

Product overview

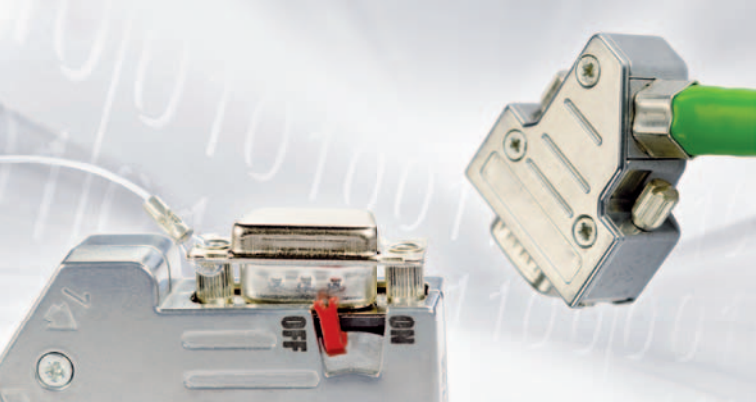
PROVERTHA[®]

CONNECTORS, CABLES & SOLUTIONS



www.provertha.com





PROVERTHA makes your data network safe

PROVERTHA Connectors, Cables & Solutions GmbH has been a successful manufacturer for safe connection technology and data transfer systems for over 30 years. About 600 people are employed at PROVERTHA in head-quarter at Pforzheim, Germany, and in the three manufacturing facilities in Hungary.

Thanks to its high product quality, PROVERTHA has established itself as a qualified partner worldwide, including the strategically important countries, in railway technology, industry automation, industry communication and industry electronics.

Connectors, housings, self-assembly lines

Complex connection units with a focus on M12 and D-Sub housing technology complete, together with a big variety of plastic and die-cast hoods, the PROVERTHA product range. Our special focus lies on the push-pull latching system Quick-Lock.

Standard and special connectors

We offer mass production as well as special connectors with a large variety of accessories, individual data cables, top-hat rail adapters, wiring harnesses and line sets, complete solutions as well as plastic manufacturing and tools customised for your requirements.

Quality products

Our quality management, certified in accordance with QS 9000, DIN ISO 9001, and ISO/TS 16949, guarantees a high product quality of all PROVERTHA products.

PROVERTHA Products

Connectors and hoods

- D-Sub Connectors and hoods
- Mixed layout and 600V D-Sub
- High density D-Sub
- Filter D-Sub
- Profibus and CAN-Bus bus connectors
- Profibus and CAN-Bus M12
- Profinet M12 D-code

Cable assemblies

- Individual data and power cables for industrial automation, industrial electronics, medical industry and telecommunications
- System cables
- Wire harnesses
- Cable assemblies
- Overmoulded harness assemblies

Solutions

- Contract manufacturing
- Plastic moulding and assembly
- Tool manufacturing
- Complete solutions including tool-making and reliable production on assembly machines

Development

- Customized connectors and electro-mechanical subassemblies in economic design optimized for the application
- Complete solutions including purchase and logistics





D-Sub Hoods – the right hood for every application

The PROVERTHA product range offers more than 20 hood systems for suitable and safe solutions. One main characteristic of our D-Sub hoods is the fast and easy mounting due to a practical design and a minimised number of parts.

Product series

D-Sub plastic hoods

- Plastic hoods in black and coloured versions
- Metallised plastic hoods for applications with shielding demands
- Modular hood system
- Adapter hoods

D-Sub Die-cast hoods

- Die cast hoods with 360° RF- shielding for high EMV demands
- Axial, compact, and special full metal hoods with 2 cable exits
- Adapter hoods

Fast and easy mounting

Latching options:

- Screw latching with knurled screws in metal in different lengths
- Slide-latching in universal version
- Clip-latching in universal version
- Clip-latching, Quick-Lock Push-pull for fast assembly



Various cable exit options

Application-oriented cable exit:

- 180° cable exit
- 90° cable exit
- 45° cable exit
- 1, 2, or 3 cable exits, for example for field bus applications and signal distribution (only for die-cast hoods)

Safe strain relief and shield connection

■ Safe strain relief and shield connection

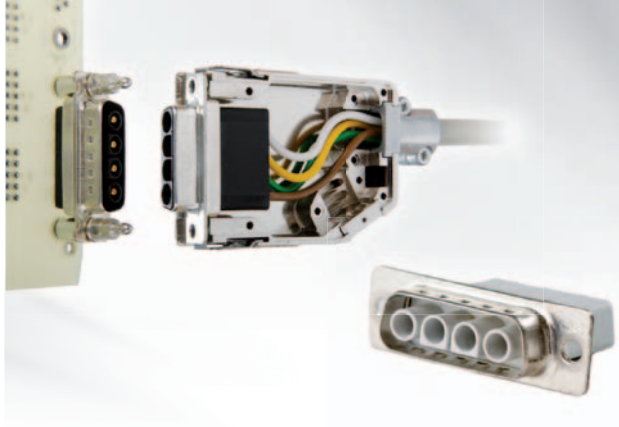
Torsion and vibration proof strain relief with constant low-ohm all around shielding for cable diameters of 3.7–15.7mm

■ External cable clamp

Special cables with very small or very big diameter are safely shielded and strain relieved with cable diameters of 4–16mm

■ Internal cable clamp

Compact shielding and strain relieving of standard uses with cable diameters of 4–15mm



600V D-Sub connector for power applications

4-pole connector range with touch-proof female versions according to VDE 0110

Electrical data

- Operating voltage: 630V
- Overvoltage category: **I:** 2,5kV
II: 4kV acc. to EC 60 664
- Creepage/Clearance: > 1,8mm/3,2mm
- Degree of pollution degree: 1
- Carrying capacity: **Turned contacts:** 20A
Stamped contacts: 16A

Mechanical data

- Termination style: Crimp, PCB 90°, PCB 180°
- Wire cross section: AWG 20 – AWG 12
- Temperature range: -55°C to +125°C
- Mating cycles: **Turned contacts:** 200 (class 2)
Stamped contacts: 20

Materials

- Insulator: PA GF UL 94-V0
- Contact: **Contact material:** Cu alloy
Clip material: CuBe-alloy
Turned contact: Au over Ni barrier
Stamped contact: tin plated
- Plating:



Mixed layout D-Sub

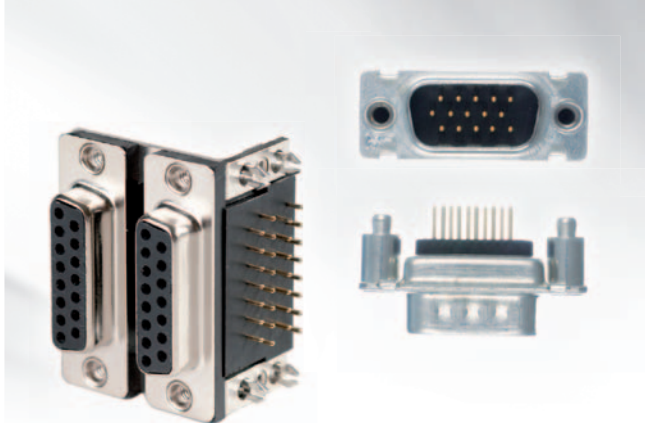
Our mixed layout D-Sub connector program includes a complete product portfolio for printed circuit boards and cable connections with different contact figurations. High-quality single components such as turned contacts and massive mounting accessories allow high-quality, suitable solutions and customer-specific applications.

For printed circuit board connection

- Connectors with 180° and with 90° solder pins
- Straight connector with boardlock or combilock fastening bolt (boardlock with integrated threaded rivet) for safe ground connection and latching on the circuit board
- Angled connector with massive metal bracket with latching clip for the safe ground connection

For cable connections

- Crimp connector with signal crimp contacts in twisted or punched versions
- Crimp special contact versions:
High-current crimp contacts from 10 A to 40 A;
coax crimp contacts: 50 Ohm
- Hand-soldering special contact versions:
High-current hand-soldering contacts from 10 A to 40 A
- D-Sub hoods in plastic, metallised, and die-cast zinc metalw



D-Sub and high density D-Sub connector

The development and manufacturing of D-Sub connectors for high-tech applications, for example special EMV demands, is one of our core competences.

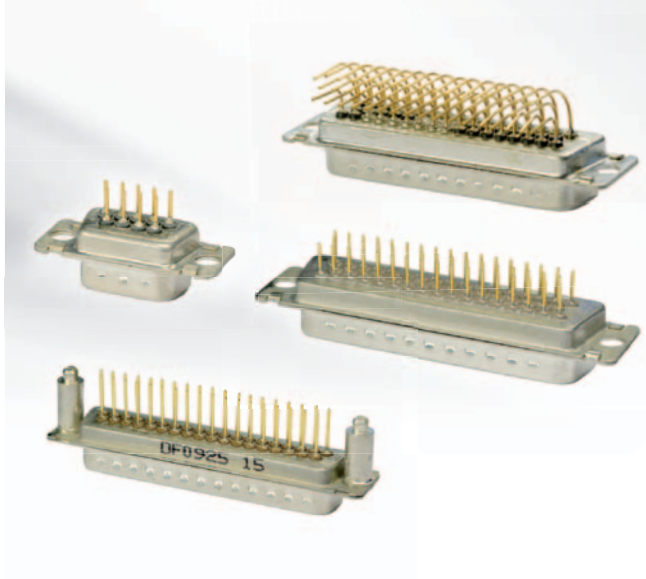
We offer a wide range of D-Sub connectors with special customer benefits.

D-Sub product range

- D-Sub connectors for PCB assembly: solder pin 90° and 180°,
- D-Sub connectors for cable assembly: IDC, crimp, hand soldering
- Mixed layout D-Sub connectors: solder pin 90° and 180°, crimp and hand solder
- 600V D-Sub connectors for power applications
- DualPort D-Sub connectors
- Filter D-Sub connectors and filter technology
- D-Sub plastic hoods
- 360° EMI/RFI D-Sub die-cast hoods for high EMC requirements in industrial automation and railway systems
- Push-pull D-Sub locking system: Quick-Lock
- Accessories: EMC and dust protection caps, hexagon screws

High density D-Sub product range

- D-Sub connectors for PCB assembly: solder pin 90° and 180°
- D-Sub connectors for cable assembly: crimp, hand soldering



Filtered D-Sub Connectors

- 100% assured quality – individual inspection of every connector
- Selective filter configuration in the connector possible
- The installation dimension are the same
- PROVERTHA standard accessories usable without restrictions
- Capacity values available from 2pF to 2000 pF
- R-shielded, closed metal back
- High damping values up to 50 dB

Technical features

- Pol number: 9, 15, 25, 37, 50
- Nominal temperature: -25° C up to +85°C
- Nominal voltage: 100 VDC (variation No. 01 (2000pF) = 50VDC)
- Test voltage: 200 VDC (variation No. 01 (2000pF) = 125VDC)
- Nominal current: 5ADC max.
- Insulation resistance: Minimum 1G Ω at 25°C



Quick-Lock-system for D-Sub connector

The functional push-pull latching allows PROVERTHA's Quick-Lock-system a fast and easy latching of D-Sub cable connectors to D-Sub device interfaces and of flying cables and cable connections.

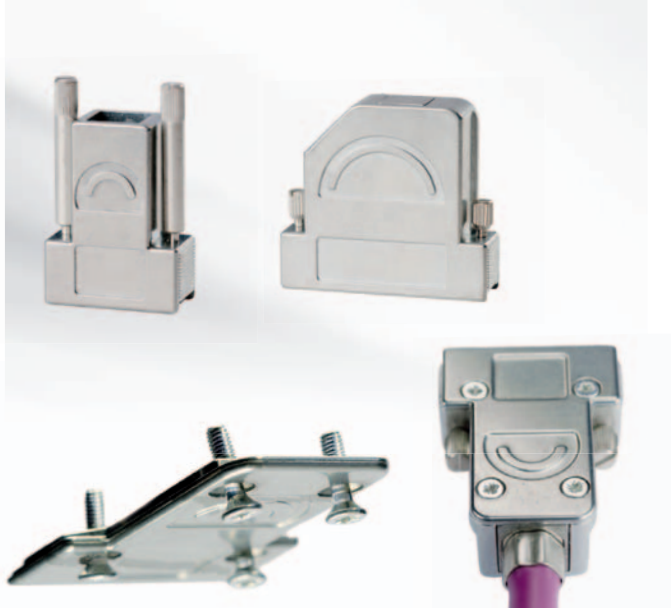
Pre-assembled D-Sub cables with the Quick-Lock hood can be mated easy and even blindly at places that are difficult to access. The hood snaps in automatically with an audible clicking.

Quick-lock-system product range

- D-Sub plastic hoods and metallised hoods in two versions
Long version: 56mm built-in length
Short version: 42mm built-in length
- D-Sub die-cast hoods: 42mm built-in length
- Conversion sets with Quick-Lock bolts and accessories
The conversions sets for D-Sub device interfaces allow an easy retrofitting or refitting to the Quick-Lock push-pull latching.

Technical features

- New innovative push-pull latching system
- Unlocking only possible by operating both unlocking-clips
- No unlocking possible when pulling on cable or housing
- Crimp flange system with 360° shielding, internal and external cable clamps
- 2–3 cable entries
- Easy retrofit on existing D-Sub device interfaces by using the Quick-Lock accessories
- Automotive approval



Quick Mount D-sub hood series 117 +147

Technical features

- Simple and quick assembly due to pre-mounted, captive screws
- Various knurled locking screws especially for vibration applications
- Crimp flange version with cylindric Allen screws
- Complete set with knurled locking screws and cable bushing for the field assembly
- 360° zinc die-cast full-metal hood
- Knurled screw locking: UNC 4-40 or M3

Flexibility for the cable connection due to 3 cable strain relief versions

- 360° EMI/RFI crimp flange system with hexagonal crimp for vibration and torsion-proof strain relief for extremely rough environmental conditions
- Internal cable clamp as a very compact strain relief solution
- External cable clamp for easy external cable preparation and cable assembly with safe strain relief of the cable



Profibus Bus Plug and Profibus Connecting Cables

PROVERTHA offers the complete bus plug range for Profibus networks. The Plug & Play bus plug series guarantees the realisation of reliable and failure-proof quick connection solutions in only a few seconds.

Characteristics and advantages

- Plug & play M12 fast connection
- Safe and easy field assembly due to internal cable clamp
- External cable clamp for the field assembly of special cables with a larger cable diameter
- Safe shielding and torsion-proof strain relief even under extreme demands due to 360° EMI/RFI crimp flange
- Economic solution, connection in seconds due to Quick Plug bus plug lines

Profibus Patch Cords

All PROVERTHA M12 connecting cables are available in various versions (pin/pin, pin/bush, bush/bush variations) and in various cable lengths of 0.3–10 meters.



Profibus M12 B-Code Connector Plugs

- Available for rear panel mounting and front panel mounting
- Versions: pin, bush
- Strand length: 500mm, other lengths on request
- Wall thickness: max. 4mm

Profibus M12 B-Code T- and Y-Distributor

- 360° EMI/RFI zinc die-cast full-metal housing
- Degree of protection IP 67
- Pin 1–4 connected, shield on housing
- Easy, safe wall mounting with 2 x M4 screws
(Mounting hole: 4.5mm)

Profibus M12 B-Code connector for field manufacturing

- Cable plug with crimp flange system
- Twisted crimp contacts
- 360° EMI/RFI IP 67
- Cable exit: 180°
- Versions: pin, bush



Profibus PA/Modbus, M12 A-Code

Panel Mount Connector M12 A-Code

- Available for rear panel mounting and front panel mounting
- Versions: pin, bush
- Strand length: 500mm, other lengths on request
- Wall thickness: max. 4mm

Profibus PA/Modbus Distributor

- M12 T distributor
- M12 Y distributor
- 360° EMI/RFI zinc die-cast full-metal housing
- Degree of protection IP 67
- Pin 1–4 connected, shield on housing
- Easy, safe wall mounting with 2 x M4 screws
(Mounting hole: 4.5mm)

M12 A

- Cable plug with crimp flange system
- Twisted crimp contacts
- 360° EMI/RFI IP 67
- Cable exit: 180°
- Versions: pin, bush

M12 Patch Cords

All PROVERTHA M12 connecting cables are available in various versions (pin/pin, pin/bush, bush/bush variations) and in various cable lengths of 0.3–10 meters.



CAN-bus bus connectors and bus connector lines

PROVERTHA offers the complete bus plug range for CAN-bus networks. The Plug & Play bus plug series guarantees the realisation of reliable and failure-proof quick connection solutions in only a few seconds.

- Plug & Play M12 quick connector
- Safe and easy field assembly due to internal cable clamp
- External cable clamp for the field assembly of special cables with a larger cable diameter
- Safe shielding and torsion-proof strain relief even under extreme demands due to 360° EMI/RFI crimp flange
- Economic solution, connection in seconds due to Quick Plug bus plug lines

Profinet M12 Patch Cords

All PROVERTHA M12 connecting cables are available in various versions (pin/pin, pin/bush, bush/bush variations) and in various cable lengths of 0.3–10 meters.



CAN-Bus M12 A-Code Connector Plug

- Available for rear panel mounting and front panel mounting
- Versions: pin, bush
- Strand length: 500mm, other lengths on request
- Wall thickness: max. 4mm

CAN-Bus M12 A-Code T- and Y-Distributor

- 360° EMI/RFI zinc die-cast full-metal housing
- Die-cast housing
- Degree of protection IP67
- Pin 1–5 connected, shield on housing
- Easy, safe wall mounting with 2 x M4 screws
(Mounting hole: 4.2mm)

Can-Bus Patch Cords

- 360° EMI/RFI IP67
- Versions: pin/bush, bush/bush, pin/pin
- Various cable lengths from 0.3–10m
- Cable exit: 180°
- Cable plug with crimp flange system



Profinet M12 D-Code

Profinet M12 D-Code Gerätestecker

- Available for back wall mounting and front wall mounting
- Versions: pin, bush
- Strand length: 500mm, other lengths on request
- Wall thickness: max. 4mm

Profinet M12 D-Code Cable Plug

- Reliable and failure-proof solution through special connector design
- Fast and easy field manufacture due to pre-mounted assembly groups and crimp snap-in contacts
- Torsion- and vibration-proof cable strain relief and shield transition
- Various versions for different cable diameters
- For Profinet cable 6.5
- For Railcat cable 7.3; 6.6; 8.3

Profinet M12 Patch Cords

- 360° EMI/RFI IP67
- Variable length from 0.3–10 meters
- Variations: pin/pin, pin/bush, bush/bush variations



Solutions

Contract manufacturing – Plastic manufacturing – Tool-making

In our plants in Hungary, we are manufacturing high-quality assembly groups and individual parts according to customer-specific requirements. As a reliable partner with many years of experience, we develop, manufacture, and deliver customised solutions for you.

All productions are organised according to the requirements of TS16949. To avoid errors and for the permanent optimisation of all processes, the use of FMA and Six Sigma tools is a natural part of our quality principles.

Complete and detailed solutions for various industries

Use our experience in automotive technology, control technology, industrial technology, medical technology, aviation technology, household electronics and audio/video technology for your customer-specific solution. Our modern logistics guarantee the reliable availability of the individual parts and the production is planned in a way that a maximum flexibility with the shortest delivery times possible is ensured.

Contact us, we will be happy to advise you personally!



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