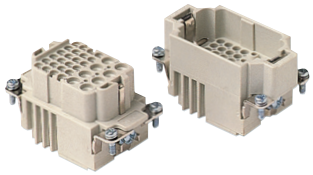
CX 8 poles (16 A – 230/400 V) + 24 poles (10 A – 160 V) + ⏚

enclosures:
size "57.27" **page:**

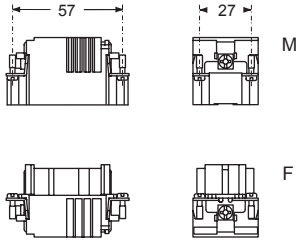
panel supports: **page:**

inserts, crimp connections

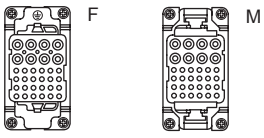


description	part No.
without contacts (to be ordered separately)	
female inserts for female contacts	**CXF 8/24**
male inserts for male contacts	**CXM 8/24**

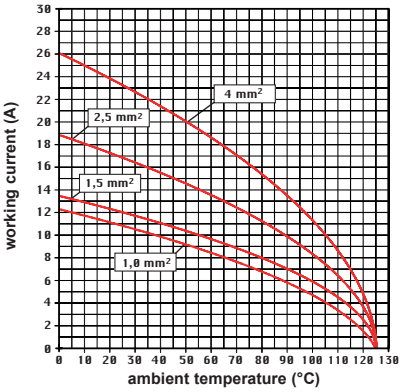
- characteristics according to EN 61984:
  16 A 230/400 V 4 kV 3
  16 A 400 V 4 kV 2
  10 A 160 V 2,5 kV 3
  10 A 250 V 4 kV 2
- certified
- rated voltage according to UL/CSA: 600 V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance:
  ≤ 1 mΩ (8 poles)
  ≤ 3 mΩ (24 poles)
- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 16 A contacts, CCF, CCM, CC...AN series and 10 A contacts CDF, CDM series on pages 708 - 741)
- PCBs interface, see article CIF 2.4 (10 A contacts)
- for max. current load see the connector inserts derating diagrams on the side; for more information see page 28



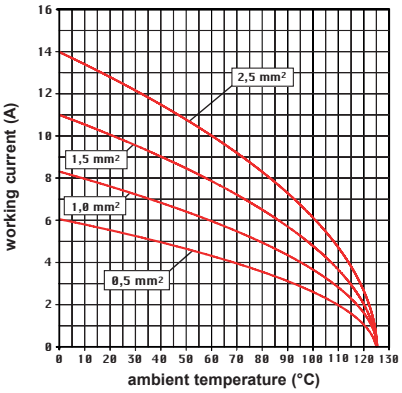
contacts side (front view)



CX 8/24 power poles connector inserts
Maximum current load derating diagram



CX 8/24 auxiliary poles connector inserts
Maximum current load derating diagram



Note: for connector with power poles and auxiliary poles simultaneously loaded in the combinations

power poles	auxiliary poles
4,0 mm²	2,5 mm²
2,5 mm²	1,5 mm²
1,5 mm²	1,0 mm²
1,0 mm²	0,5 mm²

with power / auxiliary current ratios = 1,6 / 1

16 A crimp contacts standard or for advanced opening silver and gold plated

STANDARD

ADVANCED OPENING

10 A crimp contacts silver and gold plated

description			part No.		part No.		part No.		part No.	
16 A female contacts										
0,14-0,37 mm²	AWG 26-22	one groove	**CCFA 0.3**	silver plated	**CCFD 0.3**	gold plated÷				
0,5 mm²	AWG 20	with no grooves	**CCFA 0.5**		**CCFD 0.5**					
0,75 mm²	AWG 18	one groove (back side)	**CCFA 0.7**		**CCFD 0.7**					
1 mm²	AWG 18	one groove	**CCFA 1.0**		**CCFD 1.0**					
1,5 mm²	AWG 16	two grooves	**CCFA 1.5**		**CCFD 1.5**					
2,5 mm²	AWG 14	three grooves	**CCFA 2.5**		**CCFD 2.5**					
3 mm²	AWG 12	one wide groove	**CCFA 3.0**		**CCFD 3.0**					
4 mm²	AWG 12	with no grooves	**CCFA 4.0**		**CCFD 4.0**					
16 A male contacts										
0,14-0,37 mm²	AWG 26-22	one groove	**CCMA 0.3**		**CCMD 0.3**					
0,5 mm²	AWG 20	with no grooves	**CCMA 0.5**		**CCMD 0.5**					
0,75 mm²	AWG 18	one groove (back side)	**CCMA 0.7**		**CCMD 0.7**					
1 mm²	AWG 18	one groove	**CCMA 1.0**		**CCMD 1.0**					
1,5 mm²	AWG 16	two grooves	**CCMA 1.5**		**CCMD 1.5**					
2,5 mm²	AWG 14	three grooves	**CCMA 2.5**		**CCMD 2.5**					
3 mm²	AWG 12	one wide groove	**CCMA 3.0**		**CCMD 3.0**					
4 mm²	AWG 12	with no grooves	**CCMA 4.0**		**CCMD 4.0**					
16 A male crimp contacts for advanced opening										
0,5 mm²	AWG 20	with no grooves	**CC 0.5 AN**							
0,75 mm²	AWG 18	one groove (back side)	**CC 0.7 AN**							
1 mm²	AWG 18	one groove	**CC 1.0 AN**							
1,5 mm²	AWG 16	two grooves	**CC 1.5 AN**							
2,5 mm²	AWG 14	three grooves	**CC 2.5 AN**							
10 A female contacts										
0,14-0,37 mm²	AWG 26-22	identification No. 1					**CDFA 0.3**	silver plated	**CDFD 0.3**	gold plated÷
0,5 mm²	AWG 20	identification No. 2					**CDFA 0.5**		**CDFD 0.5**	
0,75 mm²	AWG 18	identification No. ②					**CDFA 0.7**		**CDFD 0.7**	
1 mm²	AWG 18	identification No. 3					**CDFA 1.0**		**CDFD 1.0**	
1,5 mm²	AWG 16	identification No. 4					**CDFA 1.5**		**CDFD 1.5**	
2,5 mm²	AWG 14	identification No. 5					**CDFA 2.5**		**CDFD 2.5**	
10 A male contacts										
0,14-0,37 mm²	AWG 26-22	identification No. 1					**CDMA 0.3**		**CDMD 0.3**	
0,5 mm²	AWG 20	identification No. 2					**CDMA 0.5**		**CDMD 0.5**	
0,75 mm²	AWG 18	identification No. ②					**CDMA 0.7**		**CDMD 0.7**	
1 mm²	AWG 18	identification No. 3					**CDMA 1.0**		**CDMD 1.0**	
1,5 mm²	AWG 16	identification No. 4					**CDMA 1.5**		**CDMD 1.5**	
2,5 mm²	AWG 14	identification No. 5					**CDMA 2.5**		**CDMD 2.5**	

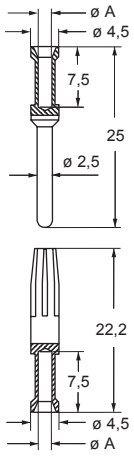
CCF, CCM and CC..AN contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length (mm)
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

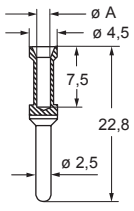
CDF and CDM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

CCF and CCM

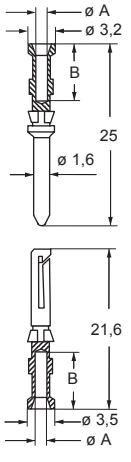


CC...AN



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

CDF and CDM



÷ for basic or high thickness gold plating, please refer to page 674

CX 6/12

TECHNICAL FEATURES

This combined connector, in addition to the traditional lateral protective earth contact with screw connection, is provided by contact seats for:

- 6 **CX** series crimp contacts up to the maximum size 10 for working current up to **40 A** and rated voltage up to **690 V**, and
- 12 **CD** series crimp contacts for working current up to **10 A** and rated voltage up to **230/400V**.

The removable crimp contacts of the **CX** series are held by resilient elements of the connector insert contact holder, while the removable crimp contacts of the **CD** series are equipped with their own retention means.

Compared to the **CX 6/36** combined connector of the same size "77.27" (see page 198) on the 6 power poles it allows the use of wires with a rated cross-sectional area (CSA) up to 10 mm² / 8 AWG whereas the CX 6/36 on the same 6 power poles is limited to size 6.0 for conductors up to 6 mm² / 10 AWG rated CSA.

The lower number of auxiliary contacts (12 instead of 36) of this connector insert, is largely rewarded by the fact that these contacts can be used for voltages up to 230/400 V, hence also for motors of non-negligible power, while in the CX 6/36 connector due to their higher density, the auxiliary contacts (of the same CD series) are limited to use at 160 V.

The presence of 230/400 V rated auxiliaries therefore suggests for these 12 contacts the possible use also in drives of up to 4 three-phase motors for the control of e.g. 4 lower power axes, while the two high power axes can be served by the 6 power poles of this connector.

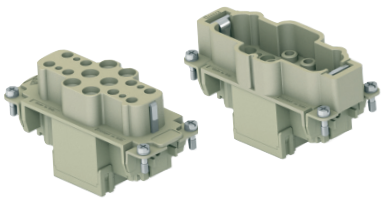
SUM-UP

- **Crimp connection**
- **Great resistance to strong vibrations**
- **For wires: up to 10 mm² (AWG 8)**
- **Auxiliary crimp contacts: silver or gold plated**

Inserts series		**CX 6/12**	
No. of poles	main contact	6 + ⏚ (40 A)	
	auxiliary contacts	12 (10 A)	
rated current		40 A	10 A
EN 61984 pollution degree 3	rated voltage	690 V	230 V/400 V
	rated impulse withstand voltage	8 kV	4 kV
	pollution degree	3	3
contact resistance		≤ 0,3 mΩ (40 A) ≤ 1 mΩ (16 A)	
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	mm²	1,5 10	
	AWG	16 - 8	
conductor cross-section (CC contact series)	mm²	0,14 2,5	
	AWG	26 - 14	
CX/CC stripping lenght	mm	8 / 9 / 15	
mechanical endurance (mating cycles)		≥ 500	

CX 6 poles (40A - 690V) + 12 poles (10A - 230/400V) + ⏚

inserts, crimp connections



40A and 10A 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 6/12**		
male inserts for male contacts	**CXM 6/12**		
40A female crimp contacts			
1,5 mm² AWG 16		**CXFA 1.5**	
2,5 mm² AWG 14		**CXFA 2.5**	
4 mm² AWG 12		**CXFA 4.0**	
6 mm² AWG 10		**CXFA 6.0**	
10 mm² AWG 8		**CXFA 10**	
40A male crimp contacts			
1,5 mm² AWG 16		**CXMA 1.5**	
2,5 mm₂ AWG 14		**CXMA 2.5**	
4 mm² AWG 12		**CXMA 4.0**	
6 mm² AWG 10		**CXMA 6.0**	
10 mm² AWG 8		**CXMA 10**	
10A female contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3		**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDFA 2.5**	**CDFD 2.5**
10A male contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3		**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDMA 2.5**	**CDMD 2.5**

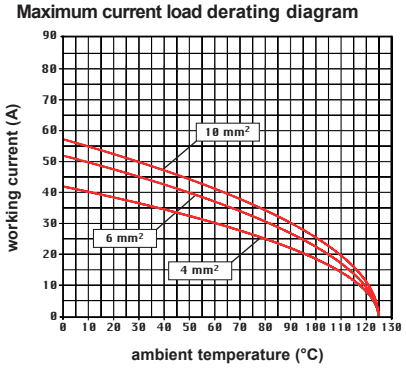
silver plated

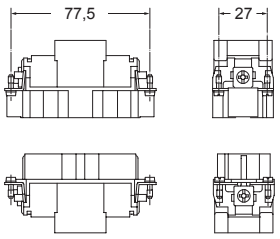
gold plated+

+ for basic or high thickness gold plating, please refer to page 674

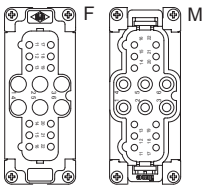
- characteristics according to EN 61984:
  40A 690V 8kV 3
  10A 230/400V 4kV 3
- c UL us (UL for USA and Canada) cec DNV BUREAU VERITAS EAC certified
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance:
  ≤ 0,3 mΩ (6 poles)
  ≤ 1 mΩ (12 poles)
- cable diameter: up to 7,5 mm
- contact section: up to 10 mm₂
- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 40A contacts, CXF, CXM series and 10A contacts CDF, CDM series on pages 708 - 741
- for max. current load see the connector inserts derating diagram below; for more information see page 28

CX 6/12 power poles connector inserts
Maximum current load derating diagram

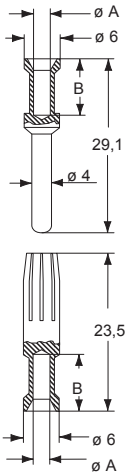




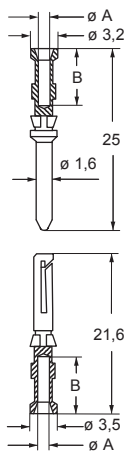
contacts side (front view)



CXF and CXM



CDF and CDM



CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
10	4,3	15
CDF and CDM contacts		
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

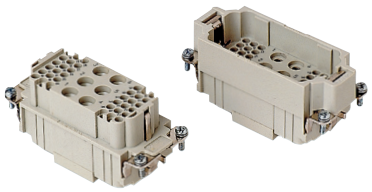
CX 6 poles (40A - 690V) + 36 poles (10A – 160V) + ⏚

enclosures:
size “77.27” **page:**

panel supports: **page:**
COB **652 - 653**

- PCBs interface, see article CIF 2.4 (10A contacts)

inserts, crimp connections



40A and 10A 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 6/36**		
male inserts for male contacts	**CXM 6/36**		
40A female crimp contacts			
1,5 mm² AWG 16		**CXFA 1.5**	
2,5 mm² AWG 14		**CXFA 2.5**	
4 mm² AWG 12		**CXFA 4.0**	
6 mm² AWG 10		**CXFA 6.0**	
40A male crimp contacts			
1,5 mm² AWG 16		**CXMA 1.5**	
2,5 mm₂ AWG 14		**CXMA 2.5**	
4 mm² AWG 12		**CXMA 4.0**	
6 mm² AWG 10		**CXMA 6.0**	
10A female contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3		**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDFA 2.5**	**CDFD 2.5**
10A male contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3		**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDMA 2.5**	**CDMD 2.5**

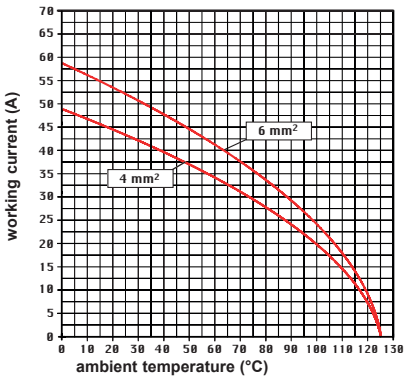
silver plated

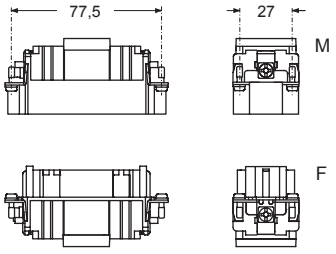
gold plated+

+ for basic or high thickness gold plating, please refer to page 674

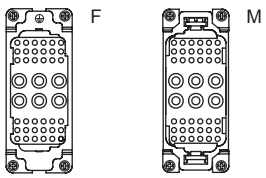
- characteristics according to EN 61984:
  40A 690V 8kV 3
  10A 160V 2,5kV 3
  10A 250V 4kV 2
- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (6 poles), ≤ 1 mΩ (36 poles)
- for max. current load see the connector inserts derating diagram below; for more information see page 28

CX 6/36 power poles connector inserts
Maximum current load derating diagram



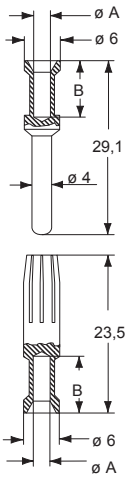


contacts side (front view)

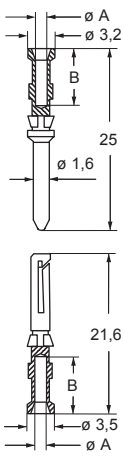


- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 40A contacts, CXF, CXM series and 10A contacts CDF, CDM series on pages 708 - 741

CXF and CXM



CDF and CDM

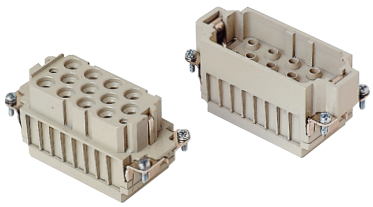


CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
CDF and CDM contacts		
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

CX 12 poles (40A - 690V) + 2 poles (10A - 250V) + ⏚

inserts, crimp connections



40A and 10A 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 12/2**		
male inserts for male contacts	**CXM 12/2**		
40A female crimp contacts			
1,5 mm² AWG 16		**CXFA 1.5**	
2,5 mm² AWG 14		**CXFA 2.5**	
4 mm² AWG 12		**CXFA 4.0**	
6 mm² AWG 10		**CXFA 6.0**	
40A male crimp contacts			
1,5 mm² AWG 16		**CXMA 1.5**	
2,5 mm₂ AWG 14		**CXMA 2.5**	
4 mm² AWG 12		**CXMA 4.0**	
6 mm² AWG 10		**CXMA 6.0**	
10A female contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3		**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDFA 2.5**	**CDFD 2.5**
10A male contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3		**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDMA 2.5**	**CDMD 2.5**

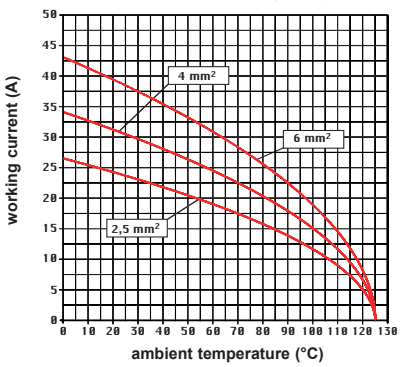
silver plated

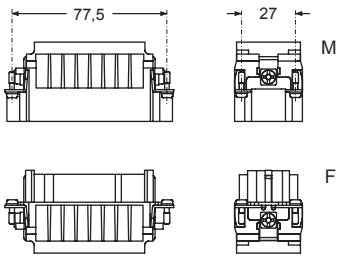
gold plated+

+ for basic or high thickness gold plating, please refer to page 674

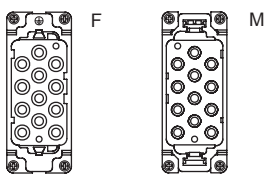
- characteristics according to EN 61984:
  40A 690V 8kV 3
  10A 250V 4kV 3
- certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (12 poles), ≤ 1 mΩ (2 poles)
- for max. current load see the connector inserts derating diagram below; for more information see page 28

CX 12/2 power poles connector inserts
Maximum current load derating diagram



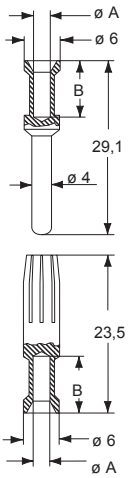


contacts side (front view)

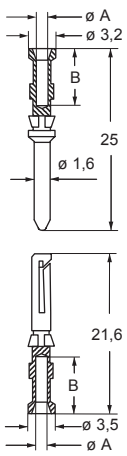


- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 40A contacts, CXF, CXM series and 10A contacts CDF, CDM series on pages 708 - 741

CXF and CXM



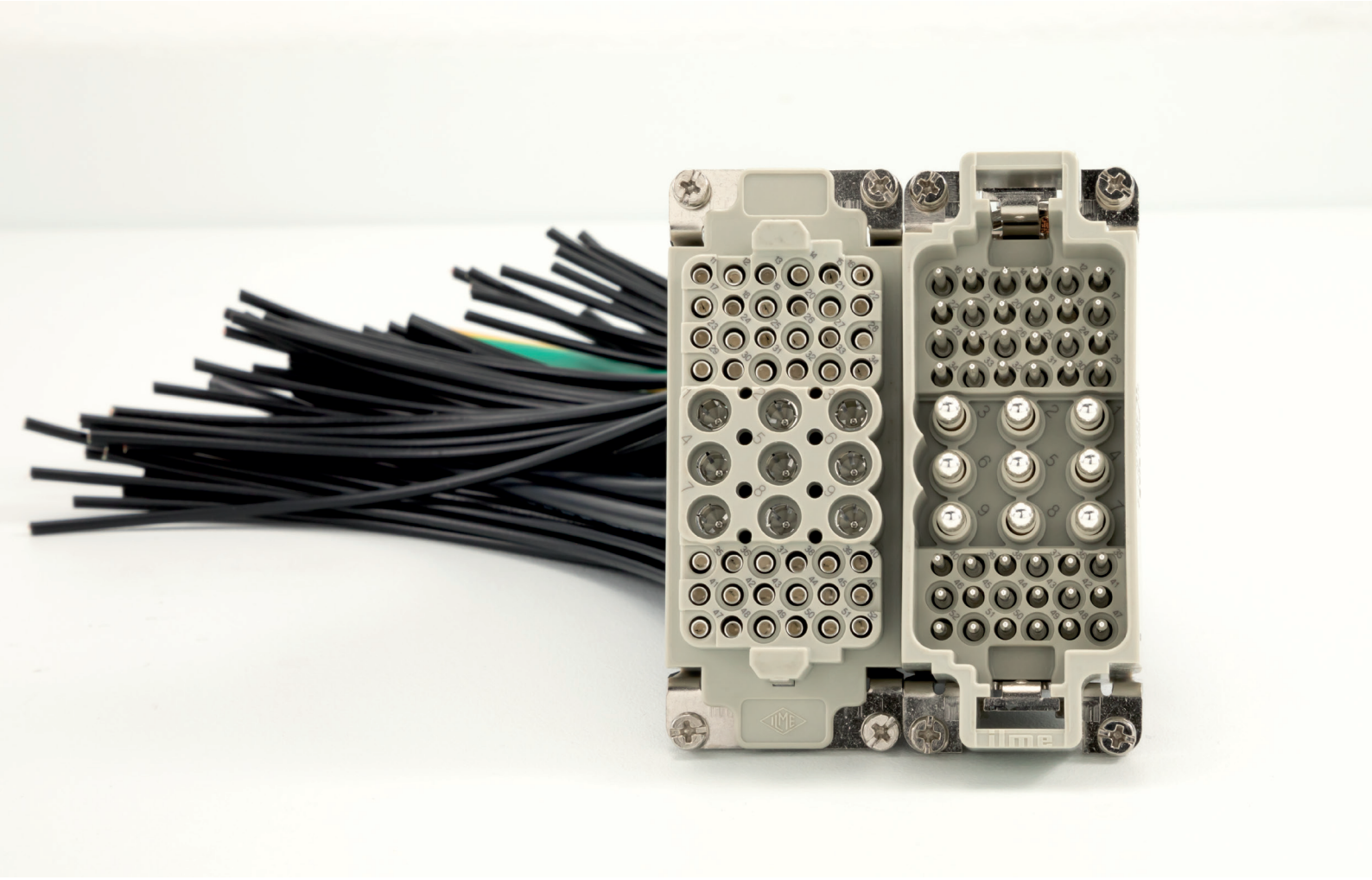
CDF and CDM



CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
CDF and CDM contacts		
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

CX SERIES COMBINED INSERT
CXF /M 9/42



CX Series - Combined insert

9 poles core high power portion

40 A 690 V 8 kV 3

42 poles peripheral “mid power/auxiliary” portions

10 A 250 V 4 kV 3

Find more information on our products at www.ilme.com

TECHNICAL FEATURES

CXF /M 9/42

- Proprietary design, it expands the range of “power + auxiliaries” combined connector series.

- Combined connector for high power + mid power and a large number of signals and auxiliary circuits.

- EN/IEC 61984 ratings:
  - **40 A 690 V 8 kV 3** (core “high power” portion, 9 contact positions),
  - **10 A 250 V 4 kV 3** (peripheral “mid power/auxiliary” portions, 24+18=42 contact positions)

- Lower and Upper Limiting Temperatures (LLT … ULT): -40 °C … +125 °C.

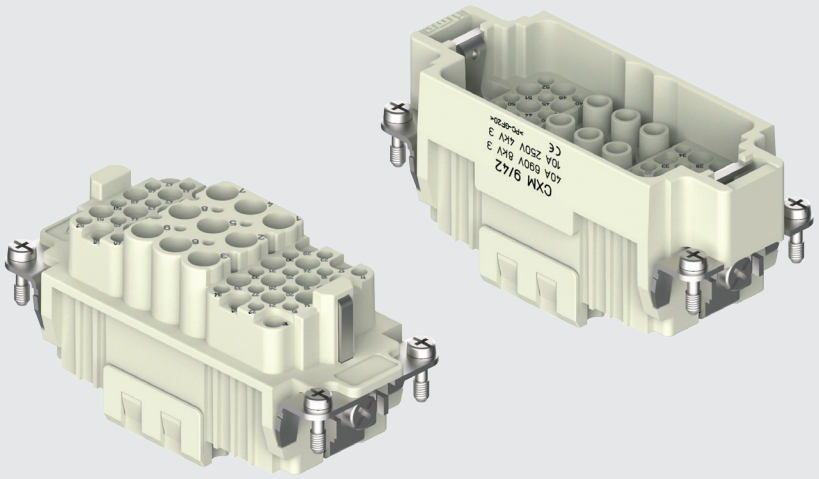
- Suitable for removable crimp contacts series **CX** up to size **6.0** (6 mm² / 10 AWG) and series **CD** up to size **2.5** (2,5 mm² / 14 AWG).

- Covers up to three 3Φ AC motors (3 axes with high-power motion control system) and 24 + 18 = 42 poles in peripheral mid-power/auxiliaries sections, to cover e.g. 4 additional motion control axes with 12 of the 18-pole portion, and the remaining 30 contacts serving auxiliary and signal contacts (I/O, solenoids, etc.).

- Max diameter of wire sheathing:
  - **5,0 mm** in the 9P “high power” core portion,
  - **3,8 mm** in the 42P “mid-power/aux” peripheral portions.

- Matches the wiring of two separate cables in a single connector insert: one cable for powering motors and relevant braking circuits, the other cable for their encoder signals (position control).

proprietary design fulfilling minituarization trend in robotics: more power contacts and more auxiliary contacts in smaller size



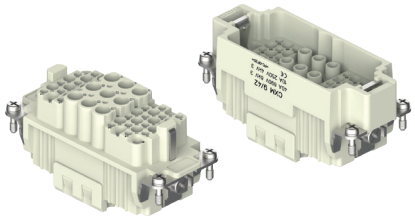
CX Combined 9 poles (40 A - 690 V) + 42 poles (10 A - 250 V) + ⏚

enclosures:
size "77.27"

panel supports:

refer to CN.19 pages

inserts, crimp connections



40 A and 10 A 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 9/42**		
male inserts for male contacts	**CXM 9/42**		
40 A female crimp contacts			
1,5 mm² AWG 16		**CXFA 1.5**	
2,5 mm² AWG 14		**CXFA 2.5**	
4 mm² AWG 12		**CXFA 4.0**	
6 mm² AWG 10		**CXFA 6.0**	
40 A male crimp contacts			
1,5 mm² AWG 16		**CXMA 1.5**	
2,5 mm₂ AWG 14		**CXMA 2.5**	
4 mm² AWG 12		**CXMA 4.0**	
6 mm² AWG 10		**CXMA 6.0**	
10 A female contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDFA 0.3**	**CDFD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDFA 0.5**	**CDFD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDFA 0.7**	**CDFD 0.7**
1 mm² AWG 18 identification No. 3		**CDFA 1.0**	**CDFD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDFA 1.5**	**CDFD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDFA 2.5**	**CDFD 2.5**
10 A male contacts			
0,14-0,37 mm² AWG 26-22 identification No. 1		**CDMA 0.3**	**CDMD 0.3**
0,5 mm² AWG 20 identification No. 2		**CDMA 0.5**	**CDMD 0.5**
0,75 mm² AWG 18 identification No. ②		**CDMA 0.7**	**CDMD 0.7**
1 mm² AWG 18 identification No. 3		**CDMA 1.0**	**CDMD 1.0**
1,5 mm² AWG 16 identification No. 4		**CDMA 1.5**	**CDMD 1.5**
2,5 mm² AWG 14 identification No. 5		**CDMA 2.5**	**CDMD 2.5**

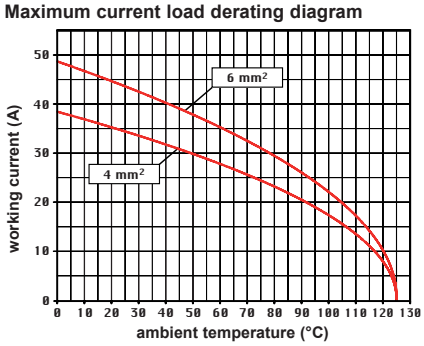
silver plated

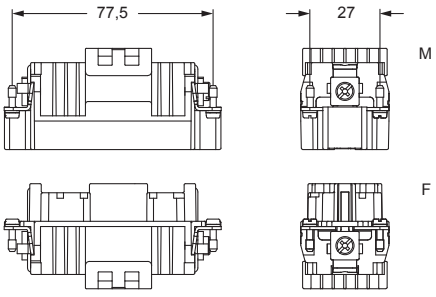
gold plated+

+ for basic or high thickness gold plating, please refer to page 674 of CN.19 catalogue

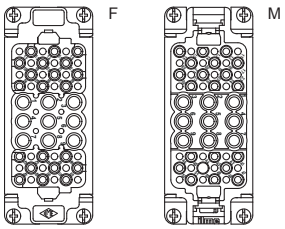
- characteristics according to EN/IEC 61984 ratings:
  40 A 690 V 8 kV 3
  10 A 250 V 4 kV 3
- c UL us (ECBT2.E115072, ECBT8.E115072), cec
  DNV EAC certified
- BV pending
- rated voltage according to UL/CSA: 600 V
- insulation resistance: ≥ 10 GΩ
- Lower and Upper Limiting Temperatures (LLT … ULT): -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ (CX power contacts)
  ≤ 3 mΩ (CD auxiliary contacts)
- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 40A contacts CXF and CXM series and 10A contacts CDF, CDM series,on pages 708 - 741 of CN.19 catalogue).
  For 40 A contacts and 10 A contacts see also new pneumatic crimping tool CCPZP RN (see page 145)
- for max. current load see the connector inserts derating diagram below.

CXF /M 9/42 combined connector inserts
Maximum current load derating diagram

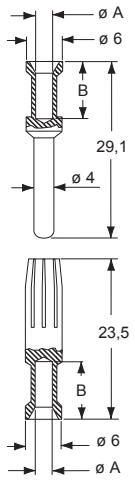




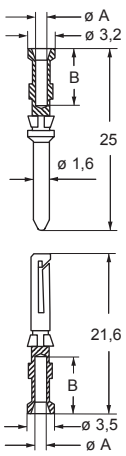
contacts side (front view)



CXF and CXM



CDF and CDM

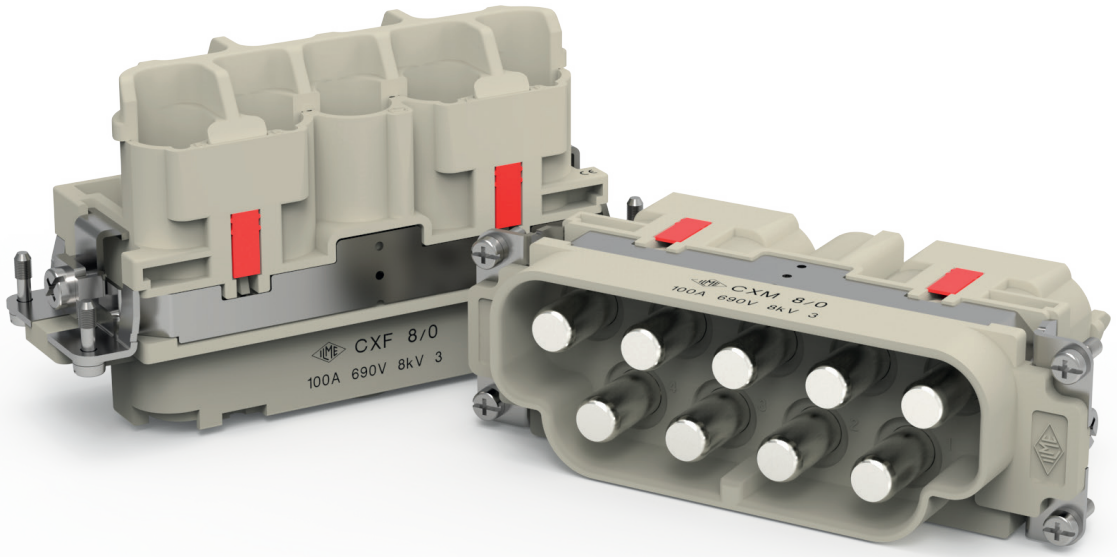


CXF and CXM contacts

conductor section mm²	conductor slot ø A (mm)	conductors stripping length B (mm)
1,5	1,8	9
2,5	2,2	9
4	2,85	9,6
6	3,5	9,6
CDF and CDM contacts		
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

CX SERIES - POWER CRIMP CONNECTOR

CXF /M 8/0



For use with up to 8 (+ 1 for ⏚)
removable crimp contacts series CG,
with working current up to 100 A
8 poles + ⏚: 100 A 690 V 8 kV 3

Find more information on our products at www.ilme.com

TECHNICAL FEATURES

CXF /M 8/0

For use with up to 8 (+ 1 for ⏚) removable crimp contacts series **CG** (9 contacts required to fill the connector), **for use with working current up to 100 A** (derating diagrams under construction). Series **CG** contacts are available in four sizes (10, 16, 25, 35) covering the corresponding stranded conductor cross-sectional area (mm²) (class 5 per IEC 60228) and corresponding AWG.

No auxiliary (signal) contact (in the same size, CX 6/6 has seats for 6 + ⏚ 100 A power contacts series CG and for 6 16 A auxiliary contacts series CC).

Crimp connection technology, providing benefits over the competing axial screw technology:

- higher resistance to mechanical stresses such as vibration, shock and strain on wire strands, e.g. creep due to thermal cycling;
- gas tightness providing outstanding corrosion resistance;
- faster connection time and more consistent results (independence from operator-applied tightening torque);
- higher connector efficiency (lower voltage drop).

Upon insert fitted with crimped connections, the contact holder is firmly locked in place by **four provided locking keys,** red coloured **(proprietary ILME design),** ensuring quick fitting and removal of crimped connections. Removal by simple flat blade screwdriver (e.g. 0,5 x 3 mm, 0,6 x 4 mm or 0,8 x 4 mm).

Inserts made by UL 94V-0 glass reinforced polycarbonate, EN 45545-2:2015 compliant.

Crimping of **CG** series contacts to be carried out with the **hand-operated hydraulic pliers CPPZ C** to be fitted with the suitable locator **CGPZ LOC.** Suitable crimping dies **CGD..C** available on request (see CN.19 p. 720).

PE power crimp contact to be fitted in the centre of the insert of the same size of the (up to) 8 line power contacts; thanks to its deeper seat on the female insert it is a FMLB contact *(first-make, last-break)* and is made equipotential, by internal metal spring elements, to the integral outer PE busbar welded to the two lateral PE mounting plates, to bond to earth the enclosure (bonding to PE required for metal enclosures). Additional PE screw terminal with pressure plate for conductors up to 4 mm² / 12 AWG on PE plate closer to pole #1.

Interchangeable and intermateable with competitor products (available only with axial screw contacts and limited to 25 mm² / 4 AWG).

Power connector suitable for energizing e.g. two 3-phase + N AC motors.

Maximum overall diameter of wires: 11,5 mm (same as for the 6+PE power contacts of CXF/M 6/6 combined connector inserts).

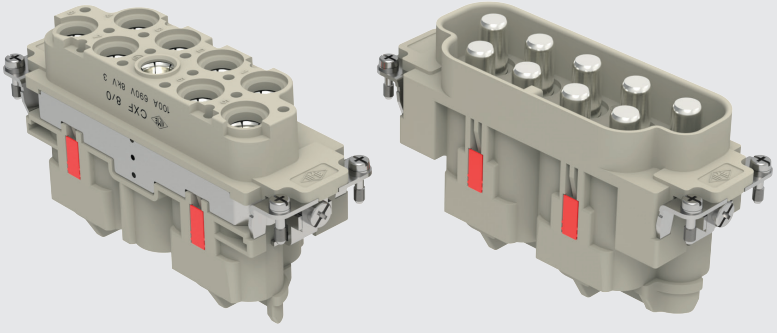
- c UL us (ECBT2/ECBT8), EAC DNV CE UKCA
- CQC, BV pending.

RoHS: compliant without exemptions.

NOTE - The turned crimp contacts series **CG** are **RoHS** compliant with exemption **6(c).**

the four provided locking keys, red coloured (proprietary ILME design) firmly lock in place the contact holder

crimp contacts CG series are separately available



CXF /M 8/0 8 poles (100 A - 690 V) + ⏚

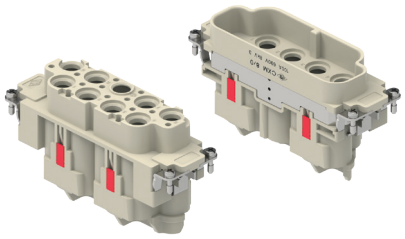
enclosures:
size "104.27" — **page:**

panel supports:

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

refer to CN.19 pages

inserts, crimp connections



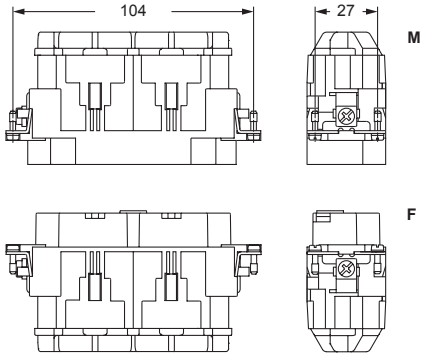
100 A crimp contacts silver plated

description	part No.	part No.
without contacts (to be ordered separately)		
female inserts for female contacts	**CXF 8/0**	
male inserts for male contacts	**CXM 8/0**	
100A female crimp contacts		
8 - 10 mm² AWG 8 - 7		**CGFA 10**
16 mm² AWG 6 - 5		**CGFA 16**
25 mm² AWG 4 - 3		**CGFA 25**
35 mm² AWG 2		**CGFA 35**
100A male crimp contacts		
8 - 10 mm² AWG 8 - 7		**CGMA 10**
16 mm² AWG 6 - 5		**CGMA 16**
25 mm² AWG 4 - 3		**CGMA 25**
35 mm² AWG 2		**CGMA 35**

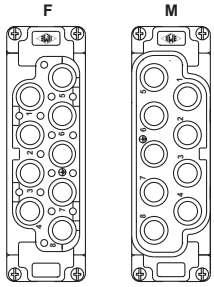
silver plated

- characteristics according to EN/IEC 61984 ratings:
  100 A 690 V 8 kV 3
- c UL us (ECBT2/ECBT8), EAC DNV certified
- CQC, BV pending
- rated voltage according to UL/CSA: 600 V
- insulation resistance: ≥ 10 GΩ
- Lower and Upper Limiting Temperatures (LLT … ULT): -40 °C ... +125 °C
- made by UL 94V-0 glass reinforced polycarbonate, EN 45545-2:2015 compliant
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,3 mΩ
- **it is recommended to crimp the contacts with crimping tools homologated by ILME** (please see the crimping tool section 100 A contacts CGF, CGM series, on pages 708 - 741 of CN.19 catalogue).
- for max. current load see the connector inserts derating diagrams below; for more information see page 28 of CN.19 catalogue

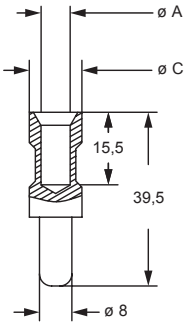
CXF 8/0, CXM 8/0

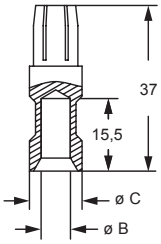


contacts side (front view)

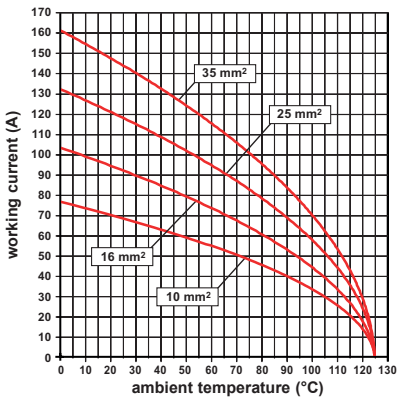


CGF and CGM





CX 8/0 poles connector inserts
Maximum current load derating diagram



CGF and CGM contacts

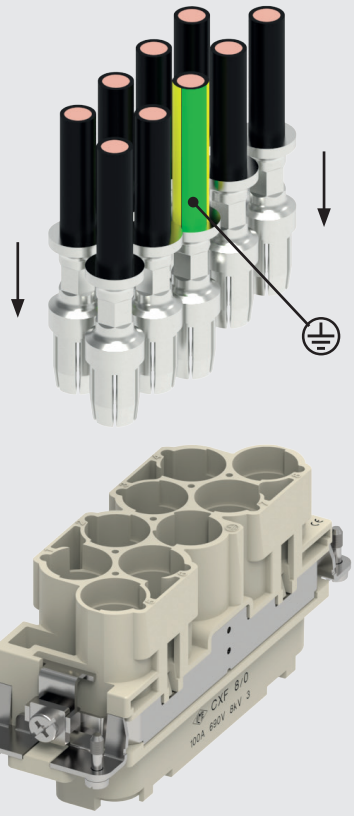
conductor section (mm²)	conductor slot ø A (mm)	ø B (mm)	ø C (mm)	conductor stripping length (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

ASSEMBLY INSTRUCTIONS

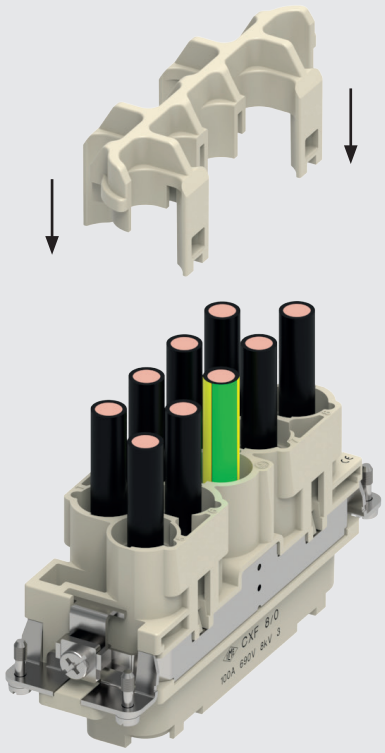
CXF /M 8/0

NOTE: CXF 8/0 representative also of CXM 8/0

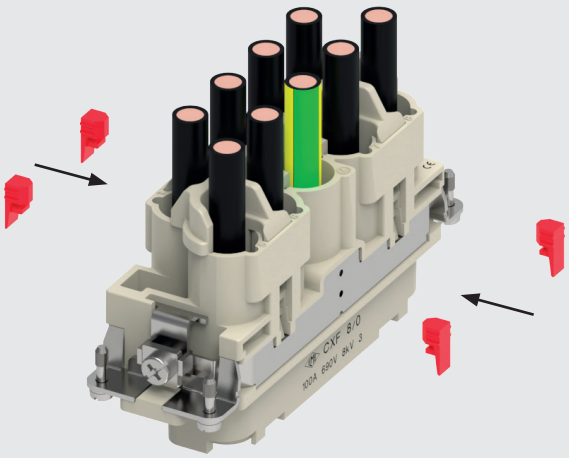
1



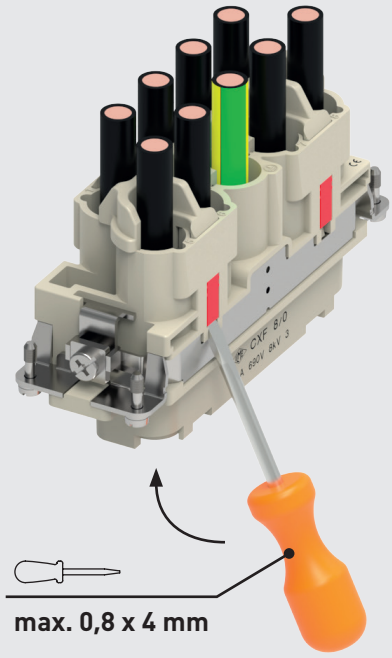
2



3



TO REMOVE



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

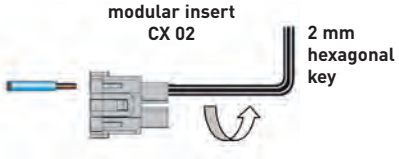
Increasing the tightening torque of terminal screws does not considerably improve the contact resistance. The screw torques are selected according to standard EN 60999-1, to provide excellent mechanical, thermal and electric behaviour. The conductor or terminal may be damaged if the recommended values 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^2 (14 AWG to 10 AWG) (CX 02 4AF/M)
  from 6 to 10 mm^2 (10 AWG to 8 AWG) (CX 02 4BF/M)
  (extra-flexible EN 60228 class 6: 2,5... 6 mm^2 (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^2 (14 AWG to 12 AWG)
  2 Nm (17,7 lb.in) max for conductors with section 6 ... 10 mm^2 (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 Wt ≤ 0,2 mm over a distance of 200 mm (measured on the panel without load)

– Roughness Ra ≤ 16 µm

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^2)**	**AWG**	**(mm)**
CK	0,75 – 2,5	18 – 14	6
CX 4/2, CX 4/8 (poles 16A) [1]	0,75 – 4	18 – 12	7
	0,75 – 2,5	18 – 14	7
CNE [1]	0,5 – 4	20 – 12	7
CNE..X	0,25 – 2,5	24 – 14	7
CDA [1]	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 [1]	0,5 – 4	20 – 12	7
CME..X	0,5 – 2,5	20 – 14	7
CP [1]	0,75 – 6	18 – 10	10,5
CX 4/.. (80A poles)	4 – 16	12 – 5	14
Crimp			
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^2]
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
Spring			
CSE, CSH, CTSE 06..24, CMSH, MIXO [CX 05 S [2], CX 05 SH], CSS	0,14 – 2,5	26 – 14	9 - 11
CTS 40/64	0,14 – 2,5 unprepared 0,14 – 1 prepared	26 – 14 unprepared 26 – 18 prepared	9 - 11
CKS, CKSH, CDS, CDSH, CSAH	0,14 – 2,5 unprepared 0,14 – 1,5 prepared	26 – 14 unprepared 26 – 16 prepared	9 - 11

[1] 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^2 unprepared - 2,5 mm^2 prepared).

[2] Available upon request.

LOAD CURVES

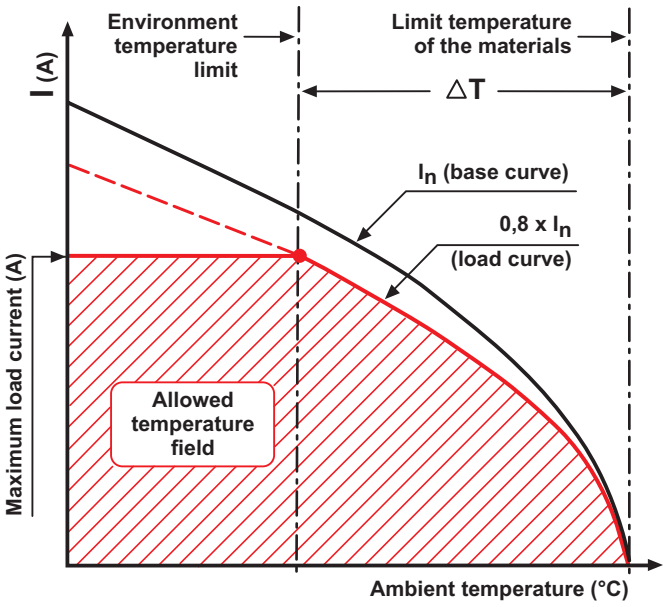
The permitted current carrying capacity for connectors is variable: it becomes lower with the increase of the number of poles and of the ambient temperature in which the connector is installed and it depends upon the thermal properties of the material used for the contacts and the insulating parts including 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 ΔT (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.

ΔT (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.