

CK series with optional coding pins: avoid incorrect connections

The renewed CK series of inserts addresses the need for connector coding with the addition of coding pins CR K03, CR K04R and CR K04G.

Each connector is made to make coupling of inserts from different series impossible, by suitable key and key way. Inserts are also polarized against inadvertent 180° mating. When a number of identical connectors with different functions are mounted close together, the coupling of a free part onto a non-corresponding fixed part must be prevented in order to avoid possible damage and breakdown.

The coding pins added to the renewed CK series **allow the user to safely configure the male and female inserts** to prevent the incorrect connection of identical connectors.

With various combinations of coding pins available, it is possible to safely install up to 4 connectors of the same type but with different functions side-by-side.



CK

SUM UP

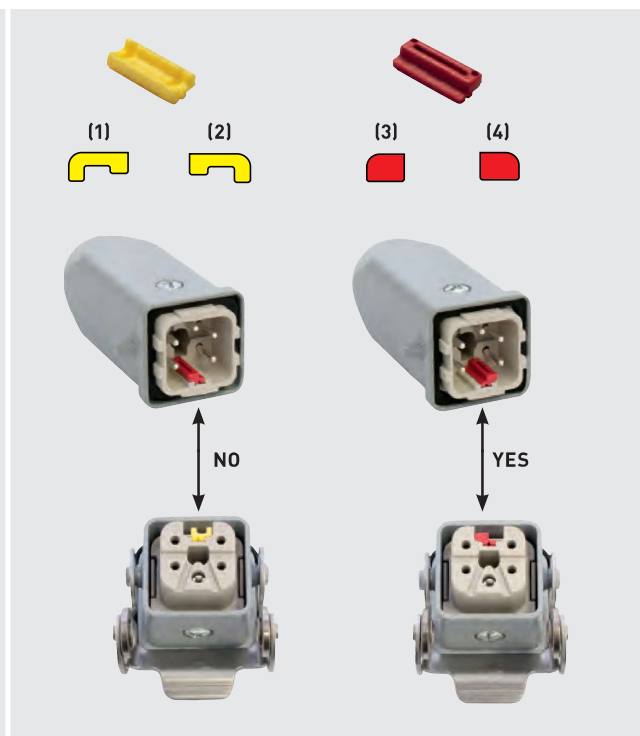
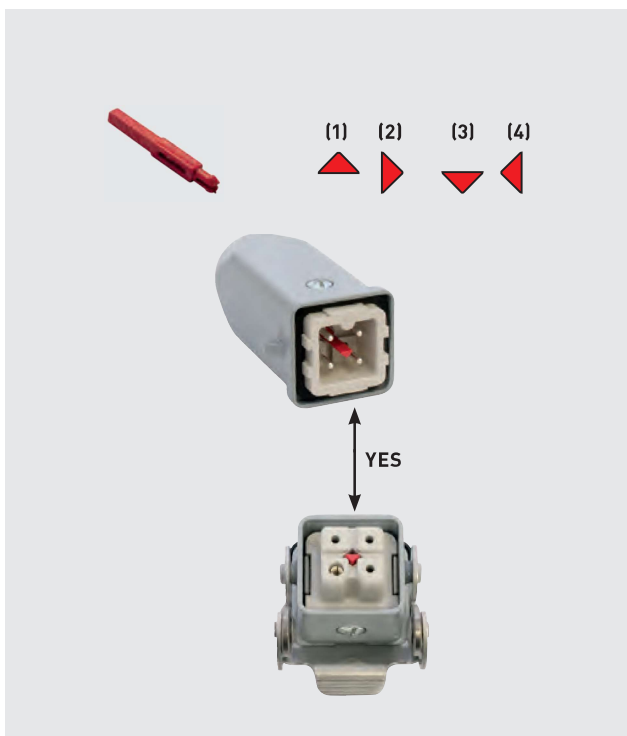
- ☑ Connection up to 2,5 mm²
- ☑ New RAL 7032 colour
- ☑ Built-in silver or gold plated contacts

CR K03 version, for connectors 3P + ⊕

Inserting the pin in the 4 possible positions by rotating through 90° allows 4 different insert codings to be obtained.

CR K04 version, for connectors 4P + ⊕

2 pin versions available: yellow - red
Each pin has 2 possible specular insertion positions. Alternate use of the pins allows 4 coding combinations to be achieved.



CK 3 and 4 poles + ⊕ 10A - 230/400V

enclosures:
size "21.21"

page:

| | |
|------------------------------------|-----------|
| Insulating type | 339 - 348 |
| Metallic type | 349 - 363 |
| W-TYPE for aggressive environments | 512 - 518 |
| E-Xtreme® corrosion proof | 538 - 539 |
| EMC | 564 - 572 |
| IP68 | 628 - 631 |

- can be mated with CKSH inserts

inserts, 3 poles + ⊕ screw terminal connections



Q SILVER PLATED CONTACTS

inserts, 4 poles + ⊕ screw terminal connections



Q SILVER PLATED CONTACTS

| description | part No. | part No. | part No. | part No. |
|---|---------------|-----------------|---------------|-----------------|
| distinctive colour | white | black | white | black |
| female inserts with female contacts ¹⁾ | CKF 03 | CKF 03 N | CKF 04 | CKF 04 N |
| male inserts with male contacts | CKM 03 | CKM 03 N | CKM 04 | CKM 04 N |

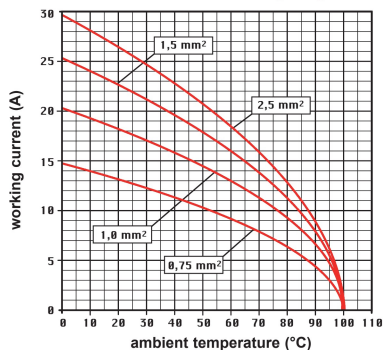
1) the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:

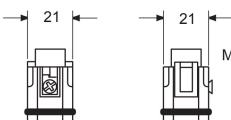
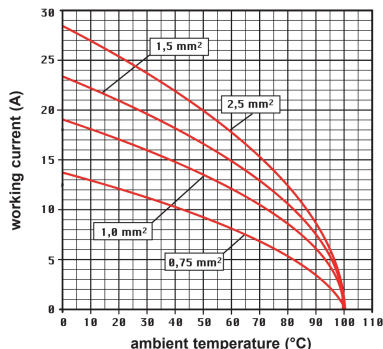
10A 230/400V 4kV 3
10A 400/690V 4kV 2

- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +100 °C
- made of self-extinguishing thermoplastic resin UL 94V-1
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 2 mΩ
- for max. current load see the connector inserts derating diagrams below; for more information see page 28

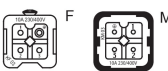
CK 03 poles connector inserts
Maximum current load derating diagram



CK 04 poles connector inserts
Maximum current load derating diagram

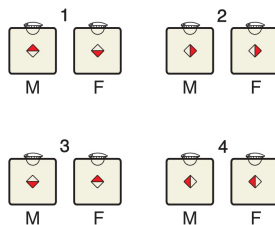


contacts side (front view)

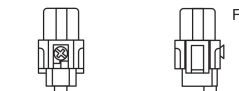
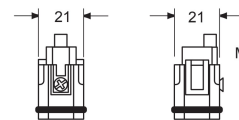


- inserts for wires with the following cross-sectional areas:
0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4,4 lb.in), for more information see page 20 and 21

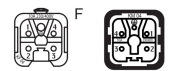
CR K03
coding pins
(page 688)



M = male insert
F = female insert

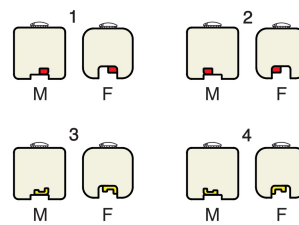


contacts side (front view)



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0,75 - 2,5 mm² - AWG 18 - 14
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CR K04R
and **CR K04G** coding pins
(page 688)



M = male insert
F = female insert

CKD 3 and 4 poles + ⊕ 10A - 230/400V

| | |
|------------------------------------|-----------|
| enclosures: size "21.21" | page: |
| Insulating type | 339 - 348 |
| Metallic type | 349 - 363 |
| W-TYPE for aggressive environments | 512 - 518 |
| E-Xtreme® corrosion proof | 538 - 539 |
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inserts, 3 poles + ⊕ screw terminal connections



Q GOLD PLATED CONTACTS

inserts, 4 poles + ⊕ screw terminal connections

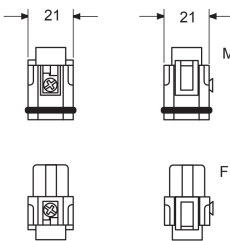


Q GOLD PLATED CONTACTS

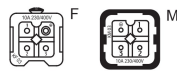
| description | part No. | part No. |
|--|----------------------------------|----------------------------------|
| female inserts with female contacts ¹⁾ male inserts with male contacts | CKFD 03 CKMD 03 | |
| female inserts with female contacts ¹⁾ male inserts with male contacts | | CKFD 04 CKMD 04 |

¹⁾ the female inserts can be mounted into the straight bulkhead housings CK I from the rear

- characteristics according to EN 61984:
10A 230/400V 4kV 3
10A 400/690V 4kV 2
- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +100 °C
- made of self-extinguishing thermoplastic resin UL 94V-1
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 2 mΩ
- for max. current load see the connector inserts derating diagrams below; for more information see page 28

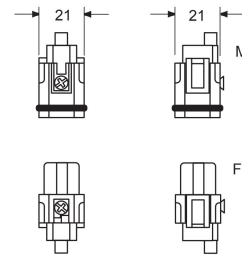


contacts side (front view)



- inserts for wires with the following cross-sectional areas:
0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 20 and 21

CR K03
coding pins
(page 688)

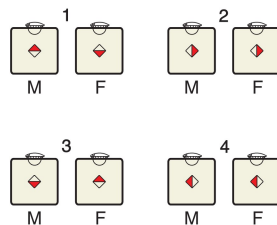


contacts side (front view)

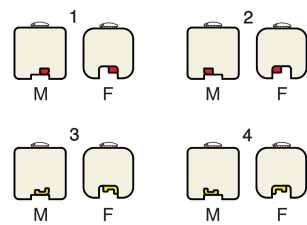


- inserts for wires with the following cross-sectional areas:
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- conductor stripping length: 6 mm
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CR K04R
and **CR K04G** coding pins
(page 688)

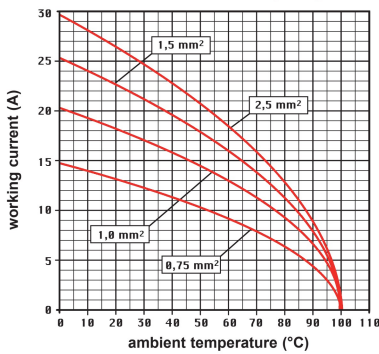


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F = female insert

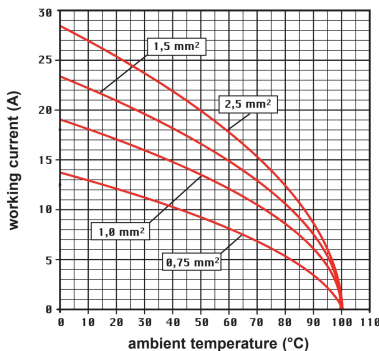


M = male insert
F = female insert

CKD 03 poles connector inserts
Maximum current load derating diagram



CKD 04 poles connector inserts
Maximum current load derating diagram



CK...RY 3 and 4 poles + ⊕ 10A - 230/400V

enclosures:
size "21.21"

page:

For 180 °C

583 - 586

inserts, 3 poles + ⊕
screw terminal connections

inserts, 4 poles + ⊕
screw terminal connections



180 °C

SILVER PLATED CONTACTS

180 °C

SILVER PLATED CONTACTS

description

part No.

part No.

use at temperatures up to 180 °C
female inserts with female contacts ¹⁾, brown
male inserts with male contacts, brown

CKF 03 RY
CKM 03 RY

use at temperatures up to 180 °C
female inserts with female contacts ¹⁾, brown
male inserts with male contacts, brown

CKF 04 RY
CKM 04 RY

1) the female inserts can be mounted into the straight
bulkhead housings CK I from the rear

- characteristics according to EN 61984:

10A 230/400V 4kV 3
10A 400/690V 4kV 2

- certified

- rated voltage according to UL/CSA: 600V

- insulation resistance: ≥ 10 GΩ

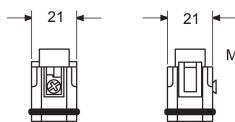
- ambient temperature limit: -40 °C ... +180 °C

- made of self-extinguishing thermoplastic resin UL 94V-0

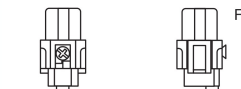
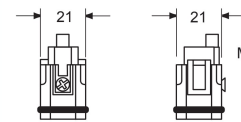
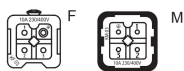
- mechanical life: ≥ 500 cycles

- contact resistance: ≤ 2 mΩ

- for max. current load see the connector inserts derating
diagrams below; for more information see page 28



contacts side (front view)



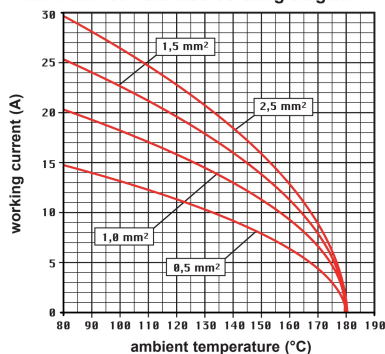
contacts side (front view)



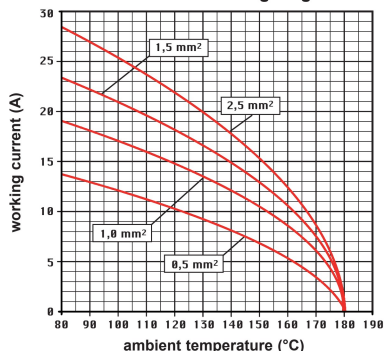
- inserts for wires with the following cross-sectional
areas:
0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more
information see page 20 and 21

- inserts for wires with the following cross-sectional
areas:
0,75 - 2,5 mm² - AWG 18 - 14
- conductor stripping length: 6 mm
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information see page 20 and 21

CK...RY 03 poles connector inserts
Maximum current load derating diagram



CK...RY 04 poles connector inserts
Maximum current load derating diagram



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 mismatching 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.



CKSH-SQUICH®

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 an 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 | mm ² | 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)

CKSH-SQUICH® 3 and 4 poles + ⊕ 10A - 400V

| | |
|------------------------------------|-----------|
| enclosures: size "21.21" | page: |
| Insulating type | 339 - 348 |
| Metallic type | 349 - 363 |
| W-TYPE for aggressive environments | 512 - 518 |
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- can be mated with CK inserts

inserts, 3 poles + ⊕ spring terminal connection without tools

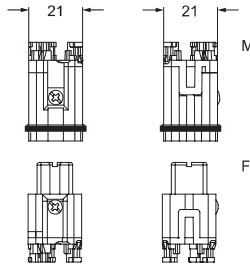


inserts, 4 poles + ⊕ spring terminal connection without tools

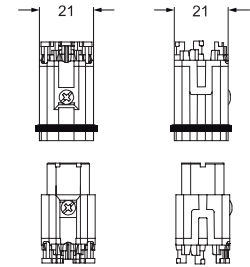
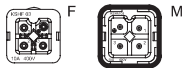


| description | part No. | part No. |
|-------------------------------------|----------|----------|
| female inserts with female contacts | CKSHF 03 | CKSHF 04 |
| male inserts with male contacts | CKSHM 03 | CKSHM 04 |
| female inserts with female contacts | | |
| male inserts with male contacts | | |

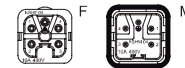
- characteristics according to EN 61984:
10A 400V 4kV 3
10A 690V 4kV 2
- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limits: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- for max. current load see the connector inserts derating diagrams below; for more information see page 28



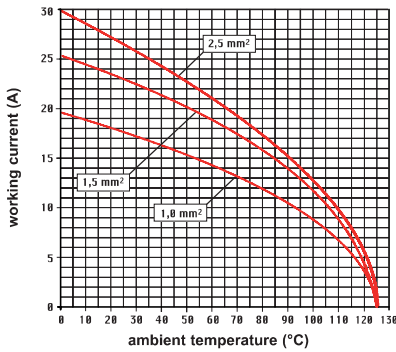
contacts side (front view)



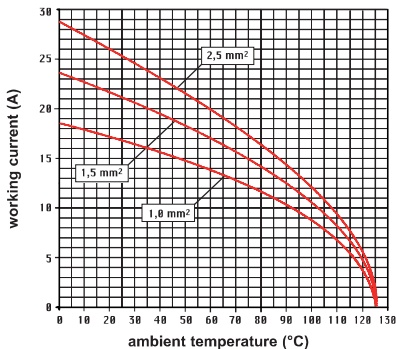
contacts side (front view)



CKSH 03 poles connector inserts
Maximum current load derating diagram



CKSH 04 poles connector inserts
Maximum current load derating diagram

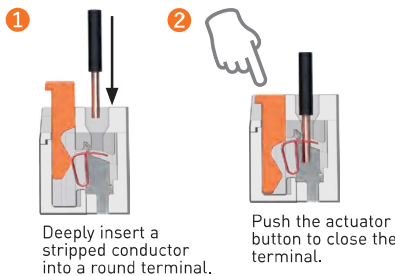


- inserts for wires with the following cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14 for prepared wires useable section: up to 1,5 mm² (AWG 16)
- conductor stripping length: 9...11 mm

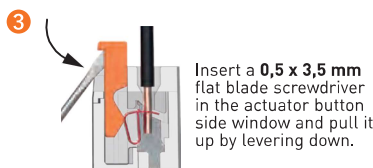
CR K03
coding pins
(page 688)



SQUICH®-spring connection technology WIRING



RE-OPENING



- inserts for wires with the following cross-sectional areas: 0,14 - 2,5 mm² - AWG 26 - 14 for prepared wires useable section: up to 1,5 mm² (AWG 16)
- conductor stripping length: 9...11 mm

CR K04R
and CR K04G coding
pins (page 688)



Rear top entry of wires for an easier wiring

