



SWA Glands & Kits



Nickel Plated Glands



Catenary



Gel Covers



Gel Joints



Gel Compounds



Hygiene



Mono Gel



Single Bottle Gels

LUCAS**Ray
Tech**

New Magic Gel Sprint Launch and Promotion

View full info & video demo here: <https://www.raytech.it/en/magic-gel-sprint-landing>**Extra quick
cross linking**

Min.

**New Magic Gel in a single bottle
with activator. Simply pour the
activator into the bottle and shake!**

- For ENERGY cables, TELECOM cables and ELECTRONIC CIRCUITS.
- Non-toxic, safe and not classified as dangerous under the CLP Directive.
- Suitable for installation in salt water (sea) and chlorinated water (swimming pools).
- For any type of indoor / outdoor and even submerged installation.
- Can also be used for high depths.
- For installations up to 1 kV.
- For high temperatures.
- Removable.
- Without expiration.



| Part number | Description | Size |
|----------------------|-------------------------|-------|
| MAGIC GEL SPRINT 450 | Magic Gel mix in bottle | 450ml |
| MAGIC GEL SPRINT 900 | Magic Gel mix in bottle | 900ml |



450 ml



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NEW

MAGICGEL
Sprint

INSULATING AND SEALING GEL
ALL IN ONE



IP68
OFFICIALLY
TESTED

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BABY BOX

IP68 PRE-FILLED MINI BOXES



**OFFICIALLY
IP69K
TESTED**

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Little Joint Easy

IP68 PRE-FILLED MINI JOINTS
COMPLETE WITH IN-OUT CONNECTORS



**OFFICIALLY
IP69K
TESTED**

page **66**

Ready

IP68 RESIN PRE-FILLED JOINTS
COMPLETE WITH CONNECTORS



IP68
OFFICIALLY
TESTED

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SWA CABLE GLANDS CAN BE TIGHTENED BY HAND!! NO SHROUDS REQUIRED!!

BITE-M20S-R (20mm Ø mounting hole)



- Minimum enclosure intrusion
- Indoor & Outdoor use (IP66)
- Quick and easy installation

Available in: Standard, LSF (low smoke), Aluminium LSF and stainless steel LSF please call

Cable range: 9-16mm Ø

| BITE-M20S-R Selector | | | | | |
|-----------------------|-----|-----|-----|-----|--|
| Cable mm ² | 1.5 | 2.5 | 4 | 6 | |
| 2 Core | yes | yes | yes | yes | |
| 3 Core | yes | yes | yes | | |
| 4 Core | yes | yes | | | |
| 5 Core | yes | yes | | | |

| Part Number: | Size: | Pack Quantity: |
|---------------|-------|----------------|
| BITE-M20S-R-B | M20 | 10 |

BITE-M20S-M (20mm Ø mounting hole)



- Indoor & Outdoor use (IP66)
- Quick and easy installation

Standard, LSF (low smoke), Aluminium LSF and stainless steel LSF please call

Cable range: 9-16mm Ø

| BITE-M20S-M Selector | | | | | |
|-----------------------|-----|-----|-----|-----|--|
| Cable mm ² | 1.5 | 2.5 | 4 | 6 | |
| 2 Core | yes | yes | yes | yes | |
| 3 Core | yes | yes | yes | | |
| 4 Core | yes | yes | | | |
| 5 Core | yes | yes | | | |

| Part Number: | Size: | Pack Quantity: |
|---------------|-------|----------------|
| BITE-M20S-M-B | M20 | 10 |

BITE-M20 (20mm Ø mounting hole)



- 2 stage cable entry system, discardable throat restrictor
- Indoor & Outdoor use (IP66)
- Quick and easy installation

Available in: Standard, LSF (low smoke), Aluminium LSF and stainless steel LSF please call

Cable range: 9-20mm Ø

| BITE-M20 Selector | | | | | |
|-----------------------|-----|-----|-----|-----|--|
| Cable mm ² | 1.5 | 2.5 | 4 | 6 | |
| 2 Core | yes | yes | yes | yes | |
| 3 Core | yes | yes | yes | yes | |
| 4 Core | yes | yes | yes | yes | |
| 5 Core | yes | yes | yes | yes | |

| Part Number: | Size: | Pack Quantity: |
|--------------|-------|----------------|
| BITE-M20-B | M20 | 10 |

BITE-M25 (25mm Ø mounting hole)



- 2 stage cable entry system, discardable throat restrictor
- Indoor & Outdoor use (IP66)
- Quick and easy installation

Available in: Standard, LSF (low smoke), Aluminium LSF and stainless steel LSF please call

Cable range: 17-26.5mm Ø

| BITE-M25 Selector | | | | | | | | | | |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cable mm ² | 6 | 10 | 16 | 25 | 35 | 50 | 70 | 95 | 150 | |
| 1 Core | | | | | | yes | yes | yes | yes | |
| 2 Core | | yes | yes | yes | yes | | | | | |
| 3 Core | | yes | yes | yes | | | | | | |
| 4 Core | yes | yes | yes | | | | | | | |
| 5 Core | yes | yes | yes | | | | | | | |

| Part Number: | Size: | Pack Quantity: |
|--------------|-------|----------------|
| BITE-M25-B | M25 | 10 |

BITE GLAND KITS

Kits come complete with:
2 brass BITE glands, 2 brass lock nuts and 2 brass earth shackles

| Part Number: | Size: | Thread Type: |
|-------------------|-------|--------------|
| BITE-M20S-R-B-KIT | M20s | Reverse |
| BITE-M20S-M-B-KIT | M20s | Male |
| BITE-M20-B-KIT | M20 | Male |
| BITE-M25-B-KIT | M25 | Male |



ACCESSORIES

EARTH SHACKLES - M20 & M25

Characteristics:

- For plastic or metal enclosures
- Easy and quick to install
- Anti-loosening system
- Compact design
- Comes complete (no other part required)
- Designed to take up to 2 x 6mm earth cables
- For use with any cable gland/conduit
- Fully compliant to 17th edition
- No special tools required
- Can be used with or without crimp lug



| Part Number: | Size: | Pack Quantity: |
|--------------|-------|----------------|
| PT-ES-M20-B | M20 | 10 |
| PT-ES-M25-B | M25 | 10 |

CHUNKY NUTS

Heavy duty lock nuts

| Part Number: | Size: | Bag Quantity: |
|-----------------|-------|---------------|
| PT-CN-M20-B-EMC | 20mm | 10 |
| PT-CN-M25-B-EMC | 25mm | 10 |



EARTH PLATE

M20 earth plate to be used with enclosures

| Part Number: | Size: | Bag Quantity: |
|--------------|-------|---------------|
| PT-EP-M20-B | M20 | 1 |



ENCLOSURE

Enclosure with 7 M20 rubber membrane entries

| Part Number: | Size: | MOQ: |
|---------------|------------------|------|
| ABOX 040L - B | 100 x 100 x 50mm | 1 |



Complete solutions for outdoor connections perfectly suited to outdoor lighting applications

Prefer to choose your own gel protection?
Here are kits without gel protection included:

AWK1-SWA-HAPPY



Kit includes:



| Part Number: | Description: | MOQ: |
|----------------|------------------------------|------|
| AWK1-SWA-HAPPY | Kit contains the above items | 1 |

AWK1-SWA



Requires 225ml for base and 90mm for lid if using pouring compound

Kit includes:



| Part Number: | Description: | MOQ: |
|--------------|------------------------------|------|
| AWK1-SWA | Kit contains the above items | 1 |

AWK2-SWA-HAPPY



Kit includes:



| Part Number: | Description: | MOQ: |
|----------------|------------------------------|------|
| AWK2-SWA-HAPPY | Kit contains the above items | 1 |

AWK2-SWA



Requires 225ml for base and 90mm for lid if using pouring compound

Kit includes:



| Part Number: | Description: | MOQ: |
|--------------|------------------------------|------|
| AWK2-SWA | Kit contains the above items | 1 |

AWK3-SWA-HAPPY



Kit includes:



| Part Number: | Description: | MOQ: |
|----------------|------------------------------|------|
| AWK3-SWA-HAPPY | Kit contains the above items | 1 |

AWK3-SWA



Requires 225ml for base and 90mm for lid if using pouring compound

Kit includes:



| Part Number: | Description: | MOQ: |
|--------------|------------------------------|------|
| AWK3-SWA | Kit contains the above items | 1 |

ALL WEATHER KITS FOR FLEX

Complete solutions for outdoor connections perfectly suited to outdoor lighting applications

AWK1-FLEX-HAPPY



Kit includes:



| Part Number: | Description: | MOQ: |
|-----------------|------------------------------|------|
| AWK1-FLEX-HAPPY | Kit contains the above items | 1 |

AWK2-FLEX-HAPPY



Kit includes:



| Part Number: | Description: | MOQ: |
|-----------------|------------------------------|------|
| AWK2-FLEX-HAPPY | Kit contains the above items | 1 |

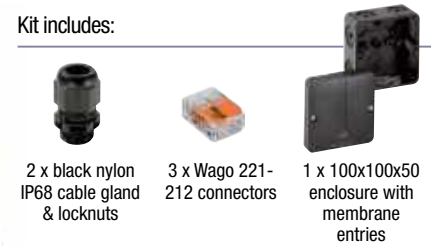
Prefer to choose your own gel protection?
Here are kits without gel protection included:

AWK1-FLEX

Requires 225ml for base and 90mm for lid if using pouring compound



Kit includes:



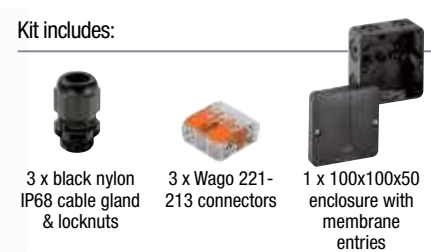
| Part Number: | Description: | MOQ: |
|--------------|------------------------------|------|
| AWK1-FLEX | Kit contains the above items | 1 |

AWK2-FLEX

Requires 225ml for base and 90mm for lid if using pouring compound



Kit includes:



| Part Number: | Description: | MOQ: |
|--------------|------------------------------|------|
| AWK2-FLEX | Kit contains the above items | 1 |

SY/CY BRAIDED CABLES

SPRING CLAMP 20

(20mm Ø mounting hole)



Cable range: 7.5 - 16mm Ø

| SPRING CLAMP 20 Selector | | | | | | |
|--------------------------|-----|------|-----|-----|-----|-----|
| Cable mm ² | 0.5 | 0.75 | 1.5 | 2.5 | 4 | 6 |
| 2 Core | yes | yes | yes | yes | yes | yes |
| 3 Core | yes | yes | yes | yes | yes | yes |
| 4 Core | yes | yes | yes | yes | | |
| 5 Core | yes | yes | yes | yes | | |
| 7 Core | yes | yes | yes | | | |
| 12 Core | yes | yes | yes | | | |
| 18 Core | yes | | | | | |

- Ideal for EMC 360 grounding
- Waterproof (IP68) submersible status
- 2 stage cable entry system
- AGS
- Quick and easy installation

| Part Number: | Size: | Pack Quantity: |
|---------------|-------|----------------|
| PT-SC-M20S-AL | M20 | 10 |

LSF (low smoke) as standard (UL94-V0 & zero halogen)

AUTOMATIC GROUNDING SYSTEM:



The unique 'Automatic Grounding System' (AGS) brings many advantages to the electrical installer and guarantees a positive grounding with excellent fault current handling characteristics.

BRAID TO EARTH CONTINUITY:



Ideal for non-conductive enclosures

TWO STAGE CABLE ENTRY SYSTEM:



- 1) The cable glands come complete with a throat restrictor for the lower cable range.
- 2) If the cable is too large and the upper cable range is required then remove and discard the throat restrictor.

COAX & ELECTRONIC CABLES

SPRING CLAMP MINIATURE 01 KIT

(10mm Ø mounting hole)



Cable range: 3.5 - 7mm Ø

- Weight: 5g plus braid sock
- IP68 waterproof
- Incredibly versatile
- 360 grounding of screens
- Ideal for plastic enclosures
- Quick and easy installation

FOR:

- Coaxial cables
- Foil wrap cables
- Foil/individual and/or overall screened cables
- Non screened cables (increased retention)

| Part Number: | Size: | Pack Quantity: |
|--------------|-------|----------------|
| PT-SC-M10-AL | M10 | 1 |

LSF (low smoke) as standard (UL94-V0 & zero halogen)

SPRING CLAMP MINIATURE 02 KIT

(12mm Ø mounting hole)



Cable range: 6 - 9mm Ø

- Weight: 6g plus braid sock
- IP68 waterproof
- Incredibly versatile
- 360 grounding of screens
- Ideal for plastic enclosures
- Quick and easy installation

FOR:

- Coaxial cables
- Foil wrap cables
- Foil/individual and/or overall screened cables
- Non screened cables (increased retention)

| Part Number: | Size: | Pack Quantity: |
|--------------|-------|----------------|
| PT-SC-M12-AL | M12 | 1 |

LSF (low smoke) as standard (UL94-V0 & zero halogen)

BRASS NICKEL PLATED IP68 CABLE GLANDS

Metric Nickel Plated IP68 Cable Glands

| Metric Nickel Plated IP68 Cable Glands | |
|--|-----------------------|
| Approvals: | CE, RoHS, IP68 |
| Material: | Nickel-plated brass |
| Clamp: | PA66 (nylon), UL94-V2 |
| Seal: | NBR Silicone rubber |
| O-ring: | NBR Silicone rubber |
| Protection: | IP68 at 10 bar |
| Temp range: | -40°C to 100°C |



| Part Number | Thread Diameter | Thread Length | Cable Range | Bag Qty |
|-------------|-----------------|---------------|-------------|---------|
| IP68M12/NP | M12 x 1.5 | 6.5 mm | 3-6.5 mm | 200 |
| IP68M16/NP | M16 x 1.5 | 8 mm | 4-8 mm | 100 |
| IP68M20/NP | M20 x 1.5 | 8 mm | 6-12 mm | 100 |
| IP68M25/NP | M25 x 1.5 | 9 mm | 10-14 mm | 50 |
| IP68M32/NP | M32 x 1.5 | 10 mm | 15-22 mm | 30 |
| IP68M40/NP | M40 x 1.5 | 10 mm | 22-30 mm | 16 |
| IP68M50/NP | M50 x 1.5 | 10 mm | 32-38 mm | 9 |
| IP68M63/NP | M63 x 1.5 | 10 mm | 37-44 mm | 3 |

Metric Nickel Plated Locknuts

| Metric Nickel Plated Locknuts | |
|-------------------------------|---------------------|
| Material: | Nickel-plated brass |

| Part Number | Thread Diameter | Bag Qty |
|-------------|-----------------|---------|
| LN12/NP | M12 x 1.5 | 200 |
| LN16/NP | M16 x 1.5 | 100 |
| LN20/NP | M20 x 1.5 | 100 |
| LN25/NP | M25 x 1.5 | 100 |
| LN32/NP | M32 x 1.5 | 100 |
| LN40/NP | M40 x 1.5 | 100 |
| LN50/NP | M50 x 1.5 | 50 |
| LN63/NP | M63 x 1.5 | 30 |



PG Nickel Plated IP68 Cable Glands

| PG Nickel Plated IP68 Cable Glands | |
|------------------------------------|-----------------------|
| Approvals: | CE, RoHS, IP68 |
| Material: | Nickel-plated brass |
| Clamp: | PA66 (nylon), UL94-V2 |
| Seal: | NBR Silicone rubber |
| O-ring: | NBR Silicone rubber |
| Protection: | IP68 at 10 bar |
| Temp range: | -40°C to 100°C |



| Part Number | Thread Diameter | Thread Length | Cable Range | Bag Qty |
|---------------|-----------------|---------------|-------------|---------|
| IP68PG7/NP | PG7 | 6.5 mm | 3-6.5 mm | 200 |
| IP68PG9/NP | PG9 | 8 mm | 4-8 mm | 100 |
| IP68PG11/NP | PG11 | 8 mm | 5-10 mm | 100 |
| IP68PG13.5/NP | PG13.5 | 8 mm | 6-12 mm | 100 |
| IP68PG16/NP | PG16 | 8 mm | 10-14 mm | 100 |
| IP68PG21/NP | PG21 | 9 mm | 13-18 mm | 50 |
| IP68PG29/NP | PG29 | 10 mm | 18-25 mm | 20 |
| IP68PG36/NP | PG36 | 10 mm | 22-32 mm | 12 |
| IP68PG42/NP | PG42 | 10 mm | 32-38 mm | 9 |
| IP68PG48/NP | PG48 | 10 mm | 37-44 mm | 3 |

PG Nickel Plated Locknuts

| PG Nickel Plated Locknuts | |
|---------------------------|---------------------|
| Material: | Nickel-plated brass |

| Part Number | Thread Diameter | Bag Qty |
|-------------|-----------------|---------|
| LNPG7/NP | PG7 | 200 |
| LNPG9/NP | PG9 | 200 |
| LNPG11/NP | PG11 | 200 |
| LNPG13.5/NP | PG13.5 | 100 |
| LNPG16/NP | PG16 | 100 |
| LNPG21/NP | PG21 | 100 |
| LNPG29/NP | PG29 | 100 |
| LNPG36/NP | PG36 | 100 |
| LNPG42/NP | PG42 | 50 |
| LNPG48/NP | PG48 | 30 |



Metric EMC Nickel Plated IP68 Cable Glands

| Metric EMC Nickel Plated IP68 Cable Glands | |
|--|-----------------------|
| Approvals: | CE, RoHS, IP68 |
| Material: | Nickel-plated brass |
| Clamp: | PA66 (nylon), UL94-V2 |
| Seal: | NBR Silicone rubber |
| O-ring: | NBR Silicone rubber |
| Protection: | IP68 at 10 bar |
| Temp range: | -40°C to 100°C |



| Part Number | Thread Diameter | Thread Length | Cable Range | Bag Qty |
|--------------|-----------------|---------------|-------------|---------|
| IP68M12/EMC | M12 x 1.5 | 6.5 mm | 4-6.5 mm | 200 |
| IP68M16/EMC | M16 x 1.5 | 8 mm | 4-8 mm | 100 |
| IP68M16L/EMC | M16 x 1.5 | 8 mm | 5-10 mm | 100 |
| IP68M20/EMC | M20 x 1.5 | 8 mm | 6-12 mm | 100 |
| IP68M20L/EMC | M20 x 1.5 | 8 mm | 10-14 mm | 100 |
| IP68M25/EMC | M25 x 1.5 | 9 mm | 10-14 mm | 50 |
| IP68M25L/EMC | M25 x 1.5 | 9 mm | 13-18 mm | 50 |
| IP68M32/EMC | M32 x 1.5 | 10 mm | 15-22 mm | 30 |
| IP68M32L/EMC | M32 x 1.5 | 10 mm | 18-25 mm | 30 |

Metric EMC Nickel Plated Locknuts

| Metric EMC Nickel Plated Locknuts | |
|-----------------------------------|---------------------|
| Material: | Nickel-plated brass |

| Part Number | Thread Diameter | Bag Qty |
|-------------|-----------------|---------|
| LN12/EMC | M12 x 1.5 | 200 |
| LN16/EMC | M16 x 1.5 | 200 |
| LN20/EMC | M20 x 1.5 | 100 |
| LN25/EMC | M25 x 1.5 | 100 |
| LN32/EMC | M32 x 1.5 | 100 |
| LN40/EMC | M40 x 1.5 | 100 |
| LN50/EMC | M50 x 1.5 | 50 |
| LN63/EMC | M63 x 1.5 | 30 |



CATENARY WIRE AND ACCESSORIES

Catenary wire

| Part number | Size | Length |
|-------------|------|--------|
| LCW3-30 | 3 mm | 30 m |
| LCW3-50 | 3 mm | 50 m |
| LCW3-100 | 3 mm | 100 m |
| LCW4-30 | 4 mm | 30 m |
| LCW4-50 | 4 mm | 50 m |
| LCW4-100 | 4 mm | 100 m |
| LCW6-30 | 6 mm | 30 m |
| LCW6-50 | 6 mm | 50 m |
| LCW6-100 | 6 mm | 100 m |



Wire Grips

| Part number | Size | Box Qty |
|-------------|------|---------|
| LWE3 | 3 mm | 20 |
| LWE4 | 4 mm | 20 |
| LWE6 | 6 mm | 20 |



Wire Thimbles

| Part number | Size | Box Qty |
|-------------|------|---------|
| LCWTH3 | 3 mm | 20 |
| LCWTH4 | 4 mm | 20 |
| LCWTH6 | 6 mm | 20 |



Wire Tensioners

| Part number | Size | Box Qty |
|-------------|-------|---------|
| LWT6 | 6 mm | 10 |
| LWT8 | 8 mm | 10 |
| LWT10 | 10 mm | 5 |



Hook Plates

| Part number | Box Qty |
|-------------|---------|
| LHP | 10 |



Ring Plates

| Part number | Box Qty |
|-------------|---------|
| LRP | 10 |



Staple Plates

| Part number | Box Qty |
|-------------|---------|
| LSP | 10 |



Catenary wire kits

Kits containing 30m of catenary wire, 2 thimbles, 4 grips, 1 ring plate, 1 hook plate and 1 strainer/tensioner

| Part number | Size | Box Qty |
|----------------|------|---------|
| CAT WIRE KIT 3 | 3 mm | 1 |
| CAT WIRE KIT 4 | 4 mm | 1 |



HYGIENE RANGE

70% HAND SANITISER

Features:

- 70% hospital grade hand sanitiser
- 60ml to 5 litre options
- Pelican pump also available for 5 litre
- Kills 99.999% of germs in 60 seconds
- No water or towel required
- Suitable for use in hospitals
- Tested to EN1276 and EN1500
- Manufactured in the UK

| Part number: | Description: | Size: | Cap Type: |
|--------------|------------------------------|---------|--------------|
| HS60 | 70% sanitiser hospital grade | 60ml | Flip top |
| HS400 | 70% sanitiser hospital grade | 400ml | Flip top |
| HS5000 | 70% sanitiser hospital grade | 5 litre | Screw top |
| HSPP | Pelican pump for 5 litre | | Pelican pump |



MANUAL SANITISER / SOAP DISPENSER 800ml

Manual hand sanitiser and soap dispenser.

Features:

- Wall mounted
- 800ml refillable container
- Durable pump
- No leak technology
- 12 month warranty
- Tough ABS construction
- White
- CE approved

| Part number: | Description: | Dimension (mm) |
|--------------|------------------|-----------------|
| LHDM800 | Manual dispenser | 119 x 106 x 245 |



AUTOMATIC SANITISER / SOAP DISPENSER 1000ml

Automatic hand sanitiser and soap dispenser. Simply put your hands underneath and sanitiser or soap will automatically release. Powered by 4 AA batteries.

Features:

- Holds 1 litre of fluid
- Inbuilt container. No need for special sachet
- 12 month warranty
- Fast infrared sensor works in 0.25 seconds
- Made from antibacterial material
- Adjustable liquid volume
- Large spray angle to cover all your hands
- No wiring required
- Powered by 4 AA batteries
- Automatic drop
- Battery life approx 40 000 operations
- White and easy stick up installation
- With drip tray (as illustrated) or without
- Floorstand and table top stand also available
- CE approved

| Part number: | Description: | Dimension (mm) |
|-----------------|--|------------------------------|
| LHDA1000 | Automatic dispenser | 270 x 160 x 100 |
| LHDA1000 + LHDT | Automatic dispenser with drip tray | 440 x 160 x 100 |
| LHDA1000TS | Automatic dispenser with table stand and drip tray | 500 x 180 x 160 |
| LHDA1000FS | Automatic dispenser with floor stand and drip tray | 1500 x 300 x 300 (base only) |
| LHDT | Drip tray | |

LHDA1000 + LHDT



LHDA1000



LHDA1000 + LHDT



LHDA1000TS



LHDA1000FS





LOW VOLTAGE FILLERS

GEL

- MAGIC GEL SPRINT
- MAGIC GEL
- MAGIC FLUID
- MAGIC POWER GEL
- RAY GEL
- WONDER GEL
- MONOGEL

RUBBER

- GEL GUM
- SKY PLAST
- MAGIC RUBBER

RESIN

- RAY RESIN





ALL IN ONE
Ready in 1 Bottle!



Gel: UL 94-HB

Dielectric strength:

>20 kV/mm

Cross linking time:

fast (about 7 min. at 23°C)

Volume resistivity:

>2 · 10¹⁵ Ω cm

Working temperature:

-60°C / +200°C

Overload temperature for short periods:

up to 250°C

Stabilised for:

mould - UV

Degree of protection:

IP68 (in proper casings)

Magic Gel Sprint protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY TESTED | **IMQ**



MAGIC GEL SPRINT

Insulating and sealing gel with very high dielectric and thermal characteristics, ideal for POWER cables, TELECOM cables and ELECTRONICS CIRCUITS.

Magic Gel Sprint is formulated for an extra fast curing directly inside the bottle. Practical, performing, eco-sustainable, it is the ideal GEL for insulating and sealing boxes of the most commonly used dimensions.

ADVANTAGES

- ▶ Non-toxic, safe and not classified as hazardous under CLP Directive.
- ▶ Suitable for installation in salt water (sea) and in chlorinated water (pools).
- ▶ For any type of indoor / outdoor and even submerged installation.
- ▶ For installations up to 1 kV.
- ▶ Suitable for high temperatures.
- ▶ Removable.
- ▶ No shelf life.

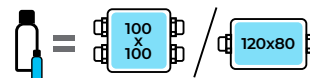


HOW IS IP68 DEGREE OF PROTECTION OBTAINED?

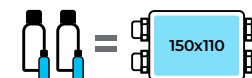
The GEL protects against dusts and seals the connections from the effects of continuous immersion in water when it is poured into enclosures protected from the ingress of solid bodies, therefore contributing to create an IP68 system.



Magic Gel 450 Sprint



Magic Gel 900 Sprint



| PRODUCT / Item | Colour | Package type | Total quantity |
|--|--------|----------------------------|----------------|
| MAGIC GEL SPRINT 450 MAGICSPRINT450 | • | 1 bottle + 1 catalyst | 450 ml |
| MAGIC GEL SPRINT 900 MAGICSPRINT900 | • | 2 bottles + 2 catalysts | 900 ml |



MAGIC GEL SPRINT is available in 2 version which are sustainable in terms of packaging and in terms of volume, as they are specifically designed for filling boxes in the most commonly used formats.

MAGIC GEL MAGIC FLUID



Two-component gel with very high dielectric and thermal characteristics, ideal for connection systems (joint shells or enclosures) for power cables.

The insulating and sealing gel, when cast in suitable casings, ensures an IP68 degree of protection and it is able to replace all types of resins. This is a self-sealing insulation polymeric type in two practical bottles or in a single use bag, with cold cross linking. Once poured, the insulation, characterized by very low viscosity, surrounds and envelopes any type of material, cross linking in less than 10 minutes. Completely non-toxic, cross linking with a very low isothermal peak that does not thermally stress the materials it comes into contact with.

ADVANTAGES

- ▶ For high temperature applications!
- ▶ The gel is **not-classified** as hazardous under the CLP Directive.
- ▶ Quick cross linking (only 10 minutes).
- ▶ Re-enterable also after long working periods.
- ▶ Low viscosity.
- ▶ No shelf life.

CLASSIC



Gel: UL 94-HB

Dielectric strength:
>20 kV/mmCross linking time:
fast (about 10 min. at 23°C)Volume resistivity
>2 · 10¹⁵ Ω cmWorking temperature:
-60°C / +200°C
Overload temperature
for short periods:
up to 250°CStabilised for:
mould - UVDegree of protection:
IP68 (in proper casings)

Magic Gel protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY
TESTED | **IMQ**



| PRODUCT / Item | Colour | Package type | Total quantity |
|---------------------------------|--------|--|----------------|
| MAGIC GEL 300 MAGICGEL300 | ● | 2 bottles | 300 ml |
| MAGIC GEL 420 MAGICGEL-420 | ● | 1 single, two-component bottle 1 jug - 1 spatula in wood | 420 ml |
| MAGIC GEL 1000 MAGICGEL-1000 | ● | 2 bottles - 1 jug 1 spatula in wood | 1000 ml |
| MAGIC GEL 2000 MAGICGEL-2000 | ● | 2 single, two-component bottles 1 jug - 1 spatula in wood | 2 x 1000 ml |
| MAGIC GEL 10000 MAGICGEL10 | ● | 2 tanks - 1 jug 1 spatula in wood | 10 lt |



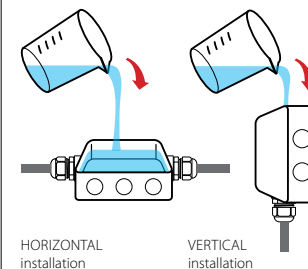
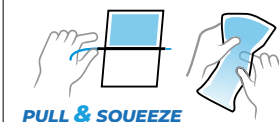
| PRODUCT / Item | Colour | Package type | Total quantity |
|-------------------------------|--------|-------------------------------|----------------|
| MAGIC FLUID 90 100090-MAG | ● | Two-component single dose bag | 90 gr |
| MAGIC FLUID 110 100110-MAG | ● | Two-component single dose bag | 110 gr |
| MAGIC FLUID 170 100170-MAG | ● | Two-component single dose bag | 170 gr |
| MAGIC FLUID 210 100210-MAG | ● | Two-component single dose bag | 210 gr |
| MAGIC FLUID 420 100420-MAG | ● | Two-component single dose bag | 420 gr |
| MAGIC FLUID 550 100550-MAG | ● | Two-component single dose bag | 550 gr |

Problem ENERGY

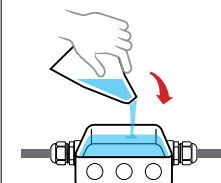
What does a gel for this type of system have to give?

- ✓ **INSULATION:** Elevated voltages (1 kV operating, 4 kV testing)
- ✓ **THERMAL PERFORMANCE:** Operating temperature 90°C, overload temperature 130°C, short circuit temperature 250°C
- ✓ **SEALING:** Installations also possible in humid environments, flooded wells
- ✓ **DEGREE OF PROTECTION:** Must also work with water between the cores of the cable
- ✓ **CERTIFIED SYSTEMS:** The combination of insulation gel + casing must comply with current standards CEI 20-33 and EN 50393

Solution: Magic Gel meets all your Energy System requirements!

HORIZONTAL
installationVERTICAL
installation

PULL & SQUEEZE





Gel: UL 94-HB

Dielectric strength:

>20 kV/mm

Cross linking time:

fast (about 15 min. at 25°C)

Volume resistivity:

>2 · 10¹⁵ Ω cm

Operating temperature:

-60°C / +200°C

Overload temperature for short periods:

up to 250°C

Stabilised for:

mould - UV

Degree of protection:

IP68 (in proper casings)

Magic Power Gel protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY TESTED | **IMQ**



MAGIC POWER GEL

The unique two component gel in a single bottle, with superior dielectric, sealing and thermal characteristics, re-enterable and re-usable!

ADVANTAGES

- ▶ Very sticky.
- ▶ Strong self amalgamating characteristics.
- ▶ The gel is not-classified as hazardous under the CLP Directive.
- ▶ Single compact bottle; convenient twin compartment.
- ▶ Re-usable as well as re-enterable, even after long working periods.
- ▶ It doesn't give any waste.
- ▶ No shelf life.



INSULATING and SEALING GEL

RE-ENTERABLE

RE-USABLE



For all types of connections, even in the toughest conditions, for power, telecom and signalling!



STICKINESS

- Exceptional sealing properties in any condition.
- Better resistance to pressure.
- Effective even in vertical or ceiling applications.

ZERO WASTE

- Due to the nature of the product waste is eliminated; even residual product can be saved and used for the next application.
- Also any left over product maintains its high performance characteristics.

SELF-AGGLOMERATING

- Once cross linked it perfectly adheres on itself to get an homogeneous and compact mass.
- It can be therefore applied in multiple layers.

SINGLE BOTTLE

- Highly useful.
- The most compact packaging.
- Less space occupied in the toolbox.
- Both components in the same packaging.

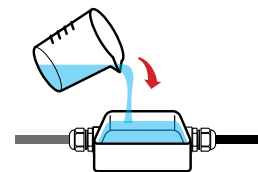


| PRODUCT / Item | Colour | Package type | Quantity |
|---------------------------------------|--------|---|----------|
| MAGIC POWER GEL 250 MAGICPOWER-250 | ● | 1 single, two-component bottle | 250 ml |
| MAGIC POWER GEL 500 MAGICPOWER-500 | ● | 1 single, two-component bottle 1 jug - 1 spatula in wood | 500 ml |
| MAGIC POWER GEL MAGICPOWER-GEL | ● | 1 single, two-component bottle 1 jug - 1 spatula in wood | 1000 ml |

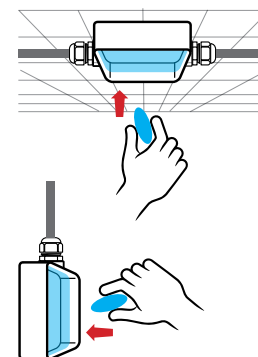


| PRODUCT / Item | Colour | Package type | Quantity |
|---|--------|-------------------------------|----------|
| MAGIC POWER GEL BAG 150 MAGICPOWERBAG150 | ● | Two-component single dose bag | 150 ml |
| MAGIC POWER GEL BAG 250 MAGICPOWERBAG250 | ● | Two-component single dose bag | 250 ml |

CASTING APPLICATION
HORIZONTAL installation




AFTER CURING MANUAL APPLICATION
CEILING or WALL application



© 2015 Lucas

LOW VOLTAGE FILLERS



Gel: UL 94-HB 

Dielectric strength:

>20 kV/mm

Cross linking time:

about 15 min. at 23°C

Volume resistivity:

>1,5 x 10¹⁵ Ω cm

Operating temperature:

-60°C / +180°C

Thermal conductivity:

< 0,2 W/m²K

Dielectric constant:

< 7

Degree of protection:

IP68 (in proper casings)

Ray Gel protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY
TESTED | **IMQ**

RAY GEL

Insulating, sealing, re-enterable fast cross linking two-component silicone gel for telephone and intercom systems and for LED and display protection.

ADVANTAGES

- ▶ Quick cross linking.
- ▶ Antioxidant protection.
- ▶ Low temperature resistant.
- ▶ The gel is not-classified as hazardous under the CLP Directive.
- ▶ No shelf life.



RED



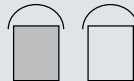
- Specially formulated for UV resistance
- Suitable for "surface" installations
- Ideal for intercom systems



TRANSPARENT

- Excellent transparency
- Does not opacify
- Ideal for protecting printed circuit boards, for sealing displays, for insulating and sealing LEDs



| PRODUCT / Item | Colour | Package type | Total quantity |
|--------------------------------|--------|---|----------------|
| BAG GEL 200-T BAGGEL200-T | ○ | Two-component single dose bags | 200 gr |
| BAG GEL 400-T BAGGEL400-T | ○ |  | 400 gr |
| BAG GEL 200-R BAGGEL200-R | ● | | 200 gr |
| BAG GEL 400-R BAGGEL400-R | ● | | 400 gr |
| RAY GEL 300-T RAYGEL300-T | ○ | 2 bottles | 300 gr |
| RAY GEL 1000-T RAYGEL1000-T | ○ |  | 1000 gr |
| RAY GEL 300-R RAYGEL300-R | ● | | 300 gr |
| RAY GEL 1000-R RAYGEL1000-R | ● | | 1000 gr |
| RAY GEL 10K-T RAYGEL10K-T | ○ | 2 tanks | 10 kg |
| RAY GEL 20K-T RAYGEL20K-T | ○ |  | 20 kg |
| RAY GEL 10K-R RAYGEL10K-R | ● | | 10 kg |
| RAY GEL 20K-R RAYGEL20K-R | ● | | 20 kg |

Problem TELECOM

What does a gel for this type of system have to give?

- ✓ **SEALING:** Installations also possible in humid environments, flooded wells.
- ✓ **DEGREE OF PROTECTION:** IP68 in proper casing.
- ✓ **PREVENTION FROM OXIDATION:** Contacts in Telecom connections shouldn't give attenuations (low signal currents).
- ✓ **HIGH INSULATION FLUIDITY:** During casting, the the insulation has to fill all interstitial spaces between the cores of the cable.
- ✓ **ANTICRACKING:** Insulation in the permanently cold joint should not crack at low temperatures.
- ✓ **INSULATION:** The filler should be an insulating component.

Solution: Ray Gel meets all your Telecom system requirements.





ALWAYS AT YOUR FINGERTIPS!



Gel: UL 94-HB

Dielectric strength:

>20 kV/mm

Volume resistivity:

>2 · 10¹³ Ω cm

Operating temperature:

-60°C / +200°C

Overload temperature

for short periods:

up to 250°C

Stabilised for:

mould - UV

Degree of protection:

IP68 (in proper casings)

Wonder Gel protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY
TESTED | **IMQ**

WONDER GEL

Single component insulating gels in cartridge to instantly protect new installations and oversee maintenance of all types of electrical connections.

Installer's best friends. Electrical connections, within empty enclosures, are exposed to the risk of short circuit, oxidation and corrosion, at times, resulting in irreparable damages. Without stress and no waiting around, **WonderGel** and **WonderGel Invisible** make your job easier, guaranteeing the protection and safety of systems in compliance to best practice rules to provide the highest quality solution, quick and perfect to get the satisfaction of both you and your clients.

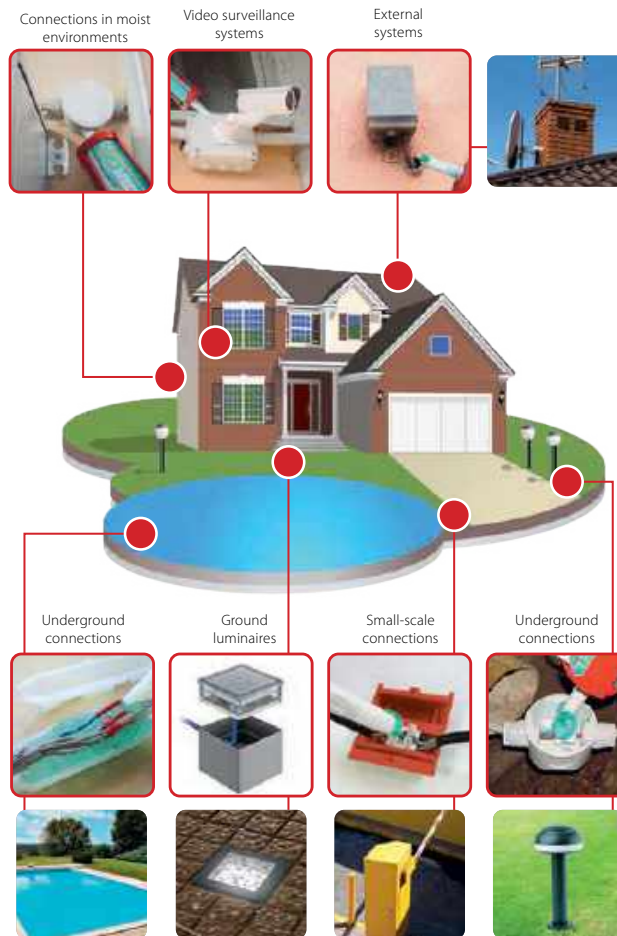
ADVANTAGES

- ▶ Ready to use! No mixing required! Already cross-linked! No need to wait!
- ▶ Resolve issues connected to incorrect insulation or sealing.
- ▶ Eliminate annoying out of service instances caused by moisture.
- ▶ Protect your systems from the penetration of insects.
- ▶ Protect your electrical connections from oxidation and corrosion.
- ▶ Applicable in all climatic conditions.
- ▶ The gel is not-classified as hazardous under the CLP Directive.



INSPECTABLE

Easy to apply even in areas which are difficult to access!



Connections in moist environments

Video surveillance systems

External systems

Underground connections

Ground luminaires

Small-scale connections

Underground connections



WHAT IS GEL WONDER?

- A single component gel
- Extremely sticky
- Stays soft with time
- Never dries
- Non-toxic and safe
- No shelf life



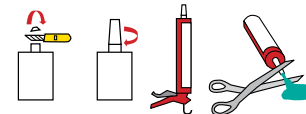
WHAT DOES GUARANTEE?

- Maximum insulation and sealing
- Effective and stable adhesion with the passing of time
- High resistance to water pressure
- Degree of protection IP68 when dispensed in suitable casings



WHY IS IT IN A CARTRIDGE?

- Always ready to use and at your fingertips
- Can be used with standard guns
- It is measurable
- No waste
- Complete with nozzle
- Extremely rapid to use even in difficult positions
- Compact



| PRODUCT / Item | Colour | Package type | Total quantity |
|------------------------------------|--------|------------------------------|----------------|
| WONDER GEL WONDER | ● | Cartridge with dosing nozzle | 280 ml |
| WONDER GEL INVISIBLE WONDER-INV | ○ | Cartridge with dosing nozzle | 280 ml |



Gel: UL 94-HB

Dielectric strength:

>20 kV/mm

Operating temperature:

-60°C / +200°C

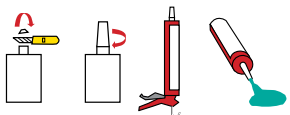
Installation temperature:

-40°C / +110°C

Degree of protection:

IP68 (in proper casings)

Wonder Gel Fluid protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a **IP68** system.



WONDER FLUID

Single component insulation fluid gel cartridge.

ADVANTAGES

- ▶ The gel is not-classified as hazardous under the CLP Directive.
- ▶ Ready-to-use fluid gel.
- ▶ Suitable for box filling.
- ▶ Does not solidify when opened.
- ▶ No waste.
- ▶ No shelf life.



| PRODUCT / Item | Colour | Package type | Total quantity |
|---------------------------------|--------|------------------------------|----------------|
| WONDER FLUID 280 WONDER-F280 | ● | Cartridge with dosing nozzle | 280 ml |

MONOGEL

Single component transparent insulation gel for generic use.

ADVANTAGES

- ▶ The gel is not-classified as hazardous under the CLP Directive.
- ▶ Ready to use.
- ▶ No shelf life.
- ▶ Inspectable.



| PRODUCT / Item | Colour | Package type | Total quantity |
|--------------------|--------|------------------------------|----------------|
| MONOGEL MONOGEL | ○ | Cartridge with dosing nozzle | 280 ml |



Gel: UL 94-HB

Dielectric strength:

>20 kV/mm

Operating temperature:

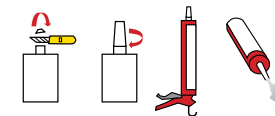
-60°C / +200°C

Installation temperature:

-40°C / +110°C

Degree of protection:

IP68 (in proper casings)





TECHNO GEL GUM

Single bottle two-component insulation with very high dielectric, thermal and sealing characteristics. Waterproof and re-enterable!

TechnoGelGum is a strong hold flexible elastomer whose formula has been optimised for the protection of POWER CABLE, TELECOM CABLE and ELECTRONIC CIRCUIT connections. A new recipe that gives the product a surprising, original texture that combines the characteristics of GEL and RUBBER to emphasise its features. It's elastic and flexible like gel, but also tough and dry like rubber.

ADVANTAGES

- ▶ For installations up to 1 kV, suitable for high temperatures.
- ▶ Suitable for installation in salt water (sea) and in chlorinated water (pools).
- ▶ For any type of indoor / outdoor and even submerged installation.
- ▶ Waterproof > 1 MPa.
- ▶ Vibration resistant can act as a damper.
- ▶ Removable.
- ▶ The gel is not-classified as hazardous under the CLP Directive.
- ▶ No shelf life.

Dielectric strength:
>20 kV/mm
Cross linking time:
fast (about 10 min. at 25°C)
Volume resistivity:
>2 . 10¹⁴ Ω cm
Operating temperature:
-60°C / +200°C
Overload temperature for short periods:
up to 250°C
Stabilised for:
mould - UV
Degree of protection:
IP68 (in proper casings)

Techno Gel Gum protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.

IP68
OFFICIALLY
TESTED | **IMQ**



STRONG CONSISTENCY

**EXTREMELY FLEXIBLE
AND WATER-REPELLENT**



FLEXIBLE like GEL

STRONG like RUBBER



SAFE



WATERPROOF



RE-ENTERABLE



Shake before using.



Pour TechnoGelGum into the provided jug in a 1:1 ratio.



Mix for 1 min. max.



Pour within 1 min. max.



In just 10 minutes the curing is completed.



| PRODUCT / Item | Colour | Package type | Total quantity |
|--|--------|---|----------------|
| TECHNO GEL GUM 500 TEGELGUM500 | ● | 1 single, two-component bottle 1 jug - 1 spatula in wood | 500 gr |
| TECHNO GEL GUM TEGELGUM | ● | 1 single, two-component bottle 1 jug - 1 spatula in wood | 1 kg |



**SKY PLAST
BECOMES
RUBBER
IN 5 MINUTES**

SKY PLAST

Two-component insulating rubber, mouldable, self-extinguishing paste with high dielectric characteristics.

Sky Plast is ideal for covering, protecting, insulating, finishing and fireproofing any electrical and non-electrical component. Once the 2 components have been blended in a ratio of 1:1 (for max 2 min.) until uniform, it cross links quickly at room temperature in less than 5 minutes. After being wrapped around the component to be protected, Sky Plast quickly transforms into a layer of rubber with high dielectric and self-extinguishing characteristics.

ADVANTAGES

- ▶ Low smoke and toxic and corrosive gases emission.
- ▶ Able to replace taping, heat-shrinking, resin finishes.
- ▶ Flexible and elastic.
- ▶ Quickly ready for use.



Cable gland sealing



Creation of LV terminals



Insulation of multiple connections



Preparation on-site of expanders for inserts



Preparation of bars, washers, round wire insulators



Preparation on-site of seals



Conduit protection



Preparation on-site of small moulds for reliefs



Drop line, bar, transformer through insulation



On-site preparation of braces and supports



Preparation of deflectors, nozzles, flow deviators

| PRODUCT / Item | Colour | Package type | Total quantity |
|------------------------------|--------|--------------|----------------|
| SKY PLAST 250 SKYPLAST250 | • | 2 cans | 250 gr |
| SKY PLAST SKYPLAST | • | 2 cans | 500 gr |



MAGIC RUBBER

Fast cross linking two-component rubber.

Two-component insulating liquid rubber, extremely conformable and fluid, flexible, elastic and re-enterable. In just a few minutes, transforms into a rubber with very high dielectric, thermal, mechanical and elastic characteristics.

ADVANTAGES

- ▶ For installation up to 1kV.
- ▶ Low smoke, toxic and corrosive gas emissions.
- ▶ Ideal also for casts and moulds.
- ▶ No shelf life.



Mix the 2 components in a ratio of 1:1.

Mix for max 30".

Pour the product into the casing to be filled.

In just a few minutes, the product transforms into rubber.

| PRODUCT / Item | Colour | Package type | Total quantity |
|-----------------------------------|--------|--|----------------|
| MAGIC RUBBER 500 MAGIC-RUBBER | • | 1 single two-component bottle 1 jug - 1 spatula in wood | 500 gr |
| MAGIC RUBBER 10 MAGICRUBBER-10 | • | Two-component tanks 1 jug - 1 spatula in wood | 10 kg |

| PRODUCT / Item | Colour | Package type | Total quantity |
|-------------------------------------|--------|--------------------------------|----------------|
| RUBBER FLUID 200 RUBBERFLUID-200 | • | Two-component single dose bags | 200 gr |
| RUBBER FLUID 350 RUBBERFLUID350 | • | Two-component single dose bags | 350 gr |



Cross linking time:
15 minutes at 23°C

Volume resistivity:
>2 10¹⁵ Ω cm

Dielectric strength:
> 20 kV/mm

Specific weight:
1,22 approx

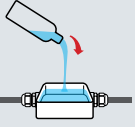
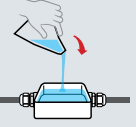

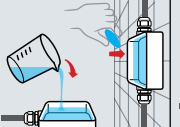

Degree of protection:
IP68 (in proper casings)

Magic Rubber protects against dust and seals the connections from the effects of continuous immersion in water when it is poured into casings protected from the ingress of solid bodies, thus helping to create a IP68 system.



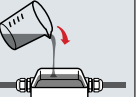
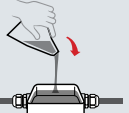


FILLERS COMPARISON CHART



| | MAGIC GEL SPRINT | MAGIC FLUID | MAGIC GEL | MAGIC POWER GEL | RAY GEL |
|---------------------------------|--|--|---|--|---|
| PACK CONTENTS | 1 bottle + 1 catalyst | 1 sachet | 2 bottles or one single 2 compartment bottle + jug + spatula | One single 2 compartment bottle + jug + spatula | 2 bottles or sachet |
| MIXING RATIO | Predetermine | Predetermine | 1:1 ratio with measuring Jug | 1:1 ratio with measuring Jug | 1:1 ratio |
| MIXING TIME | 10 seconds | 10 seconds | 15 seconds | 15 seconds | 15 seconds |
| CURING TIME (at 23° C) | < 7 minutes | < 7 minutes | < 10 minutes | About 15 minutes | About 15 minutes |
| INSTALLATION TEMPERATURE | -15° / +55°C | -15° / +55°C | -15° / +55°C | -15° / +55°C -40° / + 60° (cured) | -15° / +55°C |
| USAGE | By pouring  ALL IN ONE Ready in 1 bottle! | By pouring  ALL IN ONE CLASSIC | By pouring  CLASSIC | By pouring or "cure and stick"  SELF AGGLOMERATING | By pouring  INTERCOMS Led display |



| | WONDER GEL / FLUID | TECHNO GEL GUM | MAGIC RUBBER | RUBBER FLUID |
|---------------------------------|--|---|---|---|
| PACK CONTENTS | 1 cartridge | One single 2 compartment bottle + jug + spatula | One single 2 compartment bottle + jug + spatula | 1 sachet |
| MIXING RATIO | None | 1:1 ratio with measuring Jug | 1:1 ratio with measuring Jug | Predetermine |
| MIXING TIME | - | 15 seconds | 15 seconds | 15 seconds |
| CURING TIME (at 23° C) | Already cross-linked | About 15 minutes | About 15 minutes | About 15 minutes |
| INSTALLATION TEMPERATURE | -15° / +55°C | -15° / +55°C | -15° / +55°C | -15° / +55°C |
| USAGE | Injection  | By pouring  | By pouring  | By pouring  |



LOW VOLTAGE JOINTING BOXES

PRE-FILLED IP68

BOB
BABY BOX
READY BOX
FOX BOX

KIT IP68

MAGIC BOX
POWER KIT
MAGIC GEL SPRINT BOX 100

IP55

J-BOX



RAYTECH PRE-FILLED BOXES

| | | | | | | | | | |
|--|--|----------------------|---------------|--------------|---|--------------------------|---|-------------|-------------------------------|
| | | BOB 3 | 1 Entrance | 2 Outputs | Connector 3x 4 mm² or free connections | 3 nuts | Cables Ø mm 8-13 | Colours | mm 105 x 80 x h 25 |
| | | BOB 4 | 1 Entrance | 3 Outputs | Connector 3x 4 mm² or free connections | 4 nuts | Cables Ø mm 8-13 | Colours | mm 105 x 65 x h 25 |
| | | BABY BOX | 1 Entrance | 2 Outputs | Connector 3x 6 mm² or free connections | 3 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20 | Colours | mm 95 x 80 x h 43 |
| | | BABY BOX 3 | 1 Entrance | 3 Outputs | Connector 5x 6 mm² or free connections | 4 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20 | Colours | mm 95 x 110 x h 43 |
| | | READY BOX 90 | 1 Entrance | 2 Outputs | Connector 3x 6 mm² or free connections | 3 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20/32 | Colours | mm 90 x 90 x h 45 |
| | | READY BOX 120 | 1 Entrance | 3 Outputs | Connector 5x 6 mm² or free connections | 4 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20/32 | Colours | mm 120 x 100 x h 45 |
| | | FOX BOX 3 | 1 Entrance | 2 Outputs | Free connections | 3 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20/32 | Colours | mm 180 x 135 x h 45 |
| | | FOX BOX | 1 Entrance | 4 Outputs | Free connections | 5 nuts + adapters | Cables Ø mm 8-18 Tubes Ø mm 16/20/32 | Colours | mm 210 x 155 x h 45 |

Electrical performance:
CEI EN 50393
as applicable
Class 2 in accordance with CEI 64-8.

- Gel: UL 94-HB
- Working temperature: 90°
- Installation temperature: -40°C / +50°C
- Fully submersible
- Can be used underground
- Halogen-free Gel
- UV resistant

IP68
OFFICIALLY
TESTED | **IMQ**

IP69K
OFFICIALLY
TESTED

IP68:
(6) protected against dust
and solid objects over 1 mm.
(8) Protected from permanent
immersion in water.

IP69K:
(9K) protected against close-range high
pressure, high temperature spray downs.



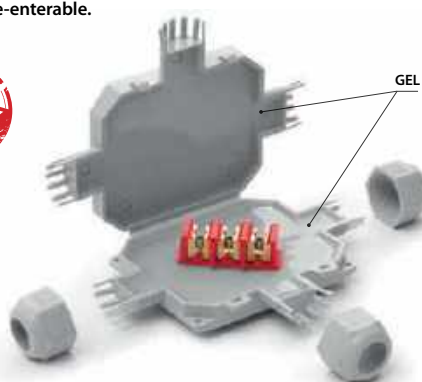
BOB

The IP68 / IP69K micro-joints, gel pre-filled, complete with connector, suitable for any type of installation, even the most extreme.

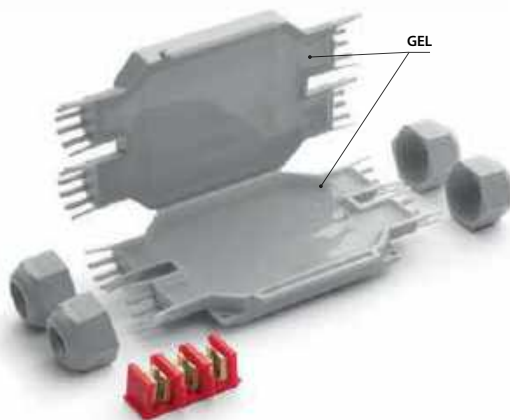
Extremely compact and space-saving, pre-filled with soft, highly conformable gel. With minimal aesthetic impact and visually pleasing. Equipped with integrated cable glands for IP68 and IP69K degree of ingress protection and cable retention.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive.
- ▶ Extremely compact and ready to install.
- ▶ Ideal for connections in lighting systems for gardens, steps and stairways, pedestrian crossings, etc.
- ▶ Pre-threaded entries for the positioning of the clamping nuts.
- ▶ No shelf life.
- ▶ Always re-enterable.



BOB 3



BOB 4



Electrical performance:

- CEI EN 50393 as applicable
- Class 2 in accordance with CEI 64-8.

● Gel: UL 94-HB

🌡 Working temperature: 90°

🌡 Installation temperature: -40°C / +50°C

🌊 Fully submersible

🔧 Can be used underground

🌿 Halogen-free Gel

☀ UV resistant

🔥 Self-extinguishing and resistant to abnormal heat and fire:
Glow Wire Flammability Index at +960° C according to EN60695-2-12

IP68 OFFICIALLY TESTED | IMQ IP69K OFFICIALLY TESTED

Some installation possibilities for BOB 4

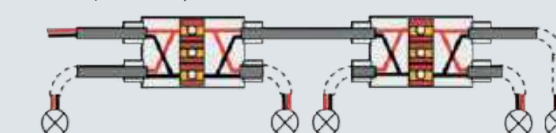
Parallel branch system with 3 three-core cables up to 3 x 4 mm²



Parallel branch system with 4 three-core cables up to 3 x 2.5 mm²

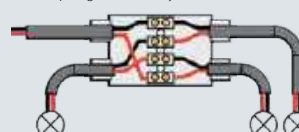


Parallel 5-lamp connection system



Can be installed with Mammut type connector (not included)

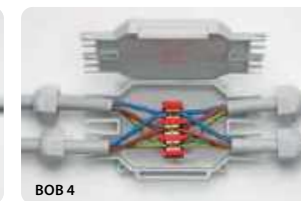
3-LED spotlight in-series system



3-LED RGB spotlight parallel system with four-core cables



BOB 3



BOB 4

| PRODUCT / Item | Colour | Max cable formation (N° x mm ²) | | Cables Ø min - max (mm) | Pieces Pack | (mm) |
|---------------------|--------|---|---------------------|-------------------------|--------------------|---------------|
| | | Through | Branch | | | |
| BOB 3 BOB3 | ● | 1 cable 3 x 4 | 2 cables 3 x 4 | 8 - 13 | 1 piece Blister | 105 x 80 x 25 |
| BOB 3 - N BOB3-N | ● | 3 x 2,5 | 2 cables 3 x 2,5 | | | |

| PRODUCT / Item | Colour | Max cable formation (N° x mm ²) | | Cables Ø min - max (mm) | Pieces Pack | (mm) |
|---------------------|--------|---|---------------------|-------------------------|--------------------|---------------|
| | | Through | Branch | | | |
| BOB 4 BOB | ● | 1 cables 3 x 4 | 2 cables 3 x 4 | 8 - 13 | 1 piece Blister | 105 x 65 x 25 |
| BOB 4 - N BOB4-N | ● | 3 x 2,5 | 3 cables 3 x 2,5 | | | |



For use in traps. The ideal accessory for branch connections from a through cable to light fittings and spotlights. Suitable in applications where there is presence of water and moisture.





**JOINT OR BOX?
CHOOSE BABY BOX!**

BABY BOX

Pre-filled boxes (1 to 2) – (1 to 3) with integrated terminal block and clamping nuts.

BABY BOX is the range of ready to use boxes/junction boxes, complete with terminal block and a kit of components that allow its use with cables from 8 to 18 mm in diameter and ducts from 16 to 20 mm in diameter. Nothing to pour and no waiting times as it is already pre-filled with a non-toxic gel, not classified as dangerous and with no shelf life, which insulates and seals the connection thoroughly and gives to the range the maximum of reliability; the accessory is ideal for underground, submerged or aerial installations. BABY BOX, 3-entrances box with three-pole terminal block and BABY BOX 3, 4-entrances box with five-pole terminal block, are available in grey or black, they are very simple to install and equipped with external holes for wall fixing.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive.
- ▶ Ready to use.
- ▶ Also suitable for wet or flooded environments.
- ▶ Always re-enterable.
- ▶ Wall or external ceiling fixing system.
- ▶ Click and hook closure, does not require screws.
- ▶ No shelf life.



Electrical performance:
• CEI EN 50393 as applicable
• Class 2 in accordance with CEI 64-8.

Gel: UL 94-HB

Installation temperature:
-40°C / +50°C

Working temperature: 90°

Gel operating temperature:
-60°C / +200°C

Fully submersible

Can be used underground

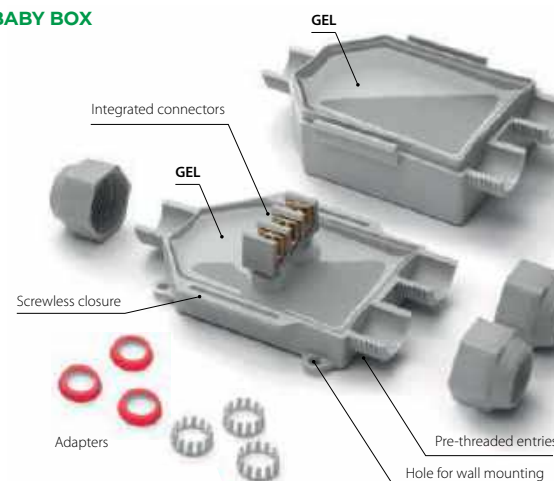
Halogen-free Gel


UV resistant

Self-extinguishing and resistant to abnormal heat and fire:
Glow Wire Flammability Index at +960° C according to EN60695-2-12



BABY BOX



| PRODUCT / Item | Colour | Connectors | Cables Ø min - max (mm) | Tubes Ø (mm) |  (mm) |
|------------------------------|--------|---------------------------|-------------------------|--------------|--|
| BABY BOX BABYBOX | ● | 3 | 8 - 18 | 16 / 20 | 90 x 80 x 47 |
| BABY BOX - N BABYBOX-N | ● | 3x Max 12 mm ² | 8 - 18 | 16 / 20 | 95 x 110 x 43 |
| BABY BOX 3 BABYBOX3 | ● | 4 | 8 - 18 | 16 / 20 | 95 x 110 x 43 |
| BABY BOX 3 - N BABYBOX3-N | ● | 4 | 8 - 18 | 16 / 20 | 95 x 110 x 43 |



READY BOX

3 or 4 entrances junction boxes pre-filled with gel, complete with integrated terminal block and cable glands

Ready Boxes are pre-filled with gel and ready to use; complete with terminal blocks but can also be used with the most common connection systems. Supplied with nuts for the conformation with 3 or 4 outputs, they are suitable for a very wide range of cables or ducts diameters.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive.
- ▶ Ready to use.
- ▶ Also suitable for wet or flooded environments.
- ▶ Always re-enterable.
- ▶ Wall or external ceiling fixing system.
- ▶ Click and hook closure, does not require screws.
- ▶ Pre-threaded entries for cable gland mounting.
- ▶ No shelf life.



Electrical performance:
• CEI EN 50393 as applicable
• Class 2 in accordance with CEI 64-8.

• Gel: UL 94-HB 

• Working temperature: 90°

• Gel operating temperature:
-60°C / +200°C

• Fully submersible

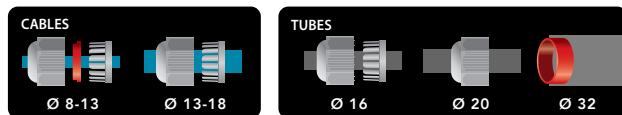
• Can be used underground

• Halogen-free Gel

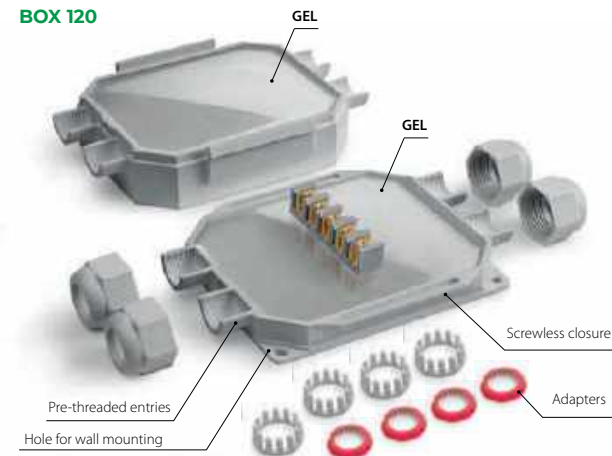
• UV resistant

• Self-extinguishing and resistant to abnormal heat and fire:
Glow Wire Flammability Index at +960° C according to EN60695-2-12

IP68 OFFICIALLY TESTED | IMQ IP69K OFFICIALLY TESTED





READY BOX 120





Thanks to its innovative design, unlike a standard box, there is no need to break through the walls of the box to insert the cable.

Also suitable for extra-flat lever connectors.

Also suitable for screw terminals.

| PRODUCT / Item | Colour |  | Cables Ø min-max (mm) | Tubes Ø (mm) |  (mm) |
|-------------------------------------|--------|---|-----------------------|--------------|--|
| Ready Box IP68 90 READYBOX90 | • | 3 | 8 - 18 | 16 / 20 / 32 | 90 x 90 x 45 |
| Ready Box IP68 90/N READYBOX90-N | • | | | | |

| PRODUCT / Item | Colour |  | Cables Ø min-max (mm) | Tubes Ø (mm) |  (mm) |
|---------------------------------------|--------|---|-----------------------|--------------|--|
| Ready Box IP68 120 READYBOX120 | • | 4 | 8 - 18 | 16 / 20 / 32 | 120 x 100 x 45 |
| Ready Box IP68 120/N READYBOX120-N | • | | | | |



Installation with free cables.



Installation with cable gland duct.

READY BOX 90



**Electrical performance:**

- CEI EN 50393 as applicable
- Class 2 in accordance with CEI 64-8.

• Gel: UL 94-HB

• Working temperature: 90°

• Gel operating temperature: -60°C / +200°C

• Fully submersible

• Can be used underground

• Halogen-free Gel

• UV resistant

• Self-extinguishing and resistant to abnormal heat and fire:
Glow Wire Flammability Index at +960° C according to EN60695-2-12

IP68
OFFICIALLY TESTED

IMQ

IP69K
OFFICIALLY TESTED

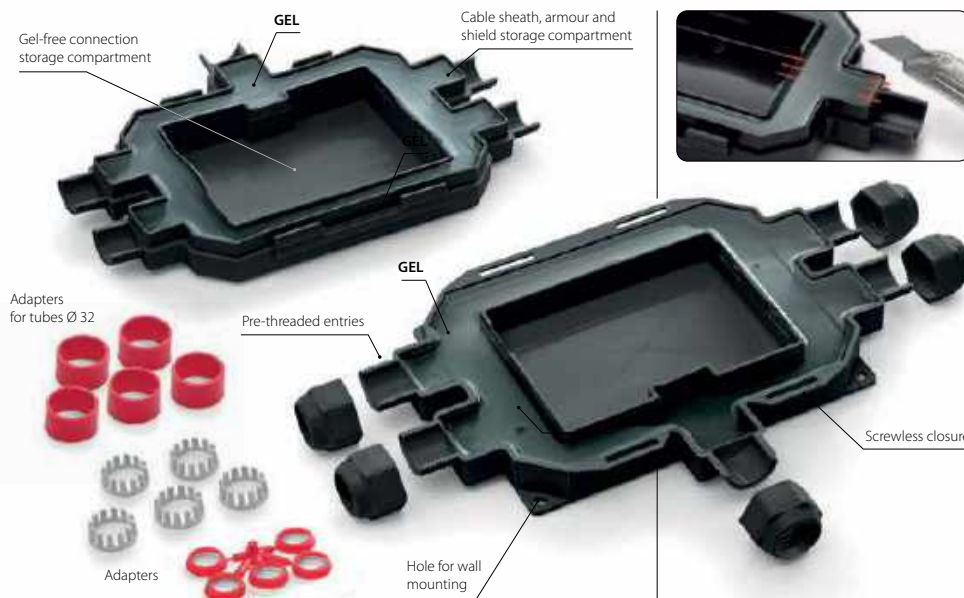
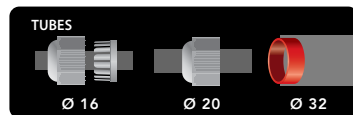
FOX BOX

3 or 5 entrance jointing enclosure with gel filled perimeter chamber providing lighter weight with maximum capacity.

Kit includes accessories to maximise versatility allowing the use of cables from 8 to 18 mm in diameter or with 16, 20 and 32 mm diameter cable conduits. The internal, gel-free compartment allows for dry connections or any future alterations or disconnections. The gel, contained in the perimeter chamber also surrounds, insulates and seals any armour continuity connections or cable shields.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive.
- ▶ Functional, elegant design.
- ▶ Ideal for exposed and safety systems and for video camera installation.
- ▶ Ready for use.
- ▶ Click and hook closure, does not require screws.
- ▶ Ready and installable in all environmental conditions.
- ▶ Also suitable for wet or flooded environments.
- ▶ Always re-enterable.
- ▶ Wall or external ceiling fixing system.
- ▶ No shelf life.



| PRODUCT / Item | Colour | Cables Ø min-max (mm) | Tubes Ø (mm) | Inner capacity (mm) | Outer dimensions (mm) |
|--------------------------------|--------|-----------------------|--------------|---------------------|-----------------------|
| FOX BOX 3 FOXBOX3 | • | | | | |
| FOX BOX 3 - N FOXBOX3-N | • | 8 - 18 | 16 / 20 / 32 | 79 x 60 x 32 | 180 x 135 x 45 |
| FOX BOX 3 - ARM FOXBOX3-ARM | • | | | | |

| PRODUCT / Item | Colour | Cables Ø min-max (mm) | Tubes Ø (mm) | Inner capacity (mm) | Outer dimensions (mm) |
|-----------------------------|--------|-----------------------|--------------|---------------------|-----------------------|
| FOX BOX FOXBOX | • | | | | |
| FOX BOX - N FOXBOX-N | • | 8 - 18 | 16 / 20 / 32 | 116 x 78 x 32 | 210 x 155 x 45 |
| FOX BOX - ARM FOXBOX-ARM | • | | | | |



The Fox Box – Arm kit includes:
• The yellow/green insulated wires.
• The roll springs to carry out the continuity of the armouring.

Armourings and their continuity are housed in the chamber with the gel, ensuring perfect sealing.

**LOW VOLTAGE
GEL COVER
GEL BOX**

COVER FOR
TERMINAL BLOCKS / CONNECTORS
**HAPPY LINE
GEL BOX LINE
NANO LINE
BRAVO**





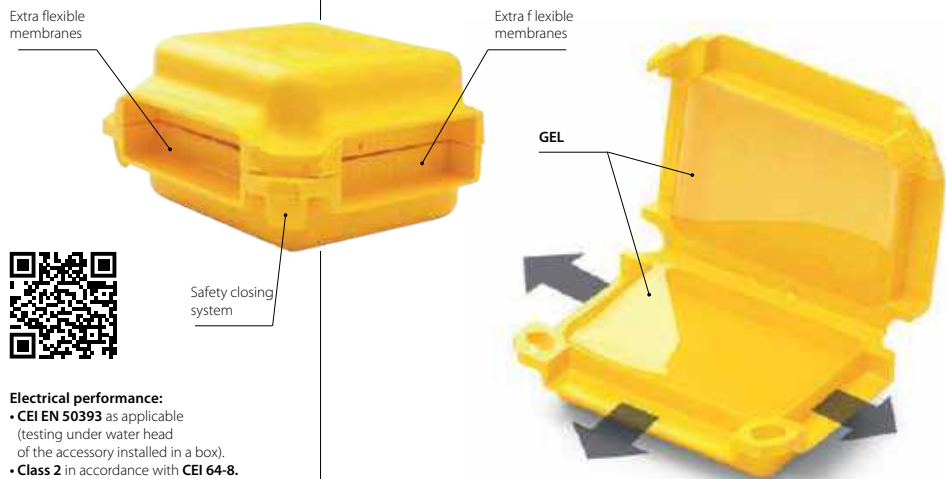
HAPPY LINE

The revolutionary mini accessories with 3 entrances, pre-filled with gel and suitable for submersible installations (IPX8).

Designed in 3 dimensions to rapidly insulate and seal the most commonly used connectors. The 3 entrances not only guarantee the extreme flexibility in the range of these products but also by the housing accepting a wide variety of connectors.

ADVANTAGES

- ▶ Extremely versatile - Ready to use - Re-enterable.
- ▶ For rigid of flexible insulated wires up to 6 mm².
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Small compact and robust.



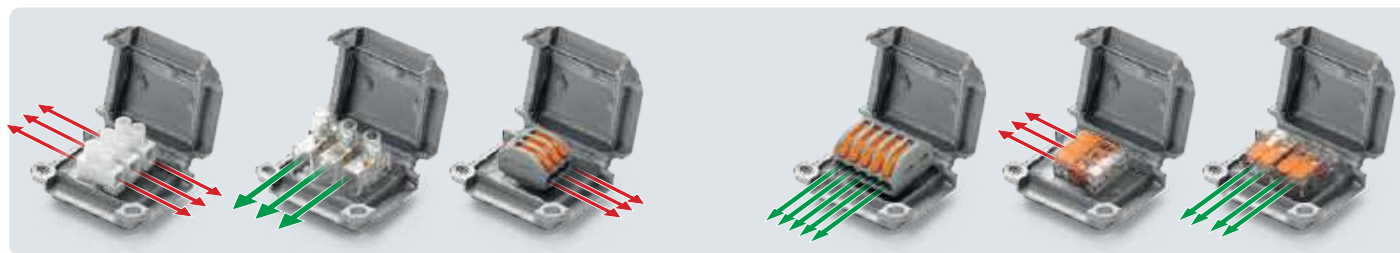
Electrical performance:

- CEI EN 50393 as applicable (testing under water head of the accessory installed in a box).
- Class 2 in accordance with CEI 64-8.
- CEI EN 60998-1 - CEI EN 60998-2

- Gel: UL 94-HB
- Working temperature: 90°
- Installation temperature: -40°C / +50°C
- Fully submersible
- Can be used underground
- Halogen-free Gel
- UV resistant

IPX8 OFFICIALLY TESTED | IMQ

Configuration examples



HAPPY 0

| PRODUCT | Item | Colour | Pack of (PCS) | Description | Dimension (mm) |
|---------------|-------------|--------|---------------|-------------|----------------|
| HAPPY 0 | HAPPY0 | ● | 4 | Blister | 41 x 28 x 19 |
| HAPPY 0 BOX12 | HAPPY0BOX12 | ○ | 12 | Box | |
| GEL BOX 0 | GELBOX0 | ○ | 20 | Blister | |

IDEAL FOR (or similar):



HAPPY 1

| PRODUCT | Item | Colour | Pack of (PCS) | Description | Dimension (mm) |
|---------------|-------------|--------|---------------|-------------|----------------|
| HAPPY 1 | HAPPY1 | ● | 2 | Blister | 45 x 37 x 24 |
| HAPPY 1 BOX10 | HAPPY1BOX10 | ○ | 10 | Box | |
| GEL BOX 1 | GELBOX1 | ○ | 15 | Blister | |

IDEAL FOR (or similar):



HAPPY 2

| PRODUCT | Item | Colour | Pack of (PCS) | Description | Dimension (mm) |
|--------------|------------|--------|---------------|-------------|----------------|
| HAPPY 2 | HAPPY2 | ● | 2 | Blister | 53 x 39 x 24 |
| HAPPY 2 BOX7 | HAPPY2BOX7 | ○ | 7 | Box | |
| GEL BOX 2 | GELBOX2 | ○ | 12 | Blister | |

IDEAL FOR (or similar):



Coloured casings are self-extinguishing according to the UL 94-V2 standard.



HAPPY JOINT LINE

The revolutionary mini accessories with 3 entrances, pre-filled with gel and suitable for submersible installations (IPX8) complete with connectors.

ADVANTAGES

- ▶ Extremely versatile - ready to use - re-enterable.
- ▶ Small, compact and robust.
- ▶ No need for tools.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Can energise immediately.
- ▶ For straight and branch connections.
- ▶ For rigid or flexible insulated wires up to 6 mm².
- ▶ Up to 5 conductors on one phase or up to two conductors on two or three phases.

**ULTRA-FLAT TERMINALS
FOR WIRES UP TO
6 mm²**



Electrical performance:

- CEI EN 50393 as applicable (testing under water head of the accessory installed in a box).
- Class 2 in accordance with CEI 64-8.
- CEI EN 60998-1 - CEI EN 60998-2

● Gel: UL 94-HB

🌡 Working temperature: 90°

🌡 Installation temperature: -40°C / +50°C

🌊 Fully submersible

🔧 Can be used underground

🌿 Halogen-free Gel

☀ UV resistant

IPX8
OFFICIALLY
TESTED | **IMQ**



HAPPY JOINT 3

| PRODUCT / Item | Formation and wires cross section (Max N° x mm ²) | Combination | Pack of | Dimension (mm) |
|--------------------------------|---|----------------------|-------------------|----------------|
| HAPPY JOINT 3 HAPPYJOINT3 | 3 x 1 - 4 | 2 through / 1 branch | 4 PCS/ Blister | 41 x 28 x 19 |
| HAPPY JOINT 36 HAPPYJOINT36 | 3 x 1 - 6 | 2 through / 1 branch | 2 PCS/ Blister | 45 x 37 x 24 |



3 x 4 mm²



3 x 6 mm²



With one connector included for each Happy

HAPPY JOINT 4

| PRODUCT / Item | Formation and wires cross section (Max N° x mm ²) | Combination | Pack of | Dimension (mm) |
|--------------------------------|---|--------------------|-------------------|----------------|
| HAPPY JOINT 4 HAPPYJOINT4 | 2+2 x 1 - 4 | 2 through / in/out | 2 PCS/ Blister | 45 x 37 x 24 |
| HAPPY JOINT 46 HAPPYJOINT46 | 2+2 x 1 - 6 | 2 through / in/out | 2 PCS/ Blister | 45 x 37 x 24 |



2+2 x 4 mm²



2+2 x 6 mm²



With two connectors included for each Happy

HAPPY JOINT 5

| PRODUCT / Item | Formation and wires cross section (Max N° x mm ²) | Combination | Pack of | Dimension (mm) |
|--------------------------------|---|----------------------|-------------------|----------------|
| HAPPY JOINT 5 HAPPYJOINT5 | 5 x 1 - 4 | 2 through / 3 branch | 2 PCS/ Blister | 45 x 37 x 24 |
| Happy Joint 56 HAPPYJOINT56 | 5 x 1 - 6 | 2 through / 3 branch | 1 PC/ Blister | 53 x 39 x 24 |



5 x 4 mm²



5 x 6 mm²



With one connector included for each Happy

HAPPY JOINT 6

| PRODUCT / Item | Formation and wires cross section (Max N° x mm ²) | Combination | Pack of | Dimension (mm) |
|------------------------------|---|--------------------|------------------|----------------|
| HAPPY JOINT 6 HAPPYJOINT6 | 6 x 1 - 4 | 3 through / in/out | 1 PC/ Blister | 53 x 39 x 24 |



6 x 4 mm²



With three connectors included for each Happy

**Electrical performance:**

- CEI EN 50393 as applicable (testing under water head of the accessory installed in a box).
- Class 2 in accordance with CEI 64-8.

💧 Gel: UL 94-HB 

🌡️ Working temperature: 90°

🌡️ Installation temperature: -40°C / +50°C

🌊 Fully submersible

🔧 Can be used underground

🌿 Halogen-free Gel

☀️ UV resistant

IPX8
OFFICIALLY
TESTED | **IMQ**

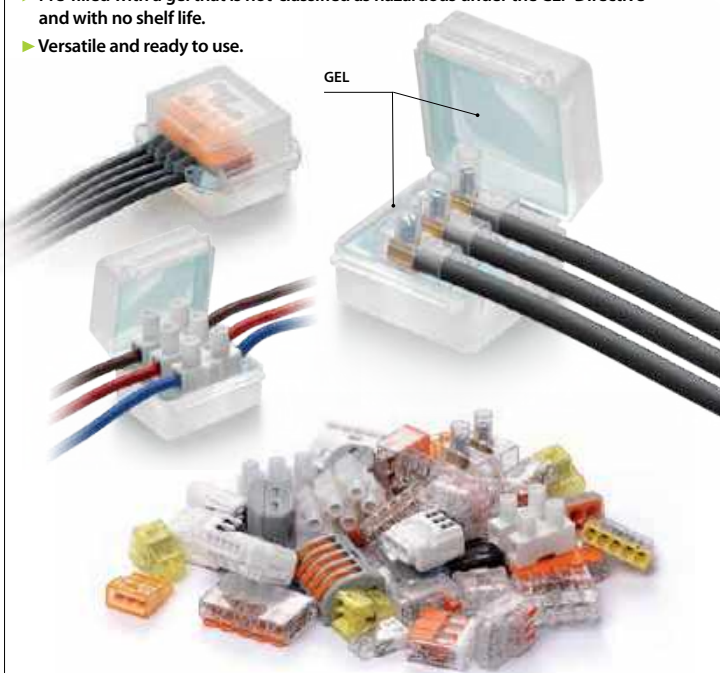


GEL BOX LINE

Gel pre-filled accessories for sealing, protecting and making safe electrical connections.

ADVANTAGES

- ▶ Designed with dimensions suitable for the most commonly used connectors.
- ▶ To put household systems in order.
- ▶ For rigid or flexible insulated wires.
- ▶ For civil and industrial connections.
- ▶ Also for submersible use.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Versatile and ready to use.



ISAAC

| PRODUCT | Item | Pack of | Pack type | Dimension (mm) |
|--------------|-----------|---------|-----------|----------------|
| ISAAC 4 | ISAAC4 | 4 PCS | Blister | 30 x 27 x 23 |
| ISAAC 4 P30 | ISAAC4P30 | 30 PCS | Box | |
| ISAAC 4 MP * | ISAAC4MP | 50 PCS | Multipack | |

IDEAL FOR
(or similar):



PASCAL

| PRODUCT | Item | Pack of | Pack type | Dimension (mm) |
|---------------|------------|---------|-----------|----------------|
| PASCAL 6 | PASCAL6 | 2 PCS | Blister | 36 x 37 x 26 |
| PASCAL 6 P15 | PASCAL6P15 | 15 PCS | Box | |
| PASCAL 6 MP * | PASCAL6MP | 25 PCS | Multipack | |

IDEAL FOR
(or similar):



WATT

| PRODUCT | Item | Pack of | Pack type | Dimension (mm) |
|-----------|---------|---------|-----------|----------------|
| WATT | WATT | 2 PCS | Blister | 30 x 42 x 26 |
| WATT P15 | WATTP15 | 15 PCS | Box | |
| WATT MP * | WATT-MP | 25 PCS | Multipack | |

IDEAL FOR
(or similar):



JOULE

| PRODUCT | Item | Pack of | Pack type | Dimension (mm) |
|------------|---------|---------|-----------|----------------|
| JOULE | JOULE | 1 PC | Blister | 33 x 52 x 26 |
| JOULE MP * | JOULEMP | 20 PCS | Multipack | |

IDEAL FOR
(or similar):



KELVIN

| PRODUCT | Item | Pack of | Pack type | Dimension (mm) |
|-------------|----------|---------|-----------|----------------|
| KELVIN | KELVIN | 1 PC | Blister | 52 x 53 x 29 |
| KELVIN P9 | KELVINP9 | 9 PCS | Box | |
| KELVIN MP * | KELVINMP | 20 PCS | Multipack | |

IDEAL FOR
(or similar):



* Also available in the self-extinguishing version according to the **UL 94-V2** standard in the colours: yellow, orange, blue or black.



GEL BOX LINE KIT

Complete with connectors.

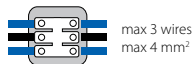
PASCAL M2,5

| PRODUCT / Item | Pack content | Pack type | Dimension (mm) |
|---------------------------|---|-----------|----------------|
| PASCAL M2,5 PASCALM2,5 | 12 pieces + 36 terminal blocks (2.5 mm ²) | Box | 36 x 37 x 26 |



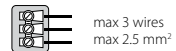
KELVIN M4

| PRODUCT / Item | Pack content | Pack type | Dimension (mm) |
|-----------------------|--|-----------|----------------|
| KELVIN M4 KELVINM4 | 6 pieces + 24 terminal blocks (4 mm ²) | Box | 52 x 53 x 29 |



WATT +

| PRODUCT / Item | Pack content | Pack type | Dimension (mm) |
|------------------------|--|-----------|----------------|
| WATT + 1.5 WATT-1.5 | 10 pieces + 30 end connectors/ terminal blocks (1.5 mm ²) | Box | 30 x 42 x 26 |
| WATT + 2.5 WATT-2.5 | 10 pieces + 30 end connectors/ terminal blocks (2.5 mm ²) | Box | |



KELVIN +

| PRODUCT / Item | Pack content | Pack type | Dimension (mm) |
|-------------------------|--|-----------|----------------|
| KELVIN + 4 KELVIN-4 | 10 pieces + 30 end connectors/ terminal blocks (4 mm ²) | Box | 52 x 53 x 29 |
| KELVIN + 6 KELVIN-6 | 10 pieces + 30 end connectors/ terminal blocks (6 mm ²) | Box | |
| KELVIN 6+4 KELVIN6-4 | 6 pieces + 20 end connectors/ terminal blocks (4 mm ²) | Box | |
| KELVIN 6+6 KELVIN6-6 | 6 pieces + 20 end connectors/ terminal blocks (6 mm ²) | Box | |



NANO JOINT LINE

Gel pre-filled accessories to seal, protect and make safe electrical connections.
Inclusive of connectors.

ADVANTAGES

- Ready to use, quick, re-enterable!
- No tools required.
- Can energise immediately.
- For straight & branch connections.
- For rigid or flexible insulated wires from 1 a 4 mm².
- For 1, 2 and 3 cores connections.
- Up to 5 conductors on one phase or up to 2 conductors on two or three phase.
- Small, compact and resistant.
- Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.



**CONNECTORS
INCLUDED IN THE KIT**

Electrical performance:

- CEI EN 50393 as applicable (testing under water head of the accessory installed in a box).
- Class 2 in accordance with CEI 64-8.
- CEI EN 60998-1 - CEI EN 60998-2

🔧 Gel: UL 94-HB 

🌡️ Working temperature: 90°

🌡️ Installation temperature: -40°C / +50°C

🌊 Fully submersible

🔧 Can be used underground

🌿 Halogen-free Gel

🔥 UV resistant

🔥 Self-extinguishing according to UL 94-V2

IPX8
OFFICIALLY
TESTED | **IMQ**

With extra flat connectors
included**NANO 3**

| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-----------------|---|-------------------------|------------------|----------------|
| NANO 3 NANO3 | 3 x 1 - 4 | 2 through / 1 branch | 4 PCS Blister | 30 x 27 x 23 |

max 3 wires
max 4 mm²**NANO 5**

| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-----------------|---|-------------------------|------------------|----------------|
| NANO 5 NANO5 | 5 x 1 - 4 | 2 through / 3 branch | 2 PCS Blister | 30 x 42 x 26 |

max 5 wires
max 4 mm²**NANO 6**

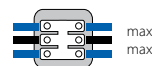
| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-----------------|---|-----------------------|-----------------|----------------|
| NANO 6 NANO6 | 6 x 1 - 4 | 3 through / In/Out | 1 PC Blister | 33 x 52 x 26 |

max 5 wires
max 4 mm²With one connector
included**NANO MAM 2,5**

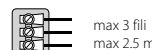
| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-----------------------------|---|-------------|-------------------|----------------|
| NANO MAM 2,5 NANOMAM-2.5 | 3 x 1 - 2,5 | 3 through | 2 PCS/ Blister | 36 x 37 x 26 |

max 3 wires
max 2.5 mm²**NANO MAM 4**

| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-------------------------|---|-------------|------------------|----------------|
| NANO MAM 4 NANOMAM-4 | 3 x 1,5 - 4 | 3 through | 1 PC/ Blister | 52 x 53 x 29 |

max 3 wires
max 4 mm²**NANO FOR 2,5**

| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-----------------------------|---|---------------------------|------------------|----------------|
| NANO FOR 2,5 NANOFOR-2.5 | 3 x 1 - 2,5 | 3 connections / In/Out | 1 PC/ Blister | 33 x 52 x 26 |

max 3 fili
max 2.5 mm²**NANO FOR 4**

| PRODUCT / Item | Formation and wires cross section (Max N° x mm²) | Combination | Package | Dimension (mm) |
|-------------------------|---|---------------------------|------------------|----------------|
| NANO FOR 4 NANOFOR-4 | 3 x 1 - 4 | 3 connections / In/Out | 1 PC/ Blister | 52 x 53 x 29 |

max 3 wires
max 4 mm²

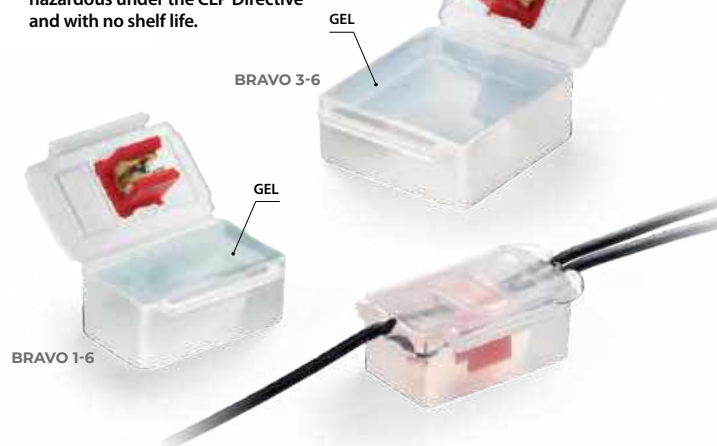


BRAVO

The first "Gel-Box" with integrated connectors!

ADVANTAGES

- ▶ Ready to use, quick, re-enterable!
- ▶ For rigid or flexible insulated wires from 1 to 6 mm².
- ▶ It can be powered immediately.
- ▶ For straight & branch connections.
- ▶ For 1 or 3 cores connections.
- ▶ Small, compact and transparent.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.



Electrical performance:

- CEI EN 50393 as applicable (testing under water head of the accessory installed in a box).
- Class 2 in accordance with CEI 64-8.

Water drop icon: Gel: UL 94-HB  

Thermometer icon: Working temperature: 90°

Thermometer icon: Installation temperature: -40°C / +50°C

Waves icon: Fully submersible

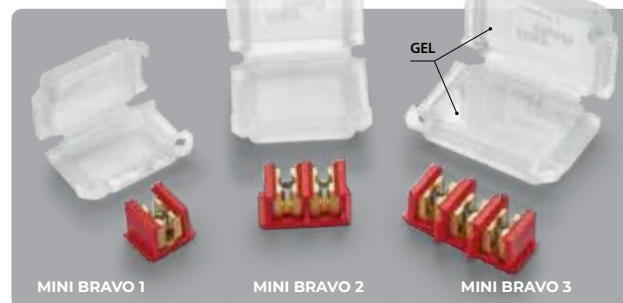
Lightning bolt icon: Can be used underground

Leaf icon: Halogen-free Gel

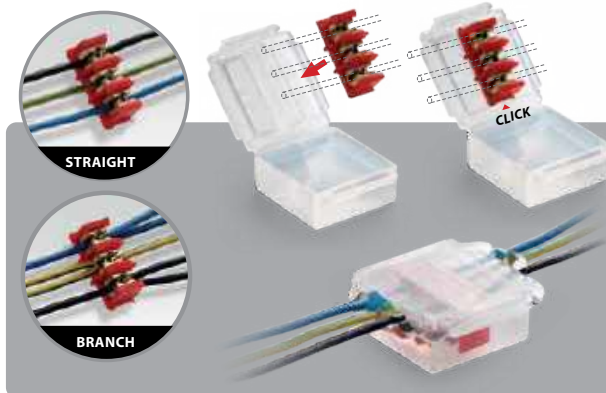
UV icon: UV resistant

IPX8 OFFICIALLY TESTED | IMQ

MINI BRAVO



1 CONNECT 2 FIX 3 CLOSE



BRAVO

| PRODUCT / Item | Formation and wires cross section | | Package | Dimension (mm) |
|-----------------------|---|--------------------------------|------------------|----------------|
| | Straight or through (N° x mm ²) | Branch (N° x mm ²) | | |
| BRAVO 1-6 BRAVO1-6 | 1 x 1 - 6 | 1 x 1 - 6 | 1 PC/ Blister | 50 x 29 x 22 |
| BRAVO 3-6 BRAVO3-6 | 2 x 1 - 6 3 x 1 - 6 | 2 x 1 - 6 3 x 1 - 6 | 1 PC/ Blister | 53 x 49 x 22 |



MINI BRAVO

| PRODUCT / Item | Formation and wires cross section | | Package | Dimension (mm) |
|----------------------------|---|--------------------------------|-------------------|----------------|
| | Straight or through (N° x mm ²) | Branch (N° x mm ²) | | |
| MINI BRAVO 1 MINIBRAVO1 | 1 x 1 - 4 | 1 x 1 - 4 | 3 PCS/ Blister | 41 x 28 x 19 |
| MINI BRAVO 2 MINIBRAVO2 | 2 x 1 - 4 | 2 x 1 - 4 | 1 PC/ Blister | 45 x 37 x 24 |
| MINI BRAVO 3 MINIBRAVO3 | 3 x 1 - 4 | 3 x 1 - 4 | 1 PC/ Blister | 53 x 39 x 24 |





LOW VOLTAGE JOINTS

PRE-FILLED IP68

- LITTLE JOINT EASY
- LITTLE JOINT
- MINI RAPID JOINT IP68
- RAPID JOINT IP68
- READY CAST

PRE-FILLED IPX8 - FLAT

- GEL COVER LINE
- SUPERCLIK / CLIK / CLIK A2A

PRE-FILLED IPX8 - CYLINDRICAL

- KING JOINT
- RAPID JOINT

FOR CASTING

- MAGIC POWER JOINT
- MAGIC JOINT
- RUBBER JOINT
- RAY CAST

HEAT-SHRINK

- JOINTS / TERMINALS

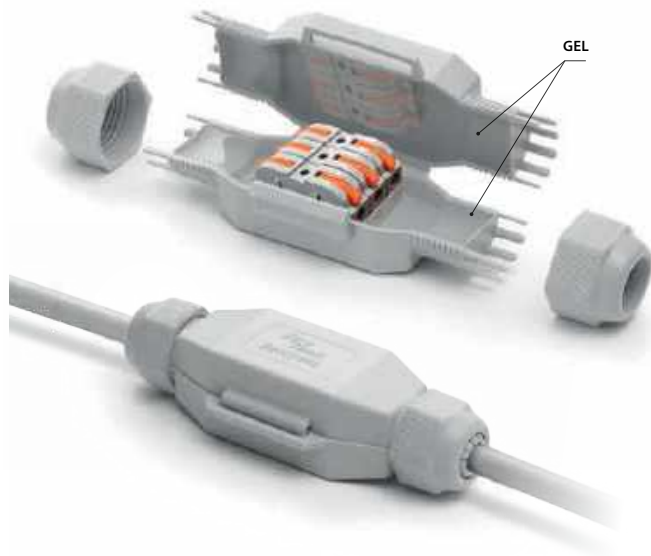
LITTLE JOINT EASY

The IP68/IP69K mini joints, gel pre-filled, complete with in-out lever connectors.

Thanks to the integrated cable glands, they allow the degree of protection IP68 and IP69K and at the same time the locking of the joint on the cable. Suitable for all types of installation, even the most extreme.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Extremely compact and ready to install.
- ▶ Ideal for connections in lighting systems for gardens, steps and stairways, pedestrian crossings, etc.
- ▶ Always re-enterable.



Electrical performance:

- CEI EN 50393 as applicable
- Class 2 in accordance with CEI 64-8.

• Gel: UL 94-HB 

• Working temperature: 90°

• Installation temperature: -40°C / +50°C

• Fully submersible

• Can be used underground

• Halogen-free Gel

• UV resistant

• Self-extinguishing and resistant to abnormal heat and fire:
Glow Wire Flammability Index at +960° C according to EN60695-2-12

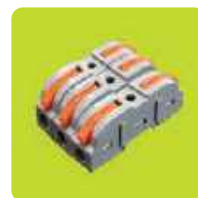
IP68
OFFICIALLY
TESTED | **IMQ** | **IP69K**
OFFICIALLY
TESTED

NEW IN-OUT LEVER CONNECTORS

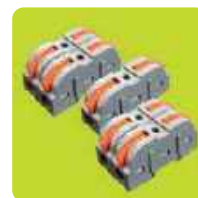
- ▶ Modular, Composable, Ultra-fast, Self-extinguishing.



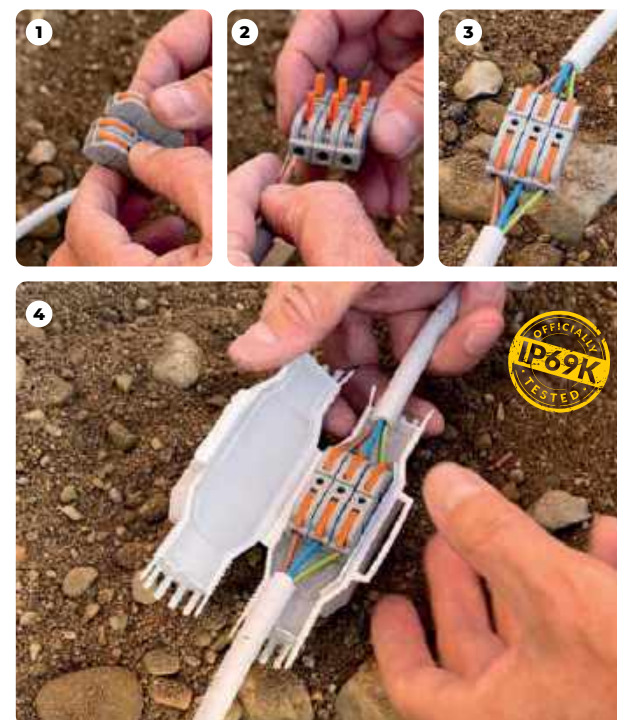
FRED EASY
2x 4 mm²








DINO EASY
3x 4 mm²



BETTY EASY
5x 4 mm²



| PRODUCT Item | Colour | Connector | Cable formation max (N° x mm ²) | Cable Ø min - max (mm) | Pieces / Pack |  (mm) |
|---------------------------------|--------|---|---|------------------------|---------------|---|
| FRED EASY FRED-EASY | • |  | 2 x 4 | 8 - 13 | 1 / Blister | 80 x 36 x 23 |
| DINO EASY DINO-EASY | • |  | 3 x 4 | 10 - 16 | 1 / Blister | 125 x 43 x 35 |
| BETTY EASY BETTY-EASY | • |  | 5 x 4 | 10 - 16 | 1 / Blister | 145 x 46 x 35 |

| PRODUCT Item | NEW IN-OUT LEVER CONNECTORS 0,5 - 4 mm ² | Pieces / Pack |  (mm) |
|-----------------------------|---|---------------|--|
| RAYBLOCK RAYBLOCK | Modular, Composable, Ultra-fast, Self-extinguishing Sections: 0,5 - 4 mm ² Voltage: 600 V Capacity: 32 A Operating temperature of the insulating material: up to 105°C | 50 / Box | 39 x 8 x 15 |



For use in traps. The ideal accessory for connections to light fittings and spotlights. Suitable in applications where there is presence of water and moisture.



LITTLE JOINT

The IP68 / IP69K micro-joints, gel pre-filled, complete with connector, suitable for any type of installation, even the most extreme.

Extremely compact and space-saving, pre-filled with soft, highly conformable gel. With minimal aesthetic impact and visually pleasing. Equipped with integrated cable glands for IP68 and IP69K degree of ingress protection and cable retention.

ADVANTAGES

- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Extremely compact and ready to install.
- ▶ Ideal for connections in lighting systems for gardens, steps and stairways, pedestrian crossings, etc.
- ▶ Always re-enterable.

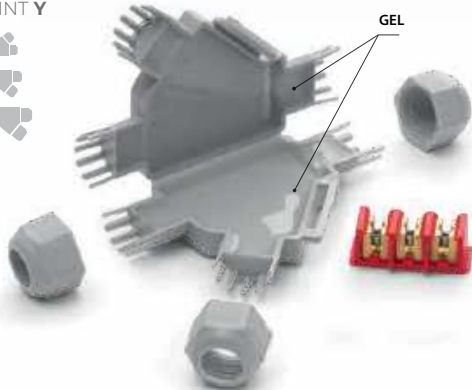
LITTLE JOINT L

- Barney
- Fred
- Dino
- Betty
- Tom



LITTLE JOINT Y

- Barney Y
- Fred Y
- Dino Y



Electrical performance:

- CEI EN 50393 as applicable
- Class 2 in accordance with CEI 64-8.

● Gel: UL 94-HB

🌡 Working temperature: 90°

🌡 Installation temperature: -40°C / +50°C

🌊 Fully submersible

🔧 Can be used underground

🌿 Halogen-free Gel

☀ UV resistant

🔥 Self-extinguishing and resistant to abnormal heat and fire: Glow Wire Flammability Index at +960° C according to EN60695-2-12

IP68 OFFICIALLY TESTED | **IMQ** OFFICIALLY TESTED | **IP69K** OFFICIALLY TESTED

| PRODUCT Item | Colour | Connector | Max cable formation (N° x mm ²) | | Cable Ø min - max (mm) | Pieces / Pack | (mm) |
|--------------------------|--------|-----------|---|--------|------------------------|----------------|---------------|
| | | | Through | Branch | | | |
| BARNEY BARNEY | ● | | | | | 1 / Blister | |
| BARNEY - N BARNEY-N | ● | | 2 x 2,5 | | 6 - 10 | 1 / Blister | 75 x 28 x 19 |
| BARNEY MP BARNEY-MP | ● | | | | | 10 / Multipack | |
| FRED FRED | ● | | | | | 1 / Blister | |
| FRED - N FRED-N | ● | | 3 x 2,5 | | 8 - 13 | 1 / Blister | 80 x 36 x 23 |
| FRED MP FRED-MP | ● | | | | | 10 / Multipack | |
| FRED/4 FRED/4 | ● | | | | | 1 / Blister | |
| FRED/4 - N FRED/4-N | ● | | 3 x 4 | | 8 - 13 | 1 / Blister | 80 x 36 x 23 |
| DINO DINO | ● | | | | | 1 / Blister | |
| DINO - N DINO-N | ● | | 4 x 4 | | 10 - 16 | 1 / Blister | 125 x 43 x 35 |
| DINO 6 DINO/6 | ● | | 3 x 6 | | 10 - 16 | 1 / Blister | 125 x 43 x 35 |
| BETTY/4 BETTY/4 | ● | | | | | 1 / Blister | |
| BETTY/4 - N BETTY/4-N | ● | | 5 x 4 | | 10 - 16 | 1 / Blister | 145 x 46 x 35 |
| BETTY/6 BETTY/6 | ● | | | | | 1 / Blister | |
| BETTY/6 - N BETTY/6-N | ● | | 5 x 6 | | 14 - 19 | 1 / Blister | 145 x 46 x 35 |
| TOM TOM | ● | | | | | 1 / Blister | |
| TOM - N TOM-N | ● | | 5 x 16 | | 19 - 23 | 1 / Blister | 180 x 53 x 42 |

| PRODUCT Item | Colour | Connector | Max cable formation (N° x mm ²) | | Cable Ø min - max (mm) | Pieces / Pack | (mm) |
|----------------------------|--------|-----------|---|----------------------|------------------------|---------------|---------------|
| | | | Through | Branch | | | |
| BARNEY Y BARNEY-Y | ● | | 1 x 4 1 x 2,5 | 1 x 1,5 1 x 2,5 | 6 - 10 | 1 / Blister | 85 x 55 x 22 |
| BARNEY Y - N BARNEY-Y/N | ● | | | | | 1 / Blister | |
| FRED Y FRED-Y | ● | | | | | 1 / Blister | |
| FRED Y - N FRED-Y/N | ● | | 3 x 4 3 x 2,5 | 3 x 1,5 3 x 2,5 | 8 - 13 | 1 / Blister | 110 x 72 x 25 |
| DINO Y DINOY | ● | | | | | 1 / Blister | |
| DINO Y - N DINOY-N | ● | | 5 x 6 5 x 4 * | 5 x 1,5 5 x 2,5 * | 14 - 19 | 1 / Blister | 160 x 75 x 37 |

* section for rigid cables





RAPID JOINT IP68

Radial closing gel pre-filled joint for extruded insulation cables up to 1 kV.

Primary insulation, consisting of a cross-linked polymer gel, and the exceptionally robust insulating plastic casing render Class 2 joints in accordance with the definitions contained in standard CEI 64-8. The joint has been tested in accordance with the main international specifications, with repeated flexing and torsion tests and immersion in water, and has been declared as conforming to the mechanical, electrical and sealing specifications required for plastic cable accessories. The joint and its components have an unlimited shelf life, are chemically inert and therefore completely safe. Conductor connections are re-enterable even after long periods of operation. Made with self-extinguishing material, flame retardant, for cables at 90°C working temperature. The radial closing system facilitates joint application, making them re-enterable only by means of a tool.

Electrical performance:

- CEI EN 50393
- Class 2 in accordance with CEI 64-8.

• Gel: UL 94-HB 

• Working temperature: 90°

• Installation temperature: -40°C / +50°C

• Fully submersible

• Can be used underground

• Halogen-free Gel

• UV resistant

• No flame propagation:
CEI 20-35 • IEC 60332-1 • HD405-1
(as applicable)

ADVANTAGES

- ▶ For straight connections (in line).
- ▶ For multi core cables of up to 5 cores.
- ▶ With suitable spacers.
- ▶ For all types of application, including submersible.
- ▶ Wide range of cable formations.
- ▶ Re-enterable only by means of a tool.
- ▶ Suitable for 3 core crossing.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.



IP68 OFFICIALLY TESTED | **IMQ** | **IP69K** OFFICIALLY TESTED



IPX8

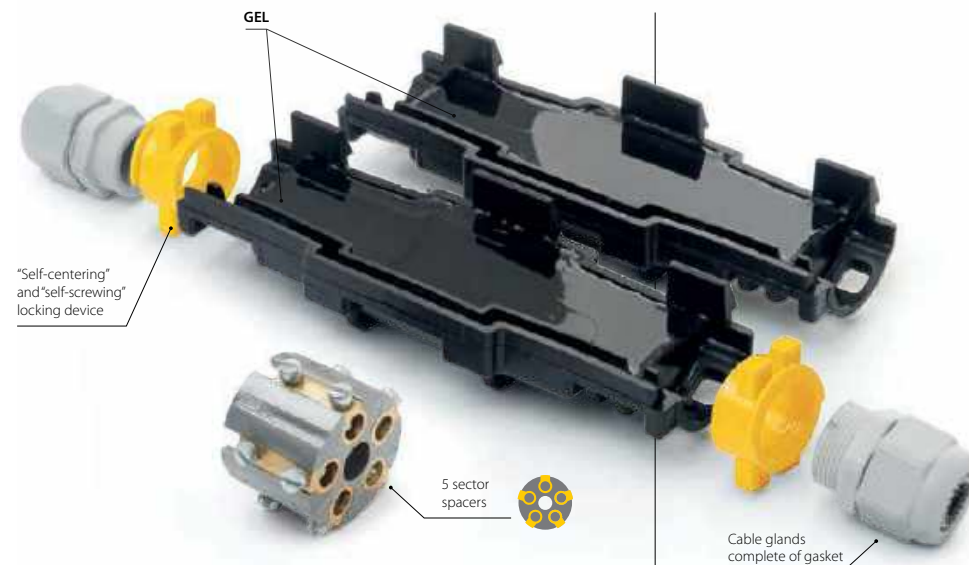
- Protected from permanent immersion in water.

IP68

- Totally protected against dust and solid objects over 1 mm (tools, wires, and small wires).
- Protected from permanent immersion in water.

IP69K

- Totally protected against dust and solid objects over 1 mm (tools, wires, and small wires).
- Protected against close-range high pressure, high temperature spray downs.



"Self-centering" and "self-screwing" locking device

5 sector spacers

Cable glands complete of gasket

| PRODUCT Item | Formation n° | Configuration IP68 | | | Configuration IPX8 | | |
|--|--------------|----------------------------|--------------|------------|----------------------------|--------------|------------|
| | | Section (mm ²) | Cable Ø (mm) | A x B (mm) | Section (mm ²) | Cable Ø (mm) | A x B (mm) |
| Rapid Joint L1,5-IP68 RAPIDJL1,5-IP68 | • | 4 - 25 | | | 1,5 - 50 | | |
| | ⊕ | 1,5 - 4 | | | 1,5 - 6 | | |
| | ⊗ | 1,5 - 2,5 | 8 - 13 | 155 x 55 | 1,5 - 6 | 20,5 | 105 x 55 |
| | ⊕ | 1,5 | | | 1,5 - 6 | | |
| Rapid Joint L6-IP68 RAPIDJL6-IP68 | • | 25 - 70 | | | 2,5 - 150 | | |
| | ⊕ | 2,5 - 6 | | | 2,5 - 10 | | |
| | ⊗ | 2,5 - 6 | 12 - 18 | 245 x 60 | 2,5 - 10 | 24 | 180 x 60 |
| | ⊕ | 2,5 - 6 | | | 2,5 - 10 | | |
| Rapid Joint L10-IP68 RAPIDJL10-IP68 | • | 70 - 95 | | | 10 - 240 | | |
| | ⊕ | 10 | | | 10 - 25 | | |
| | ⊗ | 10 | 16 - 20 | 275 x 65 | 10 - 25 | 31 | 210 x 65 |
| | ⊕ | 10 | | | 10 - 25 | | |
| Rapid Joint L25-IP68 RAPIDJL25-IP68 | • | 120 - 240 | | | 120 - 240 | | |
| | ⊕ | 25 | | | 10 - 50 | | |
| | ⊗ | 16 - 25 | 21 - 28 | 410 x 100 | 10 - 50 | 42 | 320 x 100 |
| | ⊕ | 16 - 25 | | | 10 - 50 | | |

For single core cable: do not install the separator with screw connectors and connect with crimp connector.



READY CAST

The new pre-filled resin joint for extruded insulation cables up to 1 kV.

Thanks to its innovative pre-engraved and fracture-facilitated cable entry system, Ready Cast adapts itself quickly and extremely easily to any cable diameter, while respecting the minimum and maximum diameters that can be housed in the range. With the quick and safe connection block included in the pack or with commonly used connectors that can always be housed in the practical 4x separator, included in the kit. Ready Cast is equipped with an anti-traction system of the cable since it can be secured to the casing using the supplied cable ties.

- Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.



READY CAST L

READY CAST Y



Electrical performance:
 • CEI EN 50393 as applicable
 • Class 2 in accordance with CEI 64-8.

- Resin: UL 94-HB
- Working temperature: 90°
- Installation temperature: -40°C / +50°C
- Fully submersible
- Can be used underground
- Halogen-free Resin
- UV resistant

IP68
OFFICIALLY TESTED



INNOVATIVE RESIN SOLUTIONS



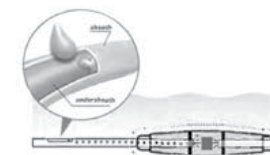
- **EASY!**
Scissors and nothing more!



- **MULTICONNECTION!**
Ideal for many types of connection



- **INTEGRATED SOLUTIONS!**
HOLE CASING technology - Anti-traction cable system using the supplied cable ties secured to the casing.



- **RELIABILITY!**
Range compliant with EN 50393 which consists in a test in air and of prolonged immersion for about 30 days, with repeated temperature changes, after the intentional removal of the cable sheath at the inlet and outlet with consequent infiltration of water between the cores of the cable.

| PRODUCT Item | Cable Ø (mm) | Cable formation (N° x mm²) | | | | | A B (mm) |
|---|--------------|----------------------------|-------|-------|-------|-----|----------------|
| | | 1 x | 2 x | 3 x | 4 x | 5 x | |
| READY CAST L 4 ARM READYCASTL4 | 8-18 | 6-25 | 2,5-4 | 2,5-4 | 2,5-4 | - | 160x48 |
| READY CAST L 10 ARM READYCASTL10 | 8-23 | 16-50 | 4-10 | 4-10 | 4-10 | - | 180x50 |
| READY CAST L 16/25 ARM READYCASTL16/25 | 8-30 | 35-150 | 10-25 | 6-25 | 4-25 | - | 215x55 |

| PRODUCT Item | Cable Ø (mm) | Cable formation (N° x mm²) | | | | | A B (mm) |
|---|------------------|----------------------------|--------------------|--------------------|---------------------|---------------------|----------------|
| | | 1 x | 2 x | 3 x | 4 x | 5 x | |
| READY CAST Y6 ARM READYCASTY6 | T 8-20 B 8-20 | T 4-6 B 2,5-4 | T 2,5-6 B 1,5-4 | T 2,5-6 B 1,5-4 | T 2,5-6 B 1,5-25 | - | 180x100 |
| READY CAST Y 16/25 ARM READYCASTY16/25 | T 8-30 B 8-30 | T 70-150 B 50-150 | T 10-25 B 6-25 | T 6-25 B 6-16 | T 6-25 B 6-10 | T 2,5-6 B 1,5-25 | 220x105 |

SWA earth kit with cut length of earth wire and constant force springs



- Each kit contains:
- Enclosure, complete with filler
 - Cable ties
 - Screw connection system
 - 4x separator
 - Rayteam black insulating tape

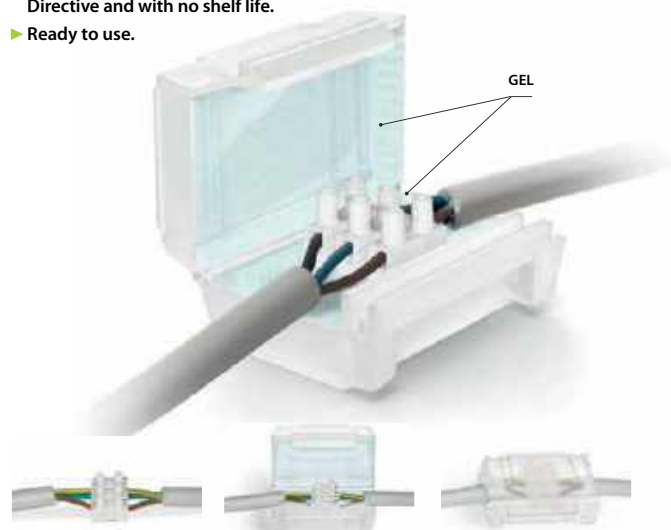


GEL COVER LINE

Gel pre-filled accessories for straight connections, for the protection, safety and covering of electrical connections using strip connectors or alternatives.


ADVANTAGES

- ▶ For 3 x 1 to 6 mm² cables or 3 insulated wires.
- ▶ For domestic and industrial connections.
- ▶ To put household systems in order.
- ▶ Also for underwater use.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.
- ▶ Ready to use.



Electrical performance:

- CEI EN 50393 as applicable
- Class 2 in accordance with CEI 64-8.

• Gel: UL 94-HB 

• Working temperature: 90°

• Installation temperature: -40°C / +50°C

• Fully submersible

• Can be used underground

• Halogen-free Gel

• UV resistant

IPX8
OFFICIALLY
TESTED | **IMQ**



| PRODUCT Item | Colour | Housed connectors type | N° pieces | Package type | Dimension (mm) |
|--------------------------|--------|--|-----------|--------------|----------------|
| OHM OHM | ○ | 2 from 4 mm ² | 1 | blister | 61 x 35 x 28 |
| OHM PACK 11 OHMPACK11 | ○ | 2 from 4 mm ² | 11 | box | 61 x 35 x 28 |
| BAR BAR | ○ | 3 from 4 mm ² / 6 mm ² | 1 | blister | 63 x 41 x 28 |
| BAR PACK 9 BARPACK9 | ○ | 3 from 4 mm ² / 6 mm ² | 9 | box | 63 x 41 x 28 |



| PRODUCT Item | Colour | Housed connectors type | N° pieces | Package type | Dimension (mm) |
|---------------------------------------|--------|--|-----------|--------------|----------------|
| GEL COVER 4 GELCOVER4 | ● | 2 from 4 mm ² | 1 | blister | 61 x 35 x 28 |
| MAMMUT GEL COVER MAMMUTGELCOVER | ● | 2 from 4 mm ² | 8 | box | 61 x 35 x 28 |
| GEL COVER 6 GELCOVER6 | ● | 3 from 4 mm ² / 6 mm ² | 1 | blister | 63 x 41 x 28 |
| MAMMUT GEL COVER 6 MAMMUTGELCOVER6 | ● | 3 from 4 mm ² / 6 mm ² | 6 | box | 63 x 41 x 28 |

No flame propagation, CEI 20-35 • IEC 60332-1 • HD405-1 (as applicable), Casing mix: UL 94-V2





Electrical performance:
 • CEI EN 50393 as applicable
 • Class 2 in accordance with CEI 64-8.

- Gel: UL 94-HB
- Casing mix: UL 94-V2
- Working temperature: 90°
- Installation temperature: -40°C / +50°C
- Fully submersible
- Can be used underground
- Halogen-free Gel
- UV resistant
- No flame propagation:
CEI 20-35 • IEC 60332-1 • HD405-1
(as applicable)

IPX8
OFFICIALLY
TESTED

IMQ



SUPER CLIK

Range of fast gel pre-filled straight or branch type joints for 0.6/1 kV multi core cables of up to 5 conductors.

The combination of the primary insulation in a cross-linked polymer gel and the highly robust insulating plastic case makes this a Class 2 joint defined by CEI 64-8. The joint has been tested in accordance with the main international specifications, with repeated flexing and torsion tests and immersion in water, it has been declared as conforming to the mechanical, electrical and sealing specifications required for plastic cable accessories. The joint and its components have an unlimited shelf life, they are chemically inert and therefore completely safe; the connections are re-entrable even after long working periods. Made of self-extinguishing components the joint is flame retardant. For cables at 90°C working temperature.

ADVANTAGES

- ▶ Complete with insulated terminal blocks.
- ▶ For straight and branch connections.
- ▶ For all types of application, including submersible.
- ▶ Re-accessible.
- ▶ Flame retardant.
- ▶ Pre-filled with a gel that is not-classified as hazardous under the CLP Directive and with no shelf life.



SUPER CLIK

SUPER CLIK MINI

| PRODUCT Item | Cable formation and conductor cross sections (n° x mm²) | | max cables Ø (mm) | (mm) |
|-----------------------------------|---|------------------------|-------------------|--------------|
| | Straight Connections In line | Branch connections T B | | |
| SUPER CLIK MINI L SUPERCLIKMINI-L | 3 x 0,5 - 1,5 | - - | 10 | 71 x 38 x 23 |
| SUPER CLIK MINI Y SUPERCLIKMINI-Y | - | 1 x 2,5 - 6 1 x 2,5 | 10 | 71 x 38 x 23 |

T: Through cable - B: Branch cable

SUPER CLIK

| PRODUCT Item | Cable formation and conductor cross sections (n° x mm²) | | max cables Ø (mm) | (mm) |
|-------------------------|---|---------------------------|-------------------|--------------|
| | Straight Connections In line | Branch connections T B | | |
| SUPER CLIK 0 SUPERCLIK0 | 3 x 1,5 - 6 | 3 x 1,5 - 4 3 x 1,5 - 2,5 | 14 | 95 x 43 x 28 |

T: Through cable - B: Branch cable

| PRODUCT | In line | T | B | max cables Ø (mm) | (mm) |
|-------------------------|-------------|-------|---------|-------------------|---------------|
| SUPER CLIK 1 SUPERCLIK1 | 2 x 1,5 - 6 | 2 x 4 | 2 x 2,5 | 20,5 | 150 x 56 x 30 |
| | 3 x 1,5 - 6 | 3 x 4 | 3 x 2,5 | | |
| | 4 x 1,5 - 6 | 4 x 4 | 4 x 2,5 | | |
| | 5 x 1,5 - 6 | 5 x 4 | 5 x 2,5 | | |

T: Through cable - B: Branch cable

| PRODUCT | In line | T | B | max cables Ø (mm) | (mm) |
|-------------------------|------------|--------|-------|-------------------|---------------|
| SUPER CLIK 2 SUPERCLIK2 | 2 x 4 - 16 | 2 x 10 | 2 x 6 | 30 | 220 x 85 x 46 |
| | 3 x 4 - 16 | 3 x 10 | 3 x 6 | | |
| | 4 x 4 - 16 | 4 x 10 | 4 x 6 | | |
| | 5 x 4 - 16 | 5 x 10 | 5 x 6 | | |

T: Through cable - B: Branch cable

| PRODUCT | In line | T | B | max cables Ø (mm) | (mm) |
|-------------------------|---------|------------|--------------|-------------------|---------------|
| SUPER CLIK 3 SUPERCLIK3 | - | 2 x 4 - 25 | 2 x 1,5 - 16 | 30 | 220 x 85 x 46 |
| | - | 3 x 4 - 25 | 3 x 1,5 - 16 | | |
| | - | 4 x 4 - 25 | 4 x 1,5 - 16 | | |

T: Through cable - B: Branch cable





KING JOINT


Range of fast gel pre-filled straight or branch type joints for 0.6/1 kV multi core cables of up to 5 conductors.

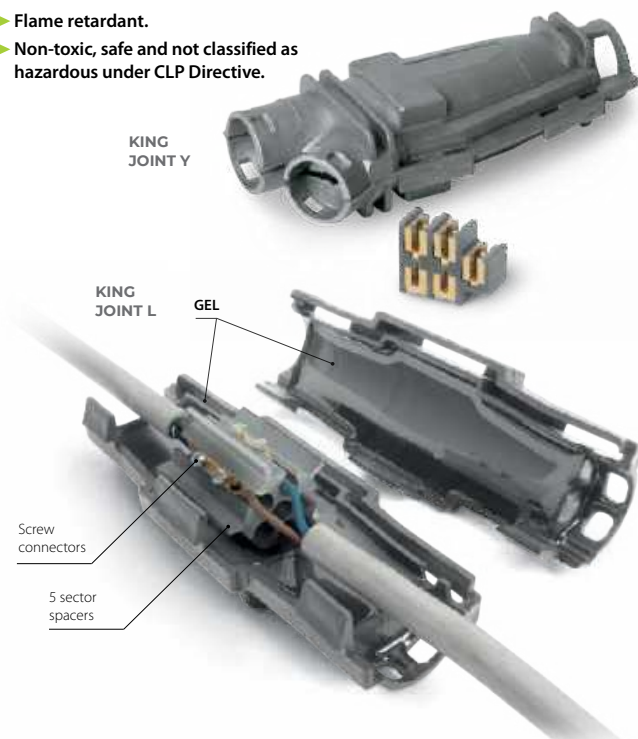
The primary insulation, consisting of a cross-linked polymer gel and extremely strong plastic insulating housing, make the Class 2, in accordance with the definitions contained in CEI Regulation 64-8. The joint, tested in accordance with the most important international specifications with repeated bending and twisting cycles and immersion in water, was found to comply with the mechanical, electrical and sealing requirements necessary for accessories for plastic cables. The joint and its components have no self life, are chemically inert and therefore completely safe; the conductor connections are re-accessible even after long operating periods. Packaged with self-extinguishing material, it is flame retardant. Suitable for cables with a temperature of +90°C.

ADVANTAGES

- ▶ For multicore cables of up to 5 cores.
- ▶ 5 sector spacers for proper centring of five-core connection.
- ▶ Complete with screw connectors.
- ▶ For straight and branch connections, including armoured cable.
- ▶ For all types of application, including submersible.
- ▶ Re-accessible.
- ▶ Flame retardant.
- ▶ Non-toxic, safe and not classified as hazardous under CLP Directive.

Electrical performance:
• CEI EN 50393
• Class 2 in accordance with CEI 64-8.

- 💧 Gel: UL 94-HB 
- 💧 Casing mix: UL 94-V2
- 🌡️ Working temperature: 90°
- 🌡️ Installation temperature: -40°C / +50°C
- 🌊 Fully submersible
- 🔧 Can be used underground
- 🌿 Halogen-free Gel
- 🔥 No flame propagation:
CEI 20-35 • IEC 60332-1 • HD405-1
(as applicable)
Low smoke and toxic and corrosive gas emissions.
- 🛡️ Degree of protection: IPX8



KING JOINT L

Straight joints, including armoured cable.



| PRODUCT / Item | LINE CONNECTIONS | max cables Ø (mm) | Dimension (mm) |
|---------------------------------------|--|-------------------|----------------|
| | Cable formation and conductor cross sections (n° x mm ²) | | |
| KING JOINT 0 blister RAYKJOINT0 | 2 x 1,5 - 6 | 20,5 | 105 x 55 x 55 |
| | 3 x 1,5 - 6 | | |
| | 4 x 1,5 - 6 | | |
| | 5 x 1,5 - 6 | | |
| KING JOINT L6 box RAYKJOINTL6 | 2 x 1,5 - 6 | 20,5 | 105 x 55 x 55 |
| | 3 x 1,5 - 6 | | |
| | 4 x 1,5 - 6 | | |
| | 5 x 1,5 - 6 | | |

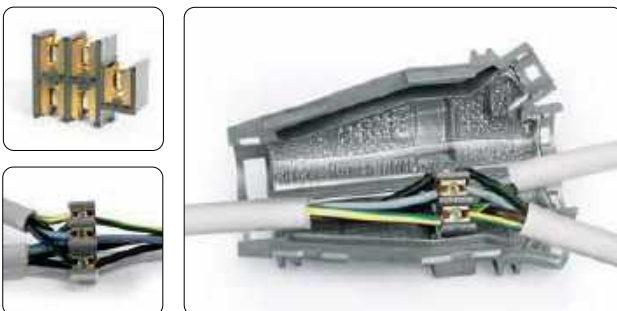
| PRODUCT / Item | LINE CONNECTIONS | max cables Ø (mm) | Dimension (mm) |
|------------------------------------|--|-------------------|----------------|
| | Cable formation and conductor cross sections (n° x mm ²) | | |
| KING JOINT L10 RAYKJOINTL10 | 2 x 2,5 - 10 | 24 | 180 x 60 x 60 |
| | 3 x 2,5 - 10 | | |
| | 4 x 2,5 - 10 | | |
| | 5 x 2,5 - 10 | | |
| KING JOINT L10 - ARM RAYJL10ARM | 2 x 2,5 - 10 | 24 | 180 x 60 x 60 |
| | 3 x 2,5 - 10 | | |
| | 4 x 2,5 - 10 | | |
| | 5 x 2,5 - 10 | | |

| PRODUCT / Item | LINE CONNECTIONS | max cables Ø (mm) | Dimension (mm) |
|------------------------------------|--|-------------------|----------------|
| | Cable formation and conductor cross sections (n° x mm ²) | | |
| KING JOINT L25 RAYKJOINTL25 | 2 x 10 - 25 | 31 | 210 x 65 x 65 |
| | 3 x 10 - 25 | | |
| | 4 x 10 - 25 | | |
| KING JOINT L25 - ARM RAYJL25ARM | 2 x 10 - 25 | 31 | 210 x 65 x 65 |
| | 3 x 10 - 25 | | |

ARM type joints complete with continuity device suitable for connection to armoured wire or steel tape cables.

KING JOINT Y

Branch joints, including armoured cable.



| PRODUCT / Item | BRANCH CONNECTIONS Cable formation and conductor cross sections (n° x mm²) | | max cables Ø (mm) | | Dimension (mm) |
|---|--|-------------|----------------------|------|-------------------|
| | T | B | T | B | |
| KING JOINT Y6 KINGJ-Y6 | 2 x 1,5 - 6 | 2 x 1,5 - 4 | 22,5 | 18,5 | 138 x 60 x 37 |
| KING JOINT Y6 - ARM KINGJ-Y6ARM | 3 x 1,5 - 6 | 3 x 1,5 - 4 | | | |
| | 4 x 1,5 - 6 | 4 x 1,5 - 4 | | | |
| | 5 x 1,5 - 6 | 5 x 1,5 - 4 | | | |

T: Through cable - B: Branch cable



| PRODUCT / Item | BRANCH CONNECTIONS Cable formation and conductor cross sections (n° x mm²) | | max cables Ø (mm) | | Dimension (mm) |
|---|--|-------------|----------------------|------|-------------------|
| | T | B | T | B | |
| KING JOINT Y16 KINGJ-Y16 | 2 x 4 - 16 | 2 x 1,5 - 4 | 26 | 18,5 | 194 x 74 x 43 |
| KING JOINT Y16 - ARM KINGJ-Y16ARM | 3 x 4 - 16 | 3 x 1,5 - 4 | | | |
| | 4 x 4 - 16* | 4 x 1,5 - 4 | | | |
| | 5 x 4 - 16* | 5 x 1,5 - 4 | | | |

T: Through cable - B: Branch cable

* For armoured cables max conductor cross section 10 mm².



| PRODUCT / Item | BRANCH CONNECTIONS Cable formation and conductor cross sections (n° x mm²) | | max cables Ø (mm) | | Dimension (mm) |
|---|--|-------------|----------------------|----|-------------------|
| | T | B | T | B | |
| KING JOINT Y35 KINGJ-Y35 | 2 x 10 - 35 | 2 x 1,5 - 6 | 36 | 26 | 290 x 105 x 51 |
| KING JOINT Y35 - ARM KINGJ-Y35ARM | 3 x 10 - 35 | 3 x 1,5 - 6 | | | |
| | 4 x 10 - 35* | 4 x 1,5 - 6 | | | |
| | | | | | |

T: Through cable - B: Branch cable

* For armoured cables max conductor cross section 10 mm².

ARM type joints complete with continuity device suitable for connection to **armoured wire or steel tape cables**.

SPEEDY WIRE OIL - SPEEDY WIRE GEL SPEEDY WIRE SPRAY

Lubricants for threading any kind of cable, power, telecom and optical fibre in ducts, smooth or corrugated piping, etc. With a very high lubrication power, especially when compared to products for similar uses, these are easily removable from cables, and require very low installation strength, even in the case of bent conduits.

Speedy Wire Oil is a standard, fluid and low viscosity lubricant.

Speedy Wire Gel, thanks to its consistency, allows for savings of up to 3 times the amount used compared to other solutions.

Speedy Wire Spray, thanks to its canister and dispensing nozzle, allows for suitable guiding of the lubricant, including inside piping and ducts, greatly facilitating application.

| PRODUCT / Item | Package | Wrapping | Appearance | PH | Density |
|--|------------|---------------|-----------------|---------|------------|
| SPEEDY WIRE OIL 900000-003 | 1 L bottle | 12-piece pack | Transparent gel | 6 - 8 | About 1 |
| SPEEDY WIRE GEL 900000-001 | 1 L bottle | 12-piece pack | Milky liquid | 6 - 8 | About 1 |
| SPEEDY WIRE SPRAY SPEEDYWSPRAY | 400 ml can | 12-piece pack | White foam | 8,5 - 9 | About 1,04 |



RAYTECH SUPER 3-3

Self-adhesive tape for use at low and high temperatures.

PVC adhesive tape with excellent electrical and mechanical properties for a wide range of working temperatures. This tape is particularly suitable for use at low temperatures and in all weather conditions, including the most extreme. The tape is flame retardant and self-extinguishing. It is recommended as the primary insulation for joints up to 0.6/1 kV, and as the outer covering for joints and other products, and for all applications at low temperatures.

| PRODUCT / Item | Colour | Width | Thickness | Length |
|--|--------|-------|-----------|--------|
| RAYTECH SUPER 3-3 3-3061-00-13 | ● | 19 mm | 0,18 mm | 20 m |

Complies with standards
CEI 60454 (EN60454)

RAYTECH 2.3

EPR Self-amalgamating tape low and high voltage tape.

This ethylene-propylene (EPR) self-amalgamating tape is used for insulating and sealing high voltage electrical joints for voltages up to Um 72 kV. It amalgamates rapidly, adapting itself to the product underneath, forming a solid unit without air bubbles. It is particularly resistant to partial discharges (corona), with the characteristics remaining unchanged with time. Joints must be protected with a PVC tape or similar.

| PRODUCT / Item | Colour | Width | Thickness | Length |
|------------------------------------|--------|-------|-----------|--------|
| RAYTECH 2.3 3-2001-00-13 | ● | 19 mm | 0,76 mm | 9 m |

RAYTECH 23 BT

Low voltage Self-amalgamating tape.

This rubber self-amalgamating low voltage tape (0.6/1 kV) is used for insulating and sealing low voltage electrical joints. It amalgamates rapidly, adapting itself to the product underneath, forming a solid unit. The joints must be protected with a PVC tape. The characteristics remain unchanged with time.

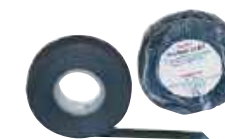
| PRODUCT / Item | Colour | Width | Thickness | Length |
|--------------------------------------|--------|-------|-----------|--------|
| RAYTECH 23 BT 3-2002-96-13 | ● | 19 mm | 0,76 mm | 6,7 m |



| Property | Typical values |
|--|--------------------|
| Breaking Strength (tensile) | 35 N/cm min |
| Elongation at break | 180 % |
| Adhesion to steel | > 1,8 N/cm |
| Adhesion to backing | > 1,8 N/cm |
| Self-extinguishing | Self-extinguishing |
| Temperatura d'esercizio | -18°C / 105°C |
| Electric Strength after exposure to damp environment | 40 kV/mm min |



| Property | Typical values |
|-----------------------------|---------------------------|
| Breaking Strength (tensile) | 2.2 MPa min |
| Elongation at break | 800% min |
| Overload temperature | 130°C |
| Operating temperature | 90°C |
| Dielectric strength | 38 kV/mm min |
| Volume resistivity | 10 ¹⁵ Ω cm min |
| Resistance to ozone | Positive |
| Resistance to U.V. | Positive |



| Property | Typical values |
|-----------------------------|----------------|
| Breaking Strength (tensile) | 3 MPa min |
| Elongation at break | 500% min |
| Operating temperature | 80°C |
| Dielectric strength | 20 kV/mm min |



RAYTEFILL

Thick low voltage Self-amalgamating tape.

This self-amalgamating thick-wall (3.2mm) has been specially designed for the rapid reconstruction of low-voltage cable insulation, to cover complex shapes (insulating and covering joints between busbars and relative bolts, clamps, etc.) and to seal against possible penetration of humidity. Once applied it becomes a solid, absolutely non-porous mass, with first class electrical qualities and ageing resistance, perfectly suited to the product it is covering.

| Property | Typical values |
|-----------------------------------|--------------------|
| Breaking Strength (tensile) | 0,1 MPa |
| Operating temperature: Continuous | From -30°C to 80°C |
| Dielectric strength | 23,0 kV/mm |

| PRODUCT / Item | Colour | Width | Thickness | Length |
|---------------------------|--------|-------|-----------|--------|
| RAYTEFILL 3-2140-00-13 | ● | 38 mm | 3,2 mm | 1,5 m |



Complies with standards
ASTM-D-2148

RAYTECH 7-0

Self-amalgamating silicone rubber tape.

This self-amalgamating silicone rubber tape is used for covering medium and high voltage terminations on extruded cables up to Um 72 kV, because of its first-rate performance for electrical installations in damp or polluted environments, against corrosion, corona and against ageing. It is used as an insulation up to 180°C due to its excellent heat properties. It can be perfectly adapted to all the shapes to be covered.

| Property | Typical values |
|-----------------------------|----------------|
| Elongation at break | 300% |
| Resistance to U.V. | Positive |
| Resistance to ozone | Positive |
| Working temperature maximum | 180°C |
| Dielectric strength | 24 kV/mm |

| PRODUCT / Item | Colour | Width | Thickness | Length |
|-----------------------------|--------|-------|-----------|--------|
| RAYTECH 7-0 3-2042-00-13 | ● | 25 mm | 0,51 mm | 9,1 m |

RAYCOPPER

Tinned copper mesh tape for electrical screening.

| Property | Typical values |
|-----------------------------|---|
| Material | Tinned copper mesh tape with high flexibility |
| Elongation at break | 70% min |
| Breaking Strength (tensile) | 35 N/10 mm |
| Volume resistivity | 0,3 cm |

| PRODUCT | Item | Colour | Width | Thickness | Length |
|----------------|------------|--------|-------|-----------|--------|
| RAYCOPPER 1000 | COPPER-100 | Silver | 60 mm | 0,3 mm | 1 m |
| RAYCOPPER 2000 | COPPER-200 | Silver | 60 mm | 0,3 mm | 2 m |
| RAYCOPPER 3000 | COPPER-300 | Silver | 60 mm | 0,3 mm | 3 m |
| RAYCOPPER 5000 | COPPER-500 | Silver | 60 mm | 0,3 mm | 5 m |
| RAYCOPPER 6000 | COPPER-600 | Silver | 60 mm | 0,3 mm | 6 m |

MCA-FV

Fiberglass adhesive tape.

Self-adhesive mono-directional fibreglass tape with polypropylene support. Suitable for cable fixing on pipes (i.e.: Raytech MCA... cables for electrical tracing), and for any kind of strong fixing. Inextensible, it is suitable for temperatures up to 130°C.

| Property | Typical values |
|-----------------------------|----------------|
| Breaking Strength (tensile) | 300 N/cm min |
| Ultimate elongation | 8% |
| Adhesion to steel | 2 N/cm min |

| PRODUCT / Item | Colour | Width | Thickness | Length |
|----------------------|--------|-------|-----------|--------|
| MCA-FV 012521-000 | White | 12 mm | 0,13 mm | 50 m |

MCA-ALL

Self-adhesive aluminium tape.

Self-adhesive adhesive aluminium tape suitable for fixing on flat surfaces (i.e.: for heating cable fixing on tanks outer surfaces); used also for holes or abrasion repairs on metallic or plastic surfaces. Strong adhesion.

| Property | Typical values |
|-----------------------------|-----------------|
| Breaking Strength (tensile) | 1,2 da N/cm min |
| Elongation at break | 5% min |
| Adhesion to steel | 4 N/cm min |
| Adhesion to backing | 4,5 N/cm min |
| Flame resistance BS476-7 | Class 1 |

| PRODUCT / Item | Colour | Width | Thickness | Length |
|----------------------|-----------|-------|-----------|--------|
| MCA-ALL 75 R42562 | Aluminium | 75 mm | 0,06 mm | 50 m |





HEATING CABLES DOMESTIC USE

PIPING

CONSTANT POWER



STOP ICE

SELF-REGULATING



ICE KILLER
MCA

RAMPS

CONSTANT POWER



EASY CABLE
EASY RAMP

SELF-REGULATING



MCA RAMP

GUTTERS

CONSTANT POWER



EASY FROST

SELF-REGULATING



MCA 8



CHARACTERISTICS

Power: 12 W/m
Power supply: 230 V - 50 Hz
Cable dimensions: ~ 5x7 mm
Min. installation temperature: +5°C
Max. working temperature: +70°C
Heating cable type:
 2 conductors, screened cable
Insulation: XLPE
External sheath: PVC
Min. bending radius: 3,5 D
Protection degree: IP X7
Marking: CE



Integrated Bimetal Thermostat
(ON + 3°C - OFF +10°C)



Complete Connections and power cord
(1,5 m - 3 x 0,75 mm²)

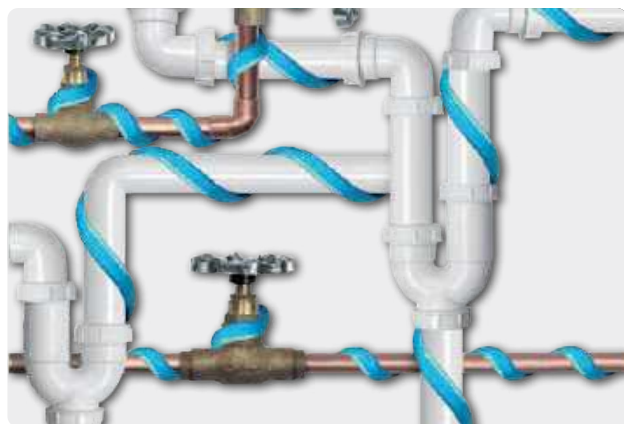
STOP ICE

Constant power anti-freeze kit complete with thermostat and plug.

Raytech Stop Ice is a pre-assembled kit consisting of a constant wattage heating cable of 12 W/m, complete with contact thermostat (installed on the end of the heating cable) and power cable with plug. Stop-ice is particularly suitable for frost protection, and prevention of possible damages caused by low temperatures on pipes, valves, faucets, water meters, troughs, bowls and small tanks.

- Easy and quick to install
- No need for any external temperature control system, thanks to its built-in thermostat
- Low energy consumption

| Product | Power (W/kit) | Specific power (W/m) | Length (m) |
|----------------|---------------|----------------------|------------|
| Stop Ice 2/12 | 24 | 12 | 2 |
| Stop Ice 5/12 | 60 | 12 | 5 |
| Stop Ice 10/12 | 120 | 12 | 10 |
| Stop Ice 18/12 | 216 | 12 | 18 |



LINUS

Self-adhesive thermal insulating tape.

To offer a complete solution in the field of electrical tracking, Raytech has developed, LINUS, an insulation tape to maintain temperature. The product is a closed-cell expanded synthetic rubber, low thermal conductivity and extremely flexible tape. The rubber tape is coupled with an aluminium sheet to protect against tearing, for greater resistance to perforation and higher tensile resistance. It also protects very well against UV radiation. The tape is self-adhesive for easy application on traced pipes. The closed cells and the special material type give the tape very high insulating properties and optimal behaviour in the presence of condensation.

| Product | Width (mm) | Thickness (mm) | Length (m) |
|---|---------------------|----------------|------------|
| LINUS | 50 | 3 | 10 |
| LENGTH PIPE I can insulate with 1 LINUS tape 50% overlapped | pipe Ø ¾" (DN 20) | 2,2 m | |
| | pipe Ø 1" (DN 25) | 1,9 m | |
| | pipe Ø 1 ¼" (DN 32) | 1,6 m | |



CHARACTERISTICS

Density: 0,7
Temperature range: -50°C -105°C
Coefficient of thermal conductivity (λ):
 0,039 W/mK a 50°C
Flame resistance: Bs3-d0
 (DIN EN 13501-1)

STOP ICE PLUS

Constant power anti-freeze kit complete with thermostat, connection plug and insulation tape.

STOP ICE + LINUS

- Stop Ice 12 W/m constant power cable, complete with connection plug and thermostat
- 3 mm LINUS insulation tape, for application on already traced pipe with a cable, to apply with 50% overlap

As an example, with a 10 m long LINUS tape, about 2.2 m of ¾", traced with the Stop Ice cable, can be insulated.

HEATING CABLE
BUILT-IN THERMOSTAT
BUILT-IN PLUG



TAPE INSULATION
TO MAINTAIN T
EMPERATURE



| Product | Power (W/kit) | Length cable (m) |
|-----------------|---------------|------------------|
| Stop Ice Plus 2 | 24 | 2 |
| Stop Ice Plus 5 | 60 | 5 |



CABLE

Specific power: 12 W/m
Power supply: 230 V- 50Hz
Cold cable: 3 x 0,75 mm² - L = 1,5 m
Temperature control: integrated bimetallic thermostat
ON / OFF: +3°C / +10°C

INSULATION TAPE

Temperature range: -50 / +105°C
Coefficient of thermal conductivity (λ):
 0,039 W/mK a 50°C
Dimensions: 50 mm x 3 mm x L10 m

ICE KILLER

Cut and install **self-regulating** cable kit, complete with connection side and termination kit.

The Ice Killer kit is composed of a 30 m self-regulating cable coil, complete with connection side and termination accessories. The cable can be cut to the desired length, installed on the pipe or tank, connected to the mains and terminated at the opposite end. The economic and compact Ice Killer kit is sold in an attractive, easy to carry, easy to handle on-site package, is small in size, very flexible and can be easily adapted to bends in the pipe.

The Ice Killer cable is laid linearly or wound around the pipe, depending on the specific necessary power. It is then fastened to the same by means of inextensible tape (Raytech MCA-FV or MCA-ALL75 type tapes), terminated with accessories contained in the kit and then clad with the insulation. Operating temperature is reached very quickly and is maintained almost constant even with room temperature variations.

Supply voltage: 230 V
Min installation temperature: -30°C
Cable dimensions: 7,7 x 5,3 mm
Max temperature with powered cable: 65°C
Max exposure temperature with non-powered cable: 65°C

| Product | Specific power a 10°C (W/m) | Kit composition |
|--------------|-----------------------------|---|
| Ice Killer 2 | 10 | 30 m cable Connection accessory Termination accessory |
| Ice Killer 6 | 18 | 30 m cable Connection accessory Termination accessory |

| Starting temperature | Maximum circuit length (m) | | | |
|--|----------------------------|-------|--------------|-------|
| | Ice Killer 2 | | Ice Killer 6 | |
| | 0°C | -20°C | 0°C | -20°C |
| 10 A electrical protection, characteristic C switch with differential 30 mA protection | 95 | 77 | 58 | 41 |



MCA

Self-regulating cable for anti-freeze use or for maintaining temperatures for general use.

For anti-freeze use on pipes or tanks or for maintaining process temperatures under 65°C, even in hazardous areas. Maintenance-free, reliable, easy to install. Suitable even in the presence of mild inorganic solutions.

| Product | Power voltage (V) | Minimum installation temperature (°C) | Power at 10°C (W/m) | TEMPERATURE MAX | |
|---------|-------------------|---------------------------------------|---------------------|-------------------------------|-------------------------------------|
| | | | | Continuous cable powered (°C) | Intermittent cable not powered (°C) |
| MCA3 | 220-240 | -30 | 10 | 65 | 80 |
| MCA5 | 220-240 | -30 | 15 | 65 | 80 |
| MCA8 | 220-240 | -30 | 25 | 65 | 80 |

| ELECTRICAL SIZING | MAXIMUM LENGTH OF THE CIRCUITS IN THE HEATING CABLE (m) | MCA3 | | | | | | | | | MCA5 | | | MCA8 | | |
|--|---|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| | | Starting temperature (°C) | | | | | | | | | | | | | | |
| | | +10° | -10° | -20° | +10° | -10° | -20° | +10° | -10° | -20° | +10° | -10° | -20° | | | |
| Switchgear protection (A), with C curve and 30mA* differential protection* | 10 A | - | - | - | 103 | 71 | 62 | 64 | 47 | 37 | | | | | | |
| | 16 A | 177 | 144 | 125 | 160 | 114 | 99 | 103 | 75 | 60 | | | | | | |
| | 20 A | - | 149 | 139 | - | 133 | 124 | 126 | 94 | 75 | | | | | | |
| | 25 A | - | - | - | - | - | - | - | 107 | 94 | | | | | | |

* Suggested where protection of people is requested; installations with no personnel admittance can be performed with 100 to 300 mA.

| Pipe Ø | Thermal insulation thickness | | | | | | | | | | |
|--------|------------------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-----|
| | 10 mm | | 20 mm | | 30 mm | | 40 mm | | 50 mm | | |
| | Outer temperature (°C) | | | | | | | | | | |
| inch | mm | -10 | -20 | -10 | -20 | -10 | -20 | -10 | -20 | -10 | -20 |
| 1/2" | 15 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 3/4" | 20 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 1" | 25 | 1-3 | 1-8 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 1¼" | 32 | 1-3 | 1-8 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 1½" | 40 | 1-3 | 1-8 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 2" | 50 | 1-8 | 1-8 | 1-3 | 1-8 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 2½" | 65 | 1-8 | 1-8 | 1-3 | 1-8 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| 3" | 80 | 1-8 | 2-8 | 1-3 | 1-8 | 1-3 | 1-5 | 1-3 | 1-3 | 1-3 | 1-3 |
| 4" | 100 | 1-8 | 2-8 | 1-5 | 1-8 | 1-3 | 1-5 | 1-3 | 1-5 | 1-3 | 1-3 |
| 6" | 150 | 2-8 | 2-8 | 1-8 | 2-8 | 1-8 | 1-8 | 1-3 | 1-8 | 1-3 | 1-8 |
| 8" | 200 | 2-8 | - | 1-8 | 2-8 | 1-8 | 1-8 | 1-8 | 1-8 | 1-3 | 1-8 |
| 10" | 250 | 2-8 | - | 2-8 | - | 1-8 | 2-8 | 1-8 | 1-8 | 1-8 | 1-8 |

MCA connection accessories

| | | | | | | | |
|---|-------------------------------------|---|---|--|---|--|---|
| <p>MCA Universal IP68 • Connection kit integrated with the terminal box. • Termination Kit. • Joint Kit.</p> | <p>MCA-Y Branch Kit.</p> | <p>MCA-BOX3 / 4 Connection boxes between heating cables or heating and power cables.</p> | <p>MCA-AL Thermal insulation pass-through kit.</p> | <p>MCA-PRESS Cable gland.</p> | <p>MCA-EA Warning label.</p> | <p>MCA-VF Glass fiber tape.</p> | <p>MCA-ALL Aluminium self adhesive tape 25 or 75 mm.</p> |
|---|-------------------------------------|---|---|--|---|--|---|



HOW TO CHOOSE MCA CABLE FOR ANTIFREEZE PROTECTION

The table gives the cable quantity for tube length unit (1st number) and the MCA cable code number (2nd number) versus tube diameter, thermal insulation thickness (for rockwool) and min outer temperature.

For uses other than anti-freeze, request design from Raytech technical direction.

For other accessories see page 219

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