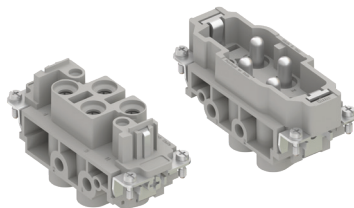


**CX 4 poles (80A - 830V) + ⊕**enclosures:  
size "77.27"

page:

C-TYPE IP65 or IP66/IP69	402 - 411
C7 IP67, two levers	439 - 440
V-TYPE IP65 or IP66/IP69, single lever	454 - 458
BIG hoods	470 - 471
T-TYPE IP65 insulating	484 - 485
T-TYPE / W IP66/IP69 insulating	491
HYGIENIC T-TYPE / H IP66/IP69	503
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	508
W-TYPE for aggressive environments	523
E-Xtreme® corrosion proof	534 - 535, 544, 554 - 555
EMC	580
Central lever	609 - 611
LS-TYPE	622 - 623
IP68	640 - 643

panel supports:  
COBpage:  
652 - 653inserts,  
screw terminal connection

**RATING 830V**  
**SILVER PLATED CONTACTS**

description

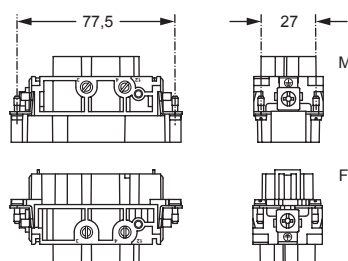
part No.

female inserts with female contacts  
male inserts with male contactsCXF 4/0  
CXM 4/0

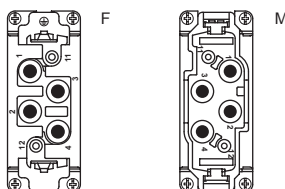
- characteristics according to EN 61984:

**80A 830V 8kV 3**

- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin  
UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$
- for max. current load see the connector inserts derating diagram below; for more information see page 28

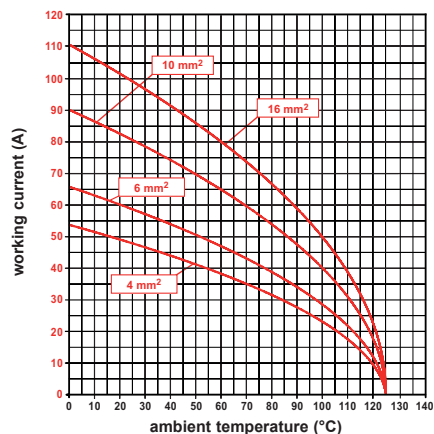


contacts side (front view)

**80A contacts**

- without plate for conductor cross-sections:  
4 - 16 mm<sup>2</sup> - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in),  
for more information see page 20 and 21

**CX 4/0 poles connector inserts**  
**Maximum current load derating diagram**



# CX 4 poles (80A - 830V) + 2 poles (16A - 400V) + ⊕

enclosures:  
size "77.27"

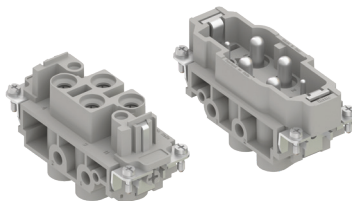
page:

C-TYPE IP65 or IP66/IP69	402 - 411
C7 IP67, two levers	439 - 440
V-TYPE IP65 or IP66/IP69, single lever	454 - 458
BIG hoods	470 - 471
T-TYPE IP65 insulating	484 - 485
T-TYPE / W IP66/IP69 insulating	491
HYGIENIC T-TYPE / H IP66/IP69	503
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	508
W-TYPE for aggressive environments	523
E-Xtreme® corrosion proof	534 - 535, 544, 554 - 555
EMC	580
Central lever	609 - 611
LS-TYPE	622 - 623
IP68	640 - 643

panel supports:  
COB

page:  
652 - 653

inserts,  
screw terminal connection



**RATING 830V**  
**Q SILVER PLATED CONTACTS**

description

part No.

female inserts with female contacts  
male inserts with male contacts

CXF 4/2  
CXM 4/2

- characteristics according to EN 61984:

**80A 830V 8kV 3**  
**16A 400V 6kV 3**  
**16A 400/690V 6kV 2**

- certified

- rated voltage according to UL/CSA: 600V

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

- ambient temperature limit: -40 °C ... +125 °C

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

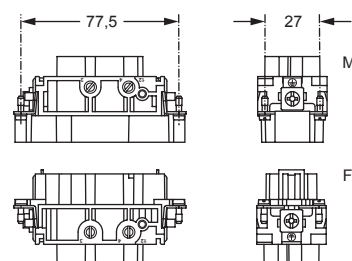
- mechanical life:  $\geq 500$  cycles

- contact resistance:

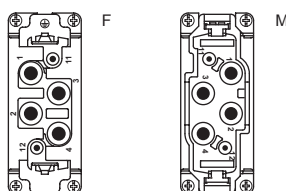
$\leq 0,3 \text{ m}\Omega$  (4 poles)

$\leq 1 \text{ m}\Omega$  (2 poles)

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



contacts side (front view)



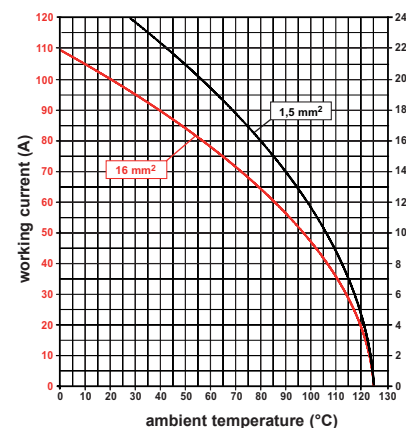
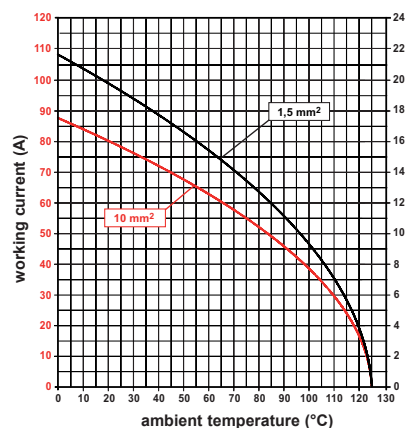
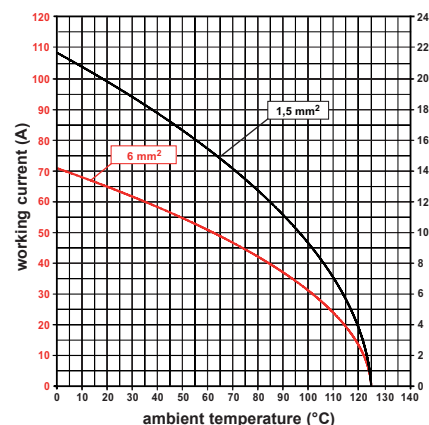
## 80A contacts

- without plate for conductor cross-sections: 4 - 16 mm<sup>2</sup> - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 20 and 21

## 16A contacts

- without plate for conductor cross-sections: 0,25 - 2,5 mm<sup>2</sup> - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 20 and 21

CX 4/2 poles connector inserts  
Maximum current load derating diagram



## NOTE

Any cross-sectional area on the signal side higher than that combined to the relevant cross-sectional area on the power side may be used, but with the derating curve for the cross-sectional area given as combined to that on the power side.

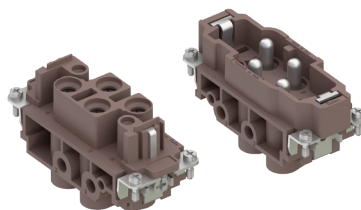
enclosures:  
size "77.27"

page:

For 180 °C

587 - 589

inserts,  
screw terminal connection



**RATING 830V**

**180 °C**

**SILVER PLATED CONTACTS**

description

part No.

use in temperatures up to 180 °C  
female inserts with female contacts, brown  
male inserts with male contacts, brown

CXF 4/0 RY  
CXM 4/0 RY

- characteristics according to EN 61984:

**80A 830V 8kV 3**

- certified

- rated voltage according to UL/CSA: 600V

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

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

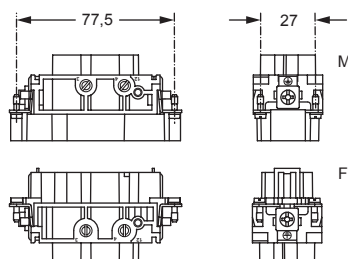
- made of self-extinguishing thermoplastic resin  
UL 94V-0

- mechanical life:  $\geq 500$  cycles

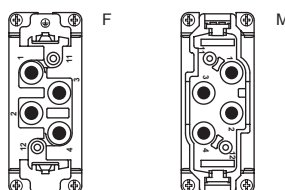
- contact resistance:

$\leq 0,3 \text{ m}\Omega$

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



contacts side (front view)



#### 80A contacts

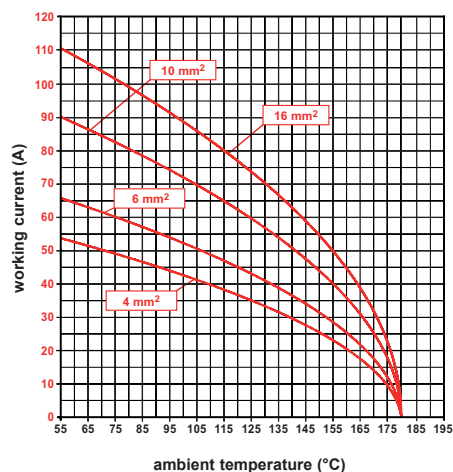
- without plate for conductor cross-sections:

4-16 mm<sup>2</sup> - AWG 12-6

- conductors stripping length: 14 mm

- terminal screw torque: 2,5 Nm (22.1 lb.in),  
for more information see page 20 and 21

CX...RY 4/0 poles connector inserts  
Maximum current load derating diagram

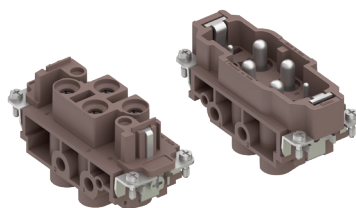


enclosures:  
size "77.27"

page:

For 180 °C

587 - 589

inserts,  
screw terminal connection✎ **RATING 830V**🌡️ **180 °C**🔍 **SILVER PLATED CONTACTS**

description

part No.

use in temperatures up to 180 °C  
female inserts with female contacts, brown  
male inserts with male contacts, brown

CXF 4/2 RY  
CXM 4/2 RY

- characteristics according to EN 61984:

**80A 830V 8kV 3****16A 400V 6kV 3****16A 400/690V 6kV 2**

- certified

- rated voltage according to UL/CSA: 600V

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

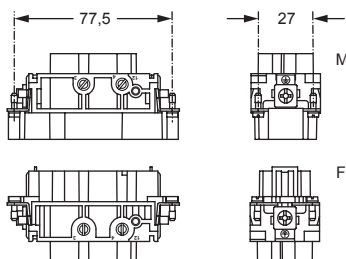
- ambient temperature limit: -40 °C ... +180 °C

- made of self-extinguishing thermoplastic resin  
UL 94V-0- mechanical life:  $\geq 500$  cycles

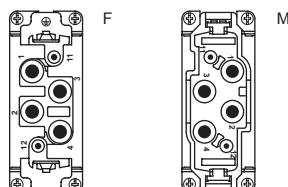
- contact resistance:

 $\leq 0,3 \text{ m}\Omega$  (4 poles) $\leq 1 \text{ m}\Omega$  (2 poles)

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



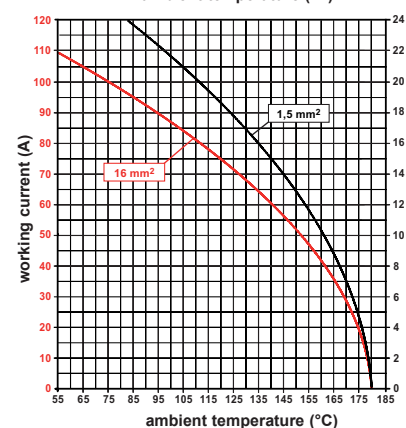
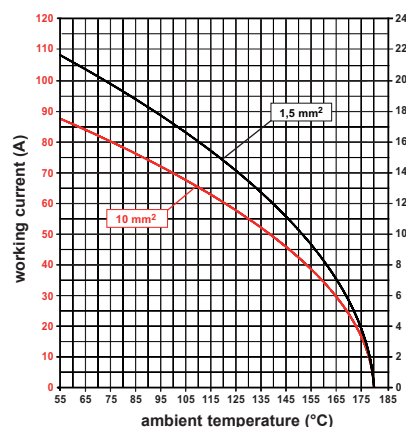
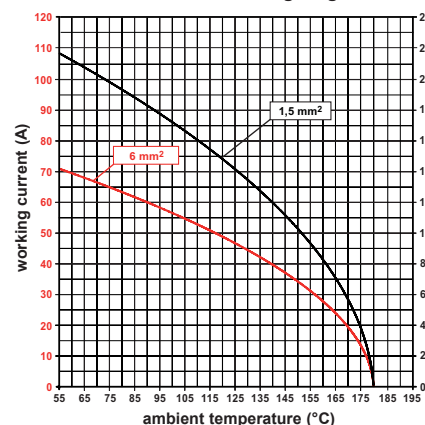
contacts side (front view)

**80A contacts**- without plate for conductor cross-sections:  
4 - 16 mm<sup>2</sup> - AWG 12 - 6

- conductors stripping length: 14 mm

- terminal screw torque: 2,5 Nm (22.1 lb.in),  
for more information see page 20 and 21**16A contacts**- without plate for conductor cross-sections:  
0,25 - 2,5 mm<sup>2</sup> - AWG 24 - 14

- conductors stripping length: 7 mm

- terminal screw torque: 0,5 Nm (4.4 lb.in),  
for more information see page 20 and 21
**CX...RY 4/2 poles connector inserts**  
**Maximum current load derating diagram**
**NOTE**

Any cross-sectional area on the signal side higher than that combined to the relevant cross-sectional area on the power side may be used, but with the derating curve for the cross-sectional area given as combined to that on the power side.

enclosures:  
size "104.27"

page:

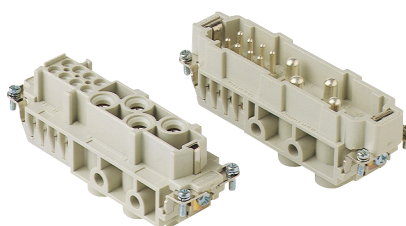
<b>CX 4/8:</b>	
C-TYPE IP65 or IP66/IP69	412 - 423
C7 IP67, two levers	441 - 442
V-TYPE IP65 or IP66/IP69, single lever	459 - 463
BIG hoods	472 - 473
T-TYPE IP65 insulating	486 - 487
T-TYPE / W IP66/IP69 insulating	492
HYGIENIC T-TYPE / H IP66/IP69	504
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	509
W-TYPE for aggressive environments	524
E-Xtreme® corrosion proof	536 - 537, 545, 556 - 557
EMC	581
Central lever	612 - 614
LS-TYPE	624 - 625
IP68	644 - 647

panel supports:  
COB

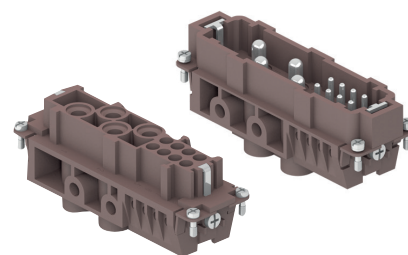
652 - 653

**CX 4/8 RY:**  
For 180 °C

588 - 590

inserts,  
screw terminal connectionQ **SILVER** PLATED CONTACTS

part No.

inserts,  
screw terminal connection

180 °C

Q **SILVER** PLATED CONTACTS

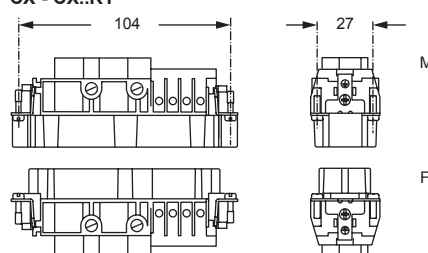
part No.

female inserts with female contacts  
male inserts with male contactsCXF 4/8  
CXM 4/8use in temperatures up to 180 °C  
female inserts with female contacts  
male inserts with male contactsCXF 4/8 RY  
CXM 4/8 RY

- characteristics according to EN 61984:

- 80A 400V 6kV 3
- 80A 400/690V 6kV 2
- 16A 230/400V 4kV 3
- 16A 400V 4kV 2
- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10$  G $\Omega$
- ambient temperature limit: -40 °C ... +125 °C (CX)
- ambient temperature limit: -40 °C ... +180 °C (CX...RY)
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:
  - $\leq 0,3$  m $\Omega$  (4 poles)
  - $\leq 1$  m $\Omega$  (8 poles)
- for max. current load see the connector inserts derating diagrams on the side; for more information see page 28

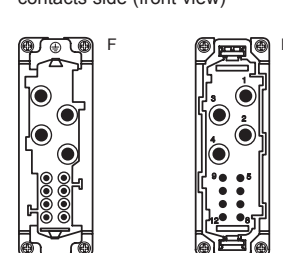
CX - CX...RY



80A contacts

- without plate for conductor cross-sections: 4 - 16 mm<sup>2</sup> - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information see page 20 and 21

contacts side (front view)



16A contacts

- with plate for conductor cross-sections: 0,75 - 2,5 mm<sup>2</sup> - AWG 18 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information see page 20 and 21

The derating curves for the connector's **power** (red) and **signal** (black) portions provided in the diagram are valid for the following combinations of cross-sectional area on the power side and on the signal side:

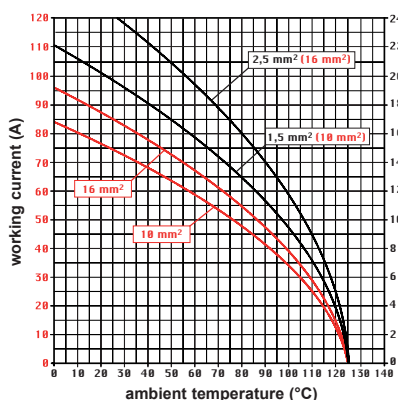
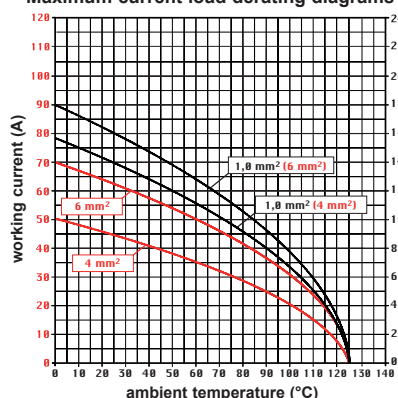
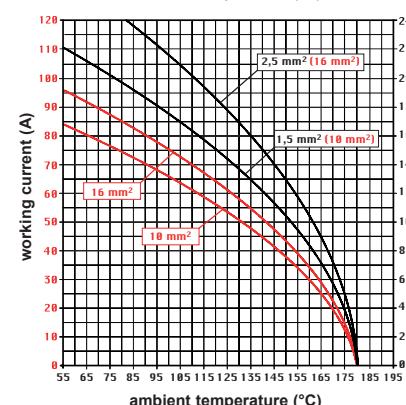
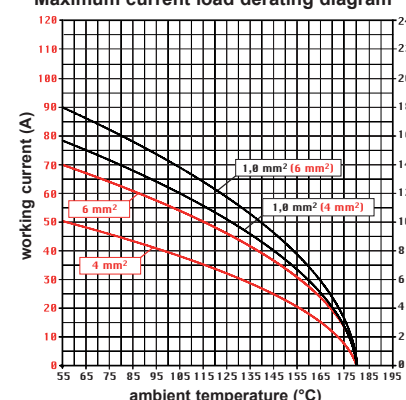
- power 4 mm<sup>2</sup> with signal 1 mm<sup>2</sup>;
- power 6 mm<sup>2</sup> with signal 1 mm<sup>2</sup>;
- power 10 mm<sup>2</sup> or 6 mm<sup>2</sup> with signal 1,5 mm<sup>2</sup>;
- power 16 mm<sup>2</sup> with signal 2,5 mm<sup>2</sup>;

**NOTE 1**

Any cross-sectional area on the signal side higher than that combined to the relevant cross-sectional area on the power side may be used, but with the derating curve for the cross-sectional area given as combined to that on the power side.

**NOTE 2**

Any cross-sectional area on the signal side lower than that combined to the relevant cross-sectional area on the power side (e.g. 1 mm<sup>2</sup> signal with 16 mm<sup>2</sup> power) may be used at the current indicated for the signal cross-sectional area belonging to the closest lower cross-sectional area on the power side (i.e. the 1 mm<sup>2</sup> curve combined to the 6 mm<sup>2</sup> power section).

CX 4/8 poles connector inserts  
Maximum current load derating diagramsCX...RY 4/8 poles connector inserts  
Maximum current load derating diagram

CX 6/6 inserts 100A/16A version

The CX series of combined “power /auxiliaries” connector inserts has been enhanced with **insert, CX 6/6 suitable for currents up to 100A** in the power side and 16A on the auxiliaries side, for crimp contacts series CG (100A max) and series CC (16A max) several benefits over conventional screw or axial screw contacts:

- more **resistant to mechanical stresses** such as vibrations, shock and cable loads;
- more **corrosion resistant** (gas tight);
- **quicker to connect** and ensuring more **consistent results** (regardless of the operators “force”);
- the connector is **electrically more efficient** (reduced voltage drop).

This innovative insert design, by following the same concepts of the MIXO 100A CX..G model, **patented by ILME**, ensures a quicker fitting and removal of crimped contacts.

The **provided locking keys** firmly fasten the contact holder.

The power contacts may be removed **without any special tool**, using a simple screwdriver (e.g.: 0,5 x 3 mm, 0,5 x 3,5 mm, 0,6 x 4 mm and 0,8 x 4 mm flat blade).

The removal of auxiliary contacts series CC requires the CQES extraction tool. See figure below.

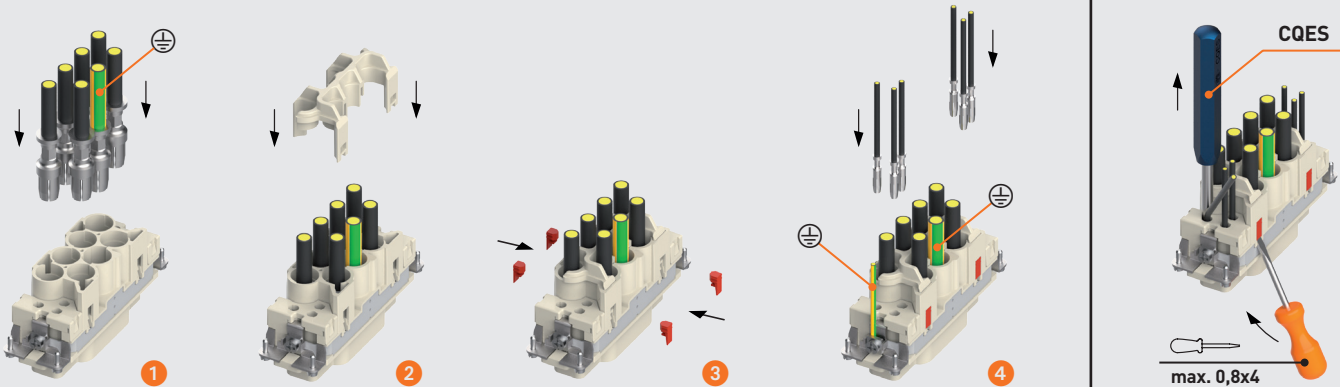
The crimping operation may be carried out quickly and efficiently with the **hand operated hydraulic pliers**, which is pre-fitted with the suitable locator. Suitable crimp dies are available on request.

Inserts series		CX 6/6	
No. of poles	main contact	6 + ⊕ (100A) **	
	auxiliary contacts	6 (16A)	
rated current <sup>1)</sup>		100A	16A
EN 61984	rated voltage	690V	400V
	rated impulse withstand voltage	8kV	6kV
	pollution degree	3	3
contact resistance		≤ 0,3 mΩ (100A) ≤ 1 mΩ (16A)	
insulation resistance		≥ 10 GΩ	
ambient temperature limit (°C)	min	-40 °C	
	max	+125 °C	
degree of protection	with enclosures (according to version)	IP65, IP66/IP69, IP66/IP67/IP69, IP66/IP68/IP69	
	without enclosures (in mated condition)	IP20 (IPXXB)	
conductor connections *		crimp	
conductor cross-section (CG contact series)	mm²	8 - 10, 16, 25, 35	
	AWG	8 - 7, 6 - 5, 4 - 3, 2	
conductor cross-section (CC contact series)	mm²	0,14 ..... 4,0	
	AWG	26 - 12	
CG/CC stripping lenght	mm	15 / 7,5	
mechanical endurance (mating cycles)		≥ 500	

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

\* max external conductor Ø = 11,5 mm  
\*\* the power PE contact is not included and must be the same size as the power contacts used (for a total n° at contacts = 7)

CX 6/6 Assembling instructions



# CX 6 poles + ⊕ (100A - 690V) + 6 poles (16A - 400V) + ⊕

enclosures:  
size "104.27"

page:

C-TYPE IP65 or IP66/IP69	412 - 423
C7 IP67, two levers	441 - 442
V-TYPE IP65 or IP66/IP69, single lever	459 - 463
BIG hoods	472 - 473
T-TYPE IP65 insulating	486 - 487
T-TYPE / W IP66/IP69 insulating	492
HYGIENIC T-TYPE / H IP66/IP69	504
HYGIENIC T-TYPE / C IP66/IP69, -50 °C	509
W-TYPE for aggressive environments	524
E-Xtreme® corrosion proof	536 - 537, 545, 556 - 557
EMC	581
Central lever	612 - 614
LS-TYPE	624 - 625
IP68	644 - 647

panel supports:  
COB

page:  
652 - 653

enclosures:  
bulkhead mounting housings, high construction housings  
or high construction hoods

inserts, crimp connections



100A and 16A crimp contacts  
silver and gold plated



description	part No.	part No.	part No.
without contacts (to be ordered separately)			
female inserts for female contacts	CXF 6/6		
male inserts for male contacts	CXM 6/6		
100A female crimp contacts		CGFA 10	
8 - 10 mm <sup>2</sup> AWG 8 - 7		CGFA 16	
16 mm <sup>2</sup> AWG 6 - 5		CGFA 25	
25 mm <sup>2</sup> AWG 4 - 3		CGFA 35	
35 mm <sup>2</sup> AWG 2			
100A male crimp contacts		CGMA 10	
8 - 10 mm <sup>2</sup> AWG 8 - 7		CGMA 16	
16 mm <sup>2</sup> AWG 6 - 5		CGMA 25	
25 mm <sup>2</sup> AWG 4 - 3		CGMA 35	
35 mm <sup>2</sup> AWG 2			
16A female contacts			
0,14-0,37 mm <sup>2</sup> AWG 26-22 one groove		CCFA 0.3	CCFD 0.3
0,5 mm <sup>2</sup> AWG 20 with no grooves		CCFA 0.5	CCFD 0.5
0,75 mm <sup>2</sup> AWG 18 one groove (back side)		CCFA 0.7	CCFD 0.7
1 mm <sup>2</sup> AWG 18 one groove		CCFA 1.0	CCFD 1.0
1,5 mm <sup>2</sup> AWG 16 two grooves		CCFA 1.5	CCFD 1.5
2,5 mm <sup>2</sup> AWG 14 three grooves		CCFA 2.5	CCFD 2.5
3 mm <sup>2</sup> AWG 12 one wide groove		CCFA 3.0	CCFD 3.0
4 mm <sup>2</sup> AWG 12 with no grooves		CCFA 4.0	CCFD 4.0
16A male contacts			
0,14-0,37 mm <sup>2</sup> AWG 26-22 one groove		CCMA 0.3	CCMD 0.3
0,5 mm <sup>2</sup> AWG 20 with no grooves		CCMA 0.5	CCMD 0.5
0,75 mm <sup>2</sup> AWG 18 one groove (back side)		CCMA 0.7	CCMD 0.7
1 mm <sup>2</sup> AWG 18 one groove		CCMA 1.0	CCMD 1.0
1,5 mm <sup>2</sup> AWG 16 two grooves		CCMA 1.5	CCMD 1.5
2,5 mm <sup>2</sup> AWG 14 three grooves		CCMA 2.5	CCMD 2.5
3 mm <sup>2</sup> AWG 12 one wide groove		CCMA 3.0	CCMD 3.0
4 mm <sup>2</sup> AWG 12 with no grooves		CCMA 4.0	CCMD 4.0

\* for basic or high  
thickness gold  
plating, please refer  
to page 675

- characteristics according to EN 61984:

**100A 690V 8kV 3**

**16A 400V 6kV 3**

- cULus (UL for USA and Canada), SP, CEC, DNV

BUREAU VERITAS ENE certified

- rated voltage according to UL/CSA: 600V

- insulation resistance: ≥ 10 GΩ

- ambient temperature limit: -40 °C ... +125 °C

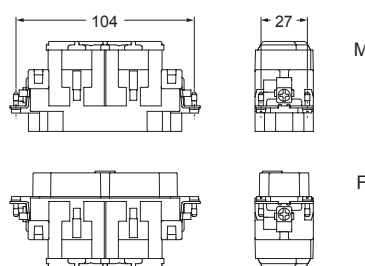
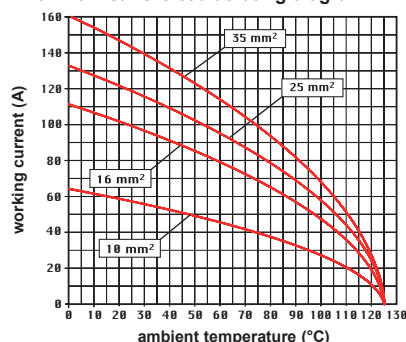
- made of self-extinguishing thermoplastic resin UL 94V-0

- mechanical life: ≥ 500 cycles

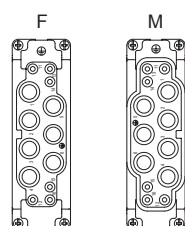
- contact resistance: ≤ 0,3 mΩ (100A), ≤ 1 mΩ (16A)

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

CX 6/6 power poles connector inserts  
Maximum current load derating diagram

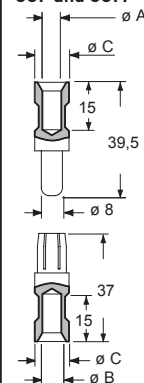


contacts side (front view)

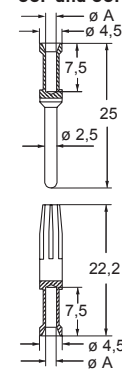


- it is recommended to crimp the contacts with  
crimping tools homologated by ILME (please  
see the crimping tool section 100A contacts CGF,  
CGM series and 16A contacts CCF, CCM series) on  
pages 708 - 741

CGF and CGM



CCF and CCM



CGF and CGM contacts

conductor section (mm <sup>2</sup> )	conductor slot Ø A (mm)	conductor slot Ø B (mm)	conductor slot Ø C (mm)	conductor stripping length (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

CCF and CCM contacts

conductor section (mm <sup>2</sup> )	conductor slot Ø A (mm)	conductor slot Ø B (mm)	conductor stripping length (mm)
0,14-0,37	0,9	0,9	7,5
0,5	1,1	1,1	7,5
0,75	1,3	1,3	7,5
1,0	1,45	1,45	7,5
1,5	1,8	1,8	7,5
2,5	2,2	2,2	7,5
3	2,55	2,55	7,5
4	2,85	2,85	7,5

## RECOMMENDED TIGHTENING TORQUE

- insert terminal screws, including PE terminal and fixing screws
- axial screw insert, MIXO series CX 02 4A / CX 02 4B
- enclosures assembly screws

### Insert terminal screws, including PE terminal and fixing screws

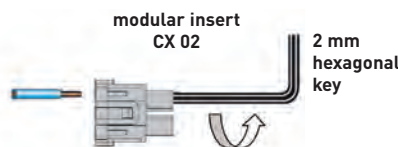
Increasing the tightening torque of terminal screws does not considerably improve the contact resistance. The screw torques are selected according to standard EN 60999-1, to provide excellent mechanical, thermal and electric behaviour. The conductor or terminal may be damaged if the recommended values are significantly exceeded.

Screw size	Connector type	Recommended tightening torque		Recommended size of screwdriver
		(Nm)	(lb.in)	
	LINE TERMINALS			
M2,5	CT 40, 64	0,4	3,5	0,5 x 3
M2,6	CT 06..24	0,4	3,5	0,5 x 3
M3	CK	0,5	4,4	0,5 x 3
M3	CDA	0,5	4,4	Ph0 or 0,6 x 3,5
M3	CNE, CME	0,5	4,4	Ph0 or 0,8 x 4
M3	CX 4/2, CX 4/8 (16A)	0,5	4,4	0,6 x 3,5
M3	CX 4/8 Q (16A)	0,5	4,4	Ph0
M4	CP	1,2	10,6	Ph1 or 0,8 x 4
M6	CX 4/.. (80A)	2,5	22,1	1,0 x 5,5
	PE TERMINAL			
M3	CK, CQ 05, CQ 07, CQ 12	0,5	4,4	0,5x3
M4	all series except CD 15, CD 25, CDA, CDC, CSAH, MIXO	1,2	10,6	Ph2 or 1,0 x 5,5
M3,5	series CD 15, CD 25, CDA, CDC, CSAH	0,8	7,1	Ph1 or 0,8 x 5,5
M3	small PE terminal, MIXO frames series	0,5	4,4	Ph1 or 1,0 x 4,5
M4	large PE terminal, MIXO frames series	1,2	10,6	Ph1 or 1,0 x 5,5
M4	PE terminal, MIXO ONE enclosures	1,2	10,6	Ph1 or 1,0 x 5,5
	FASTENING SCREWS			
M3	CK, CKS, CKSH, CD 07, CD 08, CQ 05, CQ 07, CQ 12, CQ 21, CQ4 02 /02 H, CQ4 03, CX 1/2 BD	0,5	4,4	Ph1 or 0,8 x 5,5
M3	screw for fastening inserts to enclosures of all series except T-TYPE, CQ-MQ 08 and MIXO ONE	0,8	7,1	Ph1 or 0,8 x 4
Ø 2,9	screws for fastening "32.13" inserts CQ 04/2, CQ 08, CQ 17 to CQ-MQ 08 enclosures	0,7	6,2	Ph1
M3	screw for fastening inserts to T-TYPE enclosures	0,5	4,4	Ph1 or 0,8 x 4
Ø 2,9	series MIXO ONE enclosures, assembly of top and bottom parts	0,8	7,1	Ph1
M4	CYR 16.3, CYR 24.4 cable pass-through hoods, assembly of two halves	1,2	10,6	Ph2 or 1,0 x 5,5
M4	CYG 16 in-line joint, assembly of two halves and mounting of two bulkhead mounting housings size "77.27"	1,2	10,6	Ph2 or 1,0 x 5,5
M5	series BIG enclosures, assembly of top and bottom parts	1,0	8,8	Ph2

### Axial screw insert, MIXO series CX 02 4A / CX 02 4B

The connections of the conductors to the female and male inserts are made via axial screw. Fully insert the stripped wire in the back of the contact (axial screw terminals are supplied fully opened); while holding the wire down, insert a 2 mm hexagonal key in the front of the contact and tighten to recommended torque. After assembling the complete connector periodically check that the contact is screwed tight by re-applying the proper tightening torque.

- Usable conductor cross-sections (EN 60228 Class 5):
  - from 2,5 to 8 mm<sup>2</sup> (14 AWG to 10 AWG) (CX 02 4AF/M)
  - from 6 to 10 mm<sup>2</sup> (10 AWG to 8 AWG) (CX 02 4BF/M)
  - (extra-flexible EN 60228 class 6: 2,5... 6 mm<sup>2</sup> (14 AWG to 10 AWG))
- Use only stranded flexible copper conductors
- Do not twist the strands!
- Tightening torque with 2 mm hexagonal Allen key:
  - 1,5 Nm (13,3 lb.in) max for conductors with section 2,5 ... 4 mm<sup>2</sup> (14 AWG to 12 AWG)
  - 2 Nm (17,7 lb.in) max for conductors with section 6 ... 10 mm<sup>2</sup> (10 AWG to 8 AWG)
- Stripping length: 8+1 mm



## Enclosures assembly screws

In the table below, the recommended minimum and maximum tightening torque to apply to the fixing screws of ILME bulkhead mounting housings are shown, assuming the use of steel screws with 8.8 resistance class and a good fixing panel surface according to the requirements mentioned therein.

Series	Number of screws	Screw size	Recommended torque		Flange sealing element
			(Nm)	(lb.in)	
CK/MK, CKX, CKA/MKA, CQ	2	M3	0,8 – 1,0	7,1 – 8,9	Gasket
MIXO ONE	4	M3	0,5 – 0,9	4,4 – 8,0	Gasket
CZI 15 /25	4	M3	0,8 – 1,0	7,1 – 8,9	Gasket
CHI 50	4	M4	1,2 – 1,8	10,6 – 15,9	Gasket
CHI 06 /10 /16 /24	4	M4	0,8 – 1,2	7,1 – 10,6	Gasket
CHI 32	4	M4	1,2 – 1,8	10,6 – 15,9	Gasket
CHI 48	4	M6	3,0 – 3,6	26,6 – 31,9	Gasket
CGK/MGK (IP68)	2	M4	0,8 – 1,2	7,1 – 10,6	O-ring
CGI/ MGI 06/ 10/ 16/ 24 (IP68)	2	M6	3,0 – 3,6	26,6 – 31,9	O-ring
T-TYPE, T-TYPE/H, T-TYPE/C, T-TYPE/ W	4	M4	0,8 – 1,2	7,1 – 10,6	Gasket

To guarantee the declared IP degree of protection of the housings reported in this catalogue, according to EN IEC 60529 or to the relevant Type rating per ANSI/UL 50 and 50E (for those products bearing approval to those ratings), the surface of the mounting panel must meet the following requirements (definitions are provided in ISO 4287 standard):

- Waviness  $W_t \leq 0,2$  mm over a distance of 200 mm (measured on the panel without load)
- Roughness  $R_a \leq 16$   $\mu$ m

NOTE: The values of tightening torque indicated in the above table are just recommended values, that must be related – by the designer of the final application – to the resistance class of the screws (not included in the delivery), with the assumption that the mounting panel is sufficiently rigid (stiff). If the deflection of the panel, under the effect of tightening the screws, is greater than 0,7 mm over a distance of 100 mm, it is necessary to use the counter-flanges mentioned in our catalogue or the special flange gaskets available upon request (please contact our Sales Department). For the CGI/MGI IP68 enclosures the specific counter-flanges mentioned in our catalogue are always recommended.

## Enclosures locking screws

Series	Number of screws	Screw size	Recommended tightening torque		Recommended size of screwdriver
			(Nm)	(lb.in)	
CGK/MGK	2	M4	1,2	10,6	1,0 x 5,5 or 7 mm hexagonal key
CG/ MG	2	M6	2,5	22,1	1,6 x 10 or 10 mm hexagonal key

# RANGE OF CONDUCTOR CROSS-SECTIONAL AREA AND STRIPPING LENGTH

Connector inserts connection technique	Range of conductor cross-sectional area		Stripping length
Screw	(mm <sup>2</sup> )	AWG	(mm)
CK	0,75 – 2,5	18 – 14	6
CX 4/2, CX 4/8 (poles 16A) <sup>1)</sup>	0,75 – 4	18 – 12	7
	0,75 – 2,5	18 – 14	7
CNE <sup>1)</sup>	0,5 – 4	20 – 12	7
CNE..X	0,25 – 2,5	24 – 14	7
CDA <sup>1)</sup>	0,5 – 4	20 – 12	7
CDA..X	0,25 – 2,5	24 – 14	7
CT 06..24	0,75 – 2,5	18 – 14	12
CT 40 and 64	0,75 – 2,5	18 – 14	12
CME <sup>1)</sup>	0,5 – 4	20 – 12	7
CME..X	0,5 – 2,5	20 – 14	7
CP <sup>1)</sup>	0,75 – 6	18 – 10	10,5
CX 4/.. (80A poles)	4 – 16	12 – 5	14
<b>Crimp</b>			
MIXO (5A), CX 25 IB	0,08 – 0,75	28 – 18	4
CQ 21	0,08 – 0,5	28 – 20	4
CDD, CD, MIXO (10A), CQ 12, CQ 07	0,14 – [2,5]*	26 – 14	8 – * [6 for 2,5 mm <sup>2</sup> ]
CCE, CDC, CMCE, CQ, CQE, CQEE, MIXO (16A)	0,14 – 4	26 – 12	7,5
CX, MIXO (40A), CQ4 03	1,5 – 2,5	16 – 14	9
	4 – 6	12 – 10	9,6
MIXO (70A)	10 – 25	7 – 4	15
MIXO (100A), CX 6/6	10 – 35	7 – 2	15
MIXO (200A)	16 – 70	6 – 2/0	15
<b>Spring</b>			
CSE, CSH, CTSE 06..24, CMSH, MIXO [CX 05 S <sup>2)</sup> , CX 05 SH], CSS	0,14 – 2,5	26 – 14	9 - 11
CTS 40/64	0,14 – 2,5 unprepared	26 – 14 unprepared	9 - 11
	0,14 – 1 prepared	26 – 18 prepared	
CKS, CKSH, CDS, CDSH, CSAH	0,14 – 2,5 unprepared	26 – 14 unprepared	9 - 11
	0,14 – 1,5 prepared	26 – 16 prepared	

<sup>1)</sup> For CNE, CDA, CP, CME, "CX 4/8 – pole 16A" series connectors with screw terminal and conductor protection plate, the use of ferrules is not necessary (= unprepared conductor).

The use of ferrules (= prepared conductor) causes a reduction in maximum useful cross-section to the lower size (e.g. 4 mm<sup>2</sup> unprepared - 2,5 mm<sup>2</sup> prepared).

<sup>2)</sup> Available upon request.

## LOAD CURVES

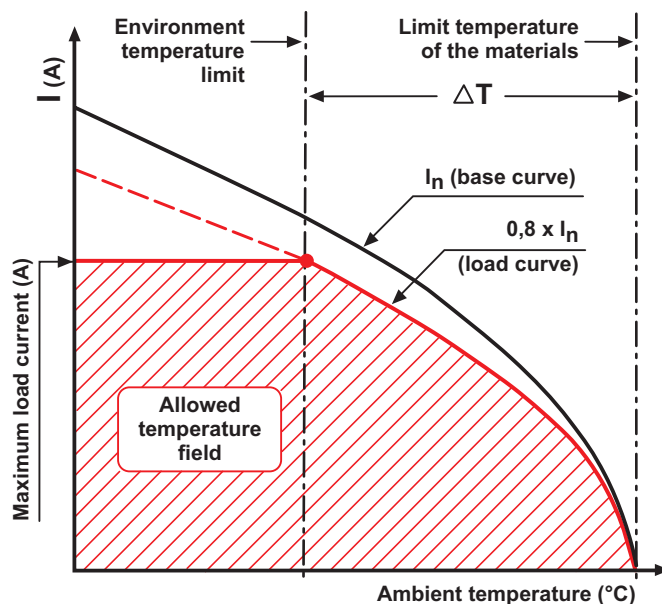
The permitted current carrying capacity for connectors is variable: it becomes lower with the increase of the number of poles and of the ambient temperature in which the connector is installed and it depends upon the thermal properties of the material used for the contacts and the insulating parts including those of the type of conductor used. The current carrying capacity is obtained from the load curves which are constructed according to standard IEC 60512-5-2 for currents circulating simultaneously in all poles.

The limit current curves express current values that determine the achievement of the upper limit temperature of the materials. The choice of the permanent load applicable on the contacts **must be made within the field of operation possible delimited by the above mentioned curves.**

Since use of connectors at the limit values of their characteristics is not recommended, the **base curve** is de-rated. The reduction of the load currents to 80% defines the correction curve where both the maximum permissible contact resistances and the inaccuracy of the temperature measurements are sufficiently taken into consideration.

The correction curve represents the final **limit current curve (load curve)** as defined by standard IEC 60512-5-2. It therefore bears in consideration the differences between the various connector inserts, as well as errors in the temperature measurements.

All the load curves presented in this catalogue include the correction. See figure below.



### Legend

#### Maximum load current (A)

Value for which the connector reaches the upper limit temperature of the material at the corresponding ambient temperature intersected on the load curve.

#### Limit temperature of the materials

Value determined by the characteristics of the material used. The sum of the environmental temperature and the increase of the  $\Delta T$  (temperature rise) caused by the current flow must not exceed the limit temperature of the materials.

#### Environment temperature limit

The environmental conditions must not exceed this value. It may be known and determines the maximum load current, or it may be directly obtained from the load curve.

#### Base curve

Set of current and temperature values obtained from laboratory tests and influenced by the connector's characteristics (number of poles, construction shape, thermal conductivity of the materials, etc.) and the cross-section of the conductor used.

#### Load curve (limit current curve)

Obtained from the base curve via the safety coefficient.

#### $\Delta T$ (temperature rise)

Temperature rise produced by a permanent current circulating through all the poles of a connector coupling; difference between the upper limit temperature of the material and the ambient temperature obtained on the limit current curve.