Circular Connectors

In Stock Versions
Signal and Universal

CONINVERS
A Company of the Phoenix Contact Group

Coninvers – Connectors for Industrial Automation

Coninvers is an autonomous company and is the specialist for circular connectors within the Phoenix Contact Group. We develop, design and manufacture our products on the site of the company headquarters in Herrenberg, south of Stuttgart.

Distribution is carried out worldwide through our own sales partners and through Phoenix Contact sales companies. In the USA, we are represented by our own subsidiary – RDE Connectors & Cables, Florida.

Coninvers headquarters in Herrenberg

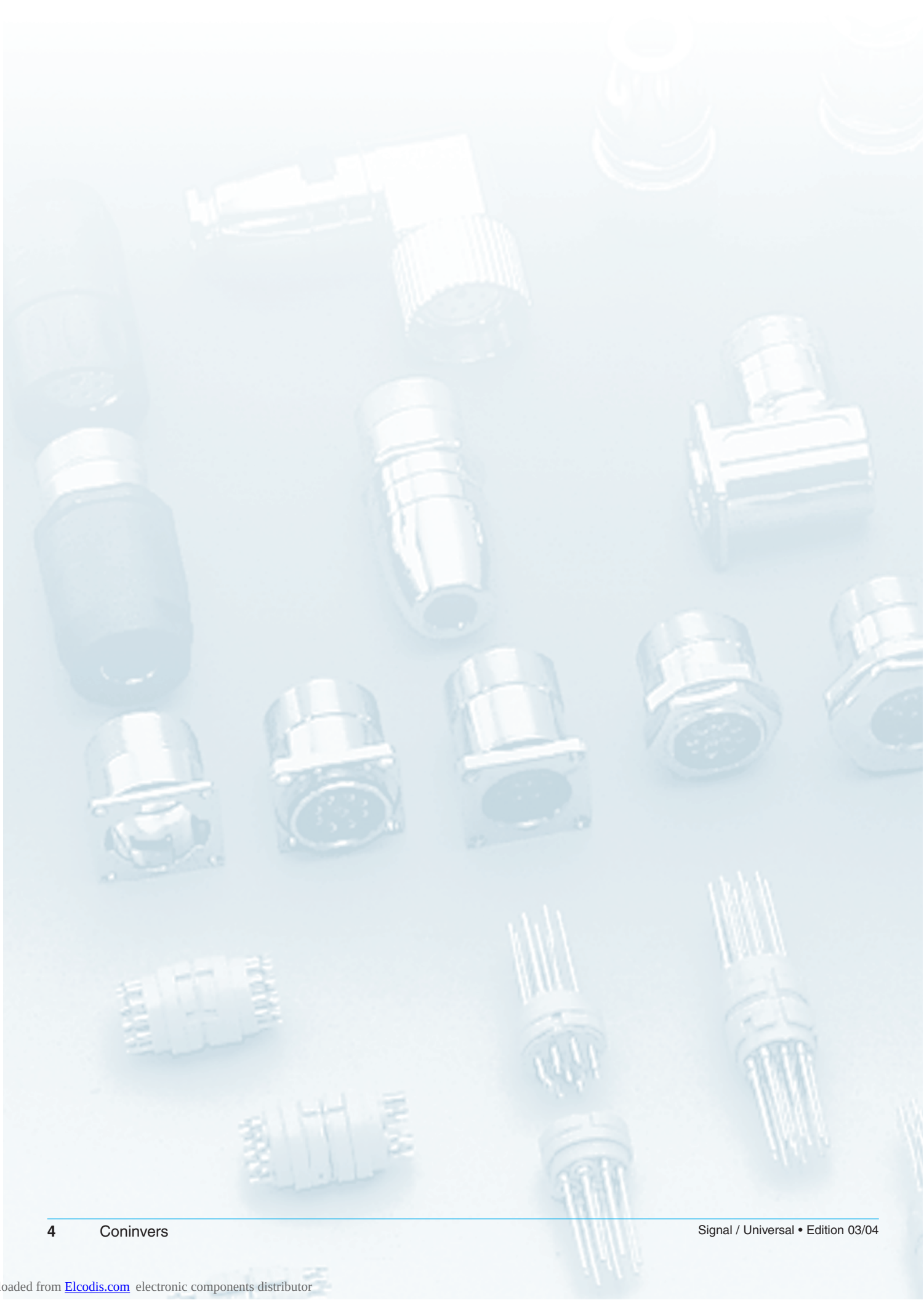
The high quality of our products and services is the basis for our successful business operations.

Coninvers management tasks have been documented in accordance with DIN EN ISO 9001:2000 since 1995.

Connectors with a system

The advantage of our signal connector system is its modular design. It allows us to offer our customers a wide range of model variants and combinations, and to deliver these within three working days.

Contents



Coninvers – The Complete Range at a Glance

In Stock Versions
Circular Connectors
Signal and Universal

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Coninvers
Circular Connectors

The Coninvers connectors in the M23 series are modular in design. This, combined with a wide range of pin assignments and the alternative use of female and male contacts in crimp, solder and sometimes screw versions, explains the enormous product spectrum. When you put this in the context of the wide range of available device flanges and wall bushings, the Coninvers signal connector family can be seen as the largest of its kind in the industry.

The cross sections of the litz wires in connecting cables are in the range 0.08 to 2.5 mm^2. This also applies to plastic-molded connectors in straight and angled versions.

M16 plastic-molded receptacles with solder connection

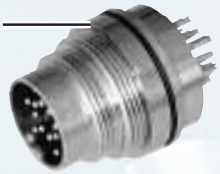
M16 circular connectors permit a high density of positions in a small amount of space. The preassembled and molded connecting cables are available with 8, 10, 12 and 14 to 19 positions, e.g. as a central connector connection for distributor systems.

M16 connectors are molded with proven, rugged PUR housing material and fulfill the requirements of IP67 protection.

Coninvers offers suitable receptacles in male versions for front or rear screw mounting with a solder connection.

Plastic-molded signal connectors

M16 receptacles with up to 19 positions



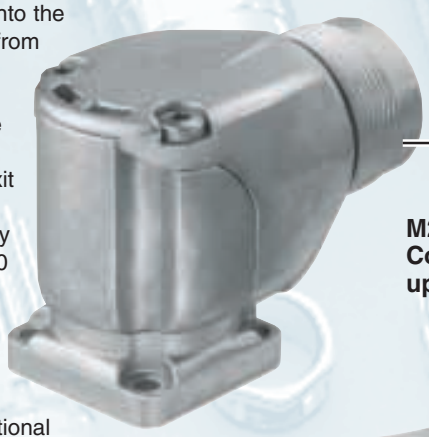
Plastic-molded M16 connectors with up to 19 positions

New power connectors ConPower P30 / P70

The ConPower power connector family comprises two performance classes: P30 up to 30 A with M23 screw locking and P70 up to 70 A with M40 screw locking. The clamping range for shielded cables includes diameters from 7.5 mm to 25 mm.

Male and female contacts cover crimp ranges from 0.08 mm² to 16 mm².

Extremely simple and time-saving handling during assembly makes the angled panel mounting connectors (equipment flanges) particularly attractive. The male contacts can be clipped into the insulating body from the side, for example, the housing is made up of two parts, and the cable exit direction can be adjusted infinitely in a range of 310 degrees. A robust, metal rotating mechanism ensures a high degree of operational safety and reliable EMC protection over a wide temperature range, even in the case of frequent adjustments.



M23 power connectors
Connection cross section up to 4 mm²

M40 power connectors
Connection cross section up to 16 mm²

Coninvers – Circular Connectors Signal and Universal

The Coninvers circular connector range has an M23 locking thread which has been developed for industrial applications. Coninvers also offers a variant with a bayonet quick locking system.

The M23/bayonet signal circular connectors in the RC/UC/TU series are available with crimp, screw and solder connection systems, as well as for PCB mounting.

Signal connectors in the UC series, also with M23 locking, feature an extended cable entry range and universal EMC shielding.

Signal connectors in the TU series are based on UC connectors but feature a bayonet quick locking system.

The individual connector is put together from a defined number of articles for the three components:

– Housing, consisting of an M23 knurled cap or bayonet, an inside sleeve, a hinged insulation sleeve and an adapter cap.
– Cable gland, including the seal, the strain relief and the optional shielded connection.
– Contact insert, comprising the contact carrier and the contacts.

Circular connectors are supplied as individual components.

Signal circular connectors

The signal circular connectors in the RC series are available as 6 to 19-position versions in crimp, screw and solder connection types, as well as for PCB connection (dip solder).

Unshielded connectors fulfill the requirements of IP65/ IP68 protection, depending on the cable gland used. The components for the connection of shielded conductors offer IP67 protection as a result of the special cable gland.

The product chart on page 10 shows how the required connector is put together and how the individual components are combined.

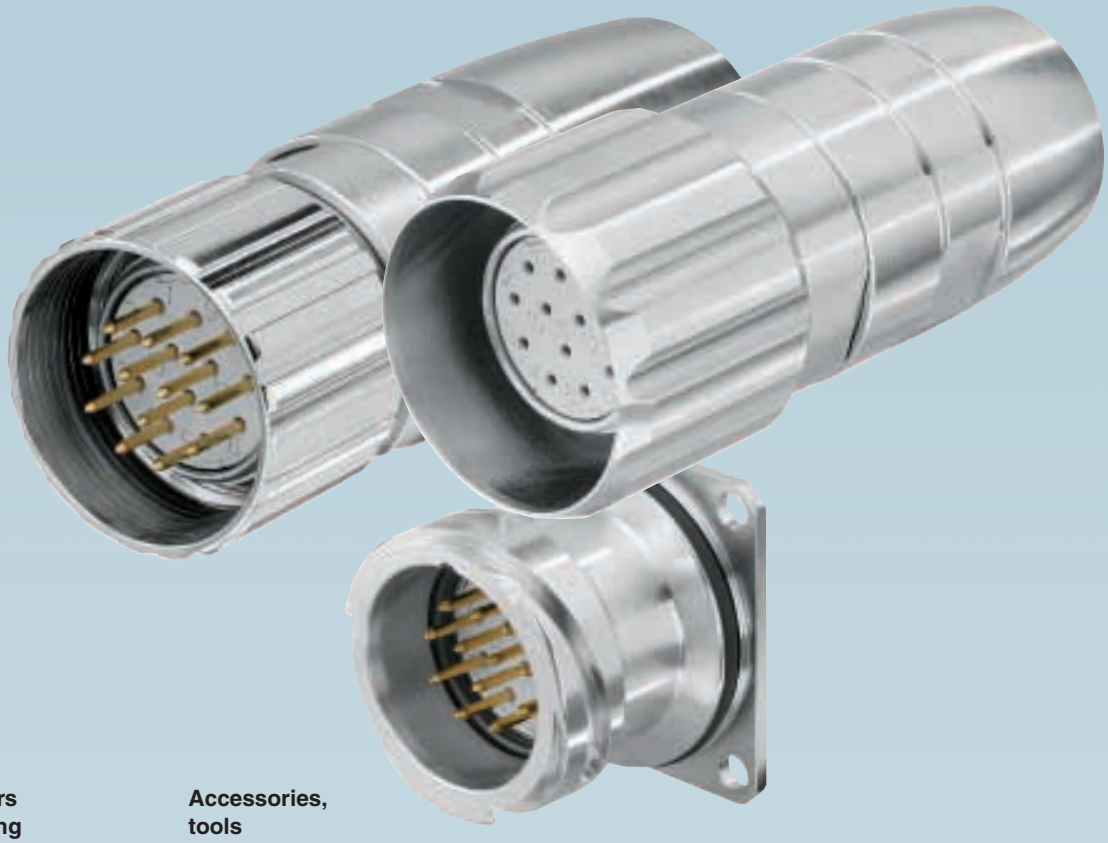
Circular connectors are supplied as individual components (from stock).

Signal circular connectors with universal shielding

Like the RC series, the signal circular connectors in the UC series are completely modular in design. This means that a wide variety of connectors can be created from a small number of different components.

Both series contain M23 connectors with similar technical specifications. The UC series uses the same insulating bodies in all pin assignment variants. The difference is that the UC series is larger than the RC series, i.e. it offers more cabling space and can accommodate larger cable diameters.

Unlike the RC series, the shielding function and the cable clamping are universal. It is not necessary to adapt the shielding elements to the cables used. This facilitates handling in the field.



Signal circular connectors with bayonet quick locking

Typical applications, such as handheld operator panels, require that connections can be released and locked quickly. The connectors in the TU series feature bayonet locking and offer the user this option.

The tactile “click” indicates to the user that the bayonet connector is locked and the connection is safely established.

TU signal connectors also guarantee IP67 protection in the locked state.

Accessories, tools

The necessary tools (crimping and assembly tools) are available for processing circular connectors, and accessories, such as cover caps, are available for special applications.

M23 • RC Series / UC Series
Signal Circular Connectors
Product Selection

Combinations

The product chart show the possible combinations of sleeve housing and connecting housing or panel mounting base.

The chart differentiates between shielded and unshielded connectors.

Selection of connectors

The modular system allows the individual connector to be selected from a defined number of articles. To specify a connector for the device and mounting side, the housing is supplemented by the corresponding cable gland and contact insert, including the contacts.

Housing

Shielded

Shielded sleeve housings, page 14


TGGM


TGGMK


TGGK


TWGM

Shielded

Shielded connecting housings, page 14


KGGM


KGGK


KGGMK

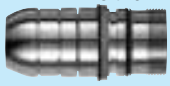
Shielded

Shielded connecting housings for wall mounting

Front mounting, page 18


AAGG

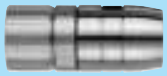
Rear mounting, page 19


AIGG


AIGZ

With universal shielding

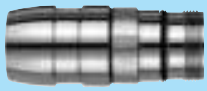
Sleeve housings with universal shielding, page 16


TGGUM


TWGUM

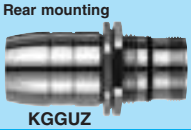
With universal shielding

Connecting housings with universal shielding, page 17


KGGUM

Connecting housings for wall mounting with universal shielding, page 17

Rear mounting


KGGUZ

Unshielded

Unshielded sleeve housings, page 15


TGUM...


TWUM...

Unshielded connecting housings, page 15


KGUM...

Unshielded

Shielded

Panel mounting bases

Shielded front mounting, page 18


AAGR


AALZ

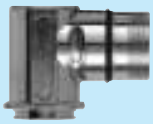
Unshielded front mounting, page 18


AAGF

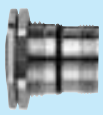
Shielded rear mounting, page 19

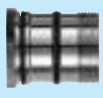

AILB


AILG


AAWF

Housing type AAWF cannot be combined with dip solder contacts or 19-pos. crimp.


AISZ


AISG

Shielded

The product chart provides an overview of the available components.

Cable glands | **Contact insert** including contacts

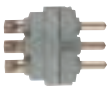
Shielded cable glands, pages 20, 21

KK...SA...

KUS..., KUD...

Contact inserts

Solder contact inserts, page 34
6 to 19-position



LSR...

LBL...

Crimp contact inserts, pages 35-37
6 to 19-position

C..S...

C..B...

Screw contact inserts, page 35
6, 7 and 9-position

SSR...

SBL...

For reasons of safety, only female contacts may be used in the live part of the connector.

The connectors are fitted with a universal shield connection for cable diameters up to 14.5 mm. Shielded cable glands with a cable clamp type cage and shielded sleeve are not required.

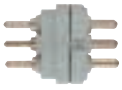
Contact inserts

Unshielded cable glands, page 21
With Pg and metric connecting threads

KVS... KVZ... KVD...

Contact inserts

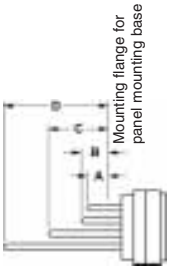
Direct PCB connection, page 38
With 6 to 17-position dip solder contacts



ES...

EB...

Type/housing design	Free solder pin length A [mm]	B [mm]	C [mm]	D [mm]
AAGF, AAGR	3.5	4.5	10.0	17.5
AILG	3.5	4.5	10.0	17.5
AILB	3.5	4.5	10.0	17.5
AISZ	–	–	3.5	11.0
AISG	–	–	3.5	11.0



Further contact inserts/dip solder contacts available on request.

For reasons of safety, only female contacts may be used in the live part of the connector.

Cable glands are not required for panel mounting bases.

Contact inserts

Mechanical data:

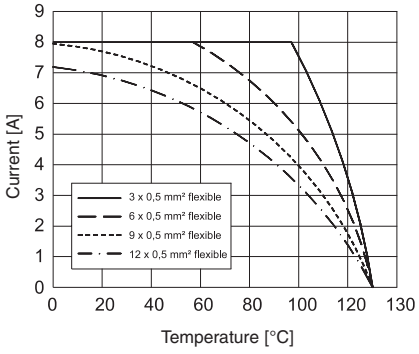
Housing material:	Machined component: copper-zinc alloy (CuZn), die-cast part: zinc (GD-Zn); types TGGK/KGGK: plastic part: thermoplastic polymers (PET), polycarbonate (PC)/UL 94 V0, largely halogen-free, die-cast part: zinc (GD-Zn), union nut: CuZn
Housing surface:	Nickel-plated (standard), black, chrome on request, plastic sheath; types TGGK/KGGK: die-cast part: passivated (Cr), union nut: nickel-plated (Ni)
Insulating body: Inflammability:	Thermoplastic polyester (PBT), polyamide (PA 66), polycarbonate (PC); storage at 15-35 °C, 40-70 % rel. humidity UL 94 V0
Contact material:	Copper-zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold layer (Au) and passivated
Contact connection type:	Solder cup, crimp and screw versions, dip solder pin
Gasket and O-ring:	Fluorine rubber (FPM); types TGGK/KGGK: perbunane (NBR) gasket
Flat gasket:	Perbunane (NBR with fabric insert) fluorine rubber (FPM)
Temperature range:	-40°C/+125°C (long-term temperature)
Conductor entry:	EMC design for external cable diameters 2 - 10.5 mm, without EMC protection for cable diameters 4 - 14 mm EMC design with extended cable entry range (UC series) for external cable diameters 2 - 14.5 mm
Locking method:	M23 screw locking
Mechanical insertion/ withdrawal cycles:	Standard: 50, more on request
Degree of protection:	EMC version: IP67 in the locked state; without EMC protection: IP65 - IP68 (depending on the cable gland)
Certification:	UL-recognized File No 153698 (M) Underwriters Laboratories Inc.® (not for types TGGK/KGGK or the UC series)

Electrical data:

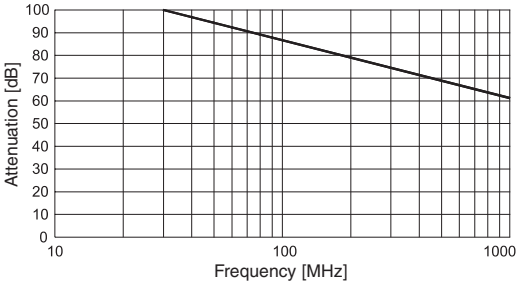
Number of positions		**6, 7**	**9**(8+1)	**9**(6+3)	**12**	**16**	**17**	**19**(16+3)
Contacts		6, 7	8 + 1	6 + 3	11, 12	15, 16	16, 17	16 + 3
Contact Ø	[mm]	2	1 2	1 2	1	1	1	1 1,5
Conductor cross section	Solder connection contacts x [mm²]	6 (7) x 2.5	8 x 1.0 + 1 x 2.5	6 x 1.0 + 3 x 2.5	12 x 2.5	16 x 1.0	17 x 1.0	16 x 1.0 + 3 x 1.0
	Crimp connection contacts x [mm²]	6 (7) x 2.5	8 x 0.56 + 1 x 2.5		12 x 0.56	16 x 0.56	17 x 0.56	16 x 1.0 + 3 x 1.5
Nominal/rated current	[A]	20	8 20	8 20	8	8	8	8 10
Nominal/rated voltage	[V]	300	300	150	150	150	150	150
Test voltage	[kV AC]	2.5	2.5	1.5	1.5	1.5	1.5	1.5
Surge voltage category [1]		II	II	II	II	II	II	II
Insulation resistance	[Ω]	≥10^{16}	≥10^{16}	≥10^{12}	≥10^{12}	≥10^{12}	≥10^{12}	≥10^{12}
Contact resistance	[mΩ]	≤3	≤3	≤3	≤3	≤3	≤3	≤3
Contamination class in acc. with IEC 664-1		2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])

[1] Reference: DIN EN 61984:2001 (see also appendix of technical terms, page 43).

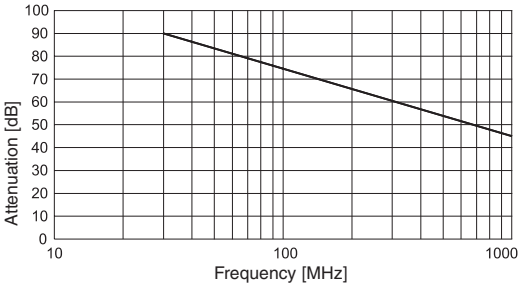
Derating curve
12-position cable and sleeve connectors



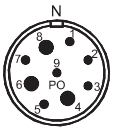
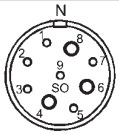
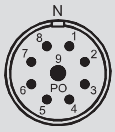
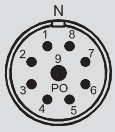
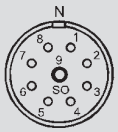
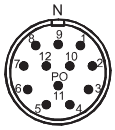
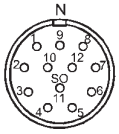
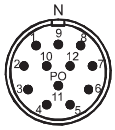
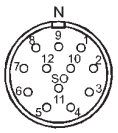
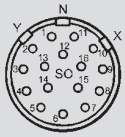
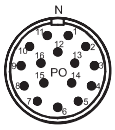
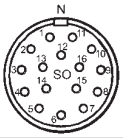
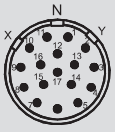
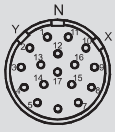
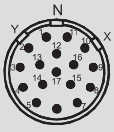
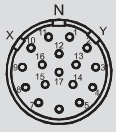
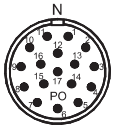
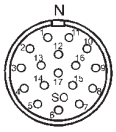
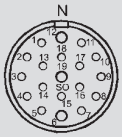
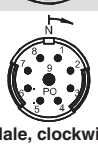
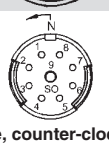
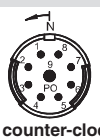
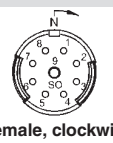
Shield attenuation curve for RC series
Based on DIN 47250-6/01.83



Shield attenuation curve for UC series (universal shielding)
Based on DIN 47250-6/01.83



Other coding versions can be configured manually or mechanically on request.

	Contact chamber numbering (view of plug-in side)			
	Clockwise	**Counter-clockwise**	**Counter-clockwise**	**Clockwise**
Number of positions	**Male**	**Female**	**Male**	**Female**
6-position Solder / crimp / screw Pages 34 - 39				
7-position Solder / crimp / screw Pages 34 - 39				
9-position (6+3) Solder Pages 34, 38				
9-position (8+1) Solder / crimp / screw Pages 34 - 39				
12-position Solder / crimp Pages 34 - 39				
16-position Solder Pages 34, 38				
16-position Crimp Pages 35 - 37				
17-position Solder Pages 34, 38				
17-position Crimp Pages 35 - 37				
19-position (16+3) Solder / crimp Pages 34 -37				
Direction of contact chamber numbering (view of plug-in side)	 **Male, clockwise (standard)**	 **Female, counter-clockwise (standard)**	 **Male, counter-clockwise (opposite direction)**	 **Female, clockwise (opposite direction)**

M23 • RC Series
Shielded Connecting and Sleeve Housings

Sleeve connectors for connecting housings and panel mounting bases

TGGMK, TGGM, TGGK, TWGM

Cable connecting receptacles for free connections

KGGMK, KGGM, KGGK

Description	Type/housing design	Order No.	Pcs./ Pkt.	Type/housing design	Order No.	Pcs./ Pkt.
Sleeve housing, straight, shielded, **with plastic sheath** for additional shock protection	**TGGMK**	**RC-0000000K0FZ**	10			
Sleeve housing, straight, shielded, **metal**	**TGGM**	**RC-000000080FZ**	10			
Sleeve housing, straight, shielded, **plastic cap**	**TGGK**	**NC-0000000KSFZ**	10			
Sleeve housing, angled, shielded, **metal**	**TWGM**	**RC-0000000T0FZ**	10			
Connecting housing, straight, shielded, **with plastic sheath** for additional shock protection				**KGGMK**	**RC-0000000M0FZ**	10
Connecting housing straight, shielded, **metal**				**KGGM**	**RC-000000090FZ**	10
Connecting housing, straight, shielded, **plastic cover**				**KGGK**	**NC-0000000MSFZ**	10

Type description

	T	G	U	M	11

Type
T Sleeve connector
K Cable connecting receptacle

Form
G Straight
W Angled

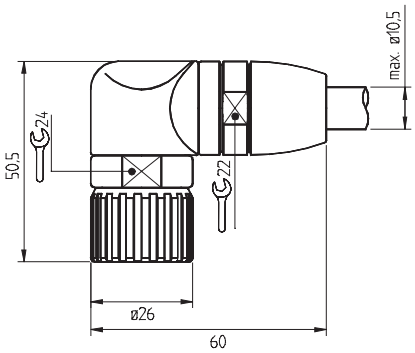
EMC protection
G Shielded
U Unshielded

Housing material
M Metal
MK With plastic sheath
K Plastic cap

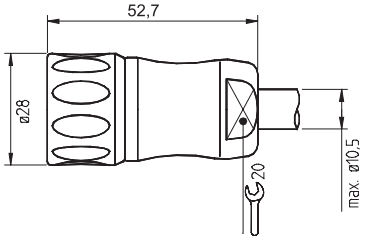
Connecting thread
09 Pg 9
11 Pg 11
13 Pg 13.5
M16 M16x1.5
M20 M20x1.5

Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.

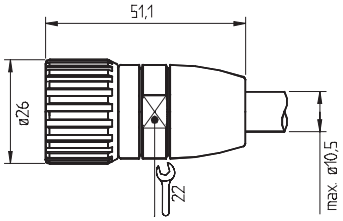
For corresponding cable glands, see pages 20-21.
For contact inserts, see pages 34-39.



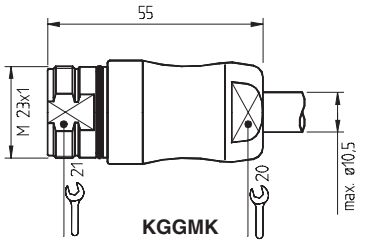
TWGM



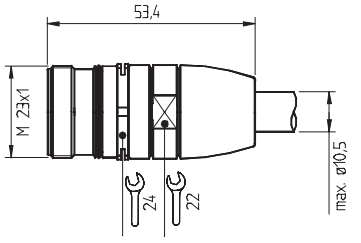
TGGMK, TGGK



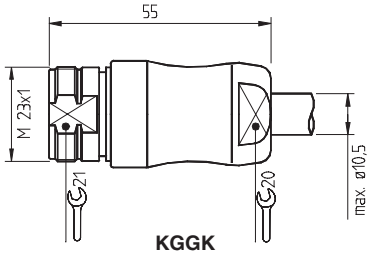
TGGM



KGGMK



KGGM



KGGK

M23 • RC Series
Unshielded Connecting Housings and Sleeve Housings for Pg and Metric Cable Glands

Sleeve connectors for unshielded connecting housings and panel mounting bases

TGUM..., TWUM...

Cable connecting receptacles for unshielded free connections

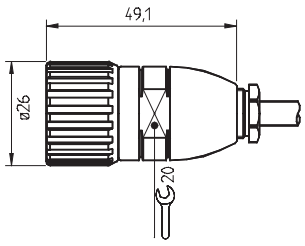
KGUM...

Description	Cable entry	Type/housing design	Order No.	Pcs./ Pkt.
Sleeve housings,				10
straight, unshielded, metal,	Pg 9	**TGUM 09**	**RC-00000001100**	
Pg/metric connecting thread	Pg 11	**TGUM 11**	**RC-00000001200**	
(without cable gland)	Pg 13.5	**TGUM 13**	**RC-00000001300**	
	M16x1.5	**TGUM M16**	**RM-00000001100**	
	M20x1.5	**TGUM M20**	**RM-00000001300**	
Sleeve housings				10
angled, can be coded 4 x 90°,	Pg 9	**TWUM 09**	**RC-0000000Z100**	
unshielded, metal,	Pg 11	**TWUM 11**	**RC-0000000Z200**	
Pg/metric connecting thread	Pg 13.5	**TWUM 13**	**RC-0000000Z300**	
(without cable gland)	M16x1.5	**TWUM M16**	**RM-0000000Z100**	
	M20x1.5	**TWUM M20**	**RM-0000000Z300**	
Coupling housings,				
straight, unshielded, metal,	Pg 9			
Pg/metric connecting thread	Pg 11			
(without cable gland)	Pg 13.5			
	M16x1.5			
	M20x1.5			

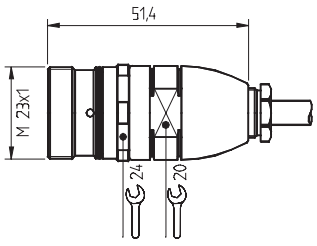
Type/housing design	Order No.	Pcs./ Pkt.
		10
KGUM 09	**RC-00000007100**	
KGUM 11	**RC-00000007200**	
KGUM 13	**RC-00000007300**	
KGUM M16	**RM-00000007100**	
KGUM M20	**RM-00000007300**	

Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.

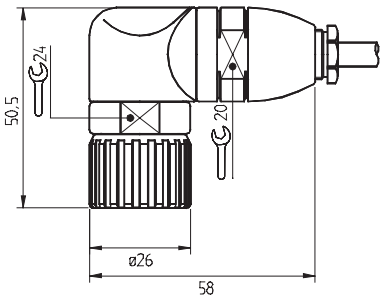
For corresponding cable glands, see pages 20-21.
For contact inserts, see pages 34-39.



TGUM



KGUM



TWUM

M23 • UC Series
Sleeve Housings with Universal Shielding, Cable Entry up to Ø 14.5 mm

Like the RC series, the RC series is completely modular in design. This means that a wide variety of connectors can be created from a small number of different components. Both series contain M23 connectors with similar technical specifications.

The UC series uses the same insulating bodies in all pin assignment variants. The UC series, however, is larger than the RC series, i.e. it offers more cabling space and can accommodate larger cable diameters. Unlike the RC series, the shielding function and cable clamping are universal. It is not necessary to adapt the shielding elements to the cables used. This facilitates handling in the field.

Sleeve and connecting housings with an additional thread can be equipped with a second cable strain relief (double bracket) for exceptional loads.

For contact inserts and pin assignments, see M23 • RC series.

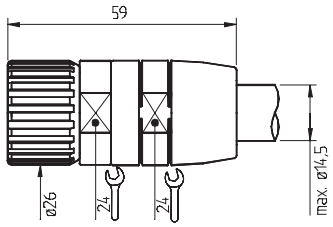
Connectors in the UC series are fitted with a universal shield connection. Shielded cable glands with a cable clamp type cage and shielded sleeve are not required.

Sleeve connectors for connecting housings and panel mounting bases

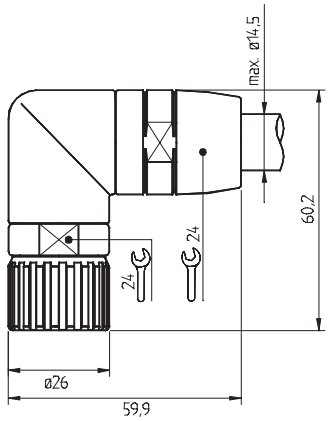
TGGUM, TWGUM

Description	Cable entry	Type/housing design	Order No.	Pcs./ Pkt.
Sleeve housings, **straight**, with universal shielding, metal for external cable diameters from 2 mm to 14.5 mm		**TGGUM**	**UC-000000080DU**	10
with thread for additional strain relief	Pg 13.5	**TGGUM 13,5**	**UC-0000000R3DU**	10
with thread for additional strain relief	Pg 16	**TGGUM 16**	**UC-0000000RNDU**	10
Sleeve housings, **angled**, with universal shielding, metal for external cable diameters from 2 mm to 14.5 mm		**TWGUM**	**UC-0000000T0DU**	10
with thread for additional strain relief	Pg 13.5	**TWGUM 13,5**	**UC-0000000N3DU**	10
with thread for additional strain relief	Pg 16	**TWGUM 16**	**UC-0000000NNDU**	10

Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.



TGGUM



TWGUM

Type description

T	G	GU	M	13,5

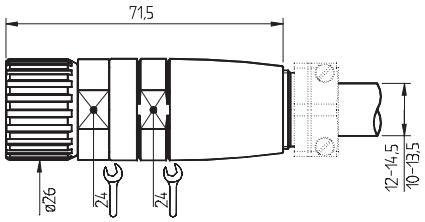
Type
T Sleeve connector
K Cable connecting receptacle

Form
G Straight
W Angled

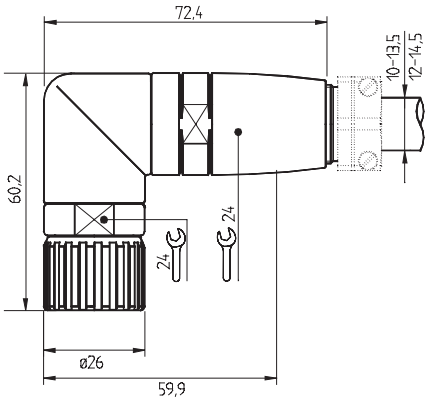
EMC protection
GU With universal shielding

Housing material
M Metal

Connecting thread
13,5 Pg 13.5
16 Pg 16



TGGUM 13,5, TGGUM 16



TWGUM 13,5, TWGUM 16

Please order additional strain relief (double bracket) and single gaskets separately, see page 40.

M23 • UC Series
Connecting Housings with Universal Shielding, Cable Entry up to Ø 14.5 mm

For contact inserts and pin assignments, see M23 • RC series.
Connectors in the UC series are fitted with a universal shield connection. Shielded cable glands with a cable clamp type cage and shielded sleeve are not required.

Cable connecting receptacles for shielded free connections

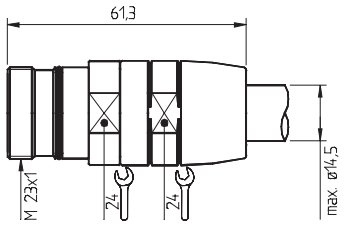
KGGUM

Cable connecting receptacles for rear mounting

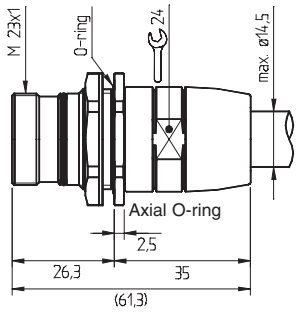
KGGUZ

Description	Cable entry	Type/housing design	Order No.	Pcs./ Pkt.
Connecting housings, straight, with universal shielding, **metal** for external cable diameters from 2 mm to 14.5 mm		**KGGUM**	**UC-000000090DU**	10
with thread for additional strain relief	Pg 13.5	**KGGUM 13,5**	**UC-0000000F3DU**	10
with thread for additional strain relief	Pg 16	**KGGUM 16**	**UC-0000000FNDU**	10
Connecting housings, internal, straight, with universal shielding, with **central** fixing nut for external cable diameters from 2 mm to 14.5 mm		**KGGUZ**	**UC-0000000Q0DU**	10
with thread for additional strain relief	Pg 13.5	**KGGUZ 13,5**	**UC-0000000Q3DU**	10
with thread for additional strain relief	Pg 16	**KGGUZ 16**	**UC-0000000QNDU**	10

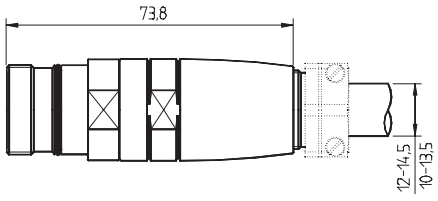
Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.



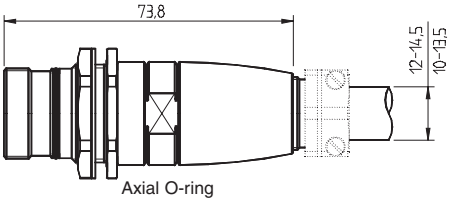
KGGUM



KGGUZ



KGGUM 13,5, KGGUM 16



KGGUZ 13,5, KGGUZ 16

Type description

K	G	GU	Z	13,5

Type
K Cable connecting receptacle

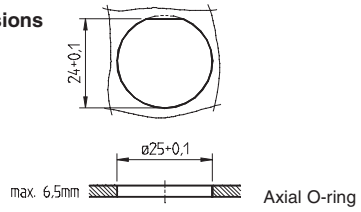
Form
G Straight

EMC protection
GU With universal shielding

Housing material, connection
M Metal
Z Central fixing nut

Connecting thread
13,5 Pg 13.5
16 Pg 16

Installation dimensions KGGUZ (all types)



Please order additional strain relief (double bracket) and single gaskets separately, see page 40.

M23 • RC Series
Panel Mounting Bases
Front Mounting

In the case of front mounting, the panel mounting base is fitted to the device from outside using screws, nuts or threads.
The contact insert then establishes the connection to the device by either solder or crimp connections at the device end.

Panel mounting bases for front mounting

AAGF, AAGR, AALZ, AAWF

Cable connecting receptacles for front mounting

AAGG

Description	Wall thickness [mm]	Type/housing design	Order No.	Pcs./ Pkt.
Panel mounting base, external, straight, **flat gasket** (self-adhesive), 4-hole mounting, for connecting unshielded cable connectors	from 1	**AAGF**	**RC-00000002200**	10
Panel mounting base, external, straight, **radial O-ring**, 4-hole mounting, with reinforced mounting flange, for shielded applications	from 3	**AAGR**	**RC-0000000WQ00**	10
Panel mounting base, external, straight, **central fixing nut**, for shielded applications	1-4.5	**AALZ**	**RC-00000006100**	10
Panel mounting base, external, angled, **flat gasket**, 4-hole mounting, for feeding a shielded cable into a wall	from 1	**AAWF**	**RC-0000000A000**	10
Panel mounting base, external, straight, **shielded**, 4-hole mounting and O-ring, for wall bushing for a shielded cable	3-7			

Type/housing design	Order No.	Pcs./ Pkt.
AAGG	**RC-0000000B2FZ**	10

For shielded cable glands, see page 20-21

Housing type AAWF cannot be combined with dip solder contacts or 19-pos. crimp.

Type description

A	A	G	F

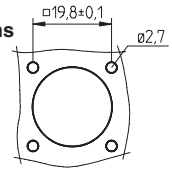
Type
A Panel mounting base

Installation method
A Front mounting
I Rear mounting

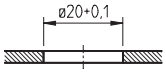
Form
G Straight
L Light version
S Heavy version
W Angled

Connection
F Flat gasket
R Radial gasket (O-ring)
Z Central fixing nut
G Threaded flange
B Drilling flange

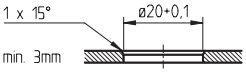
Installation dimensions AAGF, AAGR, AAWF, AAGG

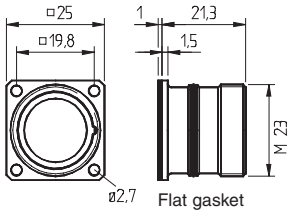


Axial O-ring/ Flat gasket

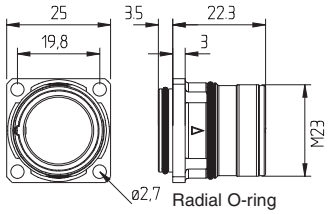


Radial O-ring

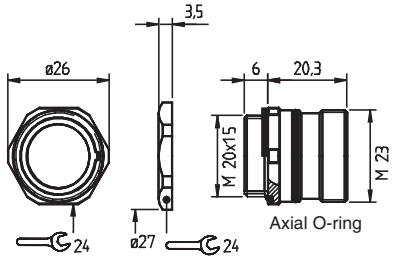




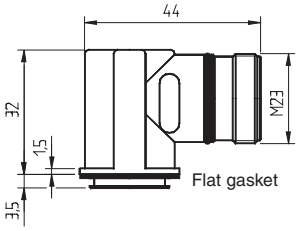
AAGF

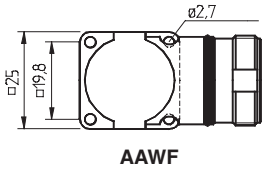


AAGR

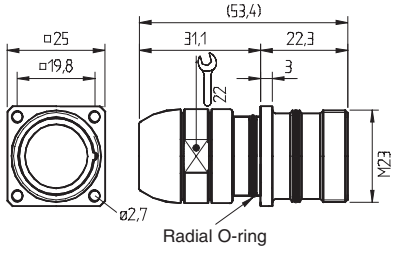


AALZ





AAWF



AAGG

M23 • RC Series
Panel Mounting Bases
Rear Mounting

Panel mounting bases for rear mounting are designed for the efficient installation of preassembled printed circuit boards, for example. These bases are fed through the mounting panel from the inside and screwed tight from the outside.

Panel mounting bases for rear mounting

AIL..., AIS...

Cable connecting receptacles for rear mounting

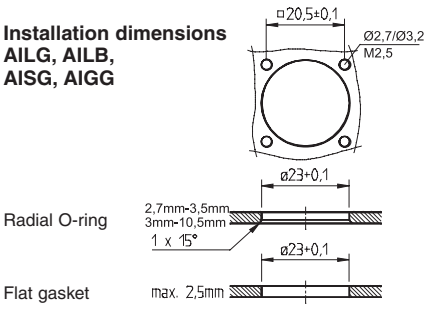
AIGG, AIGZ

Description	Wall thickness [mm]	Type/housing design	Order No.	Pcs./ Pkt.	Type/housing design	Order No.	Pcs./ Pkt.
Panel mounting base, internal, low design, threaded flange radial O-ring, **4-hole thread mounting** (M2.5)	2.7-3.5	**AILG**	**RC-00000004200**	10			
Panel mounting base, internal, low design, drilling flange radial O-ring, **4-hole mounting** (Ø 2.7)	2.7-3.5	**AILB**	**RC-00000005200**	10			
Panel mounting base, internal, high design, threaded flange, with 3 mm flange, radial O-ring, **4-hole thread mounting** (M3)	3-10.5	**AISG**	**RC-0000000E000**	10			
Panel mounting base, internal, high design, **central fixing nut**, axial O-ring	up to 6.5	**AISZ**	**RC-0000000H000**	10			
Connecting housing, internal, **shielded**, 4-hole thread mounting (M2.5), flat gasket, for wall bushing for a shielded cable	up to 2.5				**AIGG**	**RC-0000000C0FZ**	10
Connecting housing, internal, **shielded**, central fixing nut, axial O-ring, for wall bushing for a shielded cable	up to 6.5				AIGZ	RC-0000000Q0FZ	10

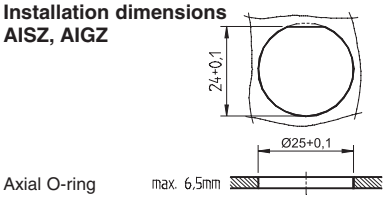
For shielded cable glands, see pages 20-21

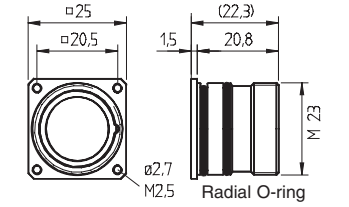
Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.

Installation dimensions AILG, AILB, AISG, AIGG

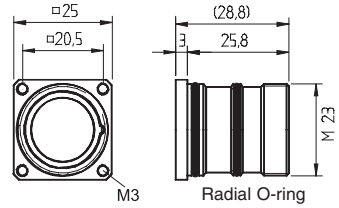


Installation dimensions AISZ, AIGZ

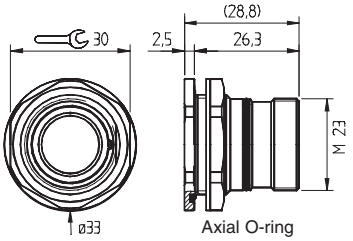




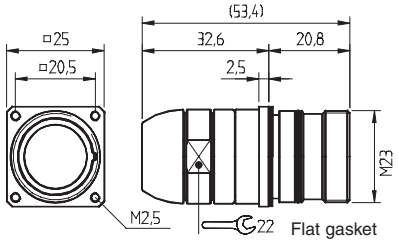
AILG, AILB



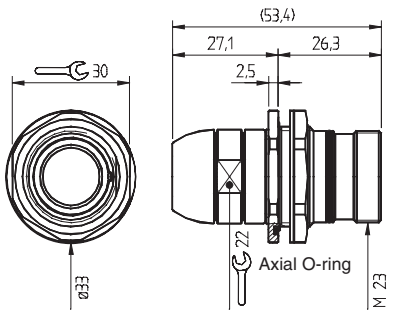
AISG



AISZ



AIGG



AIGZ

M23 • RC Series
Cable Glands
Shielded to IP67

The cables are fed through the connecting and sleeve housings to some extent using cable glands. These differ according to the application (shielded or unshielded).

In the case of shielded connectors, cable clamp type cages and shielded adapters are required. They can be used to configure a multitude of plug connection combinations for different cable types with cable diameters from 3.5 mm to 10.5 mm.

The shield adapter used depends on the diameter of the core bundle under braided screen **d** and is pushed immediately under the braided screen when the connector is assembled. The shield adapter serves as a connection element between the cable shield and the connector housing (inner sleeve and adapter cover).

The cable clamp type cage with the gasket guarantees sealing to IP67 protection and assumes the cable strain relief function. The specific type for each cable depends on external cable diameter **D**.

We recommend that you try out borderline types for transition points between two cable gland sizes.

Ordering example
Shielded cable screw connection:

A 6-core, shielded cable is to be adapted with sleeve housing TGGM (see page 14).

– External cable diameter D = 6.0 mm.
– Diameter of core bundle d = 4.7 mm.

The appropriate cable gland can be found in the category D = 5.5 mm to 6.5 mm and in line d ≈ 4.9 mm, i.e. KK60SA49.

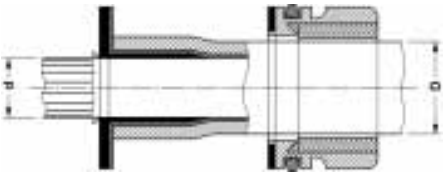


Diagram of conductor bundle diameter **d** and external cable diameter **[D]**

Cable clamp type cage with shield adapter

KK40SA.., KK100SA..

Description	Conductor bundle diameter **d** [mm]	Type	Order No.	Pcs./ Pkt.
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 2.5	**KK40SA25**	**RC-Z2425**	
D = 3.5 mm – 4.5 mm	≈ 3.2	**KK40SA32**	**RC-Z2426**	
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 2.5	**KK50SA25**	**RC-Z2225**	
D = 4.5 mm – 5.5 mm	≈ 3.2	**KK50SA32**	**RC-Z2427**	
	≈ 3.6	**KK50SA36**	**RC-Z2428**	
	≈ 3.8	**KK50SA38**	**RC-Z2429**	
	≈ 4.1	**KK50SA41**	**RC-Z2430**	
	≈ 4.3	**KK50SA43**	**RC-Z2431**	
	≈ 4.6	**KK50SA46**	**RC-Z2432**	
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 3.2	**KK60SA32**	**RC-Z2433**	
D = 5.5 mm – 6.5 mm	≈ 3.6	**KK60SA36**	**RC-Z2434**	
	≈ 3.8	**KK60SA38**	**RC-Z2435**	
	≈ 4,1	**KK60SA41**	**RC-Z2222**	
	≈ 4.3	**KK60SA43**	**RC-Z2436**	
	≈ 4.6	**KK60SA46**	**RC-Z2437**	
	≈ 4.9	**KK60SA49**	**RC-Z2438**	
	≈ 5.2	**KK60SA52**	**RC-Z2439**	
	≈ 5.5	**KK60SA55**	**RC-Z2440**	
	≈ 5.8	**KK60SA58**	**RC-Z2441**	
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 3.6	**KK70SA36**	**RC-Z2442**	
D = 6.5 mm – 7.5 mm	≈ 3.8	**KK70SA38**	**RC-Z2443**	
	≈ 4.1	**KK70SA41**	**RC-Z2227**	
	≈ 4.3	**KK70SA43**	**RC-Z2403**	
	≈ 4.6	**KK70SA46**	**RC-Z2228**	
	≈ 4.9	**KK70SA49**	**RC-Z2395**	
	≈ 5.2	**KK70SA52**	**RC-Z2392**	
	≈ 5.5	**KK70SA55**	**RC-Z2444**	
	≈ 5.8	**KK70SA58**	**RC-Z2445**	
	≈ 6.2	**KK70SA62**	**RC-Z2396**	
	≈ 6.6	**KK70SA66**	**RC-Z2446**	
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 3.8	**KK85SA38**	**RC-Z2447**	
D = 7.5 mm – 9.5 mm	≈ 4.1	**KK85SA41**	**RC-Z2448**	
	≈ 4.3	**KK85SA43**	**RC-Z2449**	
	≈ 4.6	**KK85SA46**	**RC-Z2229**	
	≈ 4.9	**KK85SA49**	**RC-Z2391**	
	≈ 5.2	**KK85SA52**	**RC-Z2398**	
	≈ 5.5	**KK85SA55**	**RC-Z2450**	
	≈ 5.8	**KK85SA58**	**RC-Z2451**	
	≈ 6.2	**KK85SA62**	**RC-Z2221**	
	≈ 6.6	**KK85SA66**	**RC-Z2393**	
	≈ 7.0	**KK85SA70**	**RC-Z2394**	
	≈ 7.4	**KK85SA74**	**RC-Z2401**	
	≈ 7.7	**KK85SA77**	**RC-Z2402**	
Cable clamp type cage and shield adapter				10
External cable diameter	≈ 5.8	**KK100SA58**	**RC-Z2404**	
D = 9.5 mm – 10.5 mm	≈ 6.2	**KK100SA62**	**RC-Z2452**	
	≈ 6.6	**KK100SA66**	**RC-Z2453**	
	≈ 7.0	**KK100SA70**	**RC-Z2454**	
	≈ 7.4	**KK100SA74**	**RC-Z2455**	
	≈ 7.7	**KK100SA77**	**RC-Z2399**	

Type description

KK 85 SA 52

Type
KK Cable clamp type cage, shield adapter

External cable Ø D [mm]
40 3.5 - 4.5
50 4.5 - 5.5
60 5.5 - 6.5
70 6.5 - 7.5
85 7.5 - 9.5
100 9.5 - 10.5

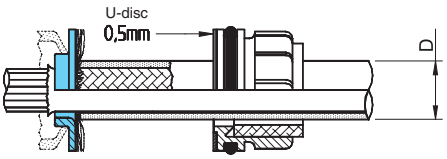
Protection
SA Shield adapter

Conductor bundle Ø d [mm]
25 ≈ 2.5
32 ≈ 3.2
36 ≈ 3.6
38 ≈ 3.8
41 ≈ 4.1
43 ≈ 4.3
46 ≈ 4.6
49 ≈ 4.9
52 ≈ 5.2
55 ≈ 5.5
58 ≈ 5.8
62 ≈ 6.2
66 ≈ 6.6
70 ≈ 7.0
74 ≈ 7.4
77 ≈ 7.7

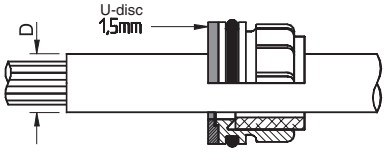
M23 • RC Series
Cable Glands
Shielded / Unshielded

Universal cable glands KUS... (shielded) and KUD... (unshielded) are available as alternatives to the shielded cable glands to IP67 for applications with less stringent requirements regarding shield attenuation.

Irrespective of the diameter of the cable or braided core screen, shielded and unshielded cables with an external diameter from 2 to 10.5 mm can be assembled for universal use with only one cable gland. This facilitates warehousing.



Universal cable clamp type cage **with shielding function**, **D** = external cable diameter



Universal cable clamp type cage, cable feed-through **without shielding function**, **D** = external cable diameter

Universal cable clamp type cage with/without shielding function

KUS..., KUD...

Type description

KU	S	2-10,5

Type
KU Cable clamp type cage, universal

Version
S Shielding function
D Cable feed-through (without shield connection)

Cable diameter D [mm]
2-10,5 2-10.5 mm

Description	Cable Ø D [mm]	Type	Order No.	Pcs./ Pkt.
Universal cable clamp type cage with shielding function Cable clamp type cage, shield disc and universal gasket	2 – 10.5	**KUS 2-10,5**	**RC-Z2462**	10
Universal cable clamp type cage, cable feed-through without shielding function Cable clamp type cage and universal gasket	2 – 10.5	**KUD 2-10,5**	**RC-Z2463**	10

Various cable glands can be supplied with Pg and metric threads for unshielded connectors. These are screwed into the adapter cover from the outside. Suitable variants are available for external cable diameters from 3 mm to 14 mm.

Ordering example
Unshielded cable gland:

A 9-core, unshielded cable is to be adapted with coupling housing KGUM09 (see page 15).

– External cable diameter D = 8 mm.

If a Pg cable gland in acc. with DIN 46 320 is to be selected, type KVS 09 corresponding to PG 9 for external cable diameters from 6 mm to 10 mm optimally fulfills the requirements.

Cable glands with Pg/metric threads

KVS..., KVZ..., KVD...

Type description

KV	D	11

Type
KV Cable gland, unshielded

Unshielded version
S Standard (IP65)
Z Double bracket strain relief (IP65)
D Increased sealing (IP68)

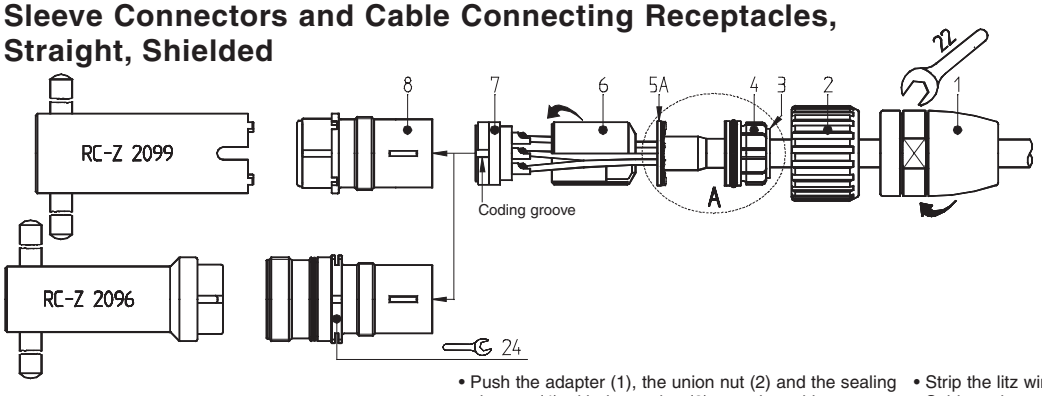
Cable entry
09 Pg 9
11 Pg 11
13 Pg 13.5
M16 M16x1.5
M20 M20x1.5

The cable entry of the connecting and sleeve housings must correspond to the cable glands.

Description	Conductor entry	Cable Ø D [mm]	Type	Order No.	Pcs./ Pkt.
Cable gland for unshielded applications in acc. with DIN 46 320, IP65	Pg 9	6 – 10	**KVS 09**	**RC-Z2091**	10
	Pg 11	8 – 12	**KVS 11**	**RC-Z2092**	
	Pg 13.5	10 – 14	**KVS 13**	**RC-Z2093**	
	M16x1.5	3 – 10	**KVS M16**	**RC-Z2406**	
	M20x1.5	4 – 14	**KVS M20**	**RC-Z2409**	
Cable gland with double bracket cable strain relief, for unshielded applications, IP65	Pg 9	6 – 10	**KVZ 09**	**RC-Z2051**	10
	Pg 11	8 – 12	**KVZ 11**	**RC-Z2052**	
	Pg 13.5	10 – 14	**KVZ 13**	**RC-Z2053**	
	M16x1.5	3 – 10	**KVZ M16**	**RC-Z2407**	
	M20x1.5	4 – 14	**KVZ M20**	**RC-Z2410**	
IP68 cable gland for unshielded applications with PVC gasket sleeve	Pg 9	6.5 – 9	**KVD 09**	**RC-Z2191**	10
	Pg 11	7 – 10.5	**KVD 11**	**RC-Z2196**	
	Pg 13.5	9 – 13	**KVD 13**	**RC-Z2202**	
	M16x1.5	6.5 – 9	**KVD M16**	**RC-Z2414**	
	M20x1.5	9 – 13	**KVD M20**	**RC-Z2417**	

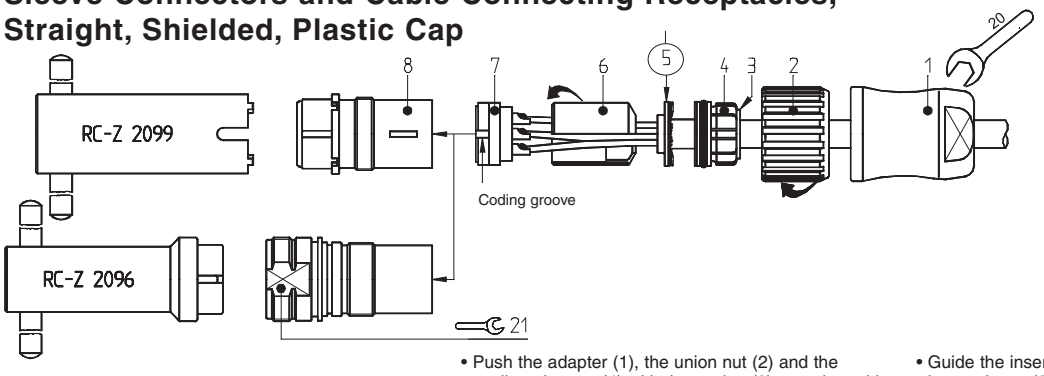
For assembly tools, see page 41

Sleeve Connectors and Cable Connecting Receptacles, Straight, Shielded



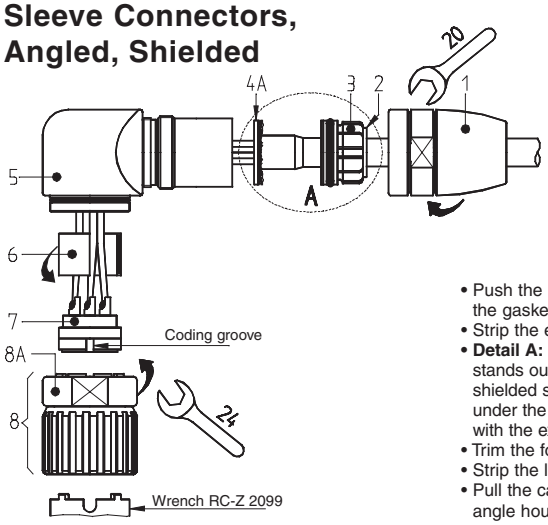
- Push the adapter (1), the union nut (2) and the sealing element (4) with the gasket (3) onto the cable.
- Strip the external sheath by 23 mm.
- **Detail A:** Push back the braided screen such that it stands out at 90°. With a rotating motion, push the shielded sleeve (5A) over the foil or cotton braiding and under the braided screen. Cut the braided screen flush with the external diameter of the shielded sleeve (5A).
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (6).
- Guide the insert (7) and spacer sleeve (6) into the insert sleeve (8), taking care that the desired **coding groove** of the insert (7) is introduced **into the coding bar**.
- Press in the cable with the shield and sealing unit.
- Screw the adapter (1) **as tight as possible**.

Sleeve Connectors and Cable Connecting Receptacles, Straight, Shielded, Plastic Cap



- Push the adapter (1), the union nut (2) and the sealing element (4) with the gasket (3) onto the cable.
- Strip the external sheath by 23 mm.
- Push back the braided screen such that it stands out at 90° and cut it flush with the outer diameter of the shield disc (5).
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (6).
- Guide the insert (7) and spacer sleeve (6) into the insert sleeve (8), taking care that the desired **coding groove** of the insert (7) is introduced **into the coding bar**.
- Press in the cable with the shield and sealing unit.
- Screw the adapter (1) **as tight as possible**.
  Attention: The required torque must not increase by more than 10 Nm during this process, as this can effect the free movement of the union nut.

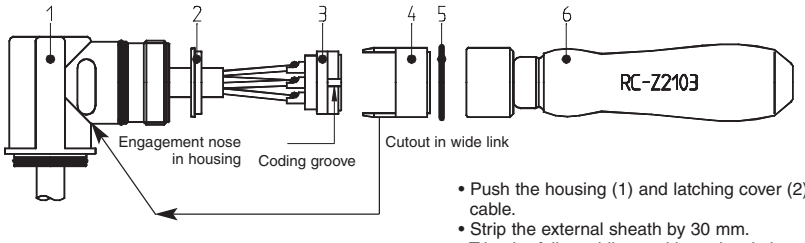
Sleeve Connectors, Angled, Shielded



- Push the adapter (1) and the sealing element (3) with the gasket (2) onto the cable.
- Strip the external sheath by 70 mm.
- **Detail A:** Push back the braided screen such that it stands out at 90°. With a rotating motion, push the shielded sleeve (4A) over the foil or cotton braiding but under the braided screen. Cut the braided screen flush with the external diameter of the shielded sleeve (4A).
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Pull the cable unit as far as possible through the angle housing (5).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (6).
- Guide the insert (7) and spacer sleeve (6) into the unit (8), taking care that the desired **coding groove** of the insert (7) is introduced **into the coding bar.**
- Insert the entire unit into the angle housing (Attention: eight coding options) and secure with nut (8A) (medium-force fit).
- Press in the cable with the shield and sealing unit.
- Screw the adapter (1) **as tight as possible.**

For assembly tools, see page 41

Panel Mounting Base (Receptacle), Angled

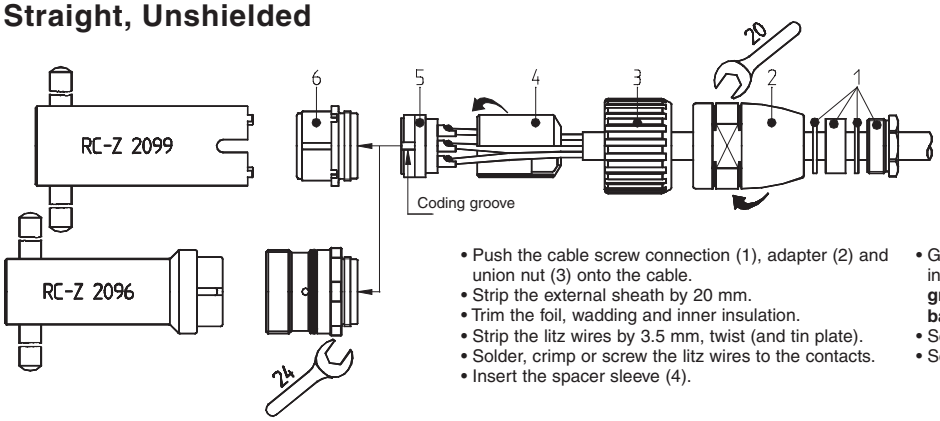


- Push the housing (1) and latching cover (2) onto the cable.
- Strip the external sheath by 30 mm.
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Push the latching sleeve (4) into the insert (3), taking care that the desired coding groove of the insert (3) is introduced into the coding bar of the latching sleeve (4).
- Press on the latching cover (2).
- Insert the entire latching sleeve (2+4) with the engagement nose into the appropriate guide groove of the housing and press in place using the insertion tool (6) (Incorrect insertion impossible due to different dimensions).
- Press in the gasket (5) using the insertion tool (6).

Disassembly instructions:

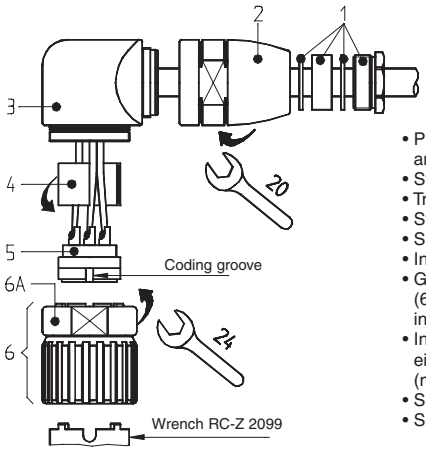
- Remove the gasket (plug-in side) using a screwdriver.
- Also use the screwdriver to lever the engagement nose (soldering side) out by 1 mm and push out the latching sleeve.

Sleeve Connectors and Cable Connecting Receptacles, Straight, Unshielded



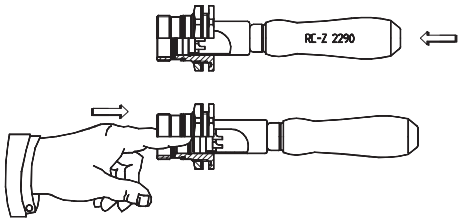
- Push the cable screw connection (1), adapter (2) and union nut (3) onto the cable.
- Strip the external sheath by 20 mm.
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (4).
- Guide the insert (5) and spacer sleeve (4) into the insert ring (6), taking care that the desired **coding groove** of the insert (7) is introduced **into the coding bar**.
- Screw the adapter (2) **as tight as possible**.
- Screw the cable gland (1) as tight as possible.

Sleeve Connectors, Angled, Unshielded



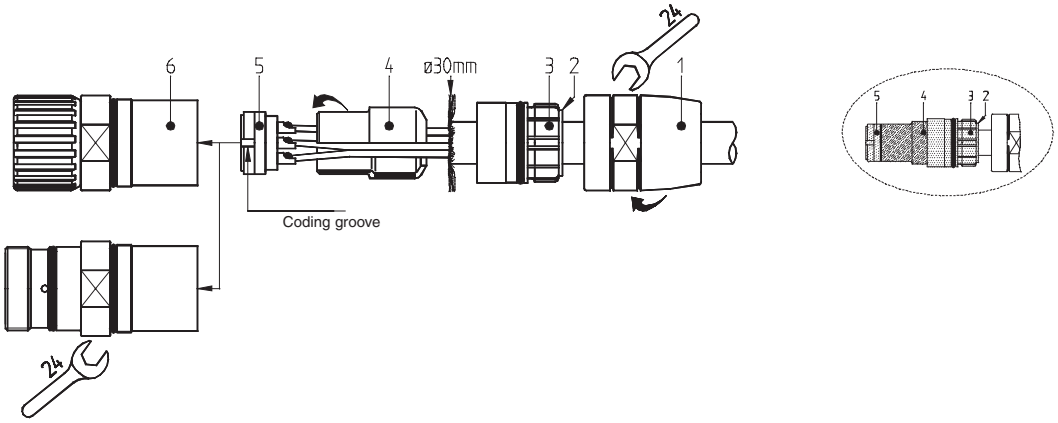
- Push the cable screw connection (1), adapter (2) and angle housing (3) onto the cable.
- Strip the external sheath by 30 mm.
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (4).
- Guide the insert (5) and spacer sleeve (4) into the unit (6), taking care that the desired **coding groove** of the insert (5) is introduced **into the coding bar**.
- Insert the entire unit into the angle housing (Attention: eight coding options) and secure with nut (6A) (medium-force fit).
- Screw the adapter (2) as tight as possible.
- Screw the cable gland (1) **as tight as possible**.

Panel Mounting Base (Receptacle), Removing the Plastic Latching Ring



For assembly tools, see page 41

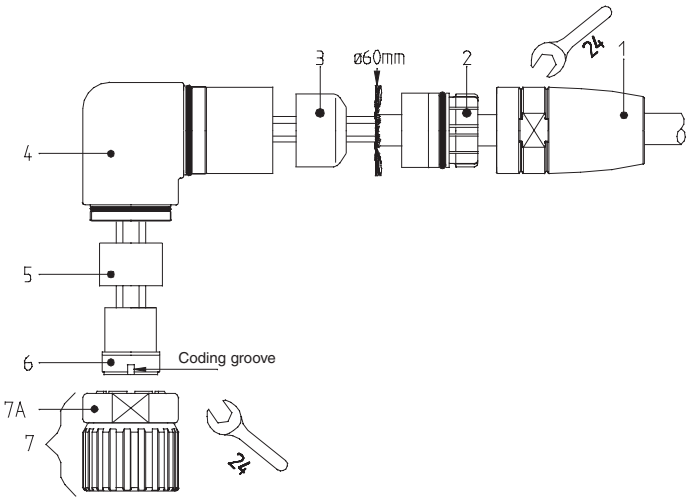
Sleeve Connectors and Cable Connecting Receptacles, Straight



- Push the adapter (1) and the sealing element (3) with the gasket (2) onto the cable.
- Strip the external sheath by 30 mm.
- Push back the braided screen so it stands out at 90° and cut to length.
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (4).
- Guide the insert (5), the spacer sleeve (4) and the sealing element (3) with the gasket (2) into the insert ring (6), taking care that the desired **coding groove** of the insert (5) is introduced **into the coding bar** of the spacer sleeve (6).
- Screw the adapter (1) **as tight as possible**.

For assembly tools, see page 41

Sleeve Connectors, Angled



- Push the adapter (1) and sealing element (2) onto the cable.
- Strip the external sheath by 80 mm.
- Trim the foil, wadding and inner insulation.
- Push back the braided screen so it stands out at 90° and cut to length.
- Strip the litz wires by 6 mm.
- Crimp the litz wires to the contacts.
- Push the cable unit through the angle housing (4).
- Insert the spacer sleeve (3) into the angle housing (4).
- Push the sealing element (2) over the spacer sleeve (3) thus clamping the braided screen between sealing element and spacer sleeve.
- Push crimped contacts into the insert (6).
- Insert the spacer sleeve (5).
- Guide the insert (6) and spacer sleeve (5) into the unit (7), taking care that the desired **coding groove** of the insert (6) is introduced **into the coding bar**.
- Insert the entire unit into the angle housing. (Attention: eight coding options) and secure with nut (7A) (medium-force fit).
- Screw the adapter (1) **as tight as possible**.

Bayonet • TU Series
Signal Circular Connectors
Product Selection

Combinations

The product chart show the possible combinations of sleeve housing and connecting housing or panel mounting base.
The sleeve connectors and cable connecting receptacles are fitted with a universal shield connection for cable diameters up to 14.5 mm.

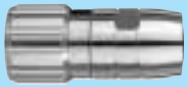
Selection of connectors

The modular system allows the individual connector to be selected from a defined number of articles. To specify a connector for the device and mounting side, the housing is supplemented by the corresponding contact insert, including contacts.

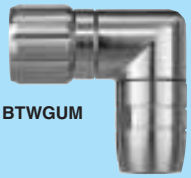
Housing

With universal shielding

Sleeve housings with universal shielding, page 30



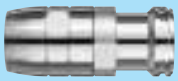
BTGGUM



BTWGUM

With universal shielding

Connecting housings with universal shielding, page 30



BKGGUM

Shielded

Panel mounting bases

Front mounting, page 31

Rear mounting, page 31

BAAGA

BAIGF

BAIGR

The product chart provides an overview of the available components.

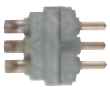
Contact insert including contacts

The connectors are fitted with a universal shield connection for cable diameters up to 14.5 mm. Shielded cable glands with a cable clamp type cage and shielded sleeve are not required.

Contact inserts

Solder contact inserts, page 34

6 to 19-position



LSR...

LBL...

Crimp contact inserts, pages 35-37

6 to 19-position

C..S...

C..B...

The connectors are fitted with a universal shield connection for cable diameters up to 14.5 mm. Shielded cable glands with a cable clamp type cage and shielded sleeve are not required.

Contact inserts

Screw contact inserts, page 35

6, 7 and 9-position

SSR...

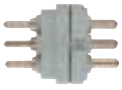
SBL...

For reasons of safety, only female contacts may be used in the live part of the connector.

Contact inserts

Direct PCB connection, page 38

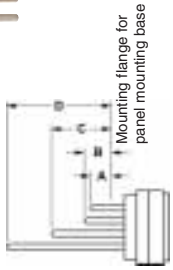
With 6 to 17-position dip solder contacts



ES...

EB...

Type/housing design	Free solder pin length A [mm]	B [mm]	C [mm]	D [mm]
BAAGA	–	3.5	9.0	16.5
BAIGF	2.5	3.5	9.0	16.5
BAIGR	2.5	3.5	9.0	16.5



Further contact inserts/dip solder contacts available on request.

Contact inserts

For reasons of safety, only female contacts may be used in the live part of the connector.

Bayonet • TU Series
Technical Data

Mechanical data:

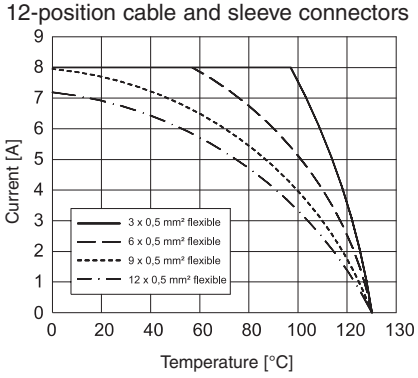
Housing material:	Machined component: copper-zinc alloy (CuZn), die-cast part: zinc (GD-Zn)
Housing surface:	Nickel-plated (standard)
Insulating body: Inflammability:	Thermoplastic polyester (PBT), polyamide (PA 66); storage at 15-35 °C, 40-70 % rel. humidity UL 94 V0
Contact material:	Copper-zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold layer (Au) and passivated
Contact connection type:	Solder cup, crimp and screw versions, dip solder pin
Gasket and O-ring:	Fluorine rubber (FPM)
Flat gasket:	Perbunane (NBR with fabric insert) fluorine rubber (FPM)
Temperature range:	-40°C/+125°C (long-term temperature)
Conductor entry:	EMC design, for cable diameters 2 - 14.5 mm
Locking method:	Bayonet locking, bayonet ring Ø 29.3 mm
Mechanical insertion/withdrawal cycles:	Standard: 50, more on request
Degree of protection:	EMC version: IP67 in the locked state

Electrical data:

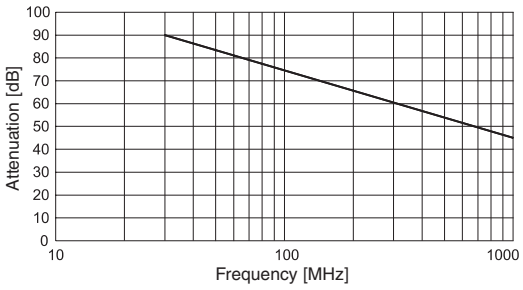
Number of positions		**6, 7**	**9**(8+1)	**9**(6+3)	**12**	**16**	**17**	**19**(16+3)
Contacts		6, 7	8 + 1	6 + 3	11, 12	15, 16	16, 17	16 + 3
Contact Ø	[mm]	2	1 2	1 2	1	1	1	1 1.5
Conductor cross section	Solder connection contacts x [mm²]	6 (7) x 2.5	8 x 1.0 + 1 x 2.5	6 x 1.0 + 3 x 2.5	12 x 2.5	16 x 1.0	17 x 1.0	16 x 1.0 + 3 x 1.0
	Crimp connection contacts x [mm²]	6 (7) x 2.5	8 x 0.56 + 1 x 2.5		12 x 0.56	16 x 0.56	17 x 0.56	16 x 1.0 + 3 x 1.5
Nominal/rated current	[A]	20	8 20	8 20	8	8	8	8 10
Nominal/rated voltage	[V]	300	300	150	150	150	150	150
Test voltage	[kV AC]	2.5	2.5	1.5	1.5	1.5	1.5	1.5
Surge voltage category [1]		II	II	II	II	II	II	II
Insulation resistance	[Ω]	$\geq 10^{16}$	$\geq 10^{16}$	$\geq 10^{12}$	$\geq 10^{12}$	$\geq 10^{12}$	$\geq 10^{12}$	$\geq 10^{12}$
Contact resistance	[mΩ]	≤3	≤3	≤3	≤3	≤3	≤3	≤3
Contamination class in acc. with IEC 664-1		2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])	2 (3[1])

[1] Reference: DIN EN 61984:2001 (see also appendix of technical terms, page 43).

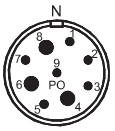
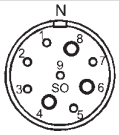
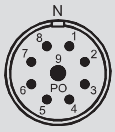
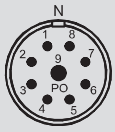
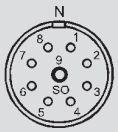
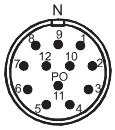
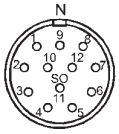
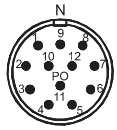
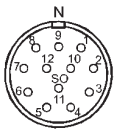
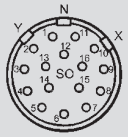
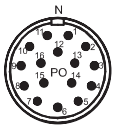
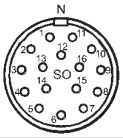
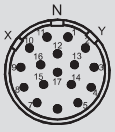
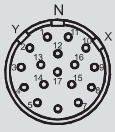
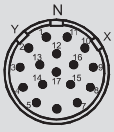
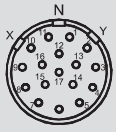
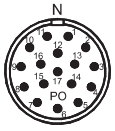
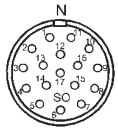
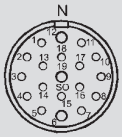
Derating curve
12-position cable and sleeve connectors



Shield attenuation curve
Based on DIN 47250-6/01.83

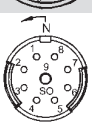


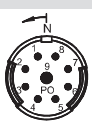
Other coding versions can be configured manually or mechanically on request.

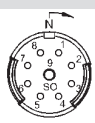
	Contact chamber numbering (view of plug-in side)			
	Clockwise	Counter-clockwise	Counter-clockwise	Clockwise
Number of positions	**Male**	**Female**	**Male**	**Female**
6-position Solder / crimp / screw Pages 34 - 39				
7-position Solder / crimp / screw Pages 34 - 39				
9-position (6+3) Solder Pages 34, 38				
9-position (8+1) Solder / crimp / screw Pages 34 - 39				
12-position Solder / crimp Pages 34 - 39				
16-position Solder Pages 34, 38				
16-position Crimp Pages 35 - 37				
17-position Solder Pages 34, 38				
17-position Crimp Pages 35 - 37				
19-position (16+3) Solder / crimp Pages 34 -37				

Direction of contact chamber numbering
(view of plug-in side)


Male, clockwise (standard)


Female, counter-clockwise (standard)


Male, counter-clockwise (opposite direction)


Female, clockwise (opposite direction)

Bayonet • TU Series
Connecting/Sleeve Housings, Universal Shielding

Sleeve connectors for connecting housings and panel mounting bases

BTGGUM, BTWGUM

Cable connecting receptacles for shielded free connections

BKGGUM

Description	Type/housing design	Order No.	Pcs./ Pkt.
Sleeve housing, **straight**, with universal shielding, metal for external cable diameters from 2 mm to 14.5 mm	**BTGGUM**	**TU-00000008UDU**	10
Bayonet sleeve housing, **angled**, with universal shielding, metal for external cable diameters from 2 mm to 14.5 mm	**BTWGUM**	**TU-0000000TUDU**	10
Bayonet connecting housing, **straight**, with universal shielding, metal for external cable diameters from 2 mm to 14.5 mm	**BKGGUM**	**TU-00000009UDU**	10

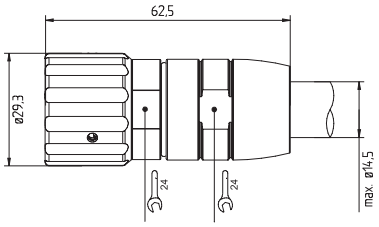
Signal connectors in the TU series feature a bayonet locking system which is easy to use but robust at the same time.

Like the signal connectors with M23 screw locking, the TU series is completely modular in design and uses the same insulating bodies/contacts.

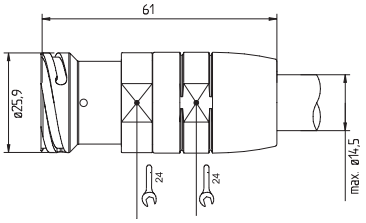
The TU series is based on UC connectors, i.e. it also offers more cabling space and can accommodate larger cable diameters. The shielding function and the cable clamping are universal. It is not necessary to adapt the shielding elements to the cables used.

Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.

For corresponding contact inserts, see pages 34-39



BTGGUM



BKGGUM

Type description

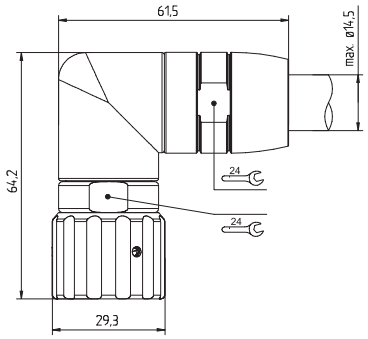
BT	G	GU	M

Type
BT Bayonet sleeve connector
BK Bayonet cable conn. receptacle

Form
G Straight
W Angled

EMC protection
GU With universal shielding

Housing material
M Metal



BTWGUM

Bayonet • TU Series
Panel Mounting Bases
Front/Rear Mounting

In the case of front mounting, the panel mounting base is fitted to the device from outside using screws or nuts. The contact insert then establishes the connection to the device by either solder or crimp connections at the device end.

Panel mounting bases for rear mounting are fed through the mounting panel from the inside and screwed tight from the outside.

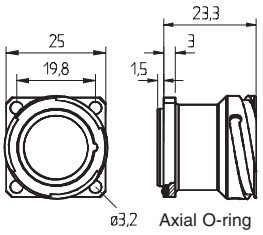
Panel mounting bases
for front mounting
BAAGA

Panel mounting bases
for rear mounting
BAIGF, BAIGR

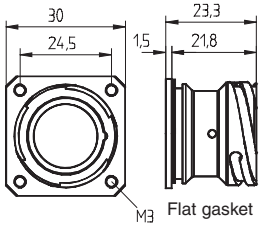
Description	Wall thickness [mm]	Type/housing design	Order No.	Pcs./ Pkt.
Panel mounting base, external, straight, **axial O-ring** 4-hole mounting (Ø 3.2 mm), for connecting shielded connectors	from 1.5	**BAAGA**	**TU-0000000WB00**	10
Panel mounting base, internal, straight, **flat gasket**, 4-hole thread mounting (M3), for connecting shielded connectors	max. 2.5	**BAIGF**	**TU-00000004100**	10
Panel mounting base, internal, straight, **radial O-ring**, 4-hole mounting (Ø 3.2 mm), for connecting shielded connectors	2.7 – 3.5	**BAIGR**	**TU-00000005300**	10

Unlike plugs, connectors must not be plugged in or unplugged under load, in order to avoid damage caused by contact erosion.

For corresponding contact inserts, see pages 34-39



BAAGA



BAIGF

Type description

	BA	I	G	F

Type
BA Bayonet panel mounting base

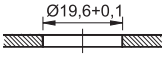
Installation method
A Front mounting
I Rear mounting

Form
G Straight

Connection
F Flat gasket
R Radial seal (O-ring)
A Axial seal (O-ring)

Installation dimensions 4 x ø3,2/M3 / □19,8±0,1
BAAGA

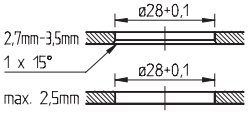
Axial O-ring

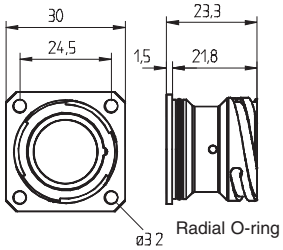


Installation dimensions 4 x ø3,2/M3 / □24,5±0,1
BAIGF, BAIGR

Radial O-ring

Flat gasket

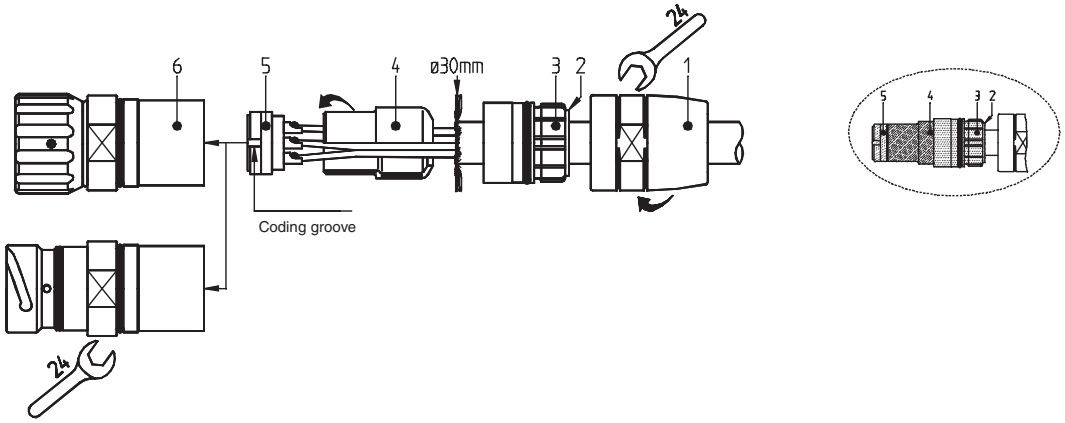




BAIGR

For assembly tools, see page 41

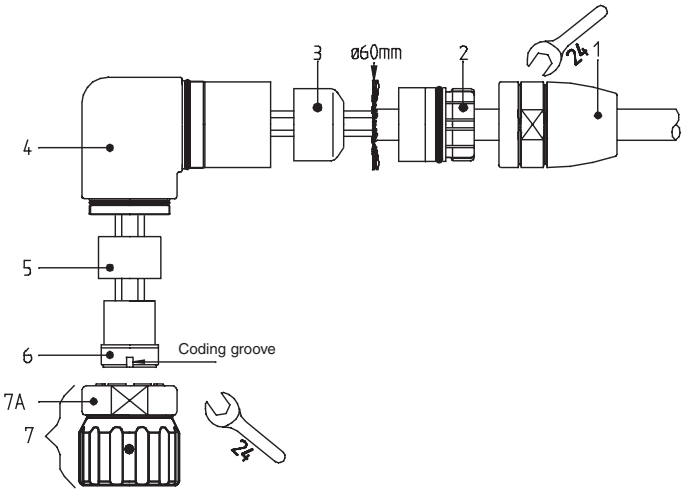
Sleeve Connectors and Cable Connecting Receptacles, Straight



- Push the adapter (1) and the sealing element (3) with the gasket (2) onto the cable.
- Strip the external sheath by 30 mm.
- Push back the braided screen so it stands out at 90° and cut to length.
- Trim the foil, wadding and inner insulation.
- Strip the litz wires by 3.5 mm, twist (and tin plate).
- Solder, crimp or screw the litz wires to the contacts.
- Insert the spacer sleeve (4).
- Guide the insert (5), the spacer sleeve (4) and the sealing element (3) with the gasket (2) into the insert ring (6), taking care that the desired **coding groove** of the insert (5) is introduced **into the coding bar** of the spacer sleeve (6).
- Screw the adapter (1) **as tight as possible**.

For assembly tools, see page 41

Sleeve Connectors, Angled



- Push the adapter (1) and sealing element (2) onto the cable.
- Strip the external sheath by 80 mm.
- Trim the foil, wadding and inner insulation.
- Push back the braided screen so it stands out at 90° and cut to length.
- Strip the litz wires by 6 mm.
- Solder, crimp or screw the litz wires to the contacts.
- Push the cable unit through the angle housing (4).
- Insert the spacer sleeve (3) into the angle housing (4).
- Push the sealing element (2) over the spacer sleeve (3) thus clamping the braided screen between sealing element and spacer sleeve.
- Push crimped contacts into the insert (6).
- Insert the spacer sleeve (5).
- Guide the insert (6) and spacer sleeve (5) into the unit (7), taking care that the desired **coding groove** of the insert (6) is introduced **into the coding bar**.
- Insert the entire unit into the angle housing. (Attention: eight coding options) and secure with nut (7A) (medium-force fit).
- Screw the adapter (1) **as tight as possible**.

RC / UC / TU Series
Contact Inserts
6 to 19-Position

The contact inserts with the contact carriers and the contacts are available for the following connection types:
– Soldering
– Crimping
– Screwing
– Dip soldering for printed circuit boards

In the case of each connection system, contact inserts are available for different
– Pin assignments
– Male and female contacts
– And for the most part, clockwise or counter-clockwise numbering of the contact chamber

Ordering instructions:

The first step is to determine the connection system – soldering, dip soldering, crimping or screwing. The number of positions corresponds to the application and the number of cores. The selection male or female depends on the circuitry. The direction of the numbering depends on individual requirements (see pin assignments, pages 13, 29).

The standard numbering direction is (view of plug-in side):
– Male contact carrier, clockwise
– Female contact carrier, counter-clockwise

This ensures that the plug connections match.

Type description

L	S	R	12

Connection system
L Solder connection
CR Crimp connection
Rolled crimp contacts
CD Crimp connection
Turned crimp contacts
S Screw connection

Contact
S Male
B Female

Numbering
R Clockwise
L Counter-clockwise

No. of positions

6	6-position
6K	6-position, lower connection range
7	7-position
7K	7-position, lower connection range
6+3	9-position (6+3)
8+1	9-position (8+1)
8+1K	9-position (8+1), lower connection range
12	12-position
16	16-position
17	17-position
16+3	19-position (16+3)
16+2+PE	19-position (16+2+PE) with crimp

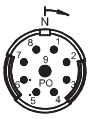
Direction of contact chamber numbering
(view of plug-in side)

Contact insert and solder contacts male/female

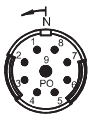
L ...

Description	Type	Order no.	Pcs./ Pkt.
Contact insert, 6-position Contacts: 6 x Ø 2.0 mm	**LSR 6** **LBL 6**	**RC-06P1N120000** **RC-06S1N120000**	10
Contact insert, 7-position Contacts: 7 x Ø 2.0 mm	**LSR 7** **LBL 7**	**RC-07P1N120000** **RC-07S1N120000**	10
Contact insert, 9-position (6+3) Contacts: 6 x Ø 1.0 mm, 3 x Ø 2.0 mm	**LSR 6+3** **LBL 6+3**	**RC-63P1N120000** **RC-63S1N120000**	10
Contact insert, 9-position (8+1) Contacts: 8 x Ø 1.0 mm, 1 x Ø 2.0 mm	**LSR 8+1** **LBL 8+1** **LSL 8+1** **LBR 8+1**	**RC-09P1N120000** **RC-09S1N120000** **RC-09P2N120000** **RC-09S2N120000**	10
Contact insert, 12-position Contacts: 12 x Ø 1.0 mm	**LSR 12** **LBL 12** **LSL 12** **LBR 12**	**RC-12P1N120000** **RC-12S1N120000** **RC-12P2N120000** **RC-12S2N120000**	10
Contact insert, 16-position Contacts: 16 x Ø 1.0 mm	**LSR 16** **LBL 16**	**RC-16P1N120000** **RC-16S1N120000**	10
Contact insert, 17-position Contacts: 17 x Ø 1.0 mm	**LSR 17** **LBL 17** **LSL 17** **LBR 17**	**RC-17P1N120000** **RC-17S1N120000** **RC-17P2N120000** **RC-17S2N120000**	10
Contact insert, 19-position (16+3) Contacts: 16 x Ø 1.0 mm, 3 x Ø 1.5 mm	**LSR 16+3** **LBL 16+3**	**RC-19P1N120000** **RC-19S1N120000**	10
Crimping pliers for crimp contacts (see also page 41)		–	

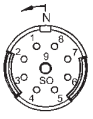
Technical data (see also pages 12, 28)	
Ambient temperature [°C]	-40 to +125
Connection cross section [mm²]	
For contact Ø 1.0 mm / 1.5 mm	≤ 1
For contact Ø 2.0 mm	≤ 2.5
Materials	
Contact	CuZN
Contact surface	Ni with gold layer
Contact insert	PBT



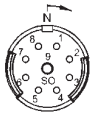
Male, clockwise (standard)



Male, counter-clockwise (opposite direction)



Female, counter-clockwise (standard)



Female, clockwise (opposite direction)

Housing termination

Contact insert and crimp contacts, rolled male/female

CR ...

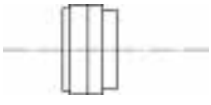
Type	Crimp range (see below *)	Order no.	Pcs./ Pkt.
			10
CRSR 12	A	**RC-12P1N8E0000**	
CRBL 12	A	**RC-12S1N8E0000**	
CRSL 12	A	**RC-12P2N8E0000**	
CRBR 12	A	**RC-12S2N8E0000**	
			10
CRSR 17	A	**RC-17P1N8E0000**	
CRBL 17	A	**RC-17S1N8E0000**	
			10
Crimping pliers RC 0,56		**RC-Z2130**	1

-40 to +125

* Crimp range A: 0.22 – 0.56
–

CuZN
Ni with gold layer
PBT

Crimp contacts/contact carriers separate, see page 36



Contact insert and crimp contacts, turned male/female

CD ...

Type	Crimp range (see below *)	Order no.	Pcs./ Pkt.
			10
CDSR 6	C	**RC-06P1N8B0000**	
CDBL 6	C	**RC-06S1N8B0000**	
CDSR 6K	D	**RC-06P1N8K0000**	
CDBL 6K	D	**RC-06S1N8K0000**	
			10
CDSR 7	C	**RC-07P1N8B0000**	
CDBL 7	C	**RC-07S1N8B0000**	
CDSR 7K	D	**RC-07P1N8K0000**	
CDBL 7K	D	**RC-07S1N8K0000**	
			10
CDSR 8+1	8xB+1xC	**RC-09P1N8C0000**	
CDBL 8+1	8xB+1xC	**RC-09S1N8C0000**	
CDSL 8+1	8xB+1xC	**RC-09P2N8C0000**	
CDBR 8+1	8xB+1xC	**RC-09S2N8C0000**	
CDSR 8+1K	8xB+1xD	**RC-09P1N8L0000**	
CDBL 8+1K	8xB+1xD	**RC-09S1N8L0000**	
CDSL 8+1K	8xB+1xD	**RC-09P2N8L0000**	
CDBR 8+1K	8xB+1xD	**RC-09S2N8L0000**	
			10
CDSR 12	B	**RC-12P1N8D0000**	
CDBL 12	B	**RC-12S1N8D0000**	
CDSL 12	B	**RC-12P2N8D0000**	
CDBR 12	B	**RC-12S2N8D0000**	
			10
CDSR 16	B	**RC-16P1N8D0000**	
CDBL 16	B	**RC-16S1N8D0000**	
			10
CDSR 17	B	**RC-17P1N8D0000**	
CDBL 17	B	**RC-17S1N8D0000**	
			10
CDSR 16+2+PE	B	**RC-1RP1NRM0000**	
CDBL 16+2+PE	B	**RC-1RS1NRM0000**	
Crimping pliers RC 2,5		**RC-Z2378**	1

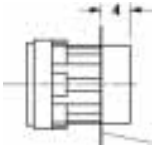
CDSR 16+2+PE / CDBL 16+2+PE cannot be combined with housing AAWF

-40 to +125

* Crimp range B: 0.14 – 0.56
* Crimp range C: 1.5 – 2.5; * Crimp range D: 1.0 – 1.5

CuZN
Ni with gold layer
PBT

Crimp contacts/contact carriers separate, see page 36



Housing termination

Contact insert and screw contacts male/female

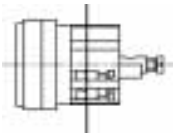
S ...

Type	Order no.	Pcs./ Pkt.
		10
SSR 6	**RC-06P1NS20000**	
SBL 6	**RC-06S1NS20000**	
		10
SSR 7	**RC-07P1NS20000**	
SBL 7	**RC-07S1NS20000**	
		10
SSR 8+1	**RC-09P1NS20000**	
SBL 8+1	**RC-09S1NS20000**	
	–	

-40 to +125

≤ 0.75
≤ 1.5

CuZN
Ni with gold layer
PBT



RC / UC / TU Series
Crimp Contact Carriers and Crimp Contacts Separate

The contact carriers and the male and female crimp contacts can also be ordered separately for 6 to 9-position connectors.

Crimp contact carriers separate male/female

RC-ICS..., RC-ICB...

Other contact inserts/contacts available on request

Type description of contact carriers without crimp contacts

RC-	IC	S	R	6

Contact series
RC

Contact carrier
IC Crimp insulating body

Contact
S Male
B Female

Numbering
R Clockwise
L Counter-clockwise

No. of positions
6 6-position
7 7-position
8+1 9-position (8+1)
12 12-position
16 16-position
17 17-position
16+2+PE 19-position (16+2+PE)

Type description of crimp contacts

RC-	ST	CD-	1/14,8/014-0,56

Contact series
RC

Contact type
ST Male
SP Male PE contact
BU Female
BP Female PE contact

Connection system
CR Crimp connection
Rolled crimp contacts
CD Crimp connection
Turned crimp contacts

Contact diameter/contact length [mm]/ Crimp range [mm²]

Description	Type	Order No.	Pcs./ Pkt.
6-position crimp contact insert for contacts 6 x Ø 2.0 mm	**RC-ICSR 6**	**RC-06P1N8A0000**	10
	RC-ICBL 6	**RC-06S1N8A0000**	
7-position crimp contact insert for contacts 7 x Ø 2.0 mm	**RC-ICSR 7**	**RC-07P1N8A0000**	10
	RC-ICBL 7	**RC-07S1N8A0000**	
9-position (8+1) crimp contact insert for contacts 8 x Ø 1.0 mm / 1 x Ø 2.0 mm	**RC-ICSR 8+1**	**RC-09P1N8A0000**	10
	RC-ICSL 8+1	**RC-09P2N8A0000**	
	RC-ICBL 8+1	**RC-09S1N8A0000**	
	RC-ICBR 8+1	**RC-09S2N8A0000**	
12-position crimp contact insert for contacts 12 x Ø 1.0 mm	**RC-ICSR 12**	**RC-12P1N8A0000**	10
	RC-ICSL 12	**RC-12P2N8A0000**	
	RC-ICBL 12	**RC-12S1N8A0000**	
	RC-ICBR 12	**RC-12S2N8A0000**	
16-position crimp contact insert for contacts 16 x Ø 1.0 mm	**RC-ICSR 16**	**RC-16P1N8A0000**	10
	RC-ICBL 16	**RC-16S1N8A0000**	
17-position crimp contact insert for contacts 17 x Ø 1.0 mm	**RC-ICSR 17**	**RC-17P1N8A0000**	10
	RC-ICBL 17	**RC-17S1N8A0000**	
19-position (16+2+PE) crimp contact insert for contacts 16 x Ø 1.0 mm / 2 x Ø 1.5 mm / 1 x Ø 1.5 mm	**RC-ICSR 16+2+PE**	**RC-1RP1NRA0000**	10
	RC-ICBL 16+2+PE	**RC-1RS1NRA0000**	
Crimping pliers for crimp contacts (see also page 41)			
Connection cross section for 6 to 17-pos. crimp contact insert [mm²] for contact Ø 1.0 mm for contact Ø 2.0 mm			
Connection cross section for 19-pos. (16+2+PE) crimp contact insert [mm²] for contact Ø 1.0 mm for contact Ø 1.5 mm			

Crimp contacts separate, rolled
male/female

RC-STCR-..., RC-BUCR-...

Type	Order No.	Pcs./ Pkt.	Included in contact insert type (page 35)
RC-STCR-1/14,8/0,22-0,56 **RC-BUCR-1/14,8/0,22-0,56**	**RC-22P2000** **RC-22S2000**	10	CRSR 12/CRSL 12 CRBL 12/CRBR 12
RC-STCR-1/14,8/0,22-0,56 **RC-BUCR-1/14,8/0,22-0,56**	**RC-22P2000** **RC-22S2000**	10	CRSR 17 CRBL 17
Crimping pliers RC 0,56	**RC-Z2130**	1	

Crimp range 0.22 – 0.56
–

–
–

Crimp contacts separate, turned
male/female

RC-S.CD-..., RC-B.CD-...

Type	Order No.	Pcs./ Pkt.	Included in contact insert type (page 35)
		10	
RC-STCD-2/14,8/1,0-1,5 **RC-BUCD-2/14,2/1,0-1,5** **RC-STCD-2/14,8/1,5-2,5** **RC-BUCD-2/14,2/1,5-2,5**	**RC-5CP2000** **RC-5CS2000** **RC-5AP2000** **RC-5AS2000**		CDSR 6K CDBL 6K CDSR 6 CDBL 6
		10	
RC-STCD-2/14,8/1,0-1,5 **RC-BUCD-2/14,2/1,0-1,5** **RC-STCD-2/14,8/1,5-2,5** **RC-BUCD-2/14,2/1,5-2,5**	**RC-5CP2000** **RC-5CS2000** **RC-5AP2000** **RC-5AS2000**		CDSR 7K CDBL 7K CDSR 7 CDBL 7
		10	
RC-STCD-1/14,8/0,14-0,56 **RC-STCD-2/14,8/1,0-1,5** **RC-STCD-2/14,8/1,5-2,5** **RC-BUCD-1/14,25/0,14-0,56** **RC-BUCD-2/14,2/1,0-1,5** **RC-BUCD-2/14,2/1,5-2,5**	**RC-12P2000** **RC-5CP2000** **RC-5AP2000** **RC-12S2000** **RC-5CS2000** **RC-5AS2000**		CDSR 8+1/CDSR 8+1K CDSL 8+1/CDSL 8+1K CDSR 8+1K/CDSL 8+1K CDSR 8+1/CDSL 8+1 CDBL 8+1/CDBL 8+1K CDBR 8+1/CDBR 8+1K CDBL 8+1K/CDBR 8+1K CDBL 8+1/CDBR 8+1
		10	
RC-STCD-1/14,8/0,14-0,56 **RC-BUCD-1/14,25/0,14-0,56**	**RC-12P2000** **RC-12S2000**		CDSR 12/CDSL 12 CDBL 12/CDBR 12
		10	
RC-STCD-1/14,8/0,14-0,56 **RC-BUCD-1/14,25/0,14-0,56**	**RC-12P2000** **RC-12S2000**		CDSR 16 CDBL 16
		10	
RC-STCD-1/14,8/0,14-0,56 **RC-BUCD-1/14,25/0,14-0,56**	**RC-12P2000** **RC-12S2000**		CDSR 17 CDBL 17
		10	
RC-STCD-1/24,3/0,25-0,5 **RC-STCD-1,5/24,3/0,75-1,0** **RC-SPCD-1,5/25,8/0,75-1,0** **RC-BUCD-1/16,5/0,25-0,5** **RC-BUCD-1,5/16,5/0,75-1,0** **RC-BPCD-1,5/16,5/0,75-1,0**	**RC-6LP2000** **RC-6EP2000** **RC-6FP2000** **RC-6LS2000** **RC-6ES2000** **RC-6FS2000**		CDSR 16+2+PE CDSR 16+2+PE CDSR 16+2+PE CDBL 16+2+PE CDBL 16+2+PE CDBL 16+2+PE
Crimping pliers RC 2,5	**RC-Z2378**	1	

Crimp range 0.14 – 0.56
Crimp range 1.0 - 1.5; Crimp range 1.5 – 2.5

Crimp range 0.25 – 0.5
Crimp range 0.75 – 1.0

RC / TU Series
Contact Inserts with 6 to 17-Position Dip Solder Contacts

Contact inserts with dip solder contacts allow efficient mounting on printed circuit boards. This reduces assembly times and wiring mistakes.

Ordering instructions:

The first step is to determine the number of positions and the connection type – Male or female.

The free solder pin length A, B, C or D is the distance between the mounting ear of the panel mounting base and the end of the dip solder contact. This distance includes the housing wall thickness and the air gap to the printed circuit board.

Contact insert and dip solder contacts male/female, free solder pin length A

E ... A

Description	Type	Dip solder pin Ø [mm]	Order No.	Pcs./ Pkt.
Dip solder contact insert, 6-position Contacts: 6 x Ø 2.0 mm	**ESR 6A** **EBL 6A**	1.5	**RC-06P1N220000** **RC-06S1N220000**	10
Dip solder contact insert, 9-position (6+3) Contacts: 6 x Ø 1.0 mm, 3 x Ø 2.0 mm	**ESR 6+3A** **EBL 6+3A**	6 x 0.6 / 3 x 1.5	**RC-63P1N220000** **RC-63S1N220000**	10
Dip solder contact insert, 9-position (8+1) Contacts: 8 x Ø 1.0 mm, 1 x Ø 2.0 mm	**ESR 8+1A** **EBL 8+1A**	8 x 0.6 / 1 x 1.5	**RC-09P1N220000** **RC-09S1N220000**	10
Dip solder contact insert, 12-position Contacts: 12 x Ø 1.0 mm	**ESR 12A** **EBL 12A**	0.6	**RC-12P1N220000** **RC-12S1N220000**	10
Dip solder contact insert, 17-position Contacts: 17 x Ø 1.0 mm	**ESR 17A** **EBL 17A**	0.6	**RC-17P1N220000** **RC-17S1N220000**	10

Technical data (see also pages 12, 28)	
Ambient temperature [°C]	-40 to +125
Materials	
Contact	CuZN
Contact surface	Ni with gold layer
Contact insert	PBT

Type description

E	S	R	6	A

Connection system
E Dip solder

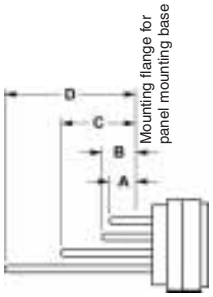
Contact
S Male
B Female

Direction of numbering
R Clockwise
L Counter-clockwise

Number of positions
06 6-position
6+3 9-position (6+3)
8+1 9-position (8+1)
12 12-position
17 17-position

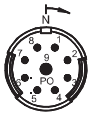
Free solder pin length
A, B, C or **D** (see table)

Type/housing design M23	Free solder pin length A [mm]	B [mm]	C [mm]	D [mm]
AAGF, AAGR	3.5	4.5	10.0	17.5
AILG	3.5	4.5	10.0	17.5
AILB	3.5	4.5	10.0	17.5
AISZ	–	–	3.5	11.0
AISG	–	–	3.5	11.0

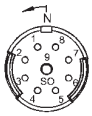


Further contact inserts/ dip solder contacts available on request.

Direction of contact chamber numbering
(view of plug-in side)



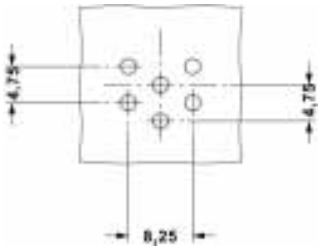
Male, clockwise (standard)



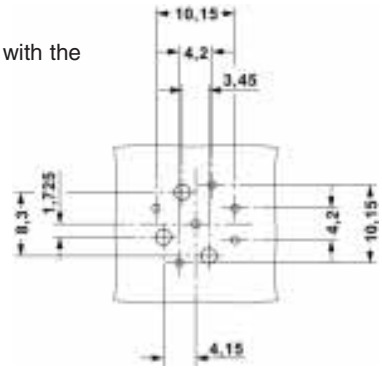
Female, counter-clockwise (standard)

PCB hole patterns

The PCB hole diameter must be adapted in line with the dip solder pin diameter (see above).



6-position



9 (6+3)-position

Contact insert and dip solder contacts male/female, free solder pin length B

E ... B

Type	Dip solder pin Ø [mm]	Order No.	Pcs./ Pkt.
ESR 6B EBL 6B	1.5	RC-06P1N320000 RC-06S1N320000	10
ESR 6+3B EBL 6+3B	6 x 1.0 / 3 x 1.5	RC-63P1N320000 RC-63S1N320000	10
ESR 8+1B EBL 8+1B	8 x 1.0 / 1 x 1.5	RC-09P1N320000 RC-09S1N320000	10
ESR 12B EBL 12B	1.0	RC-12P1N320000 RC-12S1N320000	10
ESR 17B EBL 17B	1.0	RC-17P1N320000 RC-17S1N320000	10

-40 to +125

CuZN
Ni with gold layer
PBT

Contact insert and dip solder contacts male/female, free solder pin length C

E ... C

Type	Dip solder pin Ø [mm]	Order No.	Pcs./ Pkt.
ESR 6C EBL 6C	1.5	RC-06P1NA20000 RC-06S1NA20000	10
ESR 6+3C EBL 6+3C	6 x 1.2 / 3 x 1.5	RC-63P1NA20000 RC-63S1NA20000	10
ESR 8+1C EBL 8+1C	8 x 1.2 / 1 x 1.5	RC-09P1NA20000 RC-09S1NA20000	10
ESR 12C EBL 12C	1.2	RC-12P1NA20000 RC-12S1NA20000	10
ESR 17C EBL 17C	1.2	RC-17P1NA20000 RC-17S1NA20000	10

-40 to +125

CuZN
Ni with gold layer
PBT

Contact insert and dip solder contacts male/female, free solder pin length D

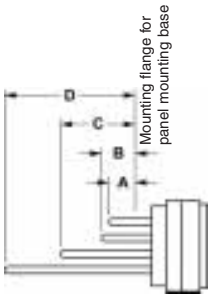
E ... D

Type	Dip solder pin Ø [mm]	Order No.	Pcs./ Pkt.
ESR 6D EBL 6D	1.5	RC-06P1NC20000 RC-06S1NC20000	10
ESR 6+3D EBL 6+3D	6 x 1.2 / 3 x 1.5	RC-63P1NC20000 RC-63S1NC20000	10
ESR 8+1D EBL 8+1D	8 x 1.2 / 1 x 1.5	RC-09P1NC20000 RC-09S1NC20000	10
ESR 12D EBL 12D	1.2	RC-12P1NC20000 RC-12S1NC20000	10
ESR 17D EBL 17D	1.2	RC-17P1NC20000 RC-17S1NC20000	10

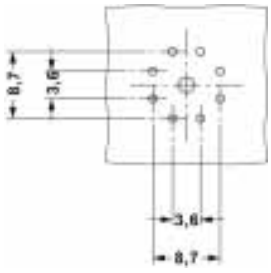
-40 to +125

CuZN
Ni with gold layer
PBT

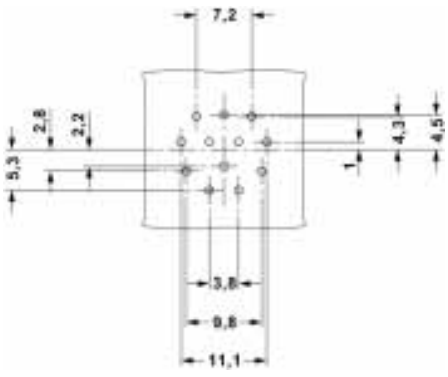
Type/housing design Bayonet	Free solder pin length A [mm]	B [mm]	C [mm]	D [mm]
BAAGA	–	3.5	9.0	16.5
BAIGF	2.5	3.5	9.0	16.5
BAIGR	2.5	3.5	9.0	16.5



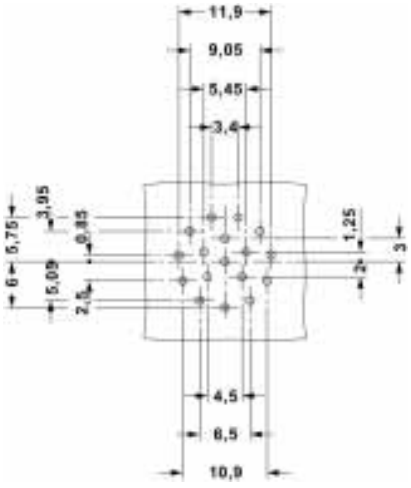
Further contact inserts/ dip solder contacts available on request.



9 (8+1)-position



12-position



17-position

Signal Connectors
Tools • Accessories

A range of protective caps is available for signal connectors with M23 screw locking / bayonet locking to protect the contact elements in the case of a separate plug connection.

This prevents the ingress of dust and moisture.

The wire is fixed to the housing panel and prevents the protective cap from being lost.

Metal protective cap

MSK...

Plastic protective cap

KSK...

Description	Degree of protection in locked state	Type	Order No.	Pcs./ Pkt.	Type	Order No.	Pcs./ Pkt.
Metal dust protection cap for M23 cable conn. receptacles and panel mounting conn.	IP 67	**MSK 1**	**RC-Z2104**	10			
Metal dust protection cap for M23 cable conn. receptacles and panel mounting conn., with steel wire	IP67	**MSK 2**	**RC-Z2064**	10			
Metal dust protection cap for M23 sleeve connectors, with steel wire	IP67	**MSK 3**	**RC-Z2062**	10			
Metal dust protection cap for bayonet cable conn. receptacles and panel mounting conn, with steel wire	IP67	**MSK 4**	**TU-Z2317**	10			
Plastic dust protection cap for M23 cable conn. receptacles and panel mounting conn.	IP40				**KSK 1**	**RC-Z2059**	10
Plastic dust protection cap for M23 sleeve connectors	IP40				**KSK 3**	**RC-Z2058**	10
Plastic dust protection cap for bayonet cable conn. receptacles and panel mounting conn.	IP40				**KSK 4**	**TU-Z2002**	10
Plastic dust protection cap for bayonet sleeve connectors	IP40				**KSK 5**	**TU-Z2003**	10

M23 • UC Series
Cable Gaskets

Single gaskets are also available for the sleeve and connecting housings in the M23 UC series in addition to the universal notched sealing rings which are included in the scope of supply. These can be obtained to suit the given cable diameter.

Sleeve and connecting housings with an additional thread can be equipped with a second cable strain relief for increased loads.

Notched sealing rings, single gaskets

PKV...

Double bracket strain relief for sleeve and connecting housings

PZKV DB...

Description		Type	Order No.	Pcs./ Pkt.	Type	Order No.	Pcs./ Pkt.
Notched sealing ring for cable diameters 6/8/10/12.5/15 mm		**PKV 6/8/10/12,5/15**	**UC-Z2351**	10			
Single gasket	Cable diameter			10			
	9 mm	**PKV 09**	**UC-Z2343**				
	10 mm	**PKV 10**	**UC-Z2344**				
	12 mm	**PKV 12**	**UC-Z2346**				
	14 mm	**PKV 14**	**UC-Z2348**				
	15.5 mm	**PKV 15,5**	**UC-Z2349**				
Double bracket strain relief for additional Pg thread	Cable entry						10
	Pg 13.5				**PZKV DB 13,5**	**RC-Z2036**	
	Pg 16				**PZKV DB 16**	**UC-Z2039**	

Crimping pliers RC 0,56 and RC 2,5 are used for rolled or turned crimp contacts.

Crimping tool RC 2,5 with 4-arbor pressing is suitable for crimping turned contacts. It is equipped with a positioner for 12 different contact types and 4 crimp settings.

Crimping tools for rolled/turned contacts

Crimping pliers RC...

Description	Type	Order No.	Pcs./ Pkt.
Crimping pliers for rolled crimp contacts 0.08 to 0.56 mm²	**Crimping pliers RC 0,56**	**RC-Z2130**	1
Crimping pliers with positioner for turned crimp contacts 0.14 to 2.5 mm²	**Crimping pliers RC 2,5**	**RC-Z2378**	1

Contact insertion and removal tool

EW..., RC-EW-CT

Type	Order No.	Pcs./ Pkt.
EWR	**RC-Z2097**	1
EW PS1	**RC-Z2274**	1
EW D2	**RC-Z2220**	1
RC-EW-CT	**RC-Z2290**	1
RC-EW-W	**RC-Z2103**	1

Contact insertion and removal tool for male/female Ø 1 mm 0.14 to 0.56 mm², AWG 26-20

Contact insertion and removal tool for male/female Ø 1.5 mm to 1.0 mm², AWG 17

Contact insertion and removal tool for male/female Ø 2 mm, turned up to 2.5 mm², AWG 13

Contact removal tool for latching rings in panel mounting bases

Contact insertion tool for angled panel mounting bases (AAWF)

Latching ring for panel mounting bases

ERR-K

Description	Type	Order No.	Pcs./ Pkt.
Replacement latching ring, plastic for panel mounting bases	**ERR-K**	**RC-Z2382**	10

The pipe spanner is used together with a wrench to screw the internal sleeve to the adapter cap.

Pipe spanner for sleeve and connecting housings

RCS-T / RCS-K

Description	Type	Order No.	Pcs./ Pkt.
Special pipe spanner for sleeve housings	**RCS-T**	**RC-Z2099**	1
Special pipe spanner for connecting housings	**RCS-K**	**RC-Z2096**	1

Signal Connectors
Ordering Information

Coninvers circular connectors are supplied as individual components.

Orders are dispatched directly from the warehouse, thus enabling short delivery times.

Flexible combinations of housings, cable glands and contact inserts facilitate warehousing.

Ordering example: 17-position cable connector (sleeve connector and cable connecting receptacle)

Description	Type/housing design	Order No.	Qty.
Sleeve housing, unshielded with Pg 11	TGUM 11	**RC-00000001200**	1
Solder contact carrier, 17-position, male	LSR 17	**RC-17P1N120000**	1
Cable gland	KVD 11	**RC-Z2196**	2
Connecting housing, unshielded with Pg 11	KGUM 11	**RC-00000007200**	1
Solder contact carrier, 17-position, female	LBL 17	**RC-17S1N120000**	1

Ordering example: 17-position panel mounting connector (receptacle)

Description	Type/housing design	Order No.	Qty.
Panel mounting base, external, straight	AAGF	**RC-00000002200**	1
Solder contact carrier, 17-position, female	LBL 17	**RC-17S1N120000**	1

Ordering example: 9-position (8+1) male crimp contact carrier separate and crimp contacts separate

Description	Type	Order No.	Qty.
9-pos. crimp contact insert, male, clockwise	RC-ICSR 8+1	**RC-09P1N8A0000**	1
Crimp contacts separate, turned Ø 1.0 Crimp range 0.14-0.56 mm²	RC-STCD-1/14,8/01,4-0,56	**RC-12P2000**	8
Crimp contacts separate, turned Ø 2.0 Crimp range 1.0-1.5 mm²	RC-STCD-2/14,8/1,0-1,5	**RC-5CP2000**	1

Appendix
Technical Terms

The explanations of the most important technical terms used in the catalog rely heavily on explanations given in VDE 0627 (DIN EN 61984). Please consult this standard should you require more detailed descriptions than those given here. All explanations refer to connectors.

Connector

This must be differentiated from the term plug or plug-in socket device. A connector is a component to which electrical conductors (cables) are connected in order to connect these to, or disconnect them from, another component or device. When used in accordance with their designated use, connectors must not be inserted or withdrawn under voltage.

Insertion/withdrawal cycle

An insertion/withdrawal cycle refers to a connection and disconnection procedure in the isolated, off-load state.

Upper limit temperature, lower limit temperature (temperature range)

Maximum permitted temperature at which a connector may be operated. It includes the increase in temperature of the contacts caused by electricity and the ambient temperature.

Nominal voltage

The term nominal voltage is used synonymously with the term rated voltage. Rated voltage is the voltage used for dimensioning connectors. Some operating properties are defined with reference to this.

The equation specified in the data sheet between effective AC voltage value U_{rms} (where $U_{max} = 1.414 \times U_{rms}$) and the DC voltage refers to the electrical transmission capacity.

Nominal current

The term nominal current is used synonymously with the term rated current. The rated current is the current which the connector can carry continuously (without interruption) at an ambient temperature of 25°C and which flows through all the connector contacts which are connected to the largest possible conductor. The upper limit temperature is not exceeded.

Test voltage (see also IEC 664-1)

The term test voltage is used synonymously with the term rated surge voltage. It refers to the defined capability of the insulation to withstand anticipated surge voltages. The impulse withstand voltage is the highest peak value of a surge voltage with a specified characteristic (n x KV (1.2/50 µs) which does not cause insulation breakdown under defined conditions.

Surge voltage category (see also IEC 664-1)

Classification of electrical device (connector) according to anticipated surge voltage state. There are 4 surge voltage categories. The category class depends on the level of the nominal voltage (operating voltage) and the selected rated surge voltage or the amplitude depending on the given design (1.2/50 µs).

Surge voltage category II:

Connectors for applications in systems or system parts for which lightning protection voltages do not need to be specified.

Surge voltage category III

Connectors for applications in systems or system parts for which lightning protection voltages do not need to be specified, but for which special requirements are defined regarding the safety and availability of the connector.

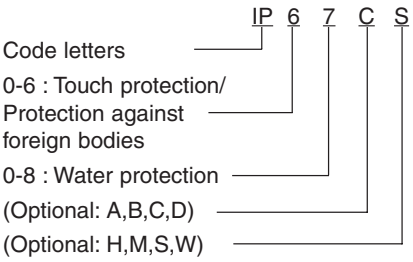
Contamination class (see also IEC 664-1)

Specification of a numeric value (1 to 4) for a category/class which characterizes the contamination to be anticipated in the immediate vicinity of the connector. Accumulations of solid, liquid or gaseous foreign matter cause a decrease in the breakdown strength or surface resistance of the insulation. The contamination class depends on the rated voltage and the material used. This is used to calculate the minimum values for the air and creepage distances which are incorporated in the dimensioning of the connector.

Degrees of protection (DIN VDE 0470-1; EN 60529)

The degree of protection of housings is specified according to an “IP” classification. In the case of connectors, this specification is designed to ensure:

- Protection of persons with regard to access to dangerous parts (touch protection).
- Protection of the connector with regard to the ingress of solid foreign bodies (protection against ingress of solid foreign bodies).
- Protection of the connector with regard to damage caused by the ingress of water (protection against water).



Example: IP66/67:
Touch protection: Protection against touching a wire
Protection against foreign bodies: Dust-tight
Water protection: Protection against powerful jetting and temporary immersion in water

The technical data specified by Coninvers refers exclusively to connectors. All specifications are non-binding product descriptions.

No liability for typing/printing errors. Subject to change without notice.

The general terms of business of Coninvers GmbH apply exclusively.
Samples for presentation are not tested with reference to the technical properties specified in the catalog.

Appendix
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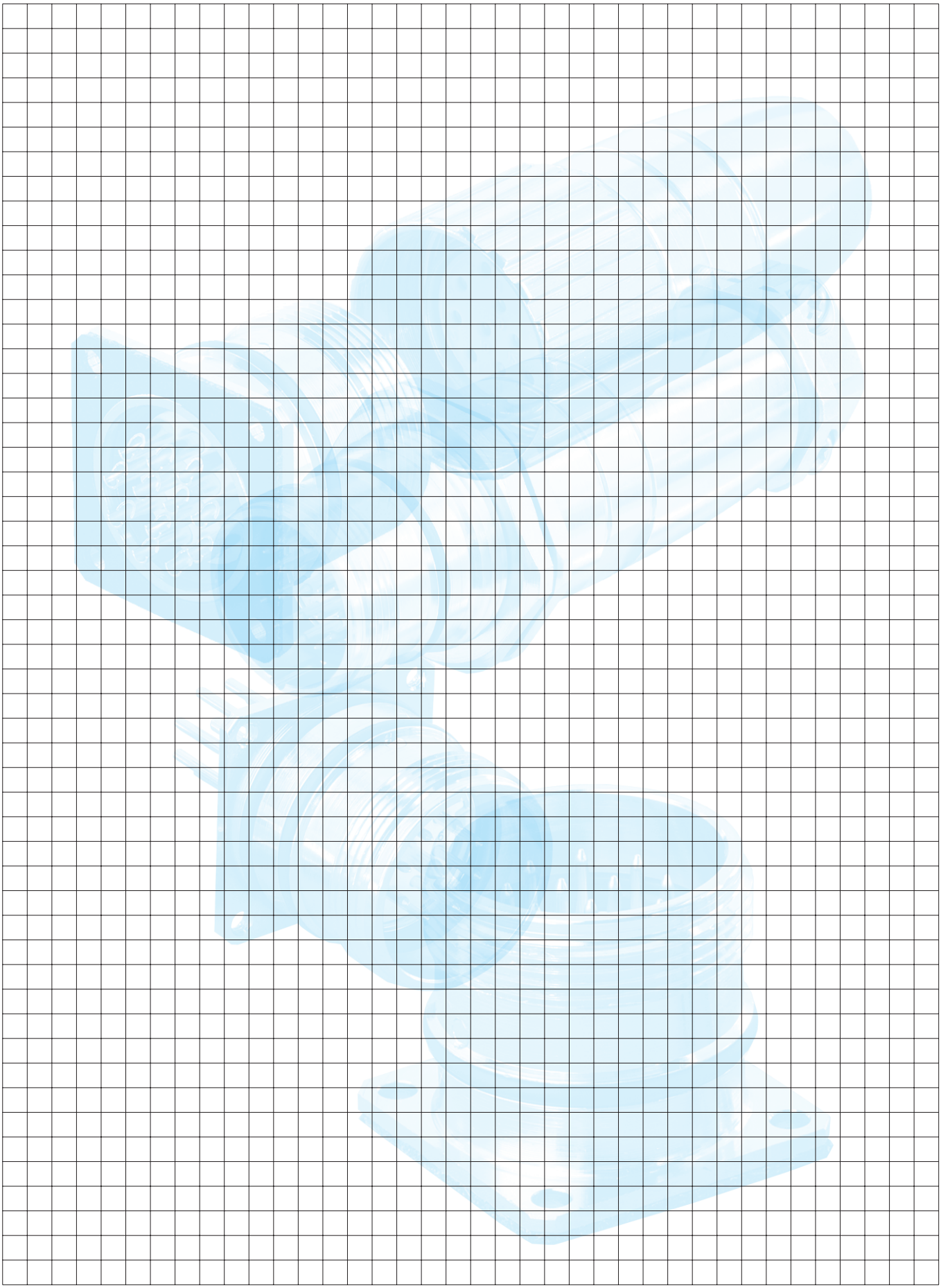
TGGM	RC-000000080FZ	14
TGGMK	RC-0000000K0FZ	14
TGGUM	UC-000000080DU	16
TGGUM 13,5	UC-0000000R3DU	16
TGGUM 16	UC-0000000RNDU	16
TGUM 09	RC-00000001100	15
TGUM 11	RC-00000001200	15
TGUM 13	RC-00000001300	15
TGUM M16	RM-00000001100	15
TGUM M20	RM-00000001300	15
TWGM	RC-0000000T0FZ	14
TWGUM	UC-0000000T0DU	16
TWGUM 13,5	UC-0000000N3DU	16
TWGUM 16	UC-0000000NNDU	16
TWUM 09	RC-0000000Z100	15
TWUM 11	RC-0000000Z200	15
TWUM 13	RC-0000000Z300	15
TWUM M16	RM-0000000Z100	15
TWUM M20	RM-0000000Z300	15

Appendix
Index of order numbers in numerical order



Coninvers GmbH
Heisenbergstr. 1
D-71083 Herrenberg, Germany
Phone: +49 (0) 70 32/92 74-0
Fax: +49 (0) 70 32/92 74-330
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❏ Please quote me a price:

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Heisenbergstr. 1
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Fax +49 (0) 70 32/92 74-330
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info@coninvers.com

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