

CKSH-SQUICH® series

Easy wiring in a compact space

These small but very capable connector inserts sized “21.21” are the evolution of former patented CKS series, still available upon request: thanks to a further step ahead in ILME proprietary solutions, they implement the fast, tool-less and skill-independent SQUICH® technology even in such a narrow space.

Reliable spring clamp contacts are now faster to wire thanks to the presence – also on the protective earth terminal – of the actuator pushbuttons, whose colour coding provides further visual help in identifying their function. Each pushbutton safely allows the insertion of a measuring probe even upon connector wired and under load, and is featured with a side slot for the possible spring terminal re-opening, by using a simple 0,5x3 mm flat blade screwdriver.

The conductor entries are on the top rear of the connector insert, as in former CKS inserts, providing **vertical straight terminations**, whereas screw-type CK inserts have lateral conductor entries and terminal screws on the top rear. CKSH connector inserts are available in the traditional two polarities: 3P+ ⊕ and 4P+ ⊕, for applications with rated voltage up to 400V AC or DC and continuous rated current per pole up to 10A.

These connector inserts inherit the proprietary optional coding system introduced in the recently renewed series CK and CKS, to prevent mismating in case of multiple connectors installed close to each other. This coding system does not alter the mating face, so connectors not making use of it are fully backwards mating compatible with former products. They are fully interchangeable, with even improved performances, to the legacy much appreciated screw-type series CK (230/400V) and CKS (spring terminals), which they replace.



SUM UP

- ☑ Easy wiring in compact size
- ☑ All the advantages of ILME SQUICH® connection in size 21.21
- ☑ Vertical and straight termination
- ☑ Full 400V voltage rating compared to 230/400V of series CK
- ☑ Built-in silver plated contacts

Requiring no wiring tool and no special wire preparation, they provide **excellent conductor fastening** with great resistance to strong vibrations.

Connecting capacity of terminals is from 0,14 mm² to 2,5 mm² (26 to 14 AWG) for unprepared conductors. Use of prepared conductors (terminated with crimped ferrule) is up to 1,5 mm² /16 AWG, suitable to rated current up to 10A per pole, due to the relatively limited number of poles.



no need of
wiring tools



already open
terminals



reduced wiring
time



quick identification
of wired terminals



☑ Easy wiring
in compact size



☑ With
coding pins

☑ Rear top entry
for easier wiring



☑ For solid or
flexible wires and for
crimped ferrules



CKSH-SQUICH® series

TECHNICAL FEATURES

Insert series		CKSH-SQUICH®
No. of poles	Main contacts + ⊕	3, 4
	auxiliary contacts	—
Rated current 1)		10A
EN IEC 61984	rated voltage	400V
	rated impulse withstand voltage	4kV
	pollution degree	3
EN IEC 61984	rated voltage	690V
	rated impulse withstand voltage	4kV
	pollution degree	2
UL / CSA certification	rated voltage (a.c./d.c.)	600V
Contact resistance		≤ 3 mΩ
Insulation resistance		≥ 10 GΩ
Ambient temperature limit (°C)	min	-40
	max	125
Degree of protection	with enclosures (according to type)	IP44 , IP66/ IP67 /IP69, IP66/ IP68 /IP69, (according to type and model)
	without enclosures (in mated condition) - termination side on male and female inserts - mating side on female inserts	IP20 (IPXXB)
Conductor connections		spring type with actuator button
Conductor cross-sectional area	mm²	0,14 - 2,5 unprepared
		0,14 - 1,5 prepared with crimped ferrule
	AWG	26 - 14 unprepared
		26 - 16 prepared with crimped ferrule
Mechanical endurance (mating cycles)		≥ 500

1) Please check the inserts derating diagrams to establish the actual maximum operating current according to the ambient temperature, the conductor cross-sectional area, the polarity of the connector, and any external constraint may derive e.g. by the continuous operating temperature sustained by the chosen conductor sheathing or by end-product safety standards fixing max allowed temperature rise on terminals (e.g. 30 K, 45 K or 50 K)

CQ4 (CQ4F /M 02 – CQ4F /M 02 H – CQ4F /M 03)

Compact size “21.21” for high current or higher voltage

- Compact size “21.21” **2P+PE** and **3P+PE** connector inserts for **high current (40 A)**, and either standard voltage up to 400 V or **higher voltage 830 V**, ideally complemented by the expanding range of hoods and housings size “21.21” with **M25** threaded cable entry, either insulating or metallic (**MK, MKA, MGK**), which are particularly suitable for use with high cross-sectional area conductors (large cable diameter).

- Series **CQ4** encompasses the following size “21.21” connector inserts:

› **CQ4F /M 03** with 3P+PE with up to 40 A current-carrying capacity and standard rated voltage up to 400 V (e.g. for 3-phase motor connections);

› **CQ4F /M 02** with 2P+PE with up to 40 A current-carrying capacity and standard rated voltage up to 400 V (e.g. for 1-phase AC or for DC power connections), this one with better current-carrying capacity by the derating diagrams, due to a power contact less in the same space;

› **CQ4F /M 02 H** with 2P+PE with up to 40 A current-carrying capacity and higher rated voltage applications, up to **830 V** (for 1-phase AC or for DC higher power connections).

- Suitable for series **CX** crimp contacts (including the PE pre-leading one), covering stranded copper conductors cross sectional area range **1,5 mm² to 10 mm²** (16 AWG to 8 AWG).

- Protection against direct contact when unmated:

› **CQ4F 02**: both male and female connector inserts are **fingerproof** (IP2X) even on the mating face when uncoupled (useful e.g. when a male connector is on the motor side of a drive including capacitors, potentially charged for residual time).

› **CQ4F 03**: the female insert is **fingerproof** (IP2X) even on the mating face when uncoupled, while the male insert **CQ4M 03** in that circumstance is protected from access with the back of the hand (IP1X).

- **CQ4F /M 02** and **CQ4F /M 02 H** specific features:

› Special **polarisation key** on the connector bodies mating face of both versions, differently oriented, to avoid the mismatching of CQ4F /M 02 H **830 V** version with the lower voltage CQ4F /M 02 **400 V** version.

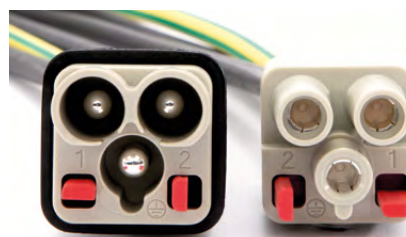
› **CQ4F /M 02 H** supplied with a **special insulating heat-shrinking tube** that provides the required additional insulation towards a metal housing.

› **CQ4F /M 02 H** specific **830 V** rated voltage duly marked on the inserts, to avoid any possible confusion with similar CQ4F /M 02 for 400 V.

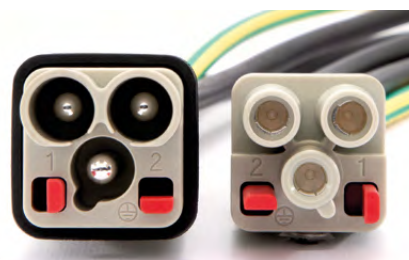
- Codings:

› **CQ4 03**: possibility of up to **4 different codings** thanks to the use of the **optional CR Q03 coding pin** (4 possible positions);

› **CQ4 02** and **CQ4 02 H**: possibility of up to **16 different codings** thanks to the use of **two optional CR Q02 coding pins** (it is possible to install two pins with 4 positions each).



CQ4F/M 02
Lower voltage version



CQ4F/M 02 H
Higher 830V voltage version

CQ4 series

TECHNICAL FEATURES

Inserts series		CQ4		
Cat. No.		CQ4F /M 02	CQ4F /M 02 H	CQ4F /M 03
No. of poles		2 + ⊕	2 + ⊕	3 + ⊕
rated current ¹⁾		40 A		
EN 61984 pollution degree 3	rated voltage	400 V	830 V	400 V
	rated impulse voltage	6 kV		
	pollution degree	3		
contact resistance		≤ 0,3 mΩ		
insulation resistance		≥ 10 GΩ		
ambient temperature limit (°C)	min. max.	-40 °C +125 °C		
degree of protection	with enclosures (according to version)	IP44, IP65, IP66, IP67, IP68, IP69		
	without enclosures: - in mated condition	IP20 IP20 (IPXXB)		
	- termination side on male and female inserts	IP20 (IPXXB)		
	- mating side on female inserts	IP20 (IPXXB)		
	- mating side on male inserts	IP20 (IPXXB)		IP1X (IPXXA)
conductor connections		crimp		
conductor cross-sectional area	mm ²	1,5 ... 10		
	AWG	16 ... 8		
stripping length	mm	9 – 9,6 – 15 (according to contact size)		
mechanical endurance (mating cycles)		≥ 500		

¹⁾ See derating diagrams