

Cable Entries

Universal Enclosures
Selection Guide



se.com/enclosures

Life Is On

Schneider
Electric

New Cable Management Products

New

Cable Entries

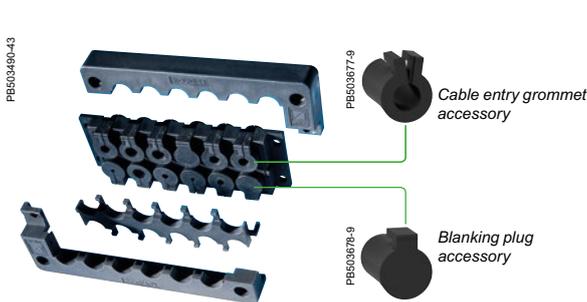
Advantages of these new cable entry plates:

- Different cable diameters can be used in the same installation.
- Can be mounted on any side of the enclosure.
- Helps saving Panel Builders and Installers time during the cabling stage.



> Cable Entry Multi-CS

Enables entry and lead through of pre-assembled cables for **easy and quick installation** in the control cabinet and clamping box. The cable entry Multi-CS can accommodate up to **48 pre-assembled cables** with a very high packing density. Cable grommets enable use of a **wide variety of cables**.



IP65

Operating temperature
-30 °C / +100 °C

Clamping range
2 to 22 mm

- Cable installation without interruption.
- Standard cut-out dimensions.
- Easy assembly.
- Protection class IP65.
- Stable construction.
- Integrated strain relief.
- Operating temperature: -30 °C / +100 °C.
- Flammability: V0.



> Cable Entry Multi-CF

Cable entry Multi-CF is made of **special modified polypropylene**.

This entry plate is used wherever **quick mounting with a high packing density** is required and cables must be protected.



IP65

Operating temperature
-30 °C / +70 °C

- Significant time savings in assembly.
- High packing density.
- Cables can be combined within a single entry.
- Wide range of cable diameters can be used.
- Very slim design.
- Protection class IP65.
- Operating temperature: -30 °C / +70 °C.
- Flammability: V0.

How it Works



New Cable Management Products

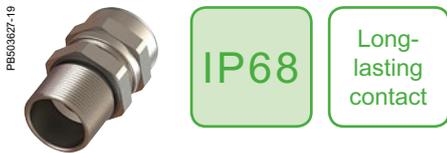
New

Industrial Cable Glands

These new cable glands extend our range of cable management accessories for different applications.

> EMC Cable Glands

Simple application and fast installation, with the patented contact system, make this gland unique among armoured cable glands.



- Long-lasting contact thanks to high-definition contact spring.
- Moving spring contact helps reduce the risk of sheath damage.
- Easy assembly.
- Strain relief and sealing performance for EMC applications.
- IP68 and UL approved (in accordance with UL514).

> Snap-In Cable Glands

Specially designed for **easy assembly** to housings **without threaded holes**.



- Can be housed without threaded holes.
- Easy assembly.
- Easy disassembly by means of a "disassembling tool".
- Peace of mind and time saving.
- Fits in a wide range of wall thickness: 0.5 mm to 4.0 mm.
- Smart and ergonomic.
- UV-resistant.

> Stainless-Steel Cable Glands

This type of stainless-steel is for **use in high quality machines and housing and in corrosive environments**.



- Easy assembly.
- High quality strain relief and sealing.
- High level of performance for standard industrial applications, both indoors and outdoors.
- Manufactured according to DIN EN 62444/50262 standard.
- Resistance to extreme high and low temperatures.
- Same quality of stainless-steel as the enclosures.

> Disassembling Tool

PB503538

PB503539

Specially designed for **easy disassembly** **snap in glands without threaded holes**.

FlexiCable

The Revolutionary Cable Entry Plate!

IP55

Max Ø
26 mm

**Fire
resistant
650°C**

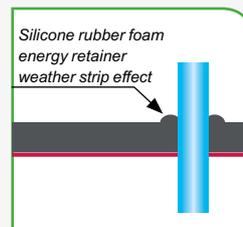
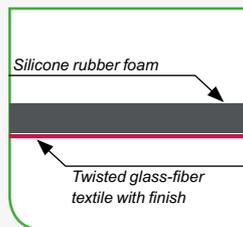
Short
circuit
validated
250 A, 25 kA

No Marking,
No Drilling,
No Tools... It Just Works!



- For cable diameters up to 26 mm.
- Number of cables limited only by the size of the plate.
- Copper or aluminium.
- Rigid or multiwire.
- Power, control or IT.

Exclusive, patented technology: composite material, made of reticulated silicone rubber foam combined with high-performance glass-fiber textile (Siltop® by Ferrari SA).



Round cables

> Elevator Solution

> Repair Kit

DB407478-90

IP50

[With flat cable for elevator: IP50]

PI5002587

[To fill-in unused hole]

Cable Management



Multiple.



Single.

Key Features When Selecting a Cable Entry (1/4)

1 Multiple Cable Entries Or Single Cable Entries?

This choice depends on the number of cables going through the cable entry: generally for 3 or more cables, choose a multiple cable entry. This will make your installation faster and more economical.

In other words, your final bill will not necessarily be lower if you use single cable entries!

Flexibility of installation: for high flexibility, multiple cable entry is the right choice.

2 Cable Entry Material

- **Soft membranes** allow cables to be easily pushed through, but still offer a good IP rating and protection from moisture and physical intrusions. Cable retention force, however, is lower than with other alternatives.



Push the membrane into a standard hole.



Make a small hole in the membrane.



Push the cable or tube through the guide hole.



Pull the cable or tube back some 20 mm to lock it.

- **Hard plastic cable entry plates** require tools to create the opening (drill or knife) but, thanks to the cable gland, they offer a very high retention force. Another use of this solution is for public places, since the hard surface helps prevent objects being pushed in.
- **Combined: the material of the cable entry plate is hard plastic**, but the cable is pushed through a soft membrane. In this case you have the advantages of both soft membranes (easy and fast installation, flexibility) and hard plastic membranes (high retention force, when using specific cable clamps).



PB502707-70



PB501702



PB501703-30



PB501704-35



PB502706-88

3 Cable Glands

Some multiple cable entries require a cable gland to be able to retain the cables and provide the required degree of protection.

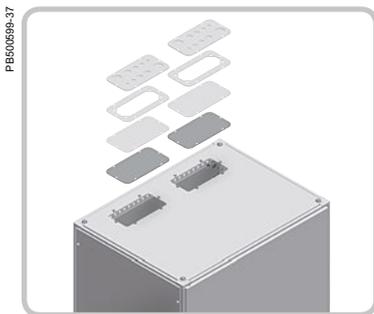
Cable Management

Key Features When Selecting a Cable Entry (2/4)

4 Installation Possibilities

There are 4 ways to install your cable entries on the enclosure:

- **Using a cable entry:** the standard cable gland plate of your S3D wall-mounting enclosure is unscrewed and replaced by the cable entry. A gasket between enclosure and cable entry will help ensure good water and dust tightness.
- **Modifying the standard cable gland plate:** the standard cable gland plate is unscrewed and machined. A cut-out is created in it.
- **On cable gland plate adapter:** this plate, which has the outer dimensions of a standard cable gland plate, has one or more pre-cut cut-outs of standard dimensions (FL13 and FL21). On steel wall-mounting enclosures, the plate can replace the standard cable gland plate once the cable entry is fitted into it. On polyester enclosures, a cut-out must be created. Schneider Electric provides this service: a precise laser cut-out can be factory-created upon request. On steel floor-standing enclosures, you may either use the specific cable gland roof or create a cut-out (*see expert's tip 1 - page 8*).



| Cable gland plate adapters | | | | |
|----------------------------|-------------------------|--------------------------|-----------------|-----------------|
| Enclosure range | 1 membrane | 2 membranes | 3 membranes | 4 membranes |
| Spacial S3D | PB500604-18 | PB500604-15 | | DB300718-15 |
| | NSYTL•FL | NSYTL•2FL | - | NSYTLG4FL |
| Spacial SF | PB502708-10 | PB502708-12 | PB500697-15 | |
| | NSYSFLR•• NSYSFLR••• | NSYSFLR••• NSYSFLR••• | NSYSFLR••• | - |

- **Drilling directly the enclosure:** a cut-out is created on the enclosure's side according to the cable entry's dimensions (*see expert's tip 1 - page 8*).

Spotlight On...

FL13 and FL21 are standard cut-out dimensions frequently used in northern European countries and also used by our enclosures for several years now.

Cable Management



Full flexibility.



Medium flexibility.

Key Features When Selecting a Cable Entry (3/4)

5 Flexibility Of The Installation

- **Full flexibility:** this means that cables can be added/removed easily, changing:
 - quantity
 - diameter
 - position
 (see expert's tip 2 - page 8).
- **Medium flexibility:**
 - the amount, diameter or position of cables can be changed to a limited extent.
- **Low flexibility:**
 - it is not possible to change the above parameters.

6 Reversibility

- **Full reversibility:**
 - this means that cables can be added/ removed easily without losing their initial characteristics, such as water tightness.
- **Medium reversibility:**
 - for soft membranes, once the cable has been removed, there may be a loss of IP depending on the size of the cable and the cut. For hard plastic entries or combined material entries, initial characteristics are regained by adding plugs.
- **Low reversibility:**
 - the cable entry must be completely replaced in order to regain the initial characteristics.

7 Degree Of Protection (IP)

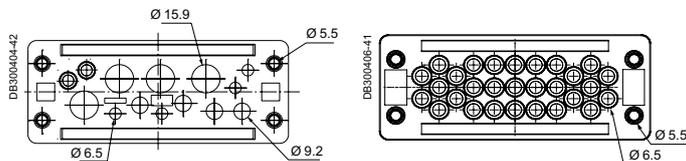
If an enclosure is to be used in a clean, dry and well insulated environment, lower levels of IP may be acceptable (IP54 or IP55). In a dusty environment you may require higher IP levels, such as IP65 or IP68 (see expert's tip 4 - page 8).

8 Cable Retention

Choose the right level of cable retention according to your needs. For locations accessible to the public, preferably choose a high level of cable retention.

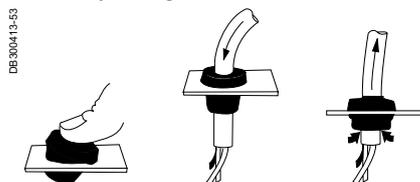
9 Cable Diameter

Choose the cable entry seal according to the cable diameter. Take into account cable diameter tolerances.



10 Cable Installation Time

Each cable entry has different installation characteristics. Some can be installed easily and quickly thanks to the soft membrane. Take this into account depending on labour costs in your region.



Cable Management

Key Features When Selecting a Cable Entry (4/4)



11 Quantity Of Cables To Be Fitted For a Given Surface

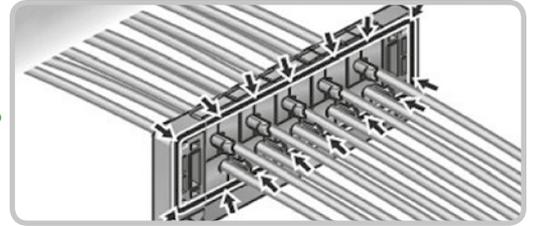
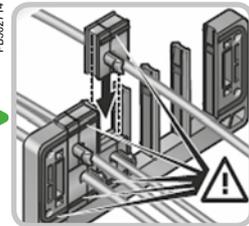
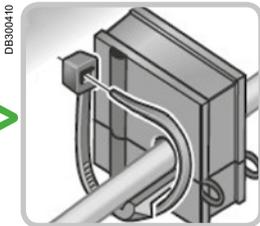
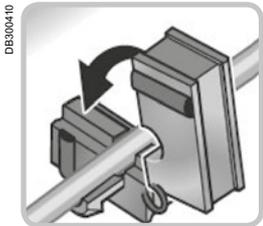
For some installations, a large quantity of cables must go through the cable entry. Some cable entries can receive a high density of cables, which can result in more economical installation (fewer cable entries to be bought). For small enclosures, it may simply be impossible to install too many cable entries due to the available space on the enclosure's wall (*see expert's tip 3 below*).



12 Cable Entries For Cables With Connectors

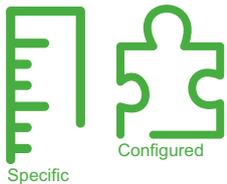
Some cables have large connectors which cannot be pushed through tight cable clamps or cable seals.

These cable entries have the unique advantage of not requiring the cable to be cut, thanks to the snap-fitting system.



A high cable retention force is provided thanks to the integrated cable fastener.

[!] Expert's Tips

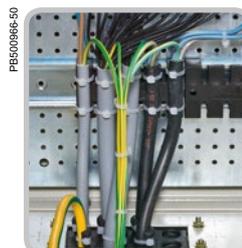
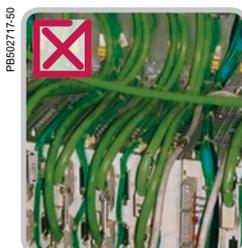
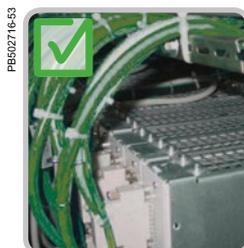


1 • Some cable entries require cut-outs to be machined on the enclosure or cable gland plate. Our customized offer provides this service. The quality of your enclosure will therefore be improved since the painting operation is performed after creating the cut-outs.

2 • Installing a cable entry with full flexibility is the solution when a large series of enclosures is being prepared for different types of installations. By using one combination of enclosure-cable entry, you can cover a large variety of installations!

3 • When the cable entry has been defined, the next step is cable management inside the enclosure. For correct thermal management, all wires must be fitted and attached so as not to create an obstacle for correct air flow. Consult our Universal Enclosures catalogue for cable management accessories (such as cable ducts) and consumables (such as cable ties).

4 • When your environment requires a high level of IP for your installation, make sure you have an appropriate thermal management system to avoid condensation or overheating problems. Consult our Thermal Management offer in our Universal Enclosures catalogue and our Control Panel Technical Guide related to this issue.



Selection Guide

1
Look for these numbers on pages 5 to 8 for more detailed information

Simple Cable Entries



| Characteristics | Simple-1 | Simple-2 | Simple-3 | Simple-4 | Simple-5 | |
|-------------------------------------|--|--|---|--|--|--|
| Description | Mixed membrane entries for enclosure thickness 20/10' - 32/10' mm. | PVC adjustable cone-shaped entries for enclosure thickness 30/10' - 32/10' mm. | Quick cable entries for enclosure thickness 10/10' - 40/10' mm (5/10' - 20/10' mm for ref. IMT36179). | PVC adjustable cone-shaped entries for PG tubes or for enclosure thickness 12/10' - 15/10' mm. | ISO cable gland. | |
| Material | SBS | PVC | EPDM | PVC | PA6, neoprene gasket | |
| Colour | RAL 7035 light grey or RAL 9003 white | - | Grey: NCS 5500 | - | RAL 7035 grey | |
| 2 Cable entry material | Soft membrane | | Combined | | | |
| 3 Cable glands to be fitted | Not applicable | | | | | |
| 4 Cable entry installation | On cable gland plate or directly on enclosure | | | | | |
| 5 Flexibility of the installation | Low | | | | | |
| 6 Reversibility | Medium | | | | | |
| 7 Ingress protection rating | IP55 | IP55 | IP67 | IP55 | IP68 | |
| 8 Cable retention | Low | Low | Medium | Low | High | |
| 9 Cable diameter (mm) | From 20 to 40 | From 5 to 87 | From 12 to 50 | From 16 to 44 | From 12 to 40 | |
| 10 Cable Installation time | Fast | Fast | Fast | Fast | Slow | |
| 11 Quantity (max. number of cables) | + | + | + | + | + | |
| 12 Cables with connectors | No | No | No | No | No | |
| Cut-out dimensions (mm) | Various circular hole diameters to fit cable diameter | | | | | |
| External dimensions (mm) | Ø 23 to 44 | Ø 25 to 98 | - | Ø 25 to 52 | Ø 15 to 46 | |
| Certificates | - | - | - | - | Glow wire resistance: 960°C | |
| Standard | - | - | - | - | Compliance with VDE, UL and CSA | |
| Flame resistance | 750°C | - | 750°C | - | 750°C | |
| Temperature range | - | - | - | - | - | |
| References | RAL 9003 IMT36130 IMT36131 | RAL 7035 ISM71071 ISM71072 ISM71073 ISM71074 | NSYECPC3 NSYECPC5 NSYECPC6 NSYECPC9 NSYECPC15 | IMT36179 IMT36180 IMT36181 IMT36182 IMT36183 IMT36184 IMT36185 | NSYEC1 NSYEC3 NSYEC4 NSYEC5 NSYEC7 | ISM71501 ISM71502 ISM71503 ISM71504 ISM71505 ISM71506 IMT36150 (1) |

(1) Cable gland with high resistance to fire.

For details, type the reference in the search engine at se.com/enclosures.

Selection Guide

1
Look for these numbers on pages 5 to 8 for more detailed information

New

New

New

Multiple Cable Entries



| Characteristics | Synthetic snap-in cable gland | Stainless-steel cable gland with lamellar insert | EMC cable gland | Flexicable | Multi-A | Multi-C | Multi-R |
|-------------------------------------|---|---|--|--|---|---|--|
| Description | Threadless. Easy assembly and disassembly. Suitable for walls from 0.5 to 4 mm thick. | Lamellar technology provides excellent resistance to traction as well as excellent torsional protection. For outdoor use, or for aggressive environments. | EMC cable gland with contact spring. Thread type: ■ Metric EN 60423 ■ Other types are available on request | Full membrane cable gland plate for wall-mounted enclosures S3D. | FL13 & FL21 type membranes. | Circular connector-free entries. | Rectangular connector-free entries. |
| Material | PA6 Polyamide, neoprene gasket | Stainless-steel AISI 304L or AISI 316L, neoprene gasket | Nickel-plated brass, neoprene gasket | HCE for membrane - Steel for frame | TPE, SBS, SEBS and PP co-polymer - Halogen-free | Polyamide | Polyamide |
| Colour | RAL 7035, RAL 7001, RAL 9005. Other colours on demand | - | - | - | RAL 7035 | - | - |
| 2 Cable entry material | Non-armoured | Non-armoured | - | Soft membrane | Combined | Soft membrane | Soft membrane |
| 3 Cable glands to be fitted | - | - | - | No | Optional: specific cable clamp ref. NSYAECPFLACA to be used | No | No |
| 4 Cable entry installation | On cable gland plate or directly on enclosure | | | Replaces cable gland plate (S3D) or directly on enclosure | On cable gland plate adapter or directly on enclosure | On modified cable gland plate or directly on enclosure | On cable gland plate with special cut-out or directly on enclosure |
| 5 Flexibility of the installation | Low | - | - | Full | Medium | Medium | Medium |
| 6 Reversibility | Medium | - | - | Medium | Medium | Full | Full |
| 7 Ingress protection rating | IP68 | IP68 | IP68 | IP55 | IP65 | IP65 | IP65 |
| 8 Cable retention | High | High | - | Low | High with cable clamp, (up to 18 daN) | Medium | Medium |
| 9 Cable diameter (mm) | From 16 to 40 | From 12 to 40 | From 3/6.5 to 19/28 | Up to 26 | From 13 to 30 | From 3 to 15.9 | From 4.3 to 15.9 |
| 10 Cable Installation time | Slow | Slow | - | Fast | Medium | Fast | Fast |
| 11 Quantity (max. number of cables) | + | + | - | +++ | ++ | ++ | ++ |
| 12 Cables with connectors | No | No | - | No | No | No | No |
| Cut-out dimensions (mm) | Various circular hole diameters to fit cable diameter | | | 178 x 63 to 478 x 63 | FL13 and FL21 | Ø 50.5 Ø 63.5 | 112 x 36 |
| External dimensions (mm) | From Ø 22 to 46 | From Ø 14 to 43 | Ø 12 to 40 | 245 x 130 to 545 x 130 or 495 x 220 | 216 x 84 | Ø 58 Ø 71 | 146 x 14 x 58 |
| Certificates | UL 94 V-2 (except for the size M40) | UL 94 V-2 | Standards: UL 514 | Tested on short-circuit effect 250 A, 25 kA in accordance with IEC 61439-1 | Cable anchorage pull test: EN 50262. Long term UV-resistance: ASTM G 154-06 | ■ UL 94 V-0 ■ Fire resistance: V0 | ■ UL 94 V-0 ■ Fire resistance: V0 |
| Standard | DIN EN 62444, UL 514B, UL 514B§8.26.7 | DIN EN 62444, UL 514 | - | - | - | - | - |
| Flame resistance | - | - | V2 depending on UL94 | 650°C | 750°C | 650°C | 650°C |
| Temperature range | -20°C to + 100°C | -20°C to + 100°C | -20°C to + 100°C | - | -40 to +85°C | - | - |
| References | NSYCGSP16 NSYCGSP20 NSYCGSP25 NSYCGSP32 NSYCGSP40 | AISI 304L NSYCGX12 NSYCGX16 NSYCGX20 NSYCGX25 NSYCGX32 NSYCGX40 | AISI 316L NSYCGX12H NSYCGX16H NSYCGX20H NSYCGX25H NSYCGX32H NSYCGX40H | NSYCGHF12 NSYCGHF16 NSYCGHF20 NSYCGHF25 NSYCGHF32 NSYCGHF40 | NSYTLCEME NSYTLDEME NSYTLLEME NSYTLFME NSYTLGME Repair kit NSYTLREP | FL13 NSYAECPFLA7 NSYAECPFLA10 FL21 NSYAECPFLA25 NSYAECPFLA33 | NSYTSAM504SE NSYTSAM508SE NSYTSAM638SE NSYTSAM6313SE NSYSA2414SE NSYSA2417SE NSYSA2422SE NSYSA2423SE NSYSA2429SE |

(1) "Pop-out" membranes only.
(2) Metallic plate.

For details, type the reference in the search engine at se.com/enclosures.

Cable Gland Snap-In Accessories



| Characteristics | Disassembling tool | | | | |
|-----------------|--------------------------------|---------|---------|---------|---------|
| Material | PA6 Polyamide, neoprene gasket | | | | |
| For cable gland | M16 | M20 | M25 | M32 | M40 |
| | NSYDT16 | NSYDT20 | NSYDT25 | NSYDT32 | NSYDT40 |

Selection Guide

New



New



1
Look for these numbers on pages 5 to 8 for more detailed information

| Multi-CS | Multi-T | Prisma | Multi-F | Multi-CF | Multi-CR | Multi-H | Characteristics |
|--|--|--|--|--|--|--|--|
| Modular entry with room for up to 48 pre-assembled cables. | FL21-type membranes. | FL21-type membranes or rectangular. | FL13 & FL21 pre-configured flanges. | Cable entry for protected cables. | Cable entries with gasket for cables equipped with connectors. | FL21 insulated flange with ISO knockouts. | Description |
| Reinforced polypropylene and TPE. Halogen-free Black | TPE RAL 7035 | Insulating material RAL 9001 | Fibreglass-reinforced polypropylene and TPE - Halogen-free RAL 7035 | Reinforced polypropylene and TPE. Halogen-free Black | Polyamide - | Polycarbonate glass-fiber reinforced RAL 7035 | Material Colour |
| Soft membrane | Soft membrane | Soft membrane | Soft membrane | Soft membrane | Hard plastic | Hard plastic | Cable entry material |
| No | No | No | No | No | Yes | Yes | Cable glands to be fitted |
| On cable gland plate adapter or directly on enclosure | On cable gland plate adapter or directly on enclosure | | | | | | Cable entry installation |
| Full | Medium | Medium | Medium | Full | Low | Low | Flexibility of the installation |
| Full | Medium | Medium | Medium | Full | Medium | Medium | Reversibility |
| IP65 | IP66 | IP55 | IP65 | IP65 | IP54 | IP65 | Ingress protection rating |
| Medium | Low | Low | Low | Medium | High (with fastener) | High (with cable clamp) | Cable retention |
| Up to 22 | From 5 to 60 | From 28 to 60 (FL21) From 7 to 72 (rectangular) | From 16 to 50 | From 9 to 30 | From 3 to 31 | From 12 to 25 | Cable diameter (mm) |
| Fast | Fast | Fast | Fast | Fast | Slow | Slow | Cable Installation time |
| +++ | ++ | ++ | ++ | +++ | ++ | ++ | Quantity (max. number of cables) |
| Yes | No | No | No | Yes | Yes | No | Cables with connectors |
| 112 x 36 | FL21 | FL21 | 134 x 52 (FL13) 214 x 90 (FL21) | 112 x 36 | 36 x 91 (NSYDCE168) 36 x 112 (NSYDCE24*) | FL21 | Cut-out dimensions (mm) |
| 148 x 58 x 15 148 x 58 x 18 ■ UL 94 V-0 ■ Fire resistance: V0 | 214 x 88 UL 94 V-0 | 216 x 84 | 134 x 52 214 x 90 ■ UL 94-HB ■ UL-approved materials | 148 x 60 x 10 ■ UL 94-HB ■ Fire resistance: V0 | 146 x 58 | 215 x 85 UL94-V1 | External dimensions (mm) Certificates |
| - | - | - | ■ EN 60529:1991 ■ EN 60670-1:2005/A1 ■ EN 50262:1998 EMKO-TUI (03-SEC) F1001/84 ■ Semko report 816003 | - | - | - | Standard |
| - | 650°C | - | - | - | 650°C | 750°C | Flame resistance |
| -30°C to +100°C | -40°C to +100°C | - | -20°C to +125°C (1) | -30°C to +70°C | -40°C to +80°C | ■ For normal operation: -40°C to +80°C ■ For short durations: -40°C to +120°C | Temperature range |
| NSYDCD2412 NSYDCD244 NSYDCD248 NSYDCD249 | NSYAECPLBP (2) NSYAECPLT7 NSYAECPLT25 NSYAECPLT35 | FL13 08898 08899 FL21 08881 08892 08895 08897 | FL13 NSYAECPKFL11 FL21 NSYAECPKFL7A NSYAECPKFL10 | NSYTLK2414 NSYTLK2422 NSYTLK2428 NSYTLK2446 NSYTLK244M | NSYDCE168 NSYDCE240 NSYDCE244 NSYDCE2410 | NSYTSKFL | References |

Multi-CS Accessories



| Characteristics | Cable gland | Blanking plug | |
|-----------------|--|-----------------------------|---------------|
| | Ø 2-3 to 21-22 mm | For cables 2-12 to 12-22 mm | |
| Material | Reinforced polypropylene and TPE. Halogen-free | | |
| For cable gland | Size of cable gland | References | For cable (Ø) |
| | Small | NSYCEJDS** | 2-12 mm |
| | Large | NSYCEJDL** | 12-22 mm |
| | | References | |
| | | NSYCEJDS0 | |
| | | NSYCEJDL0 | |



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