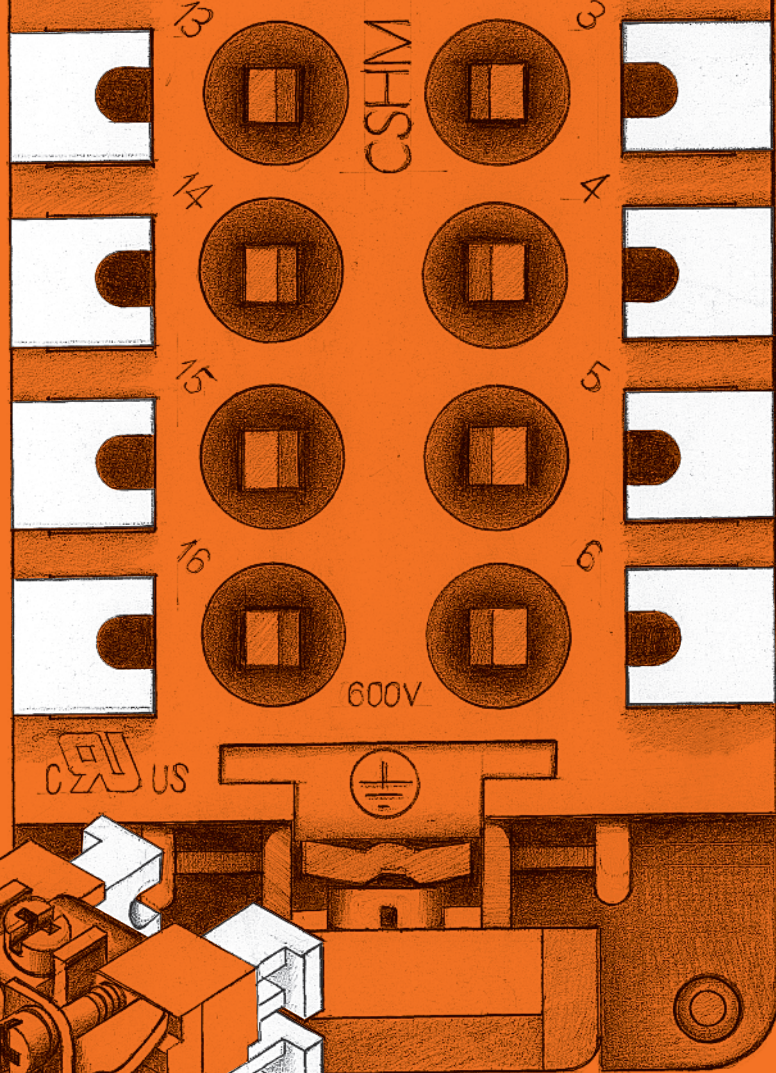
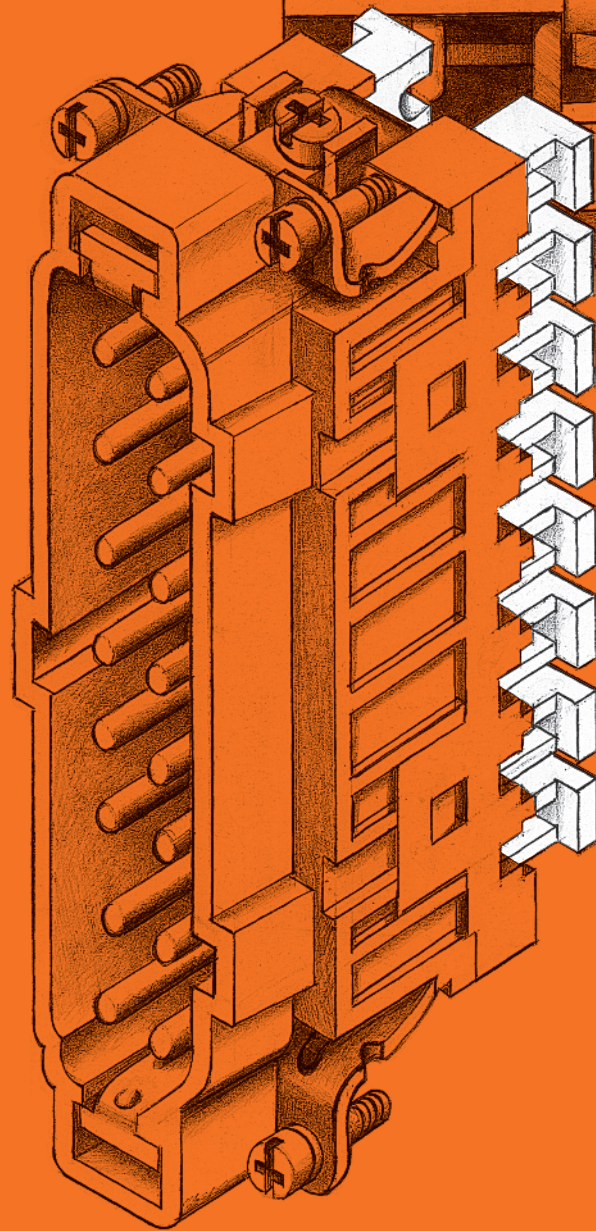


Multipole connectors SQUICH® connections without tools

ENGLISH



The Company and the Product

INDUSTRIA LOMBARDA MATERIALE ELETTRICO SpA has been operating in **Milan since 1938**, in particular in the electrotechnical sector for the manufacturing of equipment for industrial installations.

ILME reflects the traditional **entrepreneurial spirit of Lombardy**, and has enjoyed continuous expansion for over half a century. The company has carved an important role for itself in the main world markets, also operating directly in the countries that have assumed world leadership in the field of automation, including Germany and Japan.

In the **electrical connection** sector with applications in industrial automation, characterised by **top performance** and utmost **reliability needs**, ILME is today the acknowledged partner of many leading companies worldwide.

The company's fundamental values are:

product innovation, original solutions, excellent **price-quality ratio**, a customer-oriented **sense of service**, ethical behaviour and an environmentally-friendly approach.



To promote the continuing improvement of its **qualitative results**, ILME has always encouraged its collaborators to work with utmost **responsibility and participation**.

The company focuses on a series of benefits to the user, including research into the most suitable materials, high quality and safe cabling, a rapid turnaround and readily available services.

CE marking

As from 1 January 1997, in order to launch electrical products on the European market the manufacturer must ensure these bear the relevant CE marking, in line with the Low Voltage Directive 73/23/EEC * (implemented in Italy as law 18-10-1977 no. 791) and its modification 93/68/EEC * (implemented in Italy as L. D. 25-11-1996 no. 626/96, published in the supplement to the Gazzetta Ufficiale of 14-12-1996). Said marking must be placed on the product - or, if this is not possible, on the packaging, the instructions for use or the warranty certificate - and acts as a declaration by the manufacturer that the product complies with all relevant EU directives.

ILME products bear the CE marking on the product or packaging.

Almost all ILME products fall under the Low Voltage Directive. A declaration of compliance is required before applying the CE marking. This document, to which the market is not directly entitled, must be made available to the control authorities (in Italy the Ministry for Industry, Commerce and Handicraft) at all times.

In it, the manufacturer declares the technical safety standard(s) followed to manufacture the product. These standards must be, in decreasing order of preference:

- a European standard (EN prefix)
- a European harmonisation document (HD prefix)
- an international IEC standard
- a national standard
- in the absence of reference standards, the manufacturer's internal specifications, guaranteeing compliance with the directive's basic safety requirements.

Compliance with harmonised technical standards (i.e. ratified by the CENELEC) constitutes presumed conformity to the directive's basic safety requirements.

The CE marking of ILME products results from said products' declaration of conformity to harmonised standards or international IEC standards.

Through the CE marking, ILME declares full compliance, not merely with the directive's basic safety requirements, but also with those international or national EU standards on which voluntary safety certification markings are based (e.g. IMQ and VDE).

In this way, ILME intends to award the CE marking the value of self-certification in terms of safety, given the loss in legal value of voluntary certifications issued by third parties, ratified by directive 93/68/EEC *.

Notwithstanding the above, practically all ILME products still bear voluntary conformity markings.

This EC declaration of conformity becomes null and void when the assembly of products includes one or more components not manufactured by us and without EC approval.

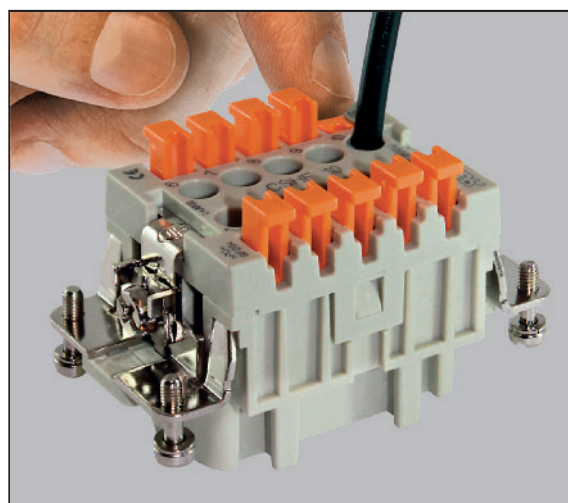
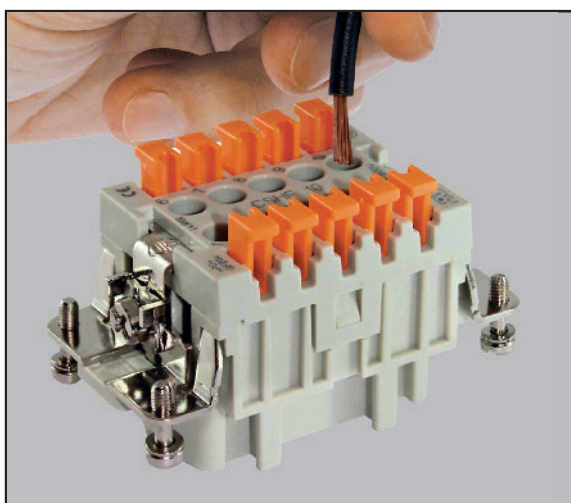
* Note:

new legal reference for the Low Voltage Directive is 2006/95/EC which is the consolidated edition of Directive 73/23/EEC + Directive 93/68/EEC.

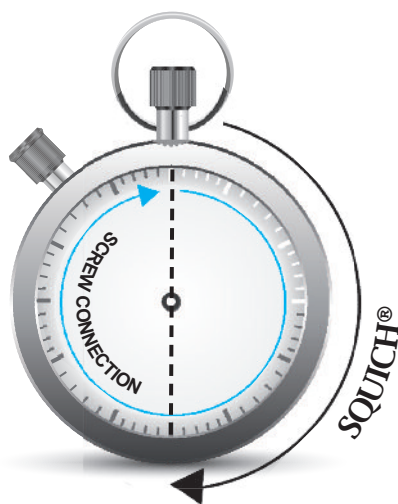
All information contained in this catalogue is not binding and may be changed without notice

SQUICH®

Connections without tools



A TIMESAVER



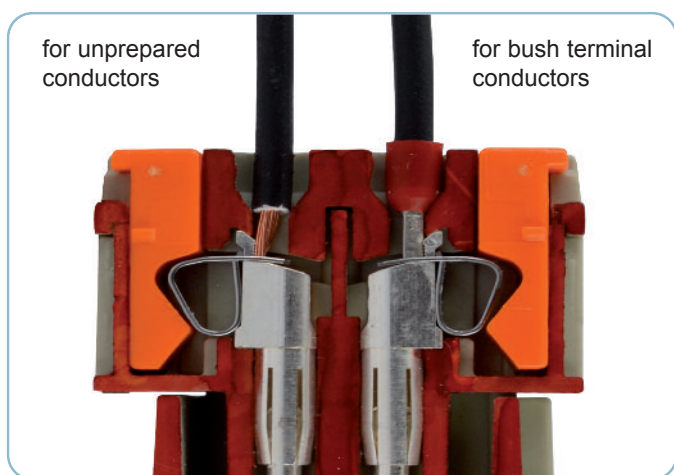
SQUICH®:

connections without tools

To improve high performance industrial connections, ILME has developed and evolved its own spring clamp connectors to meet the market needs and make installation simpler.

The new **CSH series “SQUICH®” (with spring and actuator button)**, the logical evolution of the CSE series, is characterized by the following advantages:

- ◆ reduced wiring times
- ◆ no need for tools
- ◆ quick identification of wired and non-wired terminals
- ◆ terminals already open and ready for conductor clamping
- ◆ option to use wires with or without ferrule up to 2,5 mm².



The SQUICH® inserts are adaptable to any type of rigid or flexible conductor, including unprepared conductors

Each of the spring terminals has an actuator button, suitably shaped and incorporated in the cavity. When this button is pressed, 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 lifted, 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 such an **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.

In this manner during the cabling phase the **need for a tool to activate the terminal is completely eliminated** and a **simple operation is all you need to make the connection.**

New shaped button for measuring instruments

The profile of the button used in the new version of the “**SQUICH®**” series inserts has been **modified to allow a measuring probe to be inserted**.

This allows checks to be carried out to ensure that the wiring is correct.



Simple terminal reopening

To reopen the terminals, simply introduce the tip of a common 0,5 x 3,5 mm flat blade screwdriver in the shaped pocket on the head of the actuator, and slightly rotate the screwdriver downwards: this will lift the actuator into its open terminal position.

The new connector inserts are available in the **standard versions**, with operating range from -40° C to +125° C, in the following sizes:

- “44.27” : **CSHM/ F 06**
- “57.27” : **CSHM/ F 10**
- “77.27” : **CSHM/ F 16** and **CSHM/ F 16 N** (special numbering 17-32)
- “104.27” : **CSHM/ F 24** and **CSHM/ F 24 N** (special numbering 25-48)

CSH connector inserts can be mated with the corresponding inserts of series CNE, CSE, CCE, CTSE, CT and CSS.



CRIMP



SCREW

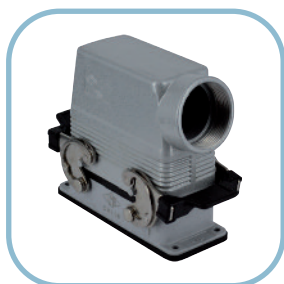


SPRING



SQUICH®

The CSH series can be used with the entire range of ILME enclosures.



CLASS
Standard



BIG
Large and
modular



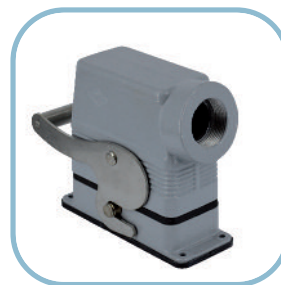
LS-TYPE
For stage
equipment



V-TYPE
IP67



W-TYPE
Aggressive
environments



**CENTRAL
LEVER**



T-TYPE
Insulating

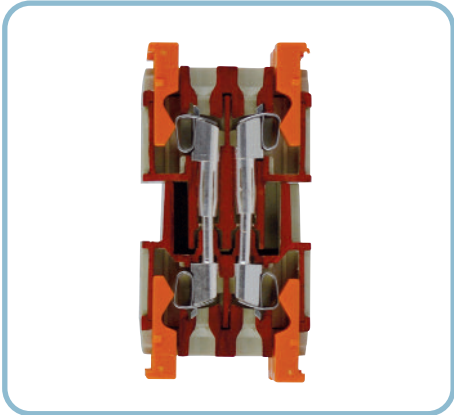


EMC



IP68

Spring connection contacts
with actuator button



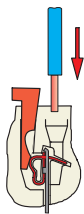
description

inserts series: CSH

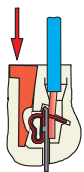
in this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.

This type of connection offers the following advantages:

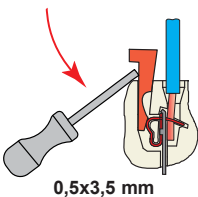
- no special wire preparation (**other than stripping**)
- no cabling tool is necessary
- it offers an excellent fastening solution and a great resistance to strong vibrations
- allows rigid and flexible wires with cross-sections between 0,14 and 2,5 mm² to be used (26 - 14 AWG)
- greatly reduces insert preparation and cabling times
- a screwdriver with a 0,5 x 3,5 mm blade is the only tool required to remove the wire from the contact.



Step 1
deep insertion of the conductor (with its insulation removed) in its own round seat



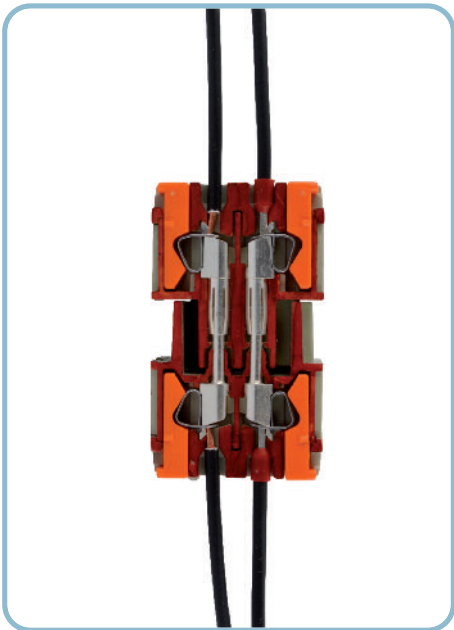
Step 2
press the actuator button to close the terminal



Reopening

inserts series		CSH
No. of poles ¹⁾	main contact + ⊕	6, 10, 16, 24, (32), (48)
	auxiliary contacts	--
rated current ²⁾		16A
EN 61984 pollution degree 3	rated voltage	500V
	rated holding impulse withstand voltage	6kV
	pollution degree	3
EN 61984 pollution degree 2	rated voltage	400/690V
	rated holding impulse withstand voltage	6kV
	pollution degree	2
UL/CSA certification	rated voltage (a.c./d.c.)	600V
certifications		UL, CSA, CCC, GOST
contact resistance		≤ 3 mΩ
insulation resistance		≥ 10 GΩ
ambient temperature limit (°C)	min	-40
	max	+125
degree of protection	with enclosures	IP65, IP66, IP67, IP68, IP69K (according to type)
	without enclosures	IP20
conductor connections		spring and clamp with actuator button
conductor cross-section	mm ²	0,14 ÷ 2,5
	AWG	26 ÷ 14
mechanical endurance (mating cycles)		≥500

1) Polarities shown in brackets may be achieved by using two inserts in their own double housings.
2) Please check the insert load curves to establish the actual maximum operating current according to the ambient temperature.



enclosures:
size "44.27"

page:

C-TYPE IP65/IP66.....	218 - 221 *
C7 IP67 stainless steel lever.....	254 *
V-TYPE IP65/IP66	
stainless steel lever.....	260 - 262 *
T-TYPE IP65 insulating	282 *
JEI zinc-plated steel lever.....	288 - 289 *
BIG hoods.....	304 - 306 *
aggressive environments.....	329 *
EMC	348 *
central lever.....	360 - 361 *
IP68.....	374 - 377 *
LS-TYPE.....	4 and 5 **

panel supports:

page:

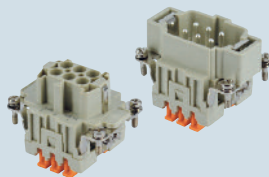
COB	410 - 411 *
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* CN.12 catalogue page references

** LS-TYPE catalogue page references

description

inserts,
spring terminal connections



part No.

CSHF 06
CSHM 06

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

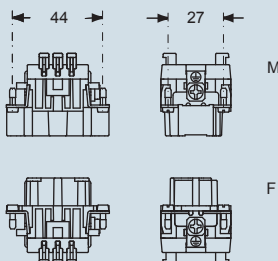
- characteristics according to EN 61984:

16A 500V 6kV 3

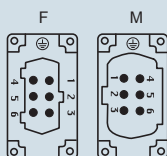
16A 400/690V 6kV 2

- UL, CSA, CCC, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 492 *

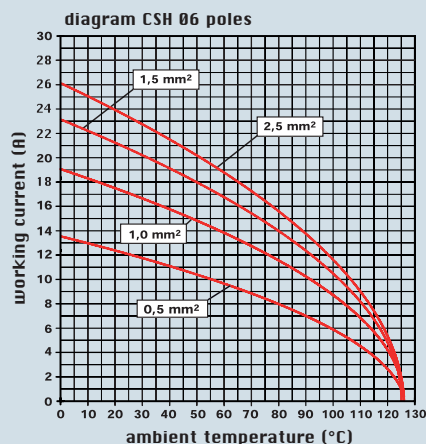
dimensions in mm



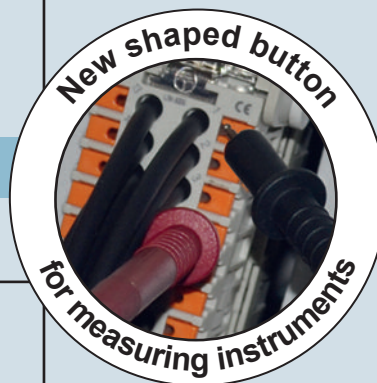
contacts side (front view)



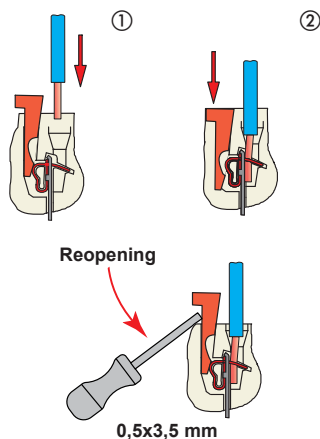
- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice



SQUICH® connections



enclosures:
size "57.27"

page:

C-TYPE IP65/IP66	222 - 227 *
C7 IP67 stainless steel lever	255 *
V-TYPE IP65/IP66	
stainless steel lever	264 - 267 *
T-TYPE IP65 insulating	283 *
JEI zinc-plated steel lever	290 - 291 *
BIG hoods	308 - 311 *
aggressive environments	330 *
EMC	349 *
central lever	362 - 363 *
IP68	378 - 381 *
LS-TYPE	6 and 7 **

panel supports:

page:

COB 410 - 411 *

* CN.12 catalogue page references

** LS-TYPE catalogue page references

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSHF 10
CSHM 10

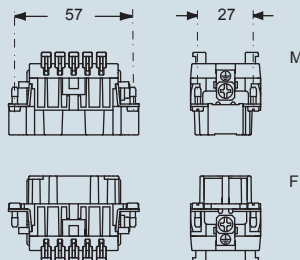
- characteristics according to EN 61984:

16A 500V 6kV 3

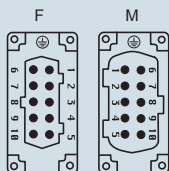
16A 400/690V 6kV 2

- UL, CSA, CCC, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 492 *

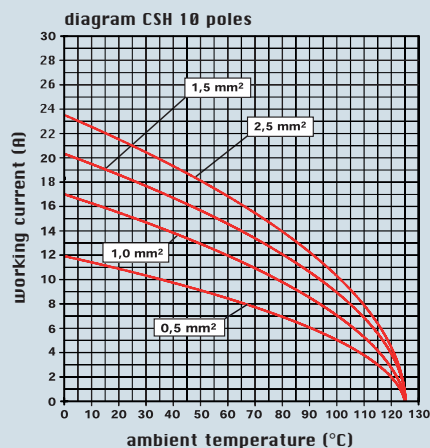
dimensions in mm



contacts side (front view)

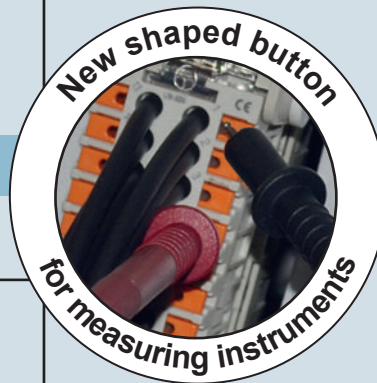
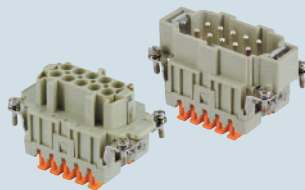


- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

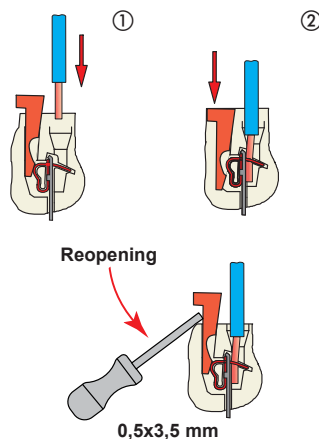


dimensions shown are not binding
and may be changed without notice

inserts,
spring terminal connections



SQUICH® connections



enclosures:
size "77.27"

page:

C-TYPE IP65/IP66.....	228 - 234 *
C7 IP67 stainless steel lever	256 *
V-TYPE IP65/IP66	
stainless steel lever.....	268 - 271 *
T-TYPE IP65 insulating	284 *
JEI zinc-plated steel lever.....	292 - 293 *
BIG hoods	312 - 315 *
aggressive environments.....	331 *
EMC	350 *
central lever	364 - 365 *
LS-TYPE	8 and 9 **

panel supports:

page:

COB 410 - 411 *

* CN.12 catalogue page references

** LS-TYPE catalogue page references

description

part No.

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

CSHF 16
CSHM 16

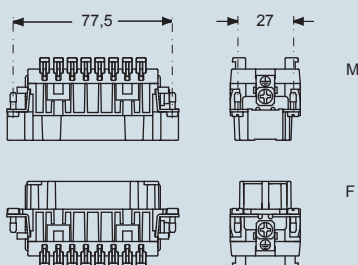
- characteristics according to EN 61984:

16A 500V 6kV 3

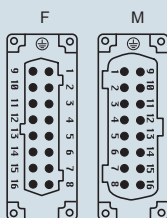
16A 400/690V 6kV 2

- UL, CSA, CCC, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 492 *

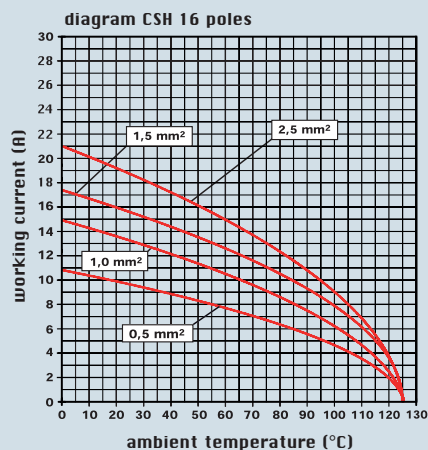
dimensions in mm



contacts side (front view)

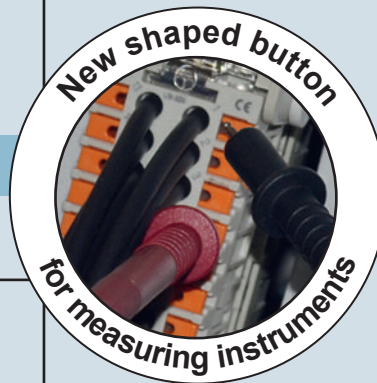
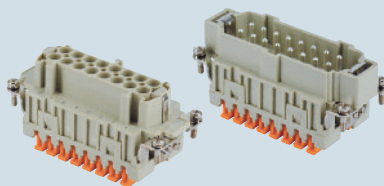


- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

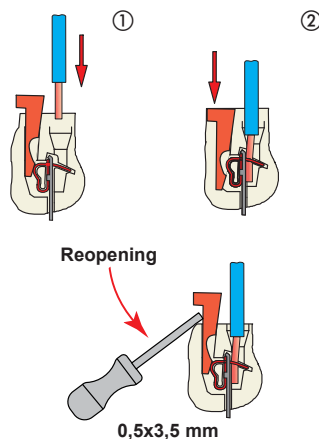


dimensions shown are not binding
and may be changed without notice

inserts,
spring terminal connections



SQUICH® connections



enclosures:
size "104.27"

page:

C-TYPE IP65/IP66	236 - 243 *
C7 IP67 stainless steel lever	257 *
V-TYPE IP65/IP66	
stainless steel lever	272 - 275 *
T-TYPE IP65 insulating	285 *
JEI zinc-plated steel lever	294 - 295 *
BIG hoods	316 - 319 *
aggressive environments	332 *
EMC	351 *
central lever	366 - 368 *
IP68	386 - 389 *
LS-TYPE	10 and 11 **

panel supports:

page:

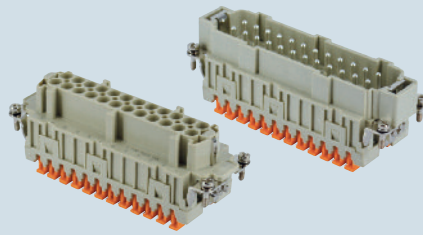
COB

* CN.12 catalogue page references

** LS-TYPE catalogue page references

description

inserts,
spring terminal connections



part No.

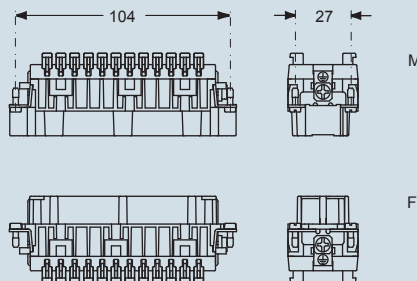
CSHF 24
CSHM 24

spring terminals with actuator button
female inserts with female contacts
male inserts with male contacts

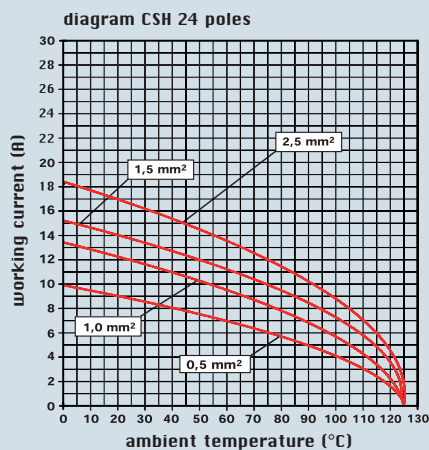
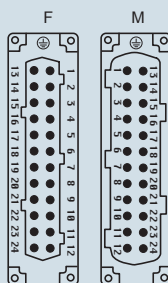
- characteristics according to EN 61984:

- 16A 500V 6kV 3**
- 16A 400/690V 6kV 2**
- UL, CSA, CCC, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: $\geq 10 \text{ G}\Omega$
- ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for maximum current load, see the following load curves inserts, for more information see page 492 *

dimensions in mm

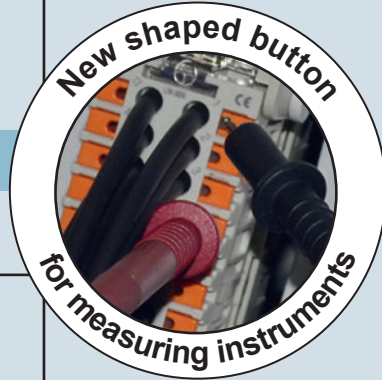
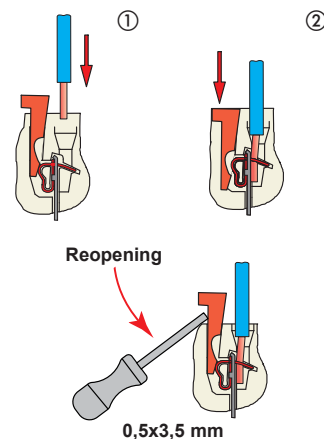


contacts side (front view)



- inserts for connectors with the following sections: 0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm

SQUICH® connections



dimensions shown are not binding
and may be changed without notice

enclosures:
size "77.62"

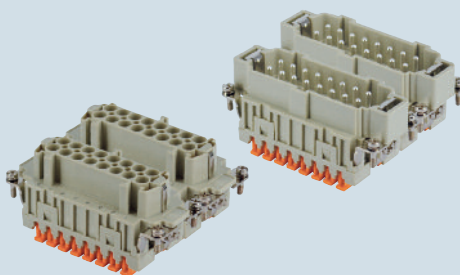
page:

C-TYPE IP65/IP66..... 244 - 247 *

aggressive environments..... 333 *

* CN.12 catalogue page references

inserts,
spring terminal connections



description

part No.

part No.

spring terminals with actuator button

female inserts with female contacts, No. (1-16) and (17-32)

male inserts with male contacts, No. (1-16) and (17-32)

CSHF 16
CSHM 16

CSHF 16 N
CSHM 16 N

- characteristics according to EN 61984:

16A 500V 6kV 3

16A 400/690V 6kV 2

- UL, CSA, CCC, GOST certified

- rated voltage according to UL/CSA: 600V

- insulation resistance: $\geq 10 \text{ G}\Omega$

- ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$

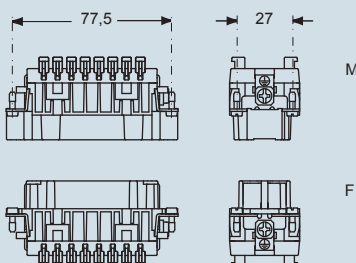
- are made of self-extinguishing thermoplastic resin
UL 94 V0

- mechanical life: ≥ 500 cycles

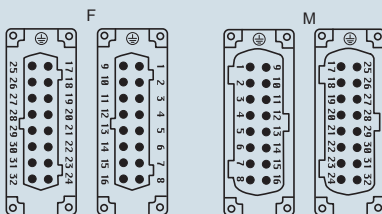
- contact resistance: $\leq 3 \text{ m}\Omega$

- for maximum current load, see the following load
curves inserts, for more information see page 492 *

dimensions in mm



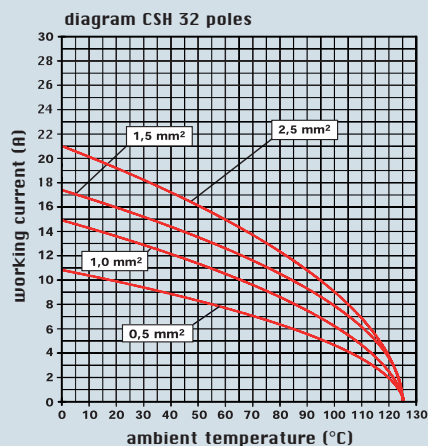
contacts side (front view)



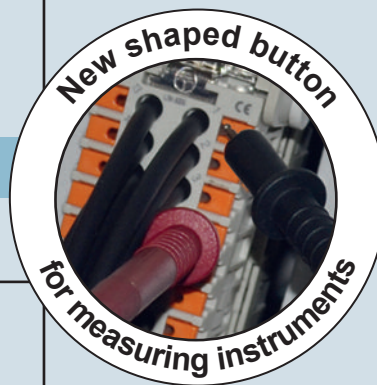
- inserts for connectors with the following sections:

0,14 - 2,5 mm² - AWG 26 - 14

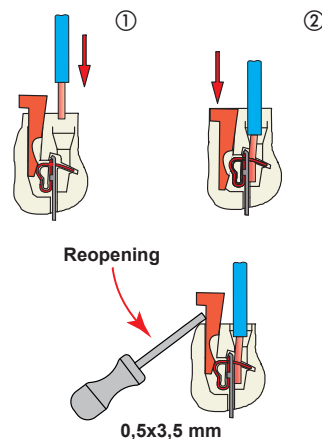
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice



SQUICH® connections



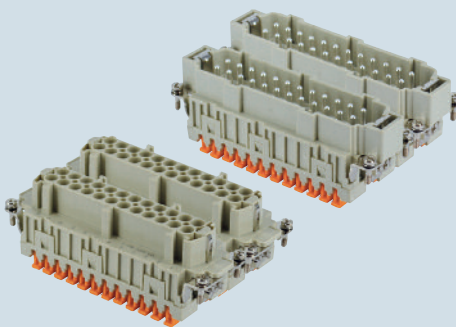
enclosures:
size "104.62"

page:

C-TYPE IP65/IP66 248 *
aggressive environments 334 *

CN.12 catalogue page references

inserts,
spring terminal connections



description

part No.

part No.

spring terminals with actuator button
female inserts with female contacts, No. (1-24) and (25-48)
male inserts with male contacts, No. (1-24) and (25-48)

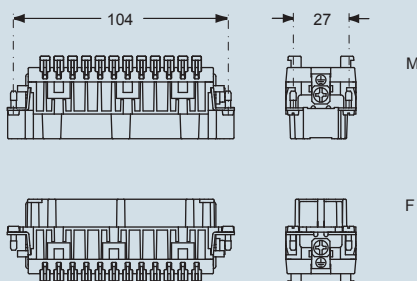
CSHF 24
CSHM 24

CSHF 24 N
CSHM 24 N

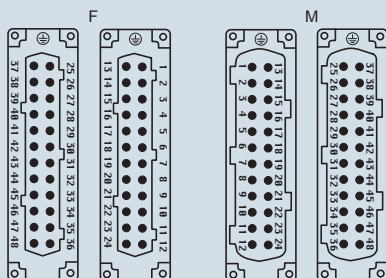
- characteristics according to EN 61984:

- 16A 500V 6kV 3**
16A 400/690V 6kV 2
- UL, CSA, CCC, GOST certified
 - rated voltage according to UL/CSA: 600V
 - insulation resistance: $\geq 10 \text{ G}\Omega$
 - ambient temperature limit: $-40^\circ\text{C} \dots +125^\circ\text{C}$
 - are made of self-extinguishing thermoplastic resin UL 94 V0
 - mechanical life: ≥ 500 cycles
 - contact resistance: $\leq 3 \text{ m}\Omega$
 - for maximum current load, see the following load curves inserts, for more information see page 492 *

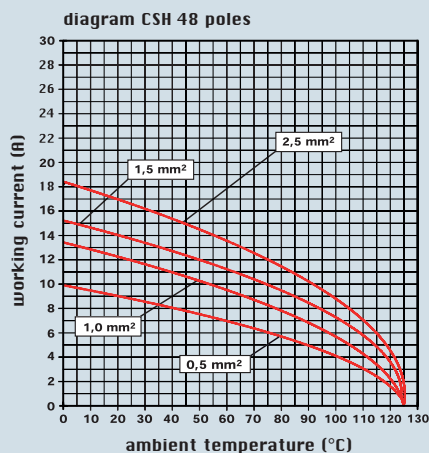
dimensions in mm



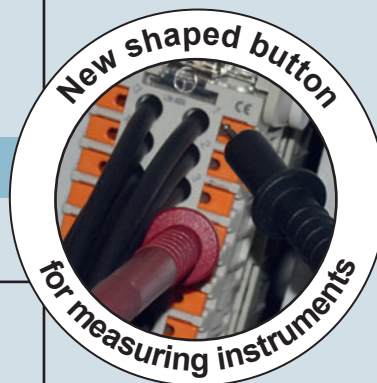
contacts side (front view)



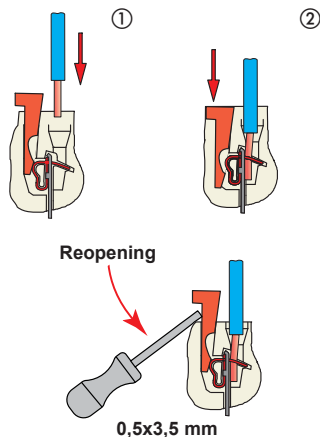
- inserts for connectors with the following sections:
0,14 - 2,5 mm² - AWG 26 - 14
- conductors stripping length: 9...11 mm



dimensions shown are not binding
and may be changed without notice



SQUICH® connections



ILME designs and manufactures complete solutions for heavy duty electrical power connections.

The connector (although offered to the user as a variety of elements, usually inserts and enclosures, to allow the selection of the ideal combination) has been **designed as a single part** and tested to be compliant with the essential safety requirements of the EU Low Voltage Directive 2006/95/EC and in particular the EN 61984 standard.

The design of this “modular” system guarantees that every approved combination of inserts, enclosures and accessories cannot result as improper.

The products in this catalogue alone cannot guarantee the best functionality upon installation, as this depends also on their correct “installation into service” which must be performed in compliance with the applicable system safety standards and according to the “rule of the art”.

Therefore the effectiveness of the installation of the connector depends on the choices of the end user who must also take into account the following safety requirements.

Connectors must **not be connected or disconnected when live or under load**.

After wiring the inserts it is necessary to **verify the continuity of the protective earth connections**.

The correct coupling of the inserts is guaranteed only if they are installed (with the four fixing screws supplied) inside the corresponding enclosures or onto compatible accessories in this catalogue. I.L.M.E. SpA is not responsible for any different application.

Wiring of **screw-type terminal connections** must be carried out applying the correct tightening torque in order to avoid false contacts or damage to the conductor, the screw or the terminal.

Crimping tools and contacts used should preferably be supplied by the same manufacturer to avoid difficulties with the insertion and retention of the contacts themselves.

Correct wiring of spring-clamp connection inserts is guaranteed only when the correct screwdriver indicated in the specific catalogue, or possibly on the insert, is used.

Avoid forcing the contacts during **connection and disconnection**.

Connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without bending and pulling the attached conductor bundles or cables.

Installation of two **inserts side by side**, in enclosures with two bays, must respect the polarity drawing marked on the insert (or the contact-side view, as shown in this catalogue) to avoid inverted coupling.

The installation of two or more identical connectors side by side is recommended only with the use of **coding pins** in order to avoid mismatched couplings.

In order to keep the declared degree of protection (IP code), enclosures must be completed with cable glands and/or other accessories with at least an equal protection rating.

Moreover, the IP protection rating (according to EN 60529) is guaranteed when the enclosures, complete with inserts, are coupled and locked with their locking levers (or devices).

Finally, Please note:

- ILME cannot be held responsible for individual components in uses other than those described in this catalogue.
- ILME cannot be held responsible for incorrect connector selection in relation to the environmental conditions of the application (e.g.: influence of ambient temperature, moisture, environmental pollution, etc.).

Connector inserts and their enclosures are generally compatible with similar/equivalent products from other manufacturers, according to the last samples tested.

Full compatibility cannot be guaranteed in the event of technical changes made by other manufacturers. In particular, maximum performance of IP68 enclosures (Series CG) cannot be guaranteed when coupled with other manufacturers' products.

I.L.M.E. SpA takes no responsibility in verifying whether the components herein contained comply with any specific regulations of fields of application.

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