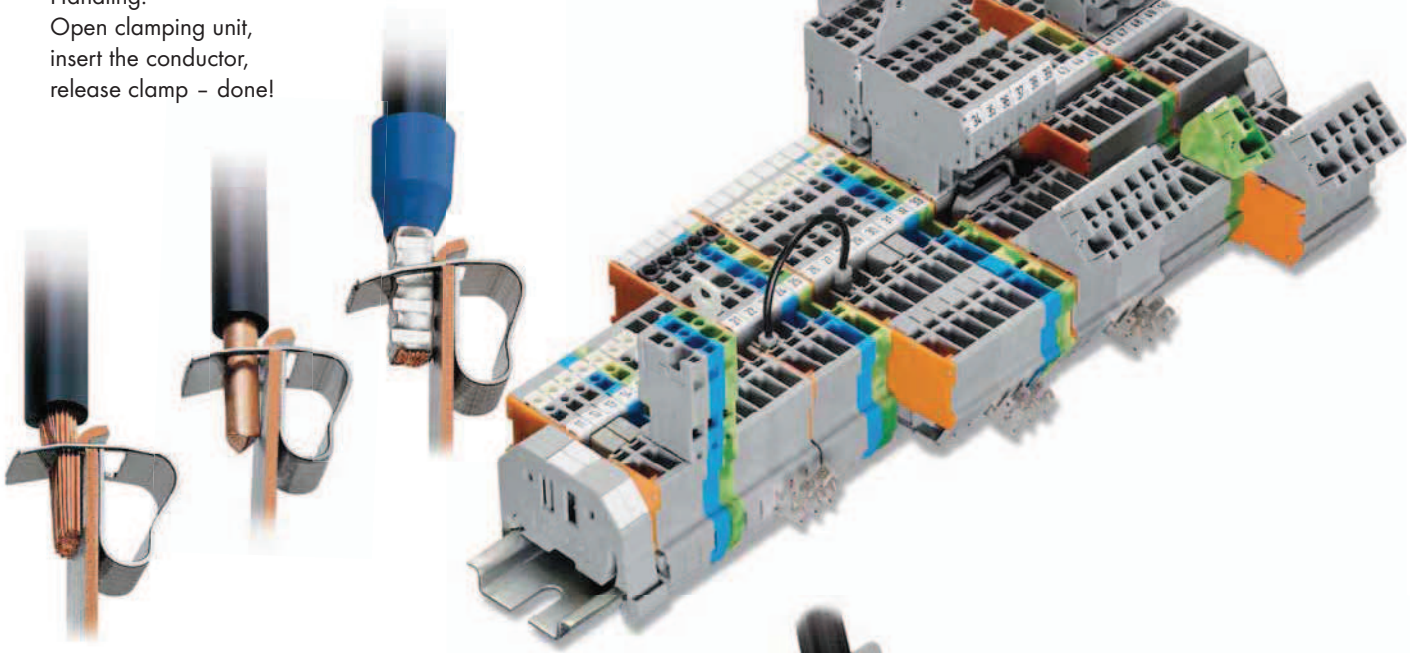
CAGE CLAMP®

The universal connection for solid, stranded and fine-stranded conductors

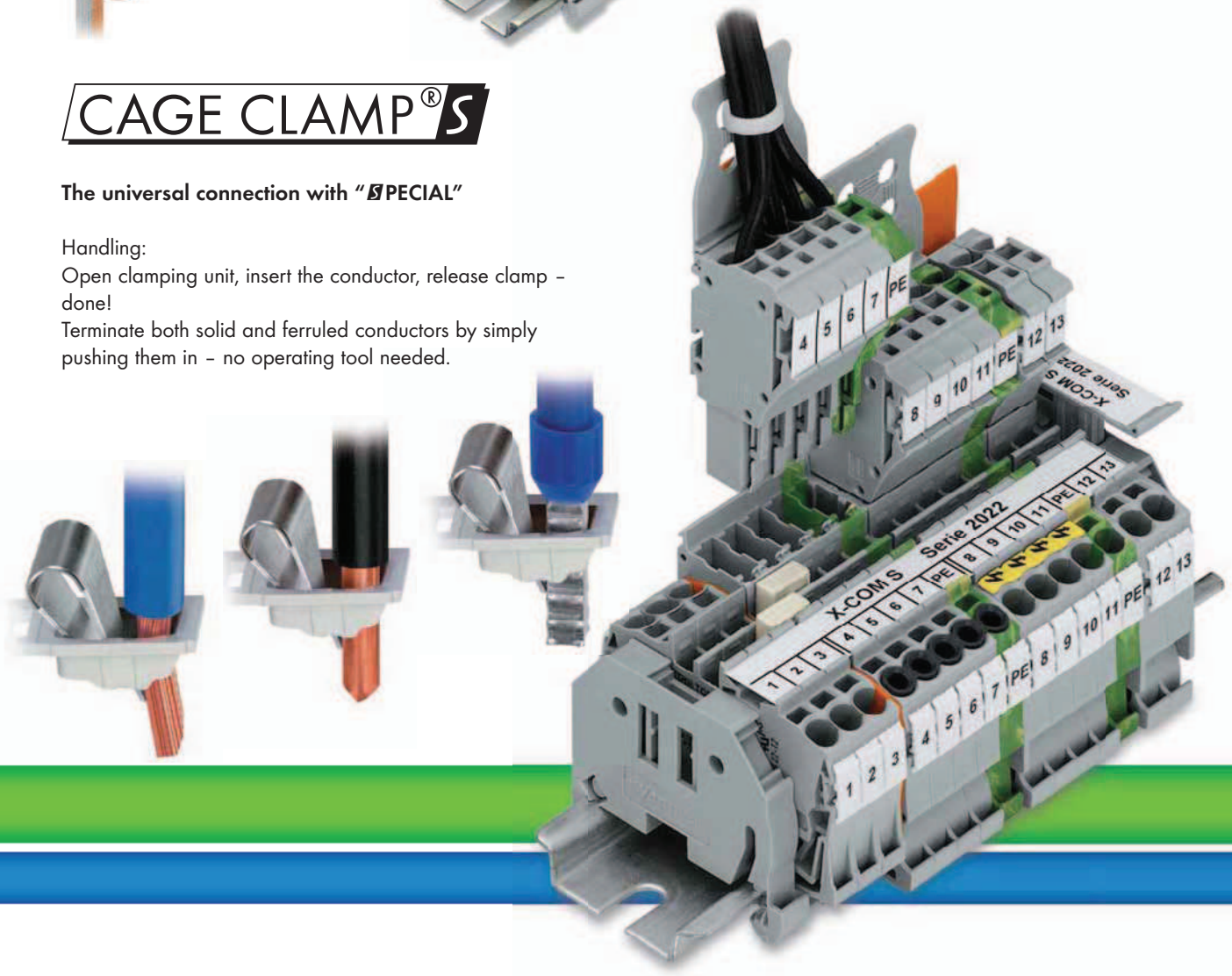
Handling:
Open clamping unit,
insert the conductor,
release clamp – done!



CAGE CLAMP®S

The universal connection with "SPECIAL"

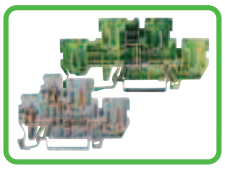
Handling:
Open clamping unit, insert the conductor, release clamp – done!
Terminate both solid and ferruled conductors by simply pushing them in – no operating tool needed.



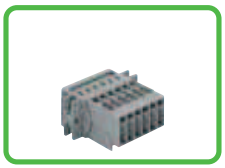
7



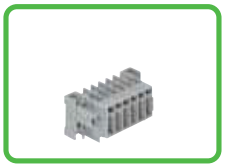
Carrier Terminal Blocks	769 Series	322 – 330
Carrier Terminal Blocks with 3 Jumper Positions	769 Series	332
Disconnect Carrier Terminal Blocks with 2 Jumper Positions	769 Series	334 – 342
Carrier Terminal Blocks for Pluggable Modules	769 Series	344 – 348
Diode and LED Carrier Terminal Blocks	769 Series	336 – 339



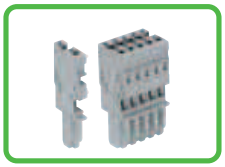
Double-Deck Carrier Terminal Blocks	870 Series	352 – 356



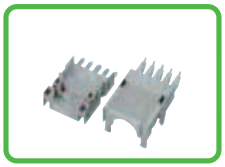
Male Connectors with CAGE CLAMP® Connection	769 Series	360 – 362



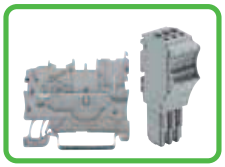
Male Headers with Solder Pins	769 Series	364 – 366



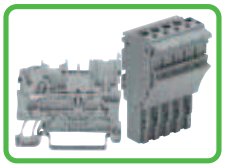
Female Plugs with and without Lateral Locking Levers	769 Series	368 – 371
Female Plugs for Self-Assembly	769 Series	372
3- and 5-Pole Female Plugs	769 Series	374



Strain Relief Housings	769 Series	375



X-COM®S-SYSTEM-MINI Carrier Terminal Blocks and Female Plugs	2020 Series	381 – 393



X-COM®S-SYSTEM Carrier Terminal Blocks and Female Plugs	2022 Series	394 – 405

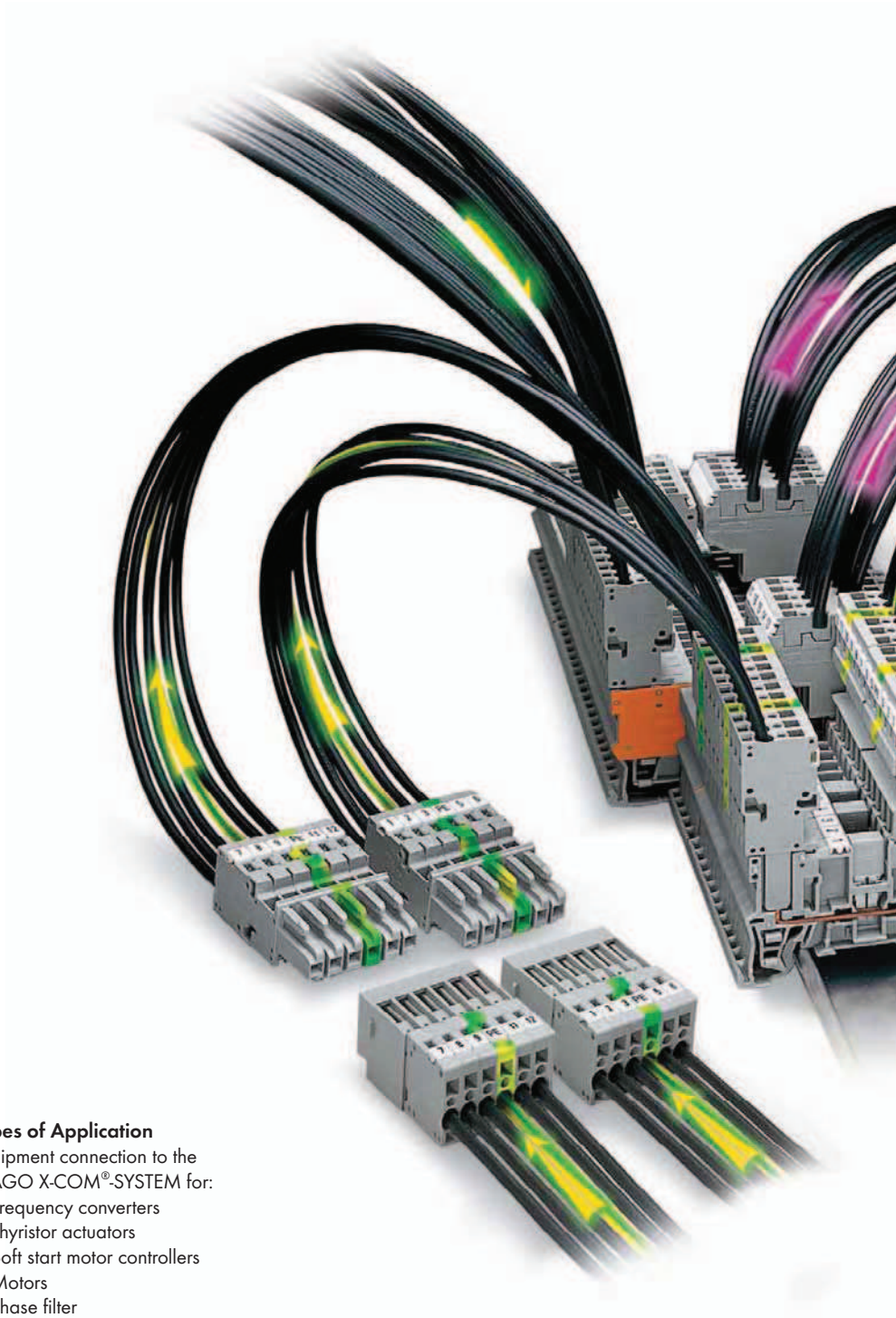
WAGO X-COM®-SYSTEM
COM-bination of Connectors and Rail-Mounted Terminal Blocks

The WAGO X-COM® SYSTEM
is a staple of switchgear and control applications.

It is designed for a **rated current up to 16/32A at V_N 500V and 4mm² (AWG 12) rated cross section (up to 600V, 10A, and 12 AWG UL).** This offers an alternative to heavy-duty rectangular and circular connectors used in power wiring applications where electrical compliance is more important than a high degree of protection.
X-COM® conveniently enables the use of pre-assembled connector systems and the following advantages:

- During manufacturing: Pre-assembled part or function assemblies can be tested before assembly.
- During assembly: Pre-assembled pluggable cable harnesses help solve time and space issues on site. Connector systems with protection against mismating can be handled by installers of all skill levels.
- During servicing: Sub-assemblies can be replaced quickly and without failure.

The X-COM®-SYSTEM consists of carrier consists of rail-mounted terminal blocks, male connectors and female plugs with different mounting systems, as well as male headers with solder pins. Pin spacing is generally 5 mm/0.197 in.

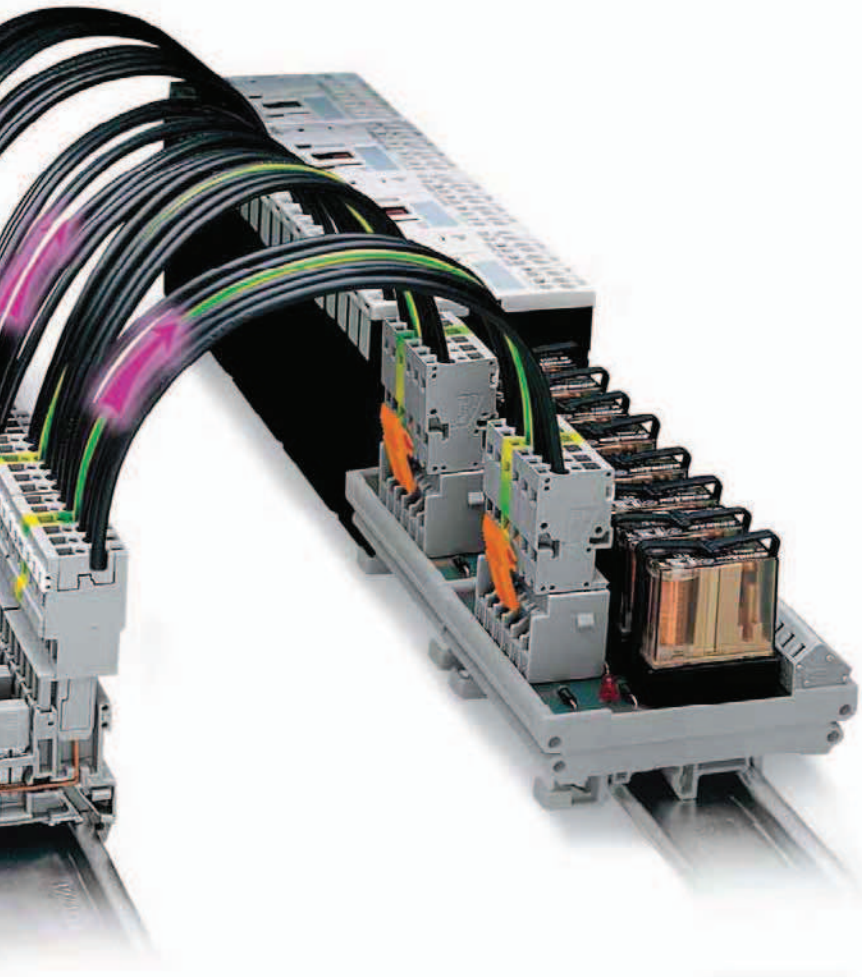


Protection Against Mismating and Accidental Contact
The WAGO X-COM®-SYSTEM **is fully protected against accidental contact – even when plugs are disconnected**. This significantly simplifies the planning of power distribution. Furthermore, the whole system is **100% protected against mismating**. Coded, without the loss of any poles, prevents mismating of male connectors and female plugs having the same number of poles.

Carrier Terminal Blocks
Carrier terminal blocks are available as through terminal blocks, double-deck terminal blocks, and ground conductor terminal blocks with automatic contact to the carrier rail.
Carrier terminal blocks with specialty functions are available in disconnect, diode and LED versions. Carrier terminal blocks equipped with an additional socket can accommodate a wide range of pluggable electronic modules (e.g., relays, optocouplers, transducers).
Depending on the type of terminal block, the carrier terminal blocks are equipped with one to three jumper positions for commoning signals via insulated push-in type jumpers.

Types of Application
Equipment connection to the WAGO X-COM®-SYSTEM for:

- Frequency converters
- Thyristor actuators
- Soft start motor controllers
- Motors
- Phase filter
- Power sub-assemblies
- Power supply units
- Uninterruptible power supply (UPS)
- "Panel-to-door" wiring
- Pluggable high-current, feed-through connections
- Flying leads



Female Plugs
The mating half of the carrier consists of terminal blocks modular 1- to 15-pole, 1-conductor and 2-conductor straight or angled female plugs. Angled female plugs combined with double-deck terminal blocks offer high-density wiring and reduce overall terminal block height. A jumper slot simplifies potential distribution – even on the female plugs.
This makes commoning supply lines particularly easy as the power supply of downstream sub-assemblies is maintained even after female plugs have been removed.

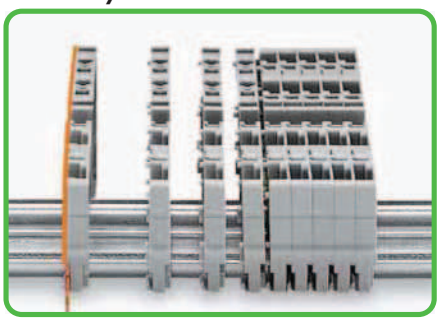
1-Pole Female Plugs
Special 1-pole female plugs can carry the full rated current of the terminal blocks for many applications:
- as test plug adapters
- as connectors for motor lead tests
- for all types of patchboard applications
- for the creation of multi-pole prototypes
- for phase selection in a three-phase network without interfering with the wiring
- for single-pole power supply in commercial or recreational vehicles. The grounding of all electrical components is connected through the chassis.

Male Connectors and Male Headers
Male connectors are available with snap-in mounting feet for panel mounting, with fixing flanges for feed-through applications or without mounting elements for flying leads. Strain relief plates are available as accessories.
Sub-assemblies on printed circuit boards can be integrated into the system wiring using male headers with solder pins. As a result, parts can be exchanged quickly without wiring failures.

Degree of Protection
In mated condition: IP20
Unmated: IP20
Temperature range:
– 35 °C to +100 °C

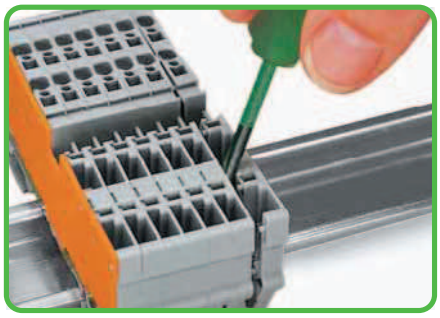
X-COM®-SYSTEM
Carrier Terminal Blocks and Female Plugs, 769 Series

Assembly



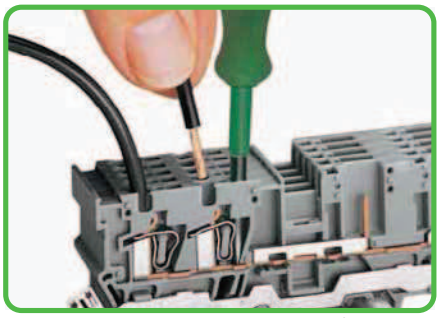
Snap individual carrier terminal blocks onto carrier rail and slide together.

Removal



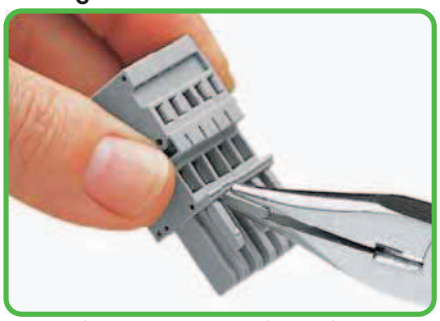
Unlock assembly with operating tool and remove terminal block via release lever.

CAGE CLAMP® connection



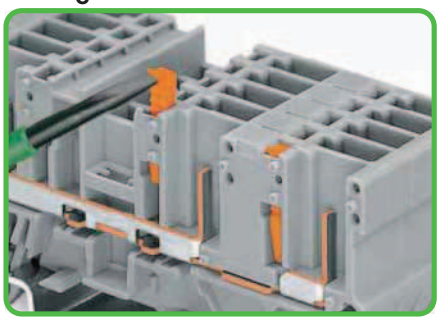
Carrier terminal block: connection/removal of conductor with (3.5 x 0.5) mm operating tool.

Coding

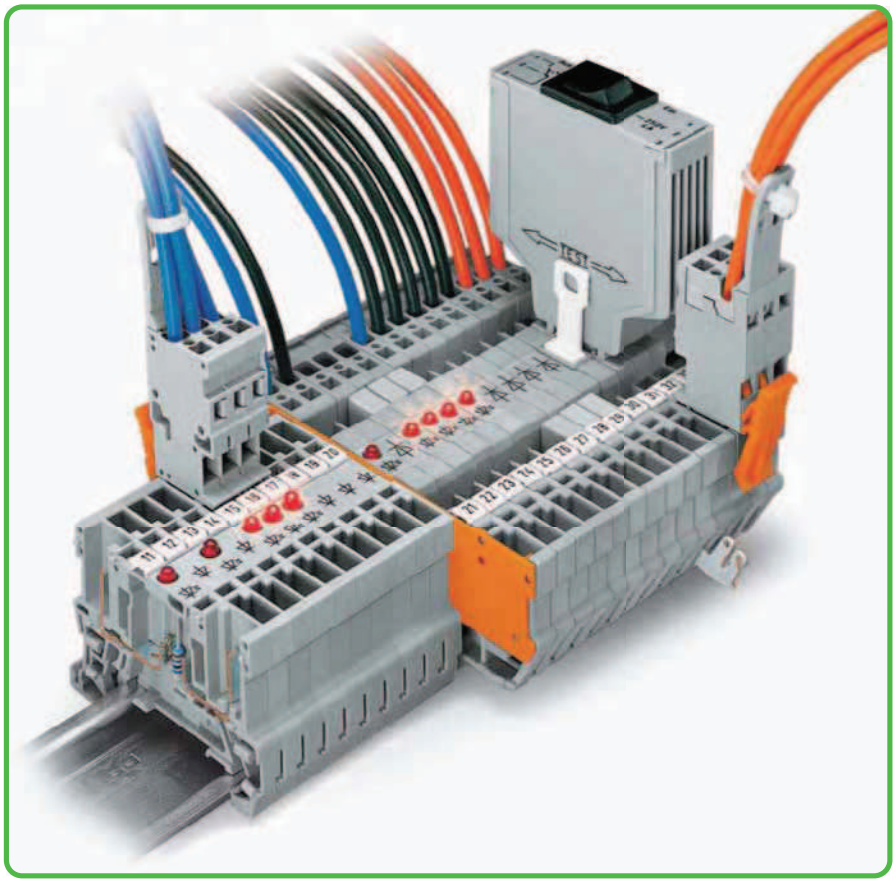


Coding a female plug – removal of coding finger(s). Do not break off the first and last latch position coding fingers!

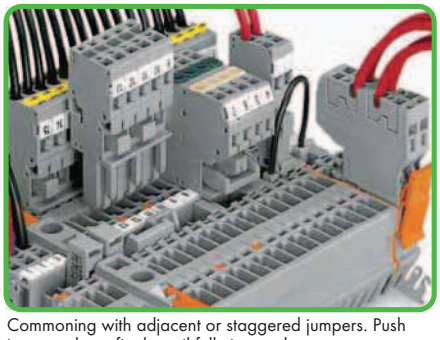
Coding



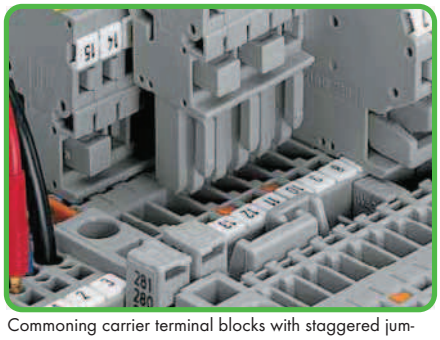
Snap coding pin in proper direction on carrier terminal block. Shown: Removal of a coding pin from carrier terminal block.



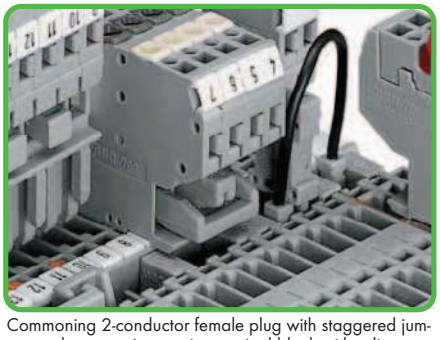
Commoning



Commoning with adjacent or staggered jumpers. Push jumpers down firmly until fully inserted.



Commoning carrier terminal blocks with staggered jumpers.



Commoning 2-conductor female plug with staggered jumper and commoning carrier terminal block with adjacent jumper.



CAGE CLAMP® clamps the following copper conductors:*

solid



stranded

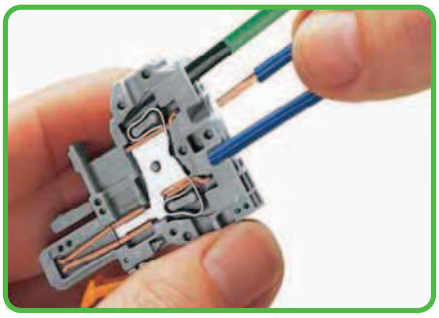


fine-stranded, also with tinned single strands

* For aluminum conductors, see notes in Section 14.

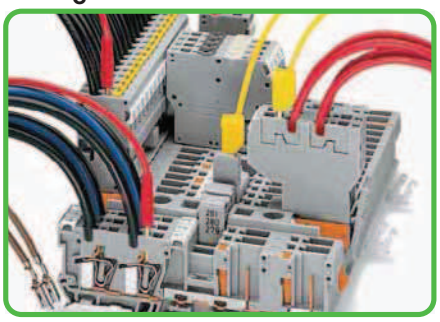
– Description and Handling –

CAGE CLAMP® connection



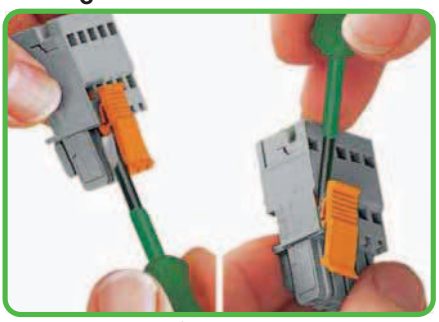
Female plug: termination/removal of conductor.
Operation 90° to wire also possible.

Testing



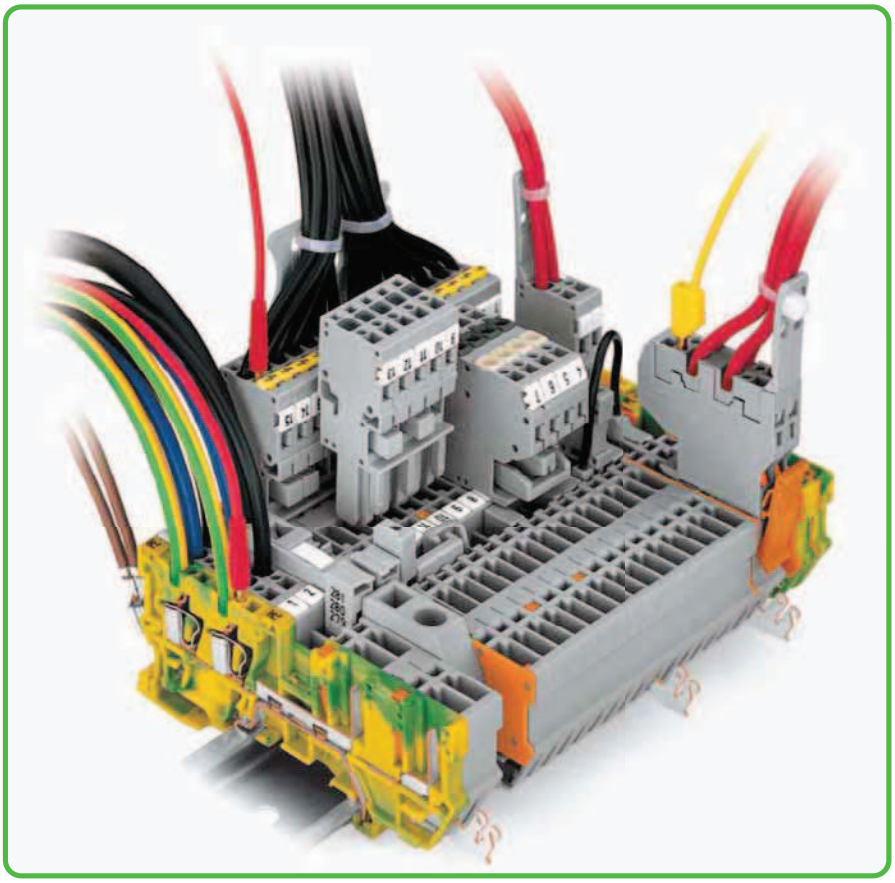
Testing with test plug 2 mm Ø (red) or
2.3 mm Ø (yellow).

Locking lever

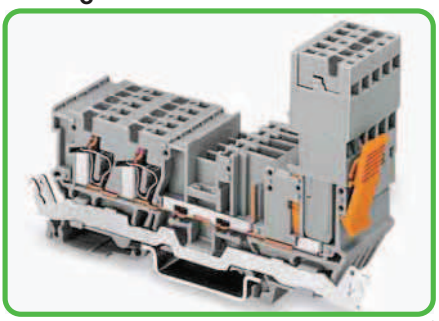


Snapping in/removal of locking lever.

Note: Connectors used according to the regulations shall not be connected or disconnected when live or under load.

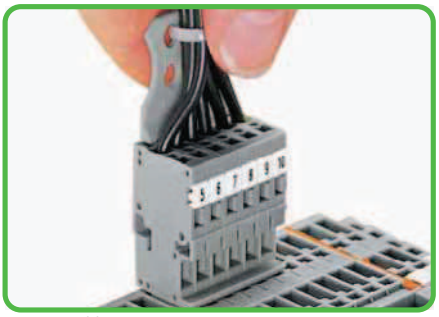


Locking lever



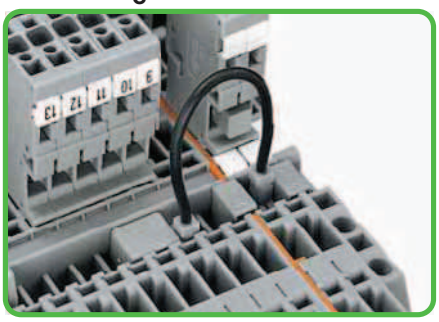
Female plug secured with locking lever in external area of carrier terminal block.

Strain relief

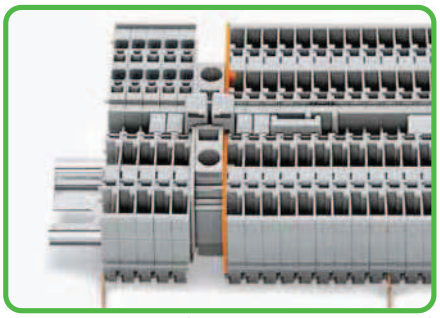


Removal of female plug, conductors provided with strain relief plate.

Commoning



Commoning carrier terminal blocks with push-in type wire, or adjacent jumpers over the intermediate plate.



Step-down jumper used for commoning terminal blocks of different sizes (max. 10 mm²/AWG 8).



Commoning 1-conductor female plugs with miniature adjacent jumpers.



fine-stranded,
tip-bonded



fine-stranded,
with ferrule ❶
(gastight crimped)

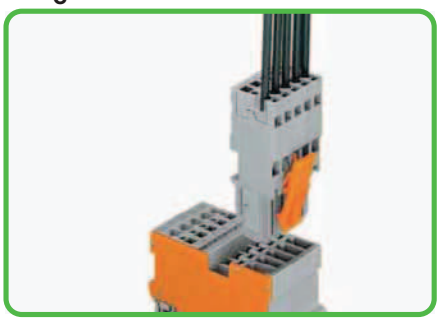


fine-stranded,
with pin terminal
(gastight crimped)

❶ When using ferrules, the max. conductor cross section accommodated is one size smaller than max. rating of terminal block.

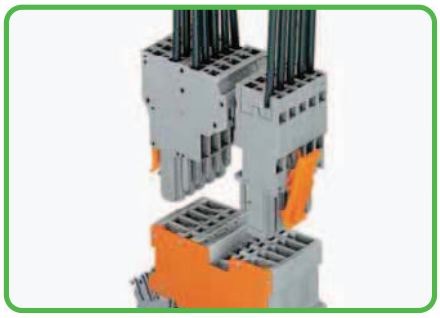
X-COM®-SYSTEM, 769 Series
Carrier Terminal Blocks, Female Plugs, Male Headers and Male Connectors

Range overview

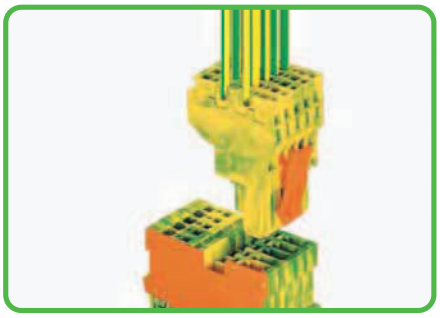


1-conductor/1-pin carrier terminal block
1-conductor female plug, straight*

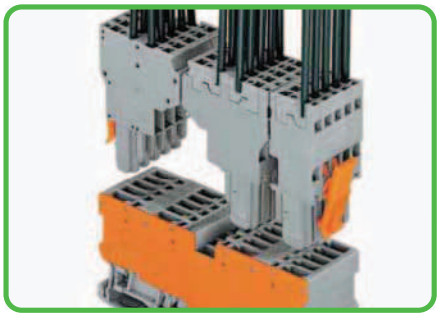
* or 1-conductor female plug, angled



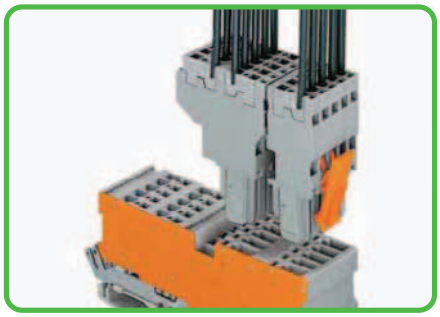
2-pin shield carrier terminal block
2-conductor female plug
1-conductor female plug, straight*



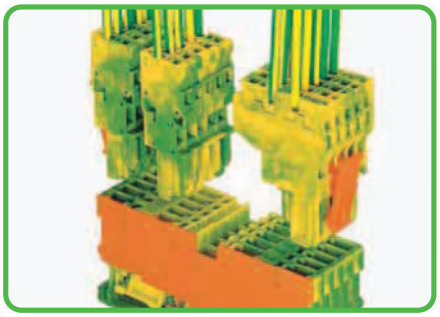
1-conductor/1-pin ground carrier terminal block
2-conductor female plug, green-yellow



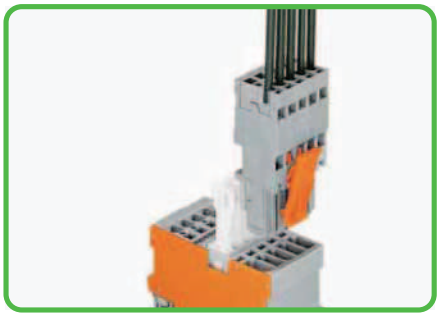
4-pin carrier terminal block
2-conductor female plug
1-conductor female plug, straight



2-conductor/2-pin shield carrier terminal block
2-conductor female plug
1-conductor female plug, straight

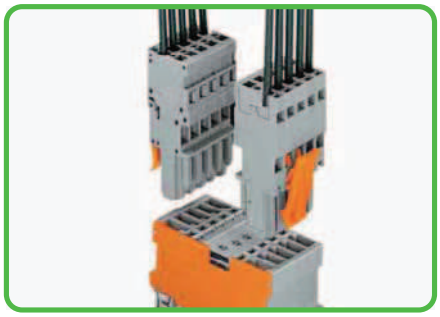


4-pin ground carrier terminal block
1-conductor female plug, straight
2-conductor female plug

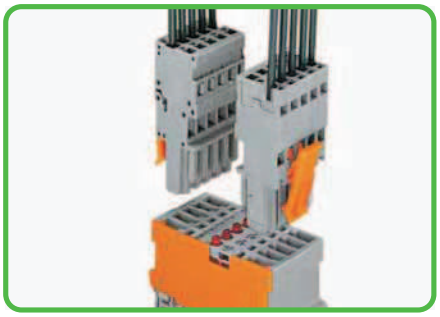


1-conductor/1-pin disconnect carrier terminal block
1-conductor female plug, straight*

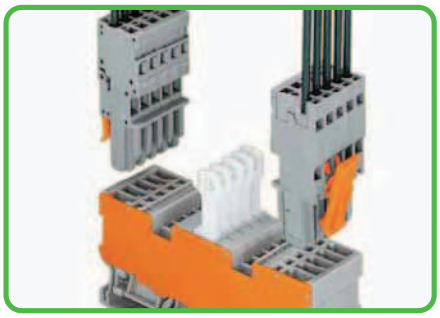
* or 1-conductor female plug, angled



2-pin diode carrier terminal block
1-conductor female plug, straight*

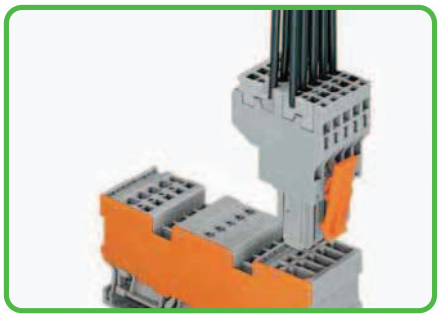


2-pin LED carrier terminal block
1-conductor female plug, straight*

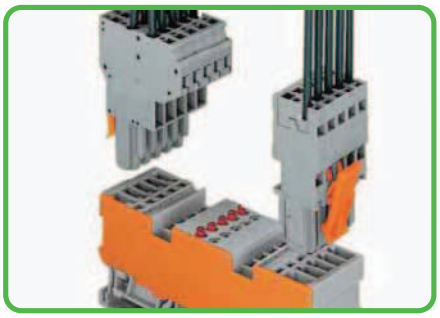


2-pin disconnect carrier terminal block
with 2 jumper positions
1-conductor female plug, straight*

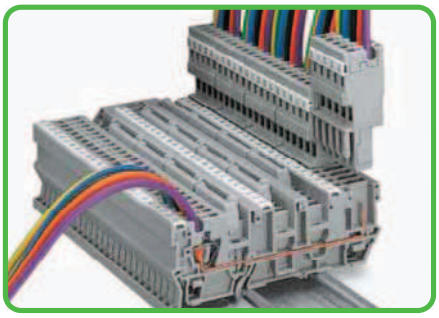
* or 1-conductor female plug, angled



1-conductor/1-diode carrier terminal block with 2 jumper positions
2-conductor female plug

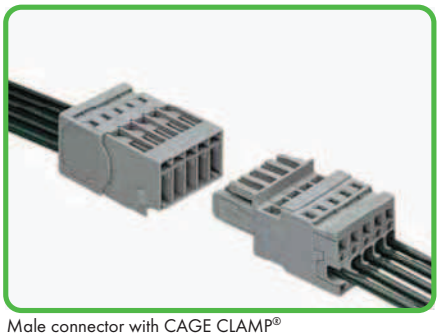


2-pin LED carrier terminal block with 2 jumper positions
2-conductor female plug
1-conductor female plug, straight

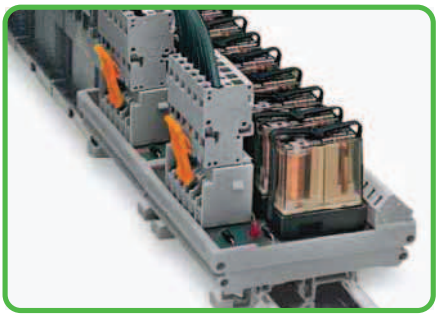


1-conductor/1-pin carrier terminal block with 3 jumper positions
1-conductor female plug, straight*

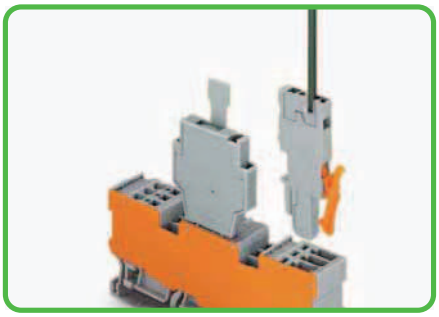
* or 1-conductor female plug, angled



Male connector with CAGE CLAMP®
1-conductor female plug, straight

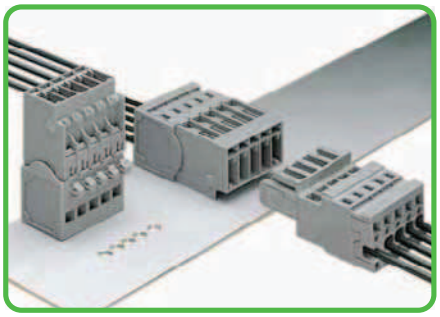


Male header with straight solder pins
1-conductor female plug, straight

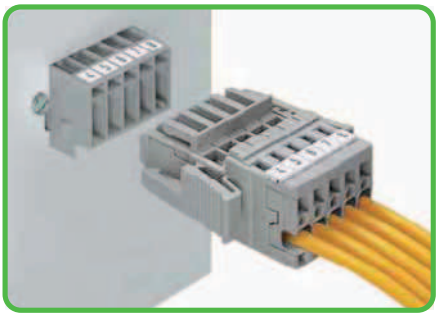


1-conductor/1-pin carrier terminal block with 2 jumper positions
1-conductor female plug, straight*
Fuse plug, 6 mm/0.236 in wide (every other terminal block)

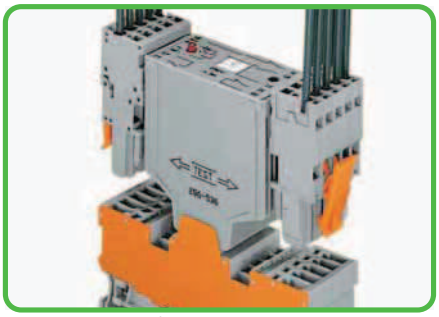
* or 1-conductor female plug, angled



Male connector with CAGE CLAMP® connection and mounting feet
1-conductor female plug, straight

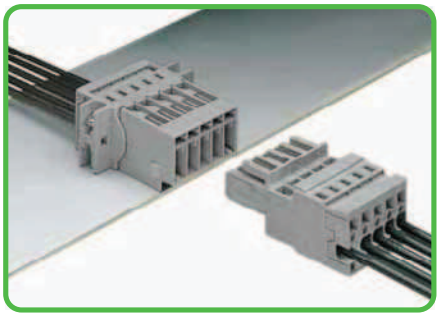


Male header with straight or angled solder pins and fixing flanges
1-conductor female plug straight with lateral locking levers

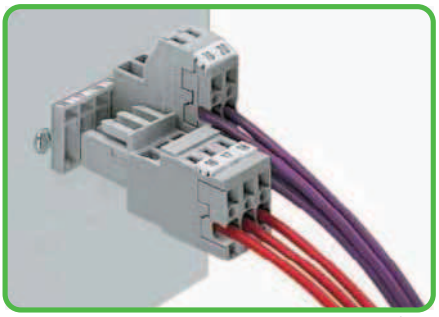


2-pin terminal block for pluggable modules with 2 jumper positions and separator plate
1-conductor female plug, straight*
Relay plug 25 mm/0.984 in wide

* or 1-conductor female plug, angled

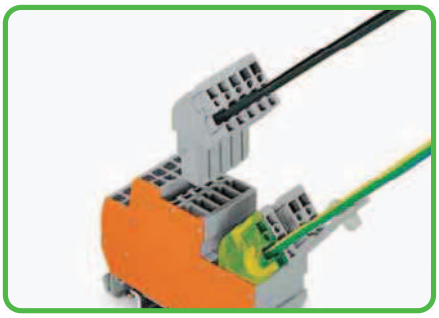


Male connector with CAGE CLAMP® connection and fixing flanges
1-conductor female plug, straight



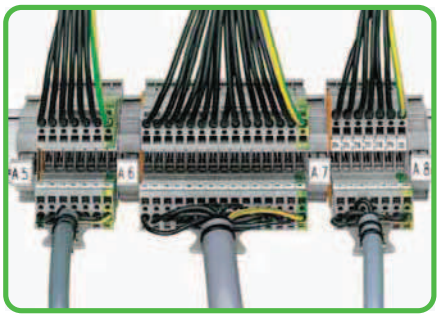
Male header with straight or angled solder pins and feed-through flanges
1-conductor female plug, straight
2-conductor female plug

Application example: Cost-effective alternative

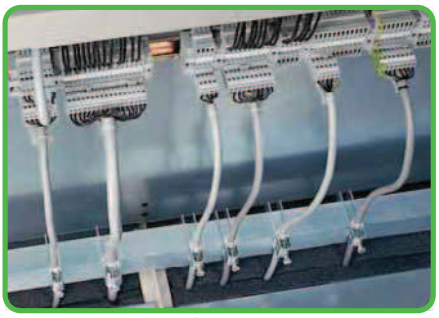


1-conductor/1-pin double-deck carrier terminal block
1-conductor female plug, angled*

* or 1-conductor female plug, straight



Installing cables in a cables in a switch cabinet.
The cables are installed **with** the connected female plugs and are directly plugged in the carrier terminal blocks.



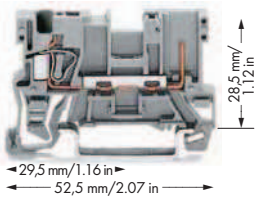
Cable entry in the base of the switch cabinet, with separate strain relief, movable IP54 bottom plates sealed with sponge rubber (e.g., by Rittal)

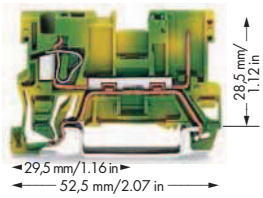
X-COM®-SYSTEM
1-Conductor/1-Pin Carrier Terminal Blocks

CAGE CLAMP®

0.08 - 4 mm²	AWG 28 - 12
500 V/6 kV/3 ❶	600 V, 20 A
I_N 32 A ❷	300 V, 20 A
Terminal block width 5 mm / 0.197 in	
8 - 9 mm / 0.33 in ❸	

0.08 - 4 mm²	AWG 28 - 12
Terminal block width 5 mm / 0.197 in	
8 - 9 mm / 0.33 in ❸	





❶ 500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = Nominal voltage with shield contact (also see Section 14)

❷ See current-carrying capacity curve, page 376 and at www.wago.com

❸ Strip length, see packaging or instructions.

❹ See application notes for:
Test plug modules, pages 195 – 196
Insulation stop, page 199
Staggered jumper, page 201
Push-in type wire jumper, page 201

	Item No.	Pack. Unit
1-conductor/1-pin carrier terminal block, for DIN 35 rail, acc. to EN 60715		
gray	**769-176**	100
blue	**769-176/000-006**	100
1-conductor/1-pin carrier terminal block with shield contact, (no picture), for DIN 35 rail, acc. to EN 60715		
gray	**769-231** ❶	50

	Item No.	Pack. Unit
1-conductor/1-pin ground carrier terminal block, for DIN 35 rail, acc. to EN 60715		
green-yellow	**769-237**	100

Item-Specific Accessories

Protective warning marker,

with high-voltage symbol, black, for 5 terminal blocks
yellow **280-415** 100 (4x25)

769 Series Accessories

Appropriate marking system:
Miniature WSB (see Section 13)

End and intermediate plate, 1.1 mm thick

orange **769-308** 100 (4x25)
gray **769-307** 100 (4x25)

Insulation stop, ❹

5 pcs/strip,
0.08 - 0.2 mm² "s" (0.14 mm² "f-st")
white **769-470** 200 (8x25)

Insulation stop, ❹

5 pcs/strip,
0.25 - 0.5 mm²
light gray **769-471** 200 (8x25)

Insulation stop, ❹

5 pcs/strip,
0.75 - 1 mm²
dark gray **769-472** 200 (8x25)

Coding pin,

for coding female plugs
orange **769-435** 100 (4x25)

Adjacent jumper, insulated,

I_N = I_N terminal block
gray **280-402** 200 (8x25)

Alternate jumper, insulated,

I_N = I_N terminal block
gray **280-409** 100 (4x25)

Staggered jumper, ❹

insulated,
width 5 mm/0.197 in,
I_N 24 A

from 1 to 2	**780-452**	100 (4x25)
from 1 to 3	**780-453**	100 (4x25)
from 1 to 4	**780-454**	100 (4x25)
from 1 to 5	**780-455**	50 (2x25)
from 1 to 6	**780-456**	50 (2x25)
from 1 to 7	**780-457**	50 (2x25)
from 1 to 8	**780-458**	50 (2x25)

Push-in type wire jumper, ❹

insulated,
I_N 9 A,
wire size 0.75 mm²

L = 60 mm	**249-125**	10
L = 110 mm	**249-126**	10
L = 250 mm	**249-127**	10

Test plug module, ❹

can be snapped together,
5 mm wide
gray **280-418** 100 (4x25)

Spacer module,

can be snapped together,
5 mm wide
gray **280-419** 100 (4x25)

Accessories

Test plug,

with 500 mm cable,
2 mm Ø
red **210-136** 50

Test plug,

with 500 mm cable,
2.3 mm Ø
yellow **210-137** 50

Test plug adapter, 5 mm wide,

for terminal blocks 1.5 - 4 mm²,
for 210-137 test plug 2.3 mm Ø
gray **280-404** 100 (4x25)

Pin cover,

with receptacle for miniature WSB
gray **769-438** 100 (4x25)
orange **769-439** 100 (4x25)

1-conductor female plug,

straight
gray **769-101** 200

1-conductor female plug,

angled
gray **769-101/022-000** 200

2-conductor female plug

gray **769-121** 100

Miniature WSB Quick marking system,

10 strips with 10 markers per card,
5 mm wide markers
plain **248-501** 5

Screwless end stop,

for DIN 35 rail,
6 mm wide
gray **249-116** 100 (4x25)

Screwless end stop,

for DIN 35 rail,
10 mm wide
gray **249-117** 50 (2x25)

For list of approvals and user guide, see pages 634 to 637.