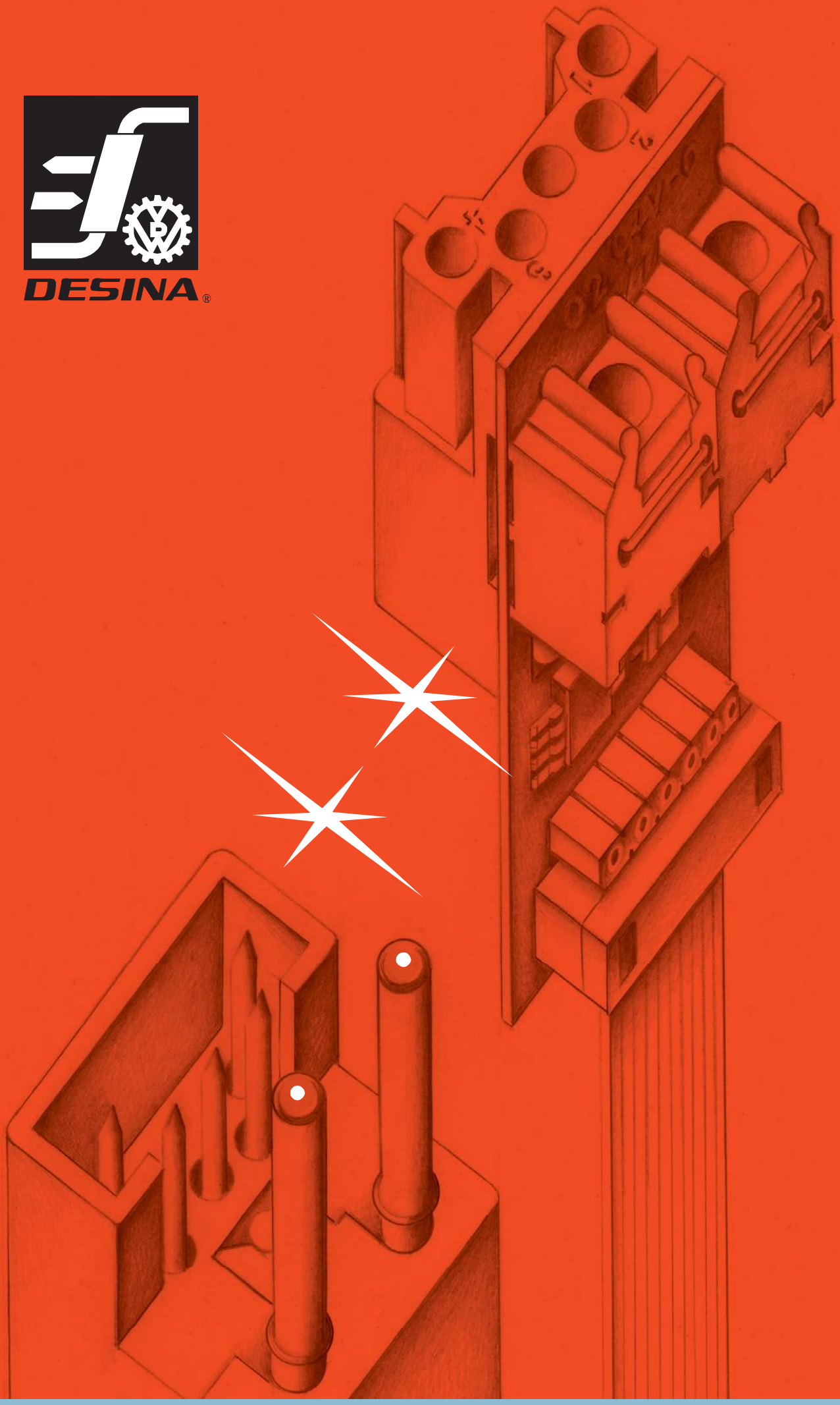
DESINA®



Connectors compliant with DESINA® standard

DESINA® (which stands for **DE**centralised and Standardised **IN**st**A**llation technology) is an innovative installation concept behind a study headed by the German manufacturers of machine tools association (VDW), with the co-operation of users (including German automotive manufacturers) and component manufacturers, which has led to the introduction of a specification aimed to standardise electrical, hydraulic and pneumatic components and their interconnection on common platform for CNC controlled machine tools and manufacturing lines.
In the last few years, the DESINA® specification has been successfully enclosed in the ISO TC 184/SC 1 "Industrial automation systems and integration / Physical device control" as an ISO standard. This work has recently been completed, and the following standards have now become available:

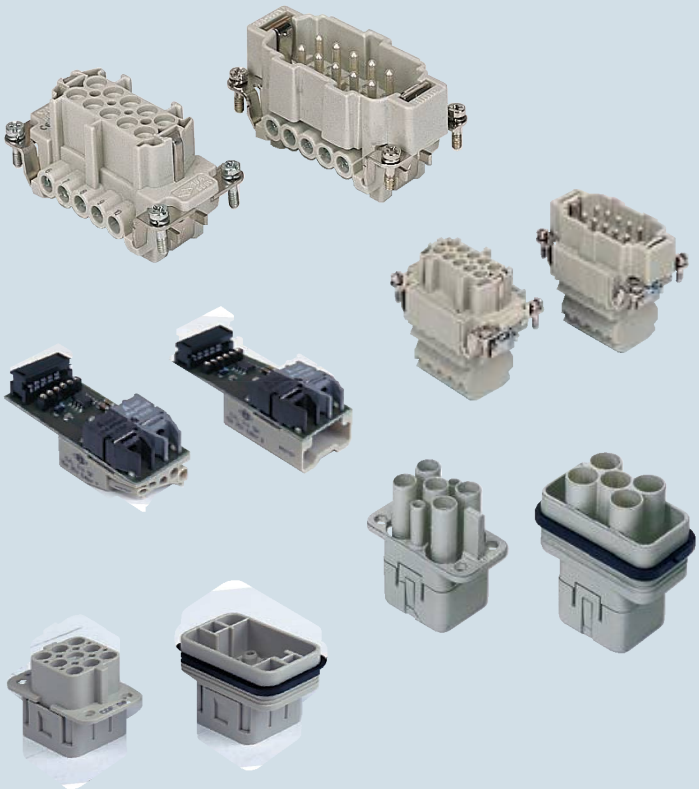
ISO 23570-1 Industrial automation systems and integration – Distributed installation in industrial applications: Part 1 – Sensors and actuators
ISO 23570-2 Industrial automation systems and integration – Distributed installation in industrial applications: Part 2 – Hybrid communication bus
ISO 23570-3 Industrial automation systems and integration – Distributed installation in industrial applications: Part 3 – Power distribution bus

Normally, production systems are controlled by various field buses available on the market such as PROFIBUS, CAN, INTERBUS, etc. DESINA® decentralised approach and interface and connector standardisation, which allows a single distributed control system to be independent from the bus communication protocol selected by the final user, ensure lower installation costs.
The availability of diagnostic capabilities in all the system components ensures a speedier diagnosis in the event of faults and an easier and quicker reset operation, which may be carried out by less specialised staff. DESINA® connection topology requires a **control bus** and a **power bus**.

The hybrid (optical/electrical) control bus provides a serial connection for the devices by using a cable consisting of two fibre optics and four power lines. The devices are fitted with 2 hybrid connectors (and matching flush mounted enclosures) for bus entry and exit. The hybrid connectors include an interface circuit which turns the TX electrical signal to optical signal with TTL levels and the RX signal from optical to electrical signal with TTL levels.
In other words, the interface is independent from the selected field bus protocol, and simply converts the electrical signals into optical signals and vice versa; by doing so, the physical connection between the devices can be used for different bus protocols and can reach a 50m range by using POF plastic fibres or 300m by using HCS® fibreglass (Hard Clad Silica – Spectran Corporation registered trademark). The highest baud rate is 12 Mbit/s, compatible with the most advanced field buses.
Another variance is also available, which is based on transmitting data on a pair of screened copper cables (instead of fibre optics); in this case, however, the system can only be used for PROFIBUS or CAN buses with RS 485 TX signals.
In both cases, the connector is fitted with housings for 5, 10A auxiliary contacts (CD series crimp contacts), which allow all connected devices to receive a permanent direct voltage of 24V (to supply circuits) and a 24V non permanent power supply (only used to open the contactors after operating an emergency switch or a safety switch), as well as a contact available for an optional earth.

The **power bus** provides a serial connection for drives, controls and power supplies and, more specifically, is suitable to supply power to motors and to their control units.
The standard connector to control motors is the **CQM/F 08** which, with 8 poles + ⏚ 16A 500V, and CC series crimp contacts, not only provides a power connection, but also connects the motor brake and safety thermistor. Another variant is available in the same sizes as the enclosure: **CQM/F 04/2** featuring 4 poles + ⏚ 40A 400/690V and 2, 10A 250V auxiliaries.
For the motor side connection, the connector **CNEM/F 10** (10P + ⏚ 16A 500V 6kV 3, with screw terminals) should be used; with the option to make a star or a delta connection on the connector, the **CSSM/F 10** connector (10P + ⏚ 16A 500V 6kV 3, with spring terminals, two per pole) should be used.
ILME connectors are manufactured to DESINA® specifications and in compliance with ISO 23570-2 and 23570-3 standards.

ISO 23570-3 standard and DESINA® specification compliant



Hybrid socket and plug connectors for field buses compliant with DESINA® specifications and with ISO 23570-2 standard

The hybrid connectors for field buses are listed below:

	electrical auxiliary female contacts	electrical auxiliary male contacts
- optical field bus **plug**	**CXL 2/4 PF** (for plastic fibre optics POF) **CXL 2/4 PFH** (for glass fibre optics HCS®)	**CXL 2/4 PM** (for plastic fibre optics POF) **CXL 2/4 PMH** (for glass fibre optics HCS®)
- optical field bus **socket**	**CXL 2/4 SF**	**CXL 2/4 SM**

The hybrid inserts for **socket** type optical field buses can only be fitted inside **fixed enclosures**.
The **plug** types, on the other hand, can only be fitted inside **portable enclosures**.

The enclosures and matching accessories available are listed below:

Construction details	Material	
	PLASTIC	**METAL**
- fixed, flush mounted enclosure:	**CK 03 IN**	**CKAX 03 I**
- portable, straight enclosures:	**CKG 03 VN** (Pg 11) **MKG VN20** (M 20)	**CKAG 03 V** (Pg 11) **MKAG V20** (M 20)
- portable, angled enclosures:	**CKG 03 VAN** (Pg 11) **MKG VAN20** (M 20)	**CKAG 03 VA** (Pg 11) **MKAG VA20** (M 20)
- cover:	**CKG 03 CN**	**CKAG 03 C**

The portable enclosures and the covers are fitted with an additional seal in order to achieve **IP65/IP67** (IEC/EN 60529) protection rating. With these accessories, the enclosures achieve **IP69K** protection rating (tightness to pressurised hot water jets) established by the German standard DIN 40050-9 for use on board of road vehicles, currently being approved to be included in ISO standards and being studied by IEC.

1 Specifications

1.1 Interface
hybrid electrical-optical connector insert consisting of 2 connectors for fibre optics and 4 contacts for electrical wires; an interface circuit built into the optical socket converts the electrical signals into optical signals and vice versa.

1.2 Optical parts
transmitter (T): Agilent (HP) Versatile Link HFBR-1525, or equivalent
receiver (R): Agilent (HP) Versatile Link HFBR-2525, or equivalent
male optical contact: Agilent (HP) Versatile Link
HFBR-4531, or equivalent, Simplex snap-in type (without crimping) for POF plastic fibre optics;
HFBR-4521, or equivalent, crimp contact, for HCS® glass fibre optics
note: POF is a plastic fibre optic with a 1000 μm diameter for red light and wavelength = 660 nm.
HCS® is a Hard Clad Silica glass fibre optic with a 200 μm diameter for red light with wavelength = 660 nm.
Optical parts: laser class I

1.3 Electrical contacts
4 maximum current 10A, gold or silver plated brass crimp contacts, cable section 0.14...2.5 mm² (CD series); live wire end female. Nominal voltage 24V.
Electrical data in compliance with EN 61984: **10A 25V 0.8kV 3**

1.4 Protection ratings
IP65 / IP67 compliant with EN 60529 (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 (with suitable cable clamp)

1.5 Temperature range
-40 °C / +70 °C

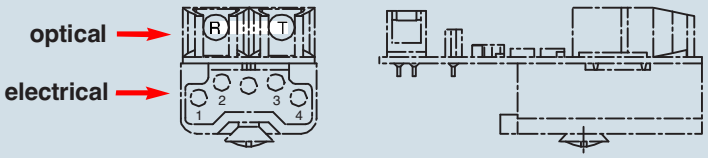
1.6 Data transmission/reception rate (Data rate)
up to 12 Mbit/s

2 Designation of auxiliary electrical contacts

designation of auxiliary electrical contacts (male and female) in the hybrid socket connector with optical TX system:

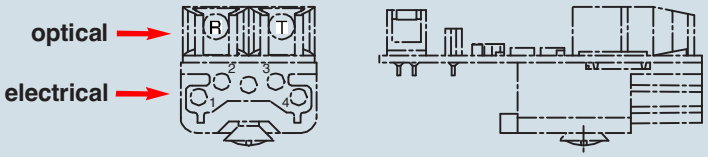
Socket connector with male auxiliary electrical contacts CXL 2/4 SM

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



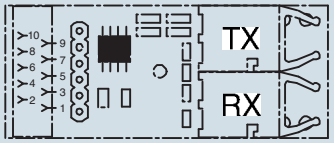
Socket connector with female auxiliary electrical contacts CXL 2/4 SF

Pos.	Function
1:	+ 24V not switched
2:	0V (reference for contact 1)
3:	0V (reference for contact 4)
4:	+ 24V switched



Insulation displacement connector (IDC) for ribbon flat cable on printed circuit

Pos.	Function	Pos.	Function
1:	earth	6:	TXD
2:	RXD	7:	earth
3:	RXD	8:	+5V DC
4:	earth	9:	+5V DC
5:	TXD	10:	earth



The contacts in the hybrid socket connector are numbered in a clockwise direction. With reference to this, the contacts in the field bus hybrid plug connector are numbered anticlockwise.
“R” Data reception (beam exit)
“T” Data transmission (beam entry)

Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:
- **CQM 08** plug
- **CQF 08** socket

The connector inserts for the motor controller may be fitted inside the following enclosures:

Construction details	Material
	PLASTIC
- flush mounted fixed enclosure:	**CQ 08 I**
- portable straight enclosure:	**CQ 08 V** (Pg 21)
- portable angled enclosure:	**CQ 08 VA** (Pg 16)
- socket cover:	**CQ 08 C**
- plug cover:	**CQ 08 CA**

The enclosures ensure **IP65/IP67** protection rating (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by the DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection
9 contacts (8 + ⏚)
The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts
9 maximum current 10A, gold or silver plated crimp contacts, cable section 0.5...2.5 mm² (20 AWG -14 AWG) CC series.

1.3 Protection ratings
IP65 / IP67 compliant with EN 60529 standard (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

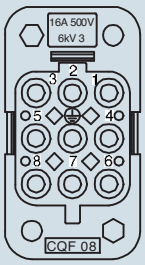
1.4 Temperature range
-40 °C / +125 °C

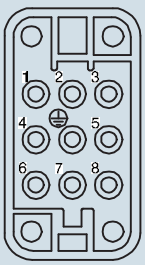
1.5 Electrical data
compliant with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties
94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designation of contacts for motor controller outlet is as follows:

contact	designation
1	live L1
2	
3	live L3
4	brake (0 V)
5	temperature sensor
6	brake (+24V c.c.)
7	live L2
8	temperature sensor
PE	earth





Socket and plug connectors for power buses in compliance with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for a motor controller are as follows:
- **CQM 04/2** plug
- **CQF 04//2** socket

These connector inserts can be fitted inside the following enclosures:

Construction details	Material
	PLASTIC
- flush mounted fixed enclosure:	**CQ 08 I**
- portable straight enclosure:	**CQ 08 V** (Pg 21)
- portable angled enclosure:	**CQ 08 VA** (Pg 16)
- socket cover:	**CQ 08 C**
- plug cover:	**CQ 08 CA**

The enclosures ensure **IP65/IP67** protection ratings (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection
5 (4 + ⏚) power contacts + 2 auxiliary contacts
The male connectors (plugs) are used for termination of connecting cables; the female connectors (sockets) are fitted on the motor controller.

1.2 Electrical contacts
5 maximum current 40A (3P+N+⏚) gold or silver plated crimp contacts, cable section 1.5...6 mm² (16 AWG -10 AWG) CX series.
2 maximum current 10A, gold or silver plated crimp contacts, cable section 0.14...2.5 mm² (26 AWG -14 AWG) CD series.

1.3 Protection ratings
IP65 / IP67 compliant with standard EN 60529 (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

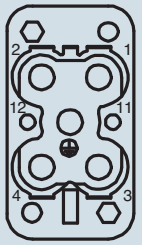
1.4 Temperature range
-40 °C / +125 °C

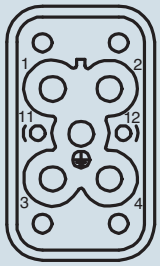
1.5 Electrical data
compliant with EN 61984: **40A 400/690V 6kV 3**

1.6 Self-extinguishing properties
94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designated of contacts for motor controller outlet is as follows:

contact	designation
1	live L1
2	live L2
3	live L3
4	neutral
PE	earth
11	aux
12	aux





Socket and plug connectors for power buses compliant with DESINA® specifications and with ISO 23570-3 standard

The connector inserts on the power bus for motor controller are as follows:

	screw type with cover	spring type dual terminal for pole
- plug	**CNEM 10 T**	**CSSM 10**
- socket	**CNEF 10 T**	**CSSF 10**

To be installed in the enclosures illustrated in this catalogue or equivalent, with single lever (directed towards the motor)

The enclosures ensure **IP65/IP67** protection rating (IEC/EN 60529) as well as **IP69K** protection rating (tightness to pressurised hot water jets) required by the DIN 40050-9 German standard for use on board of road vehicles, currently being approved as ISO standard and being studied by IEC.

1 Specifications

1.1 Connection
10 contacts + ⏚

1.2 Electrical contacts
10 screw type contacts (CNE series) or spring type (CSS series), maximum current 16A, silver plated, wire section 0.5...2.5 mm² (20 AWG -14 AWG)

1.3 Protection rating
IP65 / IP67 compliant with EN 60529 standard (if a cable clamp with IP67 protection rating is used)
IP69K compliant with DIN 40050-9 standard (with suitable cable clamp)

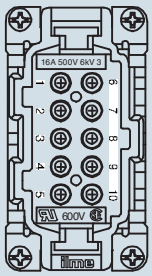
1.4 Temperature range
-40 °C / +125 °C

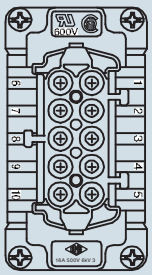
1.5 Electrical data
in compliance with EN 61984: **16A 500V 6kV 3**

1.6 Self extinguishing properties
94V-0 compliant with UL 94 standard
glow-wire 960 °C compliant with IEC/EN 60695-2-11 standard

2 Designation of contacts
The designation of contacts for motor connector is as follows:

contact	designation
1	winding U1 - L1
2	winding V1 - L2
3	winding W1 - L3
4	brake (0 V)
5	brake (+24V cc)
6	winding W2
7	winding U2
8	winding V2
9	temperature sensor
10	temperature sensor
PE	earth





accessories

inserts series / code	No. of poles / main contacts	auxiliary contacts	EN 61984 (2001-11) pollution degree 3			EN 61984 (2001-11) pollution degree 2			certification UL/CSA
			rated voltage	rated impulse withstand voltage	pollution degree	rated voltage	rated impulse withstand voltage	pollution degree	rated voltage AC or DC
CXL 2/4	**2**		contacts for plastic fibre optics (POF) Ø 1mm						
		4 (+⏚)	25V	0.8kV	3				50V
CXL 2/4...H	**2**		contacts for HCS® fibre optics ø 200 µm						
		4 (+⏚)	25V	0.8kV	3				50V
CQ 08	**8** (+⏚)	---	500V	6kV	3	400/690V	6kV	2	600V
CQ 04/2	**4**	---	400/690V	6kV	3				600V
		2	250V	4kV	3				600V
CNE	**10** (+⏚)	---	500V	6kV	3	400/690V	6kV	2	600V

Nominal Data

Nominal data complies with requirements of EN 61984 standard.

Marking example to be applied only in a mains power supply with insulated neutral or with neutral to earth in a corner (see Table 5, EN 61984):

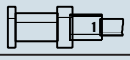
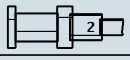
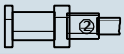
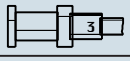
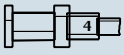
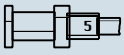
Marking example to be applied in any mains power supplies, including those with insulated neutral and the delta power supplies with earth in a corner (see Table 5, EN 61984):

accessories

inserts series / code	max rated current [4]	contact resistance ≤	insulation resistance ≥	ambient temperature limit (°C) min	ambient temperature limit (°C) max	protection rating with enclosures	protection rating without enclosures	wirer connection [6] screw	wirer connection [6] spring	wirer connection [6] connection block at 45°	wirer connection [6] crimp	wirer connection [6] snap-in	certifications
CXL 2/4	---	---	---	-40	+70	IP65/IP67	IP20					✓	
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20				✓		cUL[A]
CXL 2/4...H	---	---	---	-40	+70	IP65/IP67	IP20				✓		
	10A	3 mΩ	10 GΩ	-40	+70	IP65/IP67	IP20				✓		cUL[A]
CQ 08	16A	1 mΩ	10 GΩ	-40	+125	IP65/IP67	IP20				✓		cUL[A]
CQ 04/2	40A 10A	0.3 mΩ 3 mΩ	10 GΩ 10 GΩ	-40	+125	IP65/IP67	IP20				✓		cUL[A]
CNE	16A	1 mΩ	10 GΩ	-40	+125	IP65	IP20	✓					UL, CSA

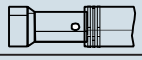
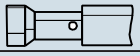
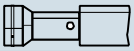
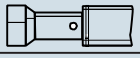
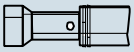
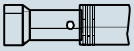
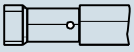
1) See the insert load curves to establish the actual maximum operating current according to the ambient temperature
2) For the wire electrical connection data, see from page 28
A) UL for USA and Canada

10A max contacts - CD serie

conductor section (mm²)	AWG	identification number
0.14 - 0.37	26 - 22	
0.5	20	
0.75	18	
1	18	
1.5	16	
2.5	14	

Contacts can be supplied in the silver or gold plated version

16A max contacts - CC serie

conductor section (mm²)	AWG	throat identification
0.14 - 0.37	26 - 22	
0.5	20	
0.75	18	
1	18	
1.5	16	
2.5	14	
4	12	

Contacts can be supplied in the silver or gold plated version
Male contacts can also be supplied in the “advanced” version (shortened contact)

40A max contacts - CX serie

conductor section (mm²)	AWG	identification
1.5	16	hole Ø 1.75 mm
2.5	14	hole Ø 2.25 mm
4	12	hole Ø 2.85 mm
6	10	hole Ø 3.5 mm

Contacts are supplied in the silver plated version only

CXL 2 pole fibre optics + 4 poles 10A max - 25V/0,8kV/3 + ⏚ optional

enclosures:
size "21.21" page :
insulating type ..... 458 - 459
metallic type ..... 460 - 461

- data baud rate: up to 12 MBit/s
- temperature range: from -40 °C to +70 °C
- for crimp contacts, see the crimp tools section (10A contacts, CDF and CDM series) on pages 466, 470, 480, 482, 484, 486

ISO 23570-3 standard and DESINA® specification compliant

inserts, crimp connections

10A crimp contacts silver and gold plated

description	part No.	part No.	part No.
inserts for fixed enclosures, complete with electro-optical interface* without contacts (to be ordered separately) socket inserts for female contacts plug inserts for male contacts	**CXL 2/4 SF** **CXL 2/4 SM**		
without electro-optical interface for fixed enclosures without contacts (to be ordered separately) socket inserts for female contacts plug inserts for male contacts	**CXL SF** **CXL SM**		

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

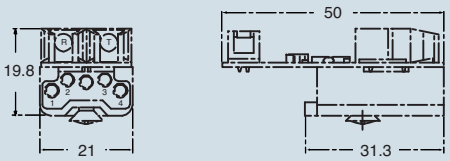
0.14-0.37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**
0.5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**
0.75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**
1.5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**
2.5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**

silver plated **gold plated**

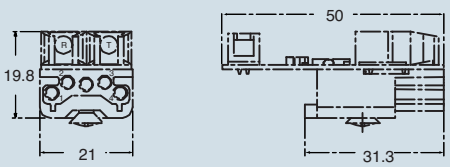
* fitted with IDC connector for TTL to bus connection ribbon cable

dimensions in mm

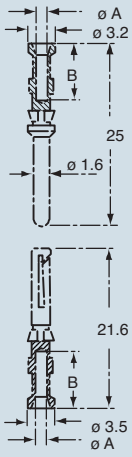
CXL 2/4 SM



CXL 2/4 SF



dimensions in mm



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

dimensions shown are not binding and may be changed without notice

accessories

CXL 2 pole fibre optics + 4 poles 10A max - 25V/0,8kV/3 + ⏚ optional

enclosures:
size "21.21" page :
insulating type ..... 458 - 459
metallic type ..... 460 - 461

- temperature range: from -40°C to +70°C
- for crimp contacts, see the crimp tools section (10A contacts, CDF and CDM series)on pages 466, 470, 480, 482, 484, 486

ISO 23570-3 standard and DESINA® specification compliant

inserts, snap-in (POF)
or crimp (HCS®) optical connection
electrical crimp connection

10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.
inserts for portable enclosures with: 4 + 1 crimp 1.5mm² contacts (included) + 2 snap on contacts for 1 mm [1] plastic (POF) fibre optics socket inserts with CDFA 1.5 female contacts plug inserts with CDMA 1.5 male contacts	**CXL 2/4 PF** **CXL 2/4 PM**		
inserts for portable enclosures with: 4 + 1 crimp 1.5mm² contacts (included) + 2 crimp contacts for 0.2mm [2] HCS® fibre optics socket inserts with CDFA 1.5 female contacts plug inserts with CDMA 1.5 male contacts	**CXL 2/4 PFH** **CXL 2/4 PMH**		
inserts for portable enclosures with: 4 + 1 crimp contacts (not included – CDF and CDM series) + 2 snap on or HCS® fibre optic contacts (not included) [3] socket inserts with female contacts plug inserts with male contacts	**CXL PF** **CXL PM**		
10A female contacts 0.14-0.37 mm² AWG 26-22 identification No. 1 0.5 mm² AWG 20 identification No. 2 0.75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1.5 mm² AWG 16 identification No. 4 2.5 mm² 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**
10A male contacts 0.14-0.37 mm² AWG 26-22 identification No. 1 0.5 mm² AWG 20 identification No. 2 0.75 mm² AWG 18 identification No. ② 1 mm² AWG 18 identification No. 3 1.5 mm² AWG 16 identification No. 4 2.5 mm² 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**

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[1] for POF fibre preparation, the polishing kit Agitent HFBR-4593 (CXL POL) is available on request

[2] for HCS® connection preparation, the Crimp & Clear cabling kit (without glue or polishing kit) for simplex connectors for 200/300 µm HCS® fibre optics is available on request.
The (CXL KCC) kit consists of:
- No. 1 scissors for kevlar cutting
- No. 1 cable stripper
- No. 1 fibre stripper
- No. 1 calibrated pliers
- No. 1 precision fibre optics cutter with diamond blade.

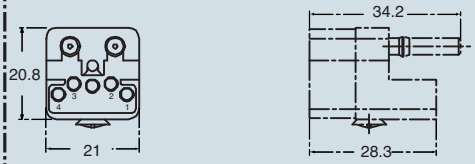
All accessories are stored in a hard carrying case

[3] see data on page 451

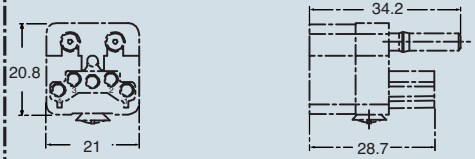
dimensions shown are not binding
and may be changed without notice

dimensions in mm

CXL 2/4 PM and **PMH**

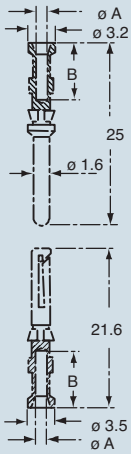


CXL 2/4 PF and **PFH**



- 8 mm wire stripping
- POF 7 mm fibre stripping

dimensions in mm



CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm²	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

accessories

inserts: page:

CXL 2/4 SF..... 456
CXL 2/4 SM..... 456
CXL SF..... 456
CXL SM..... 456

CJ KF 441

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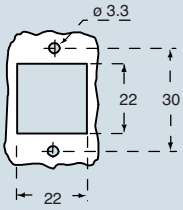
bulkhead housings

cover

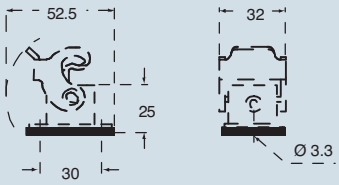
description	part No.	part No.
with lever	**CK 03 IN** (black)	
with pegs and gasket		**CKG 03 CN** (black)

panel cut-out for enclosures, in mm



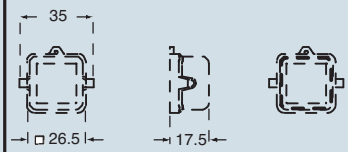
dimensions in mm

CK IN



dimensions in mm

CKG CN



Note:
CXL and CJ K inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.

Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

accessories

inserts: page:

CXL 2/4 PF 457
CXL 2/4 PFH 457
CXL 2/4 PM 457
CXL 2/4 PMH 457
CXL PF 457
CXL PM 457

CJ KM 441

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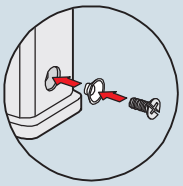
Note:
CXL and CJ K inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.



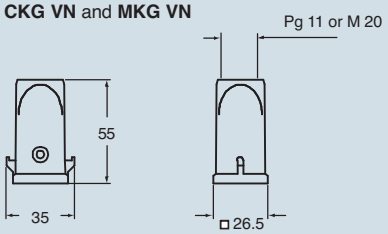
Type 4/4X/12

hoods

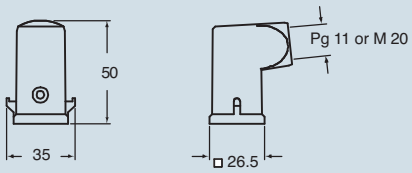
description	part No. (entry - Pg 11)	part No. (entry - M 20)
with pegs and gasket, top entry	**CKG 03 VN** (black)	**MKG VN20** (black)
with pegs and gasket, side entry	**CKG 03 VAN** (black)	**MKG VAN20** (black)

dimensions in mm

CKG VN and **MKG VN**



CKG VAN and **MKG VAN**



dimensions shown are not binding
and may be changed without notice

inserts: page

CXL 2/4 SF.....456
CXL 2/4 SM.....456
CXL SF.....456
CXL SM.....456

CJ KF 441
CX 1/2 BD 444

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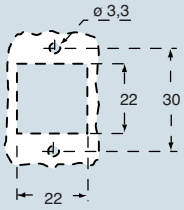
bulkhead housings

cover

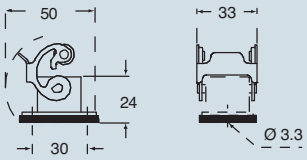
description	part No.	part No.
with stainless steel lever	**CKAX 03 I**	
with pegs and gasket		**CKAG 03 C**

panel cut-out for enclosures, in mm



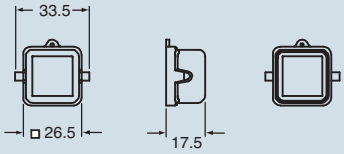
dimensions in mm

CKAX I

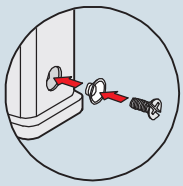


dimensions in mm

CKAG C



Nota:
CXL, CX 1/2 BD and CJ K inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.



Type 4/4X/12

dimensions shown are not binding
and may be changed without notice

accessories

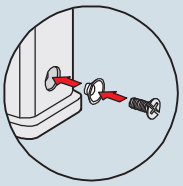
inserts: page

CXL 2/4 PF.....457
CXL 2/4 PFH.....457
CXL 2/4 PM.....457
CXL 2/4 PMH.....457
CXL PF.....457
CXL PM.....457

CJ KM.....441
CX 1/2 BD * 444

* cannot be used with angled enclosures (part No. CKAG 03 VA / MKAG VA20)

Note:
CXL, CX 1/2 BD and CJ K inserts are already supplied with seal and screw, which ensure IP66/IP67 protection rating.

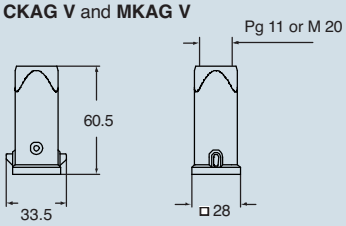


hoods

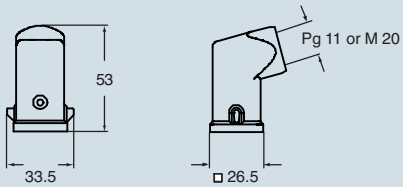
description	part No. (entry - Pg 11)	part No. (entry - M 20)
with pegs and gasket, top entry	**CKAG 03 V**	**MKAG V20**
with pegs and gasket, side entry	**CKAG 03 VA**	**MKAG VA20**

dimensions in mm

CKAG V and **MKAG V**



CKAG VA and **MKAG VA**



Type 4/4X/12

dimensions shown are not binding and may be changed without notice