

# ELECTROTECHNICAL NEWS 2023

Electrotechnical equipment producer

SEPTEMBER

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**32 A**  
**4 mm<sup>2</sup>**

**WIRE CONNECTORS**  
**IDEALNA SERIES**  
LEVER, PUSH-IN, IN-LINE

**MULTI-POLE JUNCTION BOXES**  
MULTIWALL SLIM  
MULTIBOX

**SIMBLOCK STB 16**  
RAIL MOUNTED TERMINAL BLOCK

**SIMET**

JUNCTION BOX WITH SCREW

CONNECTION BUSBARS

SURGE ARRESTER FOR PV

DIGITAL ELECTRICITY METERS

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SimetSA



SimetSA

# Wire connectors IDEALNA series



## SCL Lever wire connectors

Provide ideal solutions for connecting solid, stranded or flexible wires. Their versatility and modern design make lever wire connectors safe and easy to use. The SCL series can be used on all AC electrical installations up to 32 A.



### Advantages

- ✓ Can be used on all AC electrical installations up to 32 A
- ✓ With all types of wires:
  - from 0.2 to 4 mm<sup>2</sup> for solid and rigid stranded wires
  - from 0.14 to 4 mm<sup>2</sup> for flexible wires
- ✓ Wire strip guide to check the correct stripping length
- ✓ Solid and stranded conductor inserted without lifting the lever
- ✓ Safe and reusable

	SCL2		SCL3		SCL5
Conductor cross-section  			0.2 ... 4 mm <sup>2</sup>		
			0.14 ... 4 mm <sup>2</sup>		
Max. ambient temperature			85 °C / 105 °C*		
Voltage rating			450 V / 600 V*		
Max. current			32 A		
Collective packaging	40 pcs	10 pcs	40 pcs	10 pcs	30 pcs
Catalogue no.	80 000 303	80 001 303	80 000 313	80 001 313	80 000 323
Standards	EN 60998-1; EN 60998-2-2; *UL 486C				

# SCP Push-in wire connectors

Their small size makes them ideal for use in restricted places. They are an excellent choice for combinations of cables with different cross sections. The SCP series is used for connecting wires in electrical boxes, lighting technology and other electrical installation work.

## Advantages

- ✓ Can be used on all AC electrical installations up to 32 A (SCP2, SCP3, SCP4)
- ✓ Can be used with solid and rigid stranded wires:
  - from 0.75 to 4 mm<sup>2</sup> for solid wires
  - from 1.5 to 2,5 mm<sup>2</sup> for stranded wires
- ✓ Colour coded for easy identification
- ✓ Ergonomic and compact design



	SCP2	SCP3	SCP4	SCP5	SCP6	SCP8	Name	Collective pack.	Catalogue no.
Conductor cross-section				0.75 ... 4 mm <sup>2</sup>			SCP2	100 pcs	88 000 001
				1.5 ... 2.5 mm <sup>2</sup>				10 pcs	88 001 001
Max. ambient temperature				85 °C / 105 °C*			SCP3	100 pcs	88 000 008
Voltage rating				450V / 600V*				10 pcs	88 001 008
Max. current	32 A / 20 A*			24 A / 20 A*			SCP4	100 pcs	88 000 004
Standards	EN 60998-1; EN 60998-2-2; *UL 486C; UL 467			EN 60998-1; EN 60998-2-2; *UL 486C				10 pcs	88 001 004
							SCP5	50 pcs	88 000 002
							SCP6	50 pcs	88 000 003
							SCP8	50 pcs	88 000 007

# SCS In-line wire connector

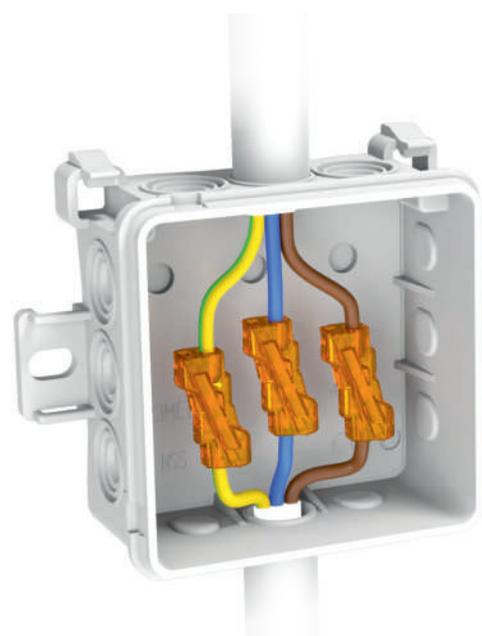
An excellent choice for extending wires. Tool-free push-in assembly makes installation extremely fast and easy. As an added bonus, there are two test ports for checking the connection. Owing to its design, the connector can be used in small home boxes as well as more extensive installations.

## Advantages

- ✓ Patented technology
- ✓ Used with solid and rigid stranded wires:
  - from 0.75 to 4 mm<sup>2</sup> for solid wires
  - from 1.5 to 2.5 mm<sup>2</sup> for stranded wires
- ✓ Can be used on all AC electrical installations up to 32 A
- ✓ Ideal for quick connections or for extending short cables
- ✓ Easily passes through standard knockouts



		SCS2	
Conductor cross-section		0.5 ... 4 mm <sup>2</sup>	
		1 ... 2.5 mm <sup>2</sup>	
Max. ambient temperature		85 °C / 105 °C*	
Voltage		450 V / 600 V*	
Max. current		32 A / 20 A*	
Collective packaging		100 pcs	10 pcs
Catalogue no.		80 000 108	80 001 108
Standards		EN 60998-1; EN 60998-2-2; *UL 486C; UL 467	





**IDEALNA**  
SZYBKOZŁĄCZKA



32 A

# Quick and safe installation

Press article

In accordance with current standards, the installation of electrical system requires using appropriate electrical components. When choosing products in this category, we should pay special attention to the installer's expectations. Traditional techniques and methods for connecting wires are becoming obsolete, and new solutions are taking their place. Modern lever wire connectors, push-in wire connectors and in-line wire connectors ensure safe, quicker, easier and more consistent installation.

For many years, the products manufactured by SIMET S.A. have been synonymous with safety and high quality. In order to support our customers following the highest standards, we have established cooperation with IDEAL INDUSTRIES, an international company originating from the USA. The effect of this cooperation is a new brand launched by SIMET S.A. this year: **wire connectors IDEALNASERIES**.



The connectors launched under this name are not only functional, but also innovative, safe and durable. Compatibility with the wires up to 4 mm<sup>2</sup>

, maximum rated current up to 32 A and halogen-free are the unique advantages, difficult to find in other connectors.

Lever wire connectors SCL series (Simet Connector Lever) present the European quality for connecting solid and stranded wires from 0.2 to 4 mm<sup>2</sup> as well as flexible wires from 0.14 to 4 mm<sup>2</sup>. This product is designed to make the installation process quicker and easier. The levers are made of polyketone, therefore they do not deform or break. In addition, they have been placed on the opposite side of the inserted cable to facilitate installation and avoid disconnecting the connection. The connection can be verified thanks to the transparent housing and two built-in test

ports. This series offers 2 ports (SCL2), 3 ports (SCL3) and 5 ports (SCL5) connectors.

**SC** L3



Pic. 1 Lever wire connector SCL series

**SC P2****SC P3****SC P4**

Pic. 2 Push-in wire connectors SCP series

The SCP series (Simet Connector Push-in) is manufactured in the United States and Japan. It is ideal for rigid wires from 0.75 to 4 mm<sup>2</sup>, and stranded wires from 1.5 to 2.5 mm<sup>2</sup>.

Push-in wire connectors allow up to 50% shorter installation time comparing to the traditional screw connectors. Both ergonomic and compact housing of the product is safe and adjusted to the installer's hand. SCP2, SCP3 and SCP4 can be used in all AC installations up to 32 A. This series also includes SCP5, SCP6 and SCP8 connectors used to connect more cables. For better identification of the products in this series, the connectors are marked with different colours.

An excellent choice for extending or connecting two cables is the patented in-line wire connector SCS series (Simet Connector Spliceline). Push-in, tool-free installation, for solid wires from 0.5 to 4 mm<sup>2</sup> makes SCS installation extremely quick and simple.

The SCS series in-line wire connector can also be used in all AC installations up to 32 A. The transparent polycarbonate housing with two test ports allows verifying the connection quality. Its small size makes the product easy to use even in hard-to-reach places.

Wire connector IDEALNA SERIES is offered in both standard cardboard packages and in foil mini bags 10 pcs. each. In addition, COMBO kits providing the recommended configuration of SCL, SCP, SCS connectors are available. They are offered in special boxes, which can also be easily configured according to the needs. This ensures that every installer can have all the necessary products at hand and thus avoid any surprising situations.

### Why is the connector from Simet S.A the best one?

The SCL, SCP, and SCS series connectors offer the easiest and quickest way to connect solid, stranded and flexible wires. Products of this brand comply with the following standards: EN 60998-1, EN 60998-2-2, UL 486C, UL 467, which guarantee the safety of use and confirm their unique quality.

Now with connectors from IDEALNA SERIES you can do much more...  
[www.idealnaszybkozlaczka.pl](http://www.idealnaszybkozlaczka.pl)

**SC S2**

Pic. 3 Patented in-line wire connector SCS series



Pic. 4 COMBO kit offering a recommended configuration of wire connectors SCL, SCP, SCS

# Porcelain screw terminal blocks - CPO series

CPO terminals due to the excellent insulating properties of porcelain and resistance to high temperatures, terminal blocks of this type are widely used in various types of electrical apparatus, both for industrial and domestic use.

## Installation

In order to connect the wire to the threaded terminal of the porcelain terminal block, strip the wire end at the specified length (in the case of multi-stranded wire ends - twist it) and after inserting it into the hole of the terminal - tighten the terminal screw.



	CPO 1-2.5	CPO 2-2.5	CPO 2-2.5A	CPO 3-2.5	CPO 3-2.5A
Conductor cross-section	4 mm <sup>2</sup>				
	2,5 mm <sup>2</sup>				
Max. current	32 A (solid) / 24 A (stranded)				
Voltage	500 V				
Working temp. of components	+350 °C (insert) / +1000 °C (body)				
Operating temp.	-40 °C ... +350 °C				
Collective packaging	20 pcs	20 pcs	16 pcs	16 pcs	10 pcs
Catalogue no.	80 015 516	80 016 516	80 017 516	80 018 516	80 019 516

# Rail-mounted terminal block STB 16

The unique design of the connectors improves the functioning of electrical connections. The unique shape of the core and the special corrugation of the body for better heat dissipation.

## SIMBLOCK

### Application areas

- mechanical engineering
- production plants
- switch gears
- wind-mill powered plants
- solar engineering
- automation

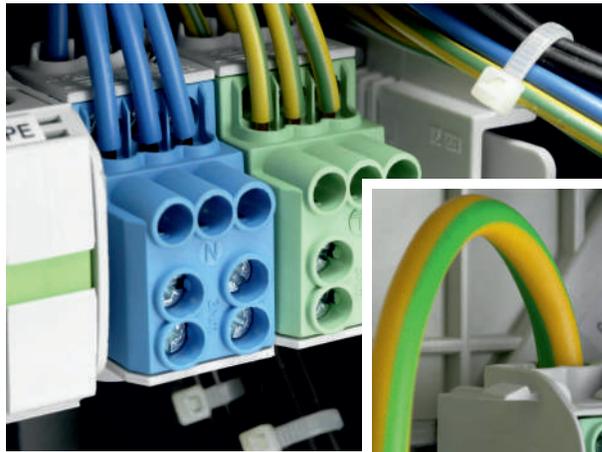


	STB 16
Terminal cross-section	2 x (1,5 ... 16 mm <sup>2</sup> ) 2 x (1 ... 10 mm <sup>2</sup> )
Nominal current	76 A Cu / 62 A Al
Nominal voltage	1000 V AC/DC
Collective packaging	9 pcs
Catalogue no.	81 005 002
Colour of cover	
Standards	IEC 60947-7-1; IEC 61238-1-1



Full STB series:





# SIMBLOCK – new quality of connection

“We aim at making installers' job easier by offering a product not only of outstanding quality and meticulous workmanship, but above all providing excellent ergonomics and easy operation”.

As the leading Polish manufacturer of electrotechnical equipment, for as long as 50 years we have been offering all installers the products which meet high standards applicable in the electrotechnical world.

SIMET S.A., in cooperation with the German manufacturer of electrical engineering products, has launched a new category of rail-mounted terminal blocks and distribution blocks on the Polish market for connecting aluminum and copper cables under the SIMBLOCK brand. This type of connection is now popular in many industries. SIMBLOCK brand is used in construction, mechanical engineering, in the automation of production processes, in electrical switchboards, and in renewable power generation equipment. SIMBLOCK provides secure, durable and safe connections for electrical cables.

## STB rail-mounted terminal block

Using STB series products, from 50 mm<sup>2</sup> to 300 mm<sup>2</sup>, allows connecting cables from 6 mm<sup>2</sup> to 300 mm<sup>2</sup>, as well as cables equipped with a sleeve terminal from 4 mm<sup>2</sup> to 240 mm<sup>2</sup>. The original design of connectors improves the functioning of electrical connections. The unique shape of the core and special corrugation of the body make that during connector's

operation the generated heat does not accumulate but escapes to the outside. The high standard of Al/Cu connections is guaranteed by UL 486E certification. As a result of thicker housing walls, the connector does not deform when tightening cables and is stable on the TS 35 rail. Allen key screws with fine threads allow increased clamping force. Body cover colours (grey/blue/green/brown) refer to the actual colours of cables to be connected.

A special feature of STB from 95 mm<sup>2</sup> to 300 mm<sup>2</sup> is an additional space in their construction for the so-called measuring connector. It provides an opportunity to control the condition of the wiring connection at specific locations and monitor the entire installation. The shape of each STB connector housing guarantees protection of the installer's hand.

The overall aesthetic design of STB is completed by a dust cover (OSTB) with space for the marking (L1,L2,L3,N).



Pic. 1 Rail mounted terminal blocks Al/Cu STB 95 SIMBLOCK



Pic. 2 Branch distribution block Al/Cu SCB 25-5X SIMBLOCK

### SCB branch distribution blocks

**SCB** is a very important distribution block which the installer should come across when connecting power cables both in the equipment and facilities. In the case of this product, cables from 2.5 mm<sup>2</sup> to 70 mm<sup>2</sup>, as well as cables equipped with a sleeve terminal from 1.5 mm<sup>2</sup> to 50 mm<sup>2</sup> can be connected. The feature that distinguishes SCB blocks from all other similar products available on the Polish market is its width. In the case of SCB 25 it is only 17.8 mm. This dimension, when converted to the length of a standard TS 35 rail used in junction boxes and switchboards allows mounting more SCBs in a series. It is of great importance when using the space allocated for branch distribution blocks in each electrical cabinet. As a result, the installer obtains more possibilities for free cable routing.

Another advantage is the durability of clamps blocking cables in the SCB core. Each cable entering SCB is fixed with two clamping screws. Using a suitable screwdriver, permanent fixing of a cable having a given cross-section can be done in the innovatively designed core. The design of the SCB housing prevents screws from falling out.

It is possible to connect all SCBs into sections, and three-, four- and five-pole SCBs can additionally be installed in both horizontal and vertical positions. Such a possibility of positioning SCBs in junction boxes and switchboards should be appreciated by any installer encountering certain space deficits in their work. SCBs can also be used by distributors and power grid owners when implementing facility connections.

### SUB universal distribution blocks and SDB distribution blocks

**SUB** holds a special place in the entire SIMBLOCK category. These products feature input cross-sections from 2.5 mm<sup>2</sup> to 185 mm<sup>2</sup> for solid wire and flexible wire types, and from 1.5 mm<sup>2</sup> to 150 mm<sup>2</sup> for cables equipped with sleeve terminals. This provides unlimited possibilities for connecting wires of different sizes and shapes. The advantage of these blocks is their ergonomic shape and unique design. SUB has been designed to fit the inner shape of the installer's hand. Its gentle roundness facilitates manual work when installing cables and protects the assembler from unwanted contact with the active part of the core. The SUB's transparent cover allows inspecting each of the connected and separated cables.



Pic. 3 Universal distribution blocks Al/Cu SUB 220 SIMBLOCK

Digital and letter markings intuitively guide the installer through the input and output slots. At the same time, SUB has the specially prepared spots in its housing for connections with round and flat cables.



Pic. 4 Distribution blocks Al/Cu SDB SIMBLOCK

Each SUB can be connected through side hooks to the adjacent block in sections of any order, regardless of its size, thus allowing their bridging. It can be done either using round cables or the specially insulated flat bridges. An additional advantage is a core made of brass suitable for 1000 V AC/1500 V DC, which is particularly important in the areas featuring higher network load. SDB, in turn, has been designed for power distribution in small switchboards and control boxes. The SDB series includes blocks with input cross-sections from 2.5 mm<sup>2</sup> to 70 mm<sup>2</sup> for wire and cable types, and from 1.5 mm<sup>2</sup> to 50 mm<sup>2</sup> for conductors equipped with sleeve terminals. In cases where cables of smaller cross-sections are used and at a lower current, SDB successfully fulfils its function. SDB 100 can be mounted both horizontally and vertically, and the side hooks allow making sections on the TS 35 rail in any order.

### SBB rail insulated terminals

**SBB** is a special example of an insulated terminal made of stainless steel. SBB is the only one on the market offering the possibility of installing it on a busbar along with connecting two wires to it at the same time. The advantage of these connectors is the speed and ease of installation on the rail. The SBB housing, as in all SIMBLOCK products, protects the installer from unwanted contact with the live part.

In our opinion, we can proudly say that by launching the SIMBLOCK series of connectors and distribution blocks, we are providing you with modern products presenting very good quality, which definitely stand out from those offered by the competition by offering innovative solutions, ergonomics and, at the same time, ensure safety for their users. All the products described above are compliant with the following standards: FI or VDE and CE, RoHS, REACH.

# SIMBLOCK

# Mounting ring PM-85

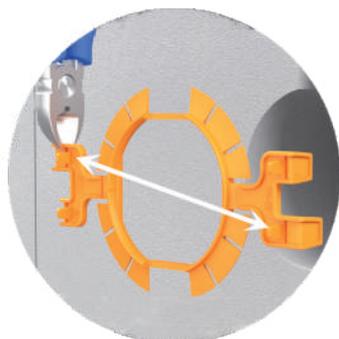
## FASTRING

### Advantages

- ✓ Allows the installation of junction boxes at temperatures below 0 °C
- ✓ Selection of the junction box embedding depth
- ✓ Stable and strong junction box embedding
- ✓ No need to use mortar or glue
- ✓ Installation of the mounting ring on combined



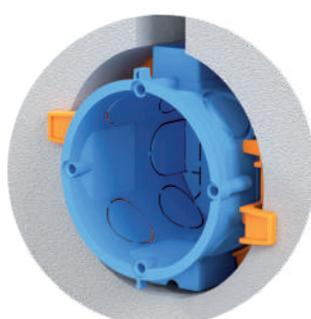
PM-85	
Heat resistance	650 °C
Material	PP
Catalogue no.	37 422 008
Collective packaging	10 pcs



By cutting of the holders diagonally choose junction box embedding depth



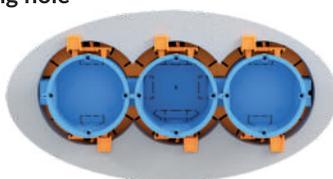
Mounting ring installation on „click”



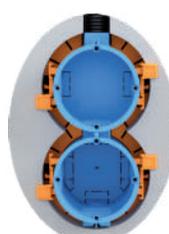
Stable support of the junction box in the mounting hole



Selection of the junction box embedding depth:  
10 mm; 15 mm  
Range:  
0 - 20 mm



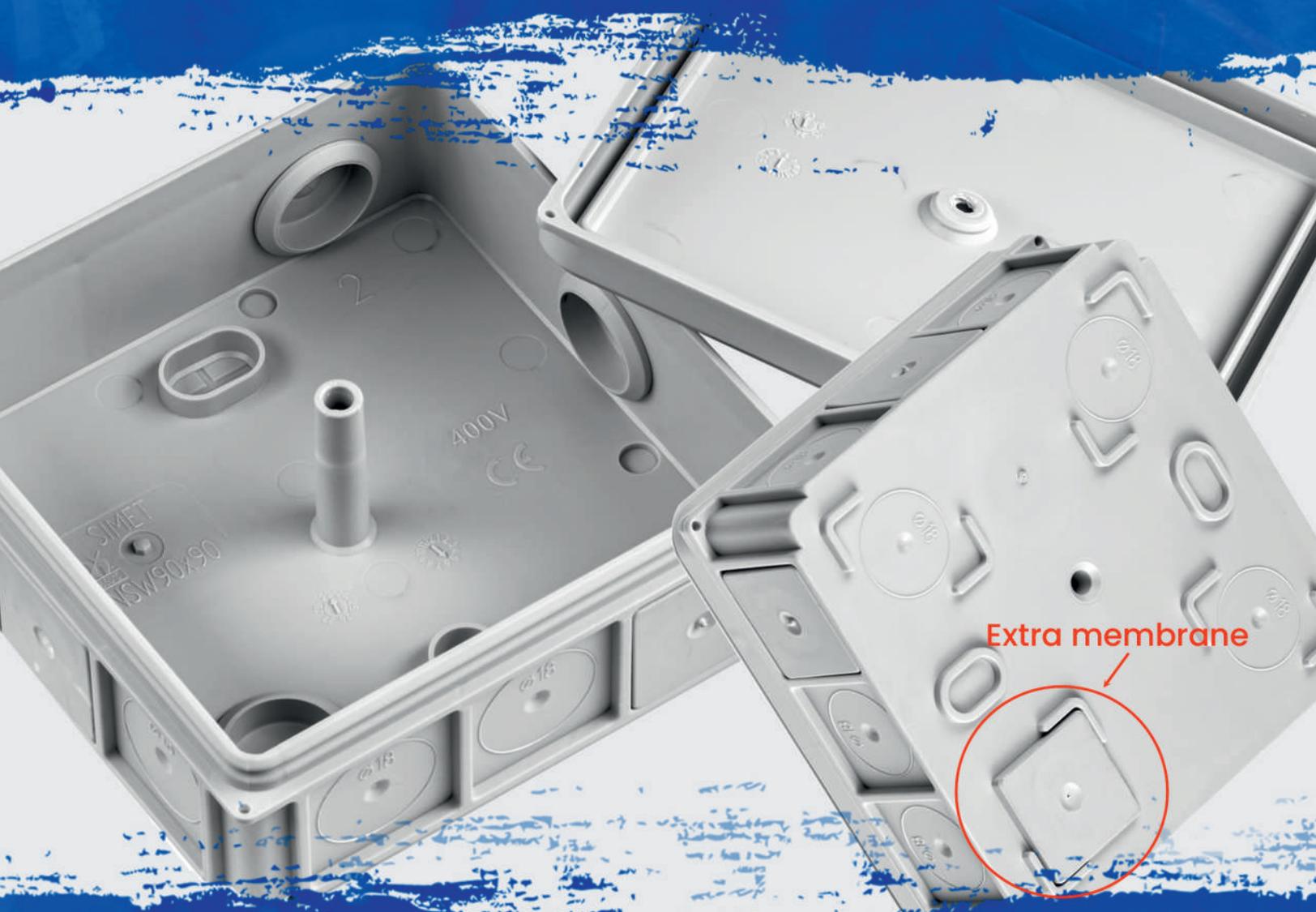
Horizontal embedding of the junction boxes



Vertical embedding of the junction boxes

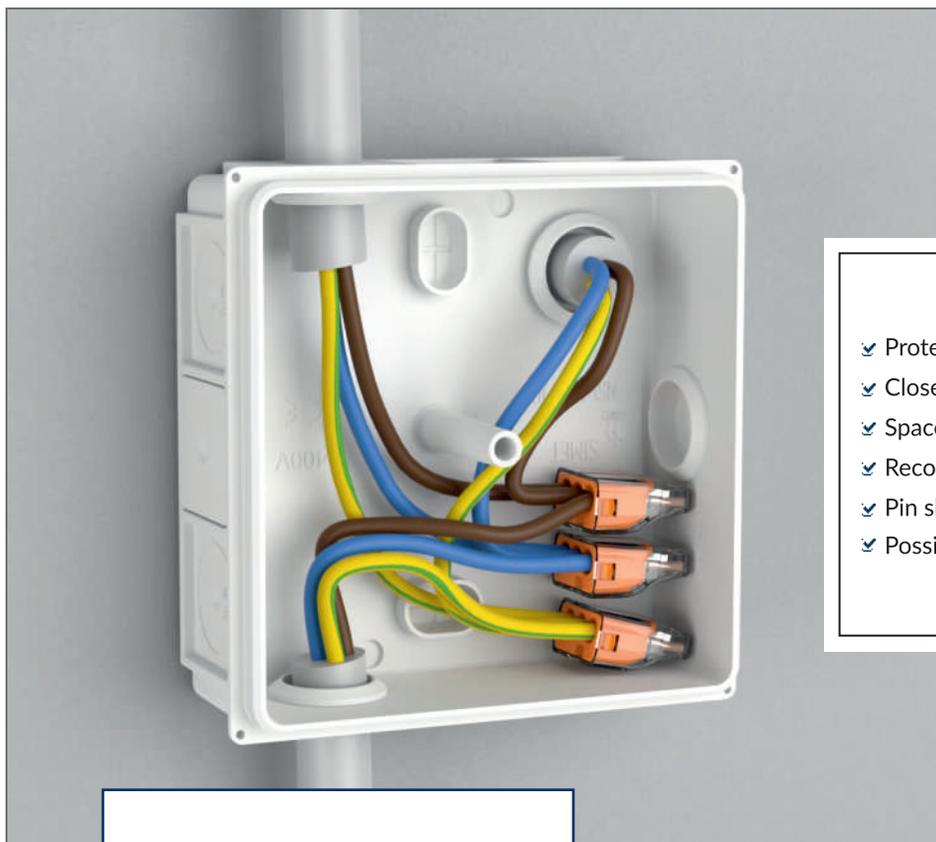


# NSW90x90



**JUNCTION BOX WITH SCREW**

# Junction box with screw NSW90x90



## Advantages

- ✓ Protection class IP55
- ✓ Closed with one stainless steel screw
- ✓ Space for cable entry from the bottom of the box
- ✓ Reconfigurable cable glands
- ✓ Pin slots allows for mounting corrections
- ✓ Possibility of sealing



	NSW90x90
Heat resistance	650 °C
Material	PS
⚓ Dimensions [mm]	90 / 37 / 90
Collective packaging	48 pcs
Standards	PN EN IEC 60670-1; PN EN 60670-22



Cat. no. 35 418 706



Cat. no. 35 418 702



Cat. no. 35 418 707



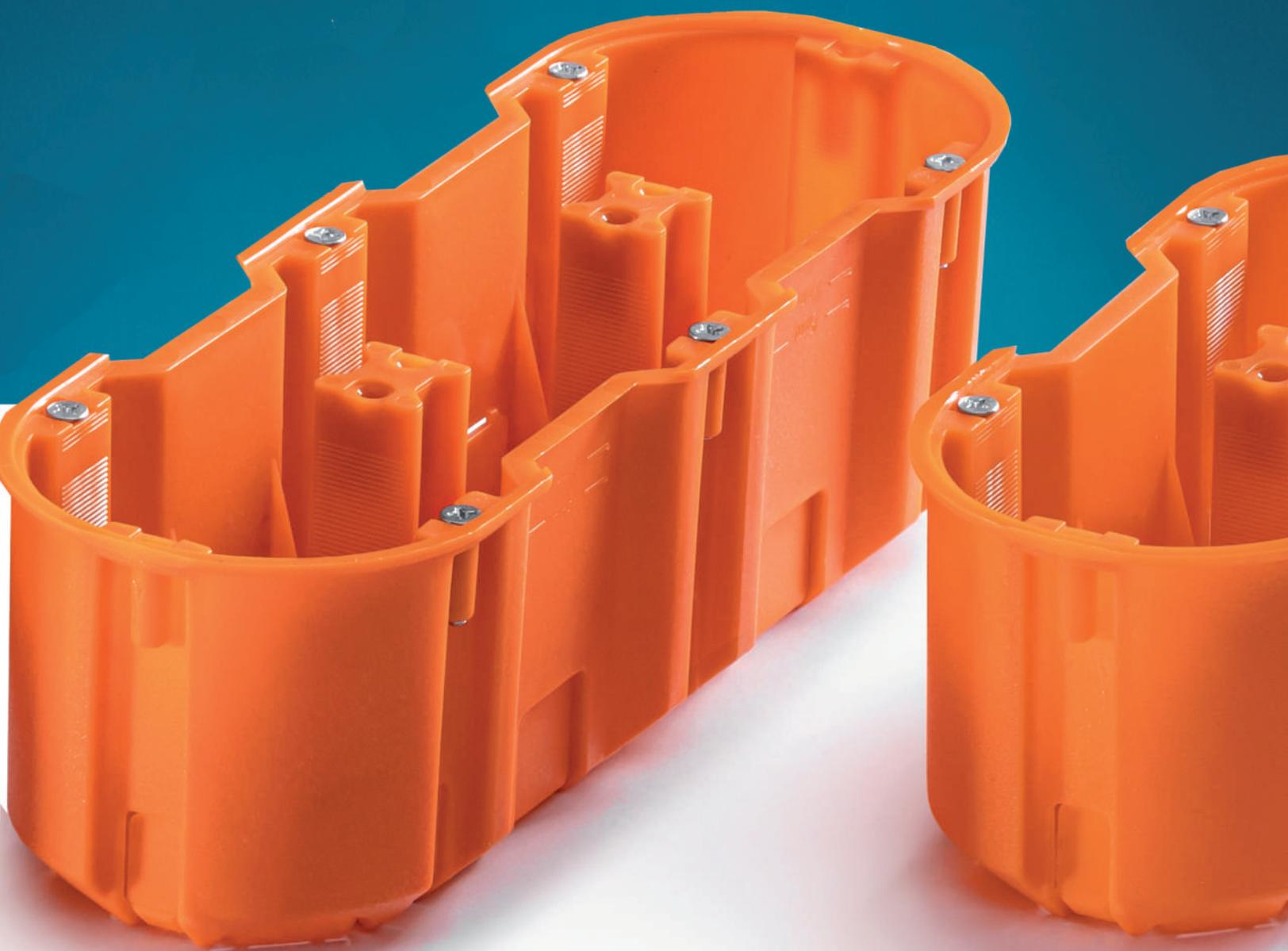
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Cat. no. 35 418 701

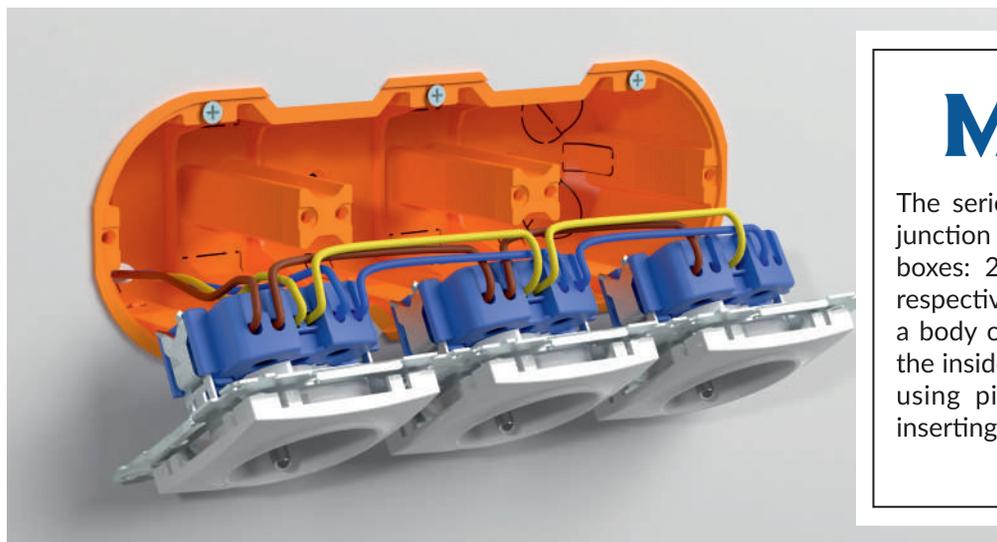


# ***FLUSH - MOUNTED*** Junction boxes



**SLIM**  
**Multiwall**

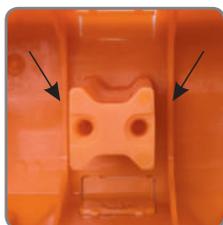
# Flush-mounted junction boxes



**Multiwall SLIM**

The series of multi-pole flush-mounted junction boxes. It consists of six junction boxes: 2, 3, 4, 5 pole junction boxes, respectively. A variety of knockouts in a body of this box makes uncovering of the inside of the box convenient, both in using pipes and conduits, as well as inserting in wires directly to the box.

### FIRM CONSTRUCTION



Stiffness body with ribs, which stabilize the structure of the entire box.

### LARGER MARKERS



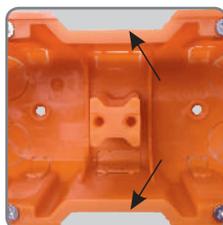
Larger markers for mounting foam and easier placement of drilling points on the wall.

### EMBEDDING MARK



Selection of the junction box embedding depth: 10 mm and 15 mm.

### NOTCH



The compact and flexible structure of the Multiwall Slim easily adapts to the mounting hole.

### WIDER SPACE



Wider space for mounting electrotechnical equipment.

### KNOCKOUTS



Numerous knockouts enable easy and convenient routing of cables, pipes or conduits.



	M2x60DF	M3x60DF	M4x60DF	M5x60DF
Heat resistance	650 °C			
Material	PP			
⚙️ Dimensions [mm]	71 / 63 / 141	71 / 63 / 212	71 / 63 / 283	71 / 63 / 354
Collective packaging	37 pcs	24 pcs	18 pcs	15 pcs
Catalogue no.	33 401 008	33 407 008	33 414 008	33 416 008
Standards	PN-E-93208; PN-EN IEC 60670-1			

## Accessories

### Closing cover

External



PM1 | 37 162 006

Internal



PM2 | 37 163 006

### Signaling cover

External



PS3 | 37 409 008

Internal



PS4 | 37 410 008

Standard Multiwall:



### Extension rings

External



PDM60Z | 37 288 006

Internal



PDM60W | 37 289 006

Universal



PD60x30 | 37 012 006

### Connection cover

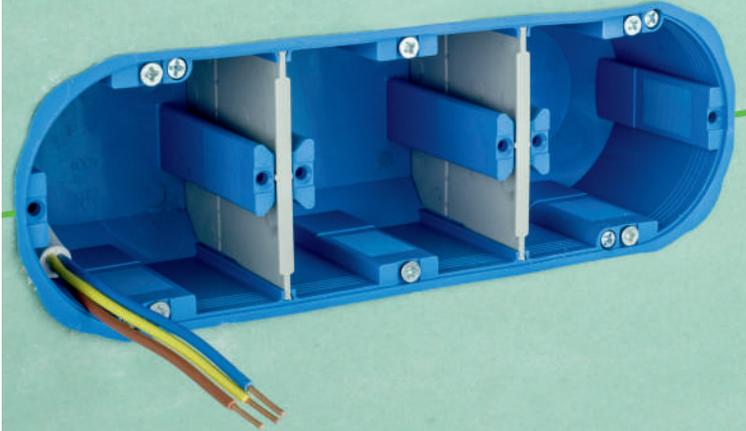


PKS60 | 37 268 306

# Junction box for cavity walls

## MULTIBOX

The Multibox series products constitute an excellent solution for installers. Boxes have been improved to make it even easier to work with. Multibox will be especially useful in electric installations mounted in the OSB and plasterboards. The compact and flexible structure of the junction box easily adapts to the mounting hole. Numerous knockouts at the bottom enable easy and convenient routing of cables, pipes or conduits.



Wider space for mounting electrotechnical equipment



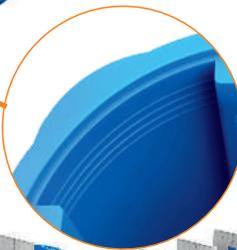
Retractable partitions provides convenience in the scope of routing wires between the poles



New position of marking pins for better precision



Wider collar for securing before falling into the wall in assembly process and better fitting



	P2x60D	P3x60D	P4x60D	P5x60D
Heat resistance	960 °C			
Material	PA 6			
⚙️ Dimensions [mm]	71 / 63 / 142	71 / 63 / 213	71 / 63 / 284	71 / 63 / 355
Collective packaging	37 pcs	24 pcs	18 pcs	15 pcs
Catalogue no.	32 092 203	32 104 203	32 097 203	32 099 203
Standards	PN-E-93208; PN-EN IEC 60670-1			

### Accessories

#### Closing cover

External



PM1 | 37 162 006

Internal



PM2 | 37 163 006

External



PDM60Z | 37 288 006

#### Extension rings

Internal



PDM60W | 37 289 006

Universal



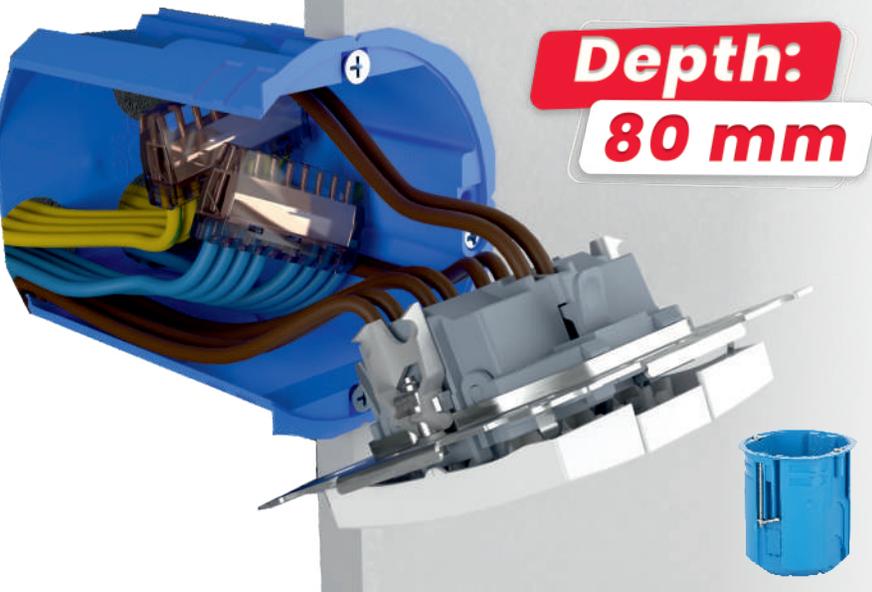
PD60x30 | 37 012 006

#### Connection cover



PKS60 | 37 268 306

# Junction box, extra-deep PV60G | ZV60GFw



## Advantages

- ✓ Wider space for mounting electrotechnical equipment
- ✓ Wider collar for a more secure fit in the mounting hole
- ✓ Special markings for easy positioning box in the wall
- ✓ Connector KG71 in order to combine boxes in a series
- ✓ Central mark for step drill



	PV60G	ZV60GFw
Heat resistance	960 °C	650 °C
Material	PA 6	PP
Catalogue no.	32 334 203	33 335 008
Collective packaging	60 pcs	60 pcs
Standards	PN-E-93208; PN-EN IEC 60670-1	

## Connectors



KG71 | 37 341 008    KG71 | 37 341 203

# Modernized junction box Z60DF

## NEW DESIGN



1. Embedding mark  
10 mm and 15 mm.

2. New knockouts -  
for easier hole cutting.

## Previous model



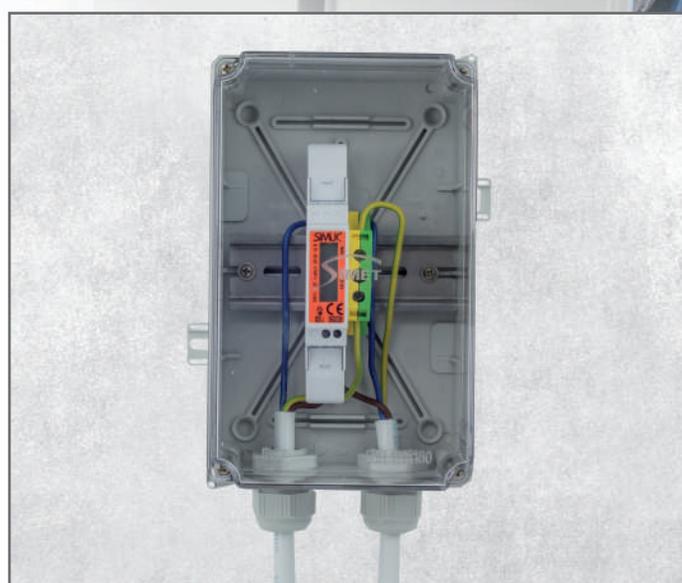
Z60DF



	Z60DF
Heat resistance	650 °C
Material	PP
Catalogue no.	33 033 008
Collective packaging	50 pcs

# Hermetic enclosures SOH

The enclosures are available in two color: grey and white. Body is made of PA 6 and the cover is made of from PC. SOH enclosures are used in a variety of installation fields including industrial automation or surface-mount installations, and provide protection against external factors such as dust and water.



SOH 180x180 white



Cat. no.: 36 434 206

SOH 180x180 grey



Cat. no.: 36 434 202

SOH 110x180 white



Cat. no.: 36 432 206

SOH 110x180 grey



Cat. no.: 36 432 202

SOH 180x180 / SOH 110x180	
Heat resistance	850 °C
Material	PA6 + PC
Protection class	IP67
Collective packaging	1 pc
Standards	PN EN IEC 60670-1

# Surge arrester for photovoltaics

# SIMTEC



A two-stage **SV B+C 3P** and single stage **SV C 3P** surge arresters are used for protection against direct and indirect effects of lightning or other transient overvoltage. They are dedicated only to the installation on the DC side of photovoltaic generators and the DC side of inverters. The devices contains a non-linear element - a varistor and is designed to limit surge voltages and reverse surge currents



**SHORTER  
MODULE**



PV T2  
SV C 3P

Cat. no. 85 034 002



PV T1 T2  
SV B+C 3P

Cat. no. 85 036 002



	SV B+C 3P	SV C 3P
Rated voltage of the DC PV system ( $U_n$ )		1000 V DC
Maximum continuous operating voltage ( $U_{cpv}$ )		1060 V DC
Surge current ( $I_{imp, 10/350 \mu s}$ )	6,25 kA	-
Discharge current ( $I_n, 8/20 \mu s$ )		20 kA
Maximum discharge current ( $I_{max, 8/20 \mu s}$ )		40 kA
Maximum short circuit current ( $I_{scPV}$ )		100 A
Voltage protection level ( $U_p$ )		$\leq 4,5$ kV
Response time ( $t_d$ )		< 25 ns
Maximum additional fuse (gL/gG)		100 A
Insulation resistance ( $R_{iso}$ )		$10^9$ M $\Omega$
Standards	Compliance with Directive 2014/35/EU Standard EN 61643-31:2019-07 TUV Certification ID: 1111263678, 1111263680	

Find out more about surge arresters



# Digital electricity meters



# SIMLIC

**LS-3FB** - bi-directional, single-zone electricity meter SIMLIC LS-3FB is designed for direct measurement of active electricity, which is collected and produced in the 3-phase installations. Furthermore, it can be used to carry out measurements in industrial and noncommercial applications. Also, it's perfectly suitable for photovoltaic installations – metering of the generated renewable energy. The LS-3FB meter indicates active power in [W] and active electricity in [kWh] – both consumed and produced (import / export).

**LS-3F, LS-1F** - these digital, single-zone electricity meters are intended for direct measurement of the consumption of active electricity in the 3-phase installations (LS-3F) and 1-phase installations (LS-1F). Furthermore, they can be used to carry out measurements in industrial and noncommercial applications. Also, they work perfectly as a meters or sub-meters of non-distribution settlements. The LS-3F meter indicates consumed active power in [W] and consumed active electricity in [kWh] and the LS-1F meter indicates consumed active electricity in [kWh].

- ✓ MID
- ✓ DIGITAL
- ✓ BACKLIT LCD
- ✓ RESET FUNCTION



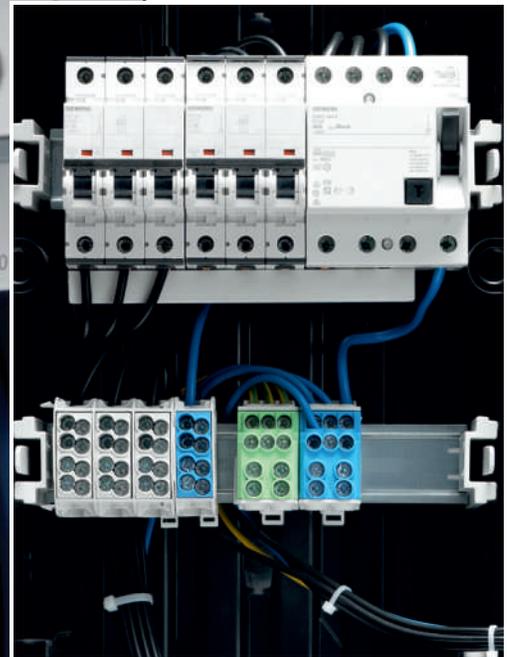
Bi-directional



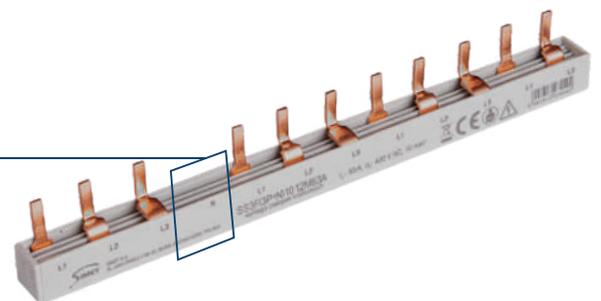
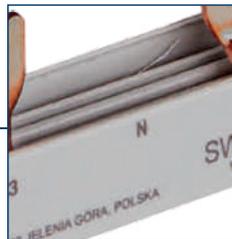
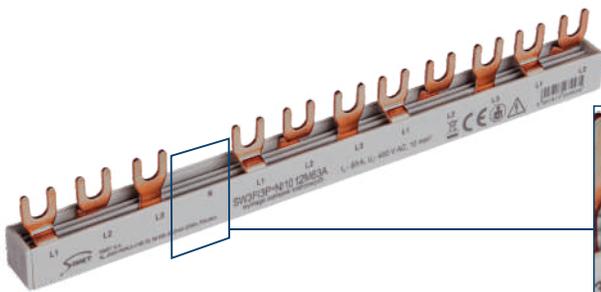
	85 403 010	85 402 010	85 401 010
Catalogue number	85 403 010	85 402 010	85 401 010
Collective packaging	1 pc	1 pc	1 pc
Reset function	Yes	Yes	No

Rated Voltage AC $U_n$	3 x 230 V / 400 V	3 x 230 V / 400 V	230 V
Rated impulse voltage $U_{imp}$	6 kV	6 kV	6 kV
Minimum current $I_{min}$	0,5 A	0,5 A	0,25 A
Reference current $I_{ref}$	10 A	10 A	5 A
Maximum current $I_{max}$	100 A	100 A	45 A
Starting current of the meter $I_{st}$	0,04 A	0,04 A	0,02 A
Rated frequency	50 Hz	50 Hz	50 Hz
Own consumption	≤ 2 W / 10 VA	≤ 2 W / 10 VA	≤ 2 W / 10 VA
Pulse output	1000 imp. / kWh	1000 imp. / kWh	1000 imp. / kWh
Maximum indication	999999,9 kWh	999999,9 kWh	99999,9 kWh
Standards	MID 2014/32/UE LVD 2014/35/UE EMC 2014/30/UE EN 50470 - 1 EN 50470 - 3	MID 2014/32/UE LVD 2014/35/UE EMC 2014/30/UE EN 50470 - 1 EN 50470 - 3	MID 2014/32/UE LVD 2014/35/UE EMC 2014/30/UE EN 50470 - 1 EN 50470 - 3

# Connection busbars - fork and pin type



## DEDICATED FOR RESIDUAL CURRENT CIRCUIT BREAKERS



### 3-POLE FORK CONNECTION BUSBARS - FORK TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 992 206	SW3F (3P+N) 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	5 pcs
81 994 206	SW3F (3P+N) 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	5 pcs



### 3-POLE PIN CONNECTION BUSBARS - PIN TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 996 206	SS3F (3P+N) 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	5 pcs
81 998 206	SS3F (3P+N) 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	5 pcs



# Connection busbars - fork and pin type

## 1-POLE FORK (M6) CONNECTION BUSBARS - FORK TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 991 006	SW1F 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	10 pcs
81 993 006	SW1F 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	10 pcs
81 991 106	SW1F 10 57M63A	10 mm <sup>2</sup>	63 A	57	17,8 mm	10 pcs
81 993 106	SW1F 16 57M80A	16 mm <sup>2</sup>	80 A	57	17,8 mm	10 pcs



## 3-POLE FORK (M6) CONNECTION BUSBARS - FORK TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 992 006	SW3F 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	5 pcs
81 994 006	SW3F 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	5 pcs
81 992 106	SW3F 10 57M63A	10 mm <sup>2</sup>	63 A	57	17,8 mm	5 pcs
81 994 106	SW3F 16 57M80A	16 mm <sup>2</sup>	80 A	57	17,8 mm	5 pcs



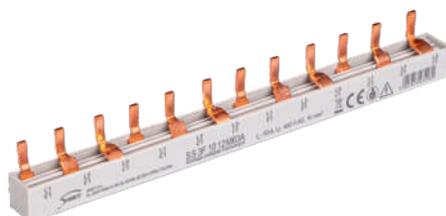
## 1-POLE PIN CONNECTION BUSBARS - PIN TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 995 006	SS1F 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	10 pcs
81 997 006	SS1F 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	10 pcs
81 996 106	SS1F 10 57M63A	10 mm <sup>2</sup>	63 A	57	17,8 mm	10 pcs
81 997 106	SS1F 16 57M80A	16 mm <sup>2</sup>	80 A	57	17,8 mm	10 pcs



## 3-POLE PIN CONNECTION BUSBARS - PIN TYPE

Catalogue number	Trade name	Cross-section	Nominal current	Modules	Pitch	Collective packaging
81 996 006	SS3F 10 12M63A	10 mm <sup>2</sup>	63 A	12	17,8 mm	5 pcs
81 998 006	SS3F 16 12M80A	16 mm <sup>2</sup>	80 A	12	17,8 mm	5 pcs
81 996 106	SS3F 10 57M63A	10 mm <sup>2</sup>	63 A	57	17,8 mm	5 pcs
81 998 106	SS3F 16 57M80A	16 mm <sup>2</sup>	80 A	57	17,8 mm	5 pcs



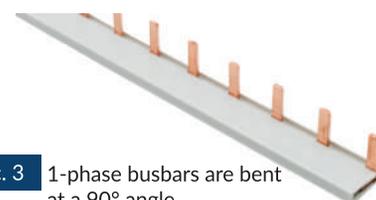
# Connection busbars - reliability and quality

When installing the electrical system, it is increasingly important to use appropriate busbars in switchboards. While choosing a product in this category, we should pay attention to its parameters: cross-section, current and voltage rating, length and number of modules, as well as the materials it is made from.

The connection busbars from SIMET S.A. have been designed and manufactured in a manner that guarantees reliability and the highest level of protection. The entire process was carried out in cooperation with a German partner who is an expert in engineering and production of high-quality electrotechnical components. Even though currently there is no dedicated standard for busbars, the production of our products is inspected in accordance with VDE DIN EN 61439-1:2012-06 and DIN EN 61439-6:2013-06 standards, dedicated to verifying the operating conditions and construction requirements for switchboards. As a result of such inspection, we can confirm the basic functions assigned to connection busbars – **the fork type** and **pin type** versions: safe power supply of

modular apparatus, quick connection of circuit breakers or residual current devices as well as other installation equipment in switchboards and even distribution of power between them. In addition, all the details used in our busbars are manufactured from the highest quality materials, and their current carrying capacity has been tested under above-standard conditions up to 100A for 10 mm<sup>2</sup> busbars and up to 130 A for 16 mm<sup>2</sup> busbars (see picture 1).

All the above results in the connection busbars from SIMET S.A. providing the best quality and the highest level of safety.



**Pic. 3** 1-phase busbars are bent at a 90° angle

### Safety and ergonomics

Connection busbars from SIMET S.A., in accordance with EN 50274 standard, are protected against the installer's unintentional direct contact with the live part. The large surface area of the connecting elements (forks, pins) and their strength ensure that these elements do not deform during installation, which is a common problem in low-quality products. In addition, our unique design provides centric clamping force and large contact area. As a result of chamfered and rounded ends, both forks and pins enter the spring clamp smoothly and do not damage it.

CURRENT RATING Busbar cross-section in mm <sup>2</sup>	1-phase						2,3 and 4-phase			
	10	12	16	20	25	36	10	16	25	36
Feed-in from side										
maximum busbar current $I_b$ / Phase A	63	65	80	90	100	130	63	80	100	130
Feed-in from middle										
maximum current per branch $I_b$ / Phase A	100	110	130	150	180	220	100	130	180	220
maximum feed-in current $I_b$ / Phase A	Dependent on the cross section									
Feed-in at start of busbar										
	<p>For central supply, it has to be made sure that the sum of the outgoing currents <math>a_n</math> at each bus branch is not bigger than the above-mentioned max. busbar current <math>I_b</math> / phase.</p>									

**Pic. 1** Current rating

### Additional accessories

It should be remembered that when cutting busbars, copper filings appear at their ends, creating an unprotected burr, which can result in electrocution or arcing. When building connections in the switchboard, the installer should take care of proper busbar protection, therefore end caps should remain an indispensable and inseparable element of each busbar. Connection busbars manufactured by SIMET S.A. are offered as standard with the following end caps: ZSP1F, ZSP3F-10, ZSP3F-16.

End caps can also be purchased separately as part of the busbar accessories.

### Product specifications

We offer fork type and pin type connection busbars: 1, 2, 3 and 4 pole. The standard versions are 12-module and 57-module busbars, with cross sections of 10 mm<sup>2</sup> and 16 mm<sup>2</sup>. If ordered, we can also offer busbars of a different length, spacing and cross-section, tailored to the individual needs of our customers.



**Pic. 2** Connection busbar – fork type



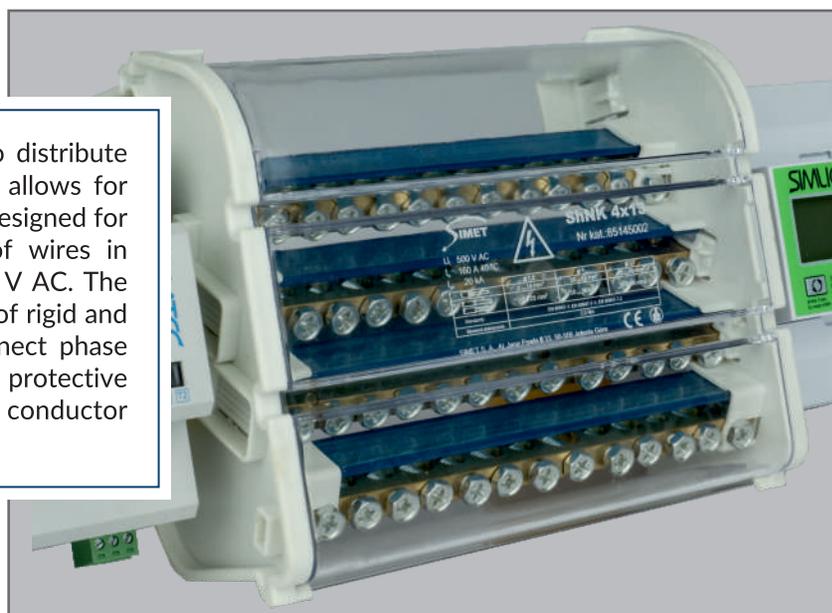
**Pic. 4** Covers dedicated for unused busbar modules



**Pic. 5** Busbar end caps

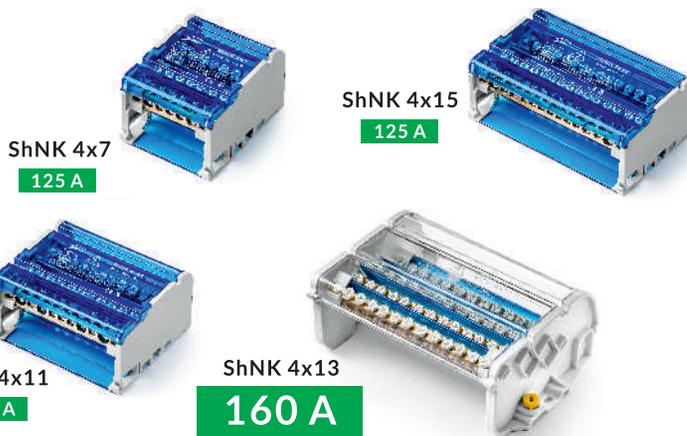
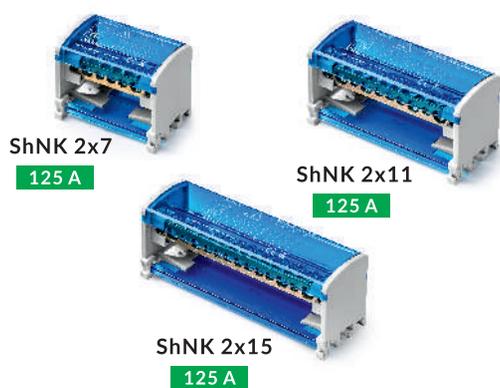
# Modular distribution blocks ShNK

**Modular distribution block** is used to distribute power between switchgear circuits and allows for proper routing and wiring ordering. It is designed for electrical and mechanical connection of wires in circuits with rated voltage of 230 / 400 V AC. The distribution block allows the connection of rigid and flexible copper wires. It is used to connect phase conductor (L), neutral conductor (N), protective conductor (PE) or protective-neutral conductor (PEN).



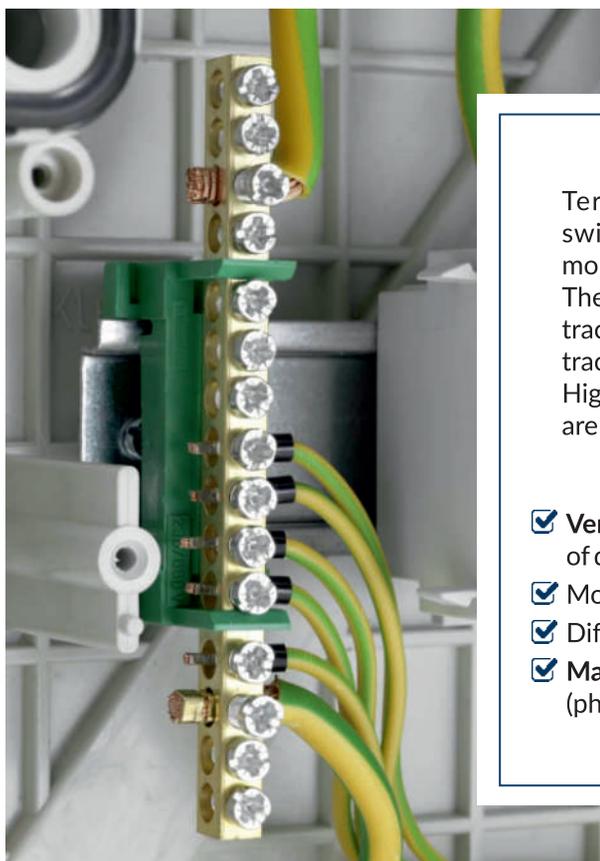
## 2-pole distribution blocks

## 4-pole distribution blocks



	ShNK 2x7	ShNK 2x11	ShNK 2x15	ShNK 4x7	ShNK 4x11	ShNK 4x15	ShNK 4x13
Catalogue no.	85 140 002	85 146 002	85 141 002	85 142 002	85 143 002	85 144 002	85 145 002
Quantity and hole diameter	5 x Ø 5,5 mm 2 x Ø 7,5 mm	7 x Ø 5,5 mm 2 x Ø 7,5 mm 2 x Ø 8,5 mm	11 x Ø 5,5 mm 2 x Ø 7,5 mm 2 x Ø 8,5 mm	5 x Ø 5,5 mm 2 x Ø 7,5 mm	7 x Ø 5,5 mm 2 x Ø 7,5 mm 2 x Ø 8,5 mm	11 x Ø 5,5 mm 2 x Ø 7,5 mm 2 x Ø 8,5 mm	8 x Ø 7,5 mm 4 x Ø 9 mm 1 x Ø 12 mm
Number of tracks	2			4			
Nominal cross-section of flexible connected cables [mm <sup>2</sup> ]	1,5 ... 6 6 ... 16	1,5 ... 6 6 ... 16 10 ... 16	1,5 ... 6 6 ... 16 10 ... 16	1,5 ... 6 6 ... 16	1,5 ... 6 6 ... 16 10 ... 16	1,5 ... 6 6 ... 16 10 ... 16	6 ... 16 10 ... 16 25 ... 35
Nominal cross-section of rigid connected cables [mm <sup>2</sup> ]	2,5 ... 6 10 ... 25	2,5 ... 6 10 ... 25 10 ... 35	2,5 ... 6 10 ... 25 10 ... 35	2,5 ... 6 10 ... 25	2,5 ... 6 10 ... 25 10 ... 35	2,5 ... 6 10 ... 25 10 ... 35	10 ... 25 10 ... 35 35 ... 50
Rated current I <sub>n</sub>	125 A 40 °C						160 A 40 °C
Rated insulation voltage AC U <sub>i</sub>	500 V						
Peak withstand current I <sub>p</sub>	20 kA						
Set screw - bolt	M5						M6
Tightening torque	2 Nm						2,5 Nm

# Terminal strip neutral, protective, phase



## Application

Terminal strips are used for wiring connections in switchboards, control cabinets, anywhere they can be mounted on a TS-35 rail.

They are used to connect wires, but also to separate current tracks (depending on the strip's design), neutral or protective tracks.

High durability and reliability of the products cause, that they are indispensable in the accessories of every electrician.

## Advantages

- ✓ **Versatility** - possibility of connecting rigid and flexible wires of different cross-sections **up to 16 mm<sup>2</sup>**
- ✓ Mounting on TS 35 rail - perfect fitting for switchgears
- ✓ Different variants: **7, 12 and 15 tracks**
- ✓ **Marked with different colours** for easy identification of wires (phase, neutral, protective)

### Neutral

### Protective

### Phase

Rated voltage	400 V AC
Rated current	Cu 63 A
Nominal cross-section	7 x 16 mm <sup>2</sup>
Collective packaging	10 pcs

N7



Cat. no. 81 700 003

PE7



Cat. no. 81 700

L7



Cat. no. 81 700 007

N12



Cat. no. 81 701

PE12



Cat. no. 81 701 005

L12



Cat. no. 81 701 007

Rated voltage	400 V AC
Rated current	Cu 63 A
Nominal cross-section	12 x 16 mm <sup>2</sup>
Collective packaging	10 pcs

N15



Cat. no. 81 702

PE15



Cat. no. 81 702 005

L15



Cat. no. 81 702 007

Rated voltage	400 V AC
Rated current	Cu 63 A
Nominal cross-section	15 x 16 mm <sup>2</sup>
Collective packaging	10 pcs

## MiniGelBox

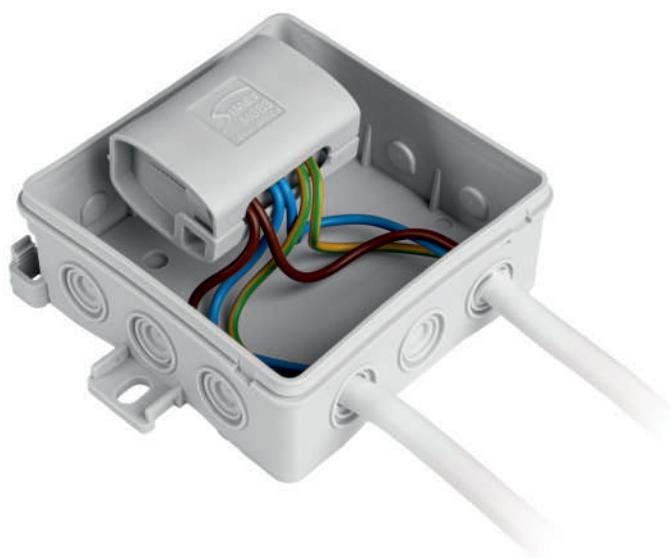
**Gel joints** - the gel joints are intended for protection of connections against external factors, e.g. dust, water. They are characterised by a robust polypropylene housing, while their interior is filled with an insulating gel. Furthermore, they are available in three versions with different dimensions.

### Advantage

- ✓ Operating temperature up to 90 °C
- ✓ Ingress protection IP68
- ✓ Easy installation
- ✓ Unlimited shelf life
- ✓ Wide range of operating temperature
- ✓ Resistance to UV radiation



	MGB2	MGB3	MGB5
Operating temp.		90 °C	
Material		PP	
Ingress protection		IP68	
Collective packaging		1 pc	
Catalogue no.	89 000 002	89 001 002	89 002 002
Standards	EN 50393 (0.6/1kV); EN 60529; EN 60695-2-11		



## SALES DEPARTMENT OF SIMET

**Maciej Waszak**  
Commercial Director



## DOMESTIC SALES

The product sales are conducted based on the Sales Department of SIMET. The Sales Department's structure includes 5 regional representatives, who maintain commercial relations with domestic recipients.

### I area (Pomerania)

Szczecin, Koszalin, Słupsk,  
Gdańsk, Elbląg, Gorzów Wlk, Piła,  
Bydgoszcz, Toruń

**Marcin Poździak**  
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Leszno, Jelenia Góra, Legnica,  
Wrocław, Kalisz, Wałbrzych

**Jakub Kacpura**  
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### V area (Centre)

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Warszawa, Sieradz, Łódź, Olsztyn,  
Suwałki, Ostrołęka

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Lublin, Kielce, Zamość, Tarnów,  
Rzeszów, Przemyśl, Nowy Sącz,  
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