

CDSH-SQUICH® series

High density without tools (spring connection contacts)

The CDSH-SQUICH® series (with spring and actuator button) are the logical **evolution of the CDS series**.

The continuous demand for a greater number of poles and smaller dimensions has led to the design and manufacture of the new CDSH series, which offers single connectors with a **maximum number of 84 poles** that occupy the **same space of standard connectors** with screw/spring connection.

Each of the spring terminals has an actuator button, suitably shaped and incorporated in the cavity. When this button is pushed, it triggers the closure of the spring device of the corresponding terminal, safely and reliably connecting the conductor to its respective electric contact in the connector.

The actuator buttons are supplied raised, in the "open terminal" position and are **easily distinguishable by the orange colour** which makes them stand out from the insulating body of the connector.

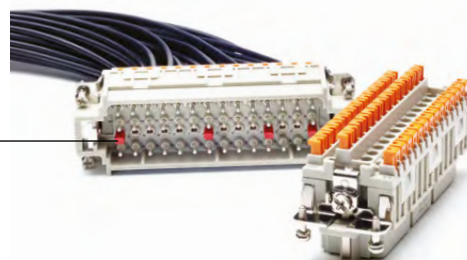
The advantage of this exclusive solution is that **the actuators disappear completely within the body of the connector**, making it easy to identify terminals not yet closed and **eliminating possible obstacles** to the movement of the conductors during installation and maintenance.

SQUICH® technology requires no tools **to activate the terminal and a simple operation is all you need to make the connection**. Refer to SQUICH® Connection operating principles on page 24.

It is possible to insert in the mating area the new **CR CDS plastic coding pin** that enables the polarisation of inserts in a wide range of combinations. This means that it is possible to install side by side identical connectors with different functions.

The CR CDS coding pins **can also be used in combination with CR 20 / CRM / CRF / CR 72 metal pins** instead of insert fixing screws in order to increase the number of possible combinations. Each position of the coding pin used on the female insert must correspond to an unused position on the male insert.

The required number of coding pins, depending on the size of connectors, and the maximum number of possible codings is shown in the table 1.



SUM UP

- ☑ **Greater pole density as compared to existing connector with screw terminals.**
SAVE SPACE +70%
- ☑ **Reduced wiring time.**
SAVE TIME -50%

STANDARD	CDSH - HIGH DENSITY	
16A	10A	
06 poles	09 poles	+50%
10 poles	18 poles	+80%
16 poles	27 poles	+70%
24 poles	42 poles	+75%
32 poles	54 poles	+70%
48 poles	84 poles	+75%

- ☑ **Wiring tool is not necessary**
- ☑ **Quick identification of wired and non-wired terminals**
- ☑ **Terminals already open and ready for conductor clamping**
- ☑ **Option to use wires up to 2,5 mm²**
- ☑ **Built-in silver plated contacts**
- ☑ **Excellent fastening solution**
- ☑ **Great resistance to strong vibration**

Q CDSH series can be used with the whole range of ILME enclosures

Table 1. CDSH series - Coding with CR CDS pins

Size of connectors	Slots for coding pins (M) = male insert (F) = female insert	Required coding pins for each coupling	Possible codings
9P + ⊕	3 (M) + 3 (F)	3 2 (M) + 1 (F)	3
18P + ⊕	6 (M) + 6 (F)	6 3 (M) + 3 (F)	20
27P + ⊕	9 (M) + 9 (F)	9 5 (M) + 4 (F)	126
42P + ⊕	14 (M) + 14 (F)	14 7 (M) + 7 (F)	3.432

CDSH-SQUICH® series

TECHNICAL FEATURES

Insert series		CDSH-SQUICH®
No. of poles ¹⁾	Main contacts + ⊕	9, 18, 27, 42, (54), (84)
	auxiliary contacts	—
Rated current ²⁾		10A
EN IEC 61984	rated voltage	400V
	rated impulse voltage	6kV
	pollution degree	3
EN IEC 61984	rated voltage	400V / 690V
	rated impulse voltage	6kV
	pollution degree	2
Contact resistance		≤ 1 mΩ
Insulation resistance		≥ 10 GΩ
Ambient temperature limit (°C)	min	-40
	max	+125
Degree of protection	with enclosures (according to type)	IP65, IP66/IP69, IP66/IP67/IP69, IP66/IP68/IP69
	without enclosures (in mated condition)	IP20 (IPXXB)
Conductor connections		spring type with actuator button
Conductor cross-sectional area	mm ²	0,14 - 2,5 (for wires with crimped ferrule, usable section: up to 1,5 mm ²)
	AWG	26 - 14 (AWG 16 with crimped ferrule)
		26 - 16 prepared with crimped ferrule
Mechanical endurance (mating cycles)		≥ 500







1) Polarities shown in brackets may be achieved by using two inserts in their own double sized housings.

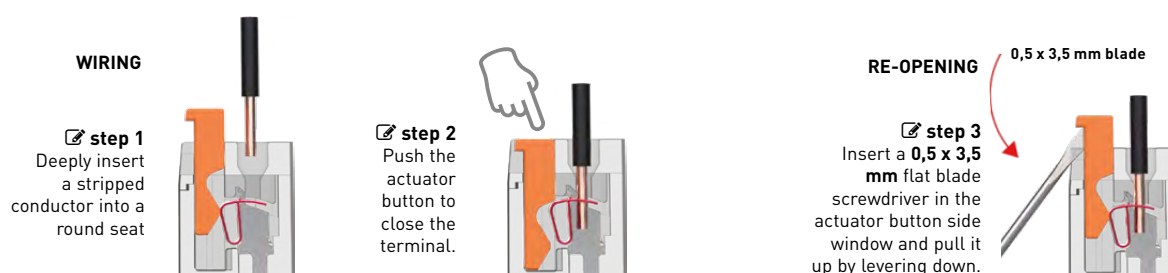
2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.

SQUICH® Connection technology

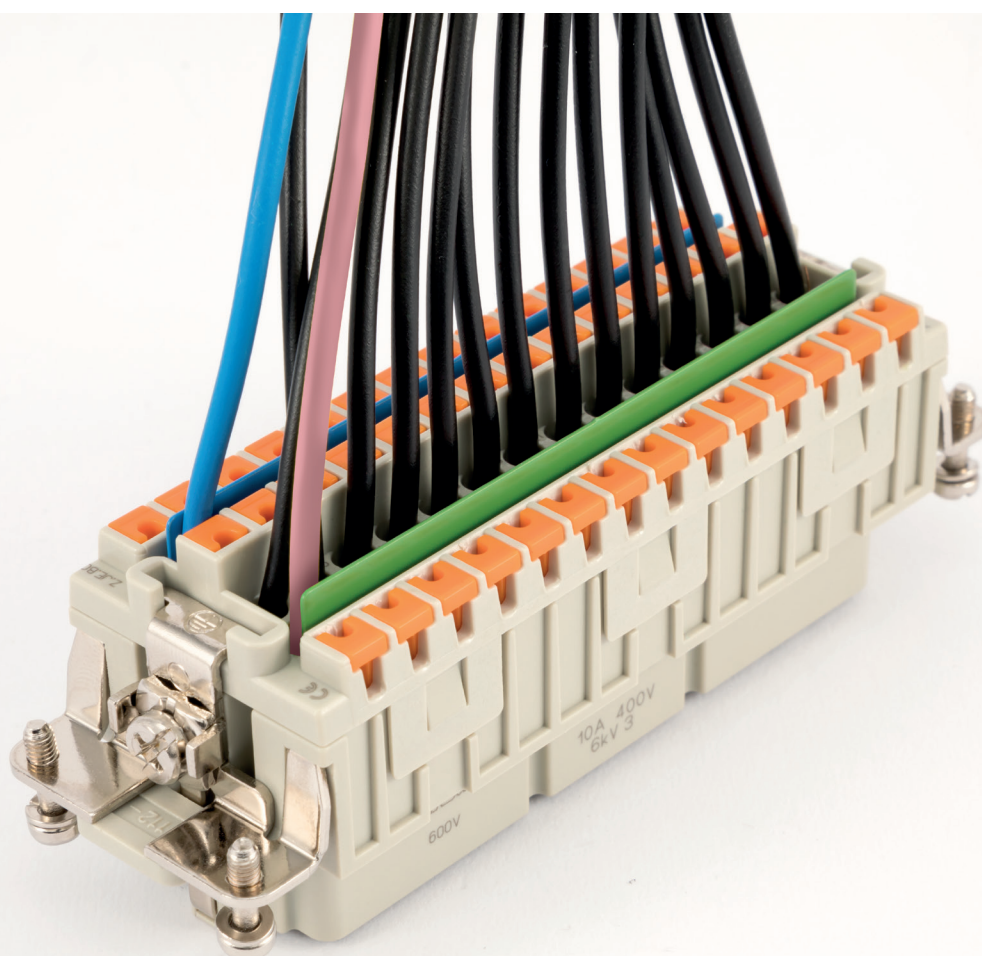
In the layout below the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.

This type of connection offers the following advantages:

-  no special wire preparation (other than stripping);
-  it offers an excellent fastening solution and a great resistance to strong vibrations;
-  it allows the use of solid and flexible wires with cross-sections between 0,14 and 2,5 mm² (AWG 26 - 14);
-  for wires with crimped ferrule, usable section: to 1,5 mm² (AWG 16);
-  a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact;
-  the profile of the actuator button allows the section of a test probe.



PARALLEL BRIDGES CR BDSH FOR CDSH-SQUICH® CONNECTOR INSERTS



Parallel bridges
for CDSH SQUICH® 3-, 6-, 9-, 14- pin
2 colours available: light blue and green
EN/IEC 61984 ratings: 10 A 50 V 0,8 kV 3



Find more
information on
our products at
www.ilme.com

TECHNICAL FEATURES

CR BDSH

CR BDSH parallel bridges are made available in order to quickly and economically put electrically in parallel multiple circuits on the same connector.

This quick connection solution reduces the number of connections inside a control panel to feed multiple sensors/actuators.

Suitable for series **CDSH-SQUICH®** connector inserts, that due to their **original and proprietary design** with a 3-row pattern configuration, allow to assign each “slice” of connector to an actuator/sensor that typically requires a 3-lead wiring.

Use of parallel bridges for the “common” references (e.g.: the neutral return and the +24 V feed or the common earth (ground) reference) dramatically cuts the need for individual wiring of each sensor/actuator: only one wire is needed for these common functions, all the others are shunted together by **CR BDSH** parallel bridges.

2 colours available: **light blue** and **green**.

Series **CDSH** (SQUICH® 10 A) representing the compact evolution of the SQUICH® technology comes particularly at hand for field wiring of multiple sensors. These elements require usually a 3-lead wiring and CDSH connectors are the only connectors on the market able to offer 3 SQUICH® fast wiring terminals in-line: CDSH 09 covers the wiring of 3 sensors, CDSH 18 allows 6 sensors to be wired, CDSH 27 allows 9 sensors to be wired and CDSH 42 allows up to 14 sensors to be wired.

A full wiring would require 3 wires per each sensor, but all sensors have two circuits that share the potential. If it would be possible to put in parallel on the connector such circuits, a lot of wiring time and a lot of wire could be spared.

By employing the new **CR BDSH** parallel bridges, available in 4 sizes (3-pin, 6-pin, 9-pin and 14-pin) and in two colours – **light blue** and **green**, identified in their part nos. respectively by suffix **A** (azure, i.e. light blue) or **G** (green) – it is now possible to feed just one circuit in a line of 3, 6, 9, or 14 (depending on the connector chosen) and all the other circuits i.e. sensors will be simultaneously provided with the same potential.

Usually the required potential for such sensors are a 0 V reference (earth/ground potential) and a feeding voltage e.g. 24 V. The third wire is deemed to carry the feedback signal from the field. Use of a **CDSH** connector in synergy with a couple of **CR BDSH** parallel bridges, one for the FE circuit, the other for the common return for potential (neutral) allows sparing a lot of wiring time and a large quantity of wire.

Due to the inherently low voltage of these applications (both neutral and FE are at 0 V potential) there is no need to provide such **CR BDSH** bridges with additional costly insulation: they are provided with an insulating enamel coating, which is able to provide a **10 A 50 V 0,8 kV 3 rating**.

Connector insert series CDSH ⁽¹⁾	Parallel bridge – light blue colour	Parallel bridge – green colour
CDSH 09, CDSH 18, CDSH 27, CDSH 42	CR BDSH3A	CR BDSH3G
	CR BDSH6A	CR BDSH6G
	CR BDSH9A	CR BDSH9G
	CR BDSH14A	CR BDSH14G

⁽¹⁾ Parallel bridges fit only on inserts of series CDSH of larger or equal number of “columns”: 3-pin bridges fit on all inserts, 6-pin bridges fit on all but CDSH 09, 9-pin bridges fit on CDSH 27 and CDSH 42, 14-pin bridges fit only on CDSH 42.

CAUTION – CR BDSH parallel bridges shall be used only with unprepared conductors up to 1,5 mm² / 16 AWG.

The rated current applies to the conductor used to feed the **CR BDSH** parallel bridge, it applies to the above indicated maximum wire size and is distributed to all pins in parallel in a manner inversely proportional to the impedance of the served branch circuit. When all branches are with identical impedance, the current is equally divided by the number of served branches in parallel.

EN/IEC 61984 ratings: **10 A 50 V 0,8 kV 3**

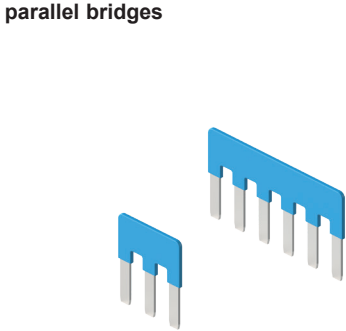
Lower and Upper Limiting Temperatures (LLT, ULT):
-40 °C + 125 °C

NOTE – These CR BDSH parallel bridges are accessories for the CDSH connector inserts only and are not electrical components able to provide a definite electrical function by themselves, for this reason even if they would have a voltage rating within the scope of the Low Voltage Directive 2014/35/EU (which they do not) they would not bear the **CE** marking, nor be subject to the similar EAC TR CU 004/2011 regulation. Moreover, their voltage rating is in the extra-low voltage range, i.e. inherently safe provided they are used within such ratings and out of scope of the above regulations. So, for two reasons neither the **CE** marking nor the EAC mark are applicable.

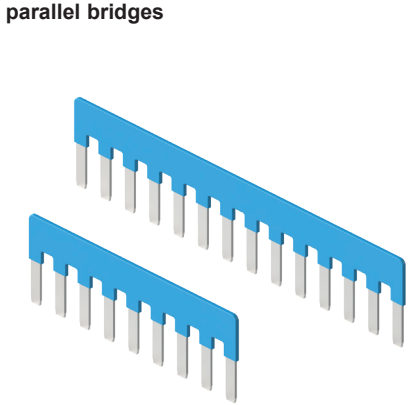
CR BDSH A parallel bridges for CDSH-SQUICH® 10 A 50 V

inserts		page:
CDSH-SQUICH®	9 poles + ⊕	86
CDSH-SQUICH®	18 poles + ⊕	87
CDSH-SQUICH®	27 poles + ⊕	88
CDSH-SQUICH®	42 poles + ⊕	89

refer to CN.19 pages



FROM APRIL 2020



FROM APRIL 2020

description

part No.

part No.

parallel bridge, 3-pin light blue colour
parallel bridge, 6-pin light blue colour
parallel bridge, 9-pin light blue colour
parallel bridge, 14-pin light blue colour

CR BDSH3A
CR BDSH6A

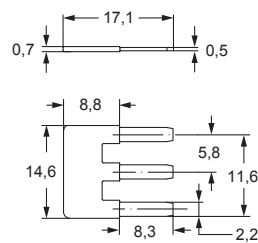
CR BDSH9A
CR BDSH14A

- characteristics according to EN/IEC 61984 ratings:
10 A 50 V 0,8 kV 3
- Lower and Upper Limiting Temperatures (LLT, ULT):
-40 °C ... +125 °C

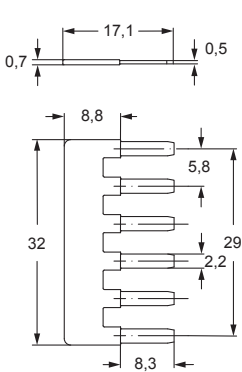
CAUTION – CR BDSH parallel bridges shall be used only with unprepared conductors up to 1,5 mm² / 16 AWG.

The rated current applies to the conductor used to feed the **CR BDSH** parallel bridge, it applies to the above indicated maximum wire size and is distributed to all pins in parallel in a manner inversely proportional to the impedance of the served branch circuit. When all branches are with identical impedance, the current is equally divided by the number of served branches in parallel.

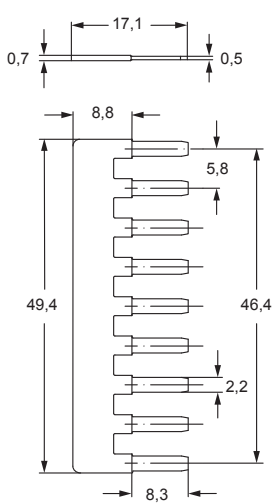
CR BDSH3A



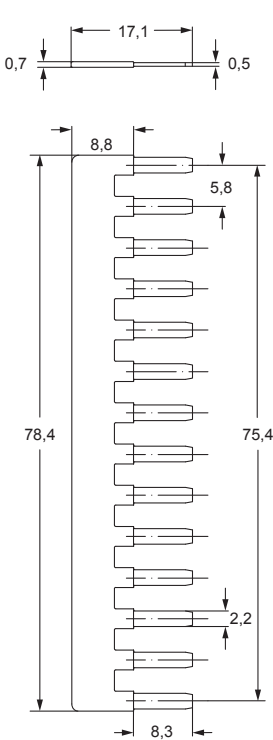
CR BDSH6A



CR BDSH9A



CR BDSH14A



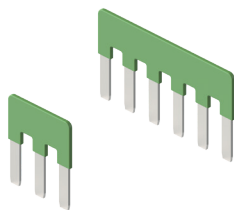
CR BDSH G parallel bridges for CDSH-SQUICH® 10 A 50 V

inserts

CDSH-SQUICH®	9 poles + ⊕	86
CDSH-SQUICH®	18 poles + ⊕	87
CDSH-SQUICH®	27 poles + ⊕	88
CDSH-SQUICH®	42 poles + ⊕	89

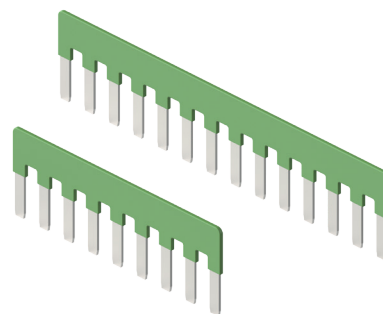
page:

parallel bridges



FROM APRIL 2020

parallel bridges



FROM APRIL 2020

refer to CN.19 pages

description

part No.

part No.

parallel bridge, 3-pin green colour
 parallel bridge, 6-pin green colour
 parallel bridge, 9-pin green colour
 parallel bridge, 14-pin green colour

CR BDSH3G
 CR BDSH6G

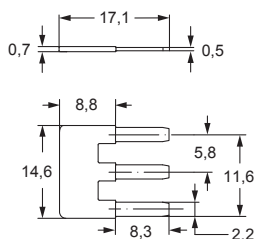
CR BDSH9G
 CR BDSH14G

- characteristics according to EN/IEC 61984 ratings:
10 A 50 V 0,8 kV 3
- Lower and Upper Limiting Temperatures (LLT, ULT):
 -40 °C ... +125 °C

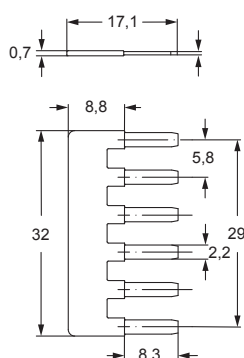
CAUTION – CR BDSH parallel bridges shall be used only with unprepared conductors up to 1,5 mm² / 16 AWG.

The rated current applies to the conductor used to feed the **CR BDSH** parallel bridge, it applies to the above indicated maximum wire size and is distributed to all pins in parallel in a manner inversely proportional to the impedance of the served branch circuit. When all branches are with identical impedance, the current is equally divided by the number of served branches in parallel.

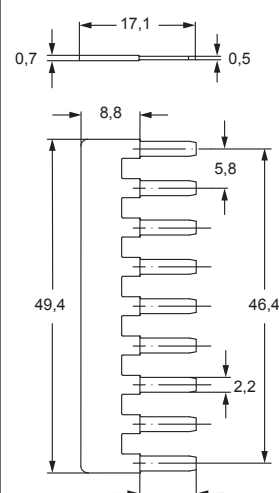
CR BDSH3G



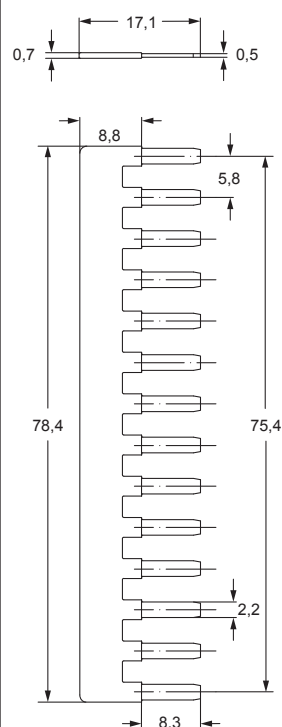
CR BDSH6G



CR BDSH9G

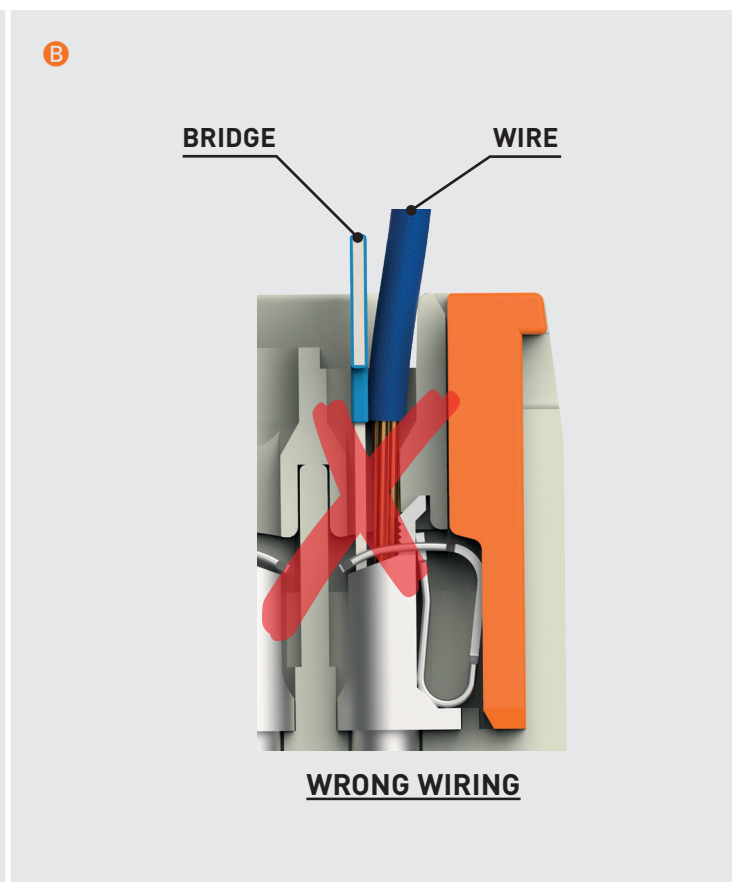
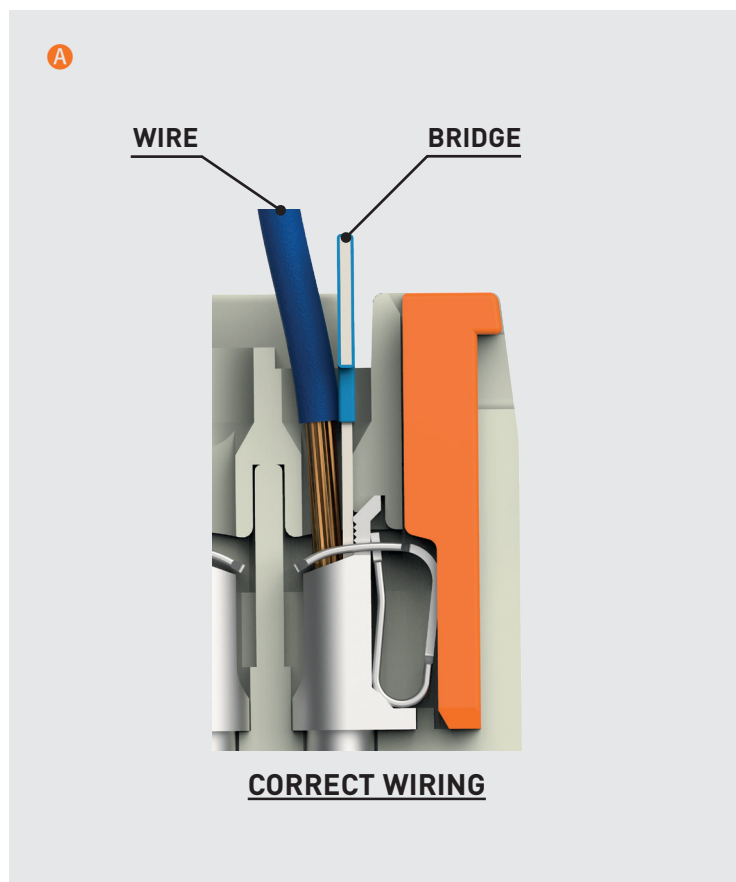


CR BDSH14G



WIRING INSTRUCTIONS

Watch
our online
tutorial

PARALLEL BRIDGES CR BDSH FOR CDSH CONNECTOR INSERTS

CR BDSH PARALLEL BRIDGES FOR CDSH CONNECTOR INSERTS

