the heating cable, ensure that the area around the cable is free of sharp objects and combustible materials.

If the heating cable is installed on plastic pipes, in order to improve thermal conductivity, we recommend covering the pipe with aluminium tape (ISOALL type) before installing the cable.

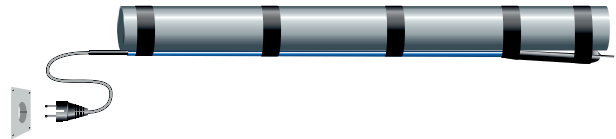
Stretch the cable along the bottom of the pipe, ensuring that the end with the plug is nearest to the power outlet.



2.

Begin fixing the thermostat with the side marked with a red dot in contact with the pipe, using PVC insulation tape (ISOEL type).

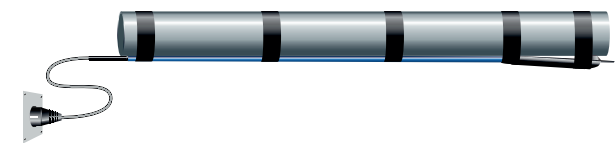
It is best to position the thermostat on the coldest end of the pipe, which is more exposed to low temperatures. Continue fixing the heating cable on the pipe at intervals of approximately 300 mm, using the PVC insulating tape.

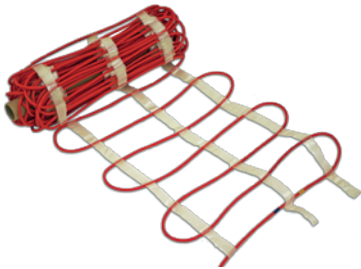


3.

It is advisable to apply a layer of insulation material round the pipe and the heating cable to improve the performance of the cable and reduce energy consumption.

When installation is complete, plug the power cord into the 230 V electrical outlet.





APPLICATIONS

- Defrosting and snow and ice melting on access ramps and outdoor surfaces used by pedestrians or vehicles
- Can be installed under concrete, brick paving, porphyry
- Also suitable for direct installation under asphalt surfaces

FEATURES

- Heating mat comprising a pre-assembled 225 W/m² constant power heating cable arranged in a zigzag pattern on a matrix of fiberglass reinforced tape
- Connection to the power supply via cold cable (5 m length) already connected to the heating cable, with connection point identification



Download and print the data collection form (page 225)

ref.	item	length (m)	area (m ²)	total power (W)	current (A)	min./mult. ord.qty. (pcs)
HTRC04	HOT TRACE 4	4	2	450	1,9	1
HTRC08	HOT TRACE 8	8	4	900	3,9	1
HTRC12	HOT TRACE 12	12	6	1350	5,9	1
HTRC14	HOT TRACE 14	14	7	1575	6,9	1
HTRC20	HOT TRACE 20	20	10	2250	9,8	1

Installation accessories

ref.	description
SH0306	SHARK 306 gel joint with control unit cable connection (page 48)
CTAHTC1	Thermostatic control unit (page 208)
CTAHTC2	Thermostatic control unit (page 208)
STUHTC1	Temperature and humidity sensor (page 210)

Nominal power output
225 W/m²

Supply voltage
230 V ac

Compliance
IEC 60800

Tinned copper conductors

PVC outer sheath

Screen 7 mm

Cable cross dimensions
8 × 5.5 mm

Heating mat width 0.5 m

KT1040

Heating mat kit complete with accessories for tracing of ramps and pavements

constant power pre-assembled



KT1040
constant power pre-assembled kit with accessories included

KIT CONTENTS

- no. 2 HOT TRACE 12 - Constant power heating cable arranged in a zigzag pattern on a fiberglass reinforced tape for a linear length of mats equal to 12 m each
- no. 1 CTAHTC1 - Thermostatic control unit
- no. 1 STUHTC1 - Temperature and moisture sensor
- no. 1 SHARK 306 - Gel joint with terminal block for hot lead-cold lead connection
- Installation instructions

ref.	item	min./mult. ord. (pk)
KT1040	KT1040	1

KEY FEATURES

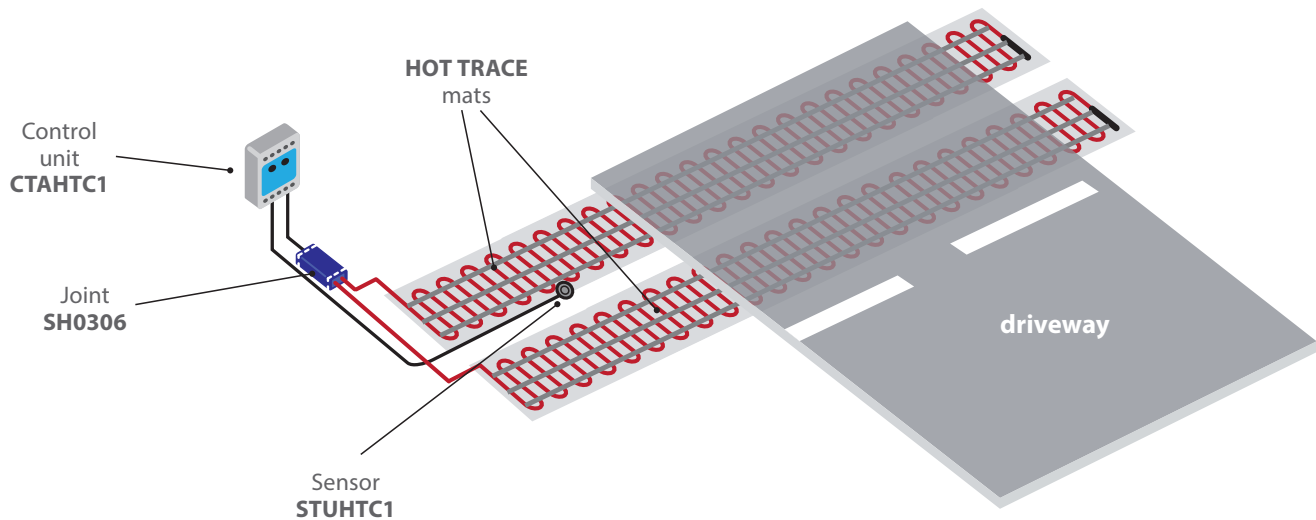
- **Quick and easy installation:** KT1040 kits are supplied with a complete set of accessories required to make the heating system

FEATURES

- Length: 12 m
- Area: 12 m²
- Total power: 2700 W

KT1040

Installation example



02 SELF-REGULATING



|| heating || cables ||

download
PDF

TRACING OF PIPES AND TANKS



HTC-S Compact self-regulating heating cables	200
HTC-P / HTC-H Self-regulating heating cables	201

TRACING OF GUTTERS, DOWNSPOUTS AND ROOFS



HTC-P / HTC-H Self-regulating heating cables	204
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TRACING OF RAMPS AND PAVEMENTS

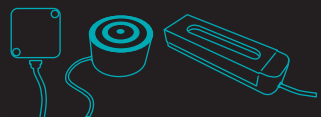


HTC-H Self-regulating heating cables	206
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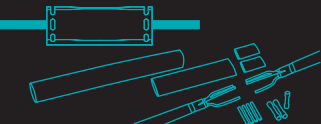
INSTALLATION ACCESSORIES



CTAHTC1 / CTAHTC2	208
CTRHTC1	209



Sensors	
STCHTC1 / STUHTC1	210
STGHTC1 / STTHTC1	211



SH0306 / GBHTC1 Cable connection joints	210
--	-----



Installation accessories	
KTA / KCP	213
PRHTC / ISOALL	214

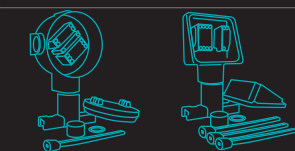
SELF-REGULATING HEATING CABLES AND ACCESSORIES FOR ATEX ENVIRONMENTS



HTC-PX / HTC-HX Self-regulating heating cable for ATEX environments applications up to 85 °C (class T6)	216
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HTC-FF Self-regulating heating cable for ATEX environments in fluoropolymer applications up to 195 °C (class T3)	217
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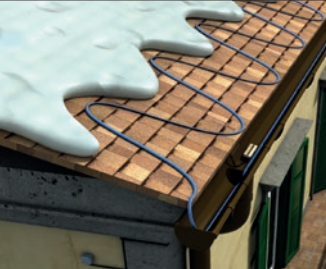



Accessories for ATEX environments	
PCKHTC1	218
ECKHTC1	219

SELF-REGULATING HEATING CABLES

ATEX ENVIRONMENTS

			
HTC-S	HTC-P HTC-H	HTC-PX HTC-HX	HTC-FF
compact			in fluoro-polymer
up to 85 °C	up to 85 °C	up to 85 °C	up to 195 °C

ANTI-FREEZE PROTECTION PIPES AND TANKS		> page 200	> page 201	> page 216	> page 217
TEMPERATURE MAINTENANCE OF PIPES AND TANKS					
ANTI-FREEZE PROTECTION OF ROOFS AND GUTTERS			> page 205		
ANTI-FREEZE PROTECTION OF RAMPS AND PAVEMENTS			> page 206		

HTC-S

Compact self-regulating heating cable for tracing of pipes and tanks up to 85 °C



STRUCTURE

- conductor wires*
tinned copper
- self-regulating conductive matrix*
- primary insulation*
thermoplastic elastomer
- metal braid*
tinned copper
- outer coating*
thermoplastic elastomer

APPLICATIONS

- Freeze protection or temperature maintenance of pipes and tanks containing liquids or gases (e. g. water pipe systems, fire extinguishing system)

FEATURES

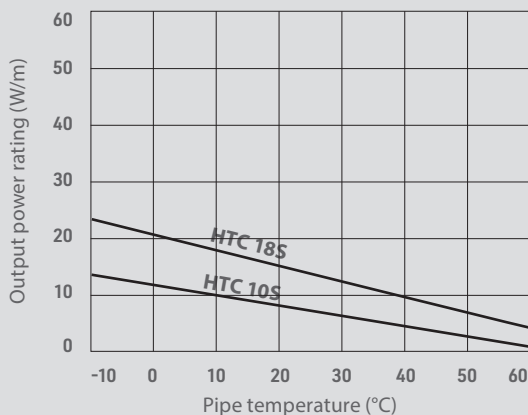
- Compact size
- Outer sheath colour: Red
- CE Marking

For accessories
see page 220
or download pdf



ref.	item	Nominal power output at 10 °C (W/m)	max contact temperature		minimum installation temperature	min./ mult. ord. (m)
			continuous	intermittent		
HTC10S	HTC10S	10	65 °C	85 °C	-40 °C	10
HTC18S	HTC18S	18				10

Power rating



Nominal power output versus temperature graph evaluated on thermal insulated metal pipes

Sizing table

ref.	start-up temperature (°C)	circuit breaker current rating			
		10 A	16 A	20 A	25 A
HTC10S	-20	77	111	139	173
	0	95	137	171	214
	+10	100	144	180	225
HTC18S	-20	41	59	74	92
	0	58	84	104	131
	+10	60	86	108	135

* Estimated values for installation with type C curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Supply voltage
230 Vac

Conductor cross-section
0.6 mm²

Maximum intermittent exposure temperature
85 °C

Maximum continuous exposure temperature
65 °C

Cable cross dimensions
8 × 5 mm

Minimum bend radius
40 mm (at -40°C)

HTC-P
HTC-H

Self-regulating heating cable

for tracing of pipes and tanks
up to 85 °C



STRUCTURE

- conductor wires
tinned copper
- self-regulating conductive matrix
- primary insulation
modified polyolefin
- metal braid
tinned copper
- outer coating
polyolefin

APPLICATIONS

- Freeze protection or temperature maintenance of pipes and tanks containing liquids or gases (e. g. water pipe systems, fire extinguishing system)

Also available HTC-PX/HTC-HX series for ATEX environments (p. 216) and HTC-FF in fluoropolymer (p. 217)

FEATURES

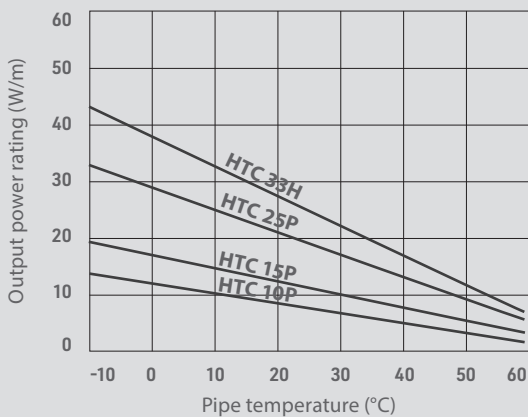
- Outer sheath colour: grey
- Degree of protection: IP 66 (EN 60529)
- CE Marking

For accessories see page 220 or download pdf



ref.	item	Nominal power output at 10 °C (W/m)	max contact temperature		minimum installation temperature	min./mult. ord. (m)
			continuous	intermittent		
HTC10P	HTC10P	10				10
HTC15P	HTC15P	15	65 °C	85 °C	-40 °C	10
HTC25P	HTC25P	25				10
HTC33H	HTC33H	33				10

Power rating



Nominal power output versus temperature graph evaluated on thermal insulated metal pipes

Sizing table

ref.	start-up temperature (°C)	circuit breaker current rating		
		20 A	30 A	40 A
		maximum cable circuit length * (m)		
HTC10P	-20	141	150	180
	0	161	180	180
	+10	150	180	180
HTC15P	-20	100	133	150
	0	115	150	150
	+10	130	150	150
HTC25P	-20	71	106	120
	0	80	120	120
	+10	110	120	120
HTC33H	-20	58	78	89
	0	66	89	100
	+10	90	100	100

* Estimated values for installation with type C curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Supply voltage
230 Vac

Conductor cross-section
0.8 mm² (18 AWG)

Maximum intermittent exposure temperature
85 °C

Maximum continuous exposure temperature
65 °C

Cable cross dimensions
11.5 × 6.3 mm

Minimum bend radius
40 mm

-sizing tables for pipe tracing self-regulating heating cables

Lowest ambient temperature -10 °C

Pipe outer diameter		Insulation thickness				
inches	mm	10 mm	20 mm	30 mm	40 mm	50 mm
½	21.3	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P
¾	26.9					
1	33.7	1 × 18S	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P
1 ¼	42.4					
1 ½	48.3	1 × 25P	1 × 18S	1 × 18S	1 × 18S	1 × 18S
2	60.3					
2 ½	76.1	1.3 × 25P	1.1 × 18S	1 × 18S	1.1 × 10S 1.1 × 10P	1 × 18S
3	88.9					
4	114.3	1.3 × 33H	1.3 × 18S	1 × 18S	1.1 × 10S 1.1 × 10P	1 × 18S
6	165					

Lowest ambient temperature -20 °C

Pipe outer diameter		Insulation thickness				
inches	mm	10 mm	20 mm	30 mm	40 mm	50 mm
½	21.3	1 × 18S	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P	1 × 10S 1 × 10P
¾	26.9					
1	33.7	1 × 25P	1.1 × 18S	1 × 18S	1 × 10S 1 × 10P	1 × 10S 1 × 10P
1 ¼	42.4					
1 ½	48.3	1 × 33H	1.2 × 25P	1 × 18S	1 × 18S	1 × 18S
2	60.3					
2 ½	76.1	1.3 × 33H	1 × 25P	1 × 18S	1 × 18S	1 × 18S
3	88.9					
4	114.3	1.8 × 33H	1.3 × 25P	1 × 25P	1 × 18S	1 × 18S
6	165					

The number preceding the heating cable reference is the number of runs of cable required for each meter of pipe, based on the lowest ambient temperature, insulation thickness and pipe diameter.
For example: 1.3 × 25P means 1.3 meters of HTC25-P heating cable are required for each meter of pipe length.

Heating cable extra length for flanges and valves

In applications on pipes or tanks, where flanges and valves are present, a longer heating cable must be provided, which depends on the pipe dimensions.

Valves and flange tracing should always be carried out in compliance with minimum bend radius of the heating cable used.

Heating cables installed on tanks should be fixed with ISOALL aluminium adhesive tape (see page 214).

Pipe outer diameter		Application on flange (m)	Application on valve (m)
inches	mm		
½	21.3	-	-
¾	26.9	0.3	0.3
1	33.7		
1 ½	48.3		
2	60.3		0.9
3	88.9		
4	114.3	0.6	1.2
6	165		

Download and print data collection form (page 223)





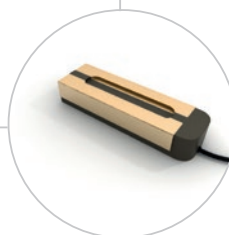
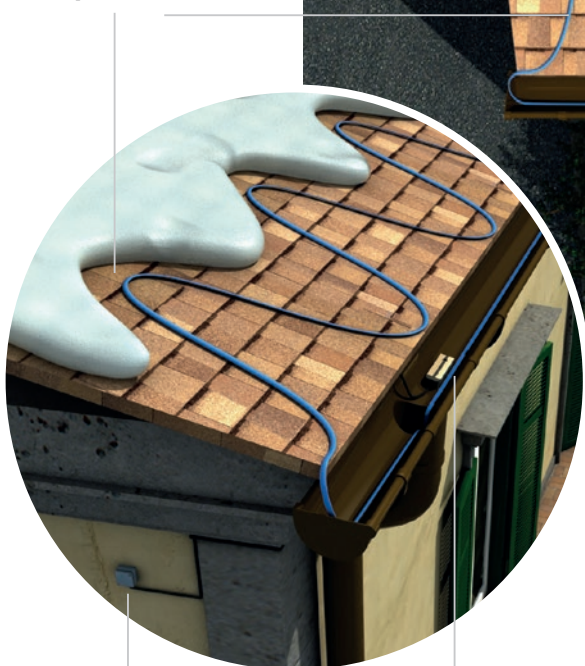
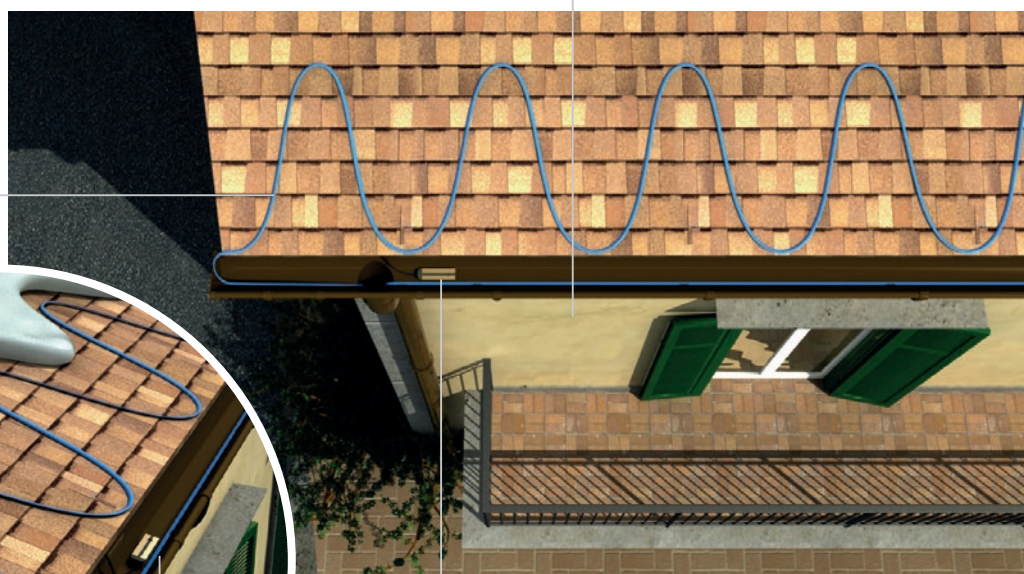
ANTI-FREEZE PROTECTION OF ROOFS, GUTTERS AND DOWNSPOUTS WITH SELF-REGULATING HEATING CABLES

Installation example



Control unit
CTAHTC1/
CTAHTC2
(installed
indoors)
> p. 208

**Self-regulating
heating cable**
HTC-P / HTC-H
> p. 205



Moisture sensor
STGHTC1 > p. 211
(must be installed
in gutters or in downspout
on the sunny side of the
building)



Temperature sensor
STTHTC1
> p. 211

Download
and print data
collection form
(page 224)



HTC-P
HTC-H

Self-regulating heating cable

for the anti-freeze protection of roofs, gutters and downspouts



STRUCTURE

- conductor wires
tinned copper
- self-regulating conductive matrix
- primary insulation
modified polyolefin
- metal braid
tinned copper
- outer sheath
polyolefin

APPLICATIONS

- Defrosting and snow and ice melting on gutters, downspouts and roof pitches

FEATURES

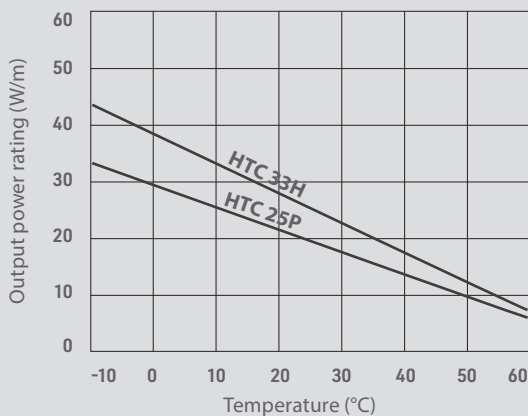
- Outer sheath colour: grey
- Degree of protection: IP 66 (EN 60529)
- CE Marking

For accessories
see page 221
or download pdf



ref.	item	Nominal power output at 10 °C (W/m)	max contact temperature		minimum installation temperature	min./mult. ord. (m)
			continuous	intermittent		
HTC25P	HTC25P	25	65 °C	85 °C	-40 °C	10
HTC33H	HTC33H	33				10

Power rating



Nominal power output versus temperature graph evaluated on thermal insulated metal pipes

Sizing table

ref.	initial start-up temperature (°C)	circuit breaker current rating		
		20 A	30 A	40 A
		maximum cable circuit length* (m)		
HTC25P	-20	71	106	120
	0	80	120	120
	+10	110	120	120
HTC33H	-20	58	78	89
	0	66	89	100
	+10	90	100	100

* Estimated values for installation with type C curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Supply voltage
230 Vac

Conductor Cross-section
0.8 mm² (18 AWG)

Maximum intermittent exposure temperature
85 °C

Maximum continuous exposure temperature
65 °C

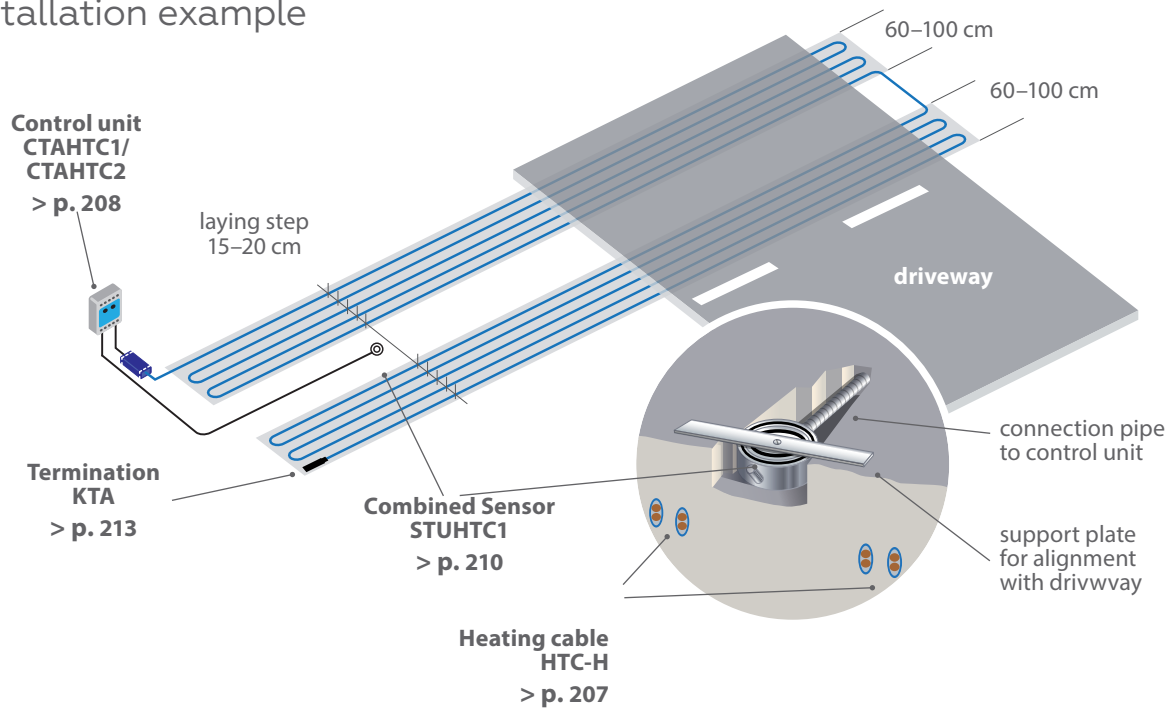
Cable cross dimensions
11.5 × 6.3 mm

Minimum bend radius
40 mm (at -40°C)

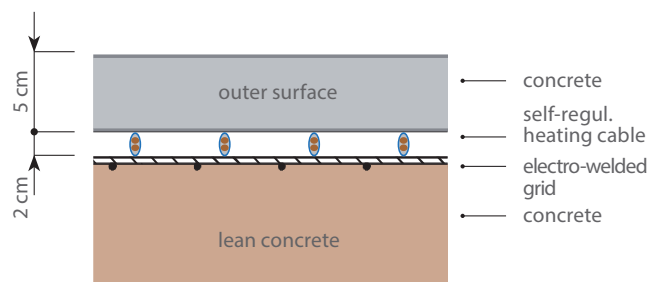
ANTI-FREEZE PROTECTION OF RAMPS AND PAVEMENTS WITH SELF-REGULATING HEATING CABLES



Installation example



- The heating cable is fixed directly to the electro-welded grid by common plastic cable ties
- Generally applied longitudinally to the running direction, with a pitch of about 15–20 cm
- The heating cable must be laid edgewise (see figure), for easy bending at the time of installation
- The STUHTC1 combined sensor must be positioned on a flat part of the ramp, without any sloping, possibly in the coldest part of the area affected by heating



Download
and print
data collection
form
(page225)





STRUCTURE

- conductor wires
tinned copper
- self-regulating conductive matrix
- primary insulation
modified polyolefin
- metal braid
tinned copper
- outer sheath
polyolefin

APPLICATIONS

- Defrosting and snow and ice melting on access ramps and outdoor surfaces used by pedestrians or vehicles
- Can be installed under concrete, brick paving, porphyry

FEATURES

- Outer sheath colour: grey
- Degree of protection: IP 66 (EN 60529)
- CE Marking

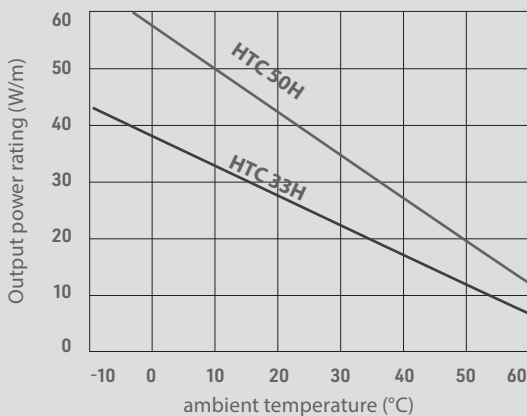
For accessories
see page 221
or download pdf



ref.	item	Nominal power output at 0 °C (W/m) *	max contact temperature		minimum installation temperature	min./mult. ord. (m)
			continuous	intermittent		
HTC33H	HTC33H	50	65 °C	85 °C	-40 °C	10
HTC50H	HTC50H	90				10

* For installation under concrete

Power rating



Nominal power output versus temperature graph

Sizing table

ref.	initial start-up temperature	circuit breaker current rating				
		16 A	20 A	30 A	40 A	50 A
HTC33H	+10 °C	68	84	127	169	-
HTC50H	-15 °C	-	-	73	98	122

* Estimated values for installation with type C curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Supply voltage
230 Vac

Conductor Cross-section
0.8 mm² (18 AWG)

Maximum intermittent exposure temperature
85 °C

Maximum continuous exposure temperature
65 °C

Cable cross dimensions
11.5 × 6.3 mm

Minimum bend radius
40 mm (at -40°C)

ACCESSORIES FOR SELF-REGULATING HEATING CABLES

CONTROL UNITS

CTAHTC1

Thermostatic control unit for heating systems

1 control zone



APPLICATIONS

Power on/off control of self-regulating heating circuits in presence of the appropriate climatic conditions detected by temperature and moisture sensors

FEATURES

- Supply voltage: 230 V AC
- 1 control zone**
output current rating: 1 × 16 A (3600 W)
- Adjustable setpoint temperature range: 0 °C / 10 °C
- Works with STGHTC1, STHTC1 and STUHTC1 sensors** (page 210, page 211)
- Operating ambient temperature range: -10 °C / +50 °C
- Degree of protection: IP20
- Dimensions: 86 × 52 × 59 mm
- Weight: 200 g

ref.	item	min. / mult. ord. qty (pcs)
CTAHTC1	CTAHTC1	1

CTAHTC2

Thermostatic control unit for heating systems

2 control zones



APPLICATIONS

Power on/off control of self-regulating heating circuits in presence of the appropriate climatic conditions detected by temperature and moisture sensors

FEATURES

- Supply voltage: 115-240 V AC, 50-60 Hz
- 2 control zones**
output current rating: 3 × 16 A
- LCD Display
- Adjustable setpoint temperature range: -20 °C / +10 °C
- Works with STGHTC1, STHTC1 and STUHTC1 sensors** (page 210, page 211)
- Operating ambient temperature range: 0 °C / +50 °C
- Degree of protection: IP20
- Dimensions (A × L × P): 90 × 156 × 45 mm
- Weight: 600 g
- CE Marking
- Compliant to Directives: 2014/35/UE (LVD) and 2014/30/UE (EMC) (according to EN 60730-2-9 Standard)

ref.	item	min. / mult. ord. qty
CTAHTC2	CTAHTC2	1

ACCESSORIES FOR SELF-REGULATING HEATING CABLES

CONTROL UNITS

CTRHTC1

Thermostatic control unit for tracing of pipes and tanks



APPLICATIONS

Power on/off control of self-regulating heating circuits in presence of the appropriate conditions detected by temperature sensor STCHTC1

FEATURES

- Supply voltage: 24-230 V AC, 50-60 Hz
- output current rating: 1 × 8 A (max resistive load at 230 V: 1760 W)
- 3 dgt. LED display
- Adjustable setpoint temperature range
- **Works with STCHTC1 temperature sensors** (page 210)
- Operating ambient temperature range: 0 °C / +50 °C
- Degree of protection: front IP40, terminals IP20
- Compliant to Directives:
2014/35/UE (LVD) (according to EN 60730-2-9 Standard)
and 2014/30/UE (EMC) (according to EN 55014, CEI EN 61000)
- Dimensions (A × L × P) : 87 × 70 × 65 mm (4 DIN modules)

ref.	item	min. / mult. ord.q.ty (pcs)
CTRHTC1	CTRHTC1	1

STCHTC1

Temperature sensor
for self-regulating heating cables



APPLICATIONS

- Temperature sensing in pipe and tanks self-regulating heat tracing systems, in combination with CTRHTC1 control unit

FEATURES

- Operating mode: temperature sensing
- Signal type: Ω (resistance)
- Sensor type: Platinum thermoresistor (100 Ω at 0 °C)
- To be used in combination with CTRHTC1 control unit** (page 209)
- Accuracy (IEC CEI EN 60751): class B
- Degree of protection: IP68
- Operating temperature range (sensor + cable): -50 °C / +110 °C
- Sensor dimension= (Diam. x Length): 5 x 20 mm
- Connecting cable: Conductor cross-section: 2 x 1,5 mm²
Cable length: 1,5 m (extensible up to 50 m)

ref.	description	min. / mult. ord.qty (pcs)
STCHTC1	STCHTC1 Contact temperature sensor	1

STUHTC1

Outdoor temperature, humidity and snow detection combined sensor
for ramps and pavements



APPLICATIONS

- Temperature, humidity conditions and snow presence detection for the control unit CTAHTC1 in heating tracing systems on outdoor surfaces (pedestrian and vehicles).
- Connection to CTAHTC1 or CTAHTC2 control unit

FEATURES

- Installation flush to surface to be heated
- Degree of protection: IP68
- Operating temperature range: -50 / +70 °C
- Dimensions: 63,5 x 78 mm (\varnothing x h) – Weight: 250 g
- Connecting cable: Conductor cross-section: 6 x 1,5 mm²
Length: 10 m (extensible up to 200 m, with total wire resistance less than 10 Ω)

ref.	description	min. / mult. ord.qty (pcs)
STUHTC1	STUHTC1 Outdoor temperature, humidity and snow detection combined sensor	1

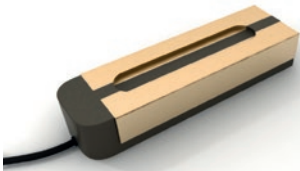
ACCESSORIES FOR SELF-REGULATING HEATING CABLES

SENSORS

STGHTC1

Humidity sensor

for gutters and downspouts



APPLICATIONS

- Humidity conditions detection in roof self-regulating heat tracing systems,
- Installation in gutters and downspouts
- To be used in combination with CTAHTC1 o CTAHTC2 control units

FEATURES

- Operating mode: humidity detection
- Degree of protection: IP68
- Operating temperature range: -50 °C / +70 °C
- Dimensions: 105 × 30 × 13 mm
- Connecting cable:
- Conductor cross-section 4 × 1,5 mm²
- Length: 10 m (extensible up to 200 m, with total wire resistance less than 10 Ω)

ref.	description	min. / mult. ord.qty (pcs)
STGHTC1	STGHTC1 Humidity sensor	1

STTHTC1

Outdoor temperature sensor

for self-regulating heating cables



APPLICATIONS

- Temperature conditions detection in heating tracing systems on roofs
- To be used in combination with CTAHTC1 o CTAHTC2 control units

FEATURES

- Operating mode: temperature detection
- Degree of protection: IP54
- Operating temperature range: -50 °C / +70 °C
- Dimensions: 50 × 50 × 35 mm
- Connecting cable:
- Conductor cross-section: 2 × 1,5 mm²
- Length: 10 m (extensible up to 50 m, with total wire resistance less than 10 Ω)

ref.	description	min. / mult. ord.qty (pcs)
STTHTC1	STTHTC1 Outdoor temperature sensor	1

ACCESSORIES FOR SELF-REGULATING HEATING CABLES CABLE JOINTS

SHARK 306

Gel joint with 3-pole terminal block
for hot lead/cold lead connection and
heating cable connection



APPLICATIONS

Connection of heating cable (hot lead) and power supply cable (cold lead)
or connection between heating cables in heat tracing systems

FEATURES

- Conductor cross-section: $3 \times 1,5 - 6 \text{ mm}^2$
- Ready to use
- Re-enterable
- Unlimited shelf life
- Non-toxic – Eco-friendly
- CE Marking – RoHS compliant
- Compliant to EN 50393 Standard
for low voltage joints up to 0.6/1 kV

KIT CONTENTS

- Gel pre-filled PP shell
- 3-pole terminal block for copper-to-copper, aluminium-to-aluminium or copper-to-aluminium connections (hex key included)
- Nylon ties

ref.	description	min. / mult. ord.qty (pcs)
SH0306	SHARK 306 Gel joint with 3-pole terminal block for HTC-S, HTC-P and HTC-H series heating cables	1

GBHTC1

Heat shrink joint with insulated compression connectors
for heating cables connection



APPLICATIONS

Connection of heating cables in heat tracing systems, also in presence of pipe insulation

KIT CONTENTS

- Insulated compression connectors
- Heat-shrink tubing for insulating bus wires and screen
- Sealant-coated outer heat shrink tubing for protecting and insulating joint

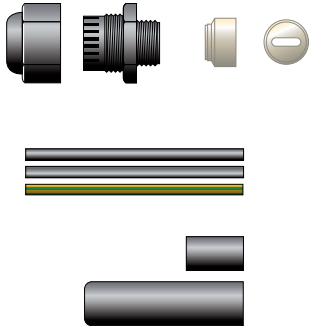
ref.	description	min. / mult. ord.qty (pcs)
GBHTC1	GBHTC1 Heat-shrink joint with insulated connectors for HTC-S, HTC-P and HTC-H series heating cables	1

ACCESSORIES FOR SELF-REGULATING HEATING CABLES

KTA

Termination and power supply connection kit

for self-regulating heating cables



APPLICATIONS

Use in tracing systems made with self-regulating heating cables for:

- Heating cable connection to power supply junction box
- Heating cable termination on unpowered side

KIT CONTENTS

- Heat shrink tubing
- Shaped cable gland, for passing the heating cable through power supply junction box

ref.	description	min. / mult. ord.qty (pcs)
KTA00S	KTA00S Connecting kit for HTC-S series heating cables	1
KTA0PH	KTA0PH Connecting kit for HTC-P and HTC-H series heating cables	1

KCP

Pipe-insulation pass-through kit

for self-regulating heating cables



APPLICATIONS

- Utilizzo in impianti traccianti realizzati con cavi scaldanti autoregolanti nei punti di attraversamento del coibente delle tubazioni

KIT CONTENTS

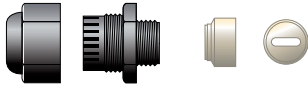
- Perforated stainless steel plate, to be applied to pipe insulation
- Shaped cable gland for passing the heating cable through the insulation

ref.	description	min. / mult. ord.qty (pcs)
KCP00S	KCP00S Pipe-insulation pass-through kit for HTC-S series heating cables	1
KCP0PH	KCP0PH Pipe-insulation pass-through kit for HTC-P and HTC-H series heating cables	1

ACCESSORIES FOR SELF-REGULATING HEATING CABLES

PRHTC

Shaped cable gland
for self-regulating heating cables



APPLICATIONS

Use in tracing systems made with self-regulating heating cables for passing the cable through junction boxes and/or power supply boxes

ref.	description	min. / mult. ord.qty (pcs)
PRHTC1	PRHTC1 Shaped cable gland for HTC-S series heating cables	1
PRHTC2	PRHTC2 Shaped cable gland for HTC-P and HTC-H series heating cables	1

ISOALL[®]

ISOALL[®]
Aluminium foil tape with adhesive



APPLICATIONS

- Fixing of heating cables to pipes and tanks
- Heating cable protection in the absence of pipe-insulation
- Improvement of cable thermal performance on plastic pipes

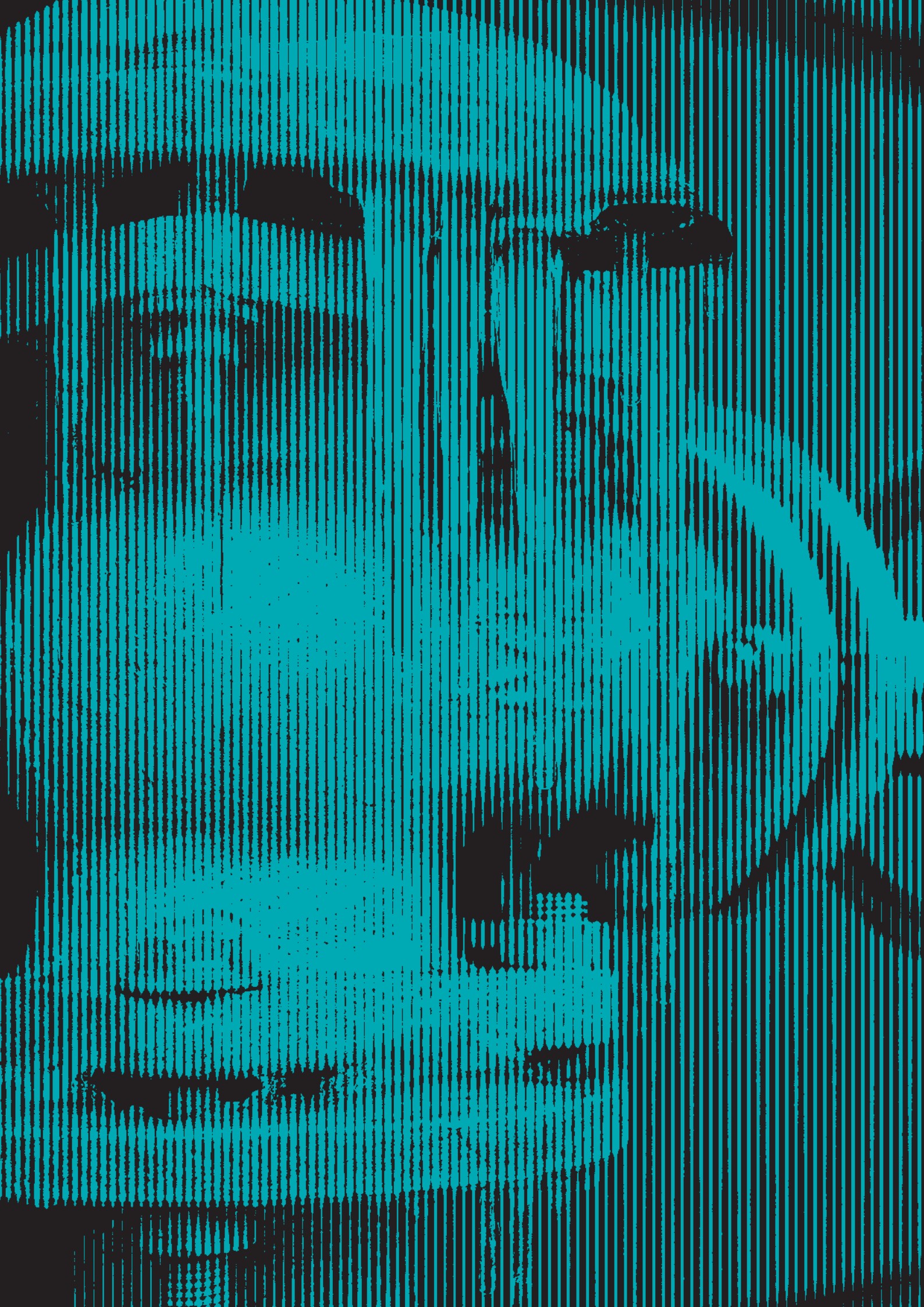
KEY FEATURES

- Highly conformable
- Good mechanical strength

FEATURES

- Operating temperature range: -20 °C / +110 °C
- Tensile strength: 13,5 N/cm (AFERA 4004)
- Elongation: 2,5 % (AFERA 4005)
- Adhesiveness on steel: 10 N/cm (AFERA 4001)
- Adhesiveness on backing: 8 N/cm (AFERA 4001)

ref.	description	min. / mult. ord. qty (pcs)
NA9050	ISOALL Aluminium foil tape with adhesive 50 mm × 50 m × 0,065 mm	1



HTC-PX HTC-HX

Self-regulating heating cable for ATEX environments

for temperatures up to 85 °C (class T6)



STRUCTURE

- conductor wires
tinned copper
- self-regulating
conductive matrix
- primary insulation
modified polyolefin
- metal braid
tinned copper
- outer sheath
polyolefin



APPLICATIONS

- Freeze protection or process temperature maintenance of pipe systems, tanks and reservoirs in industrial environments up to 85 °C
- Approved for use in potentially explosive environments (ATEX II 2 GD classified)

FEATURES

- Degree of protection: IP 66 (EN 60529)
- CE Marking

IECEx Classification (CEI EN IEC 60079)
Ex eb IIC T6 Gb – Ex tb IIIC T85°C Db

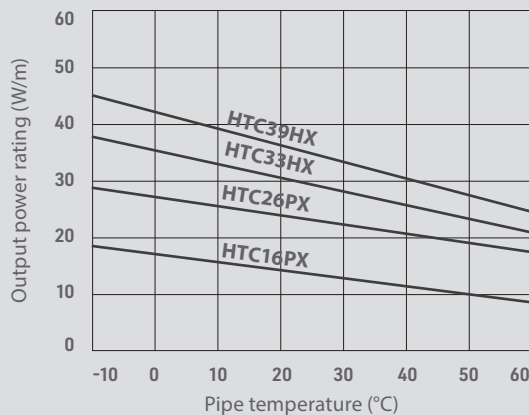
ATEX Classification
Ex II 2 GD

FM Approved
Class I, Div 2, Group A, B, C, D
Class II, Div 1, Group E, F, G

For ATEX
accessories
see on
pages 218-219

ref.	item	unit power at 10 °C (W/m)	max. contact temperature		min. installation temperature	min. ord. qty (m)	mult. ord. qty (m)
			continuous	intermittent			
HTC16PX	HTC16PX	16				10	10
HTC26PX	HTC26PX	26				10	10
HTC33HX	HTC33HX	33	65 °C	85 °C	-40 °C	10	10
HTC39HX	HTC39HX	39				10	10

Power rating



Nominal power output versus temperature graph
evaluated on thermal insulated metal pipes

Sizing table

ref.	start-up temperature (°C)	circuit breaker current rating			
		15 A	20 A	30 A	40 A
		maximum cable circuit length * (m)			
HTC16PX	-20	72	92	138	149
	0	83	105	149	149
	+10	130	149	149	149
HTC26PX	-20	46	65	97	116
	0	54	73	111	116
	+10	81	111	116	116
HTC33HX	-20	37	53	80	101
	0	41	60	91	101
	+10	64	88	101	101
HTC39HX	-20	39	40	65	87
	0	48	47	70	94
	+10	55	58	89	94

* Estimated values for installation with type C
curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Maximum intermittent
exposure temperature
85 °C
(IECEx T6)

Supply voltage
230 Vac

Conductor cross-section
1.3 mm² (16 AWG)

Maximum continuous
exposure temperature
65 °C

Cable cross dimensions
12.8 × 6.3 mm

Minimum bend radius
40 mm (at -40°C)



ATEX Classification
Ex II 2 GD



FM18ATEX0062X

HTC-FF

Self-regulating heating cable in fluoropolymer for ATEX environments

for temperature up to 195 °C (class T3)



STRUCTURE

- conductor wires tinned copper
- self-regulating conductive matrix
- primary insulation fluoropolymer
- metal braid tinned copper
- outer sheath fluoropolymer

APPLICATIONS

- Freeze protection or process temperature maintenance of pipe systems, tanks and reservoirs in industrial environments up to 195 °C
- Suitable for use in environments with presence of organic or corrosive chemicals, or in high temperature processes (eg. steam washing)
- Approved for use in potentially explosive environments (ATEX II 2 GD classified)

FEATURES

- High resistance to chemical agents
- Degree of protection: IP 66 (EN 60529) - CE Marking

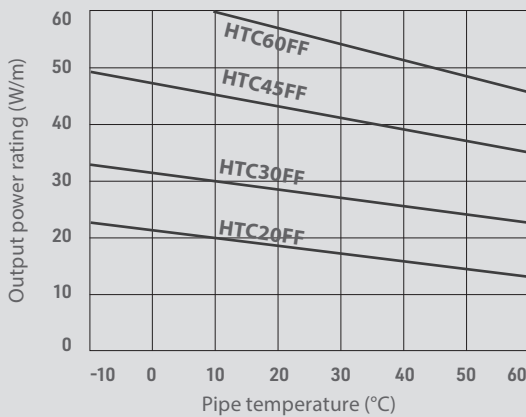
up to 195 °C (class T3)
 Primary insulation and outer sheath both in fluoropolymer make HTC-FF series cables suitable for use in high temperature industrial processes

IECEx Classification (CEI EN IEC 60079)
 Ex eb IIC T3 Gb – Ex tb IIIC T195 °C Db
ATEX Classification Ex II 2 GD

For ATEX accessories see on pages 218-219

ref.	item	unit power a 10 °C (W/m)	max. contact temperature		min. installation temperature	min. ord. qty (m)	mult. ord. qty (m)
			continuous	intermittent			
HTC20FF	HTC20FF	20	120 °C	195 °C	-40 °C	10	10
HTC30FF	HTC30FF	30				10	10
HTC45FF	HTC45FF	45				10	10
HTC60FF	HTC60FF	60				10	10

Power rating



Nominal power output versus temperature graph evaluated on thermal insulated metal pipes

Sizing table

ref.	start-up temperature (°C)	circuit breaker current rating			
		15 A	20 A	30 A	40 A
HTC20FF	-20	60	80	122	149
	0	70	94	142	149
	+10	78	103	147	149
HTC30FF	-20	38	51	77	103
	0	40	54	81	109
	+10	43	57	87	112
HTC45FF	-20	29	39	59	79
	0	32	42	64	85
	+10	34	45	68	90
HTC60FF	-20	19	25	38	52
	0	20	27	41	55
	+10	22	29	44	58

* Estimated values for installation with type C curve and 30 mA ground-fault circuit breaker

Type
Self-regulating

Maximum intermittent exposure temperature

Cable cross dimensions
12,5 × 5,5 mm

Supply voltage
230 Vac

195 °C (IECEx T3)

Minimum bend radius
40 mm (a -40°C)

Conductor cross-section
**1,3 mm² (16 AWG)
2 mm² (14 AWG)**
for HTC60FF

Maximum continuous exposure temperature
120 °C



ATEX Classification
Ex II 2 GD

ACCESSORIES FOR SELF-REGULATING HEATING CABLES ATEX ENVIRONMENTS

PCKHTC1

**Power-supply junction box
for ATEX environments**
for self-regulating heating cables



APPLICATIONS

Use in self-regulating heating systems made with HTC-PX and HTC-HX in ATEX environments for:

- connecting heating cable to power supply

FEATURES

- Installation on plane surface
- Operating temperature range: -40 °C / +60 °C
- Degree of protection: IP66, NEMA 4X, Type 4X
- Overall dimensions (width × height × depth): 144 × 230 × 85 mm

KIT CONTENTS

- Junction box, box cover and mounting bracket in ADC12 Aluminium alloy with screw-type integrated terminal block on DIN rail
- Silicone breakout boot for bus wires sealing
- Shaped grommet and steel washer for cable gland
- Installation accessories



IECEx Classification (CEI EN IEC 60079):
Ex eb IIC T6 Gb – Ex tb IIIC T85°C Db

ATEX Classification:
II 2 D Ex e II T6-T5

FM Approved:
Class I, Div 2, Group A, B, C, D – Class II, Div 1, Group E, F, G – Class III

ref.	item	use	min./ mult. ord. qty (pcs)
PCKHTC1	PCKHTC1	HTC-PX, HTC-HX and HTC-FF ATEX heating cables	1

ACCESSORIES FOR SELF-REGULATING HEATING CABLES ATEX ENVIRONMENTS

ECKHTC1

**Termination/junction box
for ATEX environments**
for self-regulating heating cables



APPLICATIONS

Use in self-regulating heating systems made with HTC-PX and HTC-HX in ATEX environments for:

- heating cable termination
- heating cable splicing/branching

FEATURES

- Installation on plane surface
- Operating temperature range: -40 °C / +60 °C
- Degree of protection: IP66, NEMA 4X, Type 4X
- Overall dimensions (width × height × depth): 132 × 230 × 89 mm

KIT CONTENTS

- Junction box, box cover and mounting bracket in ADC12 Aluminium alloy with screw-type integrated terminal block on DIN rail
- n. 3 silicone breakout boots for bus wires sealing
- Shaped grommet and steel washer for cable gland
- Installation accessories



IECEx Classification (CEI EN IEC 60079):
Ex eb IIC T6 Gb – Ex tb IIIC T85°C Db

ATEX Classification:
II 2 D Ex e II T6-T5

FM Approved:
Class I, Div 2, Group A, B, C, D – Class II, Div 1, Group E, F, G – Class III

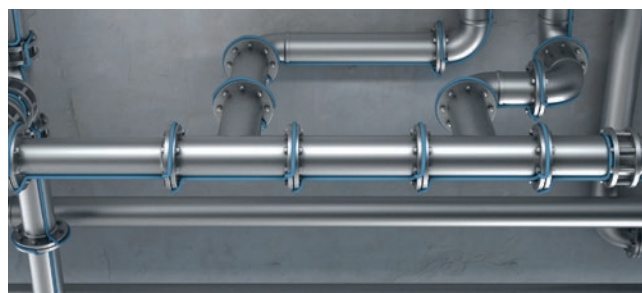
ref.	item	use	min./ mult. ord. qty (pcs)
ECKHTC1	ECKHTC1	HTC-PX, HTC-HX and HTC-FF ATEX heating cables	1

CABLE AND PART LIST FOR SELF-REGULATING HEATING SYSTEMS



ANTI-FREEZE PROTECTION OF PIPES AND TANKS

ref.	description	info
HTC10S	compact self-regulating heating cable 10 W/m	page 200
HTC18S	compact self-regulating heating cable 18 W/m	
HTC10P	self-regulating heating cable 10 W/m	page 201
HTC15P	self-regulating heating cable 15 W/m	
HTC25P	self-regulating heating cable 25 W/m	
HTC33H	self-regulating heating cable 33 W/m	
CTRHTC1	control unit for temperature sensor	page 209
STCHTC1	temperature sensor	page 210
SH0306	gel joint for power supply cable connection	page 212
GBHTC1	heat-shrink joint for heating cables connection	
KTA00S	termination and power supply connection kit for HTC-S cables	page 213
KTA0PH	termination and power supply connection kit for HTC-P and HTC-H cables	
KCP00S	pipe-insulation pass-through kit for HTC-S cables	
KCP0PH	pipe-insulation pass-through kit for HTC-P and HTC-H cables	
PRHTC1	shaped cable gland for HTC-S cables	page 214
PRHTC2	shaped cable gland for HTC-P and HTC-H cables	
NA9050	ISOALL aluminium foil tape with adhesive	page 214



TEMPERATURE MAINTENANCE OF PIPES AND TANKS

ref.	description	info
HTC10P	self-regulating heating cable 10 W/m	page 201
HTC15P	self-regulating heating cable 15 W/m	
HTC25P	self-regulating heating cable 25 W/m	
HTC33H	self-regulating heating cable 33 W/m	
CTRHTC1	control unit for temperature sensor	page 209
STCHTC1	temperature sensor	page 210
SH0306	gel joint for power supply cable connection	page 212
GBHTC1	heat-shrink joint for heating cables connection	
KTA0PH	termination and power supply connection kit for HTC-P and HTC-H cables	page 213
KCP0PH	pipe-insulation pass-through kit for HTC-P and HTC-H cables	
PRHTC2	shaped cable gland for HTC-P and HTC-H cables	page 214
NA9050	ISOALL aluminium foil tape with adhesive	page 214

Download PDF



CABLE AND PART LIST FOR SELF-REGULATING HEATING SYSTEMS



ANTI-FREEZE PROTECTION OF ROOFS AND GUTTERS

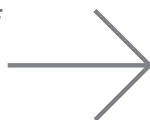
ref.	description	info
HTC25P	self-regulating heating cable 25 W/m	page 205
HTC33H	self-regulating heating cable 33 W/m	
CTAHTC1	control unit for temperature and humidity sensors	page 208
CTAHTC2	control unit for temperature and humidity sensors	
STTHTC1	outdoor temperature sensor	page 211
STGHTC1	humidity sensor for gutters and downspouts	page 211
SH0306	gel joint for power supply cable connection	page 212
GBHTC1	heat-shrink joint for heating cables connection	
KTA0PH	termination and power supply connection kit for HTC-P and HTC-H cables	page 213
PRHTC2	shaped cable gland for HTC-P and HTC-H cables	page 214



ANTI-FREEZE PROTECTION OF RAMPS AND PAVEMENTS

ref.	description	info
HTC33H	self-regulating heating cable 33 W/m	page 207
HTC50H	self-regulating heating cable 50 W/m	
CTAHTC1	control unit for temperature and humidity sensors	page 208
CTAHTC2	control unit for temperature and humidity sensors	
STUHTC1	temperature, humidity and snow detection combined sensor	page 210
SH0306	gel joint for power supply cable connection	page 212
GBHTC1	heat-shrink joint for heating cables connection	
KTA0PH	termination and power supply connection kit for HTC-P and HTC-H cables	page 213
PRHTC2	shaped cable gland for HTC-P and HTC-H cables	page 214

Download PDF



Data collection form

Self-regulating heating cables for pipe tracing

Fill in the form and send to
tecnico@etelec.it




Pipe tracing

*mandatory fields

Applicant info

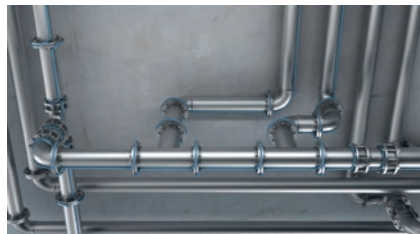
Surname *	Name
Company *	Place *
Email*	Tel.*
Offer Reference Number	Date

Project data- ANTI-FREEZE (temperature maintenance)

Pipe diameter	[mm], [DN]			
Room minimum temperature	°C			
Fluid maintenance temperature	°C			
Pipe length	m			
Type of insulation				
Insulation thickness	[mm]			
Insulation thermal conductivity	[W/m °C]		at	°C

For installation aimed at heating the fluids in the pipes, complete both tables

Project data- HEATING

Pipe material specific heat	[Wh/kg °C]	
Fluid heating end temperature	[°C]	
Fluid specific heat	[Wh/kg °C]	
Fluid unit weight	[kg/m³]	
Fluid density	[kg/m³]	

if available, attach technical project files

ATEX area

ATEX environment

YES

NO

Data collection form

Self-regulating heating cables for tanks

Fill in the form and send to
tecnico@etelec.it



Tank tracing

*mandatory fields

Applicant info

Surname *	Name
Company *	Place *
Email*	Tel.*
Offer Reference Number	Date

Temperature maintenance data

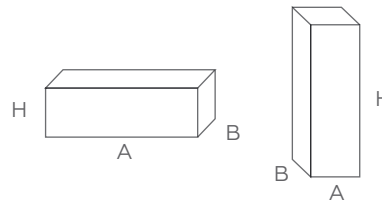
Tank dimensions A × B × H (m)

A: Greater base side

B: Smaller base side

H: Height

..... × ×

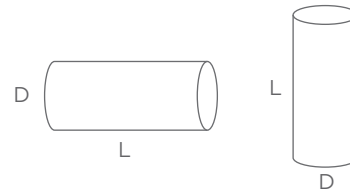


Tank dimensions D × L (m)

D: Diameter

L: Length

..... × ×



Tank location

Indoor

Outdoor

Tank material

Insulation type

Fluid type

Insulation Thickness

[mm]

Insulation thermal conductivity

[W/m °C]

at

°C

Room minimum temperature

[°C]

Maintenance temperature

[°C]

Fluid level height in tank

[m]

For installation aimed at heating the fluids in the pipes, complete both tables

Project data- HEATING

Tank thickness	[mm]
Fluid initial temperature	[°C]
Heating temperature	[°C]
Fluid specific heat	[Wh/kg °C]
Tank material specific heat	[Wh/kg °C]
Fluid weight	[kg]
Tank weight	[kg]

ATEX area

ATEX environment

YES

NO

Data collection form

Self-regulating heating cables for roofs and gutters

Fill in the form and send to
tecnico@etelec.it



Tracciamento tetti, grondaie e pluviali

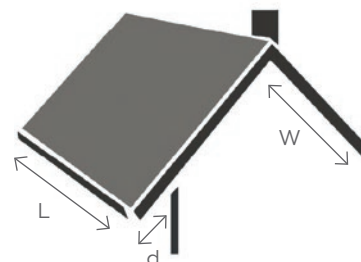
*mandatory fields

Applicant info

Surname *	Name
Company *	Place *
Email*	Tel.*
Offer Reference Number	Date

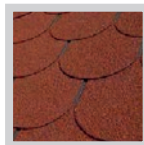
ROOF Data

Type*	[mm], [DN]
Length* (L)	[m]
Depth* (W)	[m]
Protrusion* (d)	[m]
Gutter length *	[m]
Gutter width *	[cm]
Number of gutters	
Gutter height	[m]

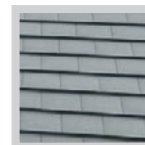
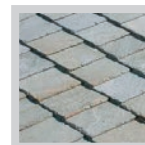
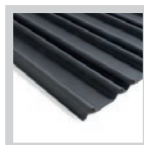


Roof coating

- Bituminous tiles
 Brick tiles
 Concrete tiles



- Metal plates
 Stone
 Bitumen sheets



- other

If available, attach the plan drawing in PDF format

Data collection form

Self-regulating heating cables for ramps

Fill in the form and send to
tecnico@etelec.it



Ramp tracing

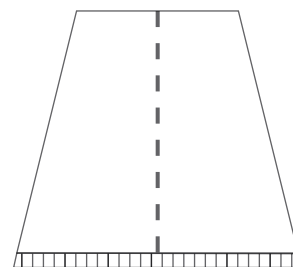
*mandatory fields

Applicant info

Surname *	Name
Company *	Place *
Email*	Tel.*
Offer Reference Number	Date

RAMP Data

No. of ramps*	
Ramp length*	[m]
Ramp width*	[m]
Water collection grids* If present, indicate the position and number of water collection grids on the drawing	<input type="checkbox"/> YES <input type="checkbox"/> NO
Running directions	<input type="checkbox"/> One-way <input type="checkbox"/> Two-way
Coating	<input type="checkbox"/> Asphalt <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete <input type="checkbox"/> Gravel or Crushed stone <input type="checkbox"/> Self-locking <input type="checkbox"/> Stone or concrete pebbles
Minimum achievable temperature (indicative value)	[°C]



WATER COLLECTION GRID

Power supply data

Three-phase power supply: <input type="checkbox"/> SI <input type="checkbox"/> NO	Rated power [kW]
--	-------------------------

Tracing

Complete



Wheel passage only



Preferred technology

HTC self-regulating power heating cable

HTRC constant power heating mat in pre-assembled kit

1977

1977

1977

1977

1977

PRODUCT INDEX

ref.	item	page	pack. unit	min./mult. ord. qty
A	LV resin joints with terminal block		pc	pc
A00406	A0-0406	60	1	10
A10410	A1-0410		1	4
A20425	A2-0425		1	4
AB / AC	Gas powered portable hot air tool		pc	pc
AB76BR	AB76BR	99	1	1
AC19BP	AC19BP		1	12
ARMJT	MV Armour continuity restor. kit		cf	pk
ARMJT2540	ARM-JTMT 25/40	175	1	1
ARMJT4060	ARM-JTMT 40/60		1	1
ARMJT5075	ARM-JTMT 50/75		1	1
ARMJT5785	ARM-JTMT 57/85		1	1
ARMJT85110	ARM-JTMT 85/110		1	1
B	LV resin joints with terminal block		pc	pc
B10406	B1-0406	62	1	4
B20416	B2-0416		1	1
B30435	B3-0435		1	1
BB	Adhesive base mounts - white		pc/pk	pk
BB19194	BB19194	182	100	15
BB27276	BB27276		100	15
BC	C-shape lv compression connectors		pc/pk	pc
BC006006	BC 6-6	118	20	20
BC010010	BC 10-10		20	20
BC016016	BC 16-16		20	20
BC025010	BC 25-10		10	10
BC025016	BC 25-16		10	10
BC025025	BC 25-25		10	10
BC035035	BC 35-35		5	5
BC050050	BC 50-50		5	5
BC070035	BC 70-35		5	5
BC070070	BC 70-70		5	5
BC095035	BC 95-35		5	5
BC095070	BC 95-70		5	5
BC095095	BC 95-95		5	5
BC120120	BC 120-120		5	5
BC150150	BC 150-150		5	5
BC185095	BC 185-95		1	1
BC185185	BC 185-185		1	1
BC240120	BC 240-120		1	1
BC240240	BC 240-240		1	1
BC300300	BC 300-300		1	1
BEK	Armour continuity restoration kit lv		cf	pk
BEKA1	BEK A1	119	1	1
BEKA2	BEK A2		1	1
BEKA3	BEK A3		1	1
BEKA4	BEK A4		1	1
BEKA5	BEK A5		1	1
BH	H-shape screw-type connector		pc/pk	pk
BH1616A	BH-16/16-A	117	10	10
BN	Adhesive base mounts - black		pc/pk	pk
BN19194	BN19194	182	100	15
BN27276	BN27276		100	15
CB	Braided polyester sleeving - dispenser		m/cf	pk
CB2003	COBRABOX 03/25	186	25	1
CB2004	COBRABOX 04/25		25	1
CB2005	COBRABOX 05/25		25	1
CB2006	COBRABOX 06/25		25	1

ref.	item	page	pack. unit	min./mult. ord. qty
CB	Braided polyester sleeving (cont.d)		m/cf	pk
CB2008	COBRABOX 08/20	186	20	1
CB2010	COBRABOX 10/20		20	1
CB2012	COBRABOX 12/10		10	1
CB2015	COBRABOX 15/10		10	1
CB2020	COBRABOX 20/10		10	1
CB2025	COBRABOX 25/10		10	1
CB2030	COBRABOX 30/5		5	1
CB2040	COBRABOX 40/3		3	1
CB2050	COBRABOX 50/3		3	1
CL	Nylon double-locking cable collars		pc/pk	pk
CL1809	CL1809	184	100	10
CL2659	CL2659		100	10
CL3609	CL3609		100	10
CL5009	CL5009		100	5
CM	MV compression lugs		pc	pc
CM0050	CMMT 50	171	1	1
CM0120	CMMT 120		1	1
CM0150	CMMT 150		1	1
CM0185	CMMT 185		1	1
CM0240	CMMT 240		1	1
CM0300	CMMT 300		1	1
CM2535	CMMT 25		1	1
CM3040	CMMT 35		1	1
CM7080	CMMT 70		1	1
CM9510	CMMT 95	1	1	
CP	LV compression connectors		pc/pk	pk
CP0306	CP0306	111	5	5
CR	MV shear bolt connectors		pc	pc
CR025095F13	CRMT 25/95-13	170	1	1
CR035150F13	CRMT 35/150-13		1	1
CR095240F13	CRMT 95/240-13		1	1
CR095240F17	CRMT 95/240-17		1	1
CR120300F13	CRMT 120/300-13		1	1
CR120300F17	CRMT 120/300-17		1	1
CR185400F13	CRMT 185/400-13		1	1
CR185400F17	CRMT 185/400-17		1	1
CT	LV heat-shrink compr. connectors.		pc/pk	pk
CT0515	CTT 0,5/1,5	111	100	1
CT1525	CTT 1,5/2,5		100	1
CT0306	CTT 3/6		50	1
CTAHTC	Heating cables control units		pc	pc
CTAHTC1	CTAHTC1	208	1	1
CTAHTC2	CTAHTC2		1	1
CTRHTC1	CTRHTC1	209	1	1
EASY	Constant-power heating cables		pc	pc
EASY02	EASY02	192	1	1
EASY04	EASY04		1	1
EASY08	EASY08		1	1
EASY12	EASY12		1	1
EASY18	EASY18		1	1
ECK	ATEX junction box for heating cables		pc	pc
ECKHTC1	ECKHTC1	219	1	1

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty
EV	IP68 gel joints and connecting devices		pc	pc
EV100	EVO PX	36	1	12
EV101	EVO 01		1	12
EV102	EVO 02		1	12
EV103	EVO 03	40	1	1
EV104	EVO 04		1	1
EV105	EVO 05		1	1
EV201D	EVO 1D	36	1	6
EV202D	EVO 2D	44	1	6
EV203D	EVO 3D		1	1

FB	Nylon cable ties - white		pc/pk	pk
FB07525	FB07525		100	150
FB10025	FB10025		100	150
FB13525	FB13525		100	125
FB14035	FB14035		100	100
FB16025	FB16025		100	100
FB16045	FB16045		100	50
FB18045	FB18045		100	50
FB20025	FB20025		100	100
FB20035	FB20035		100	60
FB20045	FB20045		100	50
FB20075	FB20075		100	25
FB24075	FB24075	180	100	20
FB25045	FB25045		100	50
FB28035	FB28035		100	65
FB28045	FB28045		100	50
FB28075	FB28075		100	20
FB36035	FB36035		100	40
FB36045	FB36045		100	40
FB36075	FB36075		100	15
FB38045	FB38045		100	35
FB43045	FB43045		100	25
FB45075	FB45075		100	1
FB54075	FB54075		100	1
FB75075	FB75075		100	1

FBT	Nylon cable ties with marking tab		pc	pk
FBT10025	FBT10025	182	100	150

FGS	Saddle mount nylon ties		pc/pk	pk
FGS16575	FGS16575	183	100	20
FGS28575	FGS28575		100	20

FL	Cable-pulling lubricants		pc	pc
FL3500	FLO 350	131	1	12
FL9500	FLO 950	130	1	12

FN	Fascette nylon nere		pc/pk	pk
FN07525	FN07525		100	150
FN10025	FN10025		100	150
FN13525	FN13525		100	125
FN14035	FN14035		100	100
FN16025	FN16025		100	100
FN16045	FN16045		100	50
FN18045	FN18045		100	50
FN20025	FN20025		100	100
FN20035	FN20035		100	60
FN20045	FN20045	180	100	50
FN20075	FN20075		100	25
FN24075	FN24075		100	20
FN25045	FN25045		100	50
FN28035	FN28035		100	65
FN28045	FN28045		100	50
FN28075	FN28075		100	20
FN36035	FN36035		100	40
FN36045	FN36045		100	40
FN36075	FN36075		100	15
FN38045	FN38045		100	35

ref.	item	page	pack. unit	min./ mult. ord. qty
FN	Nylon cable ties -black (cont.d)		pc/pk	pk
FN43045	FN43045	180	100	25
FN45075	FN45075		100	10
FN54075	FN54075		100	10
FN75075	FN75075		100	1

FT	MV heat shrink sheets		pc/pk	pk
FT0005	FTMT-05	167	3	3
FT0010	FTMT-10		1	1

GB	LV Heat-shrink joints		pc	pc
GB0007	GBT-007		1	1
GB0014	GBT-014	-	1	1
GB0030	GBT-030		1	1
GB0406	GBT-0406		1	1
GB0416	GBT-0416		1	1
GB0416C	GBT-0416-C		1	1
GB0435	GBT-0435	-	1	1
GB0450C	GBT-0450-C		1	1
GB0470	GBT-0470		1	1
GB0495C	GBT-0495-C		1	1
GB1016	GBT-1016		1	1
GB1070	GBT-1070		1	1
GB1150	GBT-1150	-	1	1
GB1300	GBT-1300		1	1
GB3000	GN-RF-4/4		1	1
GB3001	GN-RF-4/16		1	1
GB3002	GN-RF-4/50		1	1
GB3003	GN-RF-4/150		1	1
GB3004	GN-RF-A-4/4	-	1	1
GB3005	GN-RF-A-4/16		1	1
GB3006	GN-RF-A-4/50		1	1
GB3007	GN-RF-A-4/150		1	1
GB3008	GN-RF-007		1	1
GB3009	GN-RF-014		1	1
GB3010	GN-RF-030		1	1
GB3011	GN-RF-A-007	-	1	1
GB3012	GN-RF-A-014		1	1
GB3013	GN-RF-A-030		1	1
GB4025	GBT-4025		1	1
GB4060	GBT-4060		1	1
GB4150	GBT-4150		1	1
GB4240C	GBT-4240-C	-	1	1
GB4300	GBT-4300		1	1
GB4300C	GBT-4300-C		1	1

GBHTC	Heat-shrink joint for heating cables		pc	pc
GBHTC1	GBHTC1	212	1	1

GM	MV compression connectors		pc	pc
GM0050	GMMT 50		1	1
GM0150	GMMT 120/150		1	1
GM0185	GMMT 185		1	1
GM0240	GMMT 240	173	1	1
GM2535	GMMT 25		1	1
GM3040	GMMT 35		1	1
GM6370	GMMT 70		1	1
GM9510	GMMT 95		1	1

GNRF	LV fire-resistant heat-shrink joints		pc	pc
GNRF410D	GN-RF 410/D		1	1
GNRF416D	GN-RF 416/D		1	1

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty	
GP	MV heat shrink tubing - in spool		m	m	
GP0015	GPSM-15/6-A/U	162	30	30	
GP0030	GPSM-30/12-A/U		30	30	
GP0050	GPSM-50/20-A/U		30	30	
GP0075	GPSM-75/30-A/U		20	20	
GP0100	GPSM-100/40-A/U		25	25	
GP0120	GPSM-120/50-A/U		25	25	
GP0175	GPSM-175/70-A/U		15	15	
GP0205	GPSM-205/110-A/U		10	10	
GP1025	GPSA-25/10-A/U		164	25	25
GP1040	GPSA-40/16-A/U			20	20
GP1065	GPSA-65/25-A/U	15		15	
GP1100	GPSA-100/40-A/U	15		15	
GP1150	GPSA-150/60-A/U	15		15	
GP1175	GPSA-175/80-A/U	10		10	
GP	MV heat shrink tubing - in bars			m/pc	pc
GP2015	GPSM-15/6-1000	162	1	1	
GP2030	GPSM-30/12-1000		1	1	
GP2050	GPSM-50/20-1000		1	1	
GP2075	GPSM-75/30-1000		1	1	
GP2100	GPSM-100/40-1000		1	1	
GP2120	GPSM-120/50-1000		1	1	
GP2175	GPSM-175/70-1000		1	1	
GP2205	GPSM-205/110-1000		1	1	
GP3025	GPSA-25/10-1000		164	1	1
GP3040	GPSA-40/16-1000			1	1
GP3065	GPSA-65/25-1000	1		1	
GP3100	GPSA-100/40-1000	1		1	
GP3150	GPSA-150/60-1000	1		1	
GP3175	GPSA-175/80-1000	1		1	
GR	MV shear bolt connectors			pc	pc
GR025095	GRMT 25/95	172	1	1	
GR035150	GRMT 35/150		1	1	
GR095240	GRMT 95/240		1	1	
GR120300	GRMT 120/300		1	1	
GR185400	GRMT 185/400		1	1	

ref.	item	page	pack. unit	min./ mult. ord. qty	
GT	LV heat shrink tubing - in spool		m	m	
GT0012	GTUC-1.2/0.6-0	82	300	300	
GT0016	GTUC-1.6/0.8-0		300	300	
GT0019	GTUC-19/9,5-0		75	75	
GT0024	GTUC-2.4/1.2-0		150	150	
GT0032	GTUC-3.2/1.6-0		150	150	
GT0038	GTUC-38/19-0		30	30	
GT0048	GTUC-4.8/2.4-0		150	150	
GT0051	GTUC-51/25,4-0		30	30	
GT0064	GTUC-6.4/3.2-0		75	75	
GT0076	GTUC-76/38-0		15	15	
GT0095	GTUC-9.5/4.8-0		75	75	
GT0102	GTUC-102/51-0		15	15	
GT0127	GTUC-12.7/6.4-0		75	75	
GT0254	GTUC-25.4/12.7-0		30	30	
GT	LV heat shrink tubing - in bars			m/pc	pc
GT1106	GTUC/B-2,4/1,2-BK		88	1,0	5
GT1107	GTUC/B-3,2/1,6-BK			1,0	5
GT1108	GTUC/B-4,8/2,4-BK			1,0	5
GT1109	GTUC/B-6,4/3,2-BK	1,0		5	
GT1110	GTUC/B-9,5/4,8-BK	1,0		5	
GT1111	GTUC/B-12,7/6,4-BK	1,0		5	
GT1112	GTUC/B-19/9,5-BK	1,0		5	
GT1113	GTUC/B-25,4/12,7-BK	1,0		3	
GT1114	GTUC/B-38/19-BK	1,0		2	
GT1115	GTUC/B-51/25,4-BK	1,0		1	
GT1116	GTUC/B-2,4/1,2-RD	88		1,0	5
GT1117	GTUC/B-3,2/1,6-RD			1,0	5
GT1118	GTUC/B-4,8/2,4-RD			1,0	5
GT1119	GTUC/B-6,4/3,2-RD			1,0	5
GT1120	GTUC/B-9,5/4,8-RD			1,0	5
GT1121	GTUC/B-12,7/6,4-RD			1,0	5
GT1122	GTUC/B-19/9,5-RD			1,0	5
GT1123	GTUC/B-25,4/12,7-RD			1,0	3
GT1124	GTUC/B-38/19-RD		1,0	2	
GT1125	GTUC/B-51/25,4-RD		1,0	1	
GT1126	GTUC/B-2,4/1,2-WH		88	1,0	5
GT1127	GTUC/B-3,2/1,6-WH			1,0	5
GT1128	GTUC/B-4,8/2,4-WH			1,0	5
GT1129	GTUC/B-6,4/3,2-WH			1,0	5
GT1130	GTUC/B-9,5/4,8-WH			1,0	5
GT1131	GTUC/B-12,7/6,4-WH			1,0	5
GT1132	GTUC/B-19/9,5-WH			1,0	5
GT1133	GTUC/B-25,4/12,7-WH			1,0	3
GT1134	GTUC/B-38/19-WH	1,0		2	
GT1135	GTUC/B-51/25,4-WH	1,0		1	
GT1136	GTUC/B-2,4/1,2-BE	88		1,0	5
GT1137	GTUC/B-3,2/1,6-BE			1,0	5
GT1138	GTUC/B-4,8/2,4-BE			1,0	5
GT1139	GTUC/B-6,4/3,2-BE			1,0	5
GT1140	GTUC/B-9,5/4,8-BE			1,0	5
GT1141	GTUC/B-12,7/6,4-BE			1,0	5
GT1142	GTUC/B-19/9,5-BE			1,0	5
GT1143	GTUC/B-25,4/12,7-BE			1,0	3
GT1144	GTUC/B-38/19-BE		1,0	2	
GT1145	GTUC/B-51/25,4-BE		1,0	1	
GT1146	GTUC/B-2,4/1,2-TR		88	1,0	5
GT1147	GTUC/B-3,2/1,6-TR			1,0	5
GT1148	GTUC/B-4,8/2,4-TR			1,0	5
GT1149	GTUC/B-6,4/3,2-TR			1,0	5
GT1150	GTUC/B-9,5/4,8-TR			1,0	5
GT1151	GTUC/B-12,7/6,4-TR			1,0	5
GT1152	GTUC/B-19/9,5-TR			1,0	5
GT1153	GTUC/B-25,4/12,7-TR			1,0	3
GT1154	GTUC/B-38/19-TR	1,0		2	
GT1155	GTUC/B-51/25,4-TR	1,0		1	

CONT. →

ref.	item	page	pack. unit	min./mult. ord. qty	
GT (cont.)	LV heat-shrink tubing - in bars		m/pc	pc	
GT1156	GTUC/B-2,4/1,2-YE	88	1,0	5	
GT1157	GTUC/B-3,2/1,6-YE		1,0	5	
GT1158	GTUC/B-4,8/2,4-YE		1,0	5	
GT1159	GTUC/B-6,4/3,2-YE		1,0	5	
GT1160	GTUC/B-9,5/4,8-YE		1,0	5	
GT1161	GTUC/B-12,7/6,4-YE		1,0	5	
GT1162	GTUC/B-19/9,5-YE		1,0	5	
GT1163	GTUC/B-25,4/12,7-YE		1,0	3	
GT1164	GTUC/B-38/19-YE		1,0	2	
GT1165	GTUC/B-51/25,4-YE		1,0	1	
GT1166	GTUC/B-2,4/1,2-VE		88	1,0	5
GT1167	GTUC/B-3,2/1,6-VE			1,0	5
GT1168	GTUC/B-4,8/2,4-VE			1,0	5
GT1169	GTUC/B-6,4/3,2-VE			1,0	5
GT1170	GTUC/B-9,5/4,8-VE			1,0	5
GT1171	GTUC/B-12,7/6,4-VE	1,0		5	
GT1172	GTUC/B-19/9,5-VE	1,0		5	
GT1173	GTUC/B-25,4/12,7-VE	1,0		3	
GT1174	GTUC/B-38/19-VE	1,0		2	
GT1175	GTUC/B-51/25,4-VE	1,0		1	
GT1176	GTUC/B-2,4/1,2-GR	88		1,0	5
GT1177	GTUC/B-3,2/1,6-GR			1,0	5
GT1178	GTUC/B-4,8/2,4-GR			1,0	5
GT1179	GTUC/B-6,4/3,2-GR			1,0	5
GT1180	GTUC/B-9,5/4,8-GR			1,0	5
GT1181	GTUC/B-12,7/6,4-GR		1,0	5	
GT1182	GTUC/B-19/9,5-GR		1,0	5	
GT1183	GTUC/B-25,4/12,7-GR		1,0	3	
GT1184	GTUC/B-38/19-GR		1,0	2	
GT1185	GTUC/B-51/25,4-GR		1,0	1	
GT1186	GTUC/B-2,4/1,2-BW		88	1,0	5
GT1187	GTUC/B-3,2/1,6-BW			1,0	5
GT1188	GTUC/B-4,8/2,4-BW			1,0	5
GT1189	GTUC/B-6,4/3,2-BW			1,0	5
GT1190	GTUC/B-9,5/4,8-BW			1,0	5
GT1191	GTUC/B-12,7/6,4-BW	1,0		5	
GT1192	GTUC/B-19/9,5-BW	1,0		5	
GT1193	GTUC/B-25,4/12,7-BW	1,0		3	
GT1194	GTUC/B-38/19-BW	1,0		2	
GT1195	GTUC/B-51/25,4-BW	1,0		1	
GT1197	GTUC/B-3,2/1,6-YG	88		1,0	5
GT1198	GTUC/B-4,8/2,4-YG			1,0	5
GT1199	GTUC/B-6,4/3,2-YG			1,0	5
GT1200	GTUC/B-9,5/4,8-YG			1,0	5
GT1201	GTUC/B-12,7/6,4-YG			1,0	5
GT1202	GTUC/B-19/9,5-YG		1,0	5	
GT1203	GTUC/B-25,4/12,7-YG		1,0	3	
GT1204	GTUC/B-38/19-YG		1,0	2	
GT	LV heat-shrink tubing - in spool			m	m
GT2012	GTUC-1.2/0.6-2		82	300	300
GT2016	GTUC-1.6/0.8-2	300		300	
GT2019	GTUC-19/9,5-2	75		75	
GT2024	GTUC-2.4/1.2-2	150		150	
GT2032	GTUC-3.2/1.6-2	150		150	
GT2038	GTUC-38/19-2	30		30	
GT2048	GTUC-4.8/2.4-2	150		150	
GT2051	GTUC-51/25,4-2	30		30	
GT2064	GTUC-6.4/3.2-2	75		75	
GT2076	GTUC-76/38-2	15		15	
GT2095	GTUC-9.5/4.8-2	75		75	
GT2102	GTUC-102/51-2	15		15	
GT2127	GTUC-12.7/6.4-2	75		75	
GT2254	GTUC-25.4/12.7-2	30		30	

ref.	item	page	pack. unit	min./mult. ord. qty	
GT	LV heat-shrink tubing - in spool		m	m	
GT3003	GTGV-3/1.5	82	150	150	
GT3006	GTGV-6/3		75	75	
GT3008	GTGV-8/4		75	75	
GT3010	GTGV-10/5		75	75	
GT3012	GTGV-12/6		75	75	
GT3019	GTGV-19/9		75	75	
GT3026	GTGV-26/13		30	30	
GT3038	GTGV-38/19		30	30	
GT4012	GTUC-1.2/0.6-4		82	300	300
GT4016	GTUC-1.6/0.8-4			300	300
GT4019	GTUC-19/9,5-4	75		75	
GT4024	GTUC-2.4/1.2-4	150		150	
GT4032	GTUC-3.2/1.6-4	150		150	
GT4038	GTUC-38/19-4	30		30	
GT4048	GTUC-4.8/2.4-4	150		150	
GT4051	GTUC-51/25,4-4	30		30	
GT4064	GTUC-6.4/3.2-4	75		75	
GT4076	GTUC-76/38-4	15		15	
GT4095	GTUC-9.5/4.8-4	75		75	
GT4102	GTUC-102/51-4	15		15	
GT4127	GTUC-12.7/6.4-4	75		75	
GT4254	GTUC-25.4/12.7-4	30		30	
GT5012	GTUC-1,2/0,6-5	82		300	300
GT5016	GTUC-1,6/0,8-5			300	300
GT5019	GTUC-19/9,5-5			75	75
GT5024	GTUC-2,4/1,2-5		150	150	
GT5032	GTUC-3,2/1,6-5		150	150	
GT5038	GTUC-38/19-5		30	30	
GT5048	GTUC-4,8/2,4-5		150	150	
GT5051	GTUC-51/25,4-5		30	30	
GT5064	GTUC-6,4/3,2-5		75	75	
GT5076	GTUC-76/38-5		15	15	
GT5095	GTUC-9,5/4,8-5		75	75	
GT5102	GTUC-102/51-5		15	15	
GT5127	GTUC-12,7/6,4-5		75	75	
GT5254	GTUC-25,4/12,7-5		30	30	
GT6012	GTUC-1,2/0,6-6		82	300	300
GT6016	GTUC-1,6/0,8-6			300	300
GT6019	GTUC-19/9,5-6			75	75
GT6024	GTUC-2,4/1,2-6	150		150	
GT6032	GTUC-3,2/1,6-6	150		150	
GT6038	GTUC-38/19-6	30		30	
GT6048	GTUC-4,8/2,4-6	150		150	
GT6051	GTUC-51/25,4-6	30		30	
GT6064	GTUC-6,4/3,2-6	75		75	
GT6076	GTUC-76/38-6	15		15	
GT6095	GTUC-9,5/4,8-6	75		75	
GT6102	GTUC-102/51-6	15		15	
GT6127	GTUC-12,7/6,4-6	75		75	
GT6254	GTUC-25,4/12,7-6	30		30	

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty
GT (cont.)	LV heat-shrink tubing - flexible		m/pc	pc
GT7003	GTUM-3/1-0	91	1,2	5
GT7006	GTUM-6/2-0		1,2	5
GT7009	GTUM-9/3-0		1,2	5
GT7012	GTUM-12/4-0		1,2	5
GT7019	GTUM-19/6-0		1,2	5
GT7024	GTUM-24/8-0		1,2	5
GT7104	GTUM-4/1-0		1,2	5
GT7108	GTUM-8/2-0		1,2	5
GT7112	GTUM-12/3-0		1,2	5
GT7116	GTUM-16/4-0		1,2	5
GT7124	GTUM-24/6-0		1,2	5
GT7132	GTUM-32/8-0		1,2	5
GT7152	GTUM-52/13-0		1,2	5

GT	LV heat-shrink tubing - in spool		m	m
GT9012	GTUC-1,2/0,6-9	82	300	300
GT9016	GTUC-1,6/0,8-9		300	300
GT9019	GTUC-19/9,5-9		75	75
GT9024	GTUC-2,4/1,2-9		150	150
GT9032	GTUC-3,2/1,6-9		150	150
GT9038	GTUC-38/19-9		30	30
GT9048	GTUC-4,8/2,4-9		150	150
GT9051	GTUC-51/25,4-9		30	30
GT9064	GTUC-6,4/3,2-9		75	75
GT9076	GTUC-76/38-9		15	15
GT9095	GTUC-9,5/4,8-9		75	75
GT9102	GTUC-102/51-9		15	15
GT9127	GTUC-12,7/6,4-9		75	75
GT9254	GTUC-25,4/12,7-9		30	30
GTX012	GTUC-1,2/0,6-X	82	300	300
GTX016	GTUC-1,6/0,8-X		300	300
GTX019	GTUC-19/9,5-X		75	75
GTX024	GTUC-2,4/1,2-X		150	150
GTX032	GTUC-3,2/1,6-X		150	150
GTX038	GTUC-38/19-X		30	30
GTX048	GTUC-4,8/2,4-X		150	150
GTX051	GTUC-51/25,4-X		30	30
GTX064	GTUC-6,4/3,2-X		75	75
GTX076	GTUC-76/38-X		15	15
GTX095	GTUC-9,5/4,8-X		75	75
GTX102	GTUC-102/51-X		15	15
GTX127	GTUC-12,7/6,4-X		75	75
GTX254	GTUC-25,4/12,7-X		30	30

GT	LV heat-shrink tubing - med. wall in spool		m	m
GT30010	GTMS-10/3-A/U	85	40	40
GT30016	GTMS-16/5-A/U		40	40
GT30025	GTMS-25/8-A/U		40	40
GT30035	GTMS-35/12-A/U		30	30
GT30050	GTMS-50/16-A/U		25	25
GT30063	GTMS-63/19-A/U		15	15
GT30075	GTMS-75/22-A/U		10	10

ref.	item	page	pack. unit	min./ mult. ord. qty
GT	LV heat-shrink tubing - med.-wall in bars		pc	pc
GT31010	GTMS-10/3-1000/S	92	10	10
GT31016	GTMS-16/5-1000/S		10	10
GT31025	GTMS-25/8-1000/S		10	10
GT31035	GTMS-35/12-1000/S		10	10
GT31050	GTMS-50/16-1000/S		5	5
GT31063	GTMS-63/19-1000/S		5	5
GT31075	GTMS-75/22-1000/S		5	5
GT31085	GTMS-85/25-1000/S		1	1
GT31095	GTMS-95/29-1000/S		1	1
GT31115	GTMS-115/34-1000/S		1	1
GT31140	GTMS-140/42-1000/S		1	1
GT31160	GTMS-160/50-1000/S		1	1
GT31180	GTMS-180/60-1000/S		1	1

GT	LV heat-shrink tubing - thick-wall in bars		pc/pk	pc
GT40009	GTAS-12/3-1000/S	94	10	10
GT40013	GTAS-16/4-1000/S		10	10
GT40020	GTAS-24/6-1000/S		10	10
GT40033	GTAS-34/8-1000/S		10	10
GT40043	GTAS-48/12-1000/S		5	5
GT40051	GTAS-56/16-1000/S		5	5
GT40070	GTAS-70/20-1000/S		5	5
GT40085	GTAS-90/25-1000/S		1	1
GT40105	GTAS-110/30-1000/S		1	1
GT40130	GTAS-130/35-1000/S		1	1
GT40160	GTAS-160/50-1000/S		1	1
GT40180	GTAS-180/50-1000/S		1	1

GT	LV heat-shr. tub. - w/ wrap around		m/pc	pc
GT41034	GTCR-34/10-1000/S	96	1	1
GT41053	GTCR-53/13-1000/S		1	1
GT41084	GTCR-84/20-1000/S		1	1
GT41107	GTCR-107/229-1000/S		1	1
GT41143	GTCR-143/36-1000/S		1	1
GT41198	GTCR-198/55-1000/S		1	1
GT41250	GTCR-250/98-1000/S		1	1

GT	LV heat-shr. tubing for fire-haz. environm.		m/pc	pc
GT50008	GTRF-8/3-1500/U	97	1,5	1
GT50016	GTRF-16/5-1500/U		1,5	1
GT50024	GTRF-24/8-1500/U		1,5	1
GT50032	GTRF-32/12-1500/U		1,5	1
GT50045	GTRF-45/16-1500/U		1,5	1
GT50060	GTRF-60/22-1500/U		1,5	1
GT50070	GTRF-70/25-1500/U		1,5	1

HL	Hot air guns		pc	pc
HL1606	Air-on	99	1	1
HL1610	Air-on Display		1	1

CONT. →

ref.	item	page	pack. unit	min./mult. ord. qty
HTC	Self-regulating heating cables			m/m
HTC10S	HTC10S	200	-	10
HTC18S	HTC18S			10
HTC10P	HTC10P	201		10
HTC15P	HTC15P			10
HTC25P	HTC25P	201,	-	10
HTC33H	HTC33H	205,		10
HTC50H	HTC50H	206		10
HTC16PX	HTC16PX	216	-	10
HTC26PX	HTC26PX			10
HTC33HX	HTC33HX			10
HTC39HX	HTC39HX			10
HTC20FF	HTC20FF	217	-	10
HTC30FF	HTC30FF			10
HTC45FF	HTC45FF			10
HTC60FF	HTC60FF			10
HTRC	Constant power heating mats		pc	pc
HTRC04	HTRC04	194	1	1
HTRC08	HTRC08		1	1
HTRC12	HTRC12		1	1
HTRC14	HTRC14		1	1
HTRC20	HTRC20		1	1
JA	MV cold-shrink joints		pc/pk	pk
JA240951	JAMT-24/95-1X	154	1	1
JA242401	JAMT-24/240-1X		1	1
JA243001	JAMT-24/300-1X	154	1	1
JA271030	JAMT-36/240-I/U-H5	159	1	1
JA360951	JAMT-36/95-1X	154	1	1
JA362401	JAMT-36/240-1X		1	1
JA362401C	JAMT-36/240-1XM	155	1	1
JA362401D	JAMT-36/240-1XM-H5		1	1
JA363001	JAMT-36/300-1X	154	1	1
JBX	junction boxes		pc/pk	pc
JBX049	JuBox 1	74	4	4
JBX085	JuBox 2		2	2
JBX095	JuBox 3		2	2
JBX110	JuBox 4		1	1
JC	LV heat shrink branch joints.		pc	pc
JC0001	JCBT-01	-	1	1
JC0002	JCBT-02		1	1
JC0003	JCBT-03		1	1
JT	MV heat-shrink joints		pc/pk	pk
JT070701	JTMT-7/70-1X	152	1	1
JT170501	JTMT-17/50-1X		1	1
JT170503	JTMT-17/50-3X	153	1	1
JT170709	JTMT-17/70-3CC-1X	156	1	1
JT171201	JTMT-17/120-1X	152	1	1
JT171203	JTMT-17/120-3X	153	1	1
JT171509	JTMT-17/150-3CC-1X	156	1	1
JT172401	JTMT-17/240-1X	152	1	1
JT172403	JTMT-17/240-3X	153	1	1
JT173001	JTMT-17/300-1X	152	1	1
JT173009	JTMT-17/300-3CC-1X	156	1	1
JT175009	JTMT-17/500-3CC-1X		1	1

ref.	item	page	pack. unit	min./mult. ord. qty
JT (cont.)	MV heat-shrink joints		pc/pk	pk
JT240257	JTMT-24/25-1X-1C	156	1	1
JT240258	JTMT-24/25-1X-3C		1	1
JT240951	JTMT-24/95-1X	152	1	1
JT240953	JTMT-24/95-3X	153	1	1
JT240956	JTMT-24/95-3X-1X	156	1	1
JT242401	JTMT-24/240-1X	152	1	1
JT242403	JTMT-24/240-3X	153	1	1
JT242406	JTMT-24/240-3X-1X	156	1	1
JT242407	JTMT-24/240-1X-1C		1	1
JT242408	JTMT-24/240-1X-3C		1	1
JT244003	JTMT-24/400-3X	153	1	1
JT244007	JTMT-24/400-1X-1C	156	1	1
JT244008	JTMT-24/400-1X-3C		1	1
JT245001	JTMT-24/500-1X	152	1	1
JT245006	JTMT-24/500-3X-1X	156	1	1
JT248001	JTMT-24/800-1X	152	1	1
JT271021	JTMT-24/185-I/U-H5	159	1	1
JT271071	JTMT-24/185-I/U		1	1
JT271072	JTMT-24/150-I/U		1	1
JT361501	JTMT-36/150-1X	152	1	1
JT363001	JTMT-36/300-1X		1	1
JT366301	JTMT-36/630-1X		1	1
KCP	pipe-insulation pass-through kit		cf	pk
KCP00S	KCP00S	213	1	1
KCP0PH	KCP0PH		1	1
KT	Etelec bundles		cf	pk
KT1040	Kit HOT TRACE + accessories	195	1	1
KT1064	ROLLKIT - RollBox + HL1606	86	1	1
KT1067	Kit TBOX + tool	110	1	10/5
KT1071	Kit SpringBox + tool	108	1	10/5
KT1074	Kit fascette FGS + TX	183	1	20/5
KT1082	Kit Tubi tubings + tool	88	1	1
KTA	Termination and power supply kit		cf	pk
KTA00S	KTA00S	213	1	1
KTA0PH	KTA0PH		1	1
MBX	LV gel insulated protection device		pc	pc
MBX01	MiniBox 1	58	1	12
MBX02	MiniBox 2		1	12
MBX03	MiniBox 3		1	12
MC	LV screw-type connect. and term. blocks		pc	pc
MC0010	MC10	112	10	10
MC0025	MC25		10	10
MC0306RJ	MC306-RJ		1	1
MC0506RJ	MC506-RJ		1	1
MC0510RJ	MC510-RJ		1	1
MC0525RJ	MC525-RJ		1	1
MH	LV screw terminal block			pc
MH0306	MH 306	113	10	10
MJB	LV gel insulated connecting devices		pc/pk	pk
MJB112	ShellBox 112	-	2	12
MJB113	ShellBox 113		2	12
MJB215	ShellBox 215		1	12
MJB222	ShellBox 222		1	12
MJB323	ShellBox 323		1	12
MJB332	ShellBox 332		1	12

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty
MJBF	LV gel insulated connecting devices		pc	pk
MJBF113	ShellBox Flat 113	56	1	12
MJBF215	ShellBox Flat 215		1	12
MJBF222	ShellBox Flat 222		1	12
MJBF323	ShellBox Flat 323		1	12
MJBF332	ShellBox Flat 332		1	12
MP	Gel insulating fillers		pc	pc
MP103	MP One 300	22	1	12
MP106	MP One 600		1	12
MP109	MP One 900		1	12
MP170	MPgel 170	25	1	4
MP240	MPgel 240		1	4
MP420	MPgel 420		1	4
MP600	MPgel 600		1	4
MP0050	MPgel 50		1	12
MP0100	MPgel 100	26	1	12
MP0200	Crystalgel 1 L		1	12
MP1000	MPgel 1000		25	1
MP2200	Crystalgel 2 L	26	1	6
MP3100	Replaygel 1 L	26	1	12
MR	LV shear bolt connectors		pc	pc
MR0050	MR-10	113	1	1
MR0051	MR-11		1	1
MR0052	MR-12		1	1
MR0053	MR-13		1	1
MU	LV screw-type connect. and termin. blocks		pc	pc
MU0610	MU-6/10	116	10	10
MU1025AI	MU-10/25-AI		10	10
MU1635	MU-16/35		10	10
MU5P0610RJ	MU5P0610-RJ		1	1
MU5P1635RJ	MU5P1635-RJ		1	1
NA	Tapes		pc	pc
NA4015	ISOEL 15 BK	122	100	100
NA4019	ISOEL 19 BK		120	120
NA4025	ISOEL 25 BK		96	96
NA4115	ISOEL 15 BE		100	100
NA4119	ISOEL 19 BE		120	120
NA4125	ISOEL 25 BE		96	96
NA4215	ISOEL 15 GR		100	100
NA4219	ISOEL 19 GR		120	120
NA4225	ISOEL 25 GR		96	96
NA4315	ISOEL 15 RD		100	100
NA4319	ISOEL 19 RD		120	120
NA4325	ISOEL 25 RD		96	96
NA4415	ISOEL 15 WH		100	100
NA4419	ISOEL 19 WH		120	120
NA4425	ISOEL 25 WH		96	96
NA4515	ISOEL 15 BW		100	100
NA4519	ISOEL 19 BW		120	120
NA4525	ISOEL 25 BW		96	96
NA4615	ISOEL 15 YG		100	100
NA4619	ISOEL 19 YG		120	120
NA4623	ISOEL EPR 623	125	10	10
NA4625	ISOEL 25 YG	122	96	96
NA4626	ISOFIL 626	126	5	5
NA4715	ISOEL 15 VE	122	100	100
NA4719	ISOEL 19 VE		120	120
NA4723	ISOEL EPR 723	125	10	10
NA4725	ISOEL 25 VE	122	96	96
NA4815	ISOEL 15 YE		100	100
NA4819	ISOEL 19 YE	120	120	
NA4823	ISOEL EPR 823	125	8	8
NA4825	ISOEL 25 YE	122	96	96
NA	Tape bundles		pc	pk
NA4019K1	Kit NA4019 20 pc + tool	122	5	20/5

ref.	item	page	pack. unit	min./ mult. ord. qty
NA (cont.)	Tapes		m	m
NA4923	ISOEL EPR 923	125	6	6
NA5023	ISOEL EPR 1023		4	4
NA5633	ISOEL 633 Professional	124	10	10
NA6912	ISOGLASS 912	-	10	10
NA9050	ISOALL	127	1	1
NT	MV heat-shrink tapes		m	m
NT0012	NTMT-12-A	166	10	10
NT0014	NTMT-14-A		10	10
NT0015	NTMT-15-A		10	10
NT0016	NTMT-16-A		10	10
O	Single component gel filler in cartridge		pc	pc
ONEGEL	ONE GEL	27	1	24
PA	Heat shrink tubing for pole protection		m	m
PA0430	RJS-430X30M/C	98	30	30
PA0801	GTPA-90/25-450	98	1	1
PA1121	GTPA-125/60-450		1	1
PA1501	GTPA-150/60-450		1	1
PA1961	GTPA-200/75-450		1	1
PA2521	GTPA-252/95-450		1	1
PA4381	WPCP		1	5
PCK	ATEX junction box for heating cables		pc	pc
PCKHTC1	PCKTC1	218	1	1
PP	Heat shrink pre-moulded parts		pc	pc
PP00104	CTC-10/4	103	3	3
PP02075	CTC-20/7.5		3	3
PP03515	CTC-35/15		3	3
PP05525	CTC-55/25		3	3
PP07532	CTC-75/32		3	3
PP10045	CTC-100/45		3	3
PP12070	CTC-120/70		3	3
PP20025	TBT/B-25	104	3	3
PP20150	TBT/B-150		3	3
PP20300	TBT/B-300	104	3	3
PP30035	TBT/T-35		3	3
PP30150	TBT/T-150		3	3
PP30300	TBT/T-300		3	3
PP30500	TBT/T-500	104	3	3
PP30630	TBT/T-630		3	3
PP40035	TBT/Q-35		3	3
PP40070	TBT/Q-70	104	3	3
PP40150	TBT/Q-150		3	3
PP40300	TBT/Q-300	104	3	3
PP50010	TBT/P-10		3	3
PP50050	TBT/P-50		3	3
PP50095	TBT/P-95		3	3
PP50240	TBT/P-240	3	3	
PRHTC	Shaped cable gland for heating cables		pc	pc
PRHTC1	PRHTC1	214	1	1
PRHTC2	PRHTC2		1	1

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty	
RB	Heat-shrink tubing - in dispenser box		m/cf	pk	
RB0016	ROLLBOX 1.6/0,8-BK	86	10	1	
RB0019	ROLLBOX 19/9,5-BK		10	1	
RB0024	ROLLBOX 2.4/1,2-BK		10	1	
RB0032	ROLLBOX 3.2/1,6-BK		10	1	
RB0048	ROLLBOX 4.8/2,4-BK		8	1	
RB0064	ROLLBOX 6.4/3,2-BK		6	1	
RB0095	ROLLBOX 9.5/4,8-BK		5	1	
RB0127	ROLLBOX 12.7/6,4-BK		5	1	
RB0254	ROLLBOX 25.4/12,7-BK		4	1	
RB2016	ROLLBOX 1.6/0,8-RD		86	10	1
RB2019	ROLLBOX 19/9,5-RD	10		1	
RB2024	ROLLBOX 2.4/1,2-RD	10		1	
RB2032	ROLLBOX 3.2/1,6-RD	10		1	
RB2048	ROLLBOX 4.8/2,4-RD	8		1	
RB2064	ROLLBOX 6.4/3,2-RD	6		1	
RB2095	ROLLBOX 9.5/4,8-RD	5		1	
RB2127	ROLLBOX 12.7/6,4-RD	5		1	
RB2254	ROLLBOX 25.4/12,7-RD	4		1	
RB3019	ROLLBOX 19/9,5-YG	86		5	1
RB3064	ROLLBOX 6.4/3,2-YG		3	1	
RB3095	ROLLBOX 9.5/4,8-YG		3	1	
RB3127	ROLLBOX 12.7/6,4-YG		2	1	
RB3254	ROLLBOX 25.4/12,7-YG		1,5	1	
RB6016	ROLLBOX 1.6/0,8-BE		86	10	1
RB6019	ROLLBOX 19/9,5-BE			10	1
RB6024	ROLLBOX 2.4/1,2-BE			10	1
RB6032	ROLLBOX 3.2/1,6-BE			10	1
RB6048	ROLLBOX 4.8/2,4-BE			8	1
RB6064	ROLLBOX 6.4/3,2-BE	6		1	
RB6095	ROLLBOX 9.5/4,8-BE	5		1	
RB6127	ROLLBOX 12.7/6,4-BE	5		1	
RB6254	ROLLBOX 25.4/12,7-BE	4		1	
RE	Re-enterable resin fillers			pc	pk
RE0100	RESIL 100	29	1	12	
RE0400	RESIL 400	29	1	1	
RH	Polyester braided sleeving - in spool		m	m	
RH1003	RHB-03BK	186	200	200	
RH1004	RHB-04BK		200	200	
RH1005	RHB-05BK		100	100	
RH1006	RHB-06BK		100	100	
RH1008	RHB-08BK		100	100	
RH1010	RHB-10BK		100	100	
RH1012	RHB-12BK		100	100	
RH1015	RHB-15BK		100	100	
RH1020	RHB-20BK		50	50	
RH1025	RHB-25BK		50	50	
RH1030	RHB-30BK		50	50	
RH1040	RHB-40BK		50	50	
RH1050	RHB-50BK		50	50	
RH2003	RHB-03GR		200	200	
RH2004	RHB-04GR		200	200	
RH2005	RHB-05GR		100	100	
RH2006	RHB-06GR		100	100	
RH2008	RHB-08GR		100	100	
RH2010	RHB-10GR		100	100	
RH2012	RHB-12GR		100	100	
RH2015	RHB-15GR		100	100	
RH2020	RHB-20GR		50	50	
RH2025	RHB-25GR		50	50	
RH2030	RHB-30GR		50	50	
RH2040	RHB-40GR		50	50	
RH2050	RHB-50GR		50	50	

ref.	item	page	pack. unit	min./ mult. ord. qty	
RS	Stainless steel contact spring		pc	pc	
RS034A	RS034-A	174	1	1	
RS034B	RS034-B		1	1	
RS034C	RS034-C		1	1	
RS034D	RS034-D		1	1	
RS034E	RS034-E		1	1	
RS034F	RS034-F		1	1	
RS034G	RS034-G		1	1	
RS034H	RS034-H		1	1	
RS034I	RS034-I		1	1	
RS034K	RS034-K		1	1	
RS034L	RS034-L		1	1	
RS034M	RS034-M		1	1	
RS034N	RS034-N		1	1	
RS034O	RS034-O		1	1	
RS	Solid final state resins			pc	pc
RS0150	RS 150		30	1	4
RS0300	RS 300	1		4	
RS0400	RS 400	1		4	
RS0550	RS 550	1		4	
RS0650	RS 650	1		4	
RS1650	RS 1650	1		1	
RS5000	RS 5000	31	1	1	
SBOX	LV lever connectors		pc/pk	pc	
SBOX2	Spring Box 2	108	60	60	
SBOX3	Spring Box 3		40	40	
SBOX5	Spring Box 5		35	35	
SC	LV inline compression connectors		pc/pk	pc	
SC001	SC 1,5	114	50	50	
SC002	SC 2,5		50	50	
SC006	SC 6		20	20	
SC010	SC 10		20	20	
SC016	SC 16		20	20	
SC025	SC 25		10	10	
SC035	SC 35		10	10	
SC050	SC 50		10	10	
SC070	SC 70		5	5	
SC095	SC 95		5	5	
SC120	SC 120		5	5	
SC150	SC 150		5	5	
SC185	SC 185		5	5	
SC240	SC 240		5	5	
SC300	SC 300		1	1	
SC400	SC 400		1	1	
SC500	SC 500		1	1	
SC630	SC 630		1	1	
SC800	SC 800		1	1	
SC999	SC 1000		1	1	

CONT. →

ref.	item	page	pack. unit	min./mult. ord. qty
SH	LV gel joints		pc	pc
SH0125	SHARK 125		1	12
SH0150	SHARK 150		1	12
SH0306	SHARK 306		1	1
SH0315BL	SHARK 315		1	12
SH0325	SHARK 325		1	12
SH0406	SHARK 406		1	9
SH0410	SHARK 410		1	9
SH0416	SHARK 416		1	6
SH0425	SHARK 425		1	1
SH0435	SHARK 435		1	1
SH0506	SHARK 506	48,	1	1
SH0516	SHARK 516	52	1	1
SH0525	SHARK 525		1	1
SH1406	SHARK 406/S		1	9
SH1410	SHARK 410/S		1	9
SH1416	SHARK 416/S		1	6
SH1425	SHARK 425/S		1	1
SH1435	SHARK 435/S		1	1
SH1525	SHARK 525/S		1	1
SH6150	SHARK 150Y		1	1
SH6516	SHARK 516Y		1	1
SH6535	SHARK 535Y		1	1
SH6801	SHARK 6801		1	1
SH6802	SHARK 6802		1	1
SH6803	SHARK 6803		1	1
SH6801A	SHARK 6801A		1	1
SH6801B	SHARK 6801B	46	1	1
SH6801C	SHARK 6801C		1	1
SH6802A	SHARK 6802A		1	1
SH6802B	SHARK 6802B		1	1
SH6803A	SHARK 6803A		1	1
SJ	LV heat-shrink joints		pc	pc
SJ1050C	Sealjoint 1050 C		1	1
SJ1095C	Sealjoint 1095 C		1	1
SJ1240C	Sealjoint 1240 C		1	1
SJ1300C	Sealjoint 1300 C	64	1	1
SJ5050C	Sealjoint 5050 C		1	1
SJ5095C	Sealjoint 5095 C		1	1
SJ5240C	Sealjoint 5240 C		1	1
SJ5300C	Sealjoint 5300 C		1	1
SJ1016	Sealjoint 1016		1	1
SJ1070	Sealjoint 1070		1	1
SJ1150	Sealjoint 1150		1	1
SJ1300	Sealjoint 1300		1	1
SJ5006	Sealjoint 5006	65	1	1
SJ5016	Sealjoint 5016		1	1
SJ5035	Sealjoint 5035		1	1
SJ5070	Sealjoint 5070		1	1
SJ5150	Sealjoint 5150		1	1
SJ5300	Sealjoint 5300		1	1
SJ5004F	Sealjoint Fire 5004		1	1
SJ5016F	Sealjoint Fire 5016		1	1
SJ5050F	Sealjoint Fire 5050		1	1
SJ5150F	Sealjoint Fire 5150		1	1
SJ5004FA	Sealjoint Fire 5004 A	66	1	1
SJ5016FA	Sealjoint Fire 5016 A		1	1
SJ5050FA	Sealjoint Fire 5050 A		1	1
SJ5150FA	Sealjoint Fire 5150 A		1	1
SJ5010D	Sealjoint 5010 D		1	1
SJ5025D	Sealjoint 5025 D	68	1	1
SJ5050D	Sealjoint 5050 D		1	1
SJ5010FDC	Sealjoint Fire 5010 D	69	1	1
SJ5016FDC	Sealjoint Fire 5016 D		1	1
SJ0007S	Sealjoint 007 S		1	1
SJ0014S	Sealjoint 014 S		1	1
SJ0030S	Sealjoint 030 S	70	1	1
SJ0007SA	Sealjoint 007 SA		1	1
SJ0014SA	Sealjoint 014 SA		1	1
SJ0030SA	Sealjoint 030 SA		1	1

ref.	item	page	pack. unit	min./mult. ord. qty
SJ (cont.)	LV heat-shrink joints		pc	pc
SJ0007FS	Sealjoint Fire 007 S		1	1
SJ0014FS	Sealjoint Fire 014 S		1	1
SJ0030FS	Sealjoint Fire 030 S	71	1	1
SJ0007FSA	Sealjoint Fire 007 SA		1	1
SJ0014FSA	Sealjoint Fire 014 SA		1	1
SJ0030FSA	Sealjoint Fire 030 SA		1	1
SKA / SKB	LV solid final state resin joints		pc	pc
SKA0	SKA0		1	10
SKA1	SKA1		1	4
SKA2	SKA2		1	4
SKA3	SKA3	60	1	1
SKA3S	SKA3S		1	1
SKA4	SKA4		1	1
SKA5	SKA5		1	1
SKA6	SKA6		1	1
SKB0	SKB0		1	6
SKB1	SKB1		1	4
SKB2	SKB2	62	1	1
SKB3	SKB3		1	1
SKB4	SKB4		1	1
SKB5	SKB5		1	1
SRC	Strain relief system for Shark joints		pc	pc
SRC001	SRC 1	50	1	1
SP	Spring-clamp terminal blocks		pc	pc
SP225	SP 225		10	10
SP325	SP 325	109	10	10
SP510	SP 510		1	1
ST	Sensors for self regul. heating cables		pc	pc
STCHTC1	STCHTC1	210	1	1
STGHTC1	STGHTC1	211	1	1
STHTTC1	STHTTC1	211	1	1
STUHTC1	STUHTC1	210	1	1
TA	Nylon wall plug with screw		pc/pk	pk
TA0000	TX5		100	20
TA0001	TX6	178	100	60
TA0002	TX8		50	10
TA0003	TX10		25	10
TAK	Nylon wall plug with screw		pc/pk	pk
TAK300	TX6		300	10
TAK500	TX6	178	500	12
TAK505	TX5		500	10

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty	
TB	MV cold-shrink terminations		pc/pk	pk	
TB240701	TAMT-24/95-I	140	3	1	
TB240702	TAMT-24/95-E		3	1	
TB240951	TAMT-24/95-L		3	1	
TB241851	TAMT-24/300-I		3	1	
TB241852	TAMT-24/300-E		3	1	
TB242401	TAMT-24/240-L		3	1	
TB244001	TAMT-24/630-I		3	1	
TB244002	TAMT-24/630-E		3	1	
TB360951	TAMT-36/50-I		3	1	
TB360952	TAMT-36/50-E		3	1	
TB363001	TAMT-36/300-I		3	1	
TB363002	TAMT-36/300-E		3	1	
TB366001	TAMT-36/630-I		3	1	
TB366002	TAMT-36/630-E		3	1	
TB	ENEL-approv. MV cold-shrink termin.			pc/pk	pk
TB273041	TAMT-24/240-I/U		147	1	1
TB273069	TAMT-24/240-E/U	1		1	
TBOX	Screw-type terminal blocks		pc/pk	pc	
TBOX015	TBOX 015	110	10	100	
TBOX025	TBOX 025		10	100	
TBOX040	TBOX 040		10	100	
TBOX060	TBOX 060		10	100	
TBOX100	TBOX 100		5	50	
TBOX160	TBOX 160		5	50	
TBOX250	TBOX 250		5	50	
TBOX350	TBOX 350		5	50	
TC	MV separ. connectors - coupling			pc/pk	pk
TC630025	TS-CA630-24/25		145	3	1
TC630035	TS-CA630-24/35	3		1	
TC630050	TS-CA630-24/50	3		1	
TC630070	TS-CA630-24/70	3		1	
TC630095	TS-CA630-24/95	3		1	
TC630120	TS-CA630-24/120	3		1	
TC630150	TS-CA630-24/150	3		1	
TC630185	TS-CA630-24/185	3		1	
TC630240	TS-CA630-24/240	3		1	
TC630300	TS-CA630-24/300	3		1	
TD	MV separ. connectors - 250 A straight		pc/pk	pk	
TD250016	TSD250-16/A	142	3	1	
TD250017	TSD250-16/B		3	1	
TD250025	TSD250-25/A		3	1	
TD250026	TSD250-25/B		3	1	
TD250035	TSD250-35/A		3	1	
TD250036	TSD250-35/B		3	1	
TD250037	TSD250-35/C		3	1	
TD250050	TSD250-50/A		3	1	
TD250051	TSD250-50/B		3	1	
TD250052	TSD250-50/C		3	1	
TD250070	TSD250-70/A		3	1	
TD250071	TSD250-70/B		3	1	
TD250095	TSD250-95/A		3	1	
TD250096	TSD250-95/B		3	1	

ref.	item	page	pack. unit	min./ mult. ord. qty
TM	ENEL-approv. MV heat-shrink termin.		pc/pk	pk
TM273040	TMMT-24/185-I/U-H5	146	1	1
TM273044	TMMT-24/150-I/U		1	1
TM273045	TMMT-24/25-I/U		1	1
TM273049	TMMT-24/185-I/U-H5		1	1
TM273064	TMMT-24/185-E/U-H5		1	1
TM273065	TMMT-24/185-E/U		1	1
TM273066	TMMT-24/150-E/U		1	1
TS	MV separ. connectors. - 250 A elbow			pc/pk
TS250016	TSS250-16/A	142	3	1
TS250017	TSS250-16/B		3	1
TS250025	TSS250-25/A		3	1
TS250026	TSS250-25/B		3	1
TS250035	TSS250-35/A		3	1
TS250036	TSS250-35/B		3	1
TS250037	TSS250-35/C		3	1
TS250050	TSS250-50/A		3	1
TS250051	TSS250-50/B		3	1
TS250052	TSS250-50/C		3	1
TS250053	TSS250-50/D		3	1
TS250070	TSS250-70/A		3	1
TS250071	TSS250-70/B		3	1
TS250072	TSS250-70/C		3	1
TS250095	TSS250-95/A		3	1
TS250096	TSS250-95/B		3	1
TS250097	TSS250-95/C	3	1	
TS250098	TSS250-95/D	3	1	
TS250120	TSS250-120/A	3	1	
TS250121	TSS250-120/B	3	1	
TS250122	TSS250-120/C	3	1	
TS	MV separable connectors- 630 A		pc/pk	pk
TS630025095	TS630-24/25-95-R	144	3	1
TS630120185	TS630-24/120-185-R		3	1
TS630240300	TS630-24/240-300-R		3	1
TS	ENEL-approved MV separ. connectors		pc/pk	pk
TS273226	TS630-36/95/R-H5	148	1	1
TS273252	TS630-24/95-H5		1	1
TS273253	TS630-24/185/R-H5		1	1

CONT. →

ref.	item	page	pack. unit	min./ mult. ord. qty
TT	MV heat-shrink terminations		pc/pk	pk
TT070501	TTMT-7/50-I		3	1
TT070503	TTMT-7/50-3I		1	1
TT071201	TTMT-7/120-I		3	1
TT071203	TTMT-7/120-3I		1	1
TT072401	TTMT-7/240-I		3	1
TT072403	TTMT-7/240-3I		1	1
TT075001	TTMT-7/500-I		3	1
TT075003	TTMT-7/500-3I		1	1
TT079991	TTMT-7/1000-I		3	1
TT079993	TTMT-7/1000-3I		1	1
TT170251	TTMT-17/25-I		3	1
TT170252	TTMT-17/25-E		3	1
TT170253	TTMT-17/25-3I		1	1
TT170256	TTMT-17/25-3E		1	1
TT170701	TTMT-17/70-I	136,	3	1
TT170702	TTMT-17/70-E	138	3	1
TT170703	TTMT-17/70-3I		1	1
TT170706	TTMT-17/70-3E		1	1
TT172401	TTMT-17/240-I		3	1
TT172402	TTMT-17/240-E		3	1
TT172403	TTMT-17/240-3I		1	1
TT172406	TTMT-17/240-3E		1	1
TT174001	TTMT-17/400-I		3	1
TT174002	TTMT-17/400-E		3	1
TT174003	TTMT-17/400-3I		1	1
TT174006	TTMT-17/400-3E		1	1
TT178001	TTMT-17/800-I		3	1
TT178002	TTMT-17/800-E		3	1
TT178003	TTMT-17/800-3I		1	1

TT (cont.)	MV heat-shrink terminations		pc/pk	pk
TT178006	TTMT-17/800-3E		1	1
TT240701	TTMT-24/70-I		3	1
TT240702	TTMT-24/70-E		3	1
TT240703	TTMT-24/70-3I		1	1
TT240706	TTMT-24/70-3E		1	1
TT242401	TTMT-24/240-I		3	1
TT242402	TTMT-24/240-E		3	1
TT242403	TTMT-24/240-3I		1	1
TT242406	TTMT-24/240-3E		1	1
TT244001	TTMT-24/400-I		3	1
TT244002	TTMT-24/400-E		3	1
TT244003	TTMT-24/400-3I		1	1
TT244006	TTMT-24/400-3E	136,	1	1
TT248001	TTMT-24/800-I	138	3	1
TT248002	TTMT-24/800-E		3	1
TT360951	TTMT-36/95-I		3	1
TT360952	TTMT-36/95-E		3	1
TT360953	TTMT-36/95-3I		1	1
TT360956	TTMT-36/95-3E		1	1
TT361851	TTMT-36/185-I		3	1
TT361852	TTMT-36/185-E		3	1
TT361853	TTMT-36/185-3I		1	1
TT361856	TTMT-36/185-3E		1	1
TT365001	TTMT-36/500-I		3	1
TT365002	TTMT-36/500-E		3	1
TT365003	TTMT-36/500-3I		1	1
TT365006	TTMT-36/500-3E		1	1

ref.	item	page	pack. unit	min./ mult. ord. qty
TTBT	LV heat-shrink terminations		pc	pc
TTBT3016	TTBT-3/16		1	1
TTBT3050	TTBT-3/50		1	1
TTBT3150	TTBT-3/150		1	1
TTBT3300	TTBT-3/300		1	1
TTBT4016	TTBT-4/16		1	1
TTBT4050	TTBT-4/50	102	1	1
TTBT4150	TTBT-4/150		1	1
TTBT4300	TTBT-4/300		1	1
TTBT5010	TTBT-5/16		1	1
TTBT5050	TTBT-5/50		1	1
TTBT5095	TTBT-5/95		1	1
TTBT5240	TTBT-5/240		1	1
TUBOX	Heat-shrink tubings assorted kits		pc	pc
TUBOX001	TUBOX001	90	1	12
TUBOX002	TUBOX002		1	12
UF	Cable ties application tooling		pc	pc
UF0008	UFF-8	185	1	1
UF0009	UFC-9		1	1

NOTES

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