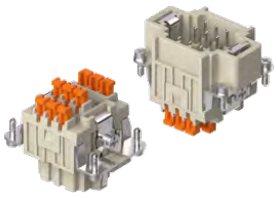
CDSH-SQUICH® 9 poles + ⏚ 10A - 400V

enclosures:
size “44.27”

panel supports: **page:**

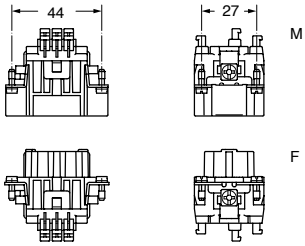
inserts,
spring terminal connections without tools



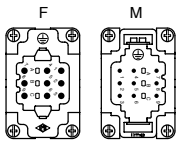
coding pins

description	part No.	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CDSHF 09** **CDSHM 09**	
plastic coding pins		**CR CDS**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28

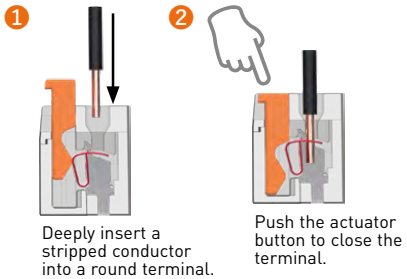


contacts side (front view)

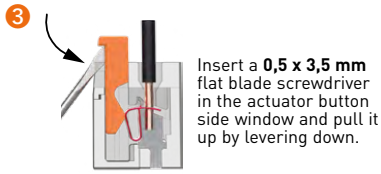


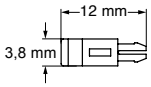
- inserts for conductors cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

SQUICH®-spring connection technology
WIRING



RE-OPENING

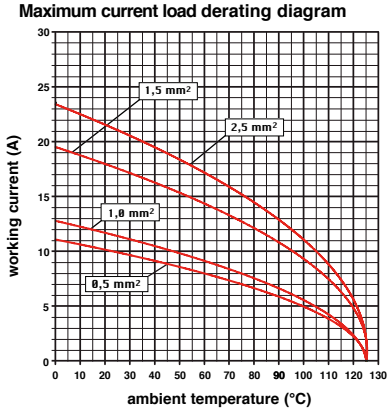




CDSH series - Coding with CR CDS pins

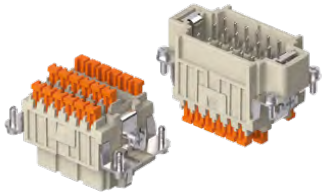
Size of connectors	Slots for coding pins (M) = male insert (F) = female insert	Required coding pins for each coupling	Possible codings
9P + ⏚	3 (M) + 3 (F)	3 2 (M) + 1 (F)	3

CDSH 09 poles connector inserts
Maximum current load derating diagram



CDSH-SQUICH® 18 poles + ⏚ 10A - 400V

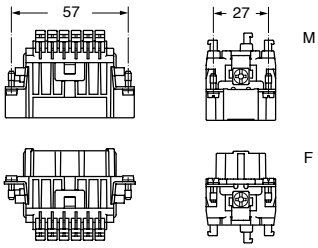
inserts,
spring terminal connections without tools



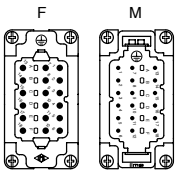
coding pins

description	part No.	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CDSHF 18** **CDSHM 18**	
plastic coding pins		**CR CDS**

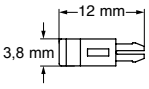
- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28



contacts side (front view)



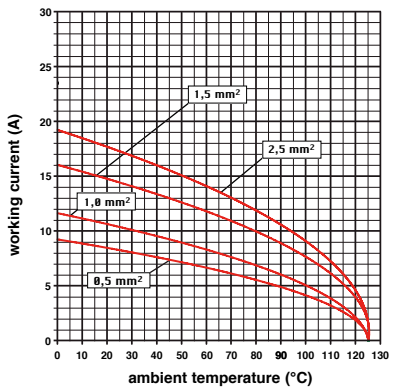
- inserts for conductors cross-sectional areas:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm



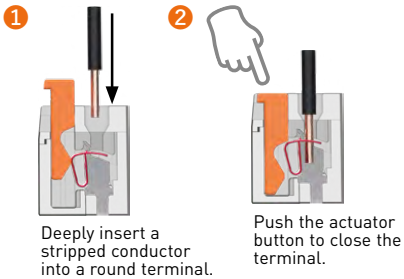
CDSH series - Coding with CR CDS pins

Size of connectors	Slots for coding pins (M) = male insert (F) = female insert	Required coding pins for each coupling	Possible codings
18P + ⏚	6 (M) + 6 (F)	6 3 (M) + 3 (F)	20

CDSH 18 poles connector inserts
Maximum current load derating diagram



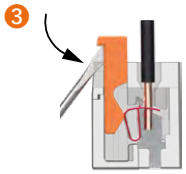
SQUICH®-spring connection technology
WIRING



Deeply insert a stripped conductor into a round terminal.

Push the actuator button to close the terminal.

RE-OPENING



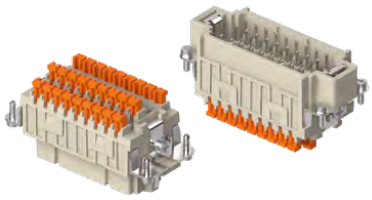
Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.

CDSH-SQUICH® 27 poles + ⏚ 10A - 400V

enclosures:
size "77.27"

panel supports:

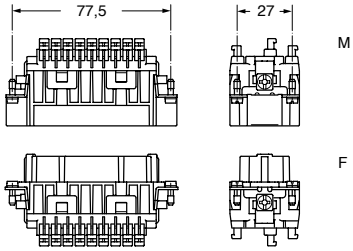
inserts,
spring terminal connections without tools



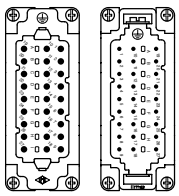
coding pins

description	part No.	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CDSHF 27** **CDSHM 27**	
plastic coding pins		**CR CDS**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28

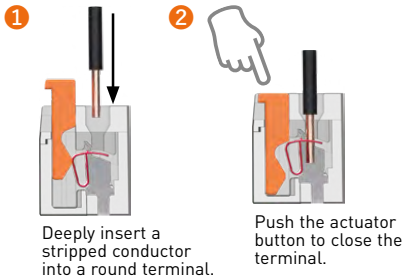


contacts side (front view)



- inserts for conductors cross-sectional areas:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section:
  up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

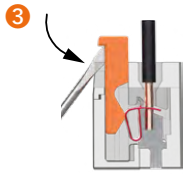
SQUICH®-spring connection technology
WIRING



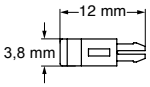
Deeply insert a stripped conductor into a round terminal.

Push the actuator button to close the terminal.

RE-OPENING



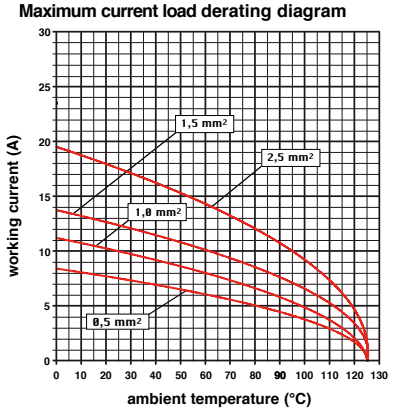
Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.



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
27P + ⏚	9 (M) + 9 (F)	9 5 (M) + 4 (F)	126

CDSH 27 poles connector inserts
Maximum current load derating diagram

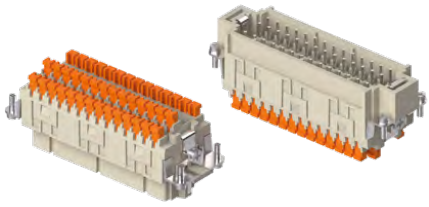


CDSH-SQUICH® 42 poles + ⏚ 10A - 400V

enclosures:
size "104.27"

panel supports:

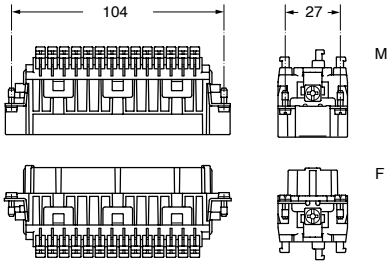
inserts,
spring terminal connections without tools



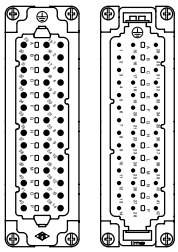
coding pins

description	part No.	part No.
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CDSHF 42** **CDSHM 42**	
plastic coding pins		**CR CDS**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28



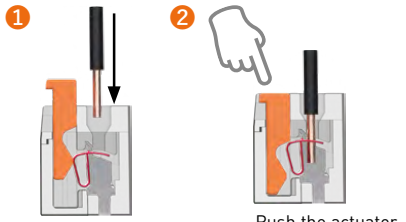
contacts side (front view)



- inserts for conductors cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

SQUICH®-spring connection technology

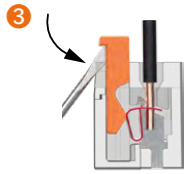
WIRING



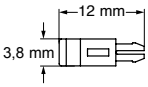
Deeply insert a stripped conductor into a round terminal.

Push the actuator button to close the terminal.

RE-OPENING



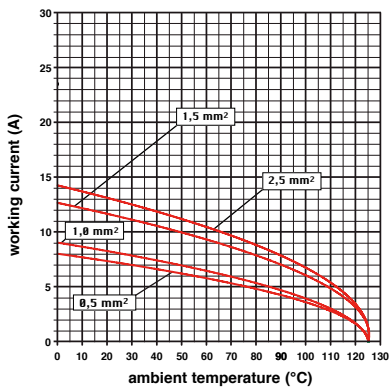
Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.



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
42P + ⏚	14 (M) + 14 (F)	14 7 (M) + 7 (F)	3.432

CDSH 42 poles connector inserts
Maximum current load derating diagram

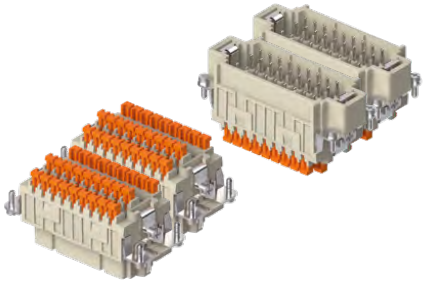


CDSH-SQUICH® 54 poles + ⏚ 10A - 400V

enclosures:
size "77.62" **page:**

C-TYPE IP65/IP66 **424 - 429**
W-TYPE for aggressive environments **525**
E-Xtreme® corrosion proof **546**

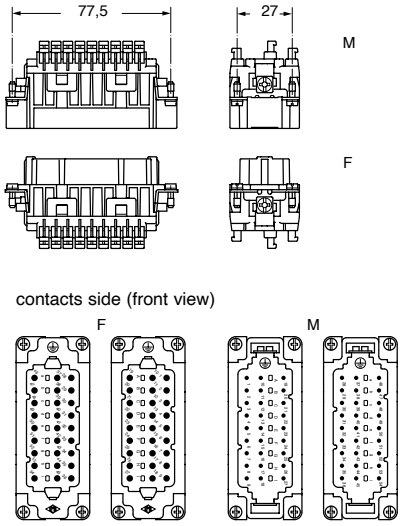
inserts,
spring terminal connections without tools



coding pins

description	part No.	part No.	part. No.
spring terminals with actuator button			
female inserts with female contacts, No. (1-27) and (28-54)	**CDSHF 27**	**CDSHF 27 N**	
male inserts with male contacts, No. (1-27) and (28-54)	**CDSHM 27**	**CDSHM 27 N**	
plastic coding pins			**CR CDS**

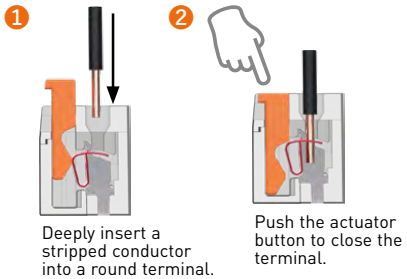
- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28



- inserts for conductors cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

SQUICH®-spring connection technology

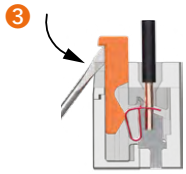
WIRING



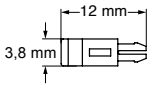
Deeply insert a stripped conductor into a round terminal.

Push the actuator button to close the terminal.

RE-OPENING



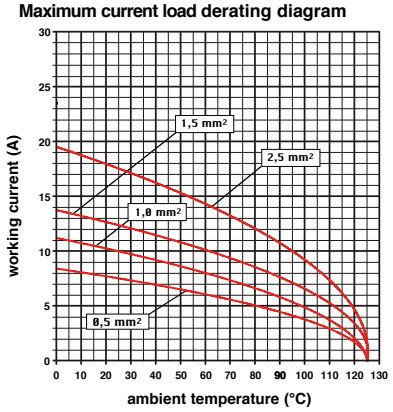
Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.



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
54P + ⏚			
27P + ⏚	9 (M) + 9 (F)	9 5 (M) + 4 (F)	126 x
27P + ⏚	9 (M) + 9 (F)	9 5 (M) + 4 (F)	126

CDSH 54 poles connector inserts
Maximum current load derating diagram



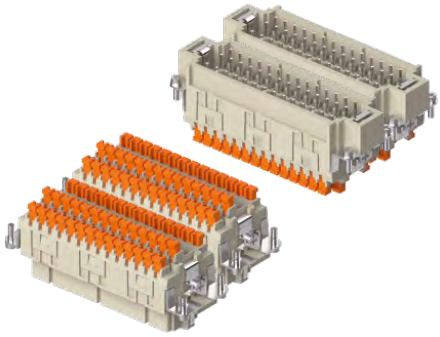
dimensions shown in mm are not binding and may be changed without notice

CDSH-SQUICH® 84 poles + ⏚ 10A - 400V

enclosures:
size "104.62" **page:**

C-TYPE IP65/IP66	**430**
W-TYPE for aggressive environments	**526**
E-Xtreme® corrosion proof	**547**

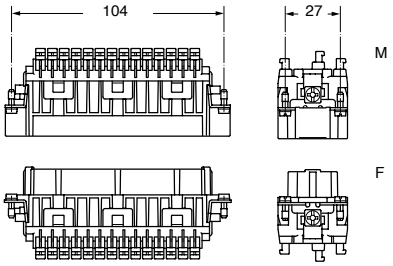
inserts,
spring terminal connections without tools



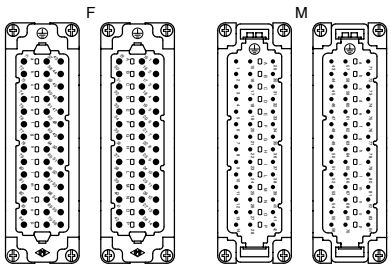
coding pins

description	part No.	part No.	part. No.
spring terminals with actuator button			
female inserts with female contacts, No. (1-42) and (43-84)	**CDSHF 42**	**CDSHF 42 N**	
male inserts with male contacts, No. (1-42) and (43-84)	**CDSHM 42**	**CDSHM 42 N**	
plastic coding pins			**CR CDS**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400V/690V 6kV 2
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for max. current load see the connector inserts derating diagram below; for more information see page 28



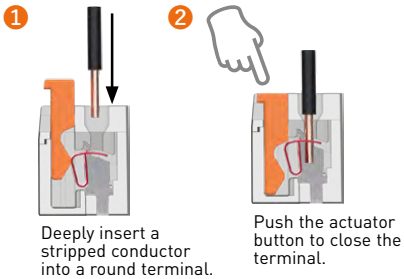
contacts side (front view)



- inserts for conductors cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, usable section: up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

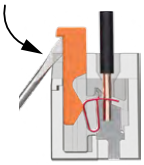
SQUICH®-spring connection technology

WIRING

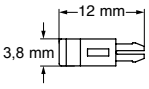


1. Deeply insert a stripped conductor into a round terminal.
2. Push the actuator button to close the terminal.

RE-OPENING



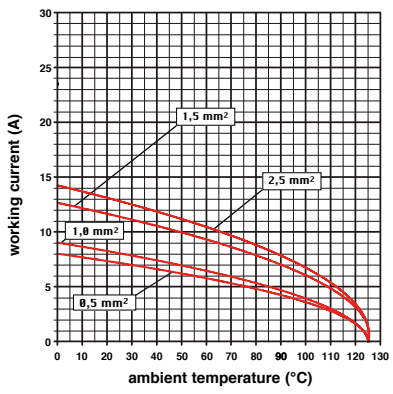
3. Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.



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
84P + ⏚			
42P + ⏚	14 (M) + 14 (F)	14 7 (M) + 7 (F)	3.432 x
42P + ⏚	14 (M) + 14 (F)	14 7 (M) + 7 (F)	3.432

CDSH 84 poles connector inserts
Maximum current load derating diagram



CDSH NC-SQUICH® series

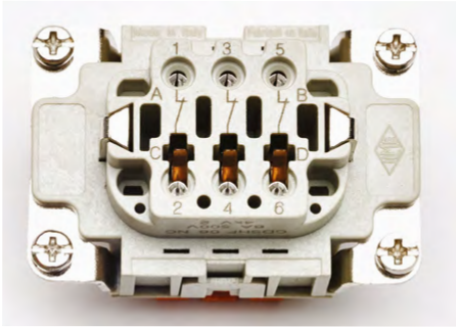
3 contact pairs with an AutoShort NC contact element

ILME developed an **innovative connector suitable for interfacing measuring current transformers (CTs)** with the dedicated electronic measurement processing equipment. Use of such systems is increasing in transformer substations with the diffusion of smart grid concepts due to the growth of self-standing power generation plants (photovoltaic, wind).

The CDSH…NC connector has the **same dimensions of a 6 poles size "44.27" CSH connector,** and it is **easy to wire** thanks to ILME proprietary SQUICH® tool-less quick connection technology.

Inside the female insert, for each of the three contact pairs 1-2, 3-4 and 5-6, a **suitable spring element is foreseen,** providing a NC (normally closed) contact between the female contact pair. The said short-circuit element automatically establishes a short-circuit between the female contact pair while the connector is being unmated, before the complete withdrawal of the corresponding male connector.

This protects the measuring current transformer's secondary windings to which this connector is deemed to be wired, against the high voltage that would arise if the ends of each winding were left open while the primary winding (the power line busbars) are still under load.

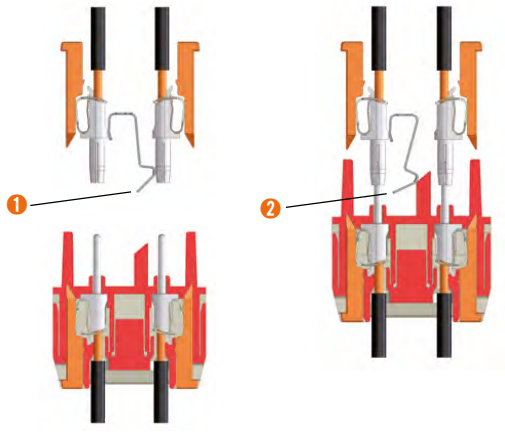


During the mating of these specially designed connector inserts, three corresponding actuator buttons realized on the mating face of the male connector, once the male contacts are already engaged with the corresponding female contacts, push aside the facing end of the AutoShort NC contact element, in order to release the short-circuit previously provided. In mated condition the proper termination of the secondary windings of the CT must be provided by the customer's downstream circuit, e.g. by suitable resistors.

AUTOSHORT NC
Operating principles

CDSH...NC connector can be used only for connecting up to three secondary (output) windings of measuring current transformers to specific measuring circuits; on the female side each contact pair is provided with said AutoShort NC contact element ❶ to keep the secondary winding ends shorted while the female connector is not engaged with the male connector, thus avoiding damages to the insulation of the current transformer and consequent hazardous condition for the personnel operating the unmating of the connector while the power busbars are energized. When the female and male connectors are being mated ❷, the short-circuit is released after proper electrical engagement of the two connector halves, thus allowing again current measurement by the dedicated electronic measurement processing equipment wired on the male connector side.

The new connector inserts can be used in size "44.27" connector enclosures, either metal (conductive) or thermoplastics (insulating), with up to IP68 degree of protection (IP66/IP68 with series CG/MG), within enclosures for aggressive environments (series "W") or with up to IP66/IP69 within series T-TYPE HYGIENIC enclosures for hygienic applications.

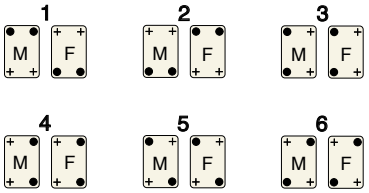


Disconnected **Connected**

AUTOSHORT NC
Coding pins

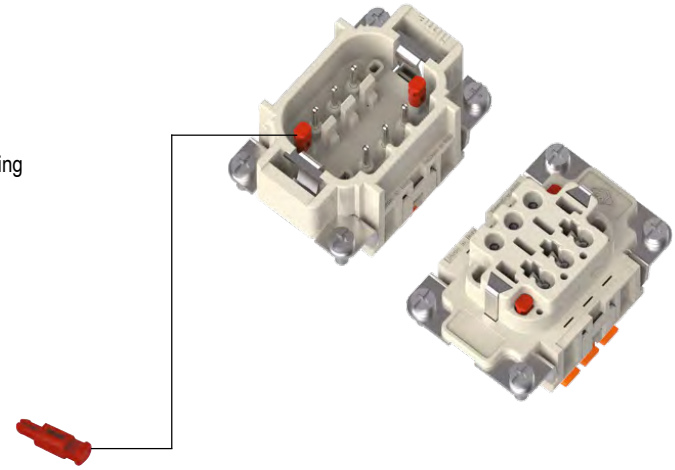
Optionally, it is possible to add **four special coding pins CR CDS** that allow up to 6 different codings, by installing 2 coding pins on the male connector half and correspondingly 2 on the female connector half, according to the coding scheme provided in the following:

CODING SCHEME



Legend

● = coding pin installed
\+ = no coding pin



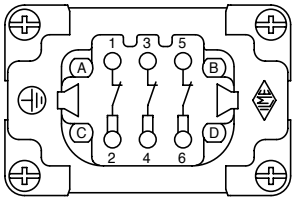
The **CR CDS coding pins can also be used in combination with other CR 20 / CRM / CRF / CR 72 metal pins** instead of insert fixing screws in order to increase the number of possible combinations.

AUTOSHORT NC
PIN Assignment

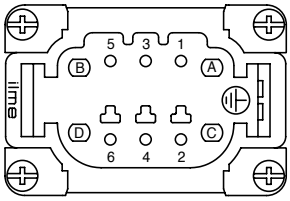
Female inserts with NC shorting contacts between contacts of pairs 1-2, 3-4, 5-6, opening upon with male inserts.
Pin assignment of contacts for the connector is the following:

Pin	Assignment
1	Winding 1 start
2	Winding 1 end
3	Winding 2 start
4	Winding 2 end
5	Winding 3 start
6	Winding 3 end
PE	⏚ Protective Earth

View from the contact side



Female



Male

CDSH NC-SQUICH® series
TECHNICAL FEATURES

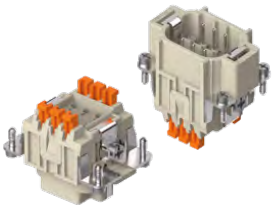
Insert series	CDSH NC-SQUICH®
Electrical contacts	6 spring clamp type built-in contacts with actuator (SQUICH®) made by copper alloy, silver plated
Rated current	**6A 250V 4kV 3; 6A 500V 4kV 2** according to EN 61984 Fault condition (rated short time thermal current): 50A for 1 s
Contact resistance (connector mated)	≤ 3 mΩ
Insulation resistance	≥ 10 GΩ
Ambient temperature limit (°C)	min. -40 max. +125
Degree of protection	IP20 (IPXXB) (connector without housing, in mated condition), IP65 or IP66 (connectors in T-TYPE housings), IP66 or more (connectors in ILME metal housings)
Conductor connections	3 pairs of contacts (with autoshunt on each pair of female connector), plus protective earth, size 44.27 housings
Conductor cross-sectional area	0,14 - 2,5 mm^2 (AWG 26 - 14) for solid or unprepared stranded copperwires
	0,14 - 1,5 mm^2 (AWG 26 - 16) for stranded copper wires prepared with ferrules
Flammability	94V-0 according to UL 94
Mechanical endurance (mating cycles)	≥ 50

CDSH NC-SQUICH® 6 poles + ⏚ 6A - 250V

enclosures:
size "44.27"

panel supports: **page:**

inserts,
spring clamp connections with actuator button, female inserts with NC shorting contacts

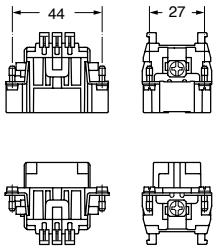


coding pins

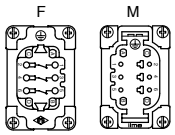
SILVER PLATED CONTACTS

description	part No.	part No
spring terminals with actuator button female inserts with female contacts male inserts with male contacts	**CDSHF 06 NC** **CDSHM 06 NC**	
plastic coding pins		**CR CDS**

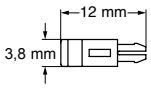
- characteristics according to EN 61984:
  6A 250V 4kV 3
  6A 500V 4kV 2
  10A with connector mated
- DNV·GL BUREAU VERITAS EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin 94V-0 according to UL 94
- mechanical life: ≥ 50 cycles
- contact resistance: ≤ 3 mΩ
- NC = Normally Closed
- the diagram below shows the current carrying capacity of the AutoShort female connector unmated, with the three NC contacts shorting the individual circuits wired in series. In this condition the AutoShort connector may be loaded up to 6A. At this max. current it may be wired 0,75 mm²/18 AWG to 2,5 mm²/14 AWG without significant performance difference.
  For the current-carrying capacity of the mated connector see the relevant diagram (for more information see page 28).



contacts side (front view)



- inserts for conductors section:
  0,14 - 2,5 mm² - AWG 26 - 14
- for wires with crimped ferrule, useful cross-section:
  up to 1,5 mm² (AWG 16)
- conductors stripping length: 9...11 mm

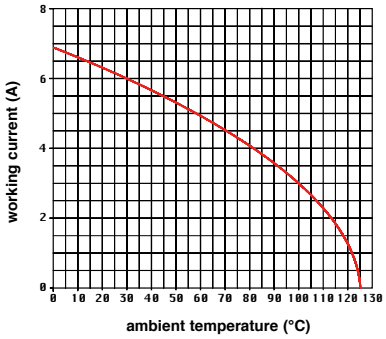


ILME CDSHF/M 06 NC (cross section: 2,5 mm²)

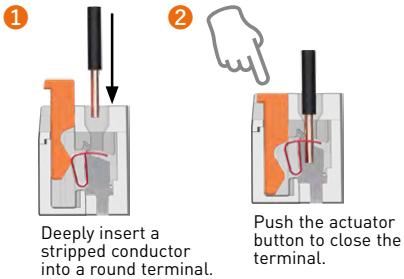
Load curve

Limit Ambient temperature (°C)	Working Current (A) 2,5 mm²
97,2	3,2
108,6	2,4
114,4	2
125	0

CDSH F 06 NC poles connector inserts
Maximum current load derating diagram



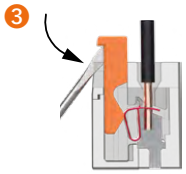
SQUICH®-spring connection technology
WIRING



Deeply insert a stripped conductor into a round terminal.

Push the actuator button to close the terminal.

RE-OPENING



Insert a **0,5 x 3,5 mm** flat blade screwdriver in the actuator button side window and pull it up by levering down.