

CX BD adapter insert

TECHNICAL FEATURES

To be able to use circular shielded connectors series **MIXO BUS** (multiaxial, for balanced cables with multiple pairs) or coaxial connectors (for coaxial cables) even in compact enclosures size "21.21" **CK/MK**, **CKA/MKA** or **CGK/MGK**, it is necessary to purchase the adapter insert **CX 1/2 BD**. This insert can be used to assemble MIXO coaxial connectors part No. **CX 01 BM/BF** for coaxial cables with a characteristic impedance of 75 Ω and **CX 01 BCM/BCF** for coaxial cables with a characteristic impedance of 50 Ω, or MIXO BUS **CX 04 BM/BF** multiaxial shielded connectors with 4 poles + shield and **CX 08 BM/BF** shielded connectors with 8 poles + shield, in addition to providing seats for 2 additional optional contacts series CD for the connection of a SELV (safety extra-low voltage) supply line.

The connector portion of this adapter has rated values compliant with standard EN 61984 and equivalent to 10A 50V 0,8kV 3.

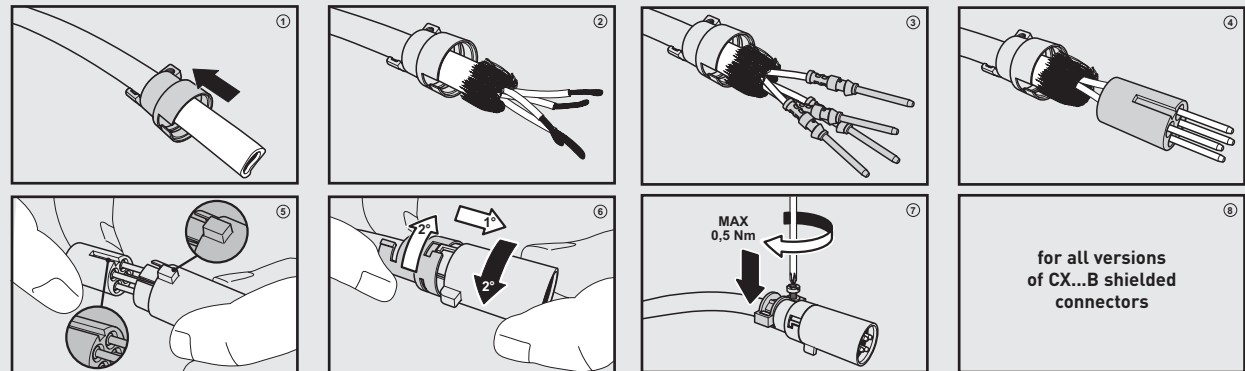
Adapter insert **CX 1/2 BDM/BDF** is fitted with multiaxial and coaxial MIXO BUS shielded connectors and is designed to be used only with the models specified below of the following enclosures: **CK/MK** or **CKA/MKA** (IP66/IP67/IP69) or **CGK/MGK** (IP66/IP68/IP69) with glued gasket on hoods and covers. The cable shielding is electrically separated from the earthing connection of the metal enclosure. If used with MIXO BUS **CX 04 BM/BF** shielded connectors, the connector is able to support all field bus protocols with 4 conductors.

Part No. of adapter		CX 1/2 BD
No. of seats/poles	seats for shielded connector 1)	1
	seats for auxiliary contacts	2
Rated current 2)	shielded connector	depending on type: 5A, 10A, 16A
	auxiliary contacts	10A
EN 61984	rated voltage	50V
	rated impulse withstand voltage	0,8kV
	pollution degree	3
UL 1977 / CSA C22.2 - N°187.3	rated voltage (a.c./d.c.)	50V
Contact resistance	shielded connector	depending on the type of contact used
	auxiliary contacts	≤ 3 mΩ
Insulation resistance		≥ 10 GΩ
Ambient temperature limit (°C)	min	-40
	max	+70
Degree of protection	with enclosures (according to type)	IP66/IP67/IP69, IP66/IP68/IP69
	without enclosures (in mated condition)	IP20 (IPXXB)
Conductor connections		crimp
Conductor section	shielded connector (mm²/AWG)	depending on the type of contact used
	auxiliary contacts (mm²)	0,14÷2,5
	auxiliary contacts (AWG)	26÷14
Conductors stripping lenght		depending on contact
Mechanical endurance (mating cycles)		≥ 500
Self-extinguishing capacity UL 94		V0

1) Depending on the selected shielded connector, which must be ordered separately, the number of poles + shield could be 1 (coaxial connectors), 4 (4-way multiaxial connector for 2 pairs) or 8 (8-way multiple connector, for example for 4 pairs).

2) It is generally necessary to refer to the loading curves of the inserts to determine the actual operating current limit for a specific ambient temperature. These curves are not required for MIXO BUS / coaxial shielded connectors, because these are signal connectors designed to be used by the transmission protocols to transmit currents in fractions of amperes. The current capacity specified is the maximum current traditionally assigned to contacts, not the one assigned to the shielded connector when in use.

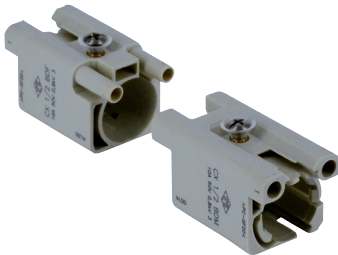
CX 04 BF/BM Assembling instructions



CX BD adapter insert 1 seat for shielded connector + 2 aux contacts 10A - 50V

enclosures: size "21.21"	page:
insulating type (CK IN, CKG/MKG VN)	346 - 348
metallic type (CKAX I, CKAX/MKAX IAP/AP/VG) (CKAG/MKAG V) (MKAX/MKA/MKAXXIAP/AP25) (MKAX/MKA/MKAXX VG25) (MKAX/MKA/MKAXX IF)	349 and 353 354 - 355 358 - 359 360 - 361 362 - 363
IP68 (CGK I, CGK/MGK IAP, CGK/MGK V)	628 - 631

adapter insert for shielded connectors



10A crimp contacts, silver or gold plated



description	part No.	part No.	part No.
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adapter insert with seats for 1 shielded connector
+ 2 aux contacts 10A
female insert, 1 seat for BUS connector and 2 seats
for 10A female contacts (CDF)
male insert, 1 seat for BUS connector and 2 seats
for 10A male contacts (CDM)

CX 1/2 BDF

CX 1/2 BDM

10A female contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

10A male contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

CDFA 0.3
CDFA 0.5
CDFA 0.7
CDFA 1.0
CDFA 1.5
CDFA 2.5

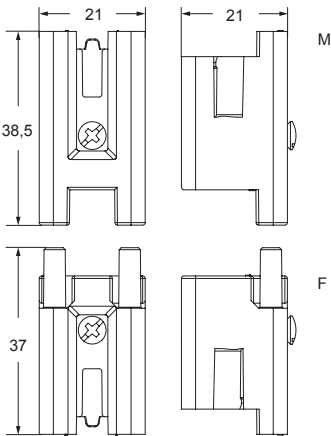
silver plated

CDFD 0.3
CDFD 0.5
CDFD 0.7
CDFD 1.0
CDFD 1.5
CDFD 2.5

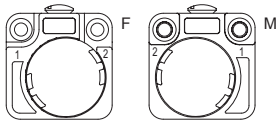
gold plated⁺

- characteristics according to EN 61984:
adapter insert CX 1/2 BD (2 aux contacts)
10A 50V 0,8kV 3
- (UL for USA and Canada), certified
- both the female and the male inserts may accept any of the above shielded connectors of any gender, as far as the correct specular assignment is set on the mating connector
- it is recommended to crimp the contacts with crimping tools homologated by ILME (please see the crimping tool section 10A contacts, CDF and CDM series on pages 708 - 741)
- extraction tool for BUS/coax shielded connectors from adapter insert CX 1/2 BD part No. CX BES see page 703
- contact resistance adapter insert, 2 aux contacts:
≤ 3 mΩ
- inserts already supplied with stainless steel fixing screw with gasket, which ensures IP66/IP67/IP69 degree of protections
- adapter insert designed to be used with CX01 BCF/M CX 01 BF/M, CX 04 BF/M and CX 08 BF/M shielded connectors see pages 289, 291, 293

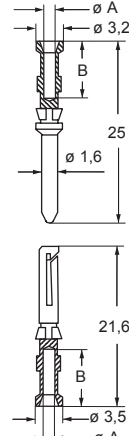
CX 1/2 BDF, CX 1/2 BDM



contacts side (front view)



CDF and CDM



CDF and CDM contacts

conductor section mm ²	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

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

CX 01 BCF/BCM 1 pole + shield (each connector) 16A - 50V

- characteristics according to EN 61984:
CX 01 BC shielded connector
16A 50V 0,8kV 3
- certified
- rated voltage according to UL/CSA: 50V
- insulation resistance: $\geq 10\text{ G}\Omega$
- ambient temperature limit: $-40\text{ }^{\circ}\text{C} \dots +70\text{ }^{\circ}\text{C}$
- contact resistance: $\leq 1\text{ m}\Omega$
- mechanical life: ≥ 500 cycles
- for information on the crimping of contacts series CC (CX 01 BC shielded connector) and on the insertion/removal tools, see the section related to crimping tools (16A contacts, CCF and CCM series) on pages 708 - 741
- CX 01 BC shielded connector for **cable with a typical impedance of 50 Ω** (attenuation see below)
- suitable for **CX 02 B** (MIXO 2-seat holder) or **CX 1/2 BD** ("21.21" 1-seat adapter insert)
- female and male shielded connectors fit both in female and in male holder / adapter insert

shielded connectors



16A crimp contacts, silver and gold plated



description	part No.	part No.	part No.
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shielded BUS coaxial connectors, 1 pole + shield
female insert, one contact seat 16A (CCF) + shield
male insert, one contact seat 16A (CCM) + shield

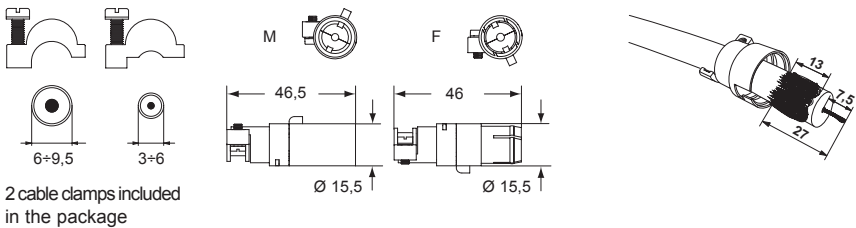
CX 01 BCF
CX 01 BCM

16A female crimp contacts		
0,14-0,37 mm ²	AWG 26-22	one groove
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

16A male crimp contacts		
0,14-0,37 mm ²	AWG 26-22	one groove
0,5 mm ²	AWG 20	with no grooves
0,75 mm ²	AWG 18	one groove (back side)
1 mm ²	AWG 18	one groove
1,5 mm ²	AWG 16	two grooves
2,5 mm ²	AWG 14	three grooves
3 mm ²	AWG 12	one wide groove
4 mm ²	AWG 12	with no grooves

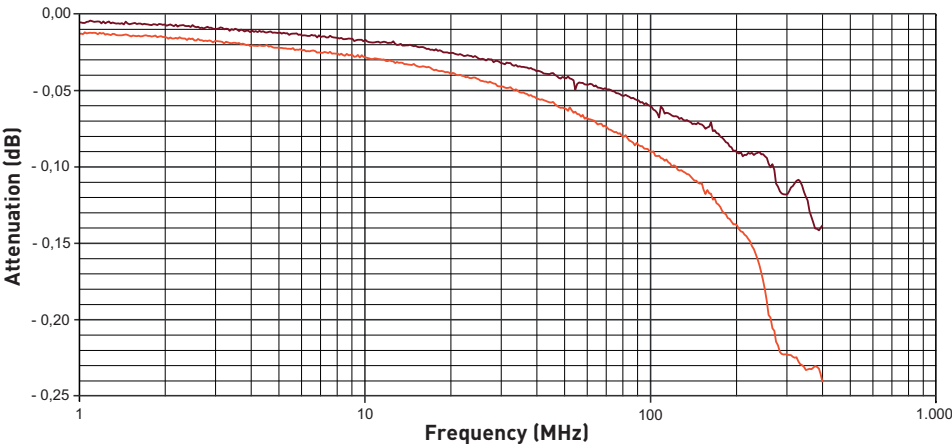
silver plated	CCFA 0.3	CCFD 0.3	gold plated+
	CCFA 0.5	CCFD 0.5	
	CCFA 0.7	CCFD 0.7	
	CCFA 1.0	CCFD 1.0	
	CCFA 1.5	CCFD 1.5	
	CCFA 2.5	CCFD 2.5	
	CCFA 3.0	CCFD 3.0	
	CCFA 4.0	CCFD 4.0	
	CCMA 0.3	CCMD 0.3	
	CCMA 0.5	CCMD 0.5	
	CCMA 0.7	CCMD 0.7	
	CCMA 1.0	CCMD 1.0	
	CCMA 1.5	CCMD 1.5	
	CCMA 2.5	CCMD 2.5	
	CCMA 3.0	CCMD 3.0	
	CCMA 4.0	CCMD 4.0	

CX 01 BCF, CX 01 BCM

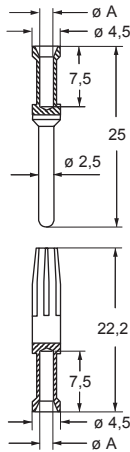


Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

Attenuation (insertion loss) 50 ohm coaxial connector (CX 01 BCF / BCM)



- RG 213/U cable and CX 01 BC connector (50 ohm)
- RG 213/U cable (50 ohm)



CCF and CCM contacts

conductor section (mm ²)	conductor slot $\varnothing A$ (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

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

CX 01 BF/BM - CX 04 BF/BM 1 or 4 poles + shield (each connector) 10A - 50V

- characteristics according to EN 61984:

CX 04 B / CX 01 B shielded connector

10A 50V 0,8kV 3

- certified

- rated voltage according to UL/CSA: 50V

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

- ambient temperature limit: $-40^\circ\text{C} \dots +85^\circ\text{C}$

- mechanical life: ≥ 500 cycles

- contact resistance:

shielded connector CX 04 B: $\leq 3 \text{ m}\Omega$

coaxial connector CX 01 B: $\leq 3 \text{ m}\Omega$

- for contact crimping instructions, refer to the crimping tool section (10A contacts, CDF and CDM series) on pages 708 - 741

- coaxial connector CX 01 B cables with a typical impedance of 75Ω (attenuation see below)

- CX 04 B multiaxial connector for STP cables with 2 pairs and terminations compliant with EN 50173-1 Cat. 5 (100 MHz), compatible with 4-wire field bus protocols

- suitable for CX 02 B (MIXO 2-seat holder) or CX 1/2 BD ("21.21" 1-seat adapter insert)

- female and male shielded connectors fit both in female and in male holder / adapter insert

shielded connectors**10A crimp contacts, silver and gold plated**

description	part No.	part No.	part No.
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shielded BUS coaxial connectors, 1 pole + shield female insert, one contact seat 10A (CDF) + shield male insert, one contact seat 10A (CDM) + shield

CX 01 BF
CX 01 BM

shielded BUS multi axial connectors, 4 poles + shield female insert, four contact seats 10A (CDF) + shield male insert, four contact seats 10A (CDM) + shield

CX 04 BF
CX 04 BM

10A female crimp contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

silver plated

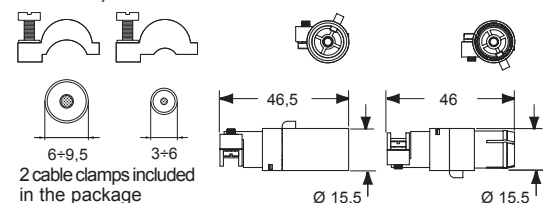
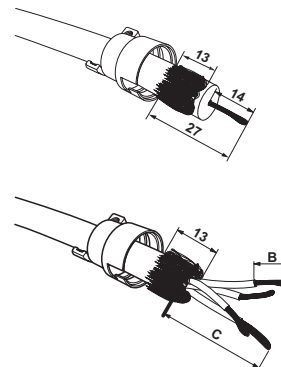
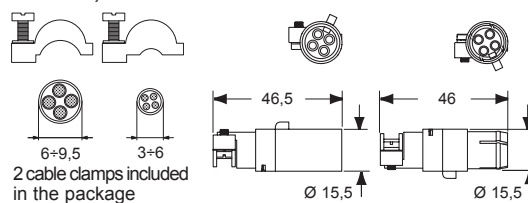
gold plated+

10A male crimp contacts

0,14-0,37 mm ²	AWG 26-22	identification No. 1
0,5 mm ²	AWG 20	identification No. 2
0,75 mm ²	AWG 18	identification No. ②
1 mm ²	AWG 18	identification No. 3
1,5 mm ²	AWG 16	identification No. 4
2,5 mm ²	AWG 14	identification No. 5

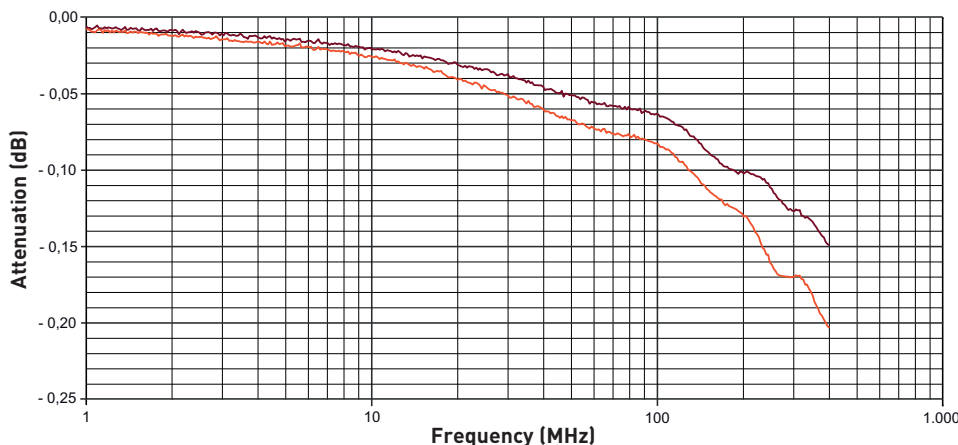
CDMA 0.3
CDMA 0.5
CDMA 0.7
CDMA 1.0
CDMA 1.5
CDMA 2.5

CDMD 0.3
CDMD 0.5
CDMD 0.7
CDMD 1.0
CDMD 1.5
CDMD 2.5

CX 01 BF, CX 01 BM**CX 04 BF, CX 04 BM**

Test performed in accordance with IEC/EN 60512-25-2 (2002), 4.1.3.2 (coaxial cable only) and 4.2.2.2 (coaxial cable and connector).

Attenuation (insertion loss) 75 ohm coaxial connector (CX 01 BF / BM)



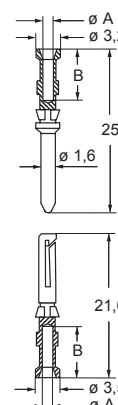
— RG 11 A/U cable and CX 01 B connector (75 ohm)
— RG 11 A/U cable (75 ohm)

cable clamp	C (mm)
3-6	20
6-9,5	25

CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
(mm ²)	ø A (mm)	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

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



CX 08 BF/BM 8 poles + shield (each connector) 5A - 50V

shielded connectors



CI (5A) crimp contacts, silver and gold plated



description	part No.	part No.	part No.
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shielded BUS multi axial connectors, 8 poles + shield
female insert, eight contact seats 5A (CIF) + shield
male insert, eight contact seats 5A (CIM) + shield

CX 08 BF
CX 08 BM

CI (5A) female crimp contacts
0,08-0,21 mm² AWG 28-24
0,13-0,33 mm² AWG 26-22
0,33-0,52 mm² AWG 22-20

CI (5A) male crimp contacts
0,08-0,21 mm² AWG 28-24
0,13-0,33 mm² AWG 26-22
0,33-0,52 mm² AWG 22-20

CIFA 0.2
CIFA 0.3
CIFA 0.5

silver plated

CIFD 0.2
CIFD 0.3
CIFD 0.5

gold plated

CIMA 0.2
CIMA 0.3
CIMA 0.5

CIMD 0.2
CIMD 0.3
CIMD 0.5

- characteristics according to EN 61984:

CX 08 B shielded connector

5A 50V 0,8kV 3

- certified

- rated voltage according to UL/CSA: 50V

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

- ambient temperature limit: -40 °C ... +85 °C

- mechanical life: ≥ 500 cycles

- contact resistance: $\leq 4\text{ m}\Omega$

- max. \varnothing of insulation for contacts CI series: 2,4 mm

- suitable for CX 02 B (MIXO 2-seat holder) or CX 1/2 BD ("21.21" 1-seat adapter insert)

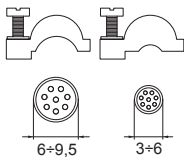
- female and male shielded connectors fit both in female and in male holder / adapter insert

- for crimp 5A contacts CI series use:

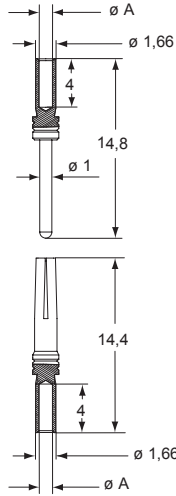
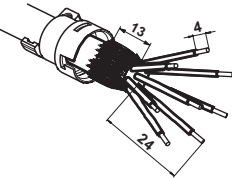
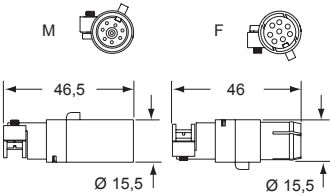
CIPZ D crimping tool

CITP D turret head

CIES insertion / removal tool



2 cable clamps included in the package



CIF and CIM contacts

conductor section (mm ²)	conductor slot $\varnothing A$ (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4