EMI/RFI shielding interconnection systems

Inotec® electronics

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For more than 45 years, the benchmark for EMI/RFI shielding interconnection systems

Inotec electronics GmbH is an internationally active, independent medium-sized enterprise in which value creation, stability and sustainability take precedence over growth and sales orientation. From the very beginning, Inotec has focused on applications with the highest requirements for interference-free signal and data transmission. Through its consistent focus on innovative, technical and high-quality products, the company has established itself as a technology leader in the market for shielded connectivity solutions. Through a high degree of flexibility, individual advice and openness to customer-specific solutions, we have been setting standards in connector technology for more than 45 years.

What we stand for

- Value orientation and social responsibility towards customers, suppliers, employees and the corporate environment.
- Made in Germany is our premise, even with subcontracted parts.
- Regionally rooted and networked: All products are developed and manufactured at our site in Lauffen am Neckar.
- International presence: We advise and supply customers on all continents directly or through competent sales partners.

1979

Foundation as sales and engineering company. Development of the first D-D-Sub connector solutions.

1981

Development of the first EMI/RFI shielding full-metal hood for D-Sub connectors, combined with a 360° contacting of the cable shield: The original "crimp flange system".

1985

Change of name to Inotec electronics GmbH. Expansion of the product range to become the world's largest range of interference-resistant full metal housings for D-Sub connectors.

1993

Expansion of the production area with the move from Heilbronn to the new company building in Lauffen a. N.

1997

Development and presentation of the first D-Sub enclosure with integrated bus system.

1999

Introduction of the MSE/F series for DIN 41612 PCB connectors. Inotec thus makes the patented crimp flange system also available for this key application in railway technology.

2003

Opening of the new building at the Lauffen site and expansion of the R&D area with EMC laboratory.

2006

Expansion of the D-Sub range to include additional Profibus connectors and impedance-controlled special connectors.

We are at our best everywhere the highest degree of safety and reliability in data and signal transmission is needed. Typical fields of application are Railway and Semiconductor industry, high-end microscopy or defence technology.

Inotec connector systems – "safe, robust and reliable"

Inotec electronics develops and manufactures high-end connector systems for demanding industrial customers with with particular requirements of safety and reliability. Whether it is interference-free signal transmission for door or brake control in trains, the reliable construction of communication and monitoring systems or the protected transmission of highly sensitive measurement data: Inotec always offers the optimal interface solution between cable and end device.

Safe
With its unique and patented crimp flange technology and a consistent full metal hood system Inotec provides a maximum shielding against disturbances through electromagnetic fields or radio frequency interferences.

Robust
The complete system, including connectors, hood, fixation and cable connection guarantees an outstanding mechanical toughness due to high-end materials, tight tolerances and a solid design.

Reliable
By identifying the optimal processing parameters for every cable type we guarantee a maximum static and dynamic load capacity. High-precision gold-plated class 1 quality contacts assure permanently low transition resistances even after numerous mating cycles.

2008
With its patented coding system for D-Sub connectors, Inotec sets the standard for robust, reliable coding without taking up additional installation space.

2011
Introduction of the first generation of M12 circular connectors, fully compatible with the Inotec crimp flange system.

2014
Introduction of a standardized test method for the tensile and torsional strength of cable-specific crimp flange assemblies.

2017
Development and introduction of the first compact cable gland with crimp flange technology for narrow installation spaces.

2018
Presentation of the world's first 15HD flex-rigid PCB for piggy-back adaptors.

2019
Celebration of the company's 40th anniversary.

2021
Expansion of the M30 series with 37-way distributor housings and adaptor hoods for field assembly.

2023
"One for all": The new HZ202 handheld crimping tool offers maximum leverage for all diameters.

Directory

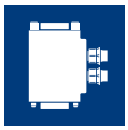
D-Sub interconnection systems

D-Sub full metal hoods for slide locks and quick-release locks 7

M1 / M2 series	with slide lock	9
M3 series	with quick-release lock	18
M5 series	with compact quick-locking system	24

D-Sub full metal hoods with screw locking 26

MS series	maximum bandwidth and versatility	28
MSB series	the universal solution for data bus applications	43
MSBS series	compact data bus connectors for high packing density	46
MSX series	for highest safety requirements	50



Adaptor hoods for special applications 56

M11 series	low-profile hood with 30° cable entry	61
M30 series	universal housing with 90° cable entries	67
Accessories	blind plates, PCB, snap-on hooks and crimp adaptors	74

D-Sub connectors, contacts, coding system 78

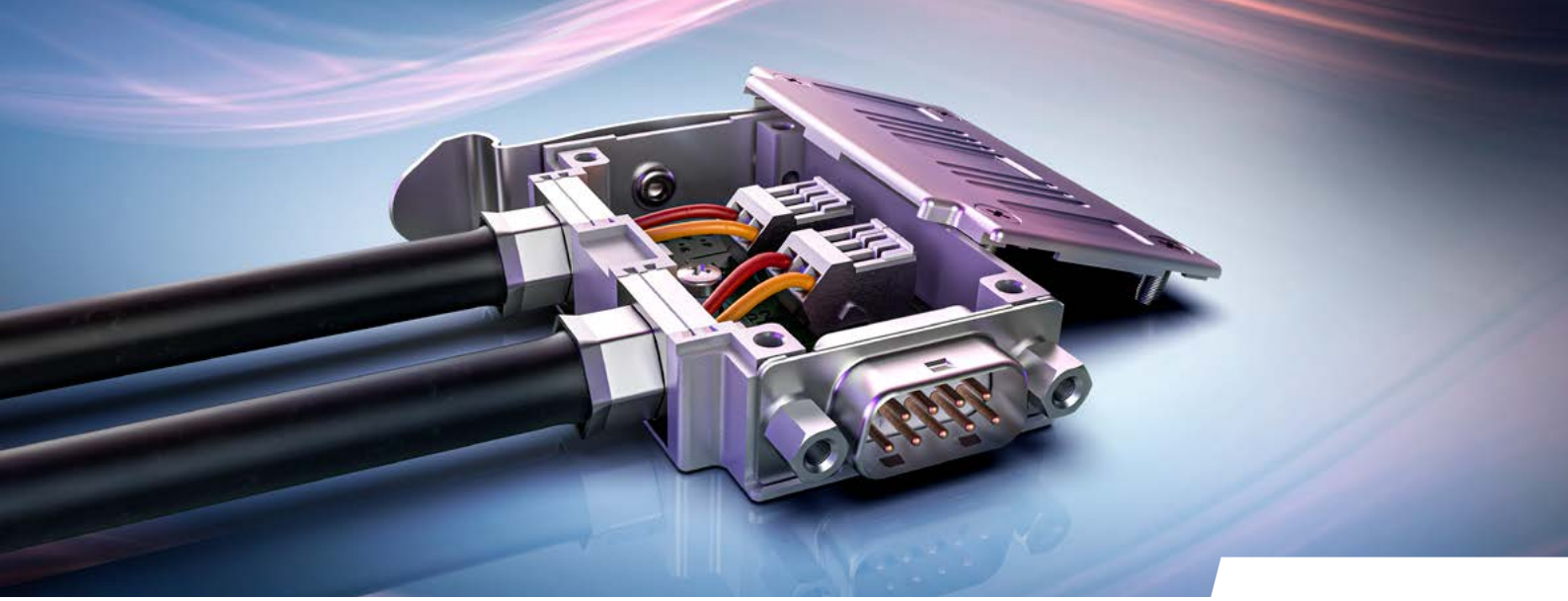
DC series	D-Sub connectors with crimp contacts	79
DE series	D-Sub connectors with solder-cup and dip-solder contacts	81
Accessories	components and assembly devices for Inotec coding system	82

IEC 60603-2 (DIN 41612) connector systems

EMC-compliant and robust hood systems for 19" racks 85

MSF-3 / MSF-1 series	direct PCB-mount system incl. PCB-holder, types E, F, H	86
MSF-92 / MSE-92 series	panel-mount system, types E, F	88

All dimensions on component drawings are given in mm.
Subject to technical changes and errors.



M12 connectors

M12 connector system for field assembly 93

MSR12 / MRR12 series full-metal hoods male / female, D- and A-coding 95
Accessories crimp contacts, insulator bodies and assembly devices 97

EMC-compliant cable connections

Components for crimp flange system, cable clamps and blind plugs 99
Crimp adaptors for MIL-type and other circular connectors 104
Cable glands for crimp flange system 106

Tools

Inotec-tools for cable processing and assembly 109

Technical information

Protection against radiation interferences 117
Original Inotec crimp flange system 119
Inotec coding system for D-Sub interfaces 122
Zamak-Protect – conductive surface protection 126
Requests, technical support and contact data 128

All dimensions on component drawings are given in mm.
Subject to technical changes and errors.

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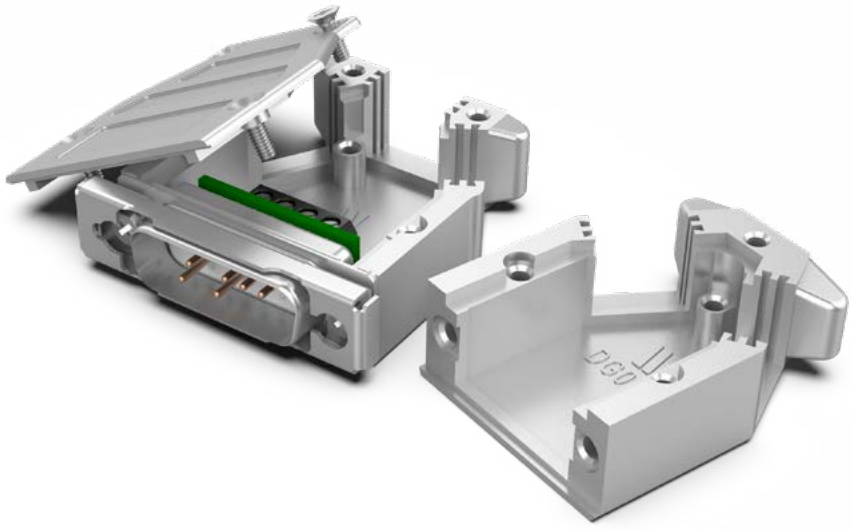
D-Sub interconnection systems

D-Sub full metal hoods for slide locks and quick-release locks

Most common areas of application for sliding and quick-release locks are in particular D-Sub connections with frequent mating cycles or in difficult installation positions, where a screwed lock would be problematic or too time-consuming due to access.

Typical application examples can be found, for example, on test benches and prototype setups, modular controllers or in the use of mobile testing and diagnostic devices. Often, this type of application also places high demands on electromagnetic compatibility (EMC), which in turn requires a high degree of interference radiation protection by means of continuous shielding with regard to the connector.

As a specialist for radiation-proof connection systems, Inotec electronics has developed the M1, M2, M3 and M5 series, a range specially designed to be combined with quick-release and slide locks.



The essential properties for a safe, robust and EMC-compliant quick locking system:

- EMC-compliant housing design
- HF-shielding full-metal housing made of die-cast zinc with labyrinth cover
- Unused cable entries are sealed with blind plugs
- Built-in grounding point
- Ergonomically designed housing shape (avoids pulling on the cable)
- Minimal transition resistance to shielded cables in combination with Inotec crimp flange technology in dovetail design
- High-quality and durable components for reliable long-term use
- Fast and safe locking and unlocking
- Reliable protection against self-release under tension or vibration with high mechanical load capacity
- Interference-free and continuous ground contact with the mating plug

Screws and bolts

M1 / M2 / M3
Shoulder screw
4-40 UNC x 7,5 mm
PZ1

thread forming

Art.-No.
DZ-AS1

M1 / M2 / M5
Locking bolt
4-40 UNC x 8 mm
hexagon bolt AF5

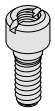
incl. nut, washer, spring washer

Art.-No.
DV-B1/1

M1 / M2
Locking bolt
4-40 UNC x 12,9 mm
hexagon bolt AF5

incl. nut, washer, spring washer

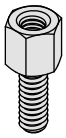
Art.-No.
DV-B1/2



M1 / M2
Jackscrew for coding
cylinder head, slotted

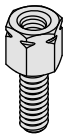
internal / external thread

Art.-No.
KOB-4-40/4-40C1
KOB-M3/4-40C1
KOB-M3/M3C1
KOB-4-40/M3C1



M1 / M2
4-40 UNC
hexagon bolt AF5

Art.-No.
DV-B2/2-C1



M1 / M2
M3 / 4-40 UNC
hexagon bolt AF5

Art.-No.
DV-B2/2M3-C1

Cover screws
M2,5
flat head PZ1

thread forming

Art.-No.
DZ-SS1 (M2,5x7)

Grounding screw
M2,5
raised head PZ1

thread forming

Art.-No.
DZ-ES1

Recommended tightening torque for

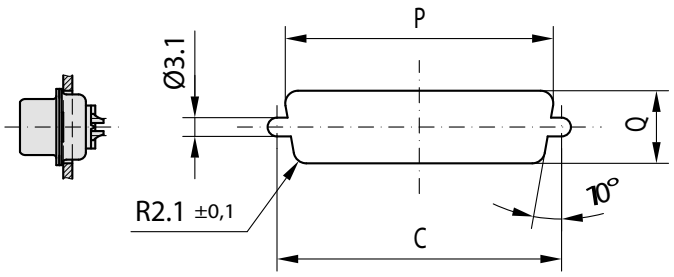
- Locking screws and bolts = 0,5 - 0,6 mm
- Thread forming cover and grounding screws DZ-SS1 and DZ-ES1 = max. 0,5 Nm

Panel cutout

Panel cutouts for front / rear panel mount according DIN 41 652-3

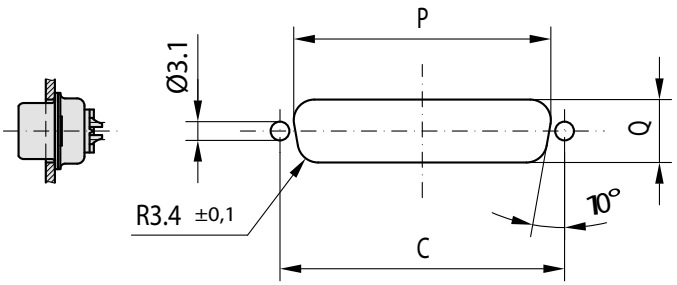
Front panel mount

Size	C (± 0,13)	P (± 0,13)	Q (± 0,13)
9	25,00	22,20	12,00
15	33,30	30,50	12,00
25	47,04	44,30	12,00
37	63,50	60,70	13,00
50	61,10	58,30	14,80



Rear panel mount

Size	C (± 0,13)	P (± 0,13)	Q (± 0,13)
9	25,00	20,50	10,40
15	33,30	28,80	10,40
25	47,04	42,50	10,40
37	63,50	59,10	10,40
50	61,10	56,30	13,10

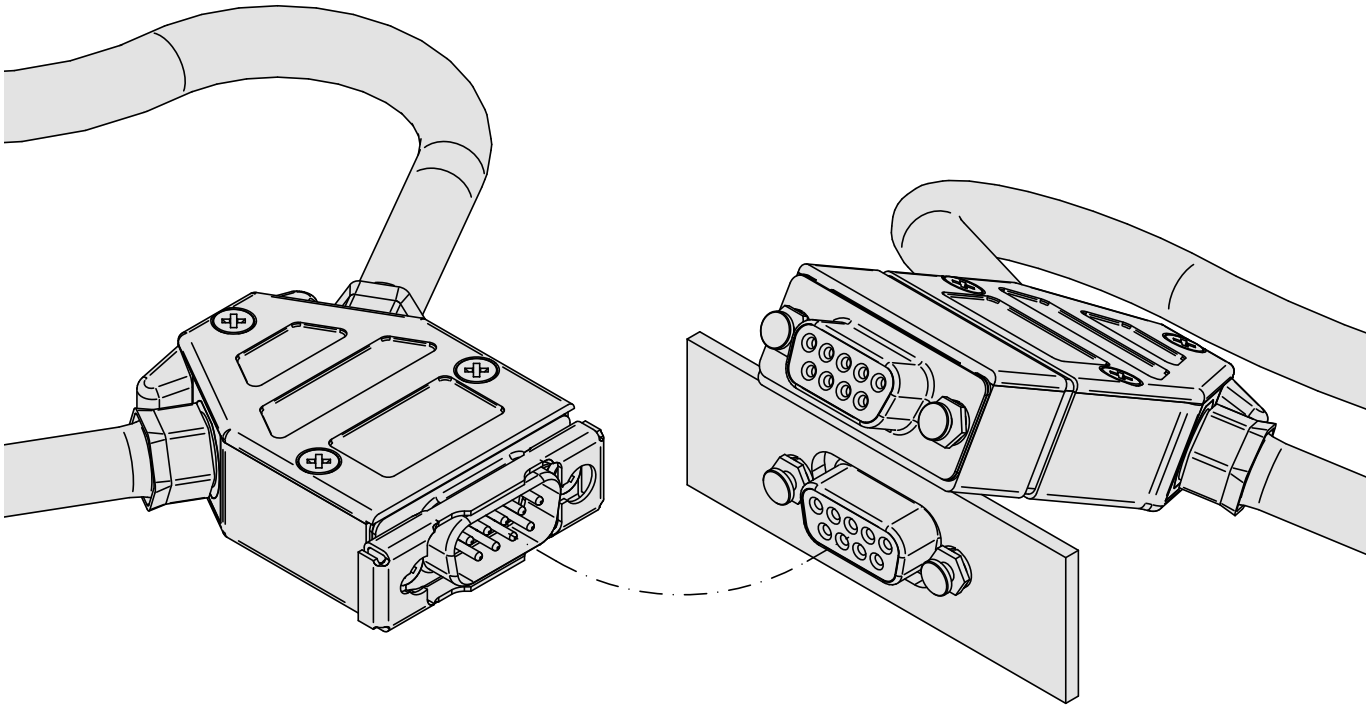


M1 / M2 series with slide lock

During the development of the M1 and M2 series, Inotec focused in particular on simple and reliable operability as well as high holding forces.
Despite a space-saving, compact design, the 9-way version of the series already offers 2 cable inputs and leaves enough space, e.g. for looping cables through. Optionally, the M1 housings are available with internal threads and thus may be used as coupling plugs with sliding or screw locking. When used as a coupling, the M1 series is also compatible with the Inotec coding system. The M2 series has been extended by 15 mm compared to the M1 and thus allows the installation of filters or assembled circuit boards or offers additional space, e.g. for the cabling of mixed, coaxial or flat cable connectors.

Special features:

- Standard version with thread-forming fixation screws for secure fastening of the slider
- M2 version with extended interior space for circuit boards or mixed cabling
- Variants with internal thread can be used as coupling plugs



Instructions for installation

Panel cutouts see page 8
Maximum panel thickness for rear panel assemblies 2,5 mm

Selection table

Series	Art.-No.	Cable entry / entries	Style		cod.	Page
D-Sub 9-way / HD 15						
M1	**DG09M1**	2x 30°	for slide locks			12
	DG09M1/4-40	2x 30°	internal thread 4-40 UNC	coupling connector	■	12
	DG09M1-3	2x 30°	internal thread M3	coupling connector	■	12
M2	**DG09M2**	2x 30°	for slide locks	extended version		12
D-Sub 15-way / HD 26						
M1	**DG15M1**	1x 0°, 2x 30°	for slide locks			13
	DG15M1/4-40	1x 0°, 2x 30°	internal thread 4-40 UNC	coupling connector	■	13
	DG15M1-3	1x 0°, 2x 30°	internal thread M3	coupling connector	■	13
M2	**DG15M2**	1x 0°, 2x 30°	for slide locks	extended version		13
D-Sub 25-way / HD 44						
M1	**DG25M1**	1x 0°, 2x 30°	for slide locks			14
	DG25M1/4-40	1x 0°, 2x 30°	internal thread 4-40 UNC	coupling connector	■	14
	DG25M1-3	1x 0°, 2x 30°	internal thread M3	coupling connector	■	14
M2	**DG25M2**	1x 0°, 2x 30°	for slide locks	extended version		14
D-Sub 37-way / HD 62						
M1	**DG37M1**	1x 0°, 2x 30°	for slide locks			15
	DG37M1/4-40	1x 0°, 2x 30°	internal thread 4-40 UNC	coupling connector	■	15
	DG37M1-3	1x 0°, 2x 30°	internal thread M3	coupling connector	■	15
M2	**DG37M2**	1x 0°, 2x 30°	for slide locks	extended version		15
D-Sub 50-way / HD 78						
M1	**DG50M1**	1x 0°, 2x 30°	for slide locks			16
	DG50M1/4-40	1x 0°, 2x 30°	internal thread 4-40 UNC	coupling connector	■	16
	DG50M1-3	1x 0°, 2x 30°	internal thread M3	coupling connector	■	16
M2	**DG50M2**	1x 0°, 2x 30°	for slide locks	extended version		16

Accessories and spare parts

Series	Art.-No.	Size / number of poles	Style		Page
D-Sub 9-way / HD 15					
M1 / M2	**DV09G1**	D-Sub 09 / HD 15	Sliding part for slide lock		17
	DV09G2	D-Sub 09 / HD 15	Sliding part for slide lock	incl. shoulder screws	17
D-Sub 15-way / HD 26					
M1 / M2	**DV15G1**	D-Sub 15 / HD 26	Sliding part for slide lock		17
	DV15G2	D-Sub 15 / HD 26	Sliding part for slide lock	incl. shoulder screws	17
D-Sub 25-way / HD 44					
M1 / M2	**DV25G1**	D-Sub 25 / HD 44	Sliding part for slide lock		17
	DV25G2	D-Sub 25 / HD 44	Sliding part for slide lock	incl. shoulder screws	17
D-Sub 37-way / HD 62					
M1 / M2	**DV37G1**	D-Sub 37 / HD 62	Sliding part for slide lock		17
	DV37G2	D-Sub 37 / HD 62	Sliding part for slide lock	incl. shoulder screws	17
D-Sub 50-way / HD 78					
M1 / M2	**DV50G1**	D-Sub 50 / HD 78	Sliding part for slide lock		17
	DV50G2	D-Sub 50 / HD 78	Sliding part for slide lock	incl. shoulder screws	17
All sizes					
M1 / M2	**DV-B1/1**	Locking bolt L 8,0			17
	DV-B1/2	Locking bolt L 12,9			17

Standard packing units

Inotec full-metal hoods and accessories of the M1 and M2 series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15	36 pcs.
D-Sub 15-way / HD 26	30 pcs.
D-Sub 25-way / HD 44	24 pcs.
D-Sub 37-way / HD 62	18 pcs.
D-Sub 50-way / HD 78	15 pcs.

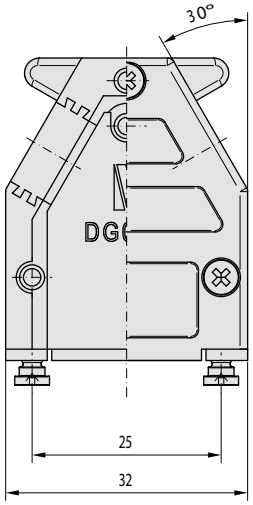
Hoods, cover and grounding screws, shoulder screws and blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1)

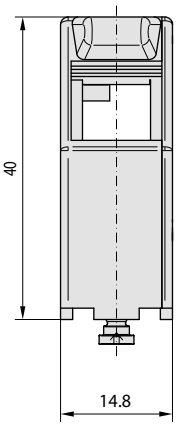
M1 / 9-way / cable entries 2x 30°

Art.-No. DG09M1

Specification
- For D-Sub connectors 9-way and HD 15
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 2 cable entries lateral (30°) for CF100 / 300 and DKS100 / 300

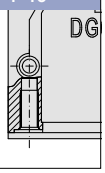
Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5

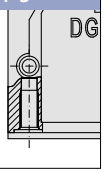




Product variants

Art.-No. DG09M1/4-40	Art.-No. DG09M1-3
Internal thread 4-40 UNC coupling connector codable	Internal thread M3 coupling connector codable



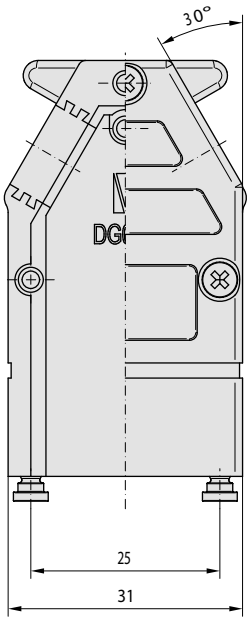


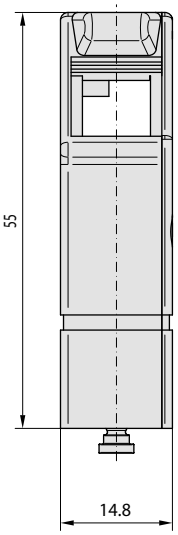
M2 / 9-way / extended version / cable entries 2x 30°

Art.-No. DG09M2

Specification
- For D-Sub connectors 9-way and HD 15
- Extended version (55 mm installation height without cable connection) with enlarged installation space (e. g. for special wiring, integrated PCB, ...)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 2 cable entries lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5





M1 / 15-way / cable entries 1x 0° and 2x 30°

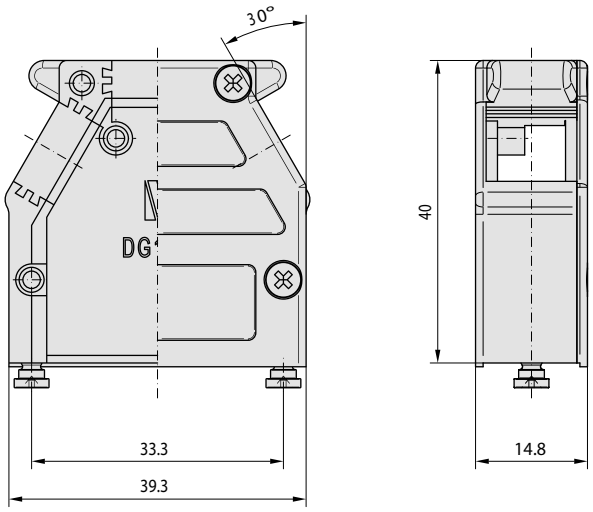
Art.-No. DG15M1

Specification

- For D-Sub connectors 15-way and HD 26
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

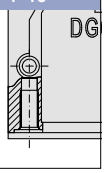
Scope of delivery

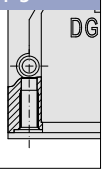
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

Art.-No. DG15M1/4-40	Art.-No. DG15M1-3
Internal thread 4-40 UNC coupling connector codable	Internal thread M3 coupling connector codable





M2 / 15-way / extended version / cable entries 1x 0° and 2x 30°

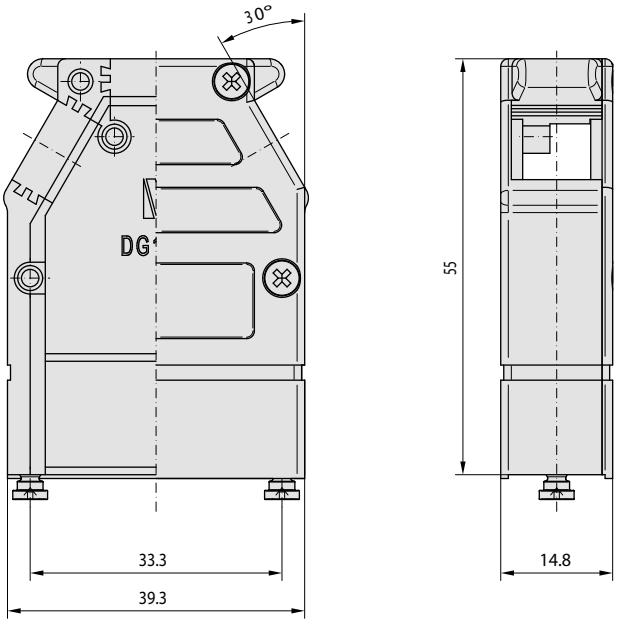
Art.-No. DG15M2

Specification

- For D-Sub connectors 15-way and HD 26
- Extended version (55 mm installation height without cable connection) with enlarged installation space (e. g. for special wiring, integrated PCB, ...)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery

- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5

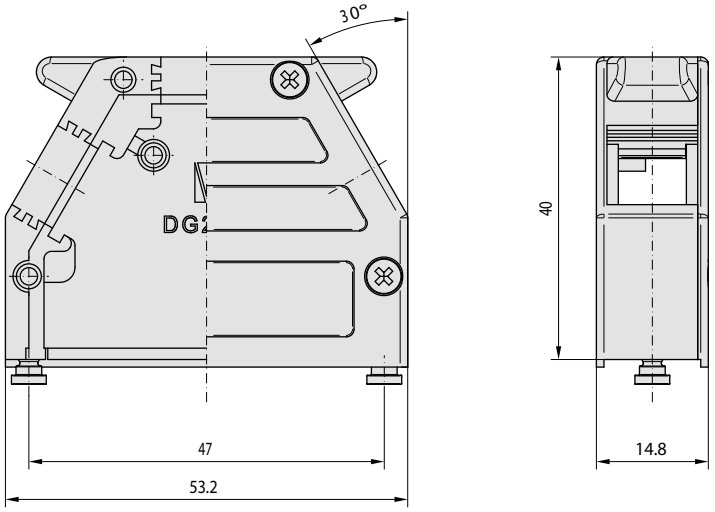


M1 / 25-way / cable entries 1x 0° and 2x 30°

Art.-No. DG25M1

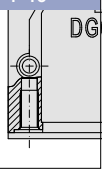
Specification
- For D-Sub connectors 25-way and HD 44
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

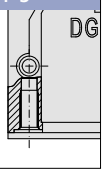
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

Art.-No. DG25M1/4-40	Art.-No. DG25M1-3
Internal thread 4-40 UNC coupling connector codable	Internal thread M3 coupling connector codable



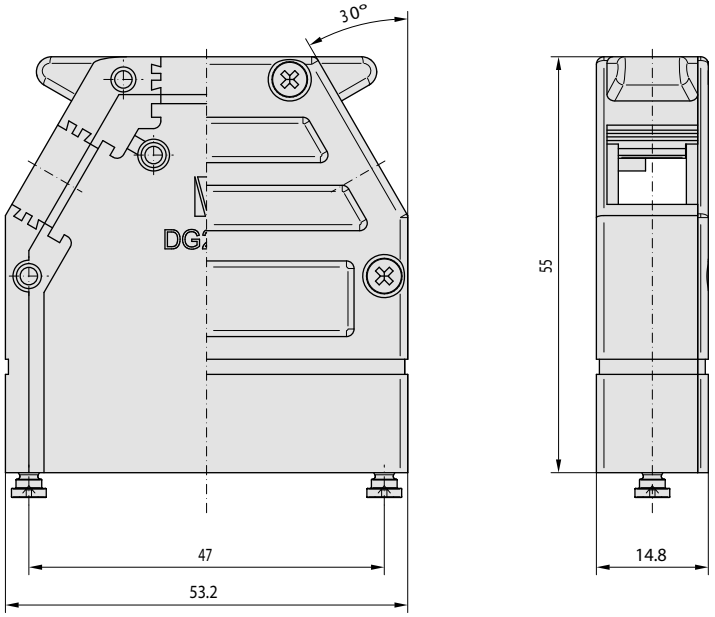


M2 / 25-way / extended version / cable entries 1x 0° and 2x 30°

Art.-No. DG25M2

Specification
- For D-Sub connectors 25-way and HD 44
- Extended version (55 mm installation height without cable connection) with enlarged installation space (e. g. for special wiring, integrated PCB, ...)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



M1 / 37-way / cable entries 1x 0° and 2x 30°

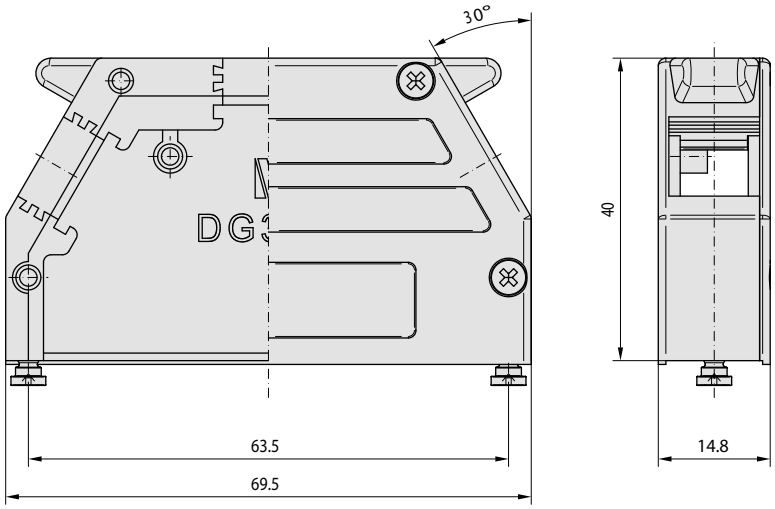
Art.-No. DG37M1

Specification

- For D-Sub connectors 37-way and HD 62
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery

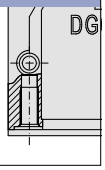
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

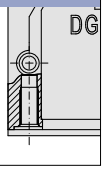
Art.-No. DG37M1/4-40

Internal thread
4-40 UNC
coupling connector
codable



Art.-No. DG37M1-3

Internal thread
M3
coupling connector
codable



M2 / 37-way / extended version / cable entries 1x 0° and 2x 30°

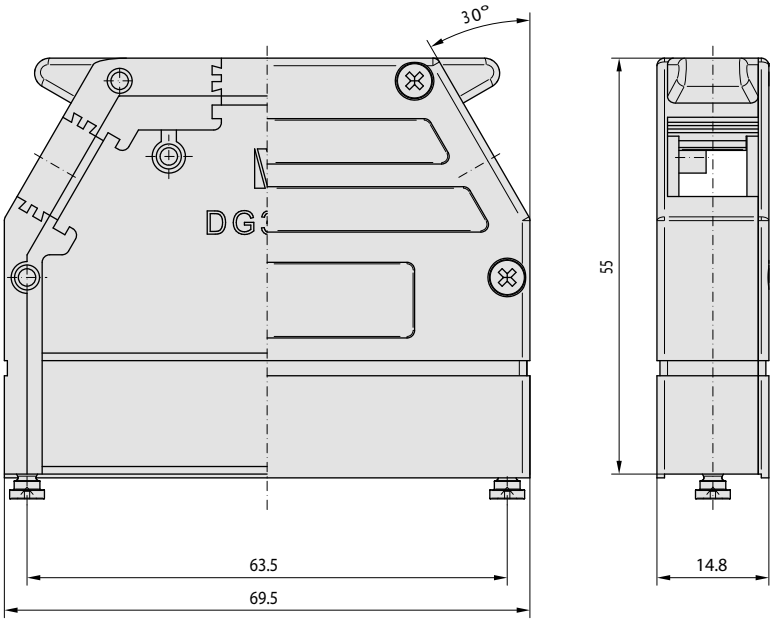
Art.-No. DG37M2

Specification

- For D-Sub connectors 37-way and HD 62
- Extended version (55 mm installation height without cable connection) with enlarged installation space (e. g. for special wiring, integrated PCB, ...)
- 14,8 mm width avoids risk of collision on 3 DU standard elements
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery

- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



M1 / 50-way / cable entries 1x 0° and 2x 30°

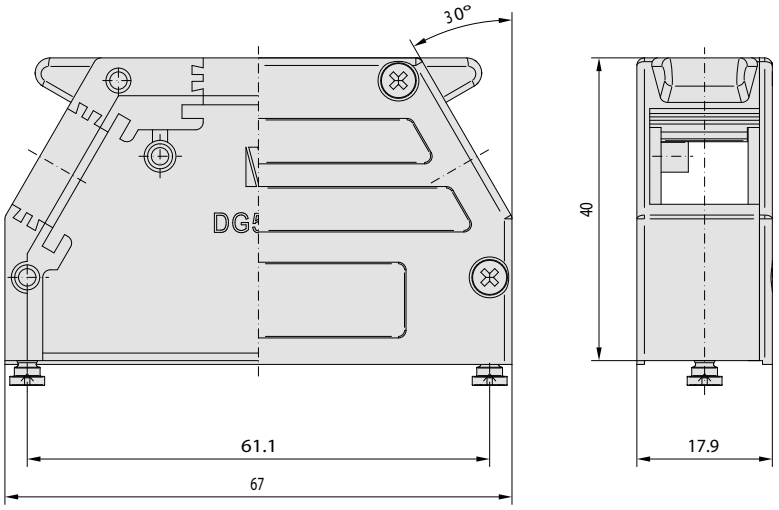
Art.-No. DG50M1

Specification

- For D-Sub connectors 50-way and HD 78
- Compact design (40 mm installation height without cable connection)
- 17,9 mm width
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200

Scope of delivery

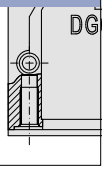
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

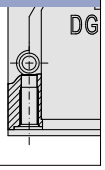
Art.-No. DG50M1/4-40

Internal thread
4-40 UNC
coupling connector
codable



Art.-No. DG50M1-3

Internal thread
M3
coupling connector
codable



M2 / 50-way / extended version / cable entries 1x 0° and 2x 30°

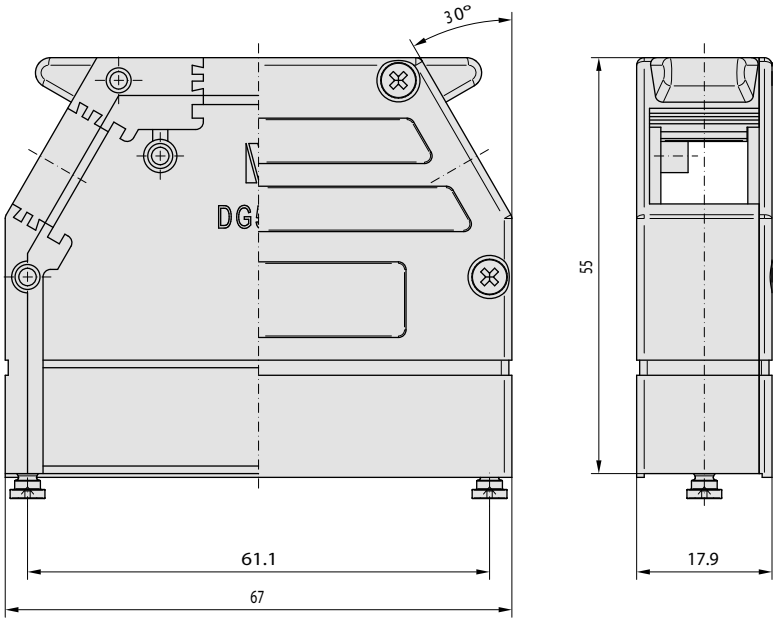
Art.-No. DG50M2

Specification

- For D-Sub connectors 50-way and HD 78
- Extended version (55 mm installation height without cable connection) with enlarged installation space (e. g. for special wiring, integrated PCB, ...)
- 17,9 mm width
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200

Scope of delivery

- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



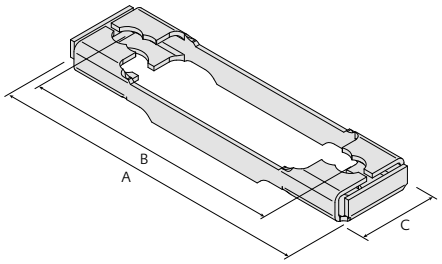
Slide lock

Art.-No.
see product specification

Specification
- Sliding part (stainless steel)

Design	A	B	C	Art.-No.
9-way	36,0	25,0	11,0	DV09G1
15-way	44,3	33,3	11,0	DV15G1
25-way	58,0	47,0	11,0	DV25G1
37-way	74,5	63,5	11,0	DV37G1
50-way	72,1	61,1	13,6	DV50G1

Scope of delivery
- 1 pc. sliding part



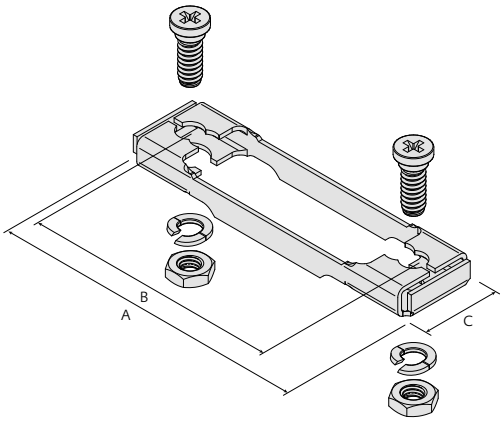
Slide lock with shoulder screws

Art.-No.
see product specification

Specification
- Sliding part (stainless steel)

Design	A	B	C	Art.-No.
9-way	36,0	25,0	11,0	DV09G2
15-way	44,3	33,3	11,0	DV15G2
25-way	58,0	47,0	11,0	DV25G2
37-way	74,5	63,5	11,0	DV37G2
50-way	72,1	61,1	13,6	DV50G2

Scope of delivery
- 1 pc. sliding part
- 2 pcs. shoulder screws 4-40 UNC
- 2 pcs. nuts 4-40 UNC
- 2 pcs. washers



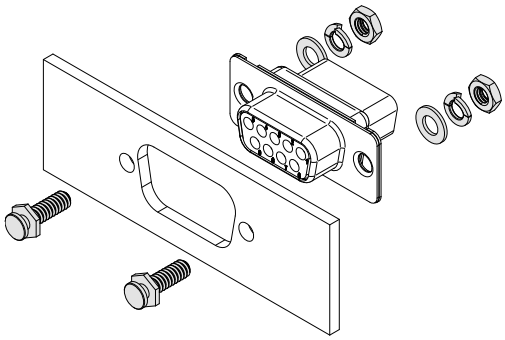
Locking bolt

Art.-No.
see product specification

Specification
- Locking bolt consistent with sliding part DVxxG1

Length L	Art.-No.
8,0	DV-B1/1
12,9	DV-B1/2

Scope of delivery
- 2 pcs. screws 4-40 UNC, hexagon drive AF 5
- 2 pcs. nuts 4-40 UNC
- 2 pcs. washers
- 2 pcs. spring washers

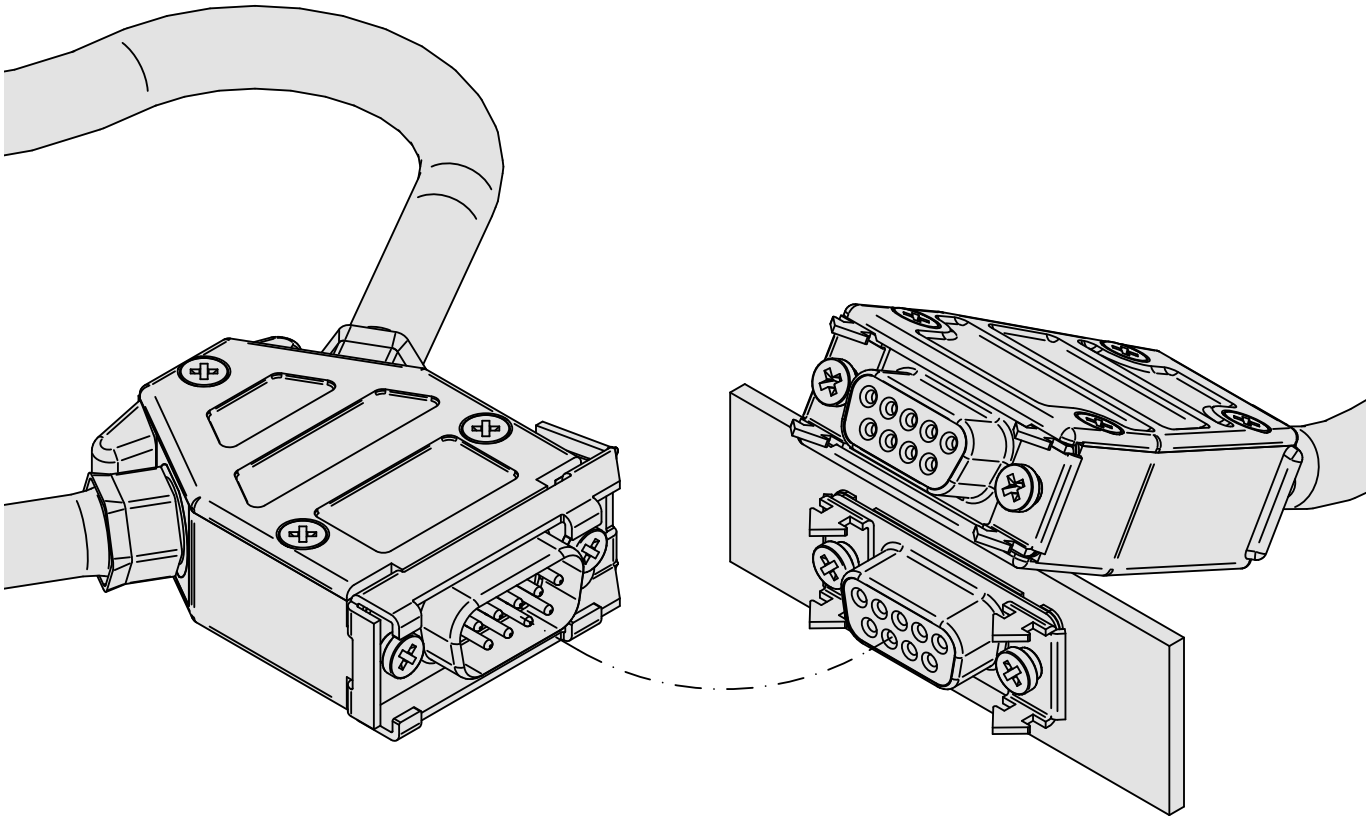


M3 series with quick-release lock

With the development of the M3 series, Inotec focused in particular on fast and secure locking even in unfavorable mounting situations. M3 series is a perfect and robust solution for all applications requiring frequent connection and disconnection cycles with a reliable protection against unintentional disconnection. During the mating operation, the lock hooks in automatically. The mechanism only needs to be actively actuated to unlock. A defined spring force and a sufficiently large spring travel also prevent unintentional actuation of the release.

Special features:

- Secure, tool-free installation of the actuator spring
- Special blanket geometry for optimal guidance of the locking mechanism
- Thread-forming shoulder screws for secure attachment of the slider



Instructions for installation

Panel cutouts see page 8
Please note: System design only allows front panel mount our use in couplings, not rear panel mount.

Selection table

Series	Art.-No.	Cable entry / entries	Style		Page
D-Sub 9-way / HD 15					
M3	DG09M3	2x 30°	for quick-release lock		20
	DG09M3-VPE1	2x 30°	for quick-release lock	Kit including ED09VL	20
D-Sub 15-way / HD 26					
M3	DG15M3	1x 0°, 2x 30°	for quick-release lock		20
	DG15M3-VPE1	1x 0°, 2x 30°	for quick-release lock	Kit including ED15VL	20
D-Sub 25-way / HD 44					
M3	DG25M3	1x 0°, 2x 30°	for quick-release lock		21
	DG25M3-VPE1	1x 0°, 2x 30°	for quick-release lock	Kit including ED25VL	21
D-Sub 37-way / HD 62					
M3	DG37M3	1x 0°, 2x 30°	for quick-release lock		21
	DG37M3-VPE1	1x 0°, 2x 30°	for quick-release lock	Kit including ED37VL	21
D-Sub 50-way / HD 78					
M3	DG50M3	1x 0°, 2x 30°	for quick-release lock		22
	DG50M3-VPE1	1x 0°, 2x 30°	for quick-release lock	Kit including ED50VL	22

Accessories and spare parts

Series	Art.-No.	Size / number of poles	Style		Page
D-Sub 9-way / HD 15					
M3	ED09VL	D-Sub 09 / HD 15	Sliding part with spring for quick-release lock		22
	EDVL-B1-P	D-Sub 09 / HD 15	Locking latch for quick-release lock		22
D-Sub 15-way / HD 26					
M3	ED15VL	D-Sub 15 / HD 26	Sliding part with spring for quick-release lock		22
	EDVL-B1-P	D-Sub 15 / HD 26	Locking latch for quick-release lock		22
D-Sub 25-way / HD 44					
M3	ED25VL	D-Sub 25 / HD 44	Sliding part with spring for quick-release lock		22
	EDVL-B1-P	D-Sub 25 / HD 44	Locking latch for quick-release lock		22
D-Sub 37-way / HD 62					
M3	ED37VL	D-Sub 37 / HD 62	Sliding part with spring for quick-release lock		22
	EDVL-B1-P	D-Sub 37 / HD 62	Locking latch for quick-release lock		22
D-Sub 50-way / HD 78					
M3	ED50VL	D-Sub 50 / HD 78	Sliding part with spring for quick-release lock		22
	EDVL-B2	D-Sub 50 / HD 78	Locking latch for quick-release lock		22

Standard packing units

Inotec full-metal hoods and accessories of the M3 series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15 36 pcs.
D-Sub 15-way / HD 26 30 pcs.
D-Sub 25-way / HD 44 24 pcs.
D-Sub 37-way / HD 62 18 pcs.
D-Sub 50-way / HD 78 15 pcs.

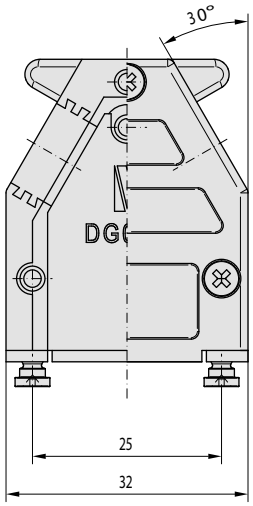
Hoods, cover and grounding screws, shoulder screws and blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

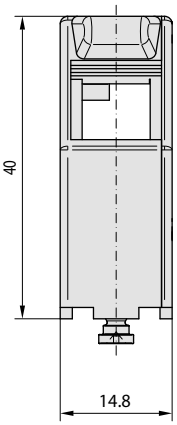
M3 / 9-way / cable entries 2x 30°

Art.-No. DG09M3

Specification
- For D-Sub connectors 9-way and HD 15
- Compact design (40 mm installation height and 14,8 mm width)
- 2 cable entries 30° for CF100 / 300 and DKS100 / 300

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5

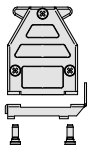




Product variants

Art.-No. DG09M3-VPE1

Kit including
ED09VL

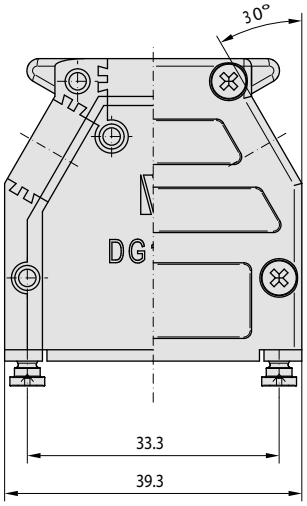


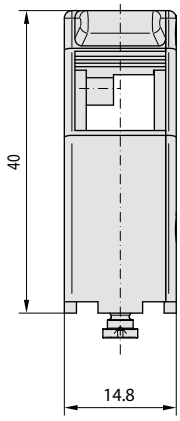
M3 / 15-way / cable entries 1x 0° and 2x 30°

Art.-No. DG15M3

Specification
- For D-Sub connectors 15-way and HD 26
- Compact design (40 mm installation height and 14,8 mm width)
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5

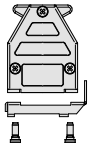




Product variants

Art.-No. DG15M3-VPE1

Kit including
ED15VL

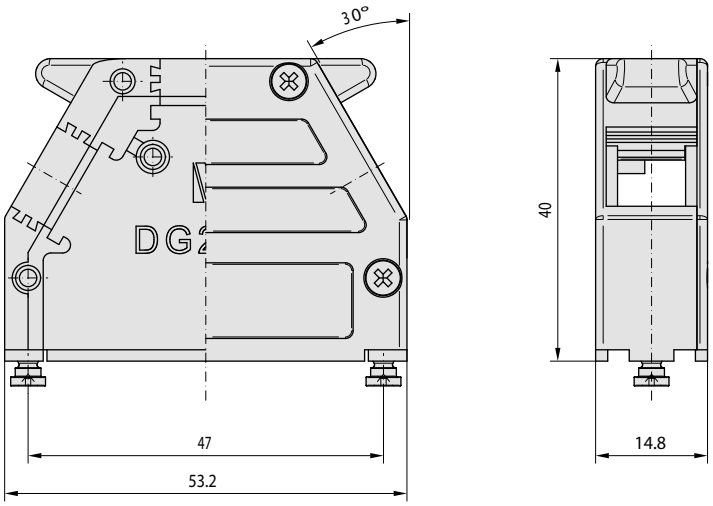


M3 / 25-way / cable entries 1x 0° and 2x 30°

Art.-No. DG25M3

Specification
- For D-Sub connectors 25-way and HD 44
- Compact design (40 mm installation height and 14,8 mm width)
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

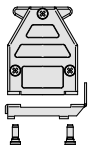
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

Art.-No. DG25M3-VPE1

Kit including
ED25VL

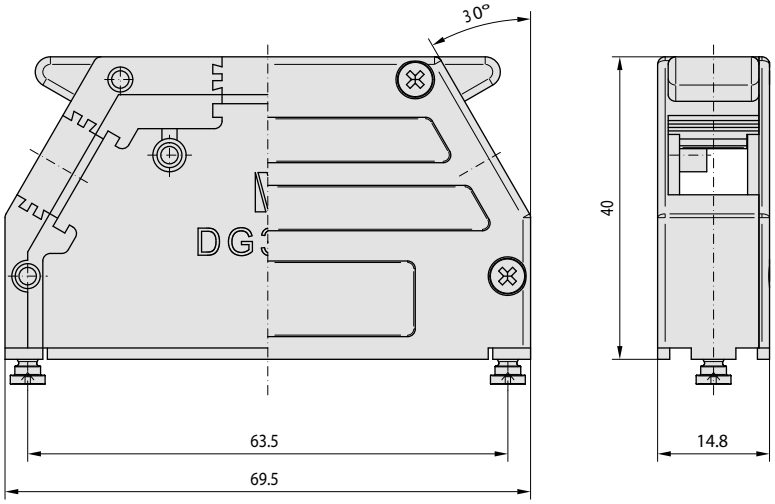


M3 / 37-way / cable entries 1x 0° and 2x 30°

Art.-No. DG37M3

Specification
- For D-Sub connectors 37-way and HD 62
- Compact design (40 mm installation height and 14,8 mm width)
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100 / 300

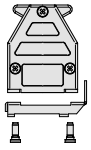
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

Art.-No. DG37M3-VPE1

Kit including
ED37VL

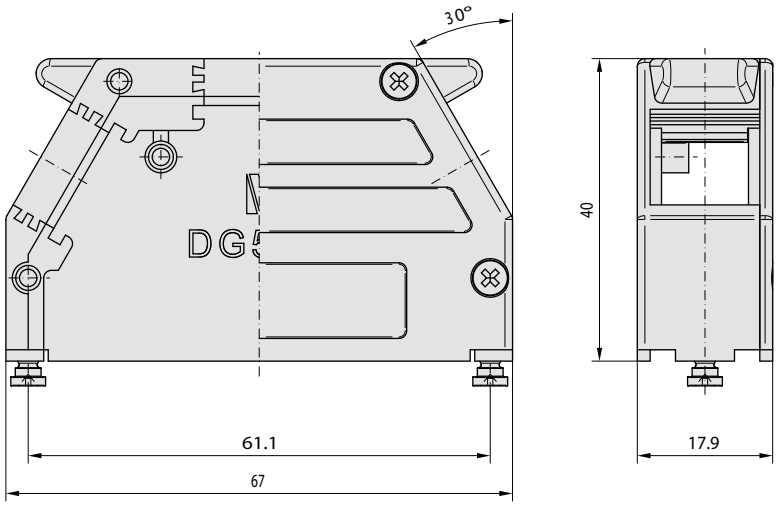


M3 / 50-way / cable entries 1x 0° and 2x 30°

Art.-No. DG50M3

Specification
- For D-Sub connectors 50-way and HD 78
- Compact design (40 mm installation height and 17,9 mm width)
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200

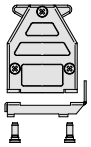
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7
- 2 pcs. shoulder screws 4-40 UNCx7,5



Product variants

Art.-No. DG50M3-VPE1

Kit including ED50VL



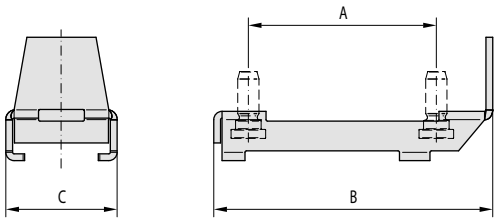
Sliding part

Art.-No. see product specification

Specification
- Sliding part in stainless steel
- Flat spring for installation in DGxxM3 hoods

Design	A	B	C	Art.-No.
9-way	25,0	37,1	15,2	ED09VL
15-way	33,3	45,0	15,2	ED15VL
25-way	47,0	60,0	15,2	ED25VL
37-way	63,5	76,6	15,2	ED37VL
50-way	61,1	73,7	18,0	ED50VL

Scope of delivery
- 1 pc. sliding part
- 1 pc. flat spring



Locking latch

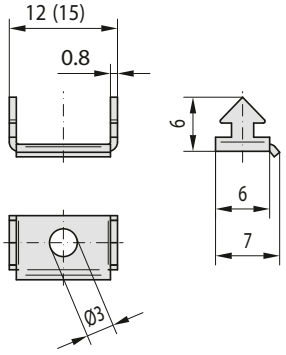
Art.-No. see product specification

Specification
- Locking latch for quick-release lock EDxxVL
- Stainless steel
- For mating connectors on devices or couplings

Scope of delivery

	Art.-No.
2 pcs. locking latch 9- to 37-way (12 mm width)	EDVL-B1-P
2 pcs. locking latch 50-way (15 mm width)	EDVL-B2

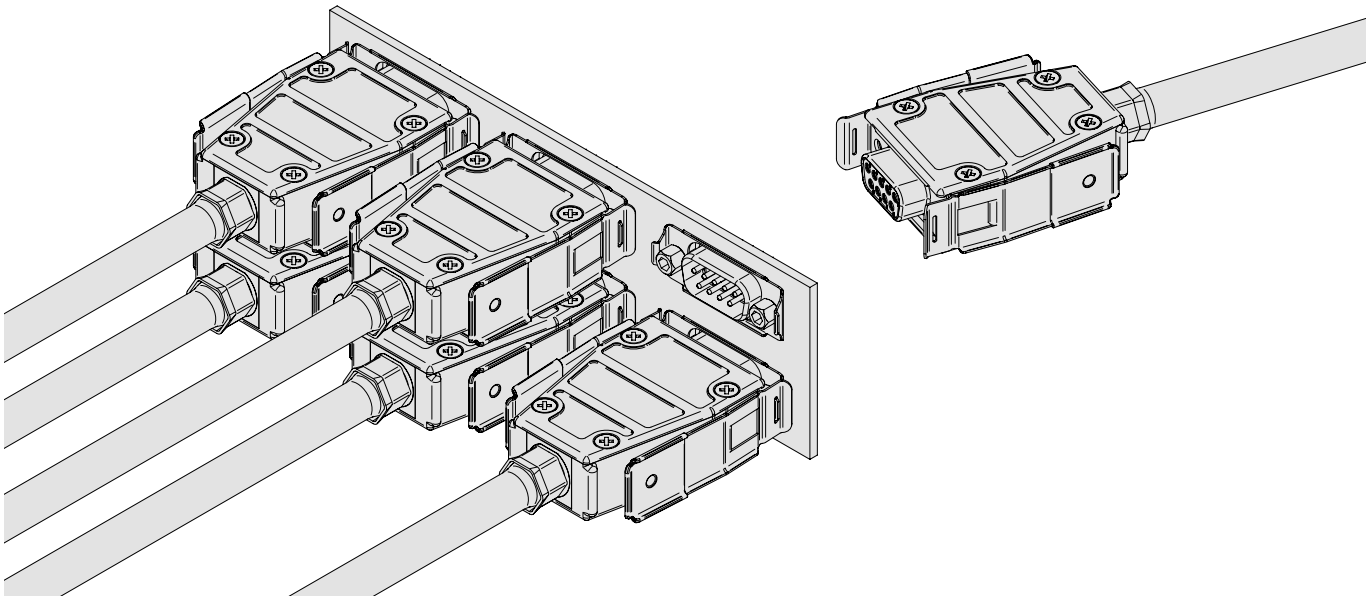
Accessories
- We recommend our M1 and M2 series hoods to be used for couplings. Fixation of the latches by DZ-AS1 shoulder screws supplied with the hood.
- For mating interfaces on end devices we recommend centered flat-head screws or DZ-AS1 shoulder screws.



M5 series with compact quick-locking system

High packing densities and frequent mating cycles are typical conditions on test benches or in test systems. Nevertheless, the connectors must be reliably secured against unintentional disconnecting and must allow to be connected individually. The Inotec M5 series is specially designed for such requirements.

Locking is done by a simple push operation without any need to actuate a mechanism. Thanks to the long and ergonomically designed, rubberized spring tabs, each connector can be easily disconnected even in densely packed installations. The M5 system is designed exclusively for 9-pin D-Sub interfaces.



Instructions for installation

Panel cutouts see page 8
Max. front panel thickness 2,5 mm

Selection table

Series	Art.-No.	Cable entry / entries	Style		cod.	Page
D-Sub 9 / HD 15						
M5	**DG09M5**	1 x 0°	Internal thread 4-40 UNC	coupling connector	■	25
	DG09M5-C101	1 x 0°	Compact quick-locking system	pre-mounted lock-latches	■	25

Accessories and spare parts

Series	Art.-No.	Size / number of poles	Style		Page
M5	**DV09RH**	D-Sub 09 / HD 15	Locking frame for compact quick-locking system		25

Standard packing units

Inotec full-metal hoods and accessories of the M5 series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15 42 pcs.

Hoods, cover, grounding and shoulder screws are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

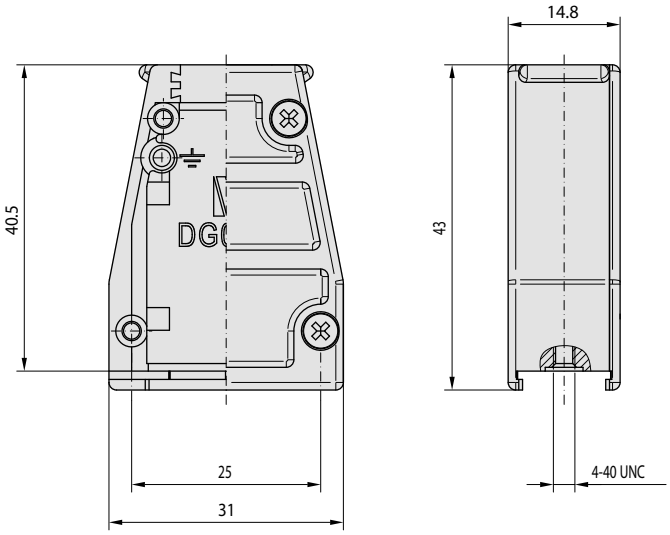
M5 / 9-way / cable entries 1x 0° and 2x 30°

Art.-No. DG09M5

Specification
- For D-Sub connectors 9-way or HD 15
- 47,6 mm installation height without cable connection
- For use as coupling connector, pre-threaded 4-40 UNC fixation holes
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6

Instruction for installation
- For coupling connectors protected with the Inotec coding system, **high coding elements "KOD03"** are required.



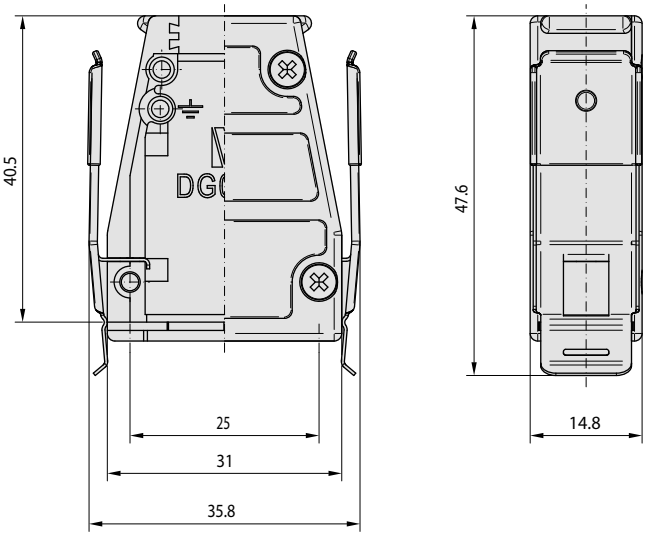
M5 / 9-way / cable entry 1x 0°

Art.-No. DG09M5-C101

Specification
- For D-Sub connectors 9-way or HD 15
- 47,6 mm installation height without cable connection
- 35,8 x 14,8 mm base allows high packing density
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x / 300
- Verriegelungsfeder aus Edelstahl mit gummierten Grifflaschen

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. spring latches, pre-mounted
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6

Instruction for installation
- For quick-locking interfaces protected with the Inotec coding system, **flat coding elements "KOD02"** are required.



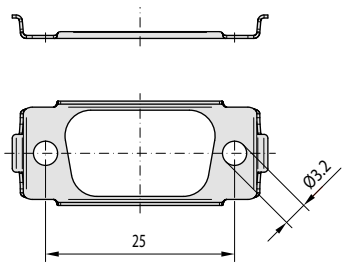
Locking frame

Art.-No. DV09RH

Specification
- Locking frame for mating connectors of DG09M5-C101 with quick-locking system
- Stainless steel

Scope of delivery
- 1 pc. locking frame

Instructions for installation
- Fixation with hexagon head screws or jackscrews for coding, 5 mm max. height of screw-head
- Optional coding with KOR09 (front panel thickness min. 0,6 mm - max. 1,7 mm for mating connectors in rear panel mount)



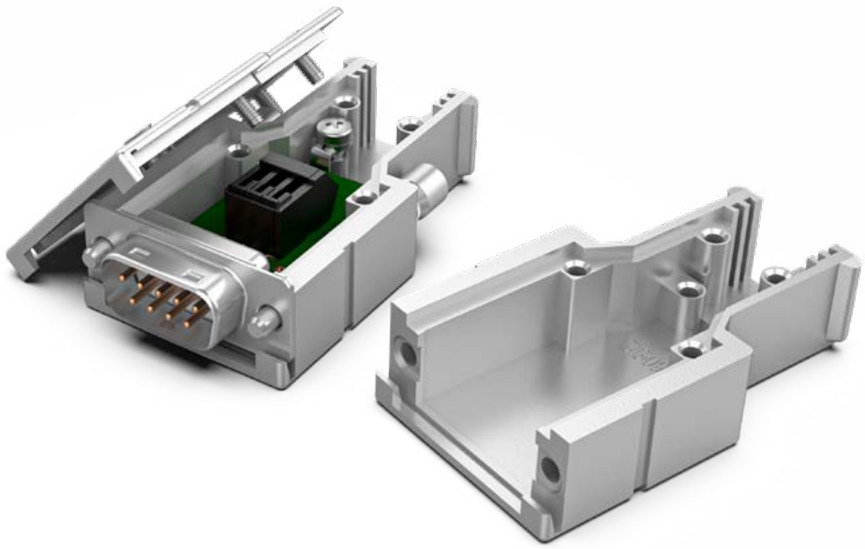
D-Sub full metal hoods with screw locking

D-Sub connectors with screw-locked housings are essential for all applications that are exposed e. g. to mechanical stress (vibration, pull, torque) or high temperature variations and still need to lock reliably and without any clearance or backlash.

Thus, screw locks not only ensure reliable contacting of the connectors, but in all-metal housings they also improve the ground contact and thus the EMC of the connector.

In addition, the screw connections must enable quick and easy installation, should not corrode in adverse environmental conditions and should be able to be easily disconnected and relocked, even after a long installation time.

As a specialist for shielded connection systems, Inotec electronics has the widest range of full-metal hoods for D-Sub connectors with the MS, MSX, MSB, MSBS and M11 / M30 adaptor hood series.



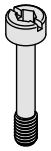
Inotec offers the widest range of high-quality, EMC-compliant full-metal D-Sub hoods with screw locking:

- EMC-compliant hood design
- HF-protecting die-cast zinc full-metal housing with labyrinth cover
- Unused cable inputs are sealed RF-tight with blind plugs
- Built-in grounding point
- Ergonomically designed hood shape avoids pulling on the cable
- Minimal transition resistance to shielded cables in combination with the Inotec crimp flange technology in dovetail design
- High-quality, non-magnetic, corrosion-resistant locking screws ensure a secure and vibration-resistant connection with maximum mechanical load capacity
- Captive mounting locking screws, optionally in 4-40 UNC or M3 with different head shapes
- Interference-free and constant ground contact with the mating plug
- Optionally available with preparation for the Inotec coding system to avoid mismating

Screws and bolts

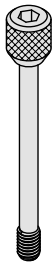
MS (standard)
4-40 UNC
Knurling
Universal
cross slot

Art.-No.
RS4-40x17



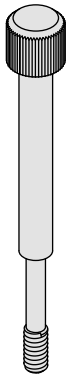
MS-80
4-40 UNC
cylinder head
ISK SW2,5
slotted

Art.-No.
IN4-40x17,3



MS-2 / MS-4
4-40 UNC
knurling
ISK SW2,5

Art.-No.
RS4-40x32

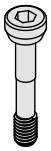


MS-50
4-40 UNC
knurling

Art.-No.
RS4-40x44

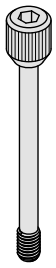
MS-3
M3
knurling
slotted

Art.-No.
RSM3x17,3



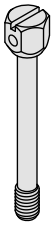
MS-90
M3
cylinder head
chamfered
ISK SW2,5

Art.-No.
ZSM3x17,2



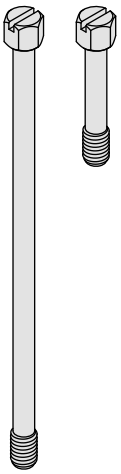
MS-2-3 / MS-4-3
M3
knurling
ISK SW2,5

Art.-No.
RSM3x32



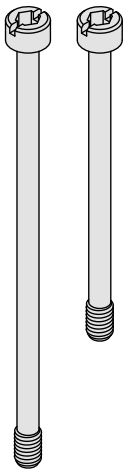
MSX
M3
hexagon
jackscrews AF5
slotted
hole for wire seals

Art.-No.
SSM3x25,5



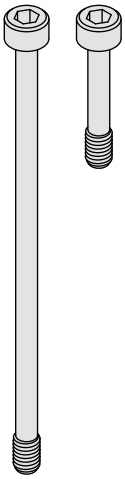
MSB
4-40 UNC
hexagon
jackscrews AF5
slotted

Art.-No.
SS4-40x16,5
SS4-40x58,5



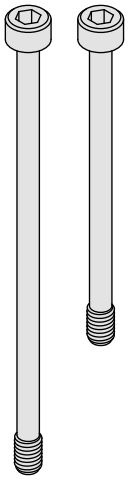
MSBS
4-40 UNC
cylinder head
ISK SW2,5
slotted

Art.-No.
IN4-40x40,2
IN4-40x57,5



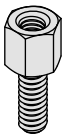
MSB-91
M3
cylinder head
ISK SW2,5

Art.-No.
ZSM3x16,5
ZSM3x58,5



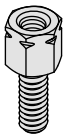
MSBS-91
M3
cylinder head
ISK SW2,5

Art.-No.
INM3x41
INM3x58,5



MS-61
(only 9-way)
4-40 UNC
hexagon bolt AF5

Art.-No.
DV-B2/2-C1



MS-63
(only 9-way)
M3 / 4-40 UNC
hexagon bolt AF5

Art.-No.
DV-B2/2M3-C1

Cover screws
M2,5
flat head PZ1

thread forming

Art.-No.
DZ-SS1 (M2,5x7)
DZ-SS3 (M2,5x6)

Grounding screw
M2,5
raised head PZ1

thread forming

Art.-No.
DZ-ES1

Recommended tightening torque for

- Locking screws and bolts = 0,5 - 0,6 Nm
- Thread forming cover and grounding screws DZ-SS1 and DZ-ES1 = max. 0,5 Nm
- Thread forming cover screws DZ-SS3 = max. 0,45 Nm

MS series – maximum bandwidth and versatility

Our universal hood series with up to 3 cable inputs covers all sizes. Besides the compact standard geometry, it is also available as an extended version with additional space, e.g. for special cabling or printed circuit boards. The wide range of locking screw variants with classic knurled head or combined with hexagon socket covers all assembly situations. Due to their different head shapes, the thread types 4-40 UNC (standard) and M3 are also easy to distinguish. All hoods are supplied with captive pre-assembled locking screws.

Selection table

Series	Art.-No.	Thread type	Cable entry / entries	Screw type	Hood type	cod.	Page
D-Sub 9-way / HD 15							
MS	**DG09MS**	4-40 UNC	1x 0°	Knurled / cross-slotted			30
	DG09MS-3	M3	1x 0°	Knurled / slotted			30
	DG09MS-85	M3	1x 0°	Knurled / slotted, washer			30
	DG09MS-80	4-40 UNC	1x 0°	ISK			30
	DG09MS-80-KOD	4-40 UNC	1x 0°	ISK		■	30
	DG09MS-90	M3	1x 0°	ISK			30
	DG09MS-90-KOD	M3	1x 0°	ISK		■	30
	DG09MS-C100	without screws	1x 0°				30
	DG09MS-50	4-40 UNC	1x 0°	Knurled / long shank			31
	DG09MS-61	Bolt 4-40 UNC	1x 0°		coupling		31
	DG09MS-63	Bolt M3	1x 0°		coupling		31
MS-1	**DG09MS-1**	4-40 UNC	1x 30°	Knurled / cross-slotted			32
	DG09MS-1-3	M3	1x 30°	Knurled / slotted			32
	DG09MS-1-85	M3	1x 30°	Knurled / slotted, washer			32
	DG09MS-1-80	4-40 UNC	1x 30°	ISK			32
	DG09MS-1-80-KOD	4-40 UNC	1x 30°	ISK		■	32
	DG09MS-1-90	M3	1x 30°	ISK			32
	DG09MS-1-90-KOD	M3	1x 30°	ISK		■	32
MS-2	**DG09MS-2**	4-40 UNC	1x 30°	Knurled / hexagon socket	extended version		32
	DG09MS-2-KOD	4-40 UNC	1x 30°	Knurled / hexagon socket	extended version	■	32
	DG09MS-2-3	M3	1x 30°	Knurled / hexagon socket	extended version		32
MS-4	**DG09MS-4**	4-40 UNC	1x 0°	Knurled / hexagon socket	extended version		33
	DG09MS-4-3	M3	1x 0°	Knurled / hexagon socket	extended version		33
	DG09MS-4-C104	Bolt 4-40 UNC	1x 0°		extended version, coupling		33
D-Sub 15-way / HD 26							
MS	**DG15MS**	4-40 UNC	1x 0°, 1x 90°	Knurled / cross-slotted			34
	DG15MS-3	M3	1x 0°, 1x 90°	Knurled / slotted			34
	DG15MS-80	4-40 UNC	1x 0°, 1x 90°	ISK			34
	DG15MS-80-KOD	4-40 UNC	1x 0°, 1x 90°	ISK		■	34
	DG15MS-90	M3	1x 0°, 1x 90°	ISK			34
	DG15MS-90-KOD	M3	1x 0°, 1x 90°	ISK		■	34
	DG15MS-C100	without screws	1x 0°, 1x 90°				34
	DG15MS-50	4-40 UNC	1x 0°	Knurled / long shank			35
MS-1	**DG15MS-1**	4-40 UNC	1x 30°	Knurled / cross-slotted			35
	DG15MS-1-3	M3	1x 30°	Knurled / slotted			35
	DG15MS-1-90	4-40 UNC	1x 30°	ISK			35
	DG15MS-1-90-KOD	4-40 UNC	1x 30°	ISK		■	35
	DG15MS-1-80	M3	1x 30°	ISK			35
	DG15MS-1-80-KOD	M3	1x 30°	ISK		■	35
MS-2	**DG15MS-2**	4-40 UNC	1x 30°	Knurled / hexagon socket	extended version		36
	DG15MS-2-3	M3	1x 30°	Knurled / hexagon socket	extended version		36
	DG15MS-2-KOD	4-40 UNC	1x 30°	Knurled / hexagon socket	extended version		36

Series	Art.-No.	Thread type	Cable entry / entries	Screw type	Hood type	cod.	Page
D-Sub 25-way / HD 44							
MS	**DG25MS**	4-40 UNC	1x 0°, 2x 30°	Knurled / cross-slotted		■	36
	DG25MS-3	M3	1x 0°, 2x 30°	Knurled / slotted		■	36
	DG25MS-85	M3	1x 0°, 2x 30°	Knurled / slotted, washer		■	36
	DG25MS-80	4-40 UNC	1x 0°, 2x 30°	ISK		■	36
	DG25MS-90	M3	1x 0°, 2x 30°	ISK		■	36
	DG25MS-C100	without screws	1x 0°, 2x 30°				37
	DG25MS-50	4-40 UNC	1x 0°	Knurled / long shank			37
MS-2	**DG25MS-2**	4-40 UNC	1x 0°, 2x 30°	Knurled / hexagon socket	extended version	■	38
	DG25MS-2-3	M3	1x 0°, 2x 30°	Knurled / hexagon socket	extended version	■	38
	DG25MS-2-85	M3	1x 0°, 2x 30°	Knurled / hexagon socket with washer	extended version	■	38
D-Sub 37-way / HD 62							
MS	**DG37MS**	4-40 UNC	1x 0°, 2x 30°	Knurled / cross-slotted			38
	DG37MS-3	M3	1x 0°, 2x 30°	Knurled / slotted			38
	DG37MS-80	4-40 UNC	1x 0°, 2x 30°	ISK			38
	DG37MS-80-KOD	4-40 UNC	1x 0°, 2x 30°	ISK		■	38
	DG37MS-90	M3	1x 0°, 2x 30°	ISK			38
	DG37MS-90-KOD	M3	1x 0°, 2x 30°	ISK		■	38
	DG37MS-C100	without screws	1x 0°, 2x 30°				39
	DG37MS-50	4-40 UNC	1x 0°	Knurled / long shank			39
MS-2	**DG37MS-2**	4-40 UNC	1x 0°, 2x 30°	Knurled / hexagon socket	extended version		40
	DG37MS-2-3	M3	1x 0°, 2x 30°	Knurled / hexagon socket	extended version		40
D-Sub 50-way / HD 78							
MS	**DG50MS**	4-40 UNC	1x 0°, 2x 30°	Knurled / cross-slotted		■	40
	DG50MS-3	M3	1x 0°, 2x 30°	Knurled / slotted		■	40
	DG50MS-80	4-40 UNC	1x 0°, 2x 30°	ISK		■	40
	DG50MS-C100	without screws	1x 0°, 2x 30°				41
	DG50MS-50	4-40 UNC	1x 0°	Knurled / long shank			41
MS-2	**DG50MS-2**	4-40 UNC	1x 0°, 2x 30°	Knurled / hexagon socket	extended version		42
	DG50MS-2-3	M3	1x 0°, 2x 30°	Knurled / hexagon socket	extended version		42

Standard packing units

Inotec full-metal hoods and accessories of the MS series are supplied as standard in the following packing units:

	MS	MS-1	MS-2	MS-4
D-Sub 9-way / HD 15	42 pcs.	42 pcs.	42 pcs.	42 pcs.
D-Sub 15-way / HD 26	30 pcs.	36 pcs.	36 pcs.	–
D-Sub 25-way / HD 44	24 pcs.	–	24 pcs.	–
D-Sub 37-way / HD 62	18 pcs.	–	18 pcs.	–
D-Sub 50-way / HD 78	15 pcs.	15 pcs.	15 pcs.	–

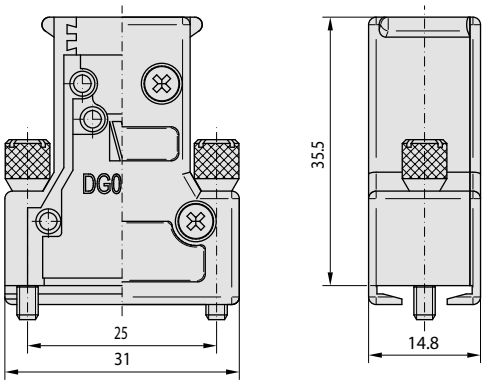
Hoods, cover screws, grounding screws and, if included in scope of delivery, blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

MS / 9-way / cable entry 1x 0°

Art.-No. DG09MS

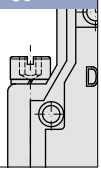
Specification
- For D-Sub connectors 9-way or HD 15
- Compact design (35,5 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

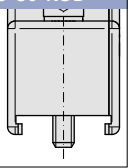


Product variants

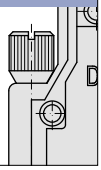
Art.-No. DG09MS-80
4-40 UNC
ISK



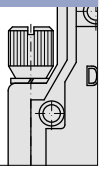
Art.-No. DG09MS-80-KOD
as DG09MS-80, codable



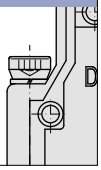
Art.-No. DG09MS-3
M3
Knurled / slotted



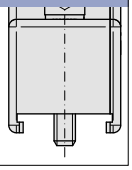
Art.-No. DG09MS-85
M3
Knurled / slotted,
Washer



Art.-No. DG09MS-90
M3
ISK



Art.-No. DG09MS-90-KOD
as DG09MS-90, codable



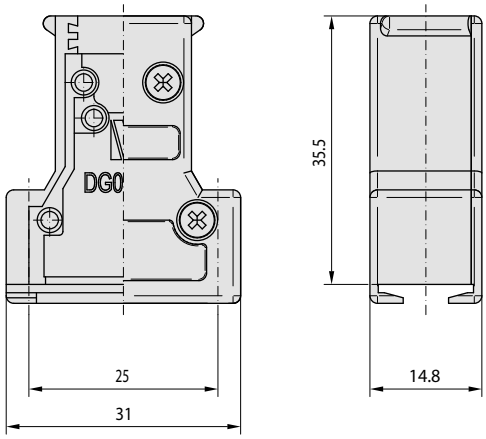
MS / 9-way / cable entry 1x 0° / without screws

Art.-No. DG09MS-C100

Specification
- For D-Sub connectors 9-way or HD 15
- Compact design (35,5 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- Without pre-mounted locking screws, for individual configuration

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Notice for order processing
- The preperation for screw retention will be executed according to the application
- Please indicate on your order whether the hood will be equipped with 4-40 UNC, M3 or special screws

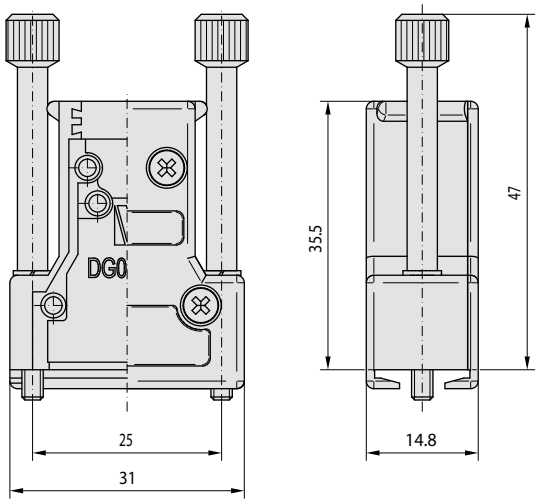


MS / 9-way / cable entry 1x 0° / long shank

Art.-No. DG09MS-50

Specification
- For D-Sub connectors 9-way or HD 15
- Long knurled jackscrews for interfaces difficult to access
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

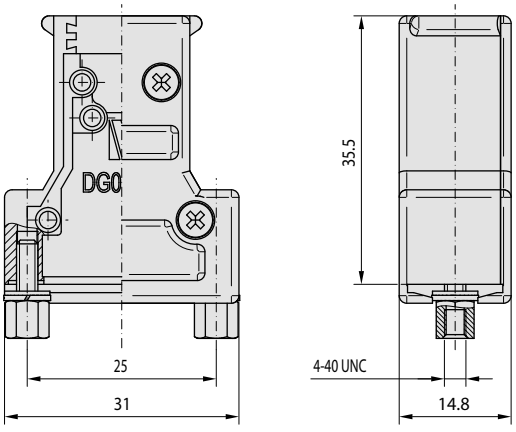


MS / 9-way / coupling / cable entry 1x 0°

Art.-No. DG09MS-61

Specification
- Coupling connector for D-Sub connectors 9-way or HD 15
- Compact design (35,5 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

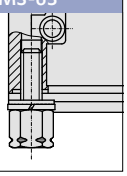
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolt 4-40 UNC (incl. spring washer and washer)
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG09MS-63

Bolt M3 coupling

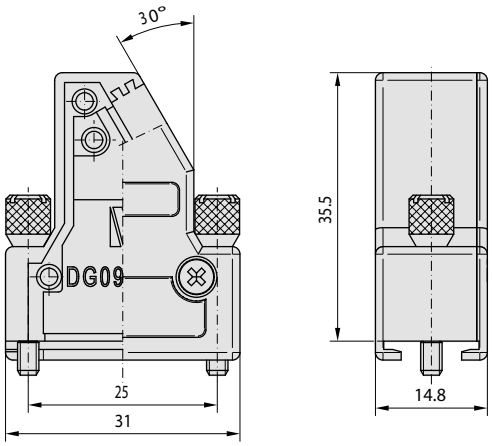


MS-1 / 9-way / cable entry 1x 30°

Art.-No. DG09MS-1

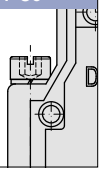
Specification
- For D-Sub connectors 9-way or HD 15
- Compact design (35,5 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

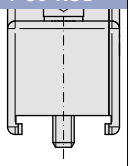


Product variants

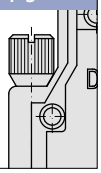
Art.-No. DG09MS-1-80
4-40 UNC
ISK



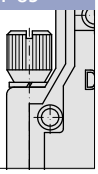
Art.-No. DG09MS-1-80-KOD
as DG09MS-1-80, codable



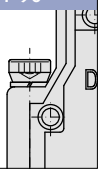
Art.-No. DG09MS-1-3
M3
Knurled / slotted



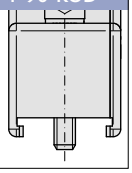
Art.-No. DG09MS-1-85
M3
Knurled / slotted,
Washer



Art.-No. DG09MS-1-90
M3
ISK



Art.-No. DG09MS-1-90-KOD
as DG09MS-1-90, codable

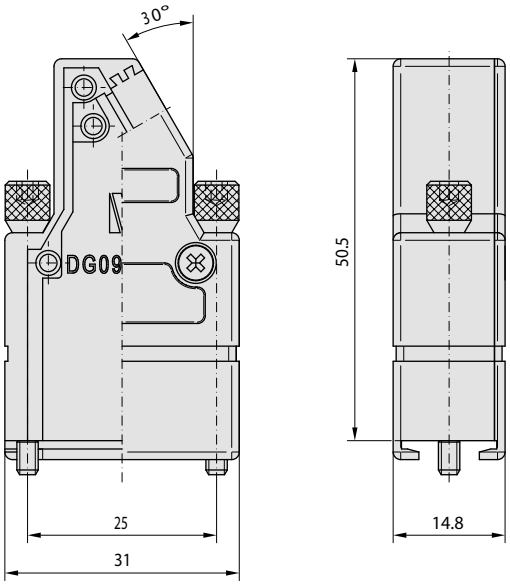


MS-2 / 9-way / extended version / cable entry 1x 30°

Art.-No. DG09MS-2

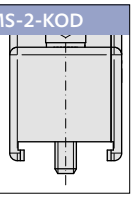
Specification
- For D-Sub connectors 9-way or HD 15
- Extended version (50,5 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

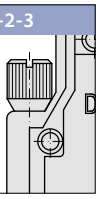


Product variants

Art.-No. DG09MS-2-KOD
as DG09MS-2, codable



Art.-No. DG09MS-2-3
M3
knurled / hex. socket
extended version

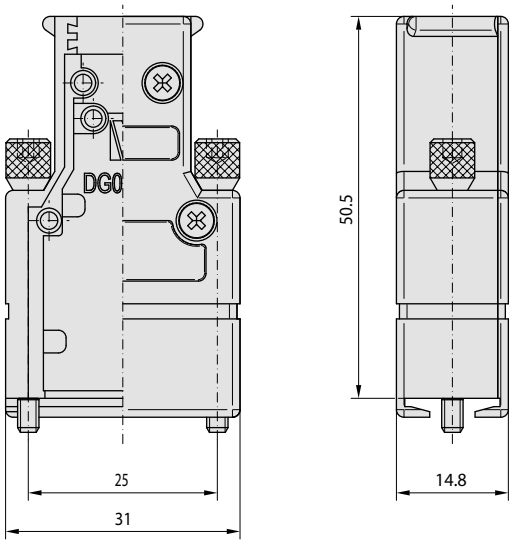


MS-4 / 9-way / extended version / cable entry 1x 0°

Art.-No. DG09MS-4

Specification
- For D-Sub connectors 9-way or HD 15
- Extended version (50,5 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

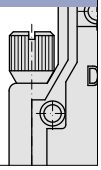
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG09MS-4-3

M3

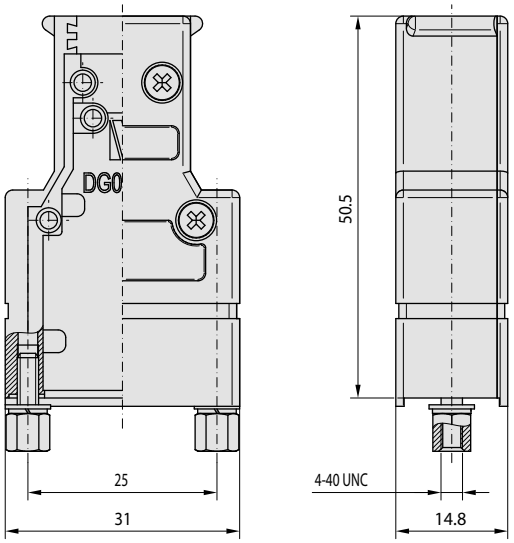


MS-4 / 9-way / extended version / coupling / cable entry 1x 0°

Art.-No. DG09MS-4-C104

Specification
- Coupling connector for D-Sub connectors 9-way or HD 15
- Extended version (50,5 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolt 4-40 UNC (incl. spring washer and washer)
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

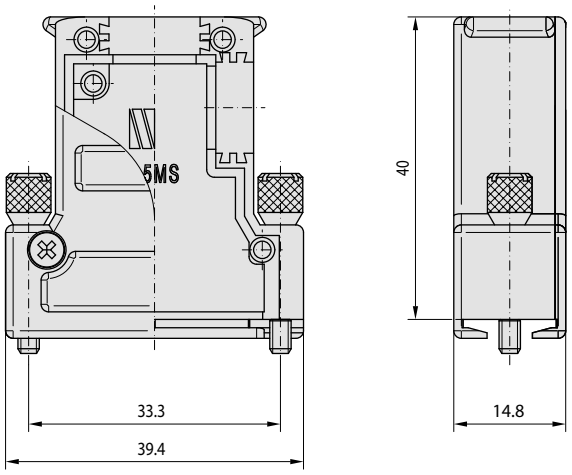


MS / 15-way / cable entry 1x 0° and 1x 90°

Art.-No. DG15MS

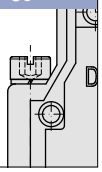
Specification
- For D-Sub connectors 15-way or HD 26
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 1 cable entry lateral (90°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

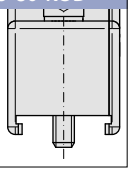


Product variants

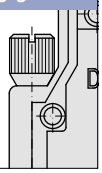
Art.-No. DG15MS-80
4-40 UNC
ISK



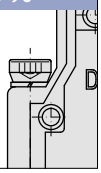
Art.-No. DG15MS-80-KOD
as
DG15MS-80,
codable



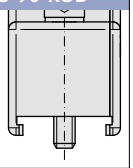
Art.-No. DG15MS-3
M3
Knurled / slotted



Art.-No. DG15MS-90
M3
ISK



Art.-No. DG15MS-90-KOD
as
DG15MS-90,
codable



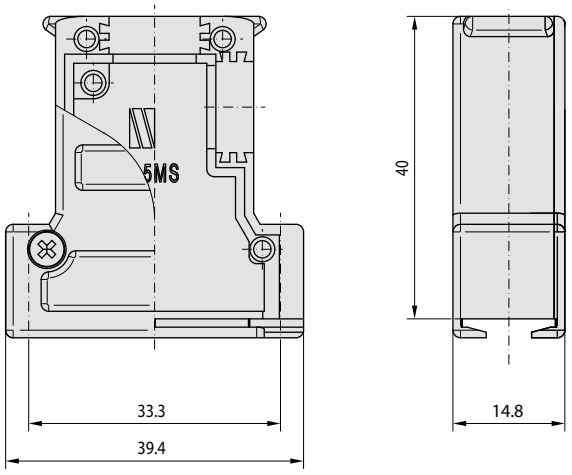
MS / 15-way / cable entry 1x 0° and 1x 90° / without screws

Art.-No. DG15MS-C100

Specification
- For D-Sub connectors 15-way or HD 26
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 1 cable entry lateral (90°) for CF100 / 300 and DKS100
- Without pre-mounted locking screws, for individual configuration

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Notice for order processing
- The preperation for screw retention will be executed according to the application
- Please indicate on your order whether the hood will be equipped with 4-40 UNC, M3 or special screws

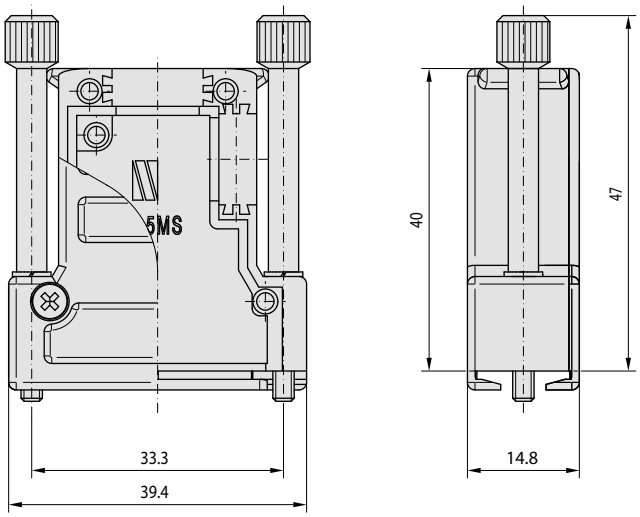


MS / 15-way / cable entry 1x 0° / long shank

Art.-No. DG15MS-50

Specification
- For D-Sub connectors 15-way or HD 26
- Long knurled jackscrews for interfaces difficult to access
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 1 cable entry lateral (90°) inaccessible, closed with blind plug

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

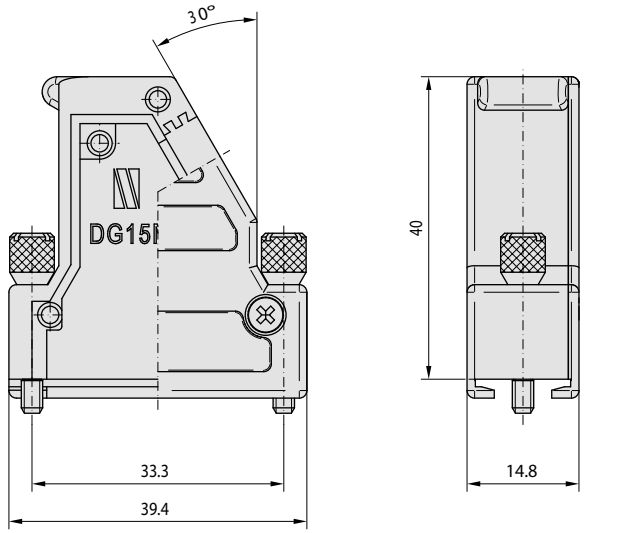


MS-1 / 15-way / cable entry 1x 30°

Art.-No. DG15MS-1

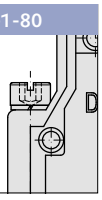
Specification
- For D-Sub connectors 15-way or HD 26
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

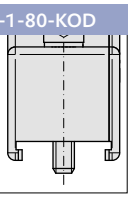


Product variants

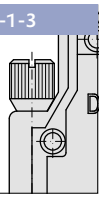
Art.-No. DG15MS-1-80
4-40 UNC
ISK



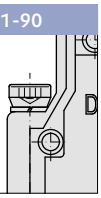
Art.-No. DG15MS-1-80-KOD
as DG15MS-1-80, codable



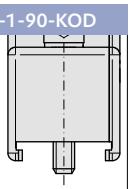
Art.-No. DG15MS-1-3
M3
Knurled / slotted



Art.-No. DG15MS-1-90
M3
ISK



Art.-No. DG15MS-1-90-KOD
as DG15MS-1-90, codable



MS-2 / 15-way / extended version / cable entry 1x 30°

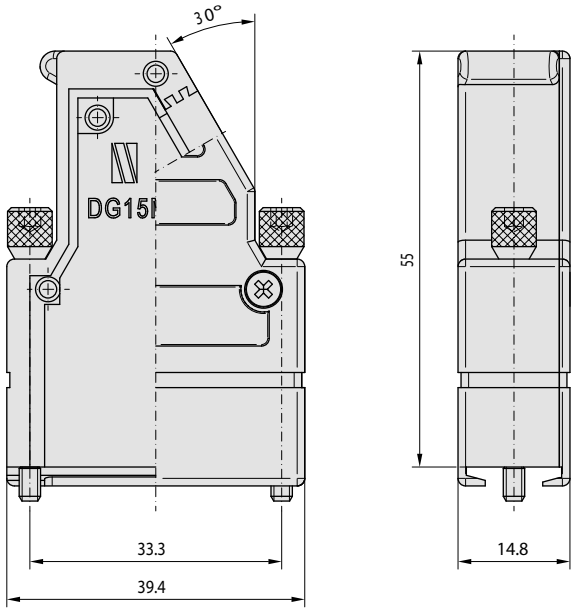
Art.-No. DG15MS-2

Specification

- For D-Sub connectors 15-way or HD 26
- Extended version (55 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery

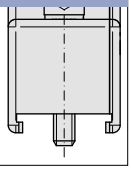
- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7



Product variants

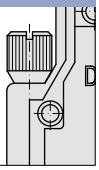
Art.-No. DG15MS-2-KOD

as DG15MS-2, codable



Art.-No. DG15MS-2-3

M3



MS / 25-way / cable entries 1x 0° and 2x 30°

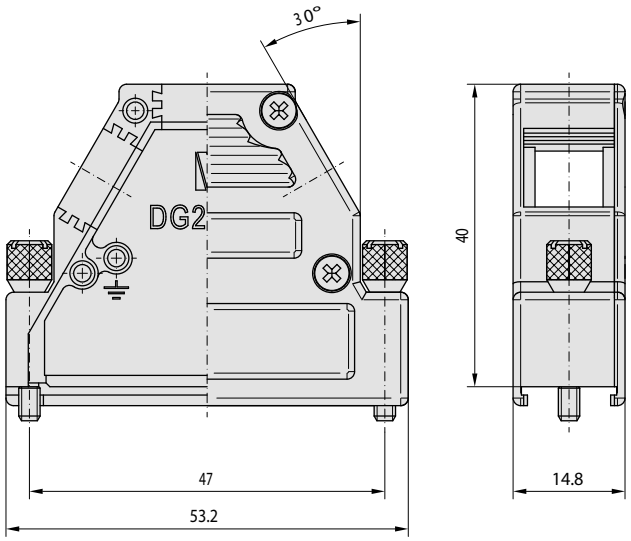
Art.-No. DG25MS

Specification

- For D-Sub connectors 25-way or HD 44
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100
- All product variants suitable for coding

Scope of delivery

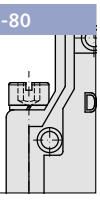
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

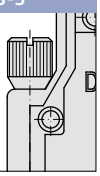
Art.-No. DG25MS-80

4-40 UNC
ISK



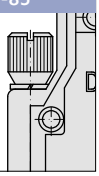
Art.-No. DG25MS-3

M3
Knurled / slotted



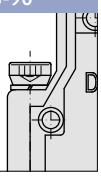
Art.-No. DG25MS-85

M3
Knurled / slotted,
Washer



Art.-No. DG25MS-90

M3
ISK



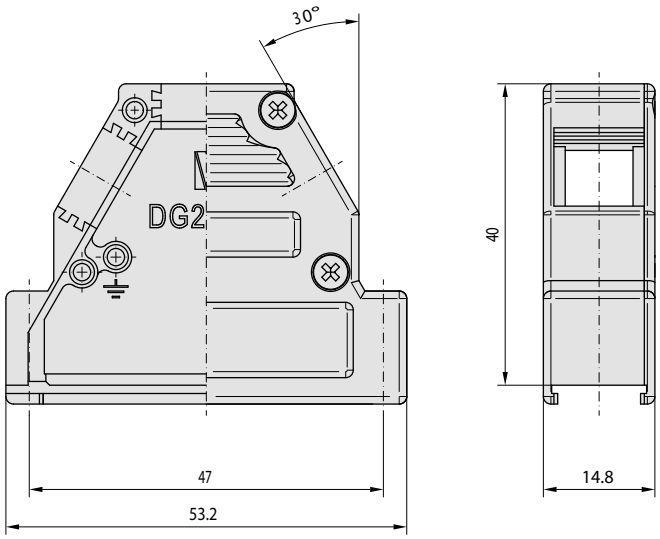
MS / 25-way / cable entry 1x 0° and 2x 30° / without screws

Art.-No. DG25MS-C100

Specification
- For D-Sub connectors 25-way or HD 44
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100
- Without pre-mounted locking screws, for individual configuration

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Notice for order processing
- The preperation for screw retention will be executed according to the application
- Please indicate on your order whether the hood will be equipped with 4-40 UNC, M3 or special screws

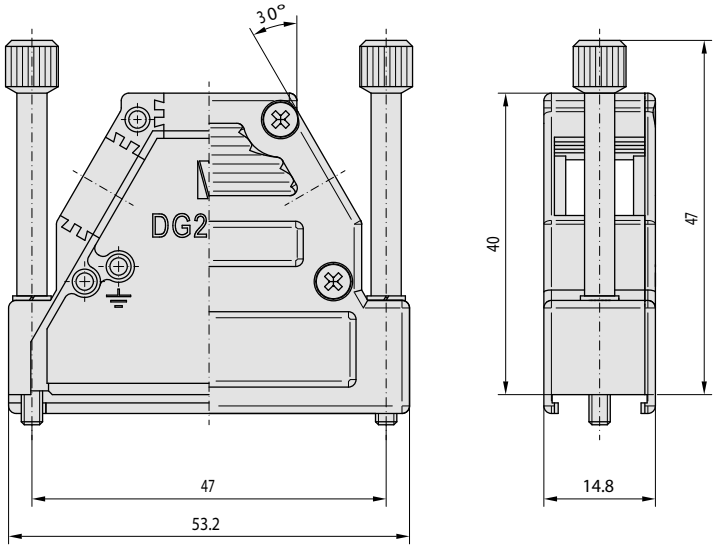


MS / 25-way / cable entry 1x 0° / long shank

Art.-No. DG25MS-50

Specification
- For D-Sub connectors 25-way or HD 44
- Long knurled jackscrews for interfaces difficult to access
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) inaccessible, closed with blind plug

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7



MS-2 / 25-way / extended version / cable entries 1x 0° and 2x 30°

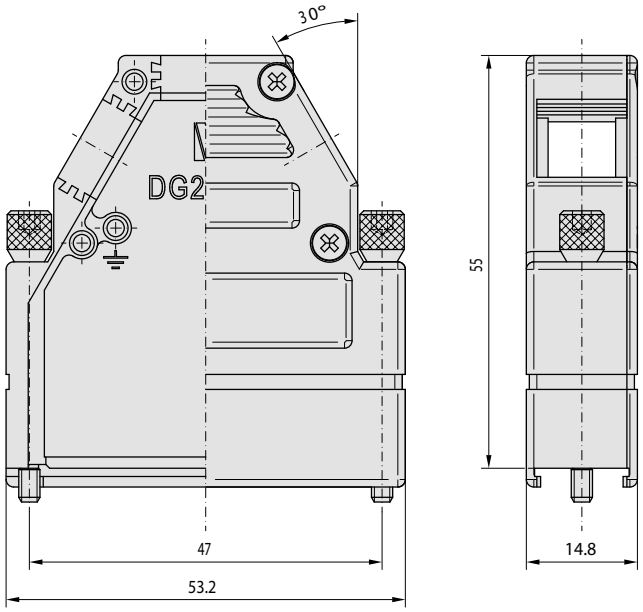
Art.-No. DG25MS-2

Specification

- For D-Sub connectors 25-way or HD 44
- Extended version (55 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100
- All product variants suitable for coding

Scope of delivery

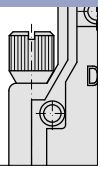
- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

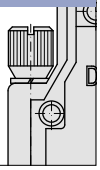
Art.-No. DG25MS-2-3

M3



Art.-No. DG25MS-2-85

M3
knurled / hex. socket with washer



MS / 37-way / cable entries 1x 0° and 2x 30°

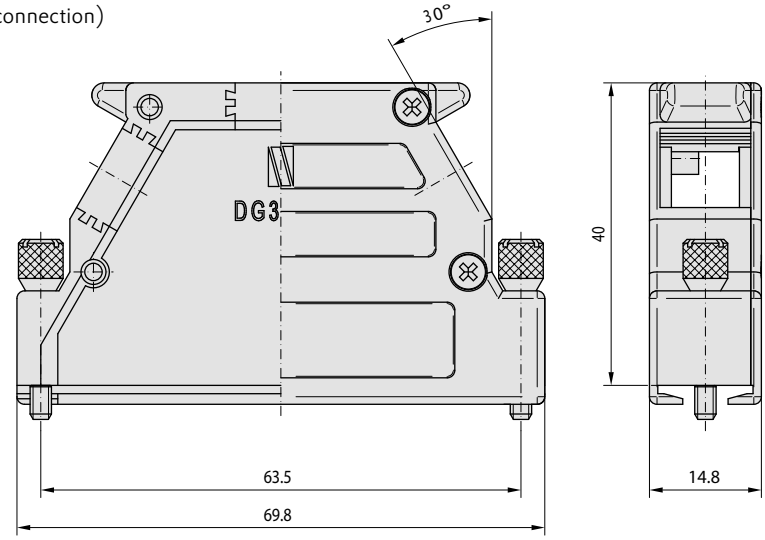
Art.-No. DG37MS

Specification

- For D-Sub connectors 37-way or HD 62
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100

Scope of delivery

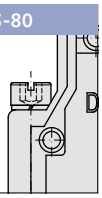
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

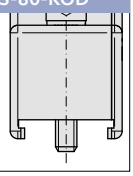
Art.-No. DG37MS-80

4-40 UNC
ISK



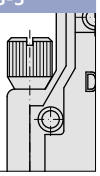
Art.-No. DG37MS-80-KOD

as DG37MS-80, codable



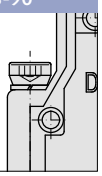
Art.-No. DG37MS-3

M3
Knurled / slotted



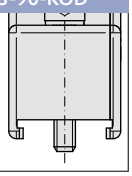
Art.-No. DG37MS-90

M3
ISK



Art.-No. DG37MS-90-KOD

as DG37MS-90, codable



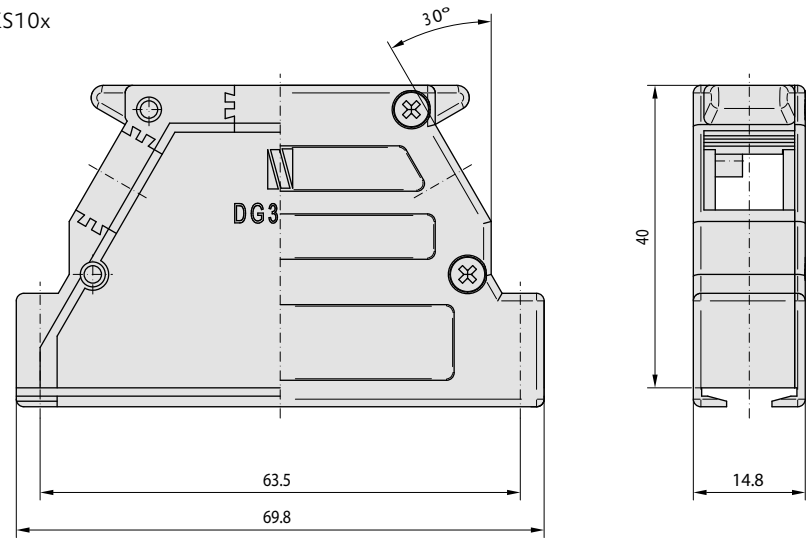
MS / 37-way / cable entries 1x 0° and 2x 30° / without screws

Art.-No. DG37MS-C100

Specification
- For D-Sub connectors 37-way or HD 62
- Compact design (40 mm installation height without cable connection)
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100
- Without pre-mounted locking screws, for individual configuration

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Notice for order processing
- The preperation for screw retention will be executed according to the application
- Please indicate on your order whether the hood will be equipped with 4-40 UNC, M3 or special screws

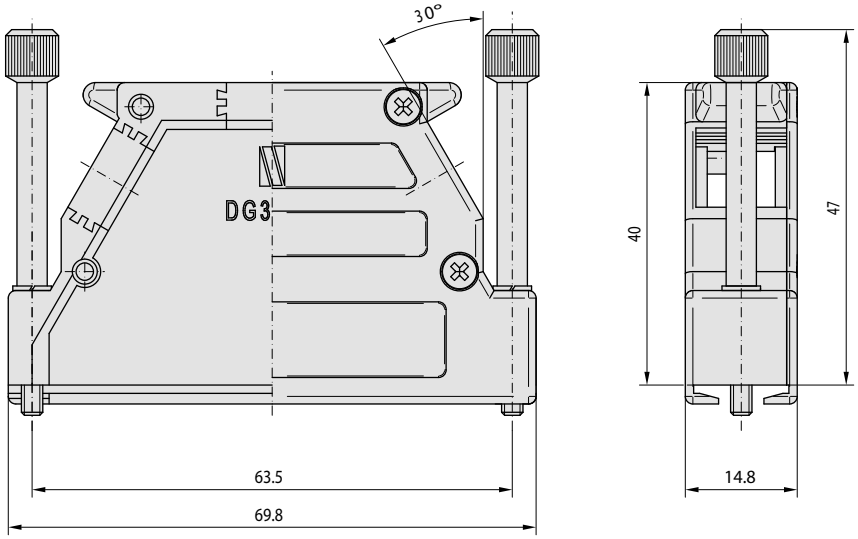


MS / 37-way / cable entry 1x 0° / long shank

Art.-No. DG37MS-50

Specification
- For D-Sub connectors 37-way or HD 62
- Long knurled jackscrews for interfaces difficult to access
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) inaccessible, closed with blind plug

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

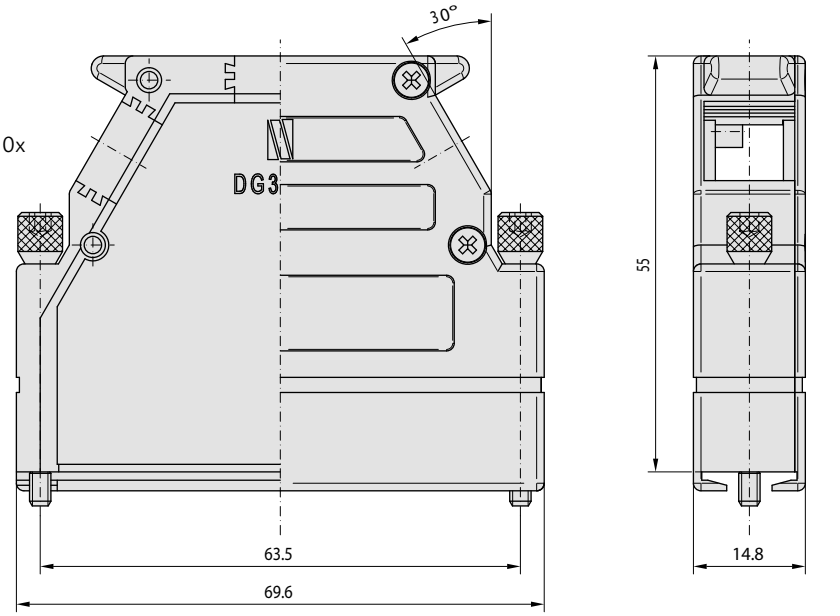


MS-2 / 37-way / extended version / cable entries 1x 0° and 2x 30°

Art.-No. DG37MS-2

Specification
- For D-Sub connectors 37-way or HD 62
- Extended version (55 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100

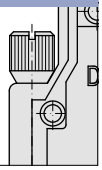
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG37MS-2-3

M3
knurled / hex. socket
extended version

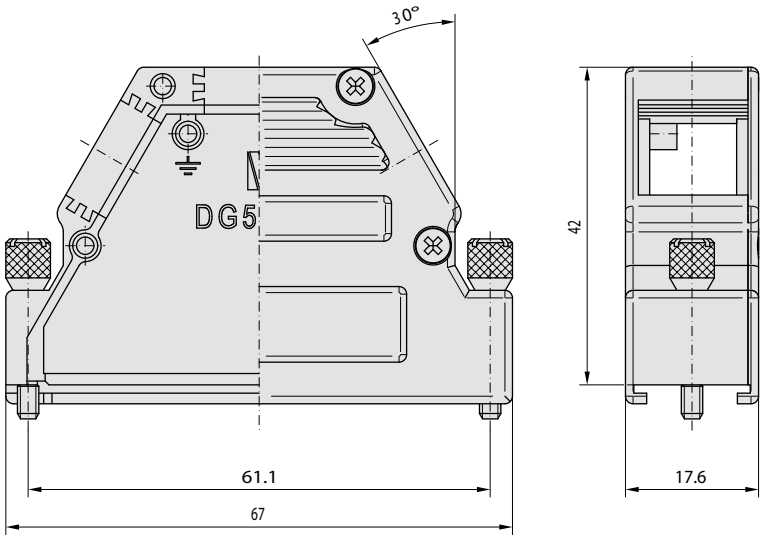


MS / 50-way / cable entries 1x 0° and 2x 30°

Art.-No. DG50MS

Specification
- For D-Sub connectors 50-way or HD 78
- Compact design (42 mm installation height without cable connection)
- Width 17,6 mm
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200
- All product variants suitable for coding

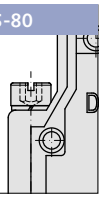
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

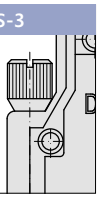
Art.-No. DG50MS-80

4-40 UNC
ISK



Art.-No. DG50MS-3

M3
Knurled / slotted



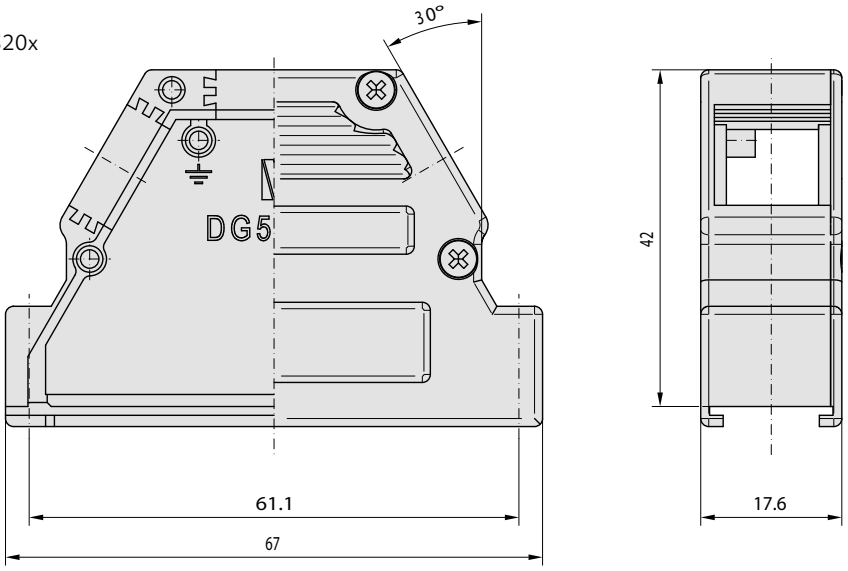
MS / 50-way / cable entries 1x 0° and 2x 30° / without screws

Art.-No. DG50MS-C100

Specification
- For D-Sub connectors 50-way or HD 78
- Compact design (42 mm installation height without cable connection)
- Width 17,6 mm
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200
- Without pre-mounted locking screws, for individual configuration

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Notice for order processing
- The preperation for screw retention will be executed according to the application
- Please indicate on your order whether the hood will be equipped with 4-40 UNC, M3 or special screws

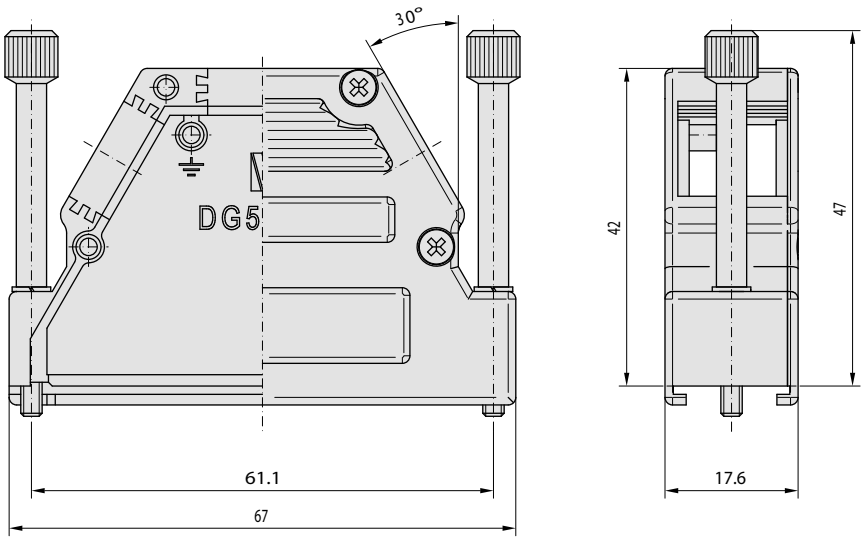


MS / 50-way / cable entries 1x 0° / long shank

Art.-No. DG50MS-50

Specification
- For D-Sub connectors 50-way or HD 78
- Long knurled jackscrews for interfaces difficult to access
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) inaccessible, closed with blind plug

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. captive jackscrews, 4-40 UNC, knurled
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7



MS-2 / 50-way / extended version / cable entries 1x 0° and 2x 30°

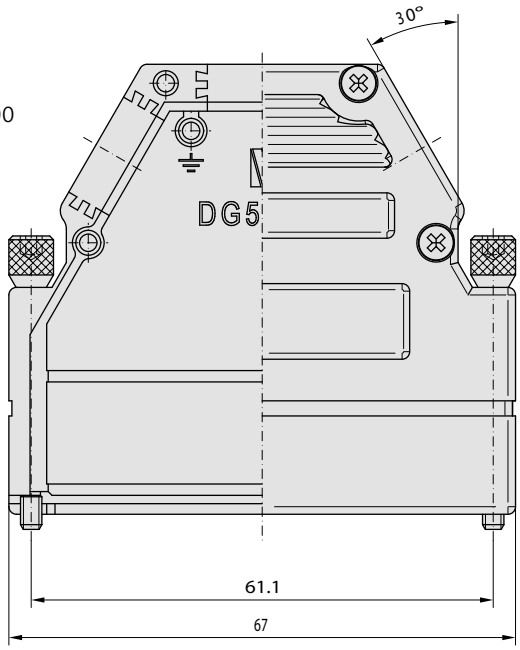
Art.-No. DG50MS-2

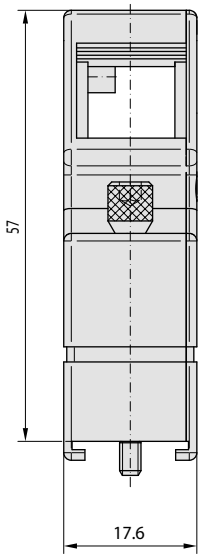
Specification

- For D-Sub connectors 50-way or HD 78
- Extended version (57 mm installation height without cable connection), particularly suitable for special wiring our integrated PCB
- Width 17,6 mm
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200
- All product variants suitable for coding

Scope of delivery

- 1 pc. metal hood with cover
- 2 pcs. captive knurled screws 4-40 UNC with hexagon socket
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

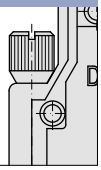




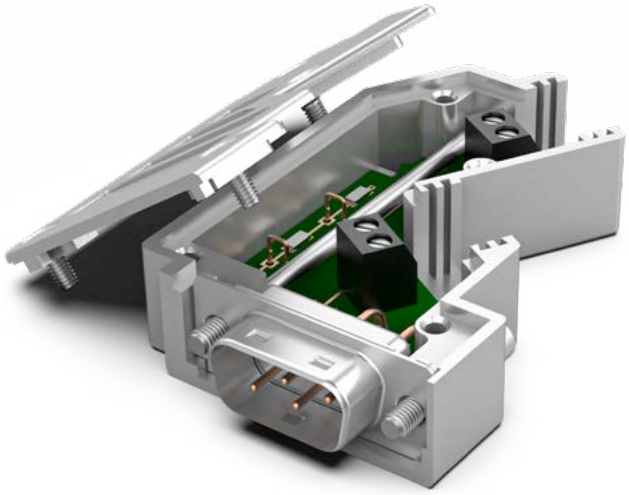
Product variants

Art.-No. DG50MS-2-3

M3



MSB series – the universal solution for data bus applications



D-Sub connectors are still a preferred interface for the integration of end devices into bus systems. With the MSB series, Inotec offers the perfect basis for the construction of fully shielded bus connectors in combination with the unique crimp flange in dovetail design. On request, Inotec offers its MSB housing fully equipped as an intermediate or final version for all common bus systems.

Special Features:

- Locking screws 4-40 UNC or M3, captive pre-assembled
- Two parallel 30° cable inputs do enable space-saving cabling even with large bending radii
- Optimum stacking due to compact external dimensions
- Large interior space to accommodate printed circuit boards
- Long blanket for reliable shielding even at high noise levels

Selection table

Series	Art.-No.	Thread type	Cable entry / entries	Screw type	Hood type	cod.	Page
D-Sub 9-way / HD 15							
MSB	**DG09MSB**	4-40 UNC	2x 30° parallel	hexagon head	long blanket		44
	DG09MSB-91	M3	2x 30° parallel	hexagon head	long blanket		44
	DG09MSB-C102	4-40 UNC	2x 30° parallel	hexagon head	short blanket		44
	DG09MSB-91-C101	M3	2x 30° parallel	hexagon head	short blanket		44
D-Sub 15-way / HD 26							
MSB	**DG15MSB**	4-40 UNC	2x 30° parallel	hexagon head	long blanket		45
	DG15MSB-91	M3	2x 30° parallel	hexagon head	long blanket		45
	DG15MSB-C102	4-40 UNC	2x 30° parallel	hexagon head	short blanket		45
	DG15MSB-91-C101	M3	2x 30° parallel	hexagon head	short blanket		45

Standard packing units

Inotec full-metal hoods and accessories of the MSB series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15 25 pcs.
D-Sub 15-way / HD 26 25 pcs.

Hoods, cover screws, grounding screws and blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

MSB / 9-way / long blanket / cable entries 2x 30° parallel

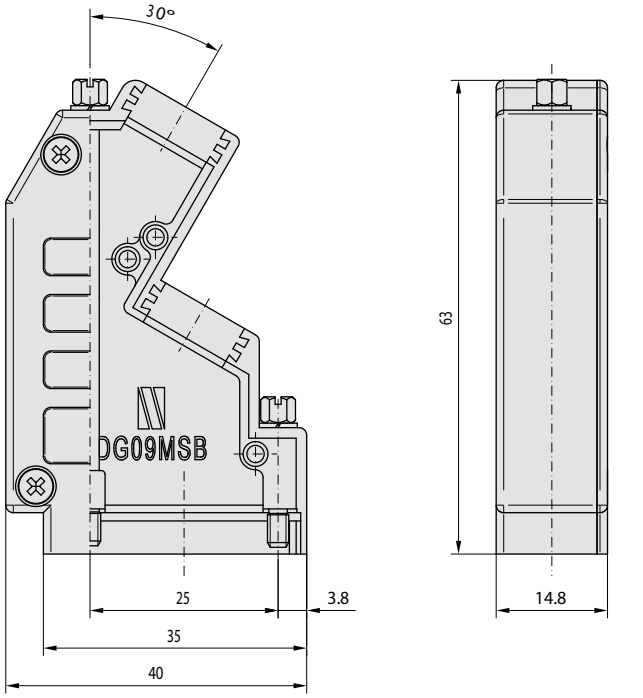
Art.-No. DG09MSB

Specification

- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 9-way or HD 15
- 2 parallel, stepped cable entries for CF100 / 300 or DKS10x (only upper entry)
- Specially designed for bus applications, available with integrated PCB for all bus types upon request

Scope of delivery

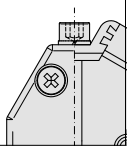
- 1 pc. metal hood with cover
- 1 pc. hex. head screw, slotted 4-40 UNCx16,5 mm
- 1 pc. hex. head screw, slotted 4-40 UNCx58,5 mm
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG09MSB-91

M3
long blanket



MSB / 9-way / short blanket / cable entries 2x 30° parallel

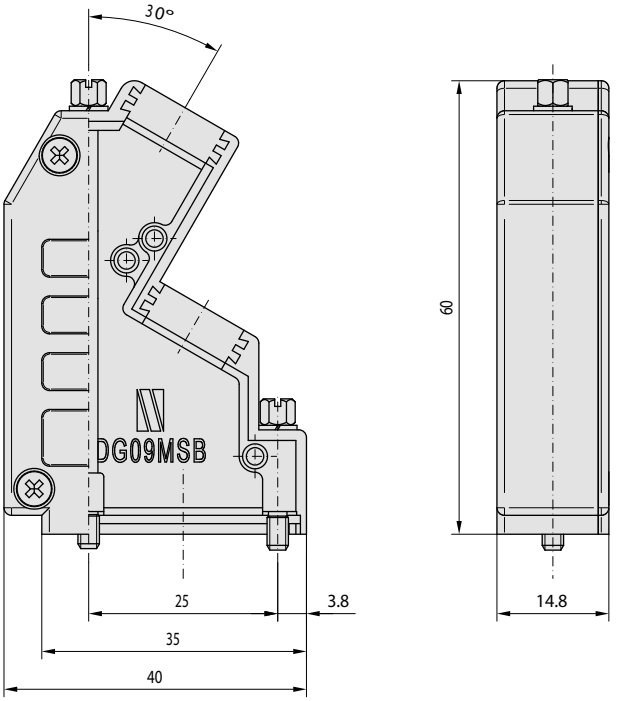
Art.-No. DG09MSB-C102

Specification

- The short blanket provides additional clearance to avoid collisions and to achieve plug-in safety on recessed interfaces and thick front panels
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 9-way or HD 15
- 2 parallel, stepped cable entries for CF100 / 300 or DKS10x (only upper entry)
- Specially designed for bus applications, available with integrated PCB for all bus types upon request

Scope of delivery

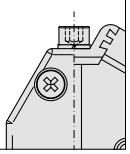
- 1 pc. metal hood with cover, short blanket
- 1 pc. hex. head screw, slotted 4-40 UNCx16,5 mm
- 1 pc. hex. head screw, slotted 4-40 UNCx58,5 mm
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG09MSB-91-C101

M3
short blanket

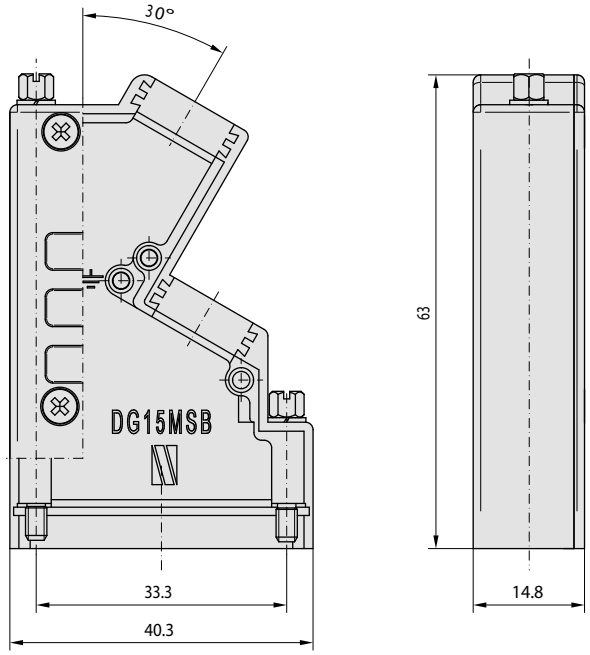


MSB / 15-way / long blanket / cable entries 2x 30° parallel

Art.-No. DG15MSB

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 15-way or HD 26
- 2 parallel, stepped cable entries for CF100 / 300 or DKS10x (only upper entry)
- Specially designed for bus applications, available with integrated PCB for all bus types upon request

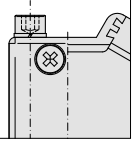
Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. hex. head screw, slotted 4-40 UNCx16,5 mm
- 1 pc. hex. head screw, slotted 4-40 UNCx58,5 mm
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DG15MSB-91

M3
long blanket

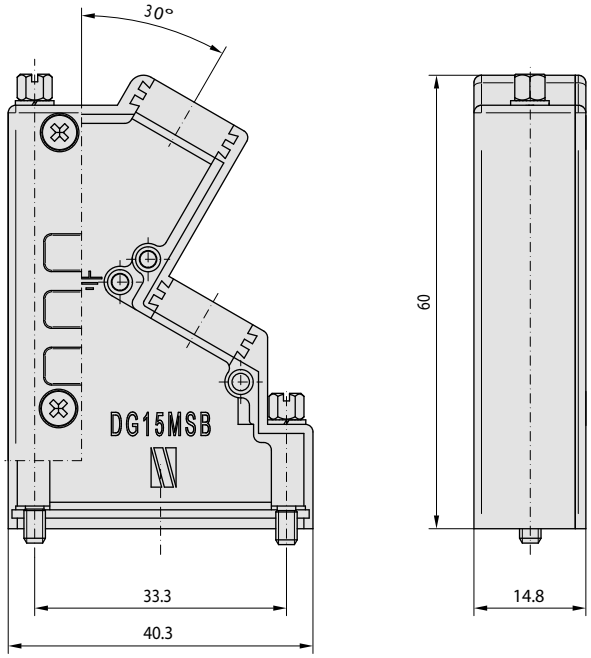


MSB / 15-way / short blanket / cable entries 2x 30° parallel

Art.-No. DG15MSB-C102

Specification
- The short blanket provides additional clearance to avoid collisions and to achieve plug-in safety on recessed interfaces and thick front panels
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 15-way or HD 26
- 2 parallel, stepped cable entries for CF100 / 300 or DKS10x (only upper entry)
- Specially designed for bus applications, available with integrated PCB for all bus types upon request

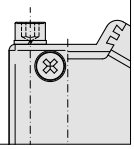
Scope of delivery
- 1 pc. metal hood with cover, short blanket
- 1 pc. hex. head screw, slotted 4-40 UNCx16,5 mm
- 1 pc. hex. head screw, slotted 4-40 UNCx58,5 mm
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

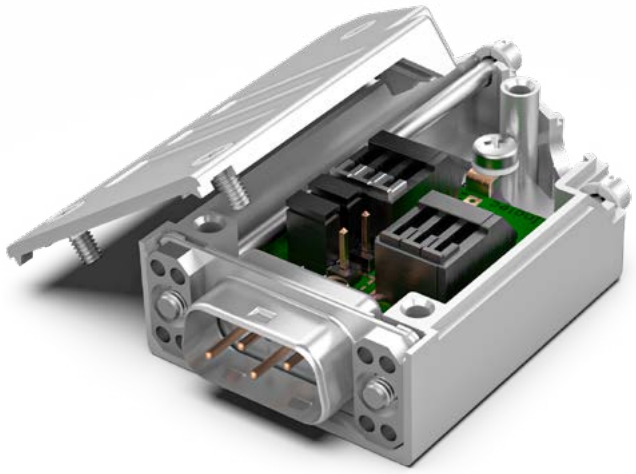
Art.-No. DG15MSB-91-C101

M3
short blanket



MSBS series – compact data bus connectors for high packing density

Weight saving and the optimal utilization of limited installation spaces are essential design premises in most industrial communication systems. With the development of its compact MSBS housing Inotec has set a particular focus on these requirements. Specially designed for BUS applications, MSBS series is only available for 9-way connectors. Due to the relatively small diameters of commonly used BUS data cables Inotec could develop a space-saving crimp flange named CF400, allowing two parallel 30° cable entries and maximized installation space inside the hood. The DG09MSBS is available either as empty backshell for individual use or as completely assembled BUS connector for all common systems.



Special features:

- Compact design enables high packing density
- Special crimp flange geometry CF400 for data bus cables
- Free access to locking screws, even in unfavorable installation positions
- Fully compatible with the Inotec coding system
- Long blanket for safe shielding even at high noise levels

Selection table

Series	Art.-No.	Thread type	Cable entry / entries	Screw type	Hood type	cod.	Page
D-Sub 9-way / HD 15							
MSBS	**DG09MSBS**	4-40 UNC	2x 30° parallel	ISK	long blanket	■	47
	DG09MSBS-91	M3	2x 30° parallel	ISK	long blanket	■	47
	DG09MSBS-C101	4-40 UNC	2x 30° parallel	ISK	short blanket	■	47
	DG09MSBS91-C101	M3	2x 30° parallel	ISK	short blanket	■	47
	DG09MSBS/4-40	Int. thread 4-40 UNC	2x 30° parallel		coupling	■	48

Accessories and spare parts

Description	Art.-No.	Notice	Page
Crimp flange for MSBS series hoods	**CF400-x/x**	diameters x/x according to crimp data definition	48
Blind plug for MSBS series hoods	**DBS400**		48
Rubber blind plug	**KBS400**	for coupling connector	48

Standard packing units

Inotec full-metal hoods and accessories of the MSBS series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15 25 pcs.

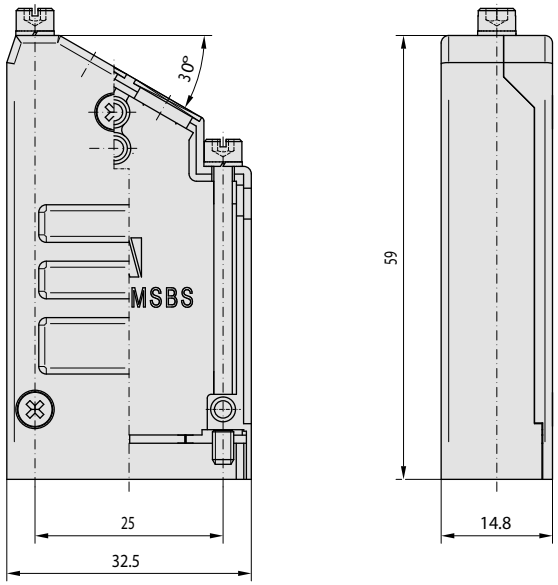
Hoods, cover and grounding screws are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

MSBS / 9-way / long blanket / cable entries 2x 30° parallel

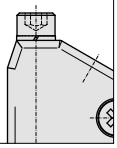
Art.-No. DG09MSBS

Specification
- HF-shielding full-metal housing with labyrinth cover
- For D-Sub connectors 9-way and HD 15
- Slim design (32,5 mm)
- 2 parallel cable entries CF400, 30°

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. hex. socket screw 4-40 UNCx40,2
- 1 pc. hex. socket screw 4-40 UNCx57,5
- 2 pcs. washers
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x6



Product variants

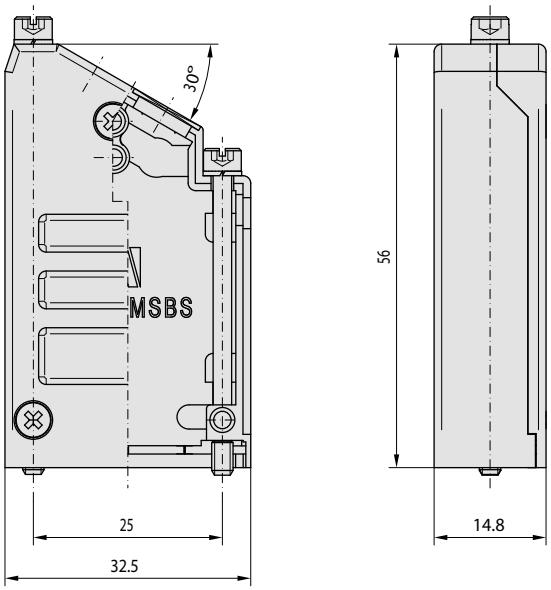
Art.-No. DG09MSBS-91	
M3 with ISK long blanket	

MSBS / 9-way / short blanket / cable entries 2x 30° parallel

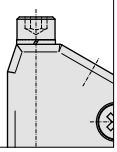
Art.-No. DG09MSBS-C101

Specification
- The short blanket provides additional clearance to avoid collisions and to achieve plug-in safety on recessed interfaces and thick front panels
- HF-shielding full-metal housing with labyrinth cover
- For D-Sub connectors 9-way and HD 15
- Slim design (32,5 mm)
- 2 parallel cable entries CF400, 30°

Scope of delivery
- 1 pc. metal hood with cover, short blanket
- 1 pc. hex. socket screw 4-40 UNCx40,2
- 1 pc. hex. socket screw 4-40 UNCx57,5
- 2 pcs. washers
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x6



Product variants

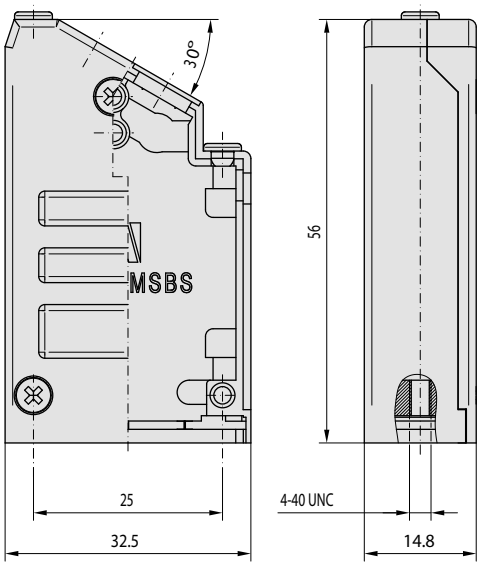
Art.-No. DG09MSBS91-C101	
M3 with ISK short blanket	

MSBS / 9-way / coupling / Internal thread / cable entries 2x 30° parallel

Art.-No. DG09MSBS/4-40

Specification
- HF-shielding full-metal housing with labyrinth cover
- For D-Sub connectors 9-way and HD 15
- Slim design (32,5 mm)
- Flat front face with 4-40 UNC female threads for use as coupling connector
- 2 parallel cable entries CF400, 30°

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. rubber blind plugs
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x6



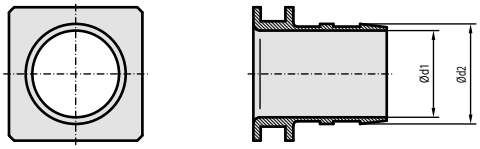
Crimp flange for MSBS-series hoods

Art.-No. CF400-x/x

Specification
- Crimp flange suitable for MSBS series hoods DG09MSBS
- Processing in combination with CH-x/x crimp ferrules according to Inotec crimp data definition and cable processing instruction
- Maximum 6,5 mm inner diameter for wire feedthrough

Scope of delivery
- 1 pc. crimp flange

x/x bezeichnet in der Bestellnummer den jeweiligen Innen- bzw. Außendurchmesser D1 / D2.

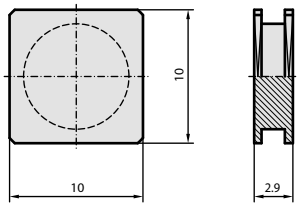


Blind plug for MSBS-series hoods

Art.-No. DBS400

Specification
- Blind plug suitable for MSBS series hoods DG09MSBS
- Covers obsolete cable entries
- Optional implementations (e. g. LED or leash) upon request

Scope of delivery
- 1 pc. blind plug

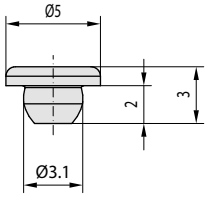


Rubber blind plugs

Art.-No. KBS400

Specification
- KAPSTO® blind plug
- Required for all MSBS-versions without locking screws (coupling / slide lock)

Scope of delivery
- Bag with 100 pcs.

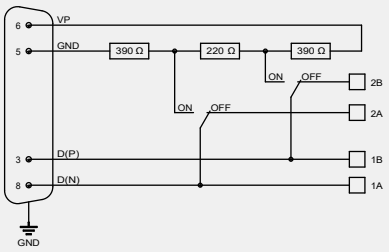


MSBS series – bus connectors ready for use

In addition to the freely configurable standard housing, Inotec also manufactures fully assembled connector housings for all common bus systems. The matching crimp flanges and crimp sleeves for cable processing are to be purchased separately in accordance with cable-specific crimp flange specifications. We are happy to offer customer-specific configurations on request.

Configuration options

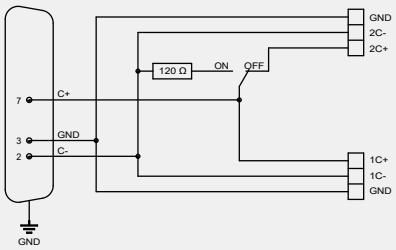
- D-Sub 9-way / HD 15-way
- Male / female
- Cable entry right / left
- Long blanket / short blanket
- Screw lock 4-40 UNC/M3
- Coupling plug with 4-40 UNC/M3 bolts
- Inotec coding system
- PCB wit individual pin assignment
- SMD or DIP assembly



Profibus

Specification

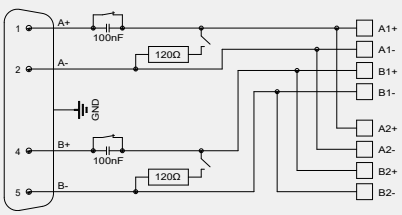
- Bus connector for Profibus systems
- Pin assignment 3, 5, 6 and 8
- 2 jumpers to change between use as intermediate or terminal plug



CAN

Specification

- Bus connector for CAN systems
- Pin assignment 2, 3 and 7
- 1 jumper to change between use as intermediate or terminal plug



MVB / WTB

Specification

- Bus connector for MVB systems
- Pin assignment 1, 2, 4 and 5
- 4 jumpers to change between use as intermediate or terminal plug

Further data bus types on request.

MSX series – for highest safety requirements

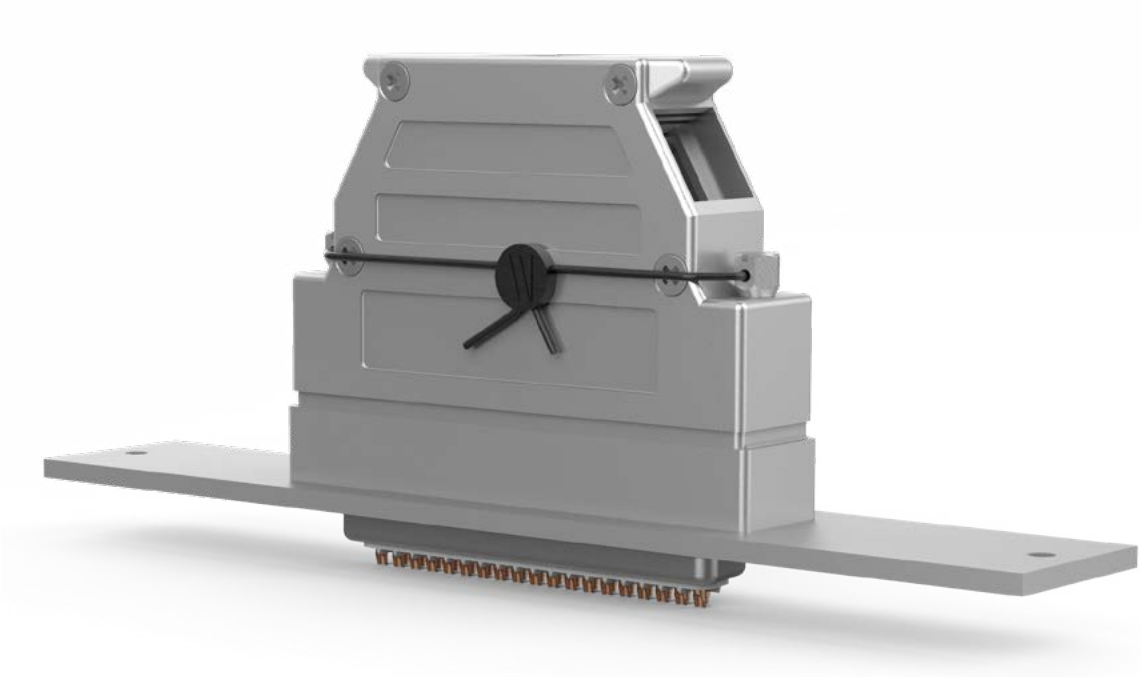
The MSX series has been developed for highly sensitive applications in high frequency ranges or with high noise levels. The blanket on the housing has the maximum depth closing the gap to the front panel of the end device when the locking screws are tightened. The contact with the front panel also provides additional grounding. MSX interfaces achieve maximum shielding of the transmitted data or signals. Special screws with a transverse hole in the screw head also allow the mounted housing to be sealed and thus offer protection against unauthorized access.

Special features:

- Extended "close-the-gap" blanket for an interference-free connection to a terminal device
- Large interior space e.g. for installation of mixed connectors or integration of PC boards
- Pre-assembled captive M3 screws with sealing bores

Important notice:

Mating connector must be mounted in rear panel configuration and panel thickness must be kept between 2,0 and 2,5 mm.



Selection table

Series	Art.-No.	Thread type	Cable entry / entries	Screw type	Hood type	cod.	Page
D-Sub 9-way / HD 15							
MSX	**DG09MS-1X**	M3	1x 30°	hexagon head, sealable	long blanket		52
	DG09MSX	M3	1x 0°	hexagon head, sealable	long blanket		52
D-Sub 15-way / HD 26							
MSX	**DG15MSX**	M3	1x 30°	hexagon head, sealable	long blanket		53
D-Sub 25-way / HD 44							
MSX	**DG25MSX**	M3	1x 0°, 2x 30°	hexagon head, sealable	long blanket		53
D-Sub 37-way / HD 62							
MSX	**DG37MSX**	M3	1x 0°, 2x 30°	hexagon head, sealable	long blanket		54
	DG37MSX-KOD	M3	1x 0°, 2x 30°	hexagon head, sealable	long blanket	■	54
D-Sub 50-way / HD 78							
MSX	**DG50MSX**	M3	1x 0°, 2x 30°	hexagon head, sealable	long blanket		54
HD 104							
MSX	**DG104MSX**	4-40 UNC	1x 0°, 2x 30°	hexagon head, sealable	long blanket		55

Accessories

Description	Art.-No.	Page
Locking bolt	**DV-B3/1-2**	55

Standard packing units

Inotec full-metal hoods and accessories of the MSX series are supplied as standard in the following packing units:

D-Sub 9-way / HD 15	42 pcs.
D-Sub 15-way / HD 26	36 pcs.
D-Sub 25-way / HD 44	24 pcs.
D-Sub 37-way / HD 62	18 pcs.
D-Sub 50-way / HD 78	15 pcs.
HD 104	15 pcs.

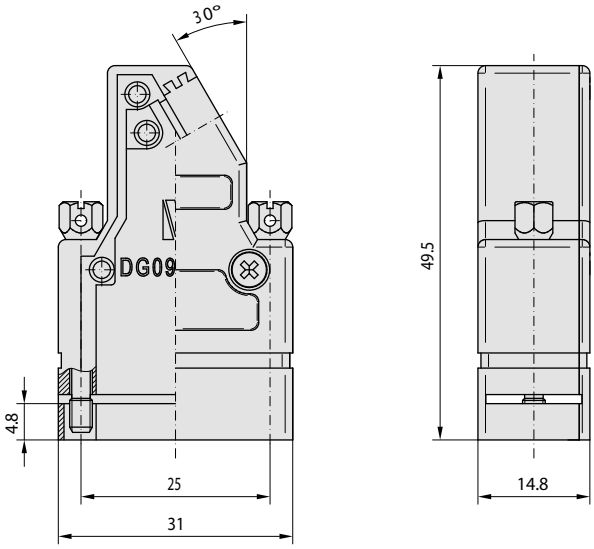
Hoods, cover screws, grounding screws and, if included in scope of delivery, blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

MSX / 9-way / long blanket / cable entry 1x 30°

Art.-No. DG09MS-1X

Specification
- For D-Sub connectors 9-way or HD 15
- 49,5 mm installation height without cable connection and plain front panel contact
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

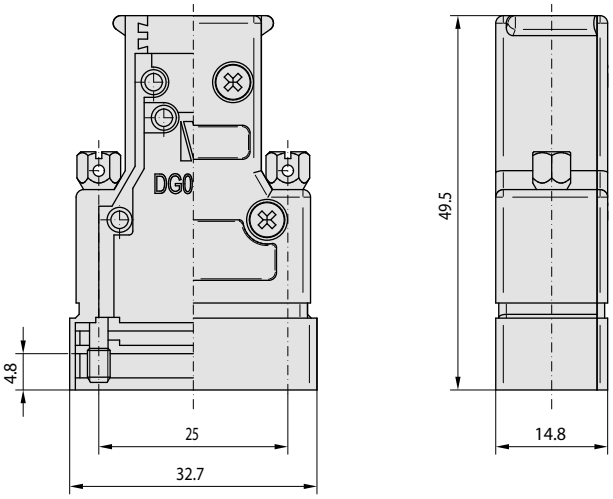


MSX / 9-way / long blanket / cable entry 1x 0°

Art.-No. DG09MSX

Specification
- For D-Sub connectors 9-way or HD 15
- 49,5 mm installation height without cable connection and plain front panel contact
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

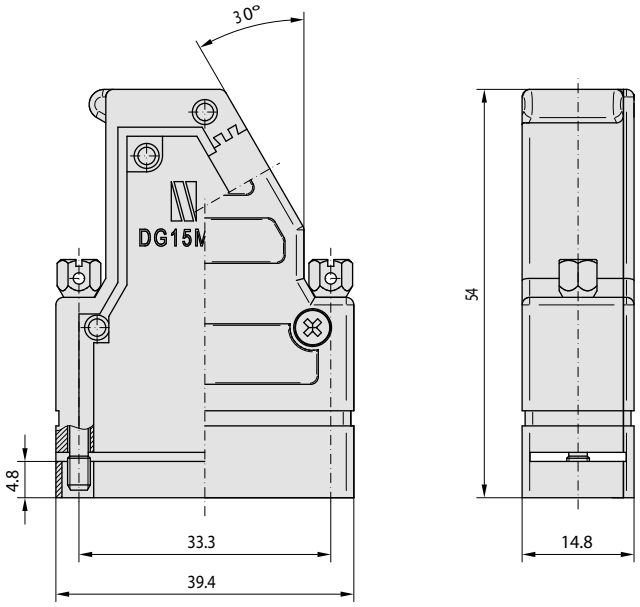


MSX / 15-way / long blanket / cable entry 1x 30°

Art.-No. DG15MSX

Specification
- For D-Sub connectors 15-way or HD 26
- 54 mm installation height without cable connection and plain front panel contact
- 14,8 mm width allows high packing densities
- 1 cable entry lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 1 pc. grounding screw M2,5x4,5
- 3 pcs. cover screws M2,5x7

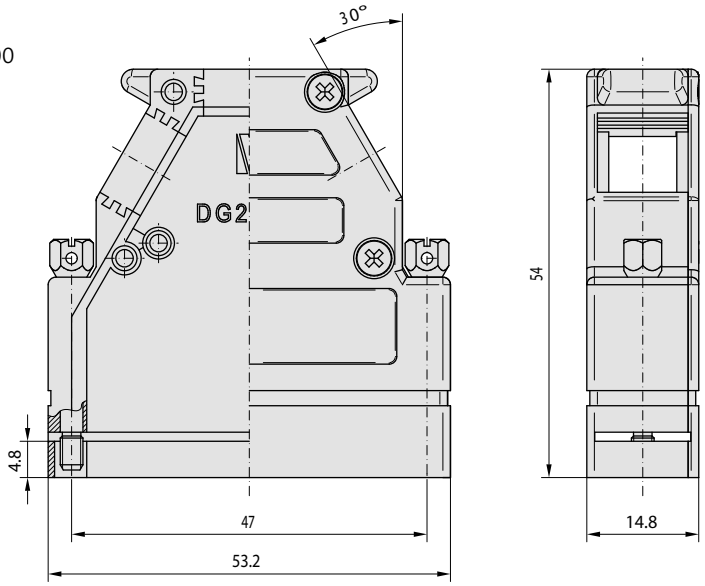


MSX / 25-way / long blanket / cable entries 1x 0° and 2x 30°

Art.-No. DG25MSX

Specification
- For D-Sub connectors 25-way or HD 44
- 54 mm installation height without cable connection and plain front panel contact
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

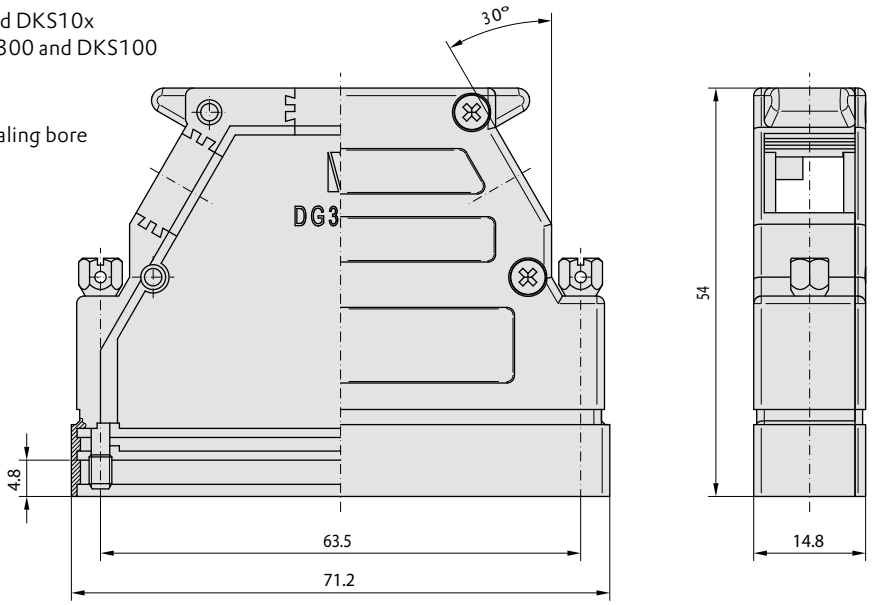


MSX / 37-way / long blanket / cable entries 1x 0° and 2x 30°

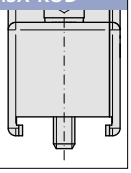
Art.-No. DG37MSX

Specification
- For D-Sub connectors 37-way or HD 62
- 54 mm installation height without cable connection and plain front panel contact
- 14,8 mm width allows high packing densities
- 1 cable entry straight (0°) for CF100 / 300 and DKS10x
- 2 cable entries each lateral (30°) for CF100 / 300 and DKS100

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

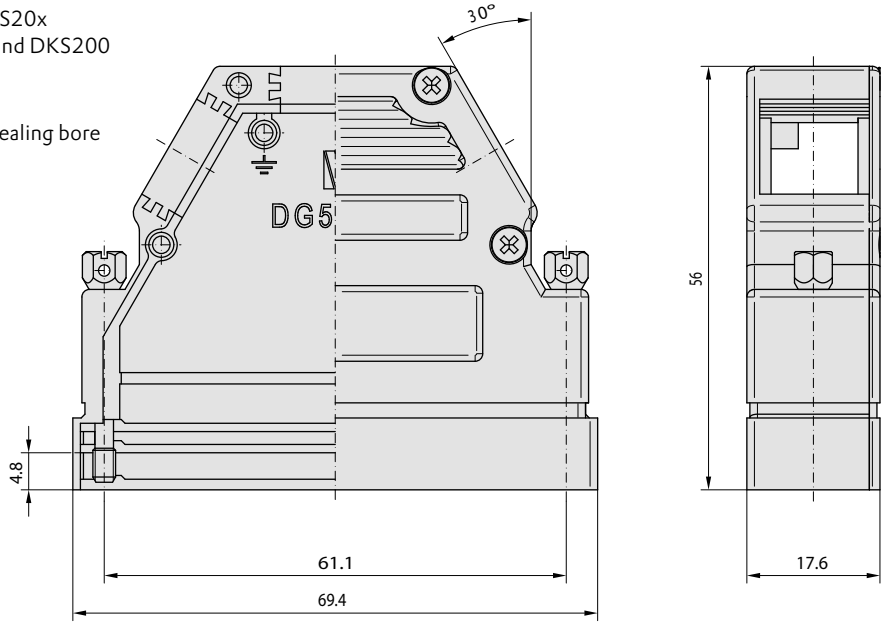
Art.-No. DG37MSX-KOD	
codable	

MSX / 50-way / long blanket / cable entries 1x 0° and 2x 30°

Art.-No. DG50MSX

Specification
- For D-Sub connectors 50-way or HD 78
- 56 mm installation height without cable connection and plain front panel contact
- Width 17,6 mm
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS200

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M3, slotted with sealing bore
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



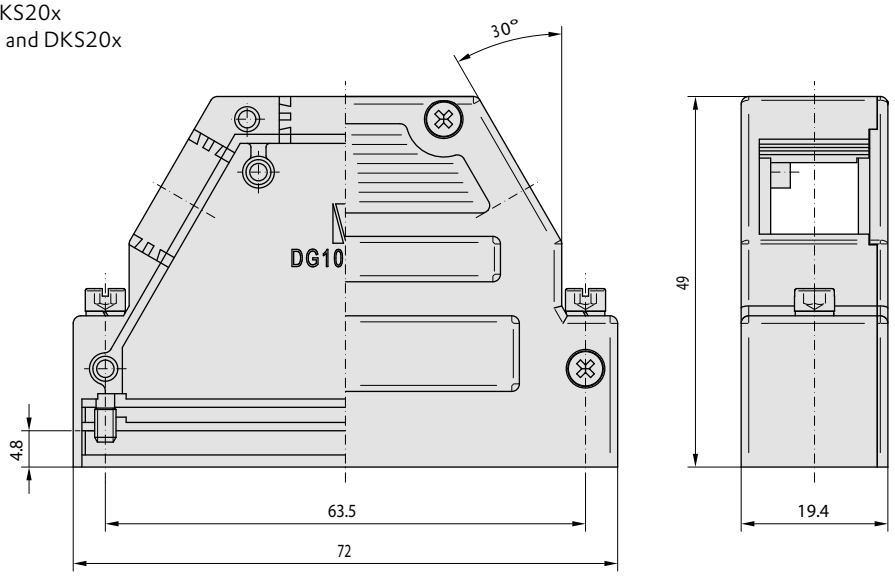
MSX / 104-way / long blanket / cable entries 1x 0° and 2x 30°

Art.-No. DG104MSX

Specification
- For D-Sub connectors HD 104 (size F)
- 49 mm installation height without cable connection and plain front panel contact
- Width 19,4 mm
- 1 cable entry straight (0°) for CF200 and DKS20x
- 2 cable entries each lateral (30°) for CF200 and DKS20x

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hex. socket screw 4-40 UNC, slotted
- 2 pcs. washers
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

Instruction for installation
- DG104MSX is only available with 4-40 UNC screws
- Not compatible with DV-B3/2

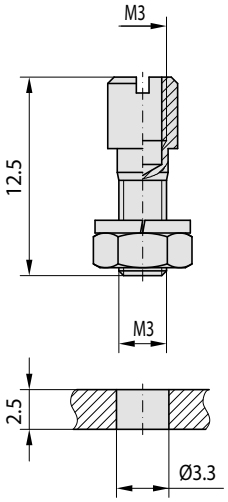


Locking bolt

Art.-No. DV-B3/1-2

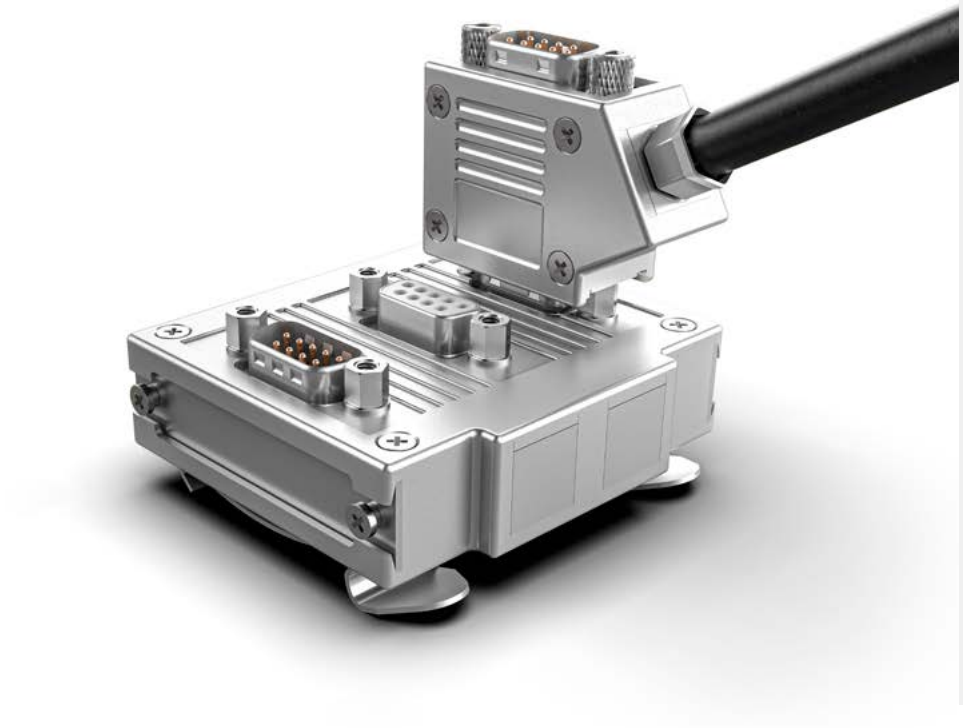
Specification
- Special bolt for positoning and fixation of MSX series hoods on terminal devices
- Only for counter connectors in rear panel mount position
- Maximum front panel thickness 2,5 mm
- Hole diameter 3,3 mm (centered bolts)

Scope of delivery
- 2 pcs. bolt with internal / external thread M3
- 2 pcs. washers
- 2 pcs. nuts M3



Adaptor hoods for special applications

Whether as a distribution housing, as a diagnostic connector or as a minicomputer – the DGA series offers a wide range of possible applications and thus more than lives up to the term „adaptor hood". While the extremely low-profile M11 series is particularly suitable for use as a space-saving diagnostic connector or as a gender changer, the housings of M30 series can be equipped with complete printed circuit boards or complex cabling due to their large interior space. Inotec offers a customer-specific design and PCB assembly as an option for all enclosures. In combination with the high-quality gold-plated solder cup or dip soldering connectors from Inotec, you get an individual high-tech solution.



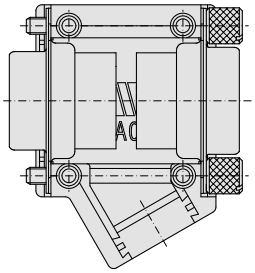
Versatile applications of the M11 and M30 series

- Locking screws with internal thread for use as diagnostic plugs in piggy-back mounting
- Setup as DIN rail housing with design variants for accommodating blank plates with snap-in clip
- Construction as gender changer or coupling plug
- Ready-to-assemble HD 15 and HD 26 diagnostic connectors with rigid-flex board
- The 25- and 37-way M30 distributor housings are available in a ready-to-use configuration or as empty housings for individual D-Sub configuration
- The M30 series can also be used as a universal compact housing, with or without DIN rail option

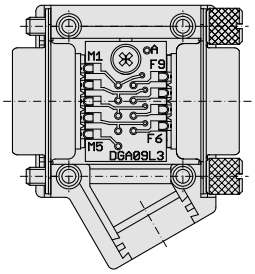
Examples for piggy-back applications

Specification

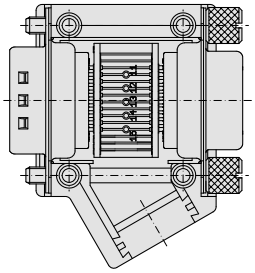
- The M11 series hoods are characterized by their particularly low design
- The standard version with locking screws allows the mounting of D-Sub or HD connectors on both sides and is therefore the perfect basis for diagnostic plugs
- The captive screws are coming with internal and external threads, optionally 4-40 UNC or M3
- Grounding point for fixation of printed circuit boards
- Standard cable entry 30°



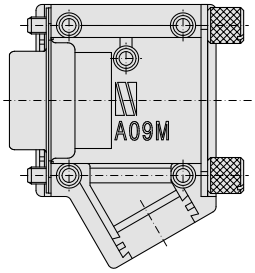
Individual setup, e. g. with crimp connectors



Diagnostic plug (1:1 male - female) or gender changer



HD 15 and HD 26 diagnostic plug (1:1 male - female)

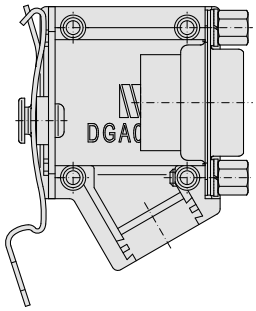


Combination with blind plate allows use as low-profile connector hood

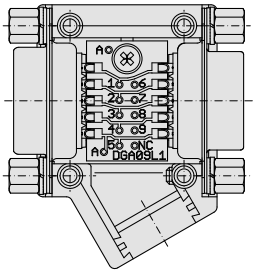
Variants without locking screws, suitable for adaptors

Specification

- All M11 housings are available as a variant with internal thread instead of locking screws
- This allows the installation of DIN rail adaptors or couplings
- If the cable entry is not in use, it can be closed with a blind plug
- Single-sided preparation for blank plate and 2x internal thread or 4x internal thread
- Optionally without grounding point



Setup with blind plate and snap on hook as DIN rail adaptor



Coupling connector with threaded bolts on both sides

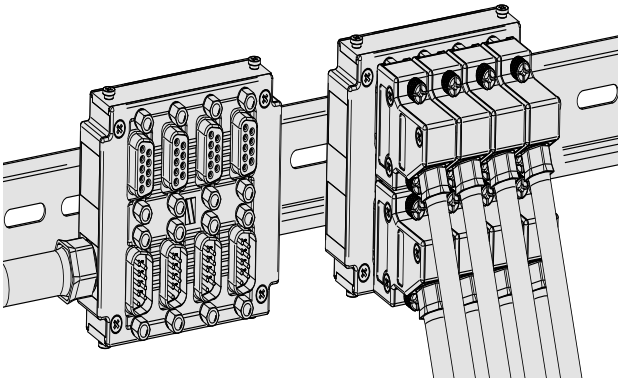
Distributor housings

Specification

- The hoods and housings of the M30 series offer sufficient space for the integration of up to 8 D-Sub connectors
- Inotec offers various variants with 1:1 cabling between one input and up to 3 output interfaces

Setup

- D-Sub IDC pin / socket as required
- Internal 1:1 cabling via ribbon cable
- Connection bolts in M3 or 4-40 UNC
- On request also with snap-in clip for DIN rail mounting



Piggy-back hoods

Series	Art.-No.	Cable entry / entries	Thread (internal / external)	Specification	Page
D-Sub 9-way / HD 15					
M11	**DGA09M11**	1x 30°	4-40 UNC / 4-40 UNC		61
	DGA09M11-3	1x 30°	M3 / M3		61
	DGA09M11-C110	1x 30°	4-40 UNC / 4-40 UNC	without grounding post	61
M30	**DGA09M30**	2x 90°	4-40 UNC / 4-40 UNC		67
	DGA09M30-91	2x 90°	M3 / M3		67
D-Sub 15-way / HD 26					
M11	**DGA15M11**	1x 30°	4-40 UNC / 4-40 UNC		62
	DGA15M11-3	1x 30°	M3 / M3		62
	DGA15M11-C102	1x 30°	4-40 UNC / 4-40 UNC	without grounding post	62
M30	**DGA15M30**	2x 90°	4-40 UNC / 4-40 UNC		68
	DGA15M30-91	2x 90°	M3 / M3		68
D-Sub 25-way / HD 44					
M11	**DGA25M11**	1x 30°	4-40 UNC / 4-40 UNC		64
	DGA25M11-3	1x 30°	M3 / M3		64
	DGA25M11-C110	1x 30°	4-40 UNC / 4-40 UNC	without grounding post	64
M30	**DGA25M30**	2x 90°	4-40 UNC / 4-40 UNC		69
	DGA25M30-91	2x 90°	M3 / M3		69
D-Sub 37-way / HD 62					
M11	**DGA37M11**	1x 30°	4-40 UNC / 4-40 UNC		65
	DGA37M11-3	1x 30°	M3 / M3		65
	DGA37M11-C104	1x 30°	4-40 UNC / 4-40 UNC	without grounding post	65
M30	**DGA37M30**	2x 90° LH + 2x 90° RH	4-40 UNC / 4-40 UNC		73
	DGA37M30-91	2x 90° LH + 2x 90° RH	M3 / M3		73

For the use of our Inotec coding system in piggy-back applications, please contact our technical support at sales@inotec-electronics.com.

Standard packing units

Inotec full-metal hoods and accessories of the M11 and M30 series are supplied as standard in the following packing units:

	M11	**M30**
D-Sub 9-way / HD 15	25 pcs.	24 pcs.
D-Sub 15-way / HD 26	20 pcs.	24 pcs.
D-Sub 25-way / HD 44	15 pcs.	15 pcs.
D-Sub 37-way / HD 62	10 pcs.	1 pc.

Hoods, cover screws, grounding screws and, if included in scope of delivery, blind plugs are packed separately.
On request, all Inotec products can also be supplied in individual packaging (VPE1).

DIN rail adaptors and couplings

Series	Art.-No.	Cable entry / entries	Prepared for DIN rail installation	Internal thread 4-40 UNC	incl. hexagon bolt	Specification	cod.	Page
D-Sub 9-way / HD 15								
M11	**DGA09M11-C103**	1x 30°	■	2x	2x 4-40 UNC		■	61
	DGA09M11-C104	1x 30°	■	2x	2x M3		■	61
	DGA09M11-C107	1x 30°	■	4x			■	62
	DGA09M11-C108	1x 30°		4x	4x 4-40 UNC		■	62
	DGA09M11-C113	1x 30°		4x	4x M3		■	62
M30	**DGA09M30-C105**	2x 90°	■	4x			■	67
D-Sub 15-way / HD 26								
M11	**DGA15M11-C103**	1x 30°		4x		compatible with slide lock system		63
	DGA15M11-C107	1x 30°	■	2x	2x 4-40 UNC			63
	DGA15M11-C104	1x 30°	■	2x	2x M3			63
M30	**DGA15M30-C108**	2x 90°	■	4x			■	68
D-Sub 25-way / HD 44								
M11	**DGA25M11-C107**	1x 30°	■	2x	2x 4-40 UNC	without grounding post		64
	DGA25M11-C106	1x 30°	■	2x	2x M3	without grounding post		64
	DGA25M11-C109	1x 30°		4x		compatible with slide lock system		65
M30	**DGA25M30-C109**	2x 90°		4x			■	69
D-Sub 37-way / HD 62								
M11	**DGA37M11-C102**	1x 30°	■	2x	2x 4-40 UNC			66
	DGA37M11-C103	1x 30°		4x		compatible with slide lock system		66
M30	**DGA37M30-C100**	2x 90° LH + 2x 90° RH		4x			■	73

Distributor housings for DIN rail installation

Series	Art.-No.	Cable entry / entries	Orien-tation	Thread type	Specification	Page
D-Sub 25-way / HD 44						
M30	**DGA25M30-C104**	2x 90°	II	4-40 UNC	D-Sub 9-way / 1:1 / female - female - male	70
	DGA25M30-C103	2x 90°	II	M3	D-Sub 9-way / 1:1 / female - female - male	70
	DGA25M30-C106	2x 90°	II	4-40 UNC	D-Sub 15-way / 1:1 / female - female - male	71
	DGA25M30-C107	2x 90°	II	4-40 UNC	D-Sub 9-way / 1:1 / female - male - male	70
	DGA25M30-C108	2x 90°	II	M3	D-Sub 9-way / 1:1 / female - male - male	70
	DGA25M30-C114	2x 90°	=	4-40 UNC	D-Sub 9-way / 1:1 / male - male - female - female	71
	DGA25M30-VT3-09	2x 90°	II		preparation for 3x 9-way D-Sub connectors	72
	DGA25M30-VT4-09	2x 90°	II		preparation for 4x 9-way D-Sub connectors	72

II Cable entries with downward orientation
= Cable entries with lateral orientation

Accessories

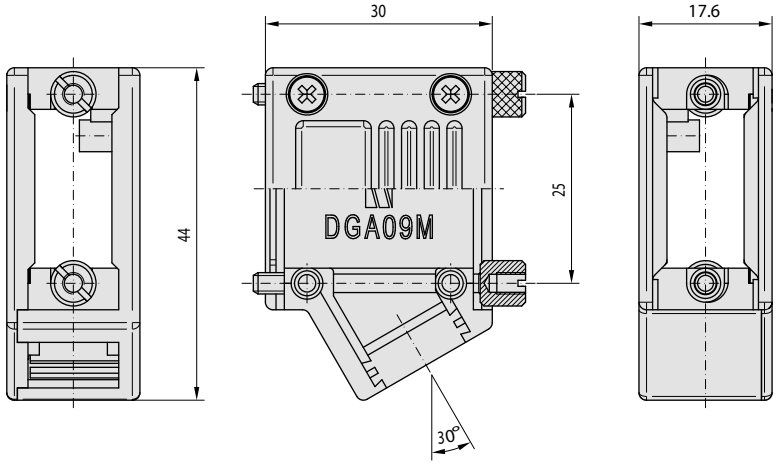
Series	Art.-No.	Hood size	Specification	Page
Blind plates				
M11	DGA09BP	D-Sub 09 / HD 15		74
	DGA15BP	D-Sub 15 / HD 26		74
M11 / M30	DGA25BP	D-Sub 25 / HD 44		74
	DGA37BP	D-Sub 37 / HD 62		74
	DGA25/09BP	D-Sub 25 / HD 44	adaptor plate 25- to 9-way	74
	DGA25/15BP	D-Sub 25 / HD 44	adaptor plate 25- to 15-way	74
M30	DGA09M30BP	D-Sub 09 / HD 15		74
	DGA09M30BPO	D-Sub 09 / HD 15	without through hole	74
	DGA15M30BP	D-Sub 15 / HD 26		74
	DGA15M30BPO	D-Sub 15 / HD 26	without through hole	74
Blind plates with snap on hook				
M11	DGA09BP-RC2	D-Sub 09 / HD 15	metal snap-on hook	75
	DGA09BP-RC3	D-Sub 09 / HD 15	metal snap-on hook, M3 threaded hole for pull-off protection	75
	DGA15BP-RC2	D-Sub 15 / HD 26		75
M11 / M30	DGA25BP-RC2	D-Sub 25 / HD 44		75
	DGA25BP-RC3	D-Sub 25 / HD 44	metal snap-on hook, M3 threaded hole for pull-off protection	75
	DGA37BP-RC2	D-Sub 37 / HD 62		75
M30	DGA09M30BPO-RC2	D-Sub 09 / HD 15	plate without through hole, metal snap-on hook	75
	DGA15M30BPO-RC2	D-Sub 15 / HD 26	plate without through hole, metal snap-on hook	75
PCB				
M11	DGA09L1	D-Sub 09 / HD 15	D-Sub 9-way / 1:1 / male - female for solder-cup connectors	75
	DGA15L1	D-Sub 15 / HD 26	D-Sub 15-way / 1:1 / male - female for solder-cup connectors	75
	DGA25L1	D-Sub 25 / HD 44	D-Sub 25-way / 1:1 / male - female for solder-cup connectors	75
	DGA37L1	D-Sub 37 / HD 62	D-Sub 37-way / 1:1 / male - female for solder-cup connectors	75
	DGA09L3	D-Sub 09 / HD 15	D-Sub 9-way / 1:1 / gender changer for solder-cup connectors	75
	DGA15L3	D-Sub 15 / HD 26	D-Sub 15-way / 1:1 / gender changer for solder-cup connectors	75
	DGA25L3	D-Sub 25 / HD 44	D-Sub 25-way / 1:1 / gender changer for solder-cup connectors	75
	DGA37L3	D-Sub 37 / HD 62	D-Sub 37-way / 1:1 / gender changer for solder-cup connectors	75
	DGA15HDL1	HD 15	HD 15-way / 1:1 / male - female for solder-cup connectors	76
	DGA26HDL1	HD 26	HD 26-way / 1:1 / male - female for solder-cup connectors	76
Crimp flange adaptors				
M30	CA09M30	D-Sub 09 / HD 15	CF100 adaptor for DGA09M30 for junction boxes	76
	CA09M30-C101	D-Sub 09 / HD 15	CF100 adaptor for DGA09M30 piggy-back hoods	76
	CA15M30	D-Sub 15 / HD 26	CF100 adaptor for DGA15M30 for junction boxes	76
	CA15M30-C101	D-Sub 15 / HD 26	CF100 adaptor for DGA15M30 piggy-back hoods	76

M11 / 9-way / cable entry 1x 30°

Art.-No. DGA09M11

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 9-way or HD 15
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

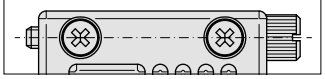
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. knurled screws, slotted, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

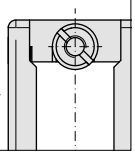
Art.-No. DGA09M11-3

Internal / external thread M3 / M3



Art.-No. DGA09M11-C110

Internal / external thread 4-40 UNC / 4-40 UNC without grounding post

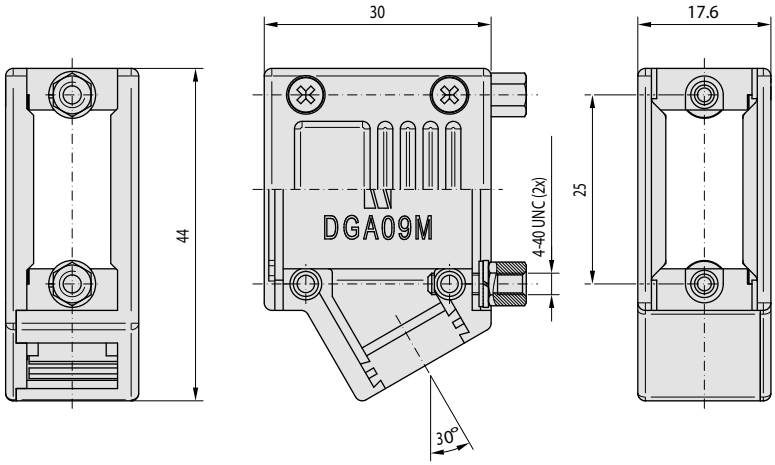


M11 / 9-way / cable entry 1x 30° / for snap-on hook

Art.-No. DGA09M11-C103

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 9-way or HD 15
- Preparation for snap-on hook
- Hood with 2x female threads, prepared for bolts
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolts, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DGA09M11-C104

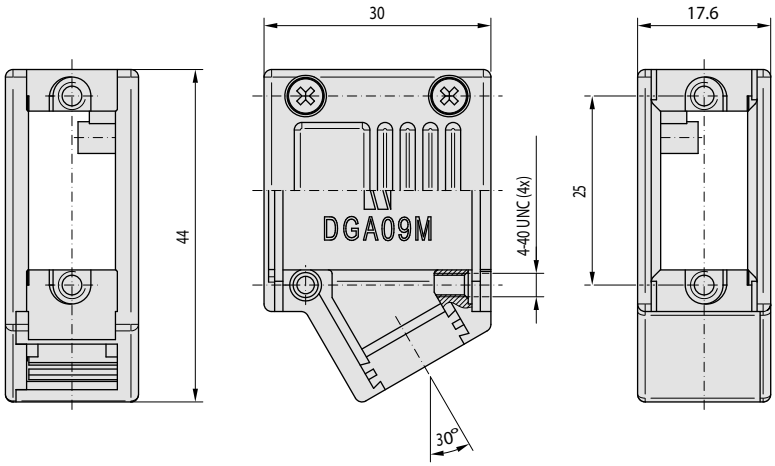
Including 2x hexagon bolt M3

M11 / 9-way / cable entry 1x 30° / coupling

Art.-No. DGA09M11-C107

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 9-way or HD 15
- 4x female thread for bolts, suitable for couplings
- Compatible with snap-on hook
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

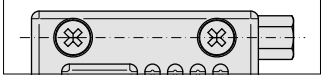
Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DGA09M11-C108

Including 4x hexagon bolt 4-40 UNC



Art.-No. DGA09M11-C113

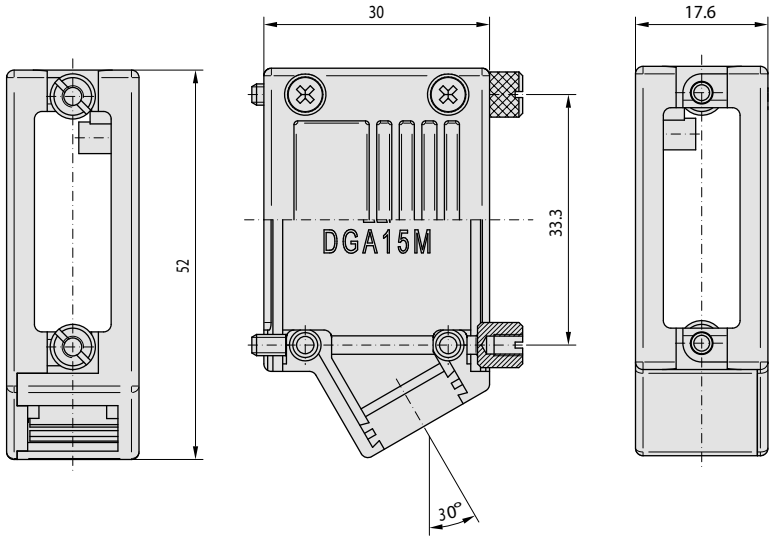
Including 4x hexagon bolt M3

M11 / 15-way / cable entry 1x 30°

Art.-No. DGA15M11

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 15-way or HD 26
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

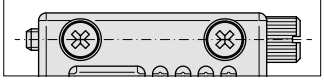
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. knurled screws, slotted, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

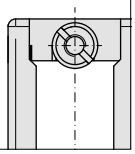
Art.-No. DGA15M11-3

Internal / external thread M3 / M3



Art.-No. DGA15M11-C102

Internal / external thread 4-40 UNC / 4-40 UNC without grounding post

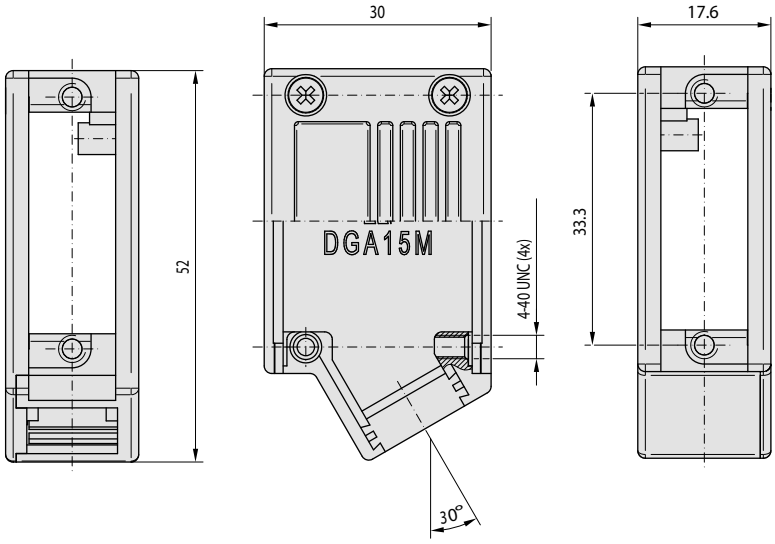


M11 / 15-way / cable entry 1x 30° / coupling

Art.-No. DGA15M11-C103

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 15-way or HD 26
- 4x female thread for bolts, suitable for couplings
- Compatible with snap-on hood and DV15G2 slide-lock
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

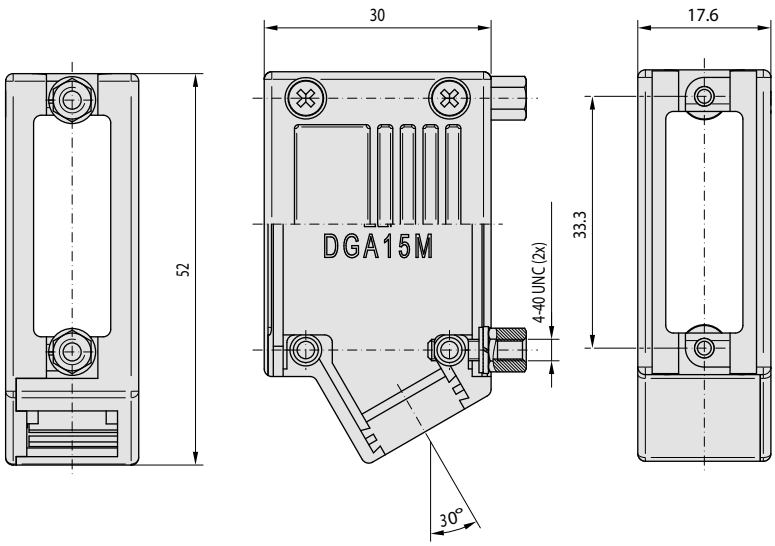


M11 / 15-way / cable entry 1x 30° / for snap-on hook

Art.-No. DGA15M11-C107

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 15-way or HD 26
- Preparation for snap-on hook
- Hood with 2x female threads, prepared for bolts
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

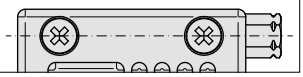
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolts, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DGA15M11-C104

hexagon bolt M3

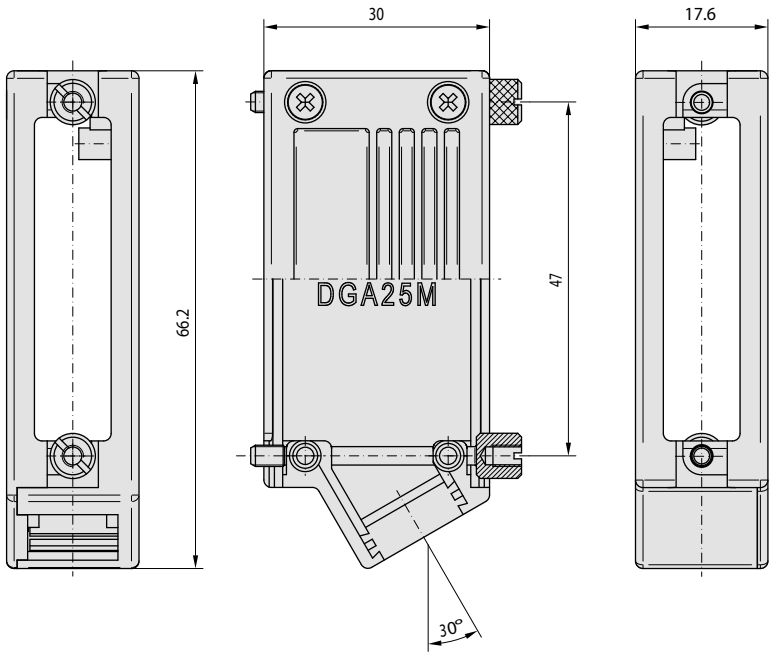


M11 / 25-way / cable entry 1x 30°

Art.-No. DGA25M11

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 25-way or HD 44
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

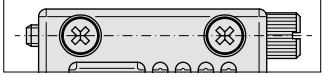
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. knurled screws, slotted, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

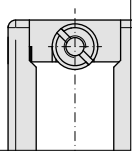
Art.-No. DGA25M11-3

Internal / external thread M3 / M3



Art.-No. DGA25M11-C110

Internal / external thread 4-40 UNC / 4-40 UNC without grounding post

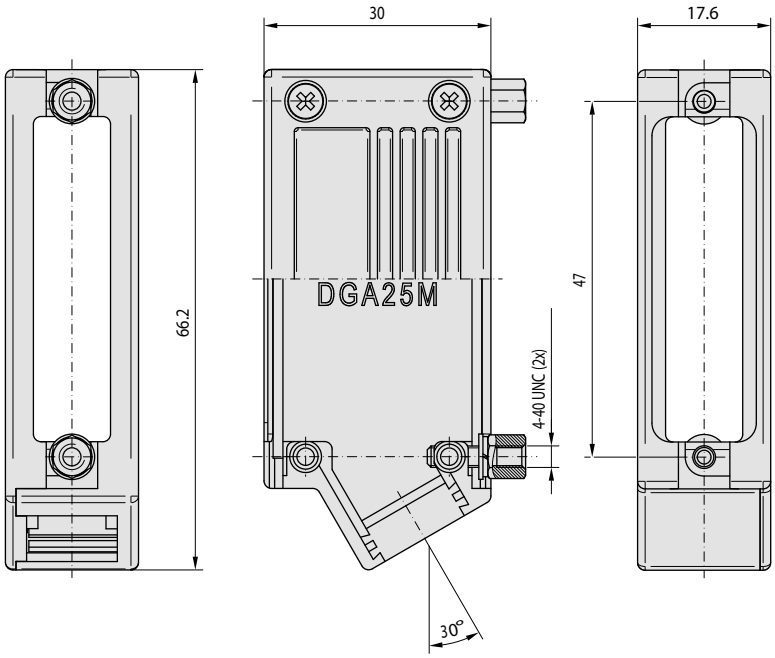


M11 / 25-way / cable entry 1x 30° / for snap-on hook

Art.-No. DGA25M11-C107

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 25-way or HD 44
- Preparation for snap-on hook
- Hood with 2x female threads, prepared for bolts
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)
- Grounding post removed for max. inner volume

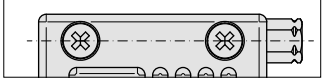
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolts, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No. DGA25M11-C106

Including 2x hexagon bolt M3

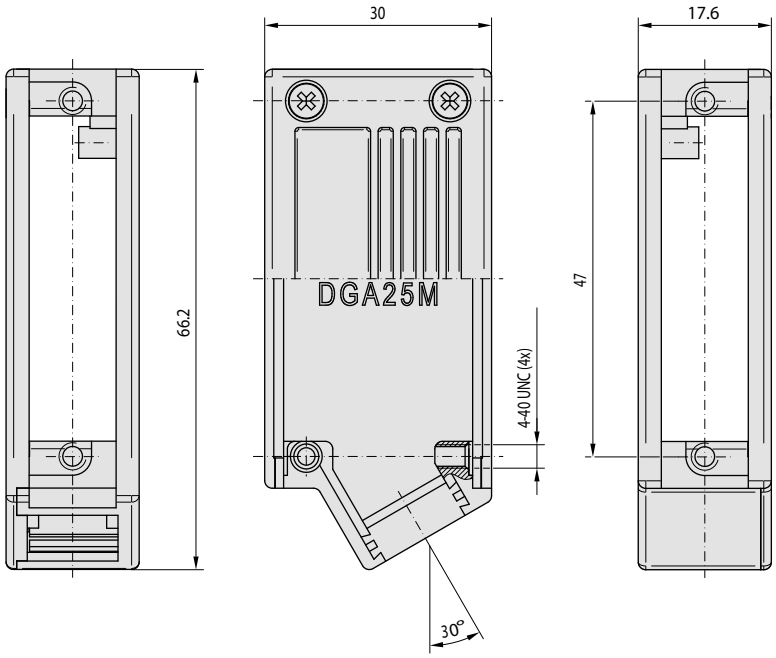


M11 / 25-way / cable entry 1x 30° / coupling

Art.-No. DGA25M11-C109

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 25-way or HD 44
- 4x female thread for bolts, suitable for couplings
- Compatible with snap-on hood and DV25G2 slide-lock
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

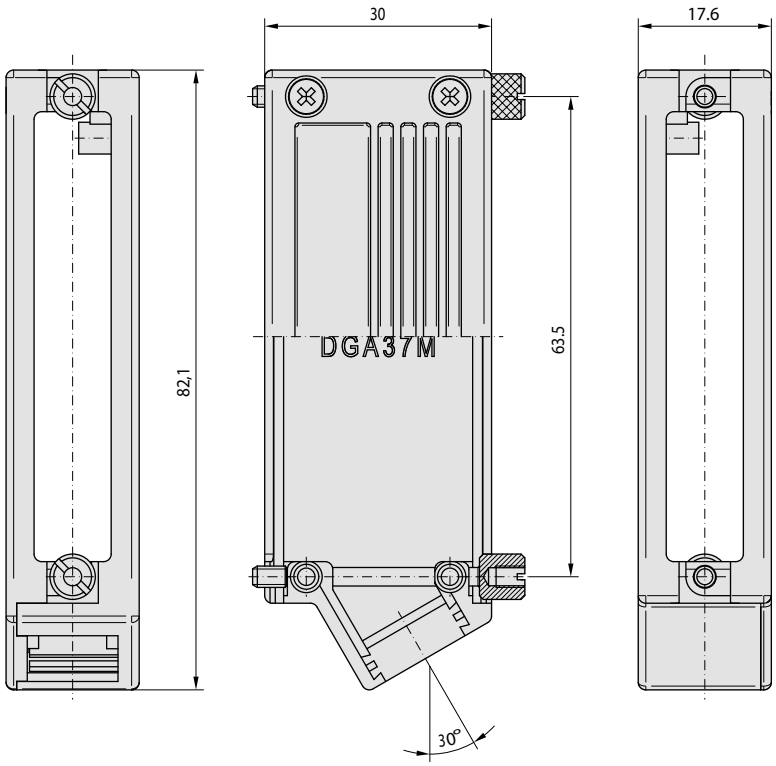


M11 / 37-way / cable entry 1x 30°

Art.-No. DGA37M11

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 37-way or HD 62
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

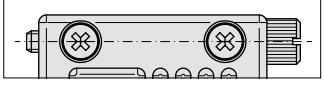
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. knurled screws, slotted, Internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

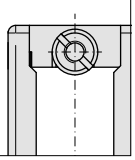
Art.-No. DGA37M11-3

Internal / external thread M3 / M3



Art.-No. DGA37M11-C104

Internal / external thread 4-40 UNC / 4-40 UNC without grounding post

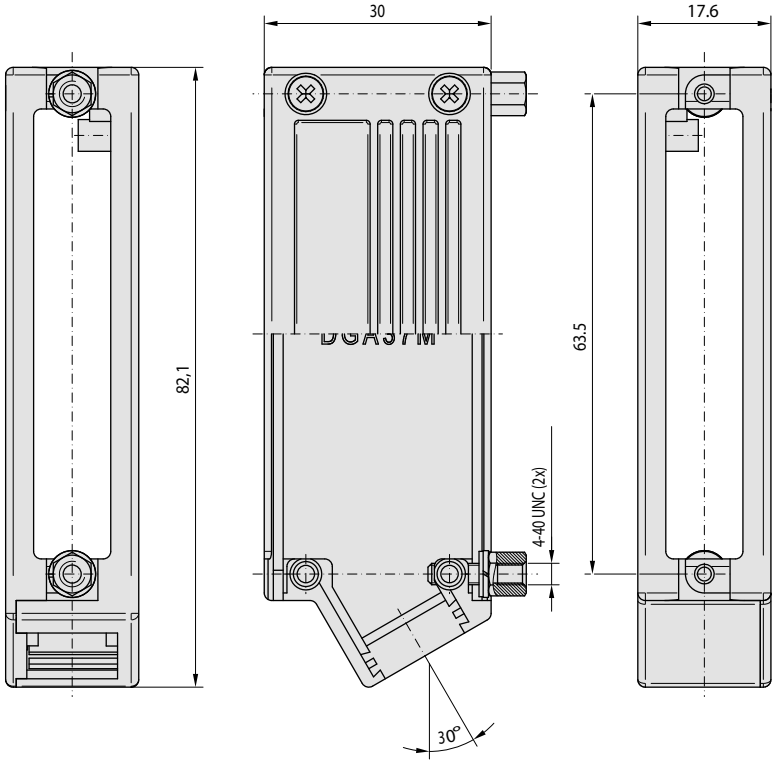


M11 / 37-way / cable entry 1x 30° / coupling

Art.-No. DGA37M11-C102

Specification
- HF-shielding full-metal housing with labyrinth cover for D-Sub connectors 37-way or HD 62
- Hood with 2x female threads, prepared for bolts
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)
- Grounding post removed for max. inner volume

Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon bolts, internal / external thread 4-40 UNC
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

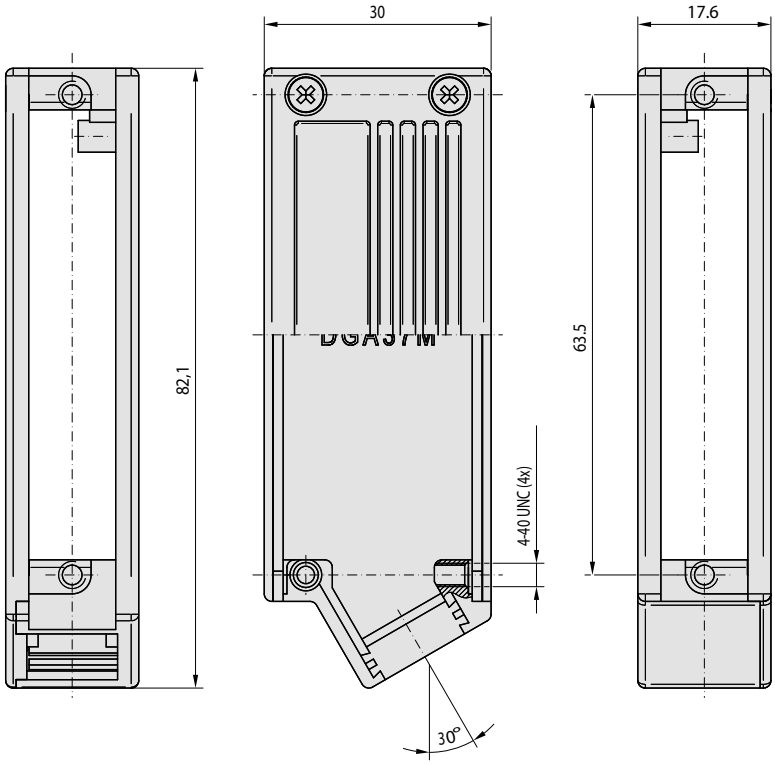


M11 / 37-way / cable entry 1x 30° / coupling

Art.-No. DGA37M11-C103

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 37-way or HD 62
- 4x female thread for bolts, suitable for couplings
- Compatible with snap-on hood and DV37G2 slide-lock
- 1 cable entry lateral (30°) for CF100 / 300 and DKS10x
- Low profile (30 mm without cable connection)

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x7

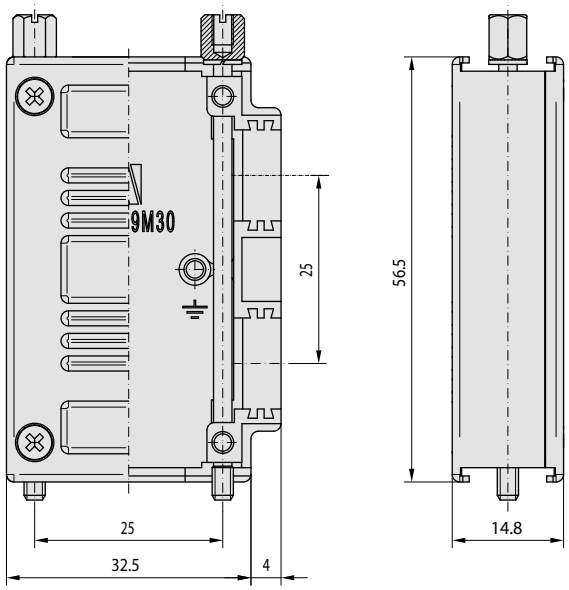


M30 / 9-way / cable entry 2x 90°

Art.-No. DGA09M30

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 9-way or HD 15
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- Large interior space for special assemblies
- 14,8 mm width allows high packing densities

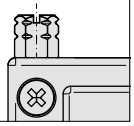
Scope of delivery
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews, slotted with internal thread 4-40 UNC
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



Product variants

Art.-No. DGA09M30-91

Internal / external thread
M3 / M3

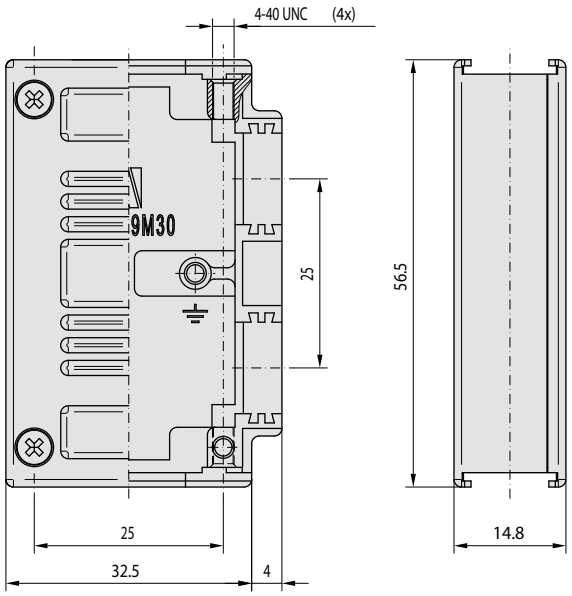


M30 / 9-way / cable entry 2x 90° / coupling

Art.-No. DGA09M30-C105

Specification
- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 9-way or HD 15
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- 4x female thread for bolts, suitable for couplings
- Large interior space for special assemblies
- 14,8 mm width allows high packing densities

Scope of delivery
- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



M30 / 15-way / cable entry 2x 90°

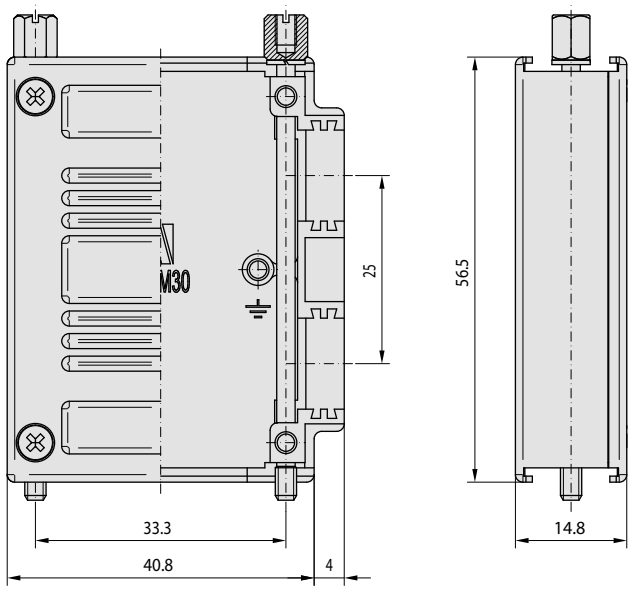
Art.-No. DGA15M30

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 15-way or HD 26
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- Large installation space (56,5 mm height) for special assemblies
- 14,8 mm width allows high packing densities

Scope of delivery

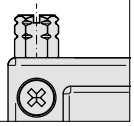
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews, slotted with internal / external thread 4-40 UNC
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



Product variants

Art.-No. DGA15M30-91

Internal / external thread
M3 / M3



M30 / 15-way / cable entry 2x 90° / coupling

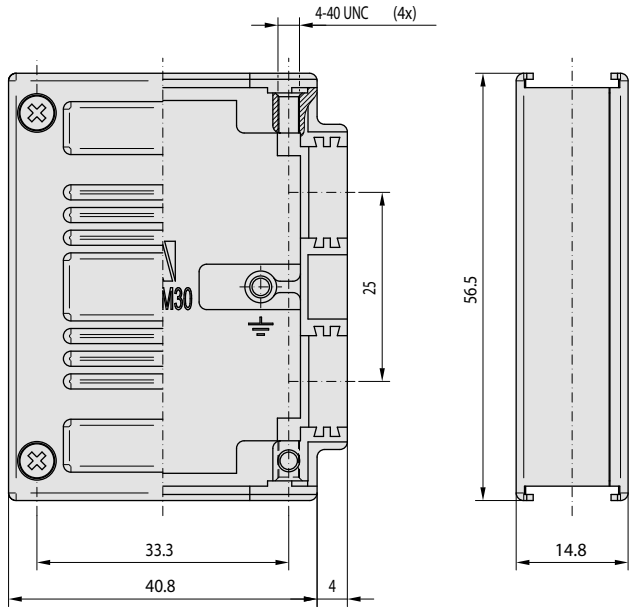
Art.-No. DGA15M30-C108

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 15-way or HD 26
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- 4x female thread for bolts, suitable for couplings
- Large installation space (56,5 mm height) for special assemblies
- 14,8 mm width allows high packing densities

Scope of delivery

- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



M30 / 25-way / cable entry 2x 90°

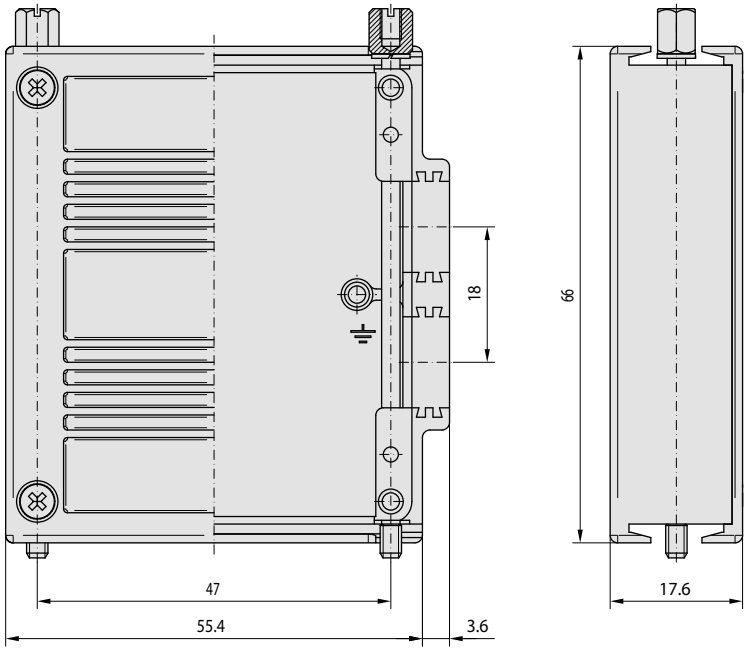
Art.-No. DGA25M30

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 25-way or HD 44
- 2 cable entries lateral (90°) for CF100 / 300 (DKS10x can be mounted only in one entry)
- Large installation space (66 mm height) for special assemblies

Scope of delivery

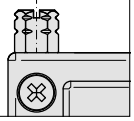
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews, slotted with internal / external thread 4-40 UNC
- 2 pcs. washers
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



Product variants

Art.-No. DGA25M30-91

Internal / external thread
M3 / M3



M30 / 25-way / cable entry 2x 90° / coupling

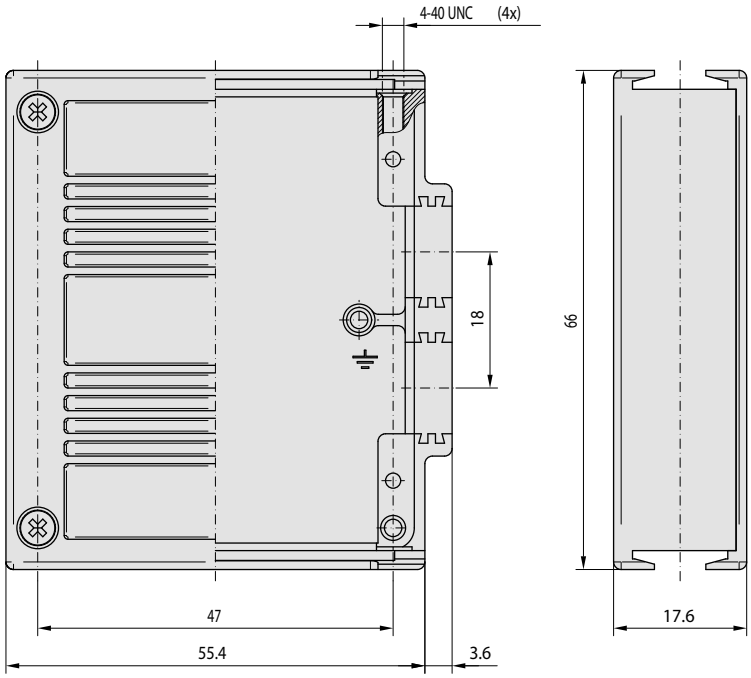
Art.-No. DGA25M30-C109

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 25-way or HD 44
- 2 cable entries lateral (90°) for CF100 / 300 (DKS10x can be mounted only in one entry)
- 4x female thread for bolts, suitable for couplings
- Large installation space (66 mm height) for special assemblies

Scope of delivery

- 1 pc. metal hood with cover
- 1 pc. blind plug
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



M30 / Distributor housing 9-way / 1:1 / female - female - male

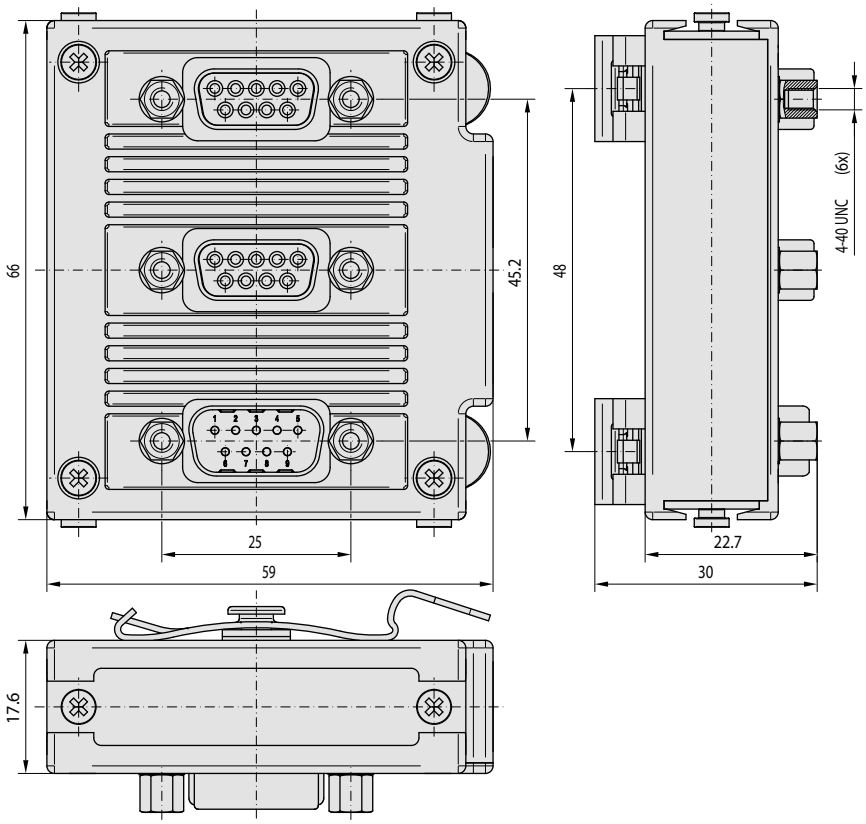
Art.-No. DGA25M30-C104

Specification

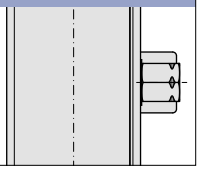
- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation
- 1 male and 2 female connectors 9-way D-Sub class 1 1:1 connection with ribbon cable
- Connectors in rear panel mount with hexagon bolt 4-40 UNC
- 2 cable entries lateral (90°) closed with blind plug

Scope of delivery

- 1 pc. metal hood with riveted metal snap-on hooks, cover, ready for use



Product variants

Art.-No. DGA25M30-C103	
hexagon bolt M3	

M30 / Distributor housing 9-way / 1:1 / female - male - male

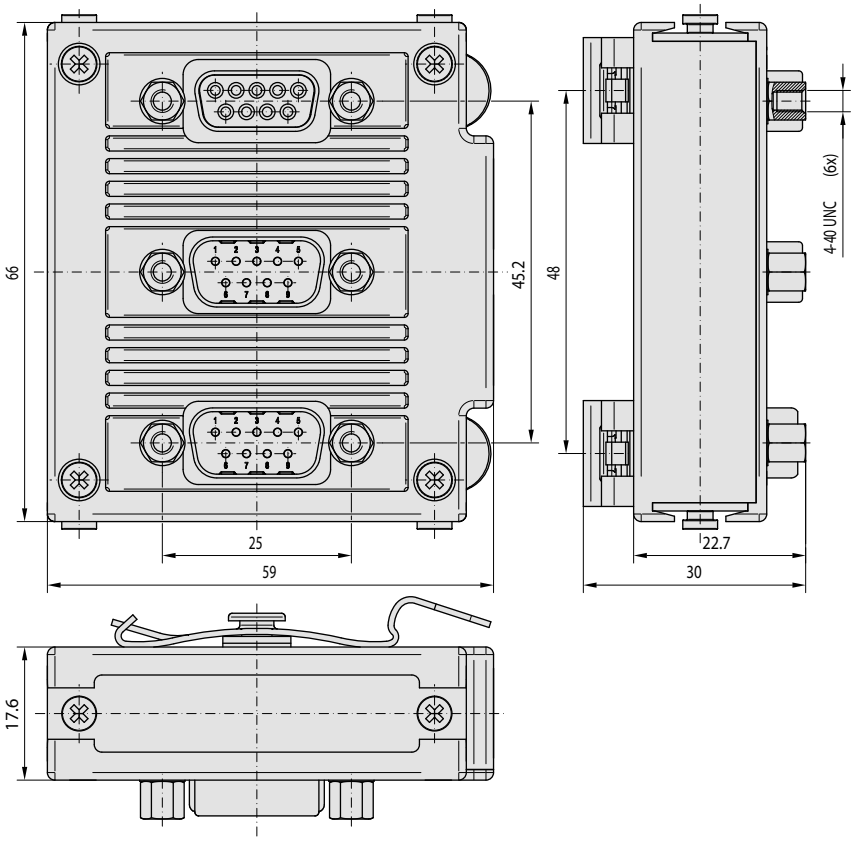
Art.-No. DGA25M30-C107

Specification

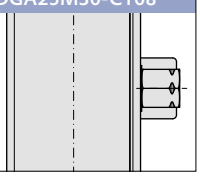
- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation
- 1 female and 2 male connectors 9-way D-Sub class 1 1:1 connection with ribbon cable
- Connectors in rear panel mount with hexagon bolt 4-40 UNC
- 2 cable entries lateral (90°) closed with blind plug

Scope of delivery

- 1 pc. metal hood with riveted metal snap-on hooks, cover, ready for use



Product variants

Art.-No. DGA25M30-C108	
hexagon bolt M3	

M30 / Distributor housing 9-way / 1:1 / male - male - female - female

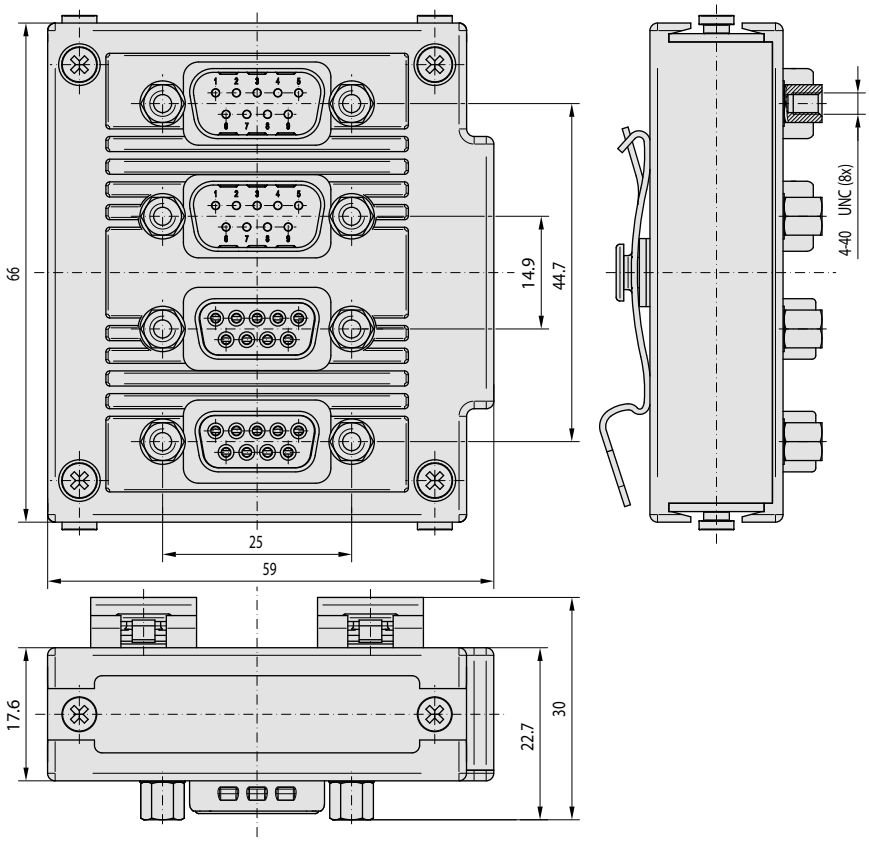
Art.-No. DGA25M30-C114

Specification

- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation (90° to connector orientation)
- 2 female and 2 male connectors 9-way D-Sub class 1 1:1 connection with ribbon cable
- Connectors in rear panel mount with hexagon bolt 4-40 UNC
- 2 cable entries lateral (90°) closed with blind plug

Scope of delivery

- 1 pc. metal hood with riveted metal snap-on hooks, cover, ready for use



M30 / Distributor housing 15-way / 1:1 / female - female - male

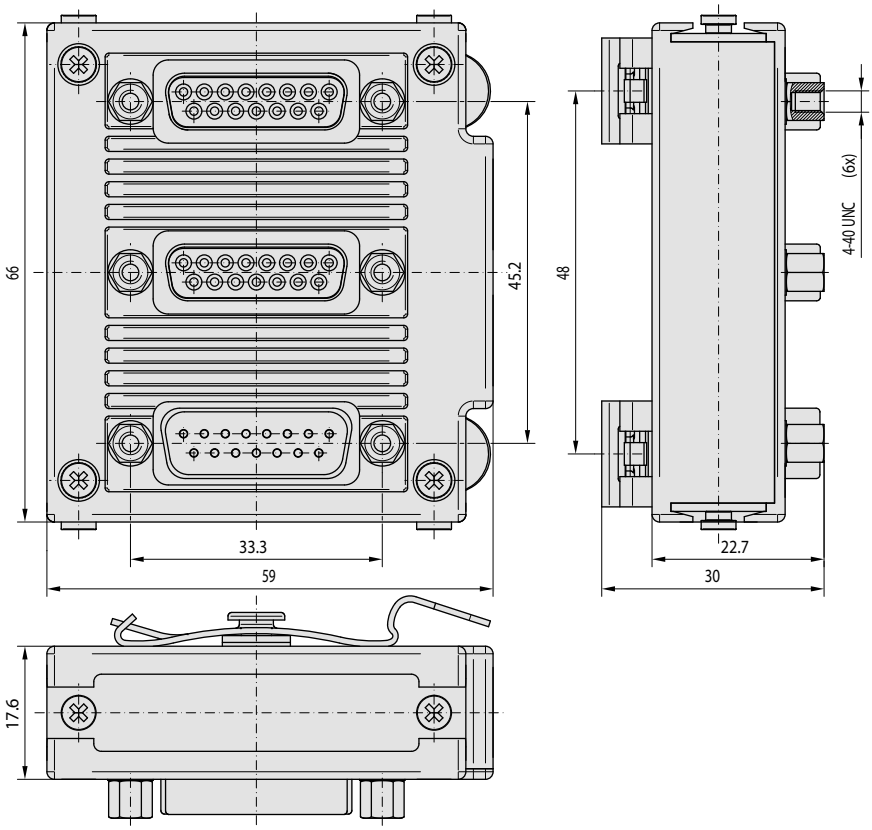
Art.-No. DGA25M30-C106

Specification

- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation
- 1 male and 2 female connectors 15-way D-Sub class 1 1:1 connection with ribbon cable
- Connectors in rear panel mount with hexagon bolt 4-40 UNC
- 2 cable entries lateral (90°) closed with blind plug

Scope of delivery

- 1 pc. metal hood with riveted metal snap-on hooks, cover, ready for use

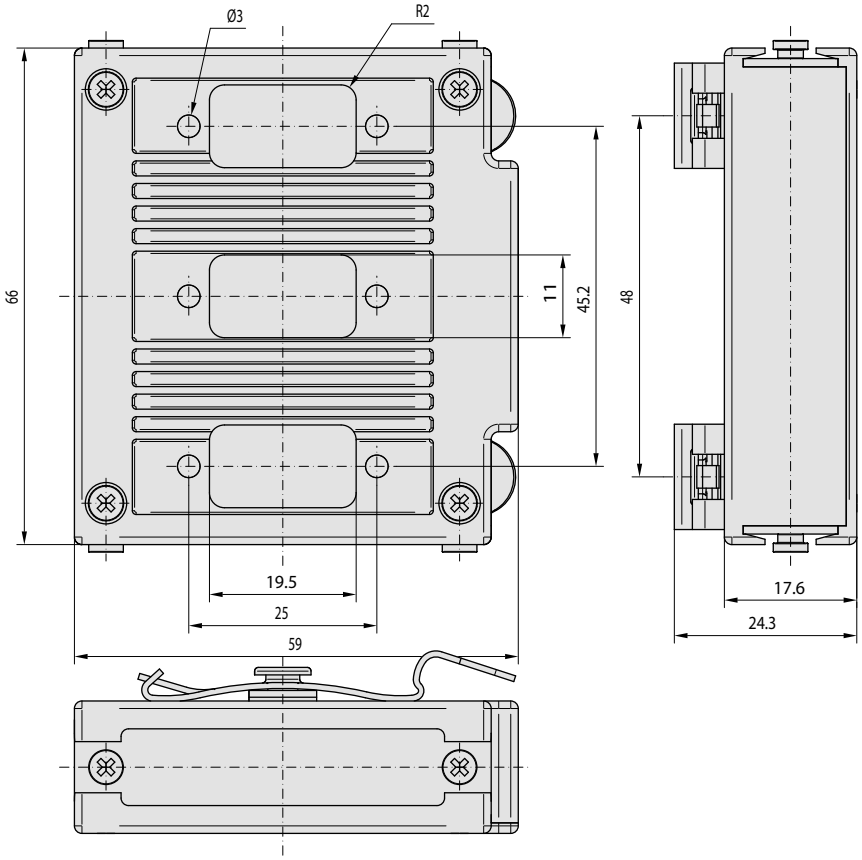


M30 / Distributor housing 9-way / 3-fold / unpopulated

Art.-No. DGA25M30-VT3-09

Specification
- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation
- 3 openings for 9-way D-Sub / HD 15 connectors
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- Large interior space (66 mm height) for special assemblies

Scope of delivery
- 1 pc. metal hood with riveted metal snap-on hooks, cover
- 2 pcs. blind plates
- 4 pcs. shoulder screws 4-40 UNCx7,5
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6

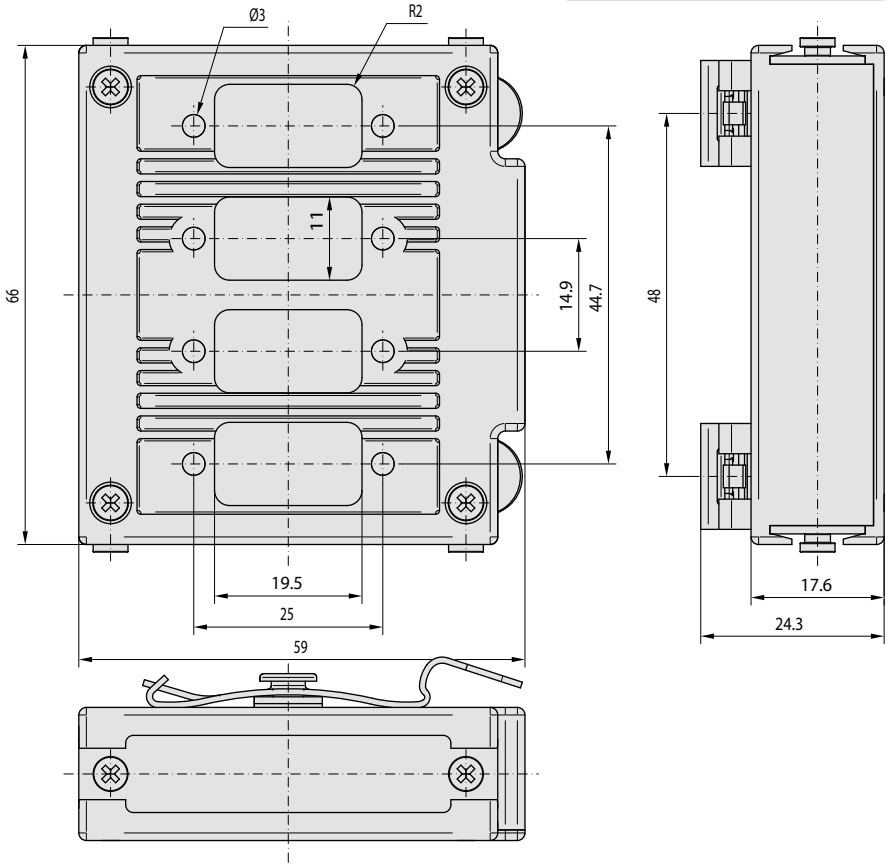


M30 / Distributor housing 9-way / 4-fold / unpopulated

Art.-No. DGA25M30-VT4-09

Specification
- HF-shielding full-metal housing with labyrinth cover 25-way D-Sub / HD 44
- 2 metal snap-on hooks for DIN rail mount, locked against rotation
- 4 openings for 9-way D-Sub / HD 15 connectors
- 2 cable entries lateral (90°) for CF100 / 300 and DKS10x
- Large interior space (66 mm height) for special assemblies

Scope of delivery
- 1 pc. metal hood with riveted metal snap-on hooks, cover
- 2 pcs. blind plates
- 4 pcs. shoulder screws 4-40 UNCx7,5
- 2 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



M30 / 37-way / cable entry 2x 90°

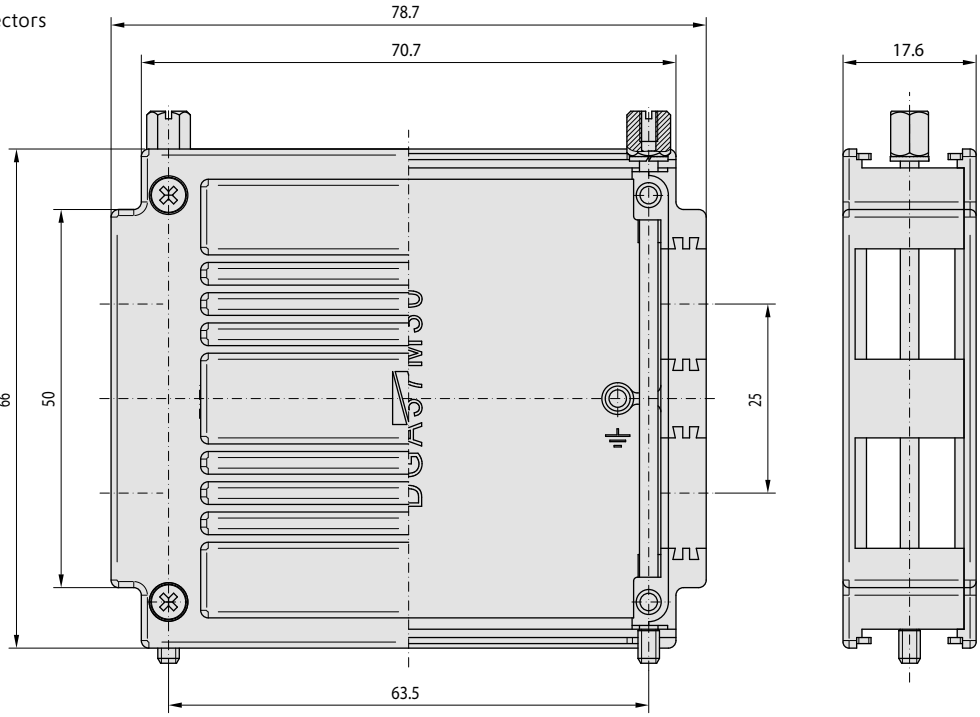
Art.-No. DGA37M30

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 37-way or HD 62
- 4 cable entries lateral (90°) for CF200
- Large interior space (66 mm height) for special assemblies

Scope of delivery

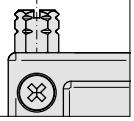
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews, slotted with internal / external thread 4-40 UNC
- 2 pcs. washers
- 3 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6



Product variants

Art.-No. DGA37M30-91

Internal / external thread
M3 / M3



M30 / 37-way / cable entry 2x 90° / coupling

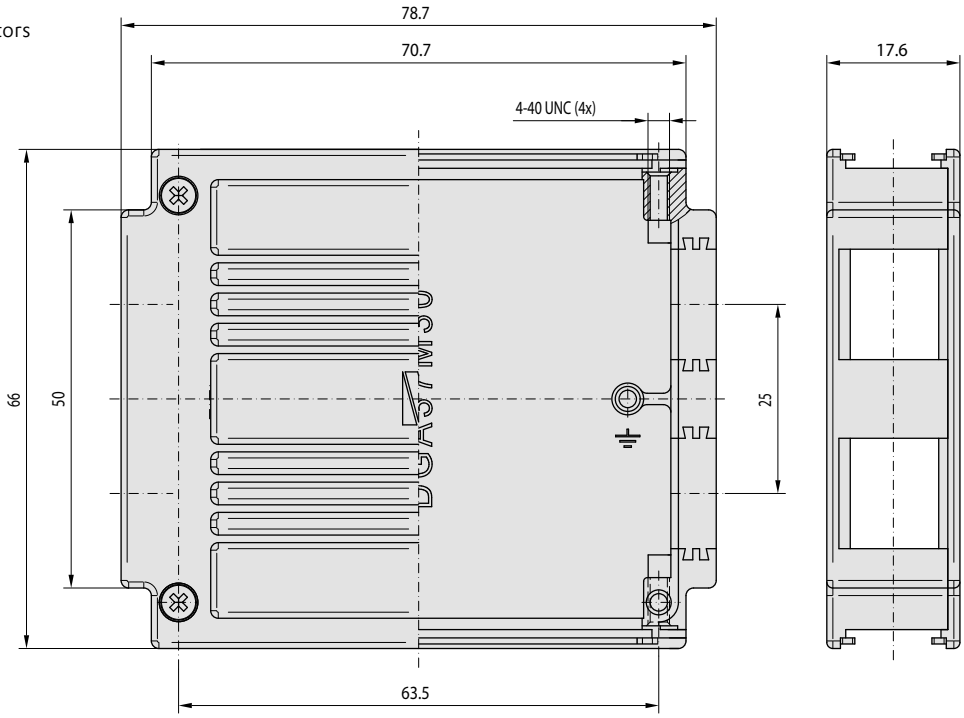
Art.-No. DGA37M30-C100

Specification

- HF-shielding full-metal housing with labyrinth cover for 2 D-Sub connectors 37-way or HD 62
- 4 cable entries lateral (90°) for CF200
- 4x female thread for bolts, suitable for couplings
- Large interior space (66 mm height) for special assemblies

Scope of delivery

- 1 pc. metal hood with cover
- 3 pcs. blind plugs
- 1 pc. grounding screw M2,5x4,5
- 4 pcs. cover screws M2,5x6

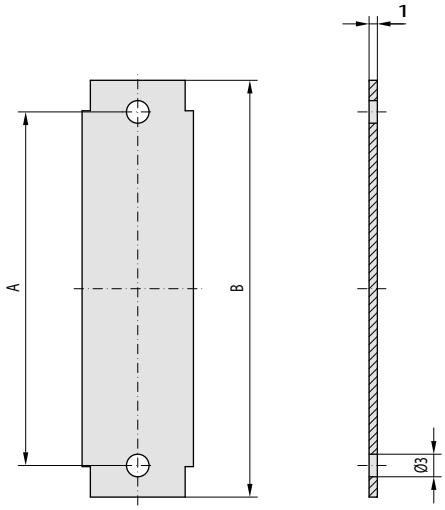


Blind plates M11 / M30

Art.-No.
see product specification

Specification
- Closes unused D-Sub entries in DGAxxM11 series, DGA25M30 and DGA37M30
- Suitable for integration of additional components (e. g. switches, LED, snap-on hook, ...)

Blind plate	Dimensions	Art.-No.
9-way M11	A 25,0 x B 32,0	DGA09BP
15-way M11	A 33,3 x B 40,3	DGA15BP
25-way M11 / M30	A 47,0 x B 55,4	DGA25BP
37-way M11 / M30	A 63,5 x B 70,5	DGA37BP

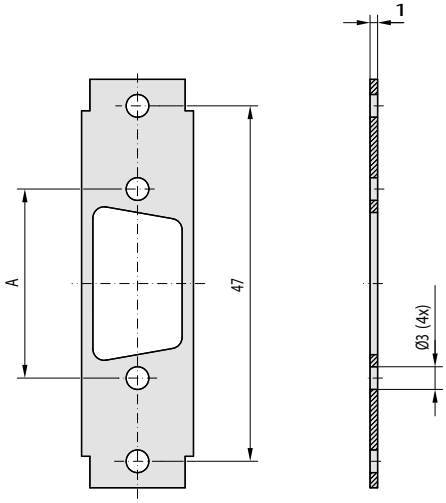


Blind plates M11 / M30 / Adaptor plates

Art.-No.
see product specification

Specification
- These adaptor plates can transform DGA25M11 or DGA25M30 hoods into 25- to 9-way (or 15HD) and 15-way (or 26HD) reduction adaptors.
- Furthermore, these plates can provide an additional D-Sub entry in DGA25M30 distributor housings

Blind plate	Dimensions	Art.-No.
25- to 9-way	47,0 x A 25,0	DGA25/09BP
25- to 15-way	47,0 x A 33,3	DGA25/15BP



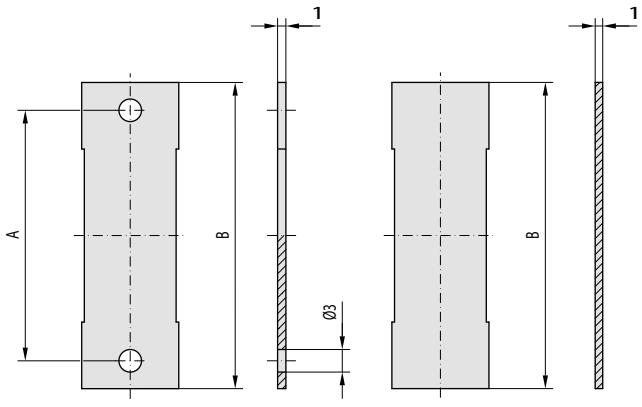
Blind plates M30

Art.-No.
see product specification

Specification
- Closes unused D-Sub entries in DGA09M30 and DGA15M30 hoods
- Versions without through hole for couplings or distributor hoods
- Suitable for integration of additional components (e. g. switches, LED, snap-on hook, ...)

Blind plate	Dimensions	Art.-No.
9-way M30	A 25,0 x B 32,4	DGA09M30BP
15-way M30	A 33,3 x B 40,7	DGA15M30BP

Blind plate without clearance hole		Art.-No.
9-way M30	B 32,4	DGA09M30BPO
15-way M30	B 40,7	DGA15M30BPO

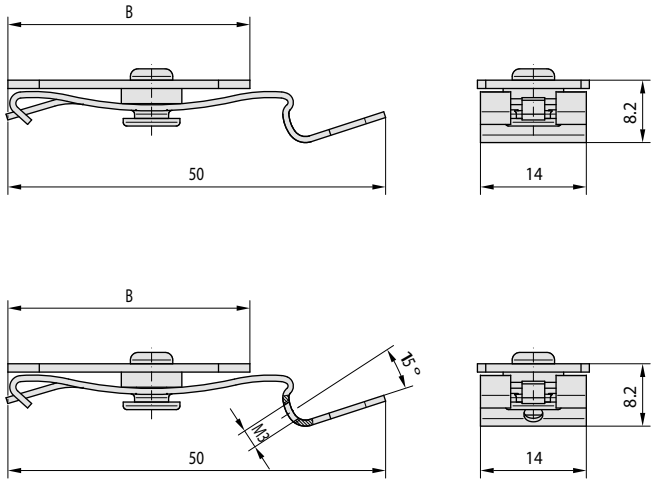


Blind plates with snap-on hook M11 / M30

Art.-No.
see product specification

Specification
- Blind plate with riveted metal snap-on hook
- For DIN rail mount of modified M11 series and DGA25M30 hoods
- Suitable for 35 mm DIN rail
- Please refer to DGAxxBP for width B

Standard versions	Art.-No.
9-way M11	DGA09BP-RC2
15-way M11	DGA15BP-RC2
25-way M11 / M30	DGA25BP-RC2
37-way M11 / M30	DGA37BP-RC2
Versions with threaded hole for pull-of protection	
9-way M11	DGA09BP-RC3
25-way M11 / M30	DGA25BP-RC3
Blind plate M30 without clearance hole	
9-way M30	DGA09M30BPO-RC2
15-way M30	DGA15M30BPO-RC2

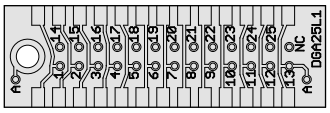


PCB with 1:1 connection for diagnostic plugs M11

Art.-No.
see product specification

Specification
- PCB with 1:1 conducting paths to connect D-Sub male to female connectors
- PCB dimensions prepared for Inotec solder cup connectors and assebly with M11 series hoods

Standard versions	Art.-No.
PCB for 9-way D-Sub connectors	DGA09L1
PCB for 15-way D-Sub connectors	DGA15L1
PCB for 25-way D-Sub connectors (see image)	DGA25L1
PCB for 37-way D-Sub connectors	DGA37L1



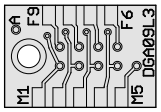
Please refer to corresponding solder-cup connectors on page 81

PCB with 1:1 connection for gender changers M11

Art.-No.
see product specification

Specification
- PCB with 1:1 conducting paths to connect D-Sub male to male or female to female connectors
- PCB dimensions prepared for Inotec solder cup connectors and assebly with M11 series hoods

Standard versions	Art.-No.
PCB for 9-way D-Sub connectors (see image)	DGA09L3
PCB for 15-way D-Sub connectors	DGA15L3
PCB for 25-way D-Sub connectors	DGA25L3
PCB for 37-way D-Sub connectors	DGA37L3



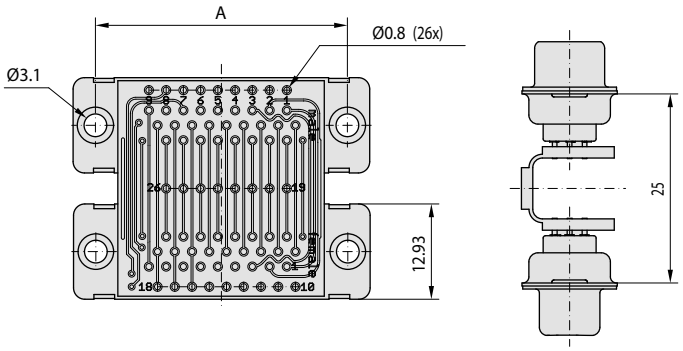
Please refer to corresponding solder-cup connectors on page 81

PCB with 1:1 connection for HD diagnostic plugs M11

Art.-No.
see product specification

Specification
- Complete sub-assembly for M11 series hoods, providing 1:1 connection of HD male to female
- Flex-rigid PCB with 0,8 mm soldering holes for diagnostic signal wires
- HD connectors with machined class 1 contacts

Standard versions	Art.-No.
HD 15 PCB for DGA09M11	DGA15HDL1
HD 26 PCB for DGA15M11	DGA26HDL1

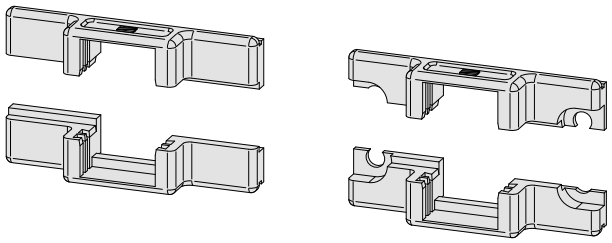


Crimp adaptor M30

Art.-No.
see product specification

Specification
- Adaptor shells for DGA09M30 and DGA15M30 hood to create additional cable entries instead of D-Sub opening
- Die-cast zinc shells with interface for crimp flanges
- Compatible with CF100 / 300 crimp flanges and DKS10x cable clamps

Standard versions	Art.-No.
1 set crimp adaptor CF100 9-way	CA09M30
1 set crimp adaptor CF100 9-way with through hole for jackscrews	CA09M30-C101
1 set crimp adaptor CF100 15-way	CA15M30
1 set crimp adaptor CF100 15-way for screw locking	CA15M30-C101

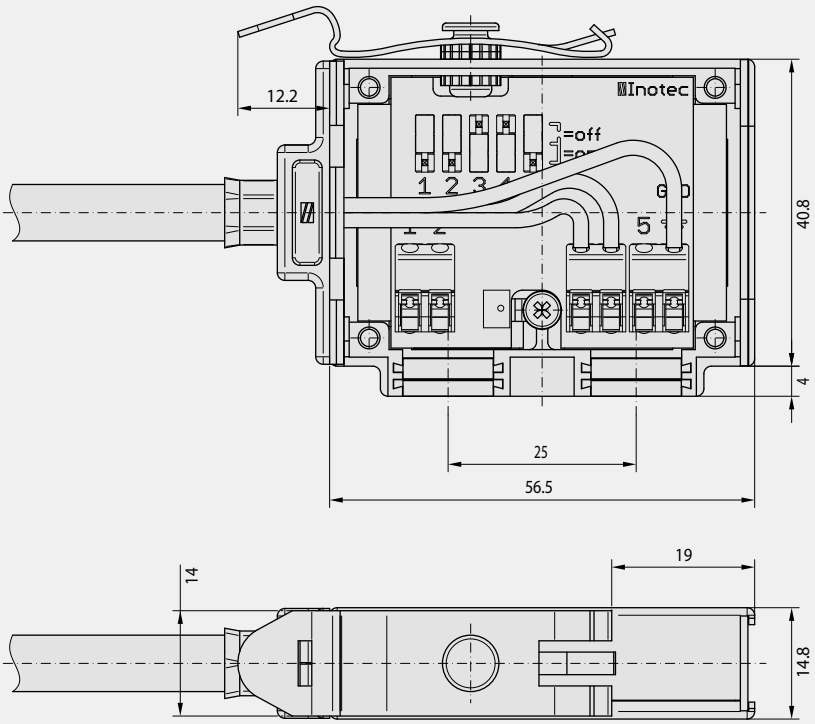


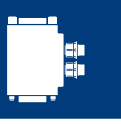
Customer-specific solutions

In particular, the enclosures of the M30 series offer numerous possibilities for customer-specific configurations and special solutions.

Due to their large interior space, they are ideal for integrating printed circuit boards, sensors or external interfaces, for example. The robust metallic design also makes it easier to integrate snap-in clips, switches or indicator lights. Special components such as the crimp flange adaptors extend the range of applications with additional cable inputs.

On request, Inotec can realize individual modifications for special applications. By means of mechanical processing, lids and housing shells can be adapted in small series, equipped according to customer requirements and delivered as a complete assembly.





D-Sub connector, contacts, coding system

Inotec's aim is to ensure maximum interference protection, robustness and reliability for D-Sub connectors. For freely assemblable connectors, contact crimping is still the most reliable technique in terms of processing and function. For this reason, Inotec offers its own range of D-Sub crimp connectors.

Our precision-turned contacts made of special copper alloys are provided exclusively with a high-quality gold coating on a nickel backing. The tolerance-precise, process-reliable production in combination with a 1.3 µm gold layer in grade 1 enables the lowest contact resistances of less than 3 mΩ.

The trapezoidal collar of our connector shells shields the contacts from the effects of electromagnetic radiation. In order to optimize the ground contact of the shells, Inotec offers an alternative shield embossing variant with embossing on the bushing and pin side. In addition to the classic crimp connectors, Inotec also offers high-quality connectors in solder cup, dip soldering or other design variants.

High-end crimp connectors

- Developed according to DIN 41 652 and MIL-C-24308
- Precision Turned Crimp Contacts GK1 grade
- D-sub contacts with 1.3 µm gold plating
- Contact resistances < 3 mΩ
- Shield embossing in 2 design variants for optimum ground contact
- Compatible with all standard-compliant D-sub connectors

Hand soldering, dip soldering and special connectors

- Grade GK1 with 1.3 µm gold plating
- GK2 and GK3 on request
- Individual configuration, bracket for PCB mounting or threaded bushings on request

Original Inotec coding system

The Inotec coding system requires only a few components and tools for all D-sub designs.

For cable-side coding, the coding elements are already integrated into the connector. This simplifies installation in the field, in particular.

On request, Inotec also manufactures HD connectors with coding.

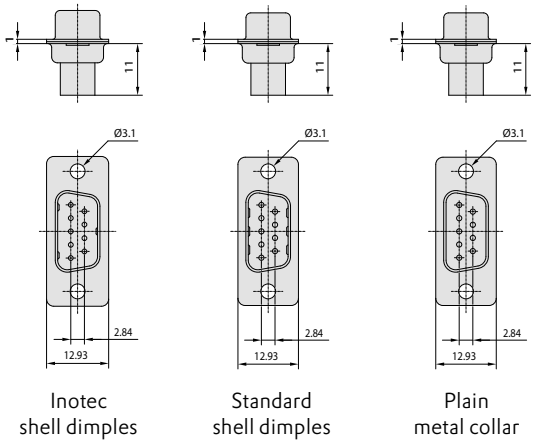
Crimp connectors, male

Art.-No.
see product specification

Specification
- Unpopulated male connector body for D-Sub crimp contacts
- Inotec shell dimples for improved ground contact
- Also available with standard shell dimples
- High density (HD) upon request

	Inotec shell dimples	Standard shell dimples [1]	Plain metal collar
	Art.-No.	Art.-No.	Art.-No.
9-way	DC09P-G	DCE09P-G	DG09P
15-way	DC15P-G	DCE15P-G	DG15P
25-way	DC25P-G		DG25P
37-way	DC37P-G		DG37P
50-way	DC50P-G		DG50P

[1] Standard shell dimples should be used only in combination with standard female connectors (plain metal collar)

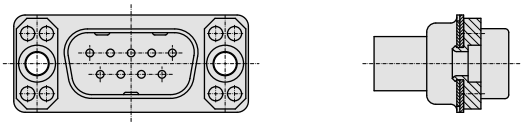


Inotec shell dimples | Standard shell dimples | Plain metal collar

Codeable crimp connectors, male

Art.-No.
see product specification

Specification
- Inotec D-Sub connectors for crimp contacts with riveted full-metal coding brackets
- Standard version KOD02 for plugs with codeable Inotec full-metal hoods
- Special variant KOD03 as mating connectors in couplings or front-panel assemblies
- Inotec shell dimples for improved ground contact
- High density (HD) upon request



KOD02	Inotec shell dimples	Standard shell dimples [1]
	Art.-No.	Art.-No.
9-way	DC09P-G-KOD02	DCE09P-G-KOD02
15-way	DC15P-G-KOD02	DCE15P-G-KOD02
25-way	DC25P-G-KOD02	
37-way	DC37P-G-KOD02	
50-way	DC50P-G-KOD02	

KOD03	Inotec shell dimples	Standard shell dimples [1]
	Art.-No.	Art.-No.
9-way	DC09P-G-KOD03	DCE09P-G-KOD03
15-way	DC15P-G-KOD03	DCE15P-G-KOD03
25-way	DC25P-G-KOD03	
37-way	DC37P-G-KOD03	
50-way	DC50P-G-KOD03	

[1] Standard shell dimples should be used only in combination with standard female connectors (plain metal collar)

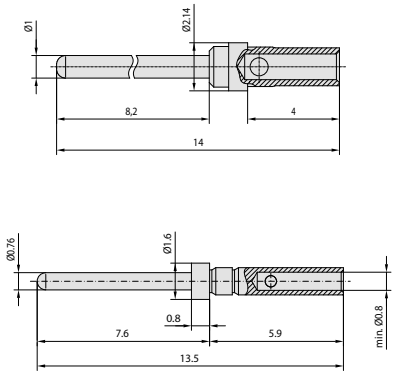
Crimp contacts, male

Art.-No.
see product specification

Specification
- Precision machined male contact
- Brass alloy
- Crimp section annealed

Standard versions	Art.-No.
Crimp contact, male GK1 for AWG 24-20	DCC2P4
Crimp contact, male GK1 for AWG 18 (up to max 0,75 mm²)	DCC2P5

High density	Art.-No.
HD crimp contact, male GK1 for AWG 28-22	DCC2P7HD
HD crimp contact, male GK2 for AWG 28-22	DCC2P6HD



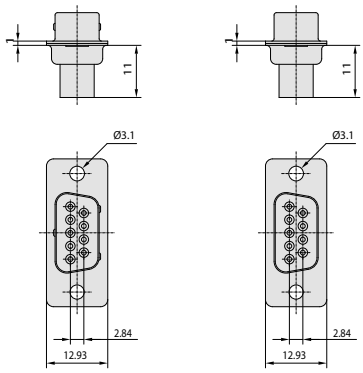
Crimp connectors, female

Art.-No. see product specification

Specification
- Unpopulated female connector body for D-Sub crimp contacts
- Inotec shell dimples for improved ground contact
- Alternative D-Sub standard with plain metal collar
- High density (HD) upon request

	Inotec shell dimples[1]	Plain metal collar
	Art.-No.	
9-way	DC09S-G	DC09S
15-way	DC15S-G	DC15S
25-way	DC25S-G	DC25S
37-way	DC37S-G	DC37S
50-way	DC50S-G	DC50S

[1] Only in combination with Inotec shell dimples on male counter connectors

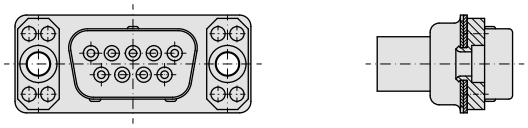


Inotec shell dimples | Plain metal collar

Codeable crimp connectors, female

Art.-No. see product specification

Specification
- Inotec D-Sub connectors for crimp contacts with riveted full-metal coding brackets, locked against rotation
- Standard version KOD02 for cable-side mounting in Inotec full metal hoods, prepared for coding
- Special version KOD03 for all plugs mating with KOD02 connectors in front panel mounting and couplings
- Inotec shell dimples for improved ground contact
- High density (HD) upon request



KOD02	Inotec shell dimples[1]	Plain metal collar
	Art.-No.	Art.-No.
9-way	DC09S-G-KOD02	DC09S-KOD02
15-way	DC15S-G-KOD02	DC15S-KOD02
25-way	DC25S-G-KOD02	DC25S-KOD02
37-way	DC37S-G-KOD02	DC37S-KOD02
50-way	DC50S-G-KOD02	DC50S-KOD02

KOD03	Inotec shell dimples[1]	Plain metal collar
	Art.-No.	Art.-No.
9-way	DC09S-G-KOD03	DC09S-KOD03
15-way	DC15S-G-KOD03	DC15S-KOD03
25-way	DC25S-G-KOD03	DC25S-KOD03
37-way	DC37S-G-KOD03	DC37S-KOD03
50-way	DC50S-G-KOD03	DC50S-KOD03

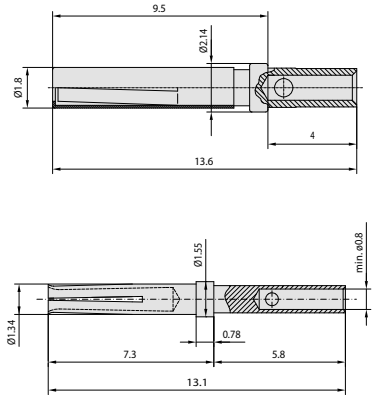
[1] Only in combination with Inotec shell dimples on male counter connectors

Crimp contact, female

Art.-No. see product specification

Specification
- Precision machined female contact
- Spring hardened Cu-bronze with stainless steel ferrule protecting the contact section
- Crimp section annealed

Standard versions	Art.-No.
Crimp contact, female GK1 for AWG 24-20	DCC2S4
Crimp contact, female GK1 for AWG 18 (up to max 0,75 mm²)	DCC2S5
High density	**Art.-No.**
HD crimp contact, female GK1 for AWG 28-22	DCC2S7HD



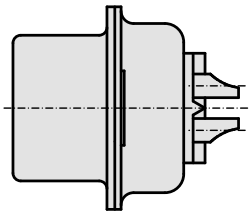
Solder-cup connectors

Art.-No. on request

Specification
- Connector with solder cup according to DIN 41 652
- Precision machined contacts for safe contact making and longevity
- Class 1 gold plating for > 500 mating cycles
- Metal collar with high-end tin-over-nickel plating provides optimal ground contact

Available options
- D-Sub 9- to 50-way, male or female
- With and without shell dimples

Prepared for coding with KOD02 or KOD03 brackets



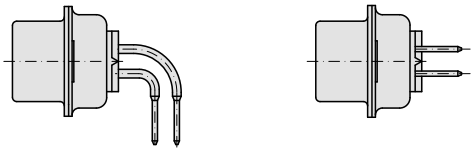
Dip-solder connectors

Art.-No. on request

Specification
- Dip-solder connectors with straight or 90° pins according to DIN 41 652
- Precision machined contacts for safe contact making and longevity
- Class 1 gold plating for > 500 mating cycles
- Metal collar with high-end tin-over-nickel plating provides optimal ground contact

Available options
- D-Sub 9- to 37-way, male or female
- With and without shell dimples
- With riveted 90° angled bracket in die-cast zinc, 4-40 UNC or M3

Prepared for coding with KOD02 or KOD03 brackets



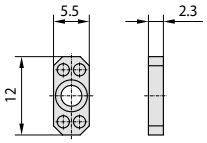
Coding elements

Art.-No. KOP-01

Specification
- Conductive coding elements made of die-cast zinc for device-side coding of connectors in rear panel mounting
- For front panels with wall thicknesses from 1,7 mm to max. 2,8 mm

Scope of delivery
- 1 PU per 100 pcs.

Service note
- Inotec assembly device KOMxx facilitates the alignment and positioning of the KOP-01

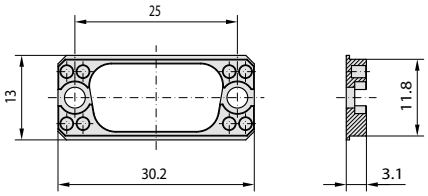


Coding frame

Art.-No. KOR09

Specification
- Conductive coding frame made of die-cast zinc for device-side coding of 9-pin connectors in rear panel mounting
- Simplified assembly due to elimination of alignment
- For front panels with wall thicknesses from 1,0 mm to max. 2,1 mm

Scope of delivery
- 1 pc. coding frame



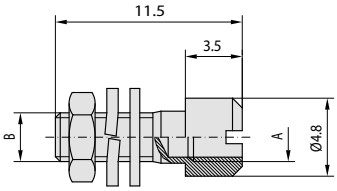
Jackscrew for coding set

Art.-No.
see product specification

Specification
- Jackscrew for coding with male and female threads for mounting the Inotec coding elements KOP-01 and KOR09
- High-strength brass alloy for maximum tensile strength

Scope of delivery
- 1 sets containing 2 pcs. bolts, spring washers, washers, hexagon nuts (M3 with AF 5,5 and 4-40 UNC with AF 5,0)

Internal thread A	External thread B	Art.-No.
4-40 UNC	4-40 UNC	KOB-4-40/4-40
4-40 UNC	M3	KOB-4-40/M3
M3	4-40 UNC	KOB-M3/4-40
M3	M3	KOB-M3/M3



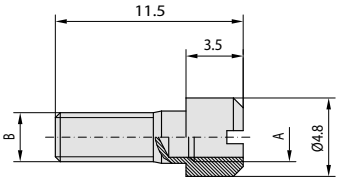
Jackscrew for coding single part

Art.-No.
see product specification

Specification
- For the build of coupling connectors, e.g. with DGxxM1-4/40
- Jackscrew for coding with male and female threads for mounting the Inotec coding elements KOP-01 and KOR09
- High-strength brass alloy for maximum tensile strength

Scope of delivery
- 1 pc. bolt **without** spring washers, washers, hexagon nuts

Internal thread A	External thread B	Art.-No.
4-40 UNC	4-40 UNC	KOB-4-40/4-40C1
4-40 UNC	M3	KOB-4-40/M3C1
M3	4-40 UNC	KOB-M3/4-40C1
M3	M3	KOB-M3/M3C1

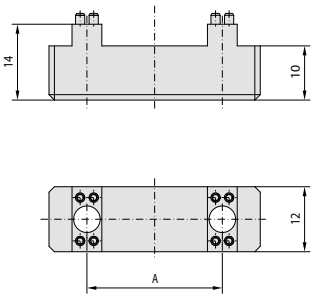


Assembly device

Art.-No.
see product specification

Specification
- Positioning template for the device-side assembly of the coding elements KOP-01
- Easy to set up and align the coding elements with jackscrew for coding on the front panel of the device to be coded
- The jackscrews for coding can be screwed through the positioned assembly devices

Design	Spacing between bolts A	Art.-No.
9-way	25,0	KOM09
15-way	33,3	KOM15
25-way	47,0	KOM25
37-way	63,5	KOM37
50-way	61,1	KOM50



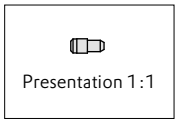
Coding pins

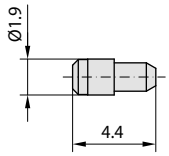
Art.-No. KOS-01

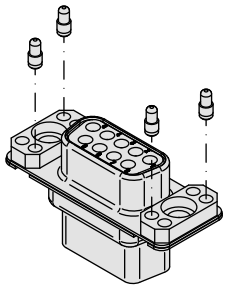
Specification
- Coding pins for insertion into the Inotec coding elements KOP-01, KOR09 or codeable Inotec connectors
- Material CuNi-Zn

Scope of delivery
- 1 PU per 100 pcs. coding pins

Service note
- Processing exclusively with hand tool KOD101







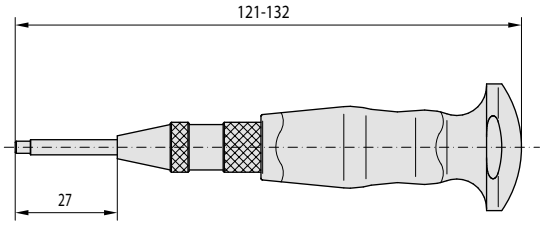
Hand tool for coding pins

Art.-No. KOD101

Specification
- Specially designed for the insertion of the KOS-01 coding pins into Inotec coding elements
- The internal spring mechanism generates exactly the impulse required for pressing in the coding pins, thus enabling process-reliable, reproducible coding

Scope of delivery
- 1 Hand tool for coding pins

Service notes
- Please note the following processing instructions
- The spring force of the KOD101 is preset at the factory
- In the event of malfunctions and damage, an inspection or repair must be carried out by Inotec



Instructions for installation

On the device side, Inotec offers various mounting options: The coding elements made of die-cast zinc can be used universally for all numbers of poles. Thanks to the Inotec assembly device, these can be aligned in parallel and fixed to the front panel in a single operation. Especially for 9-way interfaces, Inotec offers an optional one-piece coding frame. This can be attached directly to the front panel without any positioning device.

Mounting with Inotec coding bolts is not only possible in the standard versions 4-40 UNC and M3, but also with the combinations of these thread types. With internal / external M3 to 4-40 UNC and 4-40 UNC to M3, inotec coding system also allows to change the thread type on the end device.

Further installation instructions and information on the coding system can be found on page 122.

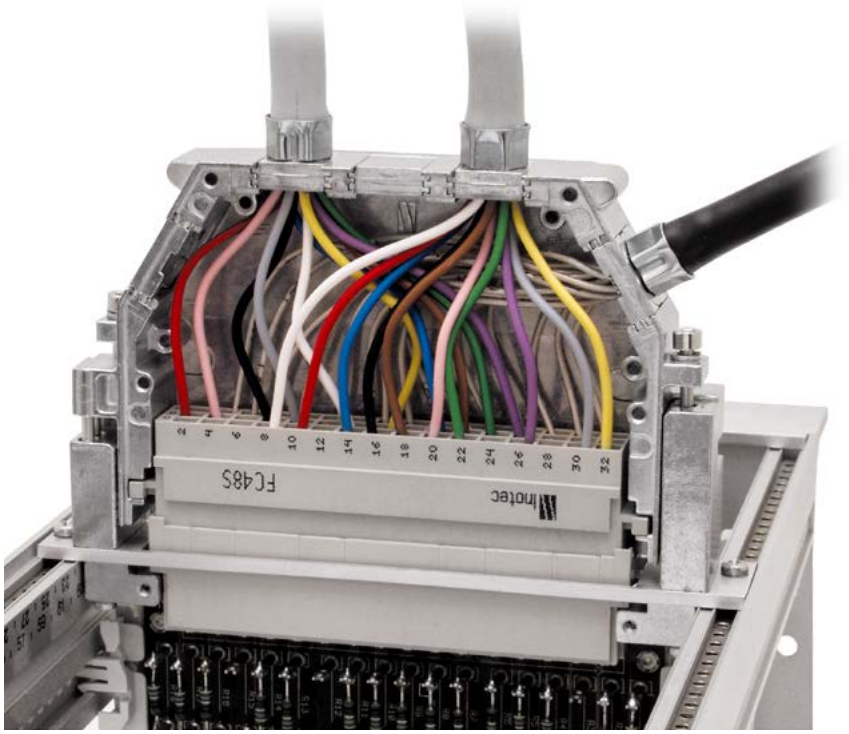
IEC 60603-2 (DIN 41612)
connector systems

EMC-compliant and robust hood systems for 19“ racks

Central units in sensitive signalling applications like onboard units for ERTMS* systems in trains, routers in telecommunications applications, industrial process controls or network equipment – 19“ racks with IEC 60603-2 (DIN 41612) interfaces are still an elementary component of numerous electronic systems. With a focus on EMC, robustness and ease of assembly, Inotec has developed two complete interface systems including the necessary fasteners, with which the most common mounting situations are covered: While the MSF-3 / MSF-1 is the classic solution for direct PCB mounting, the MSF-92 / MSE-92 enclosure system enables separate mounting of the PCB and connector housing. Due to the metallic fasteners throughout, the MSF-92 / MSE-92 also enables reliable, low-impedance ground contacting between the connector housing and the front panel.

For optimum RF shielding, high strain relief and efficient processing, the Inotec crimp flange system is also recommended here.

* European Rail Traffic Management System



The complete interface solution:

- EMC-compliant housing design
- HF-tight full-metal housing made of die-cast zinc with labyrinth cover
- Unused cable inputs are sealed with blind plugs RF-tight
- Built-in additional grounding points
- Ergonomically designed hood shape avoids pulling on the cable
- Minimal transition resistances to shielded cables in combination with the Inotec crimp flange technology in dovetail design
- Cable clamps in 4 different standard sizes for the introduction of wire or cable bundles
- Flexible cabling via 3+2 cable entries
- High-quality and durable fasteners for reliable long-term use
- F-type insulator body for Inotec crimp contacts, fire-resistance level for rail vehicles according to IEC 60603-2 level 1, EN 45545-2 compliance R22/R23 HL3

MSF / 48-way / Direct PCB-mount system incl. PCB-holder, types E, F, H

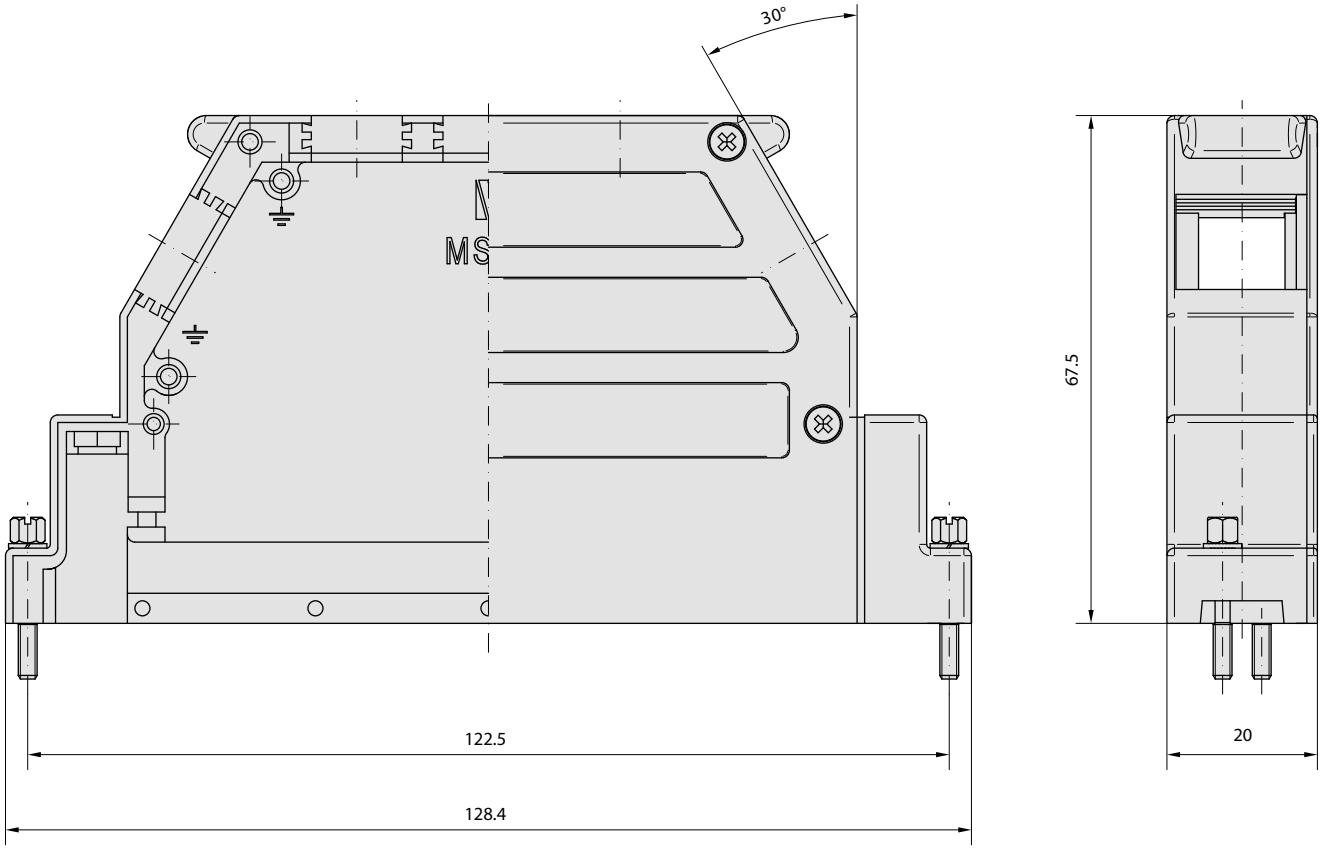
Art.-No. DG48MSF-3

Specification

- Full metal hood for direct mounting on 4HP bays in 19″ racks
- Compatible with type E, F and H female connectors by using the appropriate spacer parts kits
- Integrated coding system
- 3 straight cable entries for CF100 / 300 and DKS10x / 300
- 2 lateral cable entries (30°) for CF200 and DKS200 (Attention, not compatible with DKS207)
- Short cover for 19″ racks with plain frontside

Scope of delivery

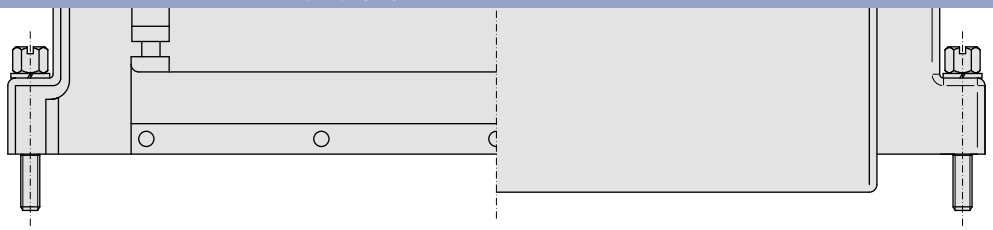
- 1 pc. metal hood with cover
- 2 pcs. hexagon jackscrews M2,5x18 with washers (captive pre-assembled)
- 2 pcs. grounding screws M2,5x4,5
- 4 pcs. cover screws M2,5x7



Product variants

Art.-No.DG48MSF-1

Long cover for slide-in systems with offset ground contacts on the front panel

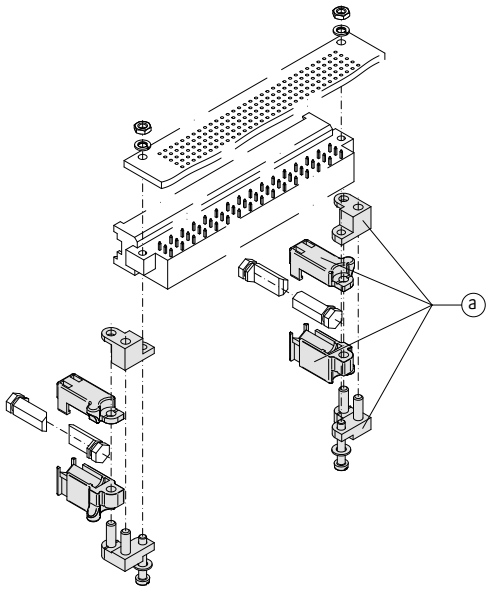


PCB holder

Art.-No. LPH-1

Specification
- Holder kit and coding elements for direct mounting on 19" PCBs. The connector hood is routed over the holder set and plugged in.
- The interface can be protected against mismatching by separate coding elements.

Scope of delivery
- 1 PCB holder set (a)

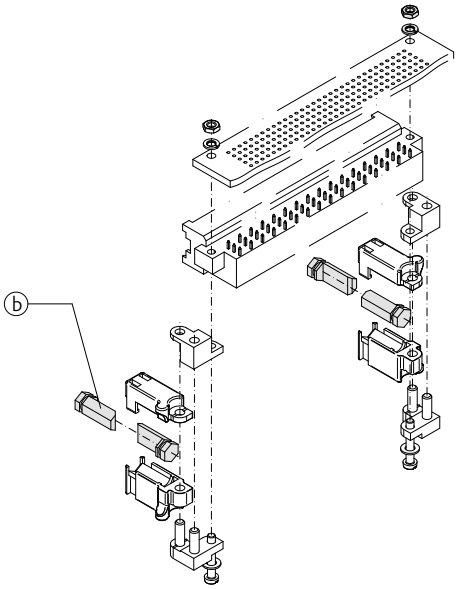


Coding element

Art.-No. KOE-1

Specification
- The PCB holder can be coded with 4 coding elements. 2 elements are positioned in the holder and 2 coding elements are inserted directly in the connector hood.

Scope of delivery
- 1 set of coding elements (b)



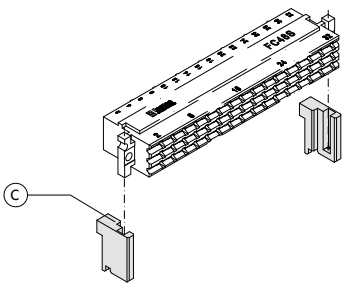
Spacer parts

Art.-No.
see product specification

Specification
- Spacer parts for connectors type E, F and H according to IEC60603-2 (DIN 41612)

Scope of delivery	Art.-No.
1 set of spacer parts for type E	DTE-1
1 set of spacer parts for type F or H	DTF-1

(c) Picture shows DTF-1

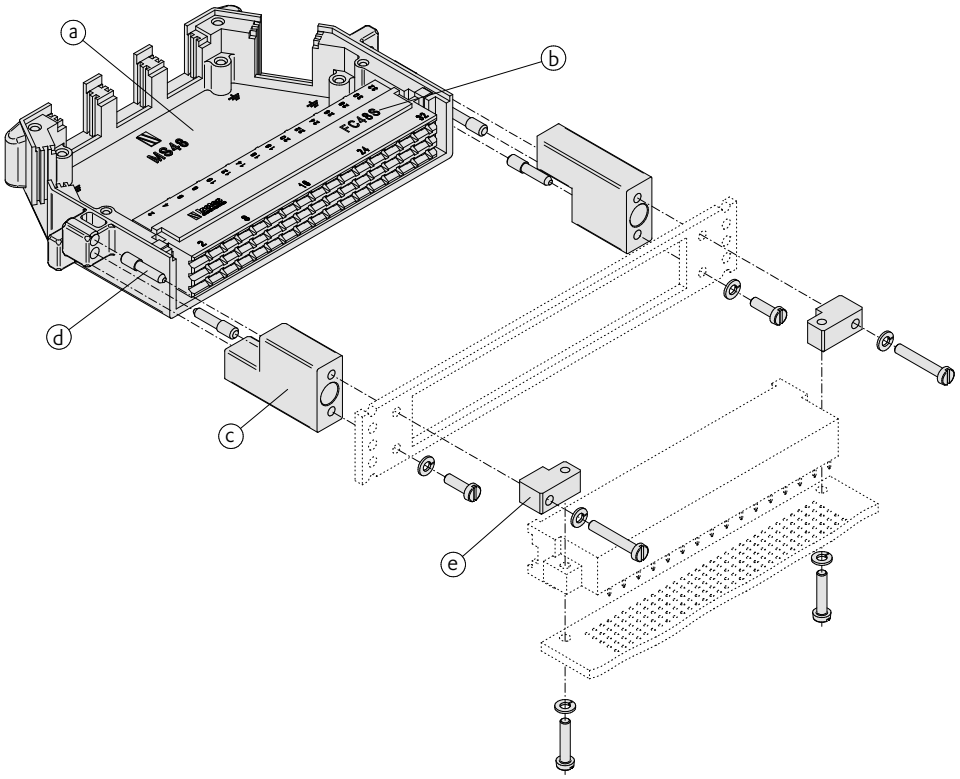


Robust and compact, simple and reliable

Especially for industrial 19" rack applications with closed housing like they are used in control modules for power converters or in communication systems, Inotec has developed an enclosure system that enables separate mounting of cable-side connector and device-side interface.

The complete system for IEC 60603-2 (DIN 41612) PCB connectors in type F includes not only the full metal housing with cable inputs for the Inotec crimp flange technology, but also the matching female connector with crimp contacts and mounting brackets, which enable the interface to the connector on the device side as well as the connection of the PCB.

Inotec has designed this interface with a focus on EMC, robustness, ease of assembly and disassembly. The housing is also available as a design variant for accommodating E-type connectors. The full-metal fasteners ensure optimal ground contact as well as vibration-resistant, secure fastening and coding.



(a) Hood DG48MSF-92

(b) Female connector FC48S

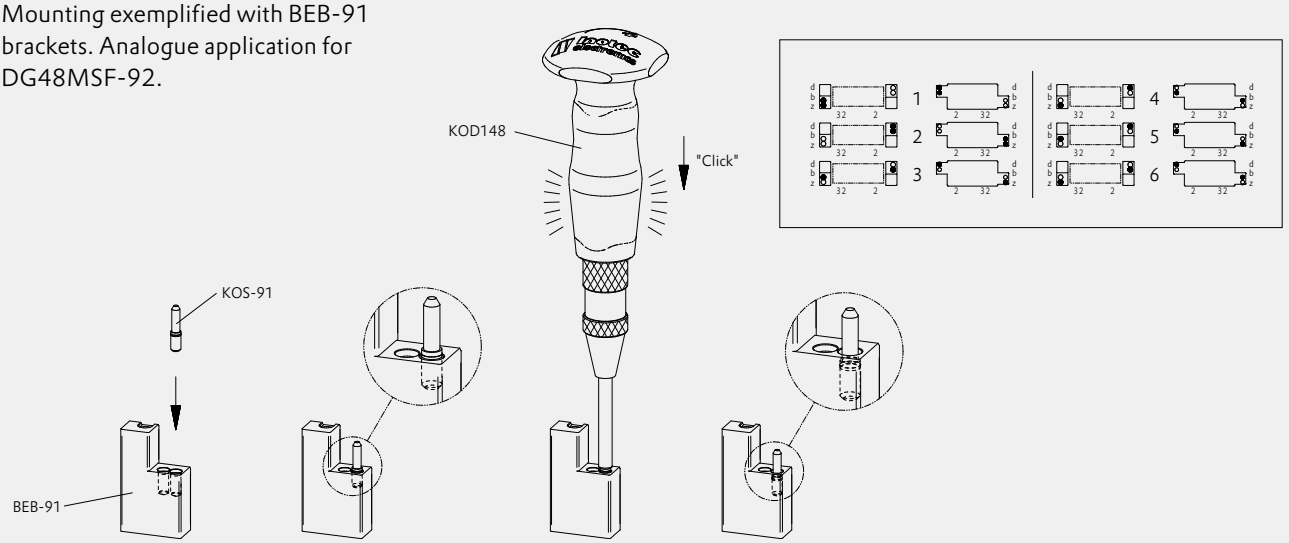
(c) Mounting brackets BEB-91

(d) Coding pin KOS-91

(e) Mounting brackets BEB-93

Processing instruction and coding scheme

Mounting exemplified with BEB-91 brackets. Analogue application for DG48MSF-92.



MSF / 48-way / Front panel mount, types E, F

Art.-No. DG48MSF-92

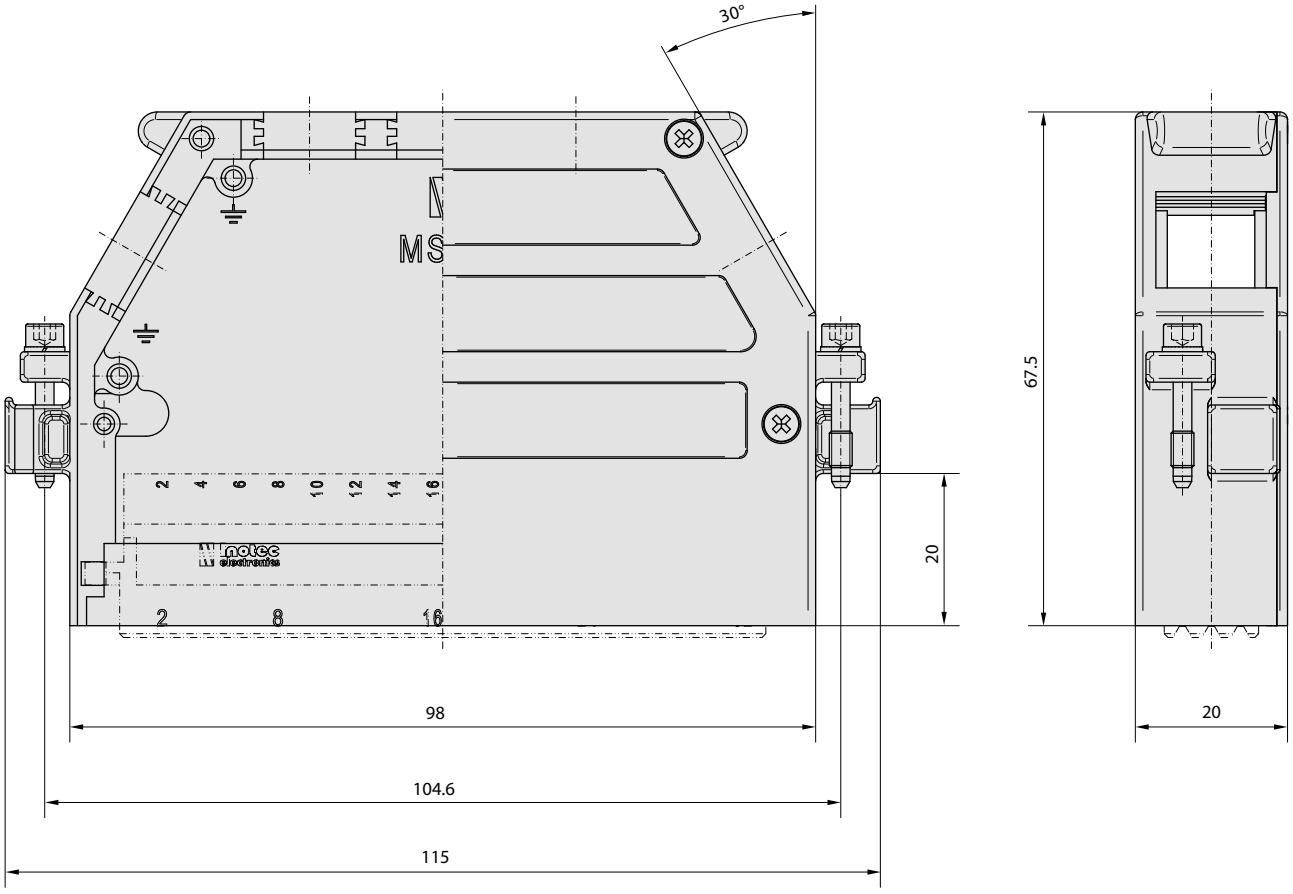
Specification

- Full-metal hood for female connectors, type F, according to IEC 60603-2 (DIN 41612)
- For flexible mounting on 19″ 4HP bays
- Compact system width of only 115 mm for limited installation space
- Backlash-free, robust and reliably vibration-resistant screw connection via separate mounting brackets
- Flexible coding using metallic coding pins in 4 slots
- 3 straight cable entries for CF100 / 300 and DKS10x / 300
- 2 lateral cable entries (30°) for CF200 and DKS200 (Attention, not suitable for DKS207)

Scope of delivery

- 1 pc. full metal hood with cover
- 2 pcs. captive mounted locking screws with washer (recommended tightening torque 0,65 Nm)
- 2 pcs. grounding screws M2,5x4,5
- 4 pcs. cover screws M2,5x7

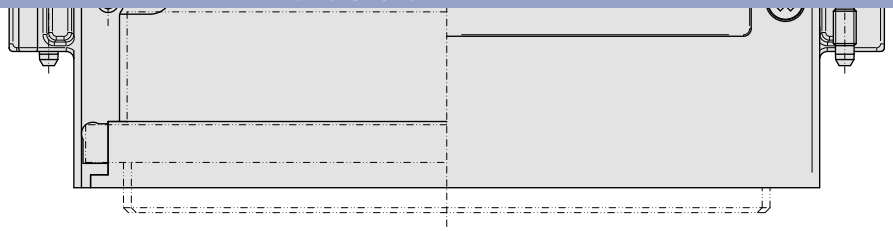
DG48MSF-92 replaces DG48MSF-91 (downward compatible)



Product variants

Art.-No.DG48MSE-92

Modified hood for type E connectors

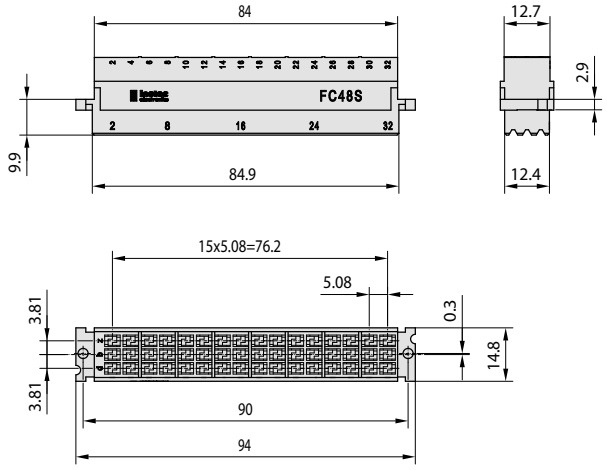


Female connector, crimp termination, IEC 60603-2 (DIN 41612), type F

Art.-No. FC48S

Specification
- 48-way insulator body for crimp contacts FCCxS-200
- Complies with fire protection requirements according to EN45545-2 R22 / R23 HL3

Scope of delivery
- 1 insulator body



Female contact, crimp, reel

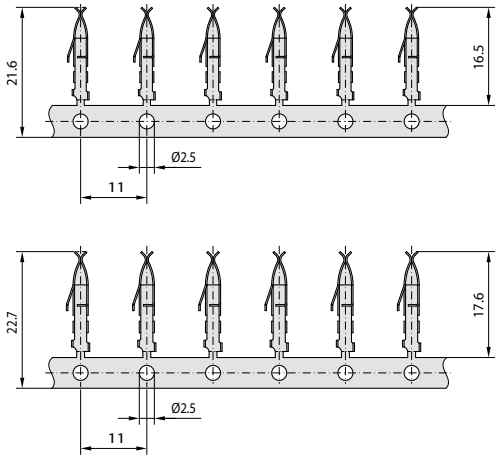
Art.-No. see product specification

Specification
- Female crimp contact, stamped, partially gold-plated
- Quality grade 2

Versions

	Art.-No.
■ 1 coil of female contacts Wire gauge 0,14 - 0,5 mm² Insulation Ø of the cable 1,0 - 2,0 mm	FCC1S-200
■ 1 coil of female contacts Wire gauge 0,5 - 1,5 mm² Insulation Ø of the cable 1,8 - 2,8 mm	FCC2S-200

Order quantities / packing units
- 1 coil = 2.500 contacts
- 50 - 450 pcs. in 50 pcs. strips
- 500 - 2.000 pcs. in 500 pcs. reels
- from 2.500 pcs. in 2.500 pcs. reels



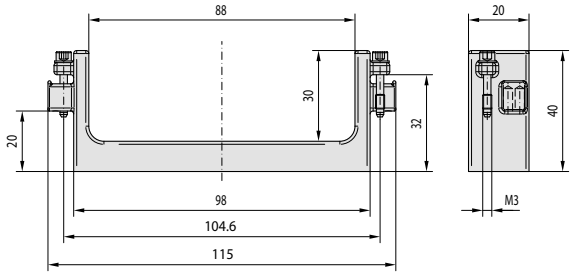
Dust cap for unused interfaces

Art.-No. BEB-91-SSK

Specification
- Dust cap for unused interfaces witch BEB-91 brackets
- Complies with fire-and-smoke requirements according to EN45545-2 R22 / R23 HL3

Scope of delivery
- 1 pc. Thermoplastic Elastomer (TPE) dust cap
- 2 pcs. captive mounted locking screws with spring washer

Accessories
- Fixation cord, black 15 mm with eyelet and loop (Art.-No. BS-001)

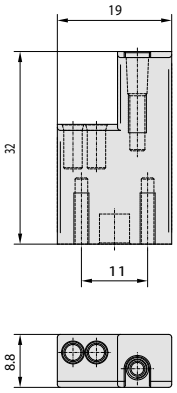


Mounting bracket for front panels

Art.-No. BEB-91

Specification
- Mounting bracket for DG48MSF-92 with locator holes for coding pins
- 2 fixation holes M2,5 for front panel mounting

Scope of delivery
- 2 pcs. mounting brackets

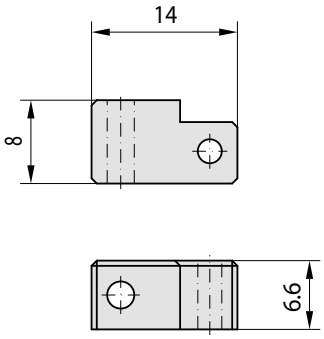


Mounting bracket, PCB holder

Art.-No. BEB-93

Specification
- Mounting brackets for rear-panel fixation of PCB with male connector IEC 60603-2 (DIN 41612) type F
- The mounting brackets also serve as a counterpart to the front-mounted BEB-91 mounting brackets
- Includes a set of fixation screws for front panel mount of BEB-91

Scope of delivery
- 2 pcs. mounting brackets
- 2 pcs. screws M2,5x8 including washer
- 2 pcs. screws M2,5x12 including washer
- 2 pcs. screws M2,5x16 including washer
- 6 pcs. washers



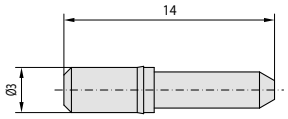
Coding pins

Art.-No. KOS-91

Specification
- Coding pin for DG48MSF-92 hoods in combination with BEB-91 mounting brackets

Scope of delivery
- 1 pc. coding pin

The corresponding assembly tool can be found in the chapter Tools on page 115



M12 connectors

M12 connector system for field assembly

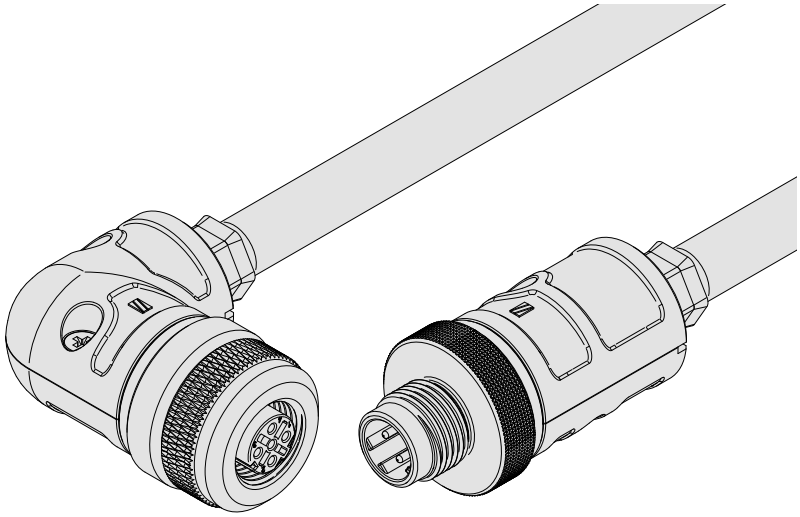
With the MSR12 / MRR12 series Inotec electronics has developed a circular connector system according to DIN IEC 61076-2-101. Due to its special full metal hood the system takes account of the users' demand for a maximum EMI / RFI shielded data transmission combined with a robust and reliable connection. Further characteristics are the compact and space-saving design as well as easy assembly and mounting. The system is designed for an extended temperature range from -55°C to +150°C and therefore also complies with the high fire and smoke requirements of the railway industry. High-end gold-plated special contacts reliably ensure minimum transition resistances for high mating frequencies of >500 cycles.

Due to the precision turned crimp contacts, not only low contact resistances but also an optimal connection to the cable core is ensured. Representing an alternative to overmolded M12 connectors, the MSR12 / MRR12 series is focusing applications requiring field assembly or individual wirings. The original Inotec crimp flange technology provides a 360° contact to the cable shield and ensures an optimal traction relief of the cable without exerting pressure on the cable cores. The components are especially adapted for the applied cable. Main area of application for MSR12 / MRR12 series is a transmission of sensitive low-voltage signal or data through shielded cables. In particular these are Industrial Ethernet and fieldbus applications like e.g. Profibus, Profinet, Ethernet/IP, Sercon, CAN Bus and further protocols being applied e.g. for data transmission in the railway industry.

These applications do require a high level of shielding against disturbances, like e.g. in control- and supervising networks or passenger information systems.
Another crucial factor in this kind of networks is their mechanical robustness. Traction and torque relief for data or signal transmitting wires when cables are bended or pulled are as important as a vibration resistant interconnection to the terminal device.

While many conventional Ethernet connectors like e.g. the widely-used RJ45 plug are not suitable for this kind of mechanical load cases, the D-coded M12 series represents the optimal standard solution.

As an option, Inotec also offers a 4-way A-coded interface. Further variants or designs may be developed according to customer demands.



Inotec M12 connector system for field assembly:

- Maximum EMI/RFI shielding provided by full-metal housing combined with Inotec crimp flange technology
- 360° cable shield contact, extreme traction and torque resistance without compressing the cable core
- Compact and space-saving design in straight or 90° version
- Robust and vibration resistant

Selection table

Complete connector, including insulators and contacts

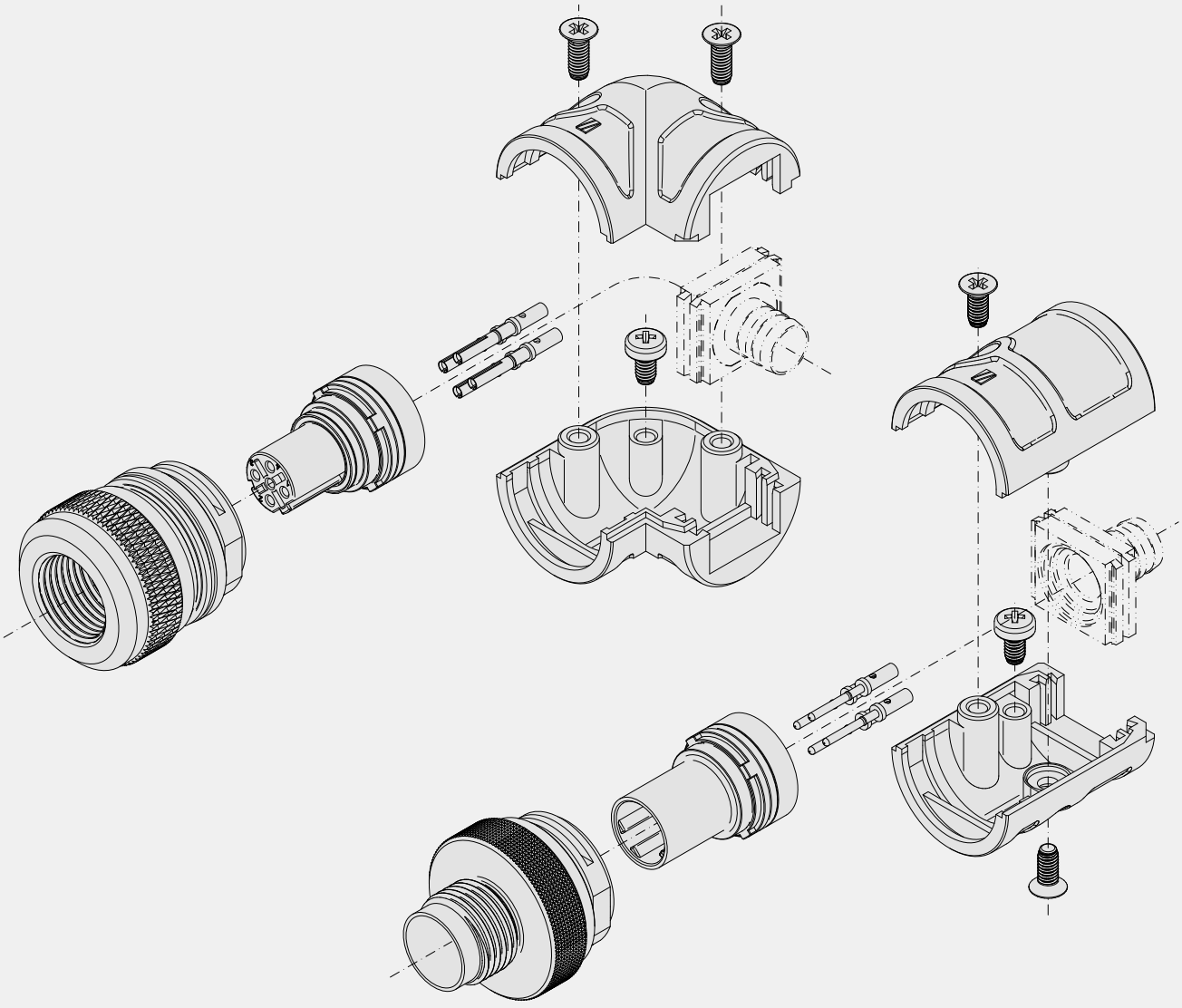
	male		female	
	0°	90°	0°	90°
D-coding	MSR12-P-4D	MRR12-P-4D	MSR12-S-4D	MRR12-S-4D
A-coding(4-way)	MSR12-P-4A	MRR12-P-4A	MSR12-S-4A	MRR12-S-4A
A-coding (5-way)	MSR12-P-5A	MRR12-P-5A	MSR12-S-5A	MRR12-S-5A

All dimensions on component drawings are given in mm.

Scope of delivery and standard packing units

Inotec M12 connectors are always supplied as a kit. Threaded sleeves, hood shells with thread-forming cover and ground screws as well as insulating bodies and contacts are delivered ready for installation in individual packages.

Strain relief components such as crimp flanges and ferrules or cable clamps are not included. In the case of packing in larger quantities, the components can also be supplied separately packaged according to customer requirements.

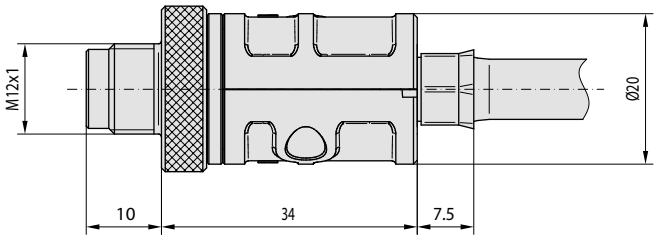


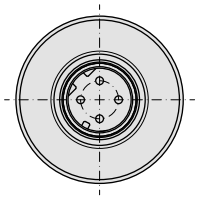
M12 crimp connector, straight, male

Art.-No.
see product specification

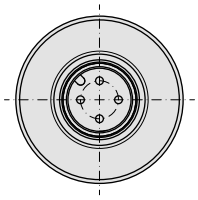
Specification
- M12 crimp connector for field assembly
- Rotating threaded sleeve M12x1 with opening for male insulator bodies
- Full-metal hood with half-shells in labyrinth design, straight cable entry
- 360° cable shield grounding with Inotec crimp flanges type CF100 / CF300

Scope of delivery
- 1 pc. threaded sleeve M12x1
- 2 pcs. die-cast half-shell hood 0°
- 1 pc. grounding screw
- 2 pcs. cover screws
- 1 pc. insulator body, male
- 4 pcs. crimp contact male GK1
- 1 pc. center contact (only 5-way A-coding)

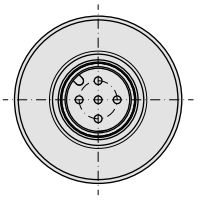




D-coding
Art.-No. MSR12-P-4D



A-coding (4-way)
Art.-No. MSR12-P-4A



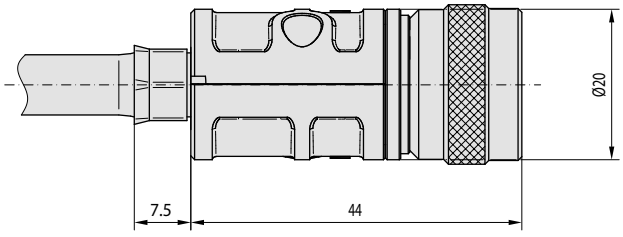
A-coding (5-way)
Art.-No. MSR12-P-5A

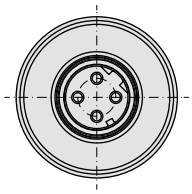
M12 crimp connector, straight, female

Art.-No.
see product specification

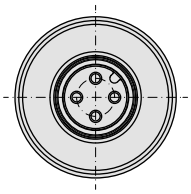
Specification
- M12 crimp connector for field assembly
- Rotating threaded sleeve M12x1 with opening for female insulator bodies
- Full-metal hood with half-shells in labyrinth design, straight cable entry
- 360° cable shield grounding with Inotec crimp flanges type CF100 / CF300

Scope of delivery
- 1 pc. threaded sleeve M12x1
- 2 pcs. die-cast half-shell hood 0°
- 1 pc. grounding screw
- 2 pcs. cover screws
- 1 pc. insulator body, female
- 4 pcs. crimp contact female GK1
- 1 pc. center contact (only 5-way A-coding)

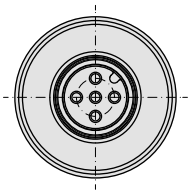




D-coding
Art.-No. MSR12-S-4D



A-coding (4-way)
Art.-No. MSR12-S-4A



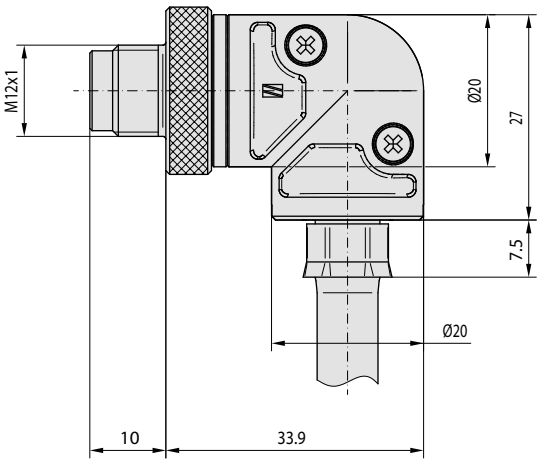
A-coding (5-way)
Art.-No. MSR12-S-5A

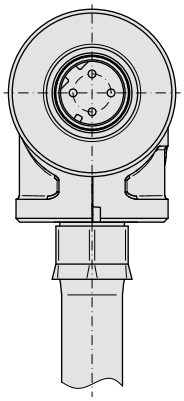
M12 crimp connector, angled, male

Art.-No.
see product specification

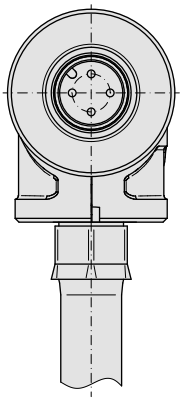
Specification
- M12 crimp connector for field assembly
- Rotating threaded sleeve M12x1 with opening for male insulator bodies
- Full-metal hood with half-shells in labyrinth design, 90° cable entry
- 360° cable shield grounding with Inotec crimp flanges type CF100 / CF300

Scope of delivery
- 1 pc. threaded sleeve M12x1
- 1 pc. die-cast upper half-shell 90°
- 1 pc. die-cast lower half-shell 90°
- 1 pc. grounding screw
- 2 pcs. cover screws
- 1 pc. insulator body male
- 4 pcs. crimp contacts male GK1
- 1 pc. center contact (only 5-way A-coding)

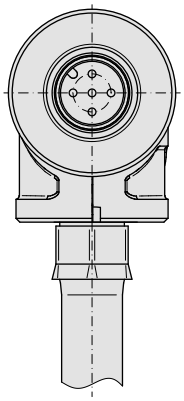




D-coding
Art.-No. MRR12-P-4D



A-coding (4-way)
Art.-No. MRR12-P-4A



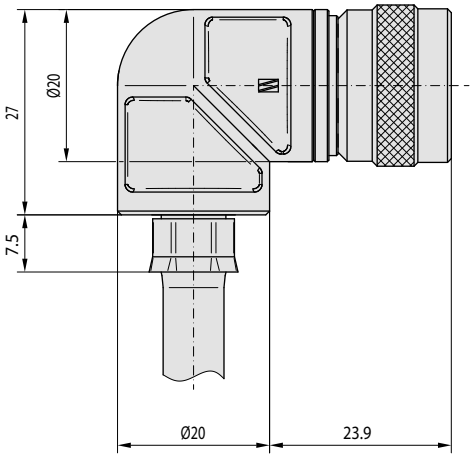
A-coding (5-way)
Art.-No. MRR12-P-5A

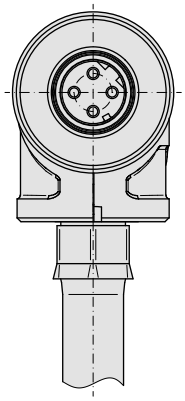
M12 crimp connector, angled, female

Art.-No.
see product specification

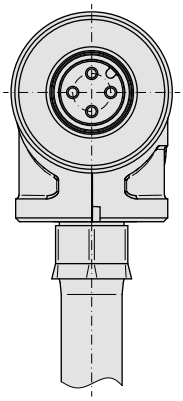
Specification
- M12 crimp connector for field assembly
- Rotating threaded sleeve M12x1 with opening for female insulator bodies
- Full-metal hood with half-shells in labyrinth design, 90° cable entry
- 360° cable shield grounding with Inotec crimp flanges type CF100 / CF300

Scope of delivery
- 1 pc. threaded sleeve M12x1
- 1 pc. die-cast upper half-shell 90°
- 1 pc. die-cast lower half-shell 90°
- 1 pc. grounding screw
- 2 pcs. cover screws
- 1 pc. insulator body, female
- 4 pcs. crimp contacts female GK1
- 1 pc. center contact (only 5-way A-coding)

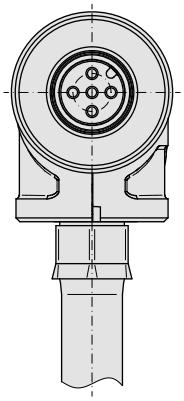




D-coding
Art.-No. MRR12-S-4D



A-coding (4-way)
Art.-No. MRR12-S-4A



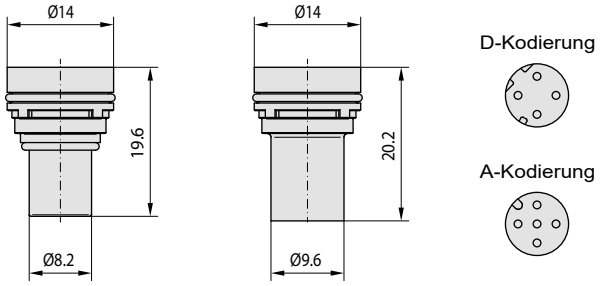
A-coding (5-way)
Art.-No. MRR12-S-5A

Insulator bodies

Art.-No.
see product specification

Specification
- Glass fibre-reinforced thermoplastic, self-extinguishing according to UL 94-V-0 and fire resistant according to EN45545-2 R22 / R23 HL3

Scope of delivery	Spare part Art.-No.
1 pc. insulator body male D-coding	M12CP-4D
1 pc. insulator body female D-coding	M12CS-4D
1 pc. insulator body male A-coding	M12CP-4A
1 pc. insulator body female A-coding	M12CS-4A

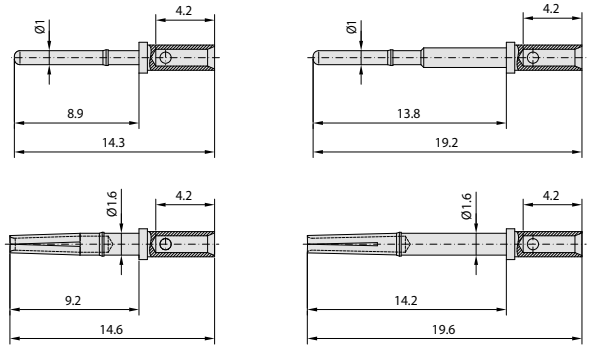


Crimp contacts

Art.-No.
see product specification

Specification
- Precision-turned crimp contacts for Inotec-M12 insulators
- Cu alloy, Au plating on Ni base
- Crimping range 0,35 - 0,75 mm²

Scope of delivery	Spare part Art.-No.
1 pc. crimp contact male	MCC3P4
1 pc. crimp contact female	MCC3S4
1 pc. crimp contact male A-coding center contact	MCC4P4
1 pc. crimp contact female A-coding center contact	MCC4S4



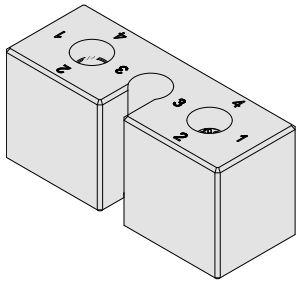
Assembly device M12

Art.-No. M12-MO1

Specification
- Assembly device for pressing in pin and socket contacts of the Inotec-M12 series
- Numbering of the slots is clearly legible on the coding aid
- Removable
- Alternative assembly with insulating bodies in A-coding possible

Scope of delivery
- 1 pc. assembly device

Completely equipped with insulating bodies pin / socket in the requested coding (D-coding by default).

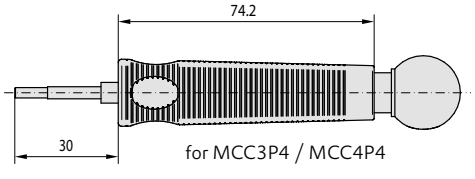


Contact removal device

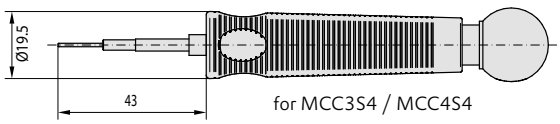
Art.-No. MCT100

Specification
- Robust and ergonomic plastic handle with lockable clamping mechanism
- Interchangeable insert made of hardened steel with push-out mandrel for socket contacts and push-out sleeve for pins

Scope of delivery
- 1 pc. plastic handle
- 1 pc. insert male / female



for MCC3P4 / MCC4P4



for MCC3S4 / MCC4S4

EMC-compliant cable connections

Components for crimp flange system, cable clamps and blind plugs

The correct processing of shielded cables is a crucial criterion for both electrical and mechanical functionality for any EMI/RFI shielding connector housings but also for direct cable in- and feedthrough into shielded end devices.

The connection of the cable and the cable shield to the housings must meet several essential requirements:

- A low-impedance connection between the cable shield and the housing, which remains constant over long periods of use, even under mechanical stress.
- A gap-free RF-tight sealing of the cable entry.
- Strain and torque relief with high retention forces that remains functional even under rough handling conditions.
- Simple, efficient and cost-effective processing.

With the development of crimp flange technology, Inotec has focused specifically on this critical interface and offers its customers the optimal solution for every cabling variant, including the corresponding assembly tool. Special installation space situations or individual cable designs may however still require the use of conventional cable clamp technology. For these applications, too, Inotec has developed components specially adapted to the HF-tight full-metal housings.

The functional reliability of an entire application finally depends on cable-specific choice of the appropriate components and processing tools. For this reason, the customer- and cable-specific determination and definition of processing parameters is a crucial part of the Inotec offering and ensures safe, robust and reliable cable processing.

Advantages of crimp flange technology

- Low shielding attenuation, respectively transition resistance due to 360° contacting of the cable shield
- High tensile and torsional strength, usually above the maximum tensile strength of the cable
- No pressure on cable cores, twisting is maintained
- Quickly and reliably reproducible assembly
- HF-tight housing closure due to unique dovetail geometry

Inotec crimp data definition

Inotec offers its customers a unique service: cable-specific crimp data definition. On the basis of a cable sample, our technicians check the optimal processing parameters for reliable and simple cable processing with maximum mechanical strength and optimal cable shield connection.

Further strain relief and cable entry components

- cable clamps in different clamping widths for special cabling
- cable entry via BNC connector
- die-cast zinc components with Inotec dovetail for low transition resistance

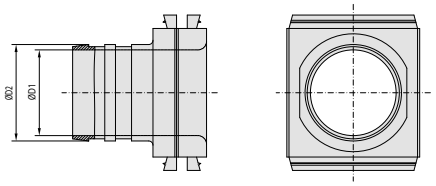
Crimp flange for small cable entries

Art.-No. CF100-x/x

Specification
- Crimp flange for 9- to 48-way hoods
- Processing with crimp sleeve CH-x/x according to Inotec crimp flange specification and cable processing instruction

Scope of delivery
- 1 pc. crimp flange CF100-x/x

x/x denotes D1 / D2
(inner / outer diameter in mm, D1 max. 8,0 mm)



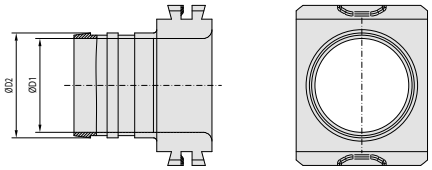
Monobloc crimp flange for small cable entries

Art.-No. CF300-x/x

Specification
- Monobloc crimp flange for 9- to 48-way hoods
- Processing with crimp ferrule CH-x/x according to Inotec crimp flange specification and cable processing instruction

Scope of delivery
- 1 pc. crimp flange CF300-x/x

x/x denotes D1 / D2
(inner / outer diameter in mm, D1 max. 10,5 mm)



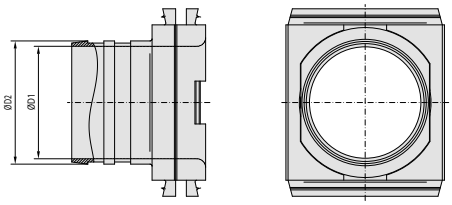
Crimp flange for large cable entries

Art.-No. CF200-x/x

Specification
- Crimp flange for 48- / 50- / 104-way hoods
- Processing with crimp ferrule CH-x/x according to Inotec crimp flange specification and cable processing instruction

Scope of delivery
- 1 pc. crimp flange CF200-x/x

x/x denotes D1 / D2
(inner / outer diameter in mm, D1 max. 11,0 mm)



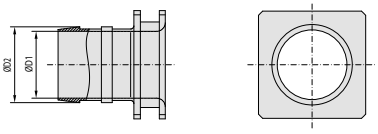
Crimp flange for MSBS-Series hoods

Art.-No. CF400-x/x

Specification
- Crimp flange for MSBS-Series hoods
- Processing with crimp ferrule CH-x/x according to Inotec crimp flange specification and cable processing instruction

Scope of delivery.
- 1 pc. crimp flange CF400-x/x

x/x denotes D1 / D2
(inner / outer diameter in mm, D1 max. 8,0 mm)



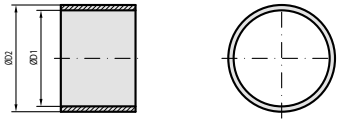
Crimp ferrule

Art.-No. CH-x/x

Specification
- Non-magnetic ferrule
- Brass alloy with Zn coating

Scope of delivery
- 1 pc. crimp ferrule

x/x denotes D1 / D2 (inner / outer diameter in mm)



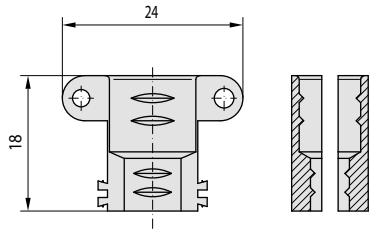
Cable clamp for small cable entries

Art.-No. DKS100

Specification
- Cable clamp for 9- to 48-way hoods
- Provides 2 different recesses for cable diameters from approx. 3 to 12 mm

Scope of delivery
- 2 pcs. half shells
- 2 pcs. countersunk screws M2,5x10

Design variant
- Increased inner diameter (Art.-No. DKS100-C101)



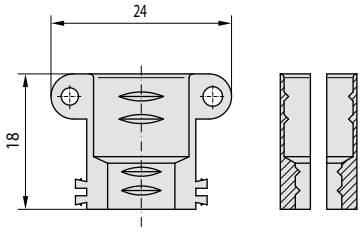
Cable clamp for large cable entries

Art.-No. DKS200

Specification
- Cable clamp for 48- / 50- / 104-way hoods
- Provides 2 different recesses for cable diameters from approx. 5 to 14 mm

Scope of delivery
- 2 pcs. half shells
- 2 pcs. countersunk screws M2,5x16

Design variant
- Increased inner diameter (Art.-No. DKS200-C101)

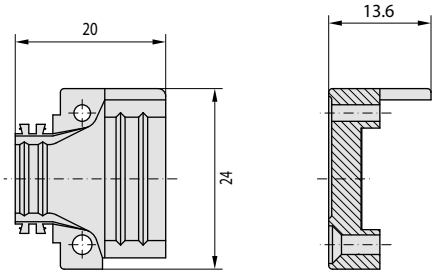


Multi cable clamp for small cable entries

Art.-No. DKS107

Specification
- Cable clamp for 9- to 48-way hoods
- For up to 3 cables with an outer diameter of 6 to 8 mm

Scope of delivery
- 2 pcs. half shells
- 2 pcs. countersunk screws M2,5x10

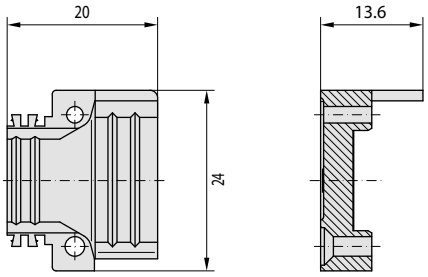


Multiple cable clamp for large cable entries

Art.-No. DKS207

Specification
- Cable clamp for 48- / 50- / 104-way hoods
- For up to 3 cables with an outer diameter of 6 to 11 mm

Scope of delivery
- 2 pcs. half-shells
- 2 pcs. countersunk screws M2,5x10



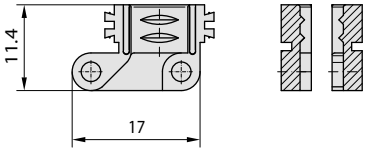
Cable clamp for small cable inputs, asymmetrical

Art.-No. DKS300

Specification
- Asymmetrical cable clamp for small cable diameters, single wires and limited installation spaces
- The maximum outer diameter for shielded cables is approx. 6 mm

Scope of delivery
- 2 pcs. half-shells
- 2 pcs. countersunk screws M2,5x10

Limited compatibility – please contact our technical support for correct installation in our D-Sub or M12 enclosures

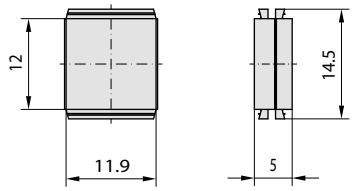


Blind plug for small cable entries

Art.-No. DBS100

Specification
- Blind plug for 9- to 48-way hoods
- For EMC-compliant sealing of unused cable entries
- Also suitable for the installation of coaxial connectors, LEDs, miniature switches, etc.

Scope of delivery
- 1 pc. blind plug

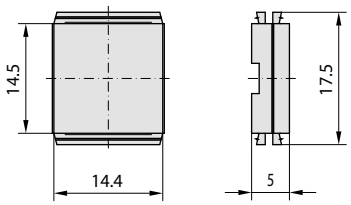


Blind plug for large cable entries

Art.-No. DBS200

Specification
- Blind plug for 48- / 50- / 104-way hoods
- For EMC-compliant sealing of unused cable entries
- Also suitable for the installation of coaxial connectors, LEDs, miniature switches, etc.

Scope of delivery
- 1 pc. blind plug

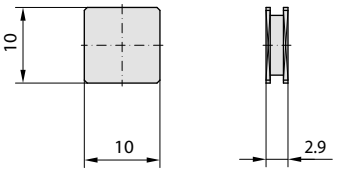


Blind plug for MSBS series hoods

Art.-No. DBS400

Specification
- Blind plug for MSBS series hoods
- For EMC-compliant sealing of unused cable entries
- On request, individual equipment is also possible, e.g. with LED or leash

Scope of delivery
- 1 pc. blind plug



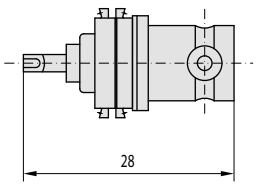
Blind plugs with integrated BNC sockets

Art.-No.
see product specification

Specification
- DBS100 Blanking Plug with Integrated BNC Connector
- Enables a quickly detachable and replaceable, EMC-compliant connection of coaxial cables to Inotec connector housings (D-Sub, M12 or DIN 41612)

Scope of delivery	Art.-No.
■ 1 pc. blind plug with BNC socket 50 Ohm	DBS100-BNC001S
■ 1 pc. blind plug with BNC socket 75 Ohm	DBS100-BNC002S
■ 1 pc. blind plug with insulated BNC socket 50 Ohm	DBS100-BNC003S

Variants with male BNC connector (DBS100-BNCxxxP) on request



Crimp adaptors for MIL-type and other circular connectors

The original crimp flange technology from Inotec with 360° contacting of the cable shield can also be integrated into existing circular connector systems.

Especially in the case of connectors according to the MIL standard, electromagnetic compatibility plays a decisive role in terms of avoiding EM or RF interferences but also in terms of safety from interception. In addition, there are often very high requirements for mechanical resilience and IP protection.

For some important types of MIL connectors, Inotec has therefore developed a special crimp flange adaptor that ensures robustness and a reliable cable shield connection. The crimp flange is integrated as a pre-assembled component on these MIL-C-38999 adaptors with sprocket sleeve and union nut. Thanks to an integrated contact flange for heat shrink tubing, protection class IP67 can also be achieved without any problems.

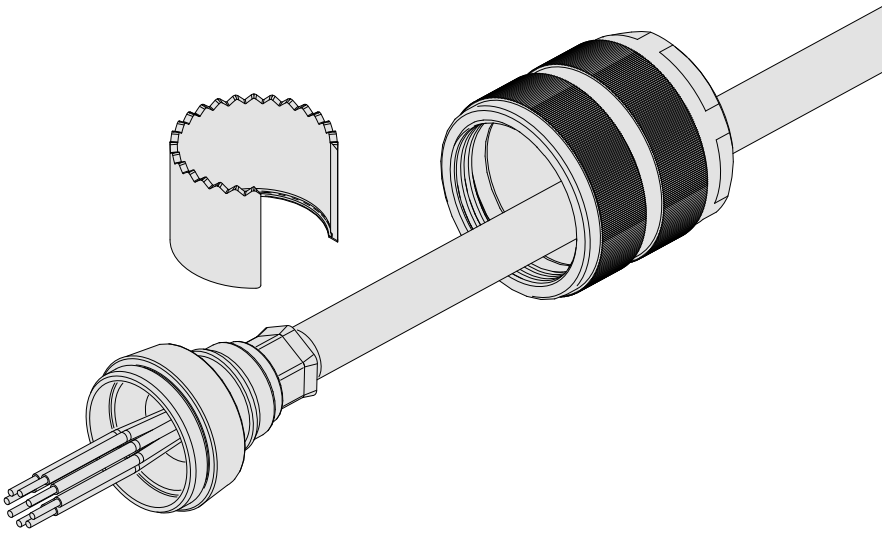
The universally applicable CE circular adaptors according to MIL-DTL-38999 can be integrated into various connector systems with the help of the matching Inotec tool set. All adaptors are designed to be cable-specific in accordance with the Inotec crimp data definition created for the respective application.

Adaptors for MIL circular connectors

- Standard adaptor for MIL-C-38999
- Contact surface for heat shrink tubes for IP67 applications
- Variants for other MIL and connector standards on request.

Universal Crimp Adaptors

- Available in 4 standard sizes
- „Design-in" component for new development of specific circular connectors



MIL-C-38999 connector housings

Art.-No.
see product specification

Specification
- Crimp flange adaptor for circular connectors according to MIL-C-38999
- The crimp flange diameter is determined on a cable-specific basis, in accordance with Inotec's crimp flange specification

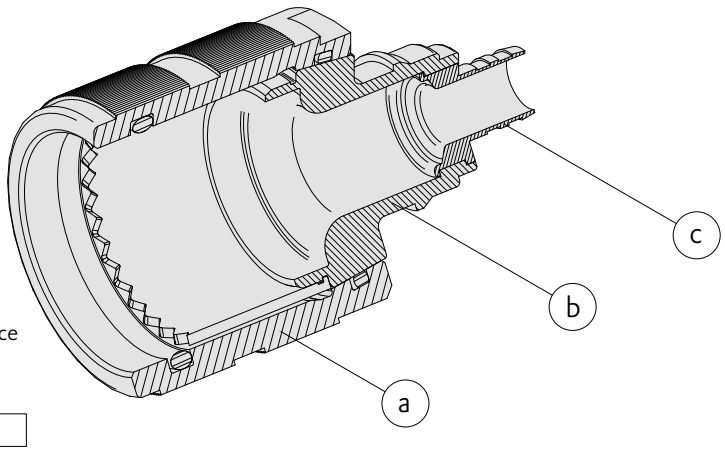
Scope of delivery
- 1 pc. cassette sleeve (a)
- 1 pc. union nut (b)
- 1 pc. crimp flange adaptor (c)
- 2 pcs. sealing rings

Accessories
- Crimp ferrule
- Heat shrink tube

Article designation
- The article number of the complete assembly is composed as follows:
  - CFSCE-x/x
  - Diameter range x/x min. 3,5 / 4,5 to max. 8,0 / 9,0
- You will receive the article number for your application in accordance with the cable-specific crimp flange specification

x/x stands for the inner / outer diameter of the crimp flange

(a) Cassette sleeve
(b) Union nut
(c) Crimp flange adaptor



Universal crimp adaptor according to MIL-DTL-38999

Art.-No.
see product specification

Specification
- Universal crimp adaptor for circular connectors
- The crimp flange diameter is determined on a cable-specific basis, in accordance with Inotec's crimp flange specification

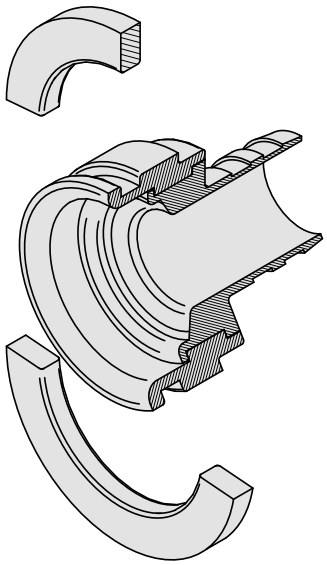
Scope of delivery
- 1 pc. crimp adaptor
- 2 pcs. ring segments

Accessories
- Crimp ferrule

Article designation
- Available in 4 standard sizes according to MIL-DTL-38999
- The article number of the complete assembly is composed as follows:
  - CE12-x/x
  - CE14-x/x
  - CE16-x/x
  - CE22-x/x
  - Diameter range x/x min. 3,5 / 4,5 to max. 8,0 / 9,0
- You will receive the article number for your application in accordance with the cable-specific crimp flange specification

x/x stands for the inner / outer diameter of the crimp flange

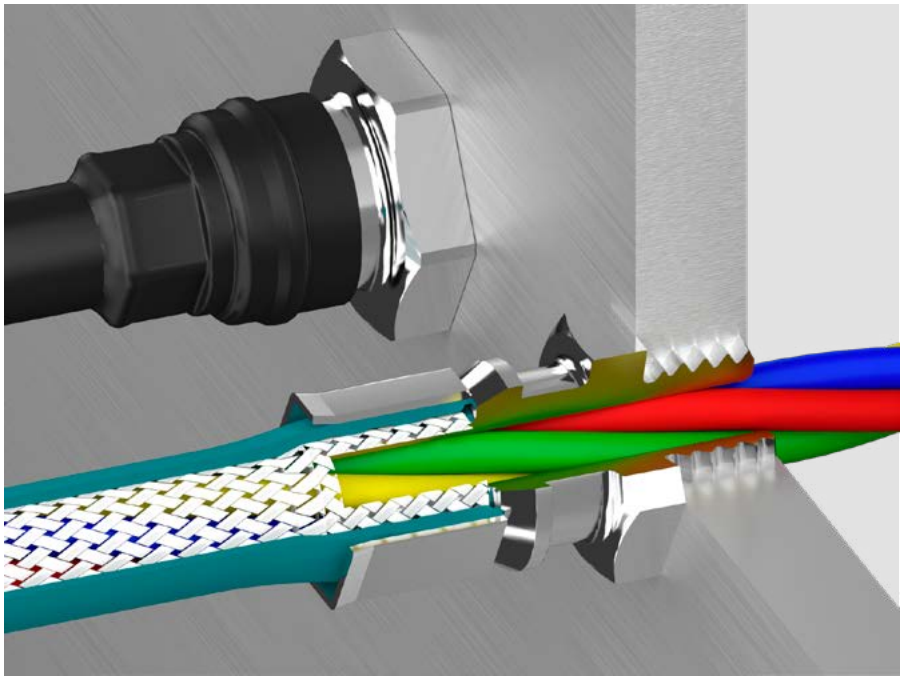
The corresponding assembly tool can be found in the chapter Tools on p. 112



Cable glands for crimp flange system

Special assembly tasks in machine-tool industry, plant-engineering and construction or other applications do require cables to pass directly through the enclosure wall. These feedthrough are a particular challenge with regard to EMC, as high requirements are usually placed on IP protection, but sealing against water and dust usually is an opposing requirement to cable shield grounding.

The Inotec cable cable gland uses the unique crimp flange technology for 360° contacting of the cable shield. In combination with a heat-shrinkable tubing cover, it offers IP67 protection and maximum EMI/RFI shielding at the same time.



Compact cable grommet KD3xx with integrated crimp flange

- compact design for high packing densities
- sealing ring and contact surface for heat shrink tubing allow to achieve class IP67 protection
- customer-specific adaptions possible
- all the advantages of the original Inotec crimp flange technology:
  - 360° shield contact
  - High tensile, torsional and vibration resistance
  - No compression of the internal cable cores
  - Fast and reliably reproducible assembly process

Universal cable grommet KD412 (M12 thread)

- With the standardized thread size M12, the KD412-x/x is ideal for applications requiring flexibility for cabling
- The 2-piece design allows a combination with all currently available flange diameters of the CF100 in the diameter range 2.7 mm to a maximum of 8 mm (inner diameter)

Compact cable gland

Art.-No.
see product specification

Specification
- One-piece cable gland made of high-strength brass alloy
- Compact design enables high packing densities
- Short fine thread, ideal for direct mount
- Electroplated tin surface for optimal and permanent ground contacting
- Contact flange for shrink tubes allows additional sealing according to IP requirements
- Processing according to cable-specific Inotec crimp flange specification

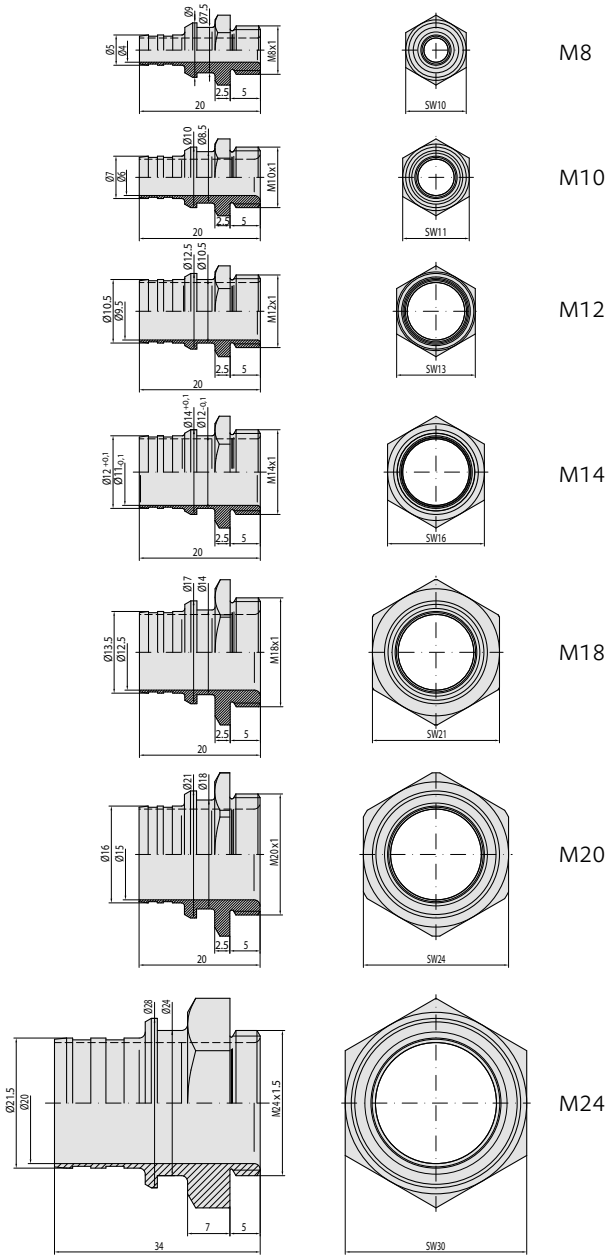
Scope of delivery
- 1 pc. cable gland

Accessories
- Lock nuts in slim design (on request)
- Sealing rings (on request)

Selection table KD3xx

Art.-No.	Thread	Wrench size hex.	Crimp flange diameter internal / external	
KD308-4,5/5,5	M8x1	SW10	4,5 / 5,5	M8
KD308-4/5	M8x1	SW10	4 / 5	
KD308-5/6	M8x1	SW10	5 / 6	
KD310-6,5/7,5	M10x1	SW11	6,5 / 7,5	M10
KD310-6/7	M10x1	SW11	6 / 7	
KD310-7/8	M10x1	SW11	7 / 8	
KD312-7,5/8,5	M12x1	SW13	7,5 / 8,5	M12
KD312-8,5/9,5	M12x1	SW13	8,5 / 9,5	
KD312-8/9	M12x1	SW13	8 / 9	
KD312-9,5/10,5	M12x1	SW13	9,5 / 10,5	
KD312-9/10	M12x1	SW13	9 / 10	
KD314-10/11	M14x1	SW16	10 / 11	M14
KD314-11/12	M14x1	SW16	11 / 12	
KD318-12,5/13,5	M18x1	SW21	12,5 / 13,5	M18
KD318-13,5/14,5	M18x1	SW21	13,5 / 14,5	
KD318-14,5/15,5	M18x1	SW21	14,5 / 15,5	
KD318-14/15	M18x1	SW21	14 / 15	
KD320-15/16	M20x1	SW24	15 / 16	M20
KD320-16/17,5	M20x1	SW24	16 / 17,5	
KD320-17/18,5	M20x1	SW24	17 / 18,5	
KD324-20/21,5	M24x1,5	SW30	20 / 21,5	M24

Special sizes and different thread types on request.



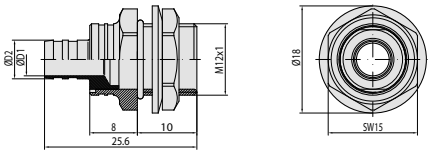
Universal cable glands M12

Art.-No. KD412-x/x*

Specification
- Uniform thread size M12x1 for all flange diameters
- Wrench size 15 mm
- Thread length 10 mm enables countering even with high wall thicknesses
- Wide contact flange for heat shrink tubing assembly
- Available flange diameters from 2.7 / 3.5 to a maximum of 8 / 9 (each inner / outer diameter)

Scope of delivery
- 1 pc. cable gland
- 1 pc. hex nut M12x1 AF15
- 1 pc. schnorr® washer
- 1 pc. sealing ring

* Art.-No. with cable-specific diameter
according to cable-specific crimp flange specification



Tools

Inotec-tools for cable processing and assembly

In order to process high-quality and high-precision components, it goes without saying that correspondingly high-quality assembly equipment is required. Inotec offers suitable tools for all quality-relevant processing steps.

Our premises in the development, production and selection of tools:

- Precise adherence and reliable, long-term reproducibility of the specified processing parameters
- Durability and easy replacement of interchangeable inserts and wear parts
- Ergonomic and efficient operability for cost-effective and error-free manufacturing processes

Special hand tools and crimp dies have been developed for the processing of Inotec crimp flanges and ferrules.

Geometries, diameters and tolerances meet the high demands we place on our products and the result of their processing. Only the use of Inotec tools in accordance with our cable-specific crimp data definition ensures reliable function of the crimp connection.

When processing contacts, Inotec relies on proven, high-quality crimping technologies. For our precision-turned crimp contacts, we generally recommend the use of 8-notch crimping pliers to achieve maximum pull-out strengths without damaging the strands.

In addition to crimp flange technology, Inotec offers assembly devices and standard tools for the assembly and processing of connectors, crimp flanges and hoods. Here, too, we focus on ease of use, quality and durability. Often, it's the little things that make the difference: For example, unfavorable installation situations in connector housings can be "defused" by using hexagon socket screws. A simple screwdriver with a ball head allows the screw to be fixed at angles of up to 30°. If you have any installation problems or general questions about processing and assembly, we will be happy to advise you.

Tools for crimp flange processing

- Compact, high-quality hand tools for one-handed operation in field assembly
- Hand lever press with crimping jaws for workshop assembly
- Wear-resistant special crimp dies made of hardened steel in 0.5 mm increments
- Special insertion tools for Inotec crimp flange
- High-quality cable shield scissors

Tools for processing crimp contacts

- Precision crimping pliers for punched B crimp contacts
- 8-notch crimping tool for turned Crimp Contacts
- Contact insertion and extraction tool

Further assembly tools

- For all screw locks with hexagon socket, we recommend our screwdriver with ball head SDK01
- Product-specific tools (e.g. insertion tools for coding pins) can be found in the respective catalogue section.

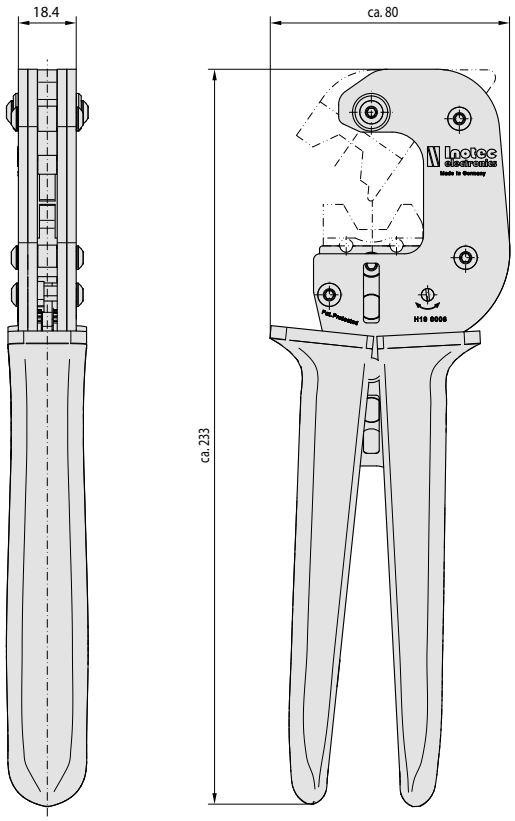
Hand crimp tool for original Inotec crimp flange technology

Art.-No. HZ202

Specification
- Compact hand pliers for cable processing with Inotec crimp flange technology
- The unique swivelling, upper crimping die allows one-handed operation and processing of cross-sections from 3,5 mm to 20 mm
- Burnished mounting bolts for crimp jaw inserts ensure maximum reliability and repeatability
- No presetting or calibration required
- Use according to cable-specific crimp flange specification

Scope of delivery
- 1 pc. hand tool (without crimp dies)
- 1 pc. hexagon key

Notice for order processing
- Use only with CB202-xxx and CB202-xxxT crimp die inserts
- Not compatible with CB-xxx(T) and CB201-xxx(T) inserts for the discontinued HZ100 and HZ201 manual pliers



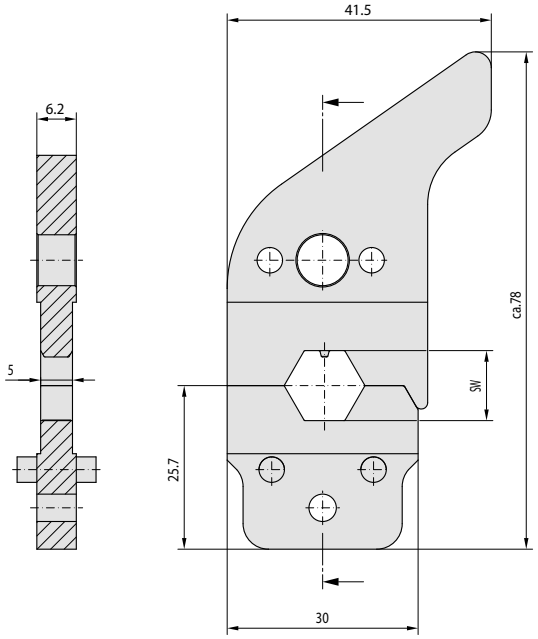
Crimp die inserts for HZ202

Art.-No. CB202-xxx(T)

Specification
- CB202-xxx(T) hexagon crimp dies
- Calibrated ready for use (no pre-setting of the tool required)
- Easy assembly and disassembly for quick replacement of the crimp dies
- Optional version with trapezoidal indent (T) in the upper crimp die to improve torque resistance
- Available in wrench sizes from 3,5 mm to 20 mm
- Size gradation in 0,5 mm increments for optimal crimping results

Scope of delivery
- 1 set of crimp dies

Notice for order processing
- Refer to cable specific processing instruction for correct article number*
- xxx = wrench size (e. g. 065 = 6,5 mm)
- Index "T" = upper crimping die with trapezoidal indent

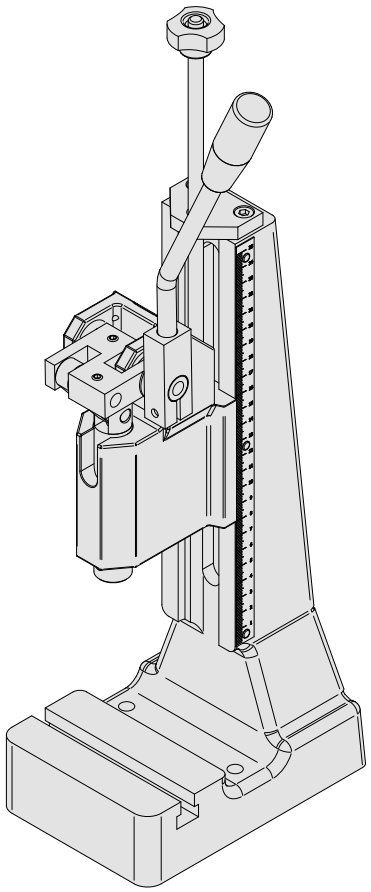


Hand lever press

Art.-No. IHP500

Specification
- Versatile toggle press in solid construction with sufficient pressure for processing the crimp flanges
- The 10 mm shank holder allows quick changeovers between different crimping dies, making it ideal for workshop assembly in small batches

Max. pressure	5,0 kN
Travel	40 mm
Adjustable height	45 - 220 mm
Plunger diameter	20 mm
Shank diameter	10H7 x 25 mm
Overhang	63 mm
Table size	110 x 60 mm
Groove width DIN 650	10 mm
Base surface	110 x 160 mm
Weight	8,5 kg



Scope of delivery
- 1 pc. hand lever press (without crimp dies)
- Ready-to-use pre-assembled with slot nut for crimp die positioning

Notice for order processing
- For cable processing requiring high crimping forces, we offer the presses IHP1200 (max. 12 kN) and IP2500 (max. 25 kN)
- You will receive a corresponding recommendation after determining the press forces as part of the cable-specific crimp flange determination

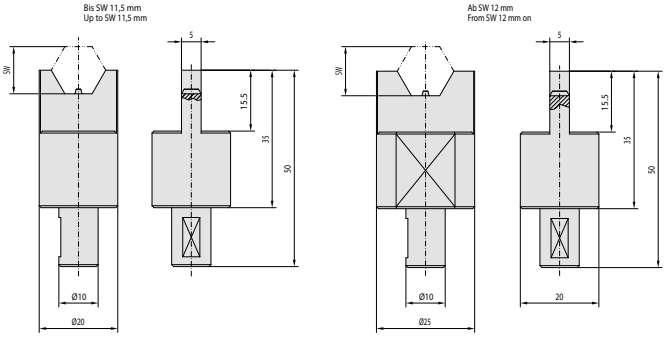
Crimp dies for hand lever press

Art.-No. DCBxxx(T)

Specification
- Crimp dies for hand lever press IHP500

Scope of delivery
- 1 set of crimp dies

Notice for order processing
- Article number according to cable-specific crimp flange specification*
- xxx = wrench size (e. g. 065 = 6,5 mm)
- Index "T" = upper die with trapezoidal indent
- Index "TT" = upper and lower die with trapezoidal indent



* Note on cable processing and selection of crimp dies

The diameter of crimping components as well as the crimp dies to be used are defined by the cable-specific Inotec crimp data definition. Orders for crimp dies can only be processed on the basis of a valid specification.

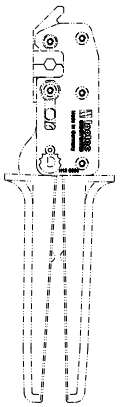
If this is not available for your application or if the last determination of processing parameters should be more than 3 years past, please send us a cable sample of at least 0.5 m in length. We will immediately provide you with an updated crimp data definition.

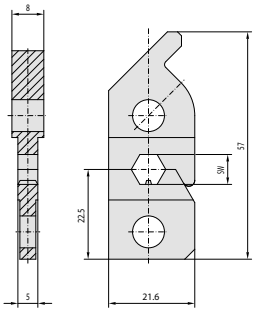
Replacement crimping dies for Inotec HZ100

Art.-No. CB-xxx(T)

Specification
- Original spare parts for Inotec hand tool HZ100
- Size and type according to Inotec crimp flange specification
- Order example CB-095T = wrench size 9,5 mm with trapezoidal indent

Note
- Our HZ100 hand crimp tool is no longer available, but we continue to offer a maintenance and repair service



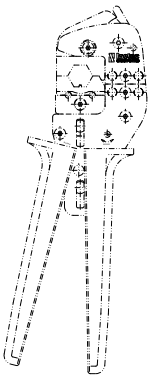


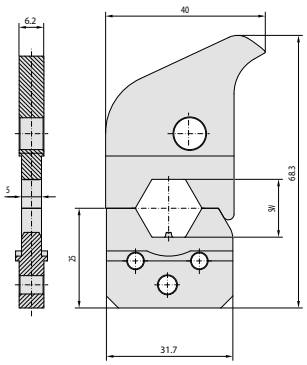
Replacement crimping jaws for Inotec HZ201

Art.-No. CB201-xxx(T)

Specification
- Original spare parts for Inotec hand tool HZ201
- Size and type according to Inotec crimp flange specification
- Order example CB201-135T = wrench size 13,5 mm with trapezoidal indent

Note
- Our HZ201 hand crimp tool is no longer available, but we continue to offer a maintenance and repair service



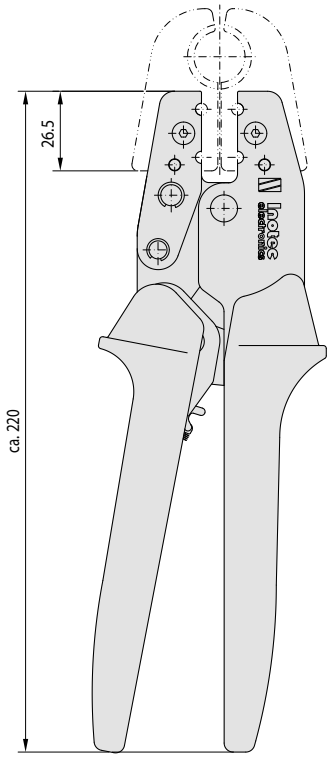


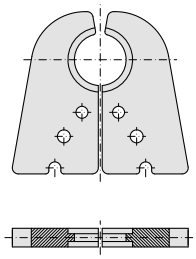
Hand tool for CE crimping unit

Art.-No. HCE01 / CEB-xx

Specification
- Special tool for mounting the universal crimp adaptors according to MIL-DTL-38999 (see page 105)
- Crimping inserts made of hardened steel, suitable for the respective adaptor (Art.-No. CEB-12, CEB-14, CEB-16 und CEB-22)

Scope of delivery
- 1 pc. hand tool (Please note: CEB-xx crimp inserts have to be ordered separately)
- 1 pc. hexagon key





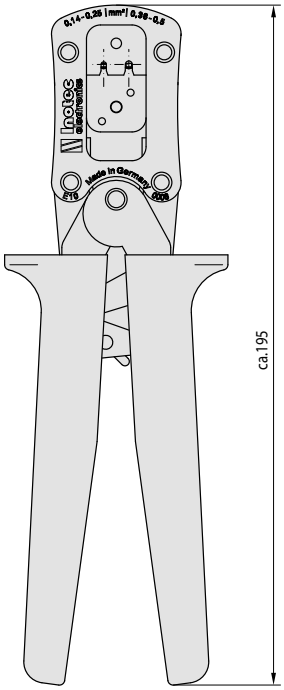
Crimp tool for FCC ribbon contacts

Art.-No.
see product specification

Specification
- Hardened special steel for a long tool life
- Parallelly guided, divided crimping jaws create a secure crimp connection and high pull-out forces
- The compact design with efficient kinematics enables one-handed operation with little effort

Standard versions	Art.-No.
Hand pliers for crimp diameter range 0,14-0,5 mm²	HZ148
Hand pliers for crimp diameter range 0,5-1,5 mm²	HZ248

B-Crimp
- Micrograph of a crimp in cross-section view
- Crimp contact FCC1S-200
- Crimped with HZ148



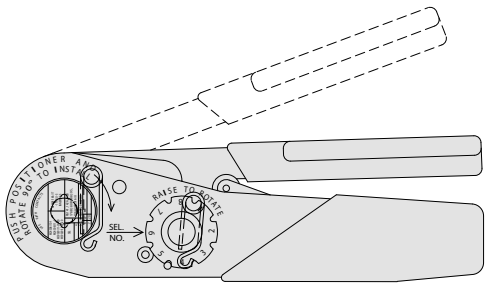
8-indent crimping tool

Art.-No.
see product specification

Specification
- 8-indent crimping tool complying with MIL standard
- Suitable for precision turned D-Sub/M12 crimp contacts
- Adjustable indentation depth
- Interchangeable positioning insert to handle different contact types

Standard versions	Art.-No.
Hand tool (positioner not included)	M22520/2-01
Positioner for Inotec D-Sub / M12 crimp contacts	M22520/2-08

Positioning inserts for further contact types upon request

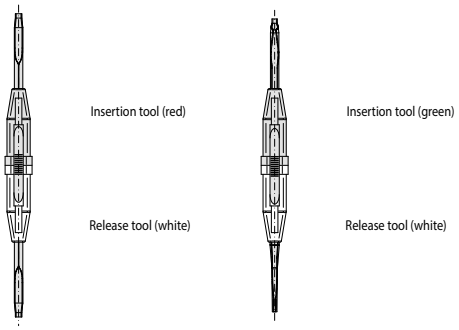


Contact insertion and release tool

Art.-No. DCT100

Specification
- Mounting Aid for Standard D-Sub Crimp Contacts and Inotec-M12 Crimp Contacts
- Divisible double tool for inserting (red side) and loosening (white side) crimp contacts in insulating bodies

Scope of delivery
- 1 pc. contact insertion and release tool

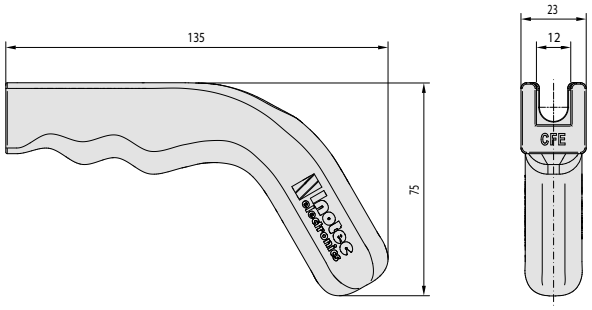


Insertion device CFE

Art.-No.
see product specification

Specification
- The insertion tool fixes the crimp flange during insertion under the shield braid and the cable sheath
- The ergonomic shape reduces the required manual forces during assembly, thus enabling fatigue-free, time-saving crimp flange processing
- Available for all Inotec crimp flange types

Design variant per crimp flange type	Art.-No.
For standard cable entry CF100-x/x und CF300-x/x	CFE101
For big cable entry CF200-x/x	CFE201
Compact CF400-x/x	CFE401

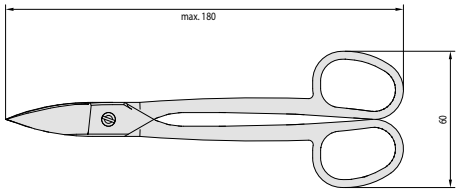


Cable cutters

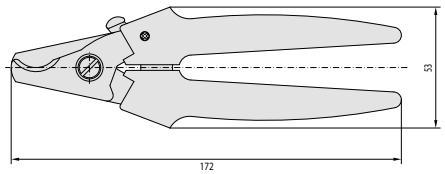
Art.-No.
see product specification

Specification
- Hardened steel blades for cutting of metallic braids
- The curved tip makes it easy to trim the shield braid during crimp flange assembly

Scope of delivery	Art.-No.
1 pc. cable screen sheards with sheath	CS01



Complementary	Art.-No.
1 pc. cable cutters for cutting to length	CS02

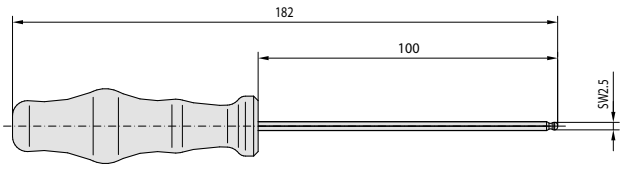


Screw driver

Art.-No. SDK01

Specification
- Hexagon socket screwdriver made of hardened steel
- Wrench size SW2,5
- The ballhead allows screws the tightening of hexagon socket screws SW2,5 at an angle of up to 30°

Scope of delivery
- 1 pc. screw driver wrench size 2,5 mm



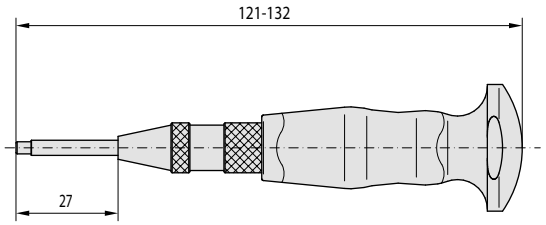
Insertion tool for coding pins

Art.-No. KOD101

Specification
- Specially designed for inserting the KOS-01 coding pins into Inotec coding elements
- The internal spring mechanism generates exactly the impulse required for pressing in the coding pins and thus enables process-reliable reproducible coding

Scope of delivery
- 1 pc. insertion tool for coding pins

Service notes
- The spring force of the KOD101 is preset at the factory
- In case of malfunctions and damage, an inspection or repair must be carried out by Inotec



Please note the processing instructions on p. 83

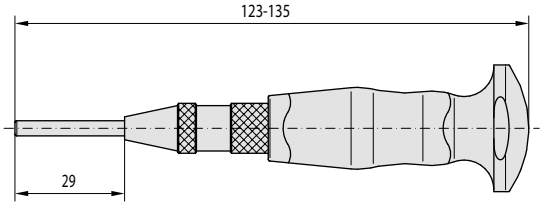
Insertion tool for coding pins KOS-91

Art.-No. KOD148

Specification
- Specially designed for inserting the KOS-91 coding pins into Inotec coding elements
- The internal spring mechanism generates exactly the impulse required for pressing in the coding pins and thus enables process-reliable reproducible coding

Scope of delivery
- 1 pc. insertion tool for coding pins

Service notes
- The spring force of the KOD148 is preset at the factory
- In case of malfunctions and damage, an inspection or repair must be carried out by Inotec



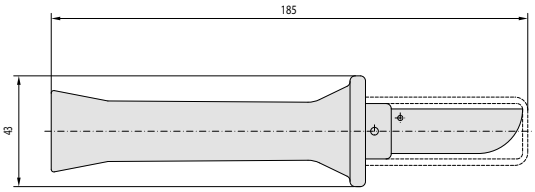
Please note the processing instructions on p. 88

Cable knife

Art.-No. CC01

Specification
- Ergonomic hand knife for stripping and trimming veins and strands
- Rigid blade made of hardened steel for a long service life

Scope of delivery
- 1 pc. knife with protective cap



Technical information

Protection against radiation interferences

Inotec regularly tests the shielding attenuation according to DIN IEC 62153-4-5 on reference hoods. The diagram on the following page shows the shielding attenuation values of different hood types in comparison. Two connector hoods of the same type were connected to each other in a coupling as test specimens. All hoods were equipped with identical connectors. The cable shield connection to the reference cable was carried out in accordance with the manufacturer's specifications.

The measured value is the dissipation of the test specimen to the environment via the absorber measuring clamp. The reference base of 0 dB is set at the output level of an unshielded reference cable. An absorber clamp meter is then used to measure the power output of the test specimens. The shielding attenuation curves thus represent the difference between the dissipation in in relation to the values of the unshielded cable.

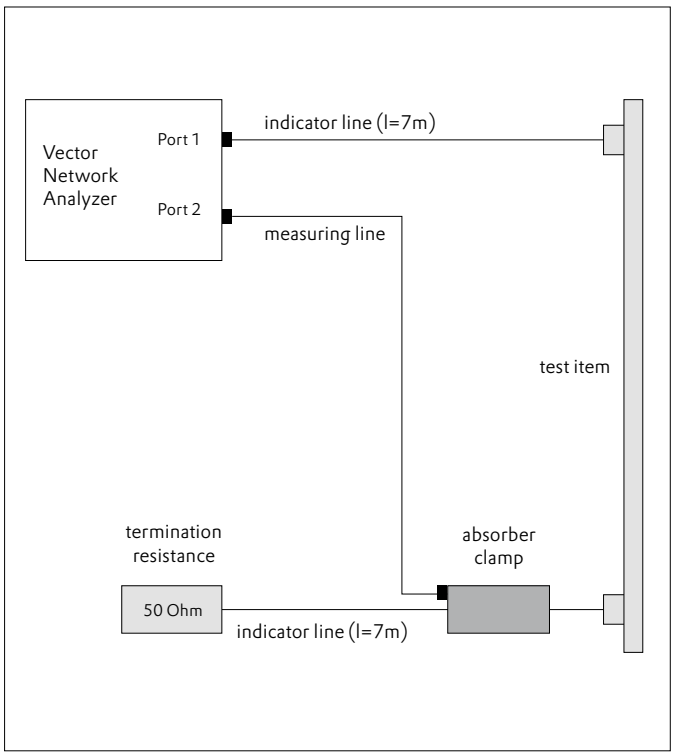
Comparative measurement on reference housings

The best attenuation values are shown by the shielded cable without connectors. The comparative measurements of the connector couplings clearly show that housings made of solid metal generally achieve a higher shielding quality compared to plastic, whereby metal-coated plastic housings have a lower attenuation than plastic housings with metal inserts.

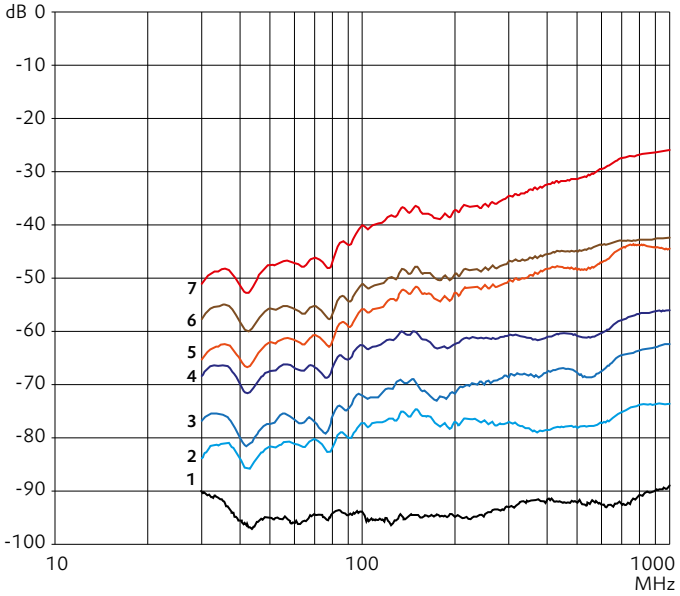
Looking at the measurement results of the full-metal housings, the advantages of the EMI/RFI shielding Inotec housing design in combination with the Inotec crimp flange compared to the measured benchmark housing become apparent. In addition, you can clearly see the effect of deep-drawn hood blankets on the Inotec MSX and MSBS series. Due to the almost flush closure with the mating connector housing in the test setup or a front panel in practical use, the dissipation to the environment can be significantly reduced again.

Screening effectiveness of Inotec full-metal hoods – benchmark

Test installation with absorbing clamp



Screening attenuation according to DIN IEC 62153-4-5*



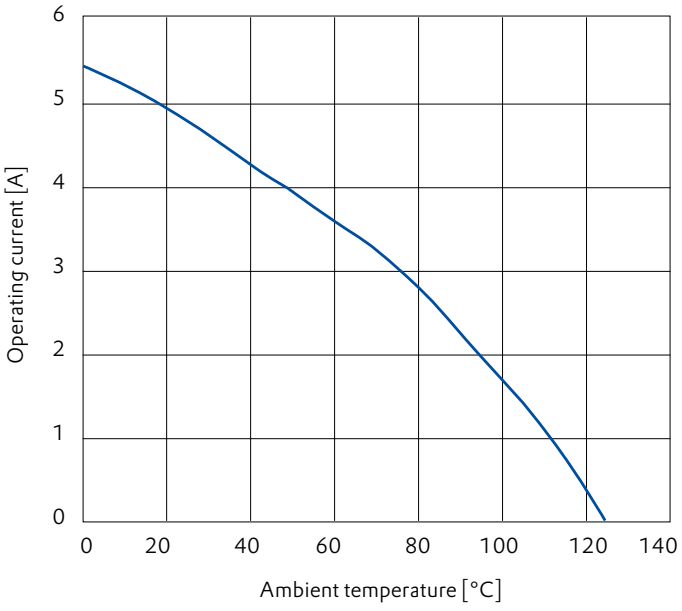
Gradient 1: Shielded cable without connector
Gradient 2: Inotec DG09MSX
Gradient 3: Inotec DG09MSBS
Gradient 4: Inotec DG09MS
Gradient 5: Full-metal hood, benchmark
Gradient 6: Metallized plastic hood
Gradient 7: Plastic hood with metal inserts

* Testing procedure for metallic communication cables - part 4-5:
Electromagnetic compatibility (EMC) – transition resistance or screening attenuation

Technical information about Inotec connectors and contacts

Number of terminals	9, 15, 25, 37, 50
Nominal current	5 A [1]
Operating voltage	125V ~ acc. to VDE 0110 Gr.A
Contact resistance	≤ 3 mΩ
Test voltage	1000 V, eff
Clearance and creepage distance	≥ 1 mm
Insulation resistance	≥ 10^{11} Ω
Temperature range	-55°C to +125°C
Mating cycles	≥ 500 / 200 / 50 [2]
Insulating body	PBTP, 2 parts
Flammability	self-extinguishing acc. to UL 94 V-0
Shells	Steel, Sn over Ni
Contacts	turned, Cu-alloy
Surface	Au over Ni

Current load curve [3]



1) According to the current load curve shown in the graph
2) Corresponding to the quality classes according to DIN 41 652
3) The information refers to test specimens with hand soldered connections. Connectors with other connection types may show differing results.

Original Inotec crimp flange system

Cable processing with original Inotec crimp flange technology

Exemplary illustration of the standard cable processing KV0001 with crimp flange CF100 and crimp ferrule on the basis of micrographs.

The 360° contact between the cable shield and the crimp flange is clearly visible. The cable is not deformed in cross-section, the cores remain free of mechanical stress in the crimp area. Specific properties of the cable, such as a soft or relatively thick cable jacket, can reduce the torsional strength of the hexagon crimp. In these cases, an additional embossing is added by means of a trapezoidal indent in the crimp die.

Micrographs of cable processing according to KV0001 (standard processing), without and with trapezoidal indent

Important features of correct cable processing:

- Regular and fully formed hexagonal contour
- 360° contact between shield braid and crimp flange
- No squeezing of the wires and damage to the cable sheath

Shielded 4-wire "twisted pair" data-cable, crimped without trapezoidal indent

Shielded data-cable, 10 cores, additional lock against rotation with trapezoidal indent

The Inotec crimp data definition

A basic requirement to achieve sufficient mechanical strength and optimal cable shield contact is to match components, tools and applied assembly procedures for every specific cable assembly. Unlike comparable crimp technologies the Inotec system provides a finely graduated diameter range (0,5 mm steps) and covers a very wide range of crimp flange, ferrule and crimp die diameters.

As an exclusive customer service Inotec electronics GmbH provides a crimp data definition for every specific cable and all cable manufacturers.

Required input data and sample:

- Cable sample (min. 0,5 m)
- Intended use (Inotec hood type)
- Cable data sheet (if available)

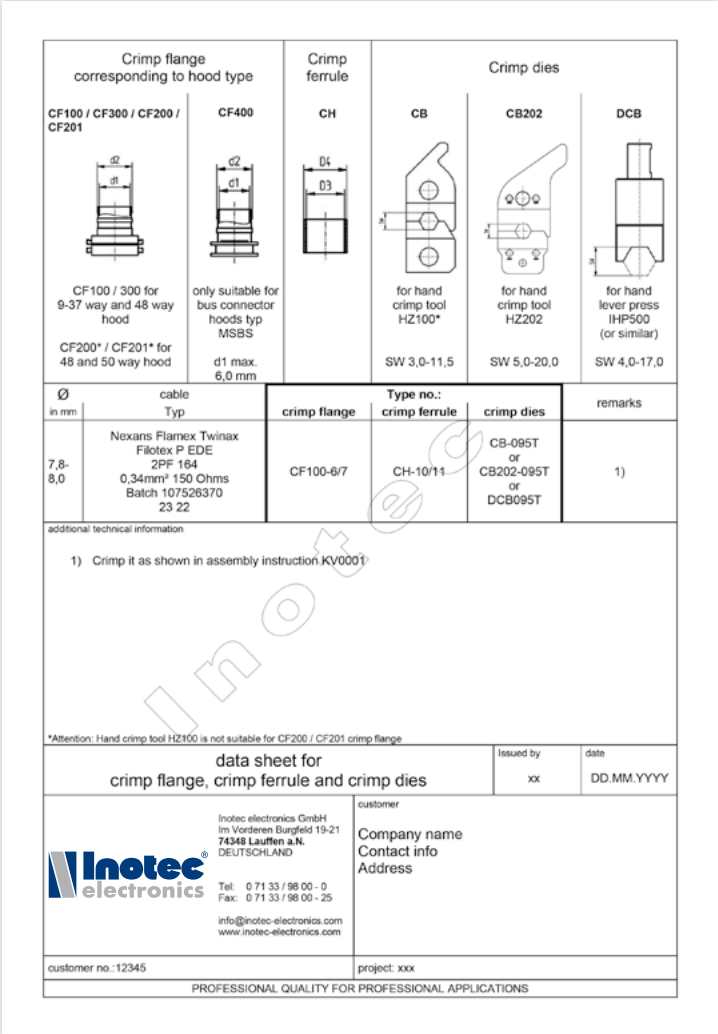
Based on this information, the Inotec mechanical laboratory realizes assembly tryout, traction and torque test in order to find out the optimal combination of convenient assembly, reliable cable shield contact and best possible mechanical resistance of the crimped connection.
Once the crimp data definition is accomplished, the customer receives a crimp data sheet and a crimped cable sample.

The customer's data sheet contains the following relevant information.

- Documentation of the cable sample provided.
- Definition of the most suitable and reliable assembly procedure (if standard procedure KV0001 cannot be recommended, a corresponding data sheet with detailed processing instructions is provided)
- Definition of the most appropriate components (crimp flange and ferrule)
- Definition of the appropriate crimp die type and size
- Additional recommendations or assembly instructions if required

Documentation of a cable-specific crimp data definition

- The headline resumes all components and types of crimp dies that can be used with Inotec crim flange technology.
- The data section shows
  - diameter of the cable sample
  - cable designation
  - defined crimp flange size (CF-type according to customers requirements)
  - crimp ferrule size (if applicable)
  - corresponding cimp die size and type
- In the field for additional technical information, the processing instruction to apply is indicated and additional remarks or process steps are given.



Crimp flange corresponding to hood type		Crimp ferrule	Crimp dies		
CF100 / CF300 / CF200 / CF201	CF400	CH	CB	CB202	DCB
CF100 / 300 for 9-37 way and 48 way hood CF200* / CF201* for 48 and 50 way hood	only suitable for bus connector hoods typ MSBS d1 max. 6,0 mm		for hand crimp tool HZ100* SW 3,0-11,5	for hand crimp tool HZ202 SW 5,0-20,0	for hand lever press IHP500 (or similar) SW 4,0-17,0

Ø in mm	cable Typ	Type no.: crimp flange	crimp ferrule	crimp dies	remarks
7,8-8,0	Nexans Flamex Twinax Filotex P EDE 2PF 164 0,34mm² 150 Ohms Batch 107526370 23 22	CF100-6/7	CH-10/11	CB-095T or CB202-095T or DCB095T	1)

additional technical information

1) Crimp it as shown in assembly instruction KV0001

*Attention: Hand crimp tool HZ100 is not suitable for CF200 / CF201 crimp flange

data sheet for crimp flange, crimp ferrule and crimp dies | Issued by: xx | date: DD.MM.YYYY

Inotec electronics GmbH, Im Vorderen Burgfeld 19-21, 74348 Lauffen a.N., DEUTSCHLAND
Tel: 0 71 33 / 98 00 - 0
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info@inotec-electronics.com
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customer: Company name, Contact info, Address

customer no.:12345 | project: xxx

PROFESSIONAL QUALITY FOR PROFESSIONAL APPLICATIONS

Important: Regular review of processing parameters

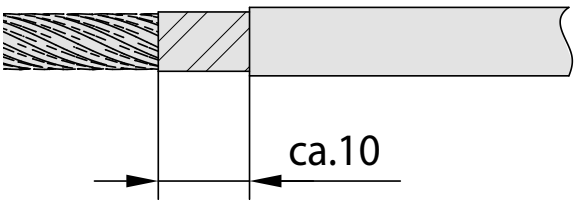
Due to changing material compositions and manufacturing technologies, the processing properties of cables may vary without their characteristics having changed according to the manufacturer's data sheet.

Inotec therefore recommends that crimp data definitions made more than 3 years ago be checked. The existence of a valid cable-specific crimp flange specification is a prerequisite for correct order processing.

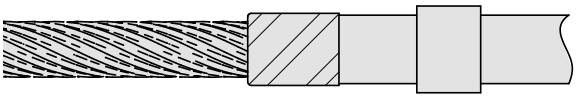
Standard assembly procedure KV0001

The standard procedure described below allows an easy and reliable assembly process for the major part of all shielded cables. Variations in cable construction or materials may require the processing following different assembly procedures.

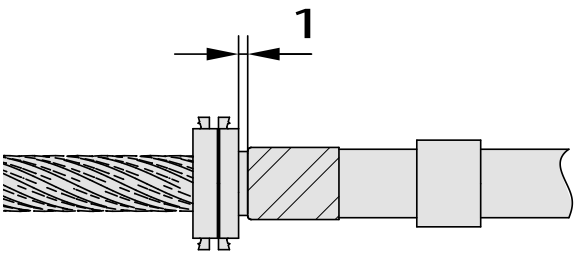
With the cable-specific crimp data definition we determine the required assembly parameters, component diameters and tool sizes for every specific application as a service for our customer (see facing page).



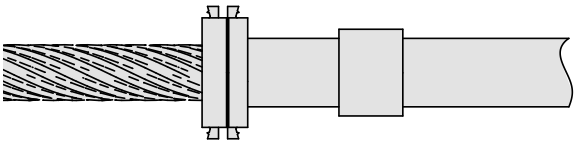
1. Dismantle the cable down to the braid and cut the braid, leaving it approx. 10 mm longer than the jacket.



2. Fold back the braid over the cable sheath and slide the crimp ferrule on the cable.

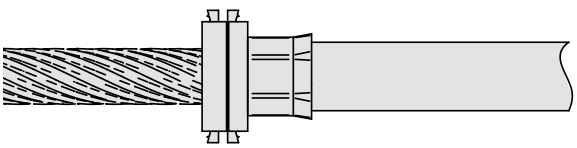


3. Slip the crimp flange over the conductors and possible intermediate layers and slide it underneath the shield mesh and the cable sheath. Enter the flange with cautious rotation while holding back the shield mesh. In this step, do not enter the flange completely but keep approx. 1 mm distance to the cable sheath in order to facilitate the cutting of the shield mesh.



4. Cut off any overlapping braid around the flange. Only now slide the crimp flange completely underneath shield mesh and cable sheath.

   Please note: Our insertion tool CFE facilitates the handling of the flange in step 3 and 4.



5. Slide the crimp ferrule forward until it is in contact with the flange. Keep it in position and crimp it with the indicated crimp dies.

   Important: During the crimping process the flange has to lay on the crimp dies. The faces of the hexagon should be parallel to the straight sides of the crimp flanges (see illustration).

Inotec coding system for D-Sub interfaces

The solution to avoid wrong connections – secure, reliable and flexible

Highly sensitive measurement, control and communication devices require an efficient protection against accidental abusive mismatching. Visual instructions and colored labeling are not sufficient. Just a minimal contact, only for the fraction of a second, may cause a voltage flashover and damage the terminal device. Not only the risk of repair cost caused by such kind of incident but also the potential consequences like a system breakdown or e. g. an inoperative train may underline the importance of a mechanical coding of critical interconnections as an indispensable safety factor. Having specialized in EMC interconnection solutions, Inotec electronics GmbH has developed a unique D-Sub coding system for hoods with screw locking. It does not only reliably avoid mismatching, it also improves the EMI / RFI shielding performance of the interface by providing a consistent full metal contact.

Secure

- Up to 70 coding versions offer protection against unintentional or abusive mating of connectors
- Full metal coding elements improve grounding contact for optimal EMC

Robust

- Coding elements are either riveted to the connector shell or screwed on the device
- High-end and precise full metal components

Reliable

- Accurate alignment with special positioning device
- Inserting the coding pins process-reliable thanks to a preset tool

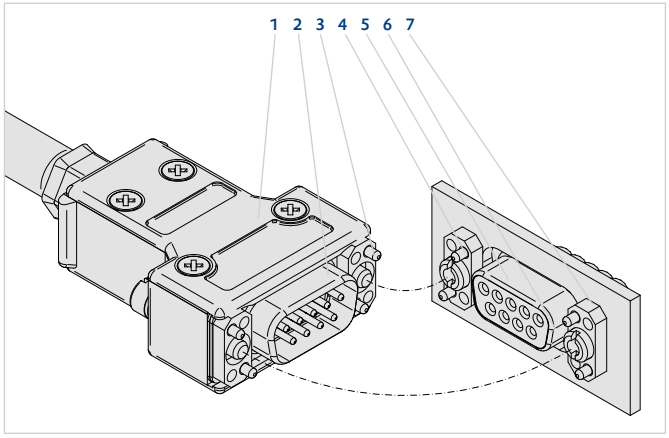
Flexible

- Suitable for all codable Inotec D-Sub hoods
- Easy to process in workshop or field assembly
- Can be variably used with M3 or 4-40 UNC jackscrews

Possible installation situations for the Inotec coding system

Basically, any D-Sub interface with screw locking can be coded with the Inotec system.

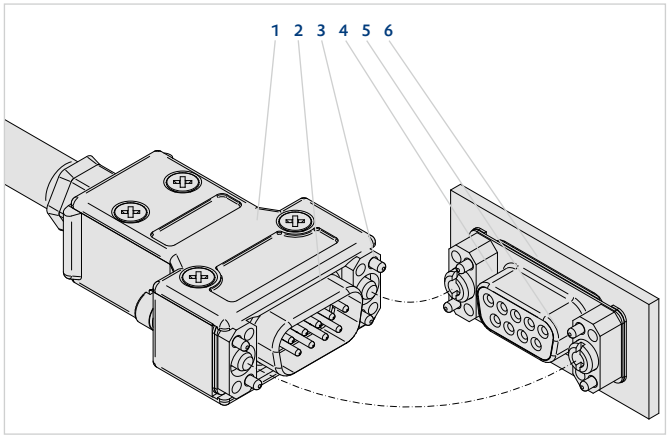
However, depending on the installation situation, a coordinated selection of components has to be made:



Rear assembly

Interconnection: Cable to terminal device
Connector in the terminal device situated behind the front panel (most common installation situation)

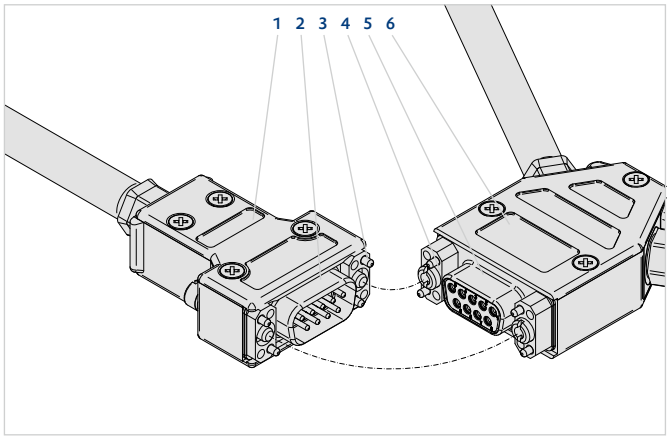
1. Inotec connector hood with screw locking*
2. Inotec connector xxx-KOD02
3. Inotec coding pins KOS-01
4. Inotec coding elements KOP-01
   (optionally KOR09 for 9-way D-Sub)
5. D-Sub connector (without coding elements)
6. Inotec female jackscrew KOB-x/x
7. Front panel of terminal device (Please consider wall thickness**)



Front assembly

Interconnection: Cable to terminal device
Connector in the terminal device is mounted on top of the front panel (e.g. in case of difficult access inside the device)

1. Inotec connector hood with screw locking*
2. Inotec connector xxx-KOD02
3. Inotec coding pins KOS-01
4. Inotec connector xxx-KOD03
5. Inotec female jackscrew KOB-x/x
6. Front panel of terminal device
   (Please consider wall thickness***)



Coupling

Interconnection: Cable to cable
Connector hood with screw locking against connector hood with female jackscrew

1. Inotec connector hood with screw locking
2. Inotec connector xxx-KOD02
3. Inotec coding pins KOS-01
4. Inotec female jackscrew KOB-x/x
5. Inotec connector xxx-KOD03
6. Inotec connector hood with internal thread*

* **Which Inotec connector hoods are suitable for codable connectors?**
The selection overviews of the respective chapters give you a quick overview of which articles can be coded.
For application-specific advice, please contact our technical support at **sales@inotec-electronics.com.**

** max. 2,8 mm when using KOP-01, max. 2,1 mm when using KOR09

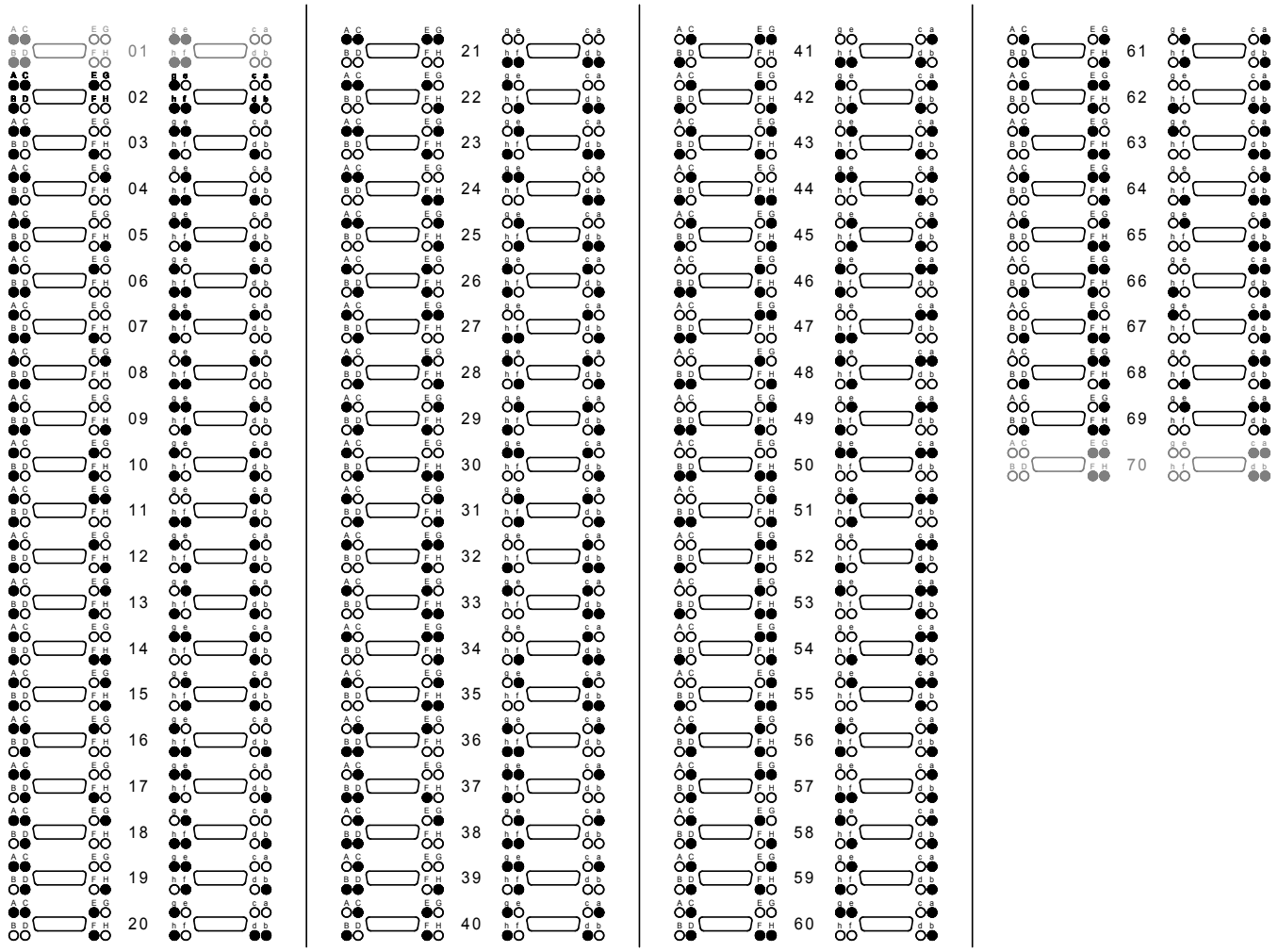
*** max. 2,3 mm for front assembly (limited by length of female jackscrews)

How to apply the Inotec coding scheme

The Inotec coding scheme provides the maximum number of combinations for a safe protection of D-Sub interconnections against mismating. By using at least 4 pins each on cable and mating side, an unintended contact of mismated connectors can be securely avoided. In the following illustration you can see all 70 possible pin combinations for a safe and reliable coding of your D-Sub interconnection.

Here's how the selection of a coding scheme is done:

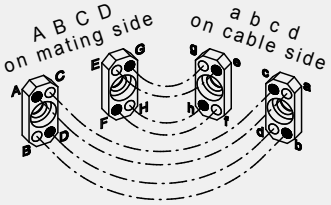
- In a first step a basic rule has to be set up (e.g. "ABCD always on female and abcd always on male connector").
- Then a specific combination for a specific interface (e.g. "scheme 29 for signal 1") has to be chosen
- Finally insert the coding pins into the corresponding coding elements according to the processing information mentioned below.



Processing information

Unambiguous documentation

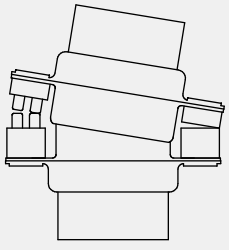
The chosen coding scheme and the combination should be unambiguously recorded, so that a correct coding can be carried out safely even when the connectors on mating side and cable side are assembled at different sites.



Single-sided coding

Under unfavorable conditions, a coding with pins only on one connector side might lead to unintended contacting (connector may tilt like shown on picture below) despite a correct coding.

For this reason, a simultaneous use of the coding schemes "1" and "70" should be avoided.



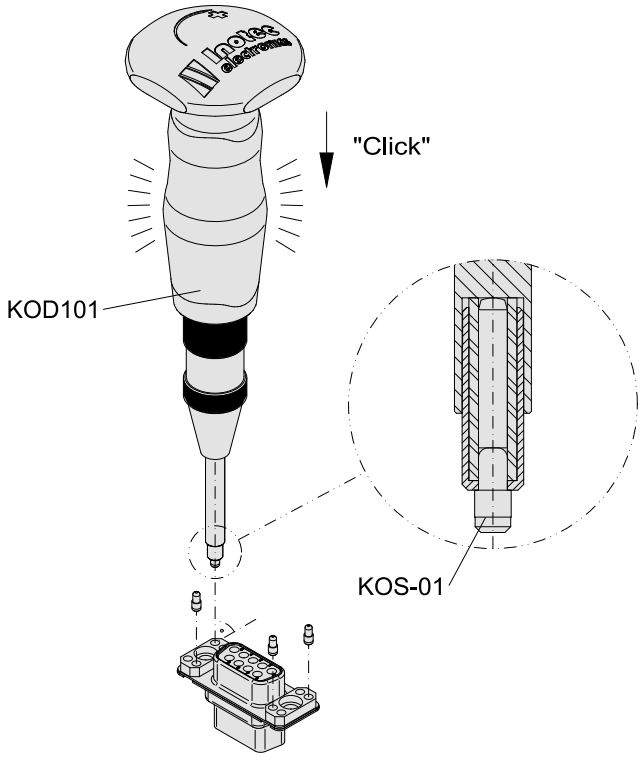
Hand tool for coding pins

Processing:

- Make sure the connector to be encoded is positioned on a straight and stable base
- Insert the KOS-01 encoding pin into the KOD101 encoding tool with the thin side
- Position the pin and tool perpendicular to the slot to be occupied on the encoding element
- Press against the spring force of the coding tool until the striking mechanism triggers the pin is driven into the coding element
- The larger diameters of the coding pins must sit completely and flush in the coding frame or coding element

Check and adjust the impact force:

- The spring force of the KOD101 is pre-set at the factory for mounting the pins on a fixed work surface
- Depending on the mounting conditions, an adjustment of the impact force may be necessary
- Reduce impact force by turning the head of the end cap to the left (minus)
- Increase impact force, by turning the head of the end cap to the right (plus)
- When optimally adjusted, the coding pin is inserted flush with one strike
- Please note that, du to various assembly conditions and the component tolerances, it may still be necessary to trigger the impact mechanism several times

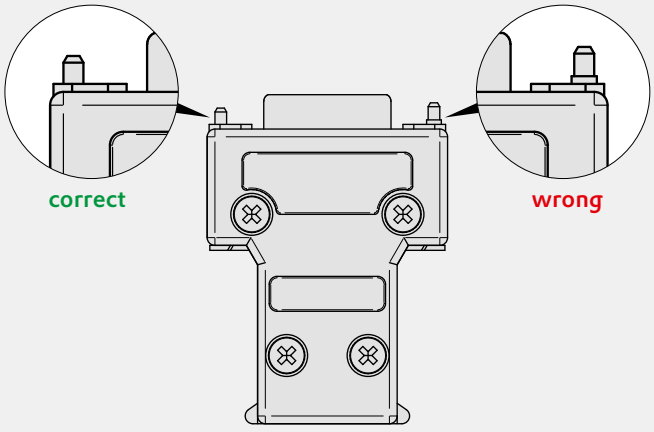


Insertion depth of the coding pins

Left: The coding pin is flush with the coding element
⇨ **correct**

Right: The coding pin is not flush with the coding element
⇨ **wrong**

Hand tool for inserting the coding pins KOS-01 into the coding elements KOP-01 or the coding frame KOR09 according to the Inotec coding plan.



Zamak-Protect – conductive surface protection

Corrosion protection for zinc

Zinc is the perfect material for the production of EMI/RFI shielding hoods and housings: conductive, non-magnetic and easy to process. Inotec electronics has been using this material for shielded connectors and strain relief components for decades.

A special polishing process gives the parts their typical Inotec gloss, and the surface is stabilized in such a way that there is no need for coating, thus ensuring minimal contact resistance between the individual components.

Zink is a very corrosion-resistant material an used as protection layer against corrosion in many applications. However, when used in humid and salty environments, surface corrosion can occur. White rust, dark spots or fingerprints visible from hand sweat are not functional limitations, but they are visually undesirable.

In addition, there are applications in which the glossy surface typical of Inotec is unfavorable. For this reason, Inotec offers all zinc die-cast components with the Zamak-Protect thin-layer passivation as an option. This surface coating reliably prevents corrosion effects, does not generate any additional weight due to its extremely thin layer structure and also ensures permanently low contact resistances between the individual components

Zamak-Protect Features

- Thin-layer passivation
- Conductive component surface ensures low contact resistances and maximum shielding
- Corrosion protection for use in adverse conditions
- Prevents white rust formation
- Protection in humid and salty environments
- Prevents fingerprints
- Matte grey, non-reflective, suitable for MIL applications
- Available for all Inotec die-cast zinc components

Requests, technical support and contact data

Technical support, development and analysis

Interconnection design, especially of EMI/RFI protected interfaces should be made in three stages. In a first step, all relevant factors of influence have to be determined. Then, the most suitable components building the interface have to be tailored to meet the specific requirements. Finally, the optimal assembly process in terms of quality, reliability, repeatability and convenience has to be defined.

Inotec electronics GmbH offers its customers end-to-end support for the following requirements:

Technical support, application engineering
- Consulting service for product choice
- Support in case of application issues
- Cable specific crimp data definition
- Instruction and training for correct crimp flange and connector assembly

Engineering, design and prototyping
- Installation space studies
- Application-specific design variants
- Prototype and low volume production

Test laboratory
- Mechanical testing (traction, torque)
- EMC (screening attenuation, transition resistances)
- Application specific tests (Salt-spray, derating, photomicrograph)

Please contact us, we are at your disposal.

Telephone: +49 (0)7133-9800-0
e-mail: sales@inotec-electronics.com
Postal: or send us your request directly using the inquiry form on the opposite page.

General product information and catalogue download available at **www.inotec-electronics.com**

Errors and technical modifications excepted

We reserve the right to change our product design without prior information if this should be required for quality improvement, enlarged application spectrum or producibility. Inotec does not assume any obligation to provide spare parts for obsolete articles. All technical information given in the present catalogue is without guarantee and only valid for the component concerned. Inotec does not assume any warranty for their use in the final applications and their performance. The testing of any final application for correct function and the suitability of the chosen connector for this application relies on the end user.

Please fill in the present form and send it
by e-mail to **sales@inotec-electronics.com**
or per fax to **+49 (0)7133-9800-25**
or send a copy of this form together wit a cable sample
to our postal address.

Inotec electronics GmbH
Im Vorderen Burgfeld 19-21
74348 Lauffen am Neckar
Germany

Contact data

Company

Name

Function

Tel.

e-mail

Subject (project title or keyword for further exchanges)

☐ **Cable-specific crimp data definition**
(Please send us a cable sample of min. 0,5 m length for assembly testing)

Manufacturer's cable specification (or cable data sheet)

☐ **Product request**
(If possible, please add a sketch of the application)

Description

Sketches / notes

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KAT_ENG_12/2024