



Pushing Performance

HARTING Component Range





Turning customer wish lists into concrete solutions

The HARTING Technology Group, which has its corporate headquarters in Espelkamp, Germany, develops tailored electrical and electronic connector solutions and products for power distribution, data transmission and networking applications. Founded 1945 in Minden, HARTING currently has more than 3,200 employees worldwide. As the knowledge and information society continues to evolve, networking with customers, suppliers and technology/business partners plays an increasingly crucial role in the domestic and international marketplace. HARTING has subsidiaries in 27 countries, which are located in close proximity to the customer base and markets. A local presence gives HARTING the opportunity to keep its ear to the ground and react quickly as situations change and developments move forwards.

Our goal is top performance.

While connectors guarantee functionality, they are by no means mere accessories. They form a core element of today's optical and electrical connectivity and infrastructure technology, and support modular machine and system design in a wide range of user industries. Connector reliability makes a crucial contribution to the problem-free operation of production, telecommunications and medical systems and in a whole host of other applications as well. The ongoing development of our technologies protects customer investment and ensures long-term functionality.



Close proximity to the customer.

The increasing level of industrialization around the world creates expanding markets characterized by very diverse requirements. What they all have in common, however, is the attempt to achieve perfection, workflow efficiency and reliable technology. The **HARTING** team at our international subsidiaries takes on a partnership role in the customer relationship. These professionals offer consultancy during the initial product development phase to ensure that our customers have access to the best possible solutions for their products.

Our vision: Pushing Performance.

HARTING delivers components which work very well together. However, in order to give our customers the best possible solution, **HARTING** can go even further to become an integral part of the value-add process. Our goal is maximum benefit to the customer with no compromises.

Quality enhances reliability and creates confidence.

The **HARTING** brand stands for exceptional quality around the world. This high standard of performance is the result of focused, non-compromising quality management that is certified and audited on a regular basis for compliance to EN ISO 9001, EMAS and ISO 14 001:2004. We take a proactive approach to new requirements, and **HARTING** ranks as the first rail equipment supplier to receive the new IRIS quality certificate.



Industrial connectors Han®

HARTING industrial connectors are used in all kinds of harsh environmental conditions whenever an electrical connection is needed that is secure, robust and detachable. Our product line features contact inserts for sensitive signal transmission as well as modular contacts for power transmission up to 650 A. Our hoods and housings are available in protection degree IP 44 up to IP 69K. Almost every size is available in four different housing types.

Advantages:

- On-site installation of machines and facilities
- Replacement of production units possible when converting types
- Assembly and disassembly of production equipment possible after a change of location
- Replacement of movable connection cables is possible

Number of contacts:

1 up to 400-pole + PE

Rated voltage:

25 V up to 5000 V

Rated current:

5 A up to 650 A

Terminations:

- Screw terminal
- Crimp terminal
- HARAX® IDC terminal
- Cage-clamp terminal
- Axial screw terminal
- Solder terminal
- Wrap terminal
- Han-Quick Lock® terminal

Housing types:

Han® Standard, Han® M, Han® HPR, Han® EMC

Accessories:

Covers, cable glands and PCB adapters

Approvals:

UL, CSA for inserts
Nema 4/12 for hoods and housings
CCC



EN ISO 9001 and 14 001 certified



Standard inserts Han®

HARTING standard inserts are established main components of industrial connectors since several years. Product range includes a huge quantity of different inserts for sensitive signals up to energy transmission until 100 A. The inserts are related to defined housings depending on size and type of construction. To achieve various requests different types of terminations were developed.

Distinct features/ advantages :

- On-the-spot-installation of machines and plants
- Disassembly and reassembly of production lines when moved
- Quick exchange of cables (i.e. in case of cable break)
- Connection of test and diagnostic devices (i.e. on vehicles)
- Exchange of production units for a model change etc.

Numbers of contacts: 1 up to 400 poles + PE

Rated voltage: 25 V up to 690 V

Rated current: 5 A up to 100 A

Terminations: Screw terminal, Crimp terminal, HARAX® insulation displacement contact (IDC), Cage clamp terminal, Axial screw terminal, Solder terminal, Wrap terminal, Han-Quick Lock® terminal

Types: Han A®, Han D® / DD®, Han E® / Han® ES / ESS / EE / EEE, Han HvE® / ES, Han-Com®, Han® HsB, Staf®, Han® Q

Accessories: PE-multiplier, docking frames, coding pins

Approvals: UL, CSA for inserts
CCC



International Railway Industry Standard



EN ISO 9001 and 14 001 certified



High Current connectors Han® HC

HARTING High Current connectors offer possibilities for power transmission in the range from 200 A up to 650 A. The inserts will be used together with Han® HPR hoods and housings which lead to guaranteed characteristics like robustness, protection against water pressure and vibration resistance. The high current contacts are available in crimp- and axial screw termination. Thus they are the solution of choice for traction and auxiliary converters, brakes, door and air-conditioning subsystems.

Distinct features/

| | |
|----------------------|--|
| advantages : | <ul style="list-style-type: none"> Safe current transmission due to capacious contact mass On-the-spot-installation of machines and components Fast exchange of application units in case of overhaul |
| Numbers of contacts: | 1 – 10 poles |
| Rated voltage: | 2000 V up to 4000 V |
| Rated current: | 200 A up to 650 A |
| Series: | <ul style="list-style-type: none"> Han® K3/0, K3/2 Han® HC Modular 350 Han® HC Modular 650 |
| Terminations: | <ul style="list-style-type: none"> Screw terminal Crimp terminal Axial screw terminal |
| Accessories: | <ul style="list-style-type: none"> Protection covers, cable glands/clamps, Crimping tools |
| Approvals: | <ul style="list-style-type: none"> UL, CSA for inserts Nema 4/12 for hoods and housings CCC |
| | International Railway Industry Standard |
| | EN ISO 9001 and 14 001 certified |





Han-Modular®

The Han-Modular® series is a system of inserts designed to meet the specific requirements of individual customers. In close cooperation with potential users a range of modular inserts has been developed allowing the simple assembly of custom designed connector sets which meet the diverse requirements encountered by designers today.

| | |
|----------------------|--|
| Advantages: | <ul style="list-style-type: none"> Custom designs can be simply assembled Optimum solutions can be reached Stock can be minimized |
| Modules: | <ul style="list-style-type: none"> Standard modules for 16 A Power modules up to 200 A High density signal modules with up to 25 contacts High voltage modules up to 5000 V Shielded modules for Quintax or D-Sub inserts Data modules for USB, FireWire or RJ45 Modules for coaxial wires Optical modules for POF or glass fibre Pneumactical modules for 3, 4 or 6 mm tubes |
| Numbers of contacts: | 1 up to 300 pins |
| Rated voltage: | 5 V up to 5000 V |
| Rated current: | 4 A up to 200 A |
| Terminations: | <ul style="list-style-type: none"> Crimp terminal Cage clamp terminal Axial screw terminal Han-Quick Lock® terminal PCB solder terminal |
| Approvals: | <ul style="list-style-type: none"> UL for Modules Nema 4/12 for hoods and housings CCC |



EN ISO 9001 and 14 001 certified



Components for switch cabinets, service interfaces and PCB adaptors

Connectors

Series: Han-Snap®

Series for connectors within closed electrical operating environments.

Frontpanel interfaces

for series: Han-Port®

Single- and double frames
for power and signals

Plug sockets
for European and international markets

Data inserts using standard interfaces

PCB Adaptor

Series: Han® Q
Han DD®
Han E®
Han-Modular®

Type: Han® Q 5/0
Han® Q 7/0
Han® Q 4/2
Han® Q 8/0
Han DD®
Han E®
Han DD® module
Han® Axial screw module



EN ISO 9001 and 14 001 certified



Components for energy transfer and distribution

Energy distribution


The Han-Power® series makes a fast, simple and comfortable installation of machines possible. The power cable is “tapped” with the Han-Power® S. For the fast and fault-free installation the industry connector is used with the Han-Power® T.

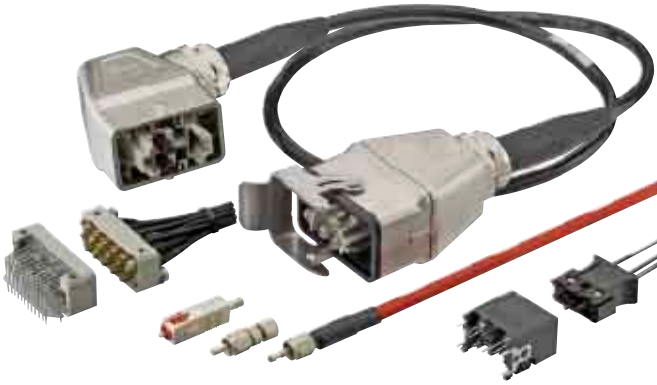
| | |
|---------|--|
| Series: | Han-Power® |
| Types: | Han-Power® S plastic metal Han-Power® T plastic with Han® Q 5/0 plastic with Han® Q 2/0 metal with Han® Q 4/2 Han-Power® T Modular Twin |

Connectors

| | |
|---------|---|
| Series: | Han® Q Han-Compact® |
| Types: | Han® Q 2/0 Han® Q 5/0 Han® Q 7/0 Han® Q 8/0 Han® Q 17 Han® Q 4/2 |

System cables

| | |
|--|----------------------------------|
| Number of contacts: | 2 – 17 |
| Rated voltage: | max. 500 V |
| Rated current: | max. 40 A |
| Fields of application: | Transfer of power |
| Approvals: | UL, CSA |
|  | EN ISO 9001 and 14 001 certified |



Fibre optic data link systems and components

Electro-optic

- converters:** Solutions for optical wavelengths 660 nm, 850 nm and 1300 nm
Optical transmitter and receiver for F-ST and F-SMA
Special versions with up to 16 optical elements
Optical transceivers for M12 connectors
- Connectors:** Simplex and multipole connectors for glass and polymer optical fibres
Quick assembly connectors for polymer optical fibres
Contacts for glass and polymer optical fibres for use in Industrial Han® connectors
Connectors up to IP 68
M12 connectors for fibre optic
- Cables:** For in- and outdoor applications
Hybrid cables
- Cable assemblies:** Cable assemblies with fibre optic and hybrid cables
Customer specific harnesses
- Accessories:** Tools for connector assembly
and test equipment for service purposes



EN ISO 9001 and 14 001 certified



Circular connectors

Connectors with HARAX® termination technique

Types: Unshielded M8 connectors
Shielded and unshielded M12 connectors
7/8" connectors
Shielded M12 panel feed throughs

Advantages: Compact and robust design
Quick and easy field assembly
No special tools required
Compatible with an extensive range of cables with different cross core sections and outer diameters

Connectors with crimp termination technique

Types: Shielded M12 connectors for data transmission and power supply
Shielded panel feed throughs M12 Crimp

Advantages: Compact and robust design
Vibration safe connection
Quick and easy field assembly with HARTING crimp tooling



EN ISO 9001 and 14 001 certified



Value Added Business (VAB)

Worldwide implementation of customer specific applications. Wide range of services from specification to production. Electrical, mechanical design and engineering as well as concept development for power and data transmission for control units and systems.

Product groups

Power Cable Solutions (PCS)

Cable assemblies for power distribution
Applications with industrial connectors of the Han® product family

Data & Signal Solutions (DSS)

Cable assemblies for data and signal transmission
Ethernet, fibre optics and coaxial cable for customer specific requirements

Customer Specific Solutions (CSS)

System solutions for cabling, control units and cabinets
Customer specific engineering for cable harnesses, sub-systems and systems



EN ISO 9001 and 14 001 certified



Ha-VIS RFID system solutions

Ha-VIS RFID system solutions from HARTING provide transparency of data within applications like tracking & tracing, asset management, supply chain management and production planning.

For these applications HARTING has developed a complete and scalable product and solution portfolio of hard- and software with following characteristics:

- Integrated device and data management
- Embedded data base features
- Automated processing of occurrences
- Efficient analysis of transponder data
- Integrated programming interface for MS Windows Visual Studio
- Server for SQL data bases
- Capable with Win CE handhelds
- List and print generating tool
- RFID label designer
- Panel for administrators, web based
- Extension of Visual Studio

Ha-VIS RFID is the complete Ha-VIS RFID program for system integrators.



EN ISO 9001 and 14 001 certified



IP 30 Ethernet Switches

The Fast and Gigabit Ethernet Switches of the product families eCon 2000, 3000, 9000, sCon 3000, 9000 as well as mCon 3000, 9000 are designed for industrial areas. The eCon and sCon Ethernet Switches operate as unmanaged Switch in Store and Forward Switching Mode and support Auto-crossing, Auto-negotiation and Auto-polarity. The mCon Ethernet Switch operates as a managed switch and comes with comprehensive management functions. Real Time applications can be easily implemented with the innovative Fast Track Switching technology.

Advantages:

- Metal housing
- Plug & Play Installation with eCon & sCon
- mCon comes with SNMP and Web-Access
- RoHS compliant

Ethernet Switches:

- Data transfer rates of 10/100/1000 Mbit/s
- Ethernet conform to PROFINET and ODVA
- sCon individually configurable via USB Interface
- F.O. ports are available in single mode or multi mode versions
- Ethernet Switches with an extended operational temperature range of -40 °C up to +70 °C are available
- mCon supports two access methods for management: SNMP and a convenient Web-Access



EN ISO 9001 and 14 001 certified



IP 40 / IP 65 / IP 67 Ethernet Switches

The Fast and Gigabit Ethernet Switches of the product families eCon 4000, eCon 7000, mCon 4000 and mCon 7000 are designed for direct deployment in industrial areas.

Through their high degree of protection (IP 40 - IP 67), their industrial Ethernet interfaces (M12, Han® 3 A RJ45) and their robust metal housing, they are suitable for harsh industrial environments and for almost all mounting locations without a switch cabinet. The eCon Ethernet Switches operate as unmanaged switches in Store and Forward Switching Mode and support Auto-crossing, Auto-negotiation and Auto-polarity.

The mCon Ethernet Switch operates as a managed switch and comes with comprehensive management functions.

Advantages:

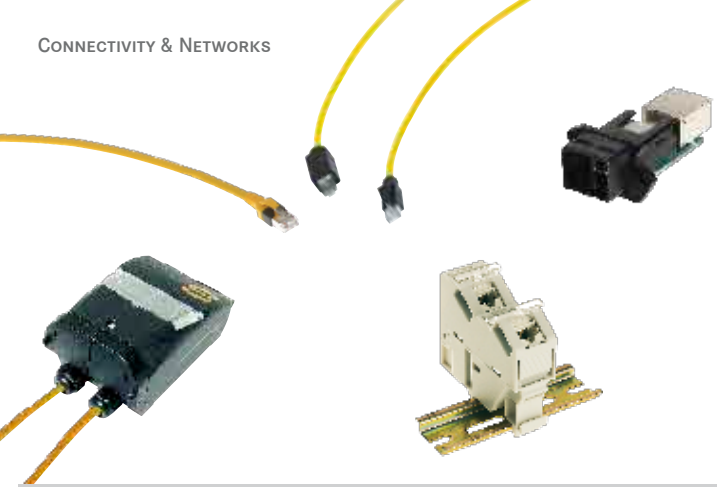
- Robust metal housing
- Reduced cabling costs in building industrial Ethernet networks
- Space saving, directly installable on machinery or in plant
- Plug & Play Installation
- RoHS compliant

Ethernet Switches:

- Fast Ethernet (Data transfer rates of 10/100 Mbit/s)
- Ethernet interfaces conform to PROFINET and ODVA
- High IP 65 / IP 67 degree of protection
- Extended operational temperature range and mechanical stability meet the highest demands
- mCon supports two access methods for management: SNMP and a convenient Web-Access



EN ISO 9001 and 14 001 certified



Cabling systems and components

Structured cabling (Generic cabling):

A complete range of cabling components for the installation of an application-independent passive infrastructure in industry, especially in automation. Universal 8-wire screened cabling for the seamless advancement of the IT infrastructure into harsh IP 65 / IP 67 environments and for outdoor areas.

Specification:

Network installation according to ISO/IEC 24 702 and EN 50 173-3 (Structured Cabling in Industrial Environments) – recommended for the transmission of data, voice/VoIP, video and other services – Ethernet transmission at 10 Mbit/s, 100 Mbit/s and 1000 Mbit/s (Gigabit Ethernet) – transmission characteristics Category 5 / Transmission Class D up to 100 MHz and Category 6 / Transmission Class E up to 250 MHz according to ISO/IEC 11 801:2002 incl. AMD1:2008 and EtherNET/IP according to IEC/TR 61158-1 (CPF number CP 2/2) and Category 5e according to EIA/TIA 568

Product range:

Consists of:

- Outlets and junctions boxes
- Panel feed-throughs
- Patch cables
- Connector sets for on-site cable assembly
- Cables for both fixed and flexible installation

Connector types:

- RJ45, IP 20
- HARTING PushPull RJ45, IP 67
- HARTING PushPull LC duplex, IP 67
- Han® 3 A RJ45, IP 67

Installation:

Modular component range for free combination to meet special installation requirements. Patch cables and connecting cables are available both as quality inspected cable assemblies or as components sets for on-site assembly.

Benefits:

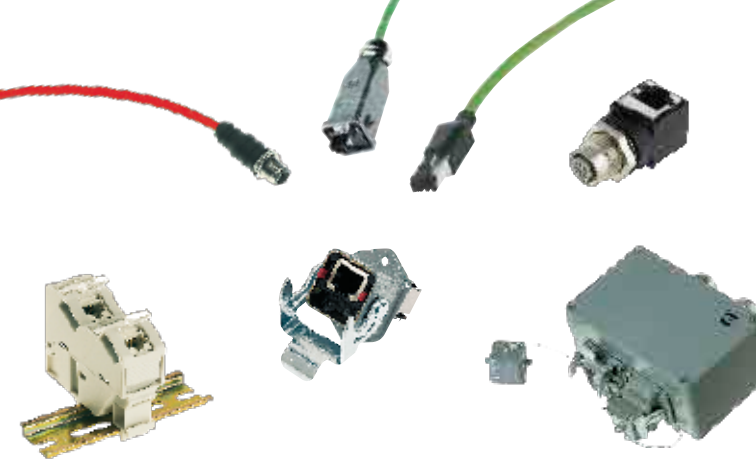
Real-time capable and future-proof cabling suitable for Gigabit Ethernet and beyond

In compliance with ISO/IEC 24 702 for signal transmission in all services in IT and automation environments guaranteeing compatibility with equipment and facilities.

Modular component range for cabling according to the specific customer requirements

Easy and quick assembly

The high quality of the cabling system guarantees long operation, reliability and protection in investment



Cabling systems and components

Profile-specific cabling:

A complete range of cabling components for the installation of a profile-specific passive infrastructure in industry, especially in automation. Universal 4-wire screened cabling for the connection of automation solutions and control units in harsh IP 65 / IP 67 environments and for outdoor areas.

Specification:

Network installation according to ISO/IEC 61 918 and the guidelines of specific automation protocols (profiles) like:

- PROFINET according to IEC/TR 61 158-1, CPF3
- EtherCAT according to IEC/TR 61 158-1, CPF12
- Ethernet Powerlink according to IEC/TR 61 158-1, CPF13
- SERCOS III according to IEC/TR 61 158-1, CPF16

Suitable for the transmission of data via Ethernet – Ethernet transmission according to IEEE 802.3 at 10 Mbit/s and 100 Mbit/s – transmission characteristics Category 5/ Transmission Class D up to 100 MHz according to ISO/IEC 11 801:2002 and cat. 5e according to EIA/TIA 568

Product range:

Consists of:

- Outlets and junctions boxes
- Panel feed-throughs
- Patch cables
- Connector sets for on-site cable assembly
- Cables for both fixed and flexible installation

Connector types:

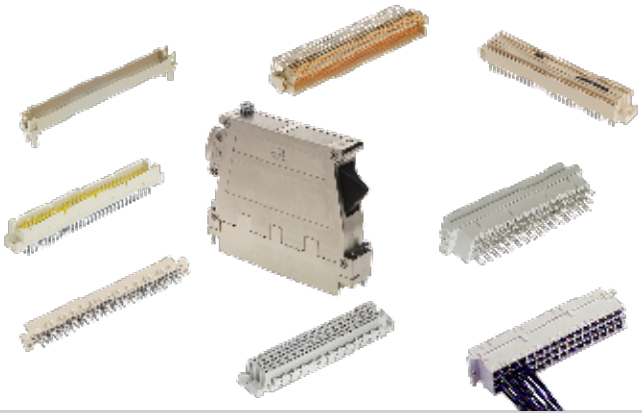
- RJ45, IP 20
- Han® 3 A RJ45 and Hybrid, IP 67
- M12, IP 67
- Han® PushPull RJ45, IP 67
- Han® PushPull SCRJ, IP 67 (in preparation)

Installation:

Modular component range for free combination to meet special installation requirements. Patch cables and connecting cables are available both as quality inspected cable assemblies or as components sets for on-site assembly.

Benefits:

- In compliance with ISO/IEC 61 918 and with the guidelines of several user organisation groups like PNO, EtherCAT, EPSG, SERCOS
- Real-time capable, robust cabling suitable for Fast Ethernet
- Modular component range for cabling according to the specific customer requirements
- Easy and quick assembly
- The high quality of the cabling system guarantees long operation, reliability and protection in investment



PCB connectors contact spacing 2.54 mm

Connectors

DIN 41 612

acc. to IEC 60 603-2

Types:

B, C, D, E, F, FM, H, MH, M, Q, R, R (HE 11),
short types 2B, 2C, 3B, 3C, 2F, F9, H3, 2Q, 2R,
har-bus® 64 for VME 64x (acc. to IEC 61 076-4-113)

Number of contacts:

3 – 160

Working current:

2 – 15 A
max. 40 A (special contacts)

Terminations:

Straight and angled solder pins
Solder lugs
Press-in technology
SMC (Surface Mount Compatible) types
Crimp terminals
Wire wrap posts 0.6 x 0.6 and 1 x 1 mm
Insulation displacement terminals
Faston blades
Cage clamp terminals

Accessories:

Extensive range of hoods in plastic,
metallized plastic or full metal
Fixing brackets and interfaces
Shrouds

Service:

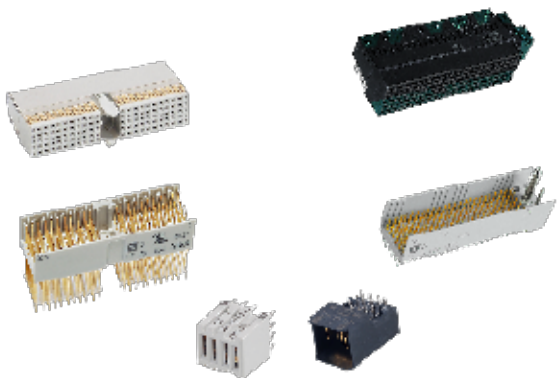
Tooling for press-in and crimp termination
Concepts for SMC and press-in technology

Approvals:

UL, VDE, IEC, CECC



EN ISO 9001 and 14 001 certified



Metric connectors

har-bus® HM/HM+ with 5 resp. 8 rows

acc. to IEC 61 076-4-101, CompactPCI

Types: A, AB19, AB22, AB25, B19, B22, B25, C, D, DE, E, Monoblock 47 (A + B22)
SMC (Surface Mount Compatible) types

Number of contacts: max. 220 signal contacts (308 fully shielded)

har-bus® HM 6 row

Extension of IEC 61 076-4-101

Types: Modules with optional features such as guiding, coding and end wall
SMC types

Number of contacts: 72 or 144 signal contacts

har-bus® HM Power

Types: Straight female press-in modules
Angled male press-in and SMC modules
Lagging / leading contacts

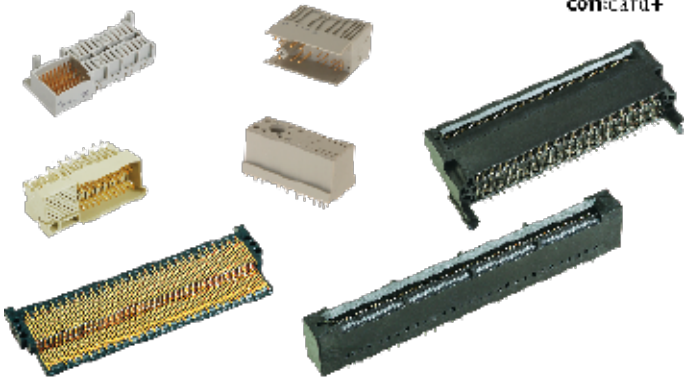
Working current: max. 23 A at 70 °C

All connector families

Accessories: Tooling for press-in termination
Service: Shielding effectiveness measurements
Signal integrity analysis
Computer simulations (3D-FEM)
SPICE modelling
Concepts for SMC technique
Approvals: UL, CSA, VDE, IEC, CECC



EN ISO 9001 and 14 001 certified



Connectors for AdvancedTCA[®] / MicroTCA[™]

AdvancedMC[™] connectors

| | |
|---------------------|--|
| Types: | According to PICMG AMC.0 / MTCA.0 specification Right angled version for AdvancedTCA [®] and straight version for MicroTCA [™] . The card edge connectors are for direct mating with Advanced Mezzanine Cards (AdvancedMC [™]). With con:card+ features for enhanced contact reliability. Plug connector mounted on the AdvancedMC [™] module replaces PCB gold pads. |
| Number of contacts: | 170 |
| Contact spacing: | 0.75 mm |
| Termination: | Press-in technology, 0.55 mm PCB hole diameter, Pin-in-hole-reflow soldering for plug connector |
| Data rate: | Suitable for 12.5 Gbps applications |



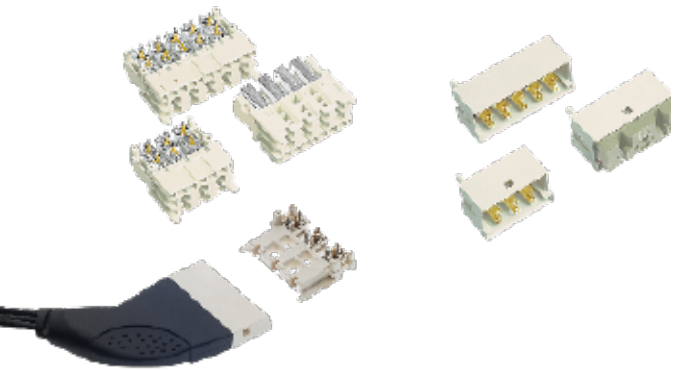
Power connectors

| | |
|---------------------|---|
| Types: | According to PICMG 3.0 / MTCA.0 specification Backplane and daughter card connectors for AdvancedTCA [®] Backplane and module connector for MicroTCA [™] Mixed pin assignment of signal and power contacts |
| Number of contacts: | 30 / 96 |
| Working current: | 16 A / 9.3 A @ 80% derating |
| Termination: | Press-in technology |

All TCA connectors

| | |
|--------------------|--|
| Accessories: | Tooling for press-in termination |
| Design-in support: | Signal integrity analysis (S-parameter, TDR, eye-diagrams) Computer simulation and modelling (e.g. SPICE) Test boards and 3D models (STEP, IGES) |
| | EN ISO 9001 and 14 001 certified |





Mini Coax connector system

Mini Coax

| | |
|---------------------|--|
| Types: | 1 SU, 1.25 SU, 1.5 SU (1 System Unit = 25 mm) |
| Number of contacts: | 2, 4, 6, 8 and 10 (other loadings on request) |
| Frequency range: | 0 – 2.5 GHz |
| Nominal impedance: | 50 Ω |
| Termination: | Press-in technology |

Mini Coax+

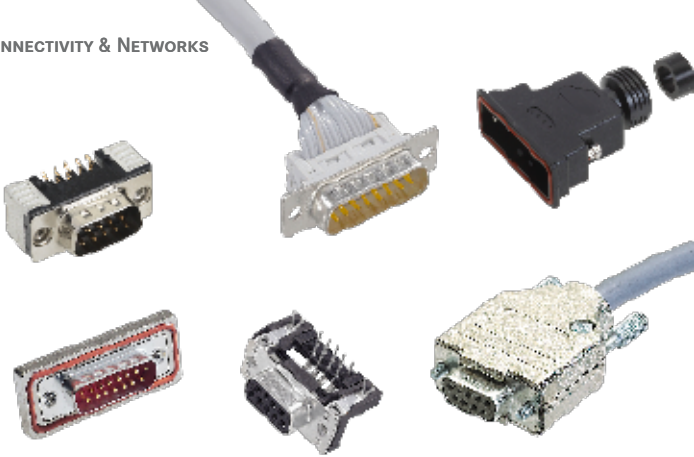
| | |
|--------------------|-------------|
| Frequency range: | 0 – 4 GHz |
| Nominal impedance: | 50 Ω |
| Termination: | SMT / SMC |

All connectors


| | |
|--------------|---|
| Accessories: | Tooling for press-in termination Pre-assembled cables Terminators |
| Service: | Shielding effectiveness measurements Signal integrity analysis Computer simulations (3D-FEM) SPICE modelling |
| Approvals: | UL, VDE, IEC, CECC |

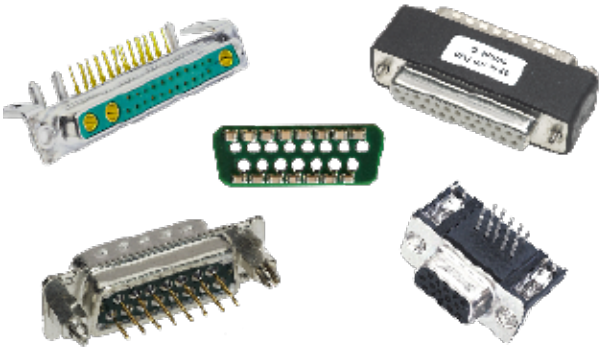


EN ISO 9001 and 14 001 certified



Standard, IP 67 D-sub connectors

| | |
|--|---|
| D-Sub | acc. to CECC 75 301-802 |
| Number of contacts: | 9, 15, 25, 37, 50 |
| Working current: | 2 – 7.5 A |
| Fields of application: | Industrial electronics, office electronics, Information and telecommunication technology |
| Terminations: | Solder buckets Straight and angled solder pins European, US and low-profile footprint SMC (Surface Mount Compatible) types SMT (Surface Mount Technology) types Wire wrap terminals Crimp terminals Insulation displacement termination Press-in technology |
| Accessories: | Extensive range of hoods: plastic, metallized plastic, plastic with internal metal plate and full metal A large choice of locking systems |
| Approval: | UL |
| D-Sub IP 67 | acc. to DIN 40 050, IEC 529 |
| Number of contacts: | 9, 15, 25, 37, 50 |
| Working current: | 5 A |
| Fields of application: | Any applications in the industrial, medical, machinery and transportation markets, which are to be protected from ingress |
| Terminations: | Rear panel mount straight and angled for PCB application Rear and front panel mount solder cup Solder cup for cable inside application in conjunction with IP 67 hood range |
| Accessories: | IP 67 plastic or metallized plastic hoods with a large range of screws Front sealing rubber for full IP 67 mated system application |
| Approval: | UL |
|  | EN ISO 9001 and 14 001 certified |



Mixed, high density, filter D-Sub connectors

D-Sub mixed

Variants:

acc. to DIN 41 652 T1, MIL-C 24 308
2W2C, 3W3, 3W3C, 5W1, 5W5, 7W2, 7W7,
8W8, 9W4, 11W1, 13W3, 13W6, 17W2, 21W1,
21WA4, 24W7, 25W3, 27W2, 36W4

Working current:

Signal 5 A; power up to 40 A

Terminations:

Solder cups
Crimp terminals
SMC (Surface Mount Compatible) types on request

Accessories:

Wide range of special contacts, like coaxial, power,
high voltage and pneumatic contacts
Special accessories like kits for blind mating

D-Sub high density

Number of contacts:

15, 26, 44, 62, 78

Working current:

up to 2 A

Terminations:

Straight and angled solder pins
Solder cups
Crimp terminals

D-Sub filter

Number of contacts:

9, 15, 25, 37

Working current:

up to 7.5 A

Terminations:

Solder buckets
Straight and angled solder pins
SMC (Surface Mount Compatible) types
Various integrated filters possible
with 47 pF, 470 pF, 1000 pF and 3900 pF etc.
All custom designs possible
(based on a contact-by-contact approach)
D-Sub filter with mixed contacts available on request

Accessories:

All connectors

Accessories:

Extensive range of hoods
Tooling for crimp termination
Special configurations on request

Fields of application:

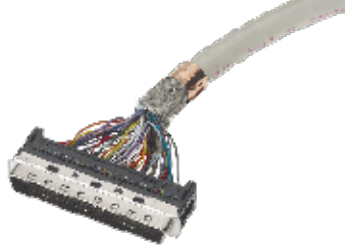
Industrial, medical, telecom, computer
and aerospace applications

Approval:

UL



EN ISO 9001 and 14 001 certified



Micro electronic connectors

har-mik®

Miniature D connector contact spacing
1.27 mm acc. to:
SCSI 2 – SCSI 3, I.P.I.2, HI.P.P.I
EIA/TIA 232 E (RS 232 E), IEEE 1284
IEC 61 076-3-100 for bellows connectors
(with leaf contact design)
IEC 61 076-3-101 for pin and socket connectors
(with blade and fork contact design)

Number of contacts: 14 – 100

Working current: 1 A

Working voltage: 240 V ~

Fields of application: Input/output interface for use in EDP, industrial and office electronics and telecommunication

Terminations: Straight and right angled solder pins
IDC for discrete wires
IDC for flat cables
Press-in technology
SMC (Surface Mount Compatible) types

har-link®

Metric connector contact spacing 2.0 mm
acc. to IEC 61 076-4-107

Number of contacts: 10

Working current: 1.5 A

Fields of application: Telecommunication
Automation
Professional broadcast
Transportation

Terminations: IDC (for male connector)
Right angled solder pins (for female connector)



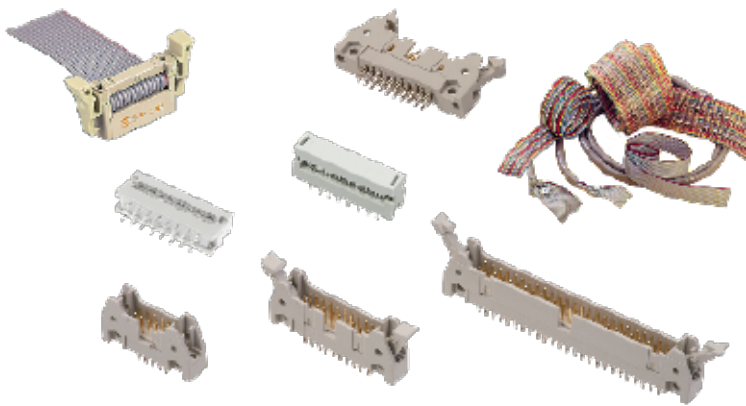
The **har-link®** connector system is a modular, compact and robust PCB-to-cable interface with excellent data transmission properties for high speed networking and telecommunication (up to 2 Gbit/s per twisted pair).

Both connector families

Approval: UL



EN ISO 9001 and 14 001 certified



IDC connector systems for flat cables Contact spacing 2.54 mm x 2.54 mm

SEK IDC connectors

Male and

female connectors:

acc. to IEC 60 603-13, comply with MIL-C 83 503

Number of contacts:

6, 10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64

Working current:

1 A max.

Working voltage:

320 V

Terminations:

Female: IDC for flat cable

Male standard and low profile:

Straight and right angled solder pins

Press-in technology

SMC (Surface Mount Compatible) versions

Wire wrap posts

Accessories:

Strain relief, locking lever, board lock, vacuum cover for pick-and-place assembly

Packaging:

Card board box, tape on reel, tube

Approval:



Service:

Concepts for SMC and press-in technology

PCB transition connectors:

2-rows, 4-rows, DIP

Number of contacts:

2 rows:

6, 8, 10, 14, 16, 20, 24, 26, 30, 34, 40, 50, 60, 64

4 rows:

10, 16, 20, 26, 34, 40, 50

DIP :

14, 16, 24, 28, 40

Working current:

1 A max.

Terminations:

Cable side: IDC

PCB side: solder pins

Standard or kinked pin for 2-rows versions

Assembly:

2-rows: assembled lever

4-rows and DIP: separate cover



EN ISO 9001 and 14 001 certified



Compact IP 65 / IP 67 PushPull connectors for data, power and signal

PushPull connectors according to IEC 61 076-3-106 variant 4 and IEC/PAS 61 076-3-117 variant 14 for device connectivity

Fields of application: Factory and building automation
Automobile industry
PROFINET applications
Industrial electronics
Transportation
Lighting and display technology
Telecommunication and wireless networks

Ideal for compact devices in harsh environments or in outdoor applications

Locking mechanism: PushPull one-hand locking
Housing material: Plastic or metal
Accessories: Protective caps, cable assemblies, coding pins and tools
Protection class: IP 65 and IP 67

Data interface

Copper based: RJ45 acc. to IEC 60 603-7
Number of contacts: 4 or 8
Wire terminations: HARAX® IDC or piercing

LC based: LC duplex acc. to IEC 61 754-20 or
SCRJ acc. to IEC 50 377-3-6

LC types: LC duplex: singlemode or multimode GOF
SCRJ: POF, HCS, singlemode or multimode GOF

Hybrid interface

Number of contacts: 4 x data + 3 x power
Working current: 5 A
Working voltage: 32 V DC
Wire terminations: Crimp and solder terminals

Power interfaces

Number of contacts: 4 or 2 + PE or 4 + PE
Working current: 12 – 16 A
Working voltage: 48 V DC, 250 V AC or 400 / 690 V AC
Wire terminations: Crimp, solder or cage clamp terminals and Quick Lock



EN ISO 9001 and 14 001 certified



Outdoor solutions

HARTING's new range of products for outdoor solutions combines the advantages of the reliable HARTING PushPull technology and Han® 3 A housings with innovative inserts for fibre optic and copper.

The integration of the standard LC fibre optic connectors, in singlemode and multimode, meets the demands set by harsh outdoor environments. The hybrid variants combine data (LC fibre or RJ45) and power in one connector for easy installation and maintenance.

These high-quality, robust HARTING interfaces offer vibration protection and IP 65 / IP 67 as standard.

| | |
|-------------|---|
| Advantages: | Standardized housings The smallest dimensions in IP 65 / IP 67 Up to four standardized LC fibre optic contacts Hybrid connectors for data & power Easy installation and maintenance Suitable for singlemode or multimode fibres Ready-to-use cable assemblies available |
|-------------|---|

| | |
|----------------|---|
| Housing types: | HARTING PushPull Han® PushPull Han® 3 A Straight and angled Metal and plastic |
|----------------|---|

| | | |
|---------------|--------|-------------------------------------|
| Insert types: | Power | DC 48 V / 300 V AC 230 V / 300 V |
| | Fibre | LC duplex 2 x LC duplex |
| | Hybrid | RJ45 & power LC duplex & power |



EN ISO 9001 and 14 001 certified



I/O cable assemblies

System cables for applications in IP 20 and IP 67 environment

Based on the connector series D-Sub, D-Sub high density, **har-mik**[®] (SCSI), **har-link**[®], DIN 41612 as well as hybrid connectors and IDC connector systems for flat cables

Advantages:

No additional assembly

Manufacturing of different lengths according to customer requirements

Available as round and flat cables

Ready-to-use and inspected products

Terminations:

Solder pins

Crimp terminals

Insulation displacement termination

Strain relief and latching mechanism according to the connectors used

Types:

Variants with or without overmoulding technology depending on the application.

The housings are available in plastic, metallized plastic or full metal.



EN ISO 9001 and 14 001 certified



HARTING Integrated Solutions

HARTING Integrated Solutions (HIS) is the backplane and backplane systems assembly business unit for the HARTING Technology Group.

Manufacturing on 3 Continents, Europe, Asia and North America, based on a 'Global Footprint' of common equipment, tooling and procedures and providing a world-wide service to our customers.

Backplane design, signal integrity services:

Standard and customized backplane design/layout
Simulation and modeling
Measurement and verification



Manufacturing:

Focused on backplane assembly, prototypes to volume production
Assembly standards to IPC610 'J' Standard



- All assembly to the highest level, Class III
 - Continuous training with in-house trainers
- SMT – press-in – wave solder
- Ability to handle large, high layer-count PCB's
- Fast prototype service
- Vertical integration
- Full integration services
 - Cardframes, cabinets

Test:

All products tested - State-of-the-art robotic backplane testers including optical inspection
System functional and safety testing

Sales partner – worldwide:**ARGENTINA:**

Condelectric S.A.
Hipólito Yrigoyen 2591
(B1640HFY) Martínez, Buenos Aires
Phone + Fax +54 11 4836-1053
E-Mail: info@condelectric.com.ar

CANADA – HARTING ELECTRIC:

Chartwell Electronics Inc.
140 Duffield Drive, Markham, Ontario L6G 1B5
Phone 905-513-7100, Toll Free 877-513-7769
Fax 905-513-7101, Internet: www.chartwell.ca

DENMARK:

Wexøe A/S
Lejrvej 31, DK-3500 Værløse
Phone +4545465800, Fax +4545465801
E-Mail: wexoe@wexoe.dk
Internet: www.wexoe.dk

ESTONIA – HARTING ELECTRIC:

SKS Tehnika OÜ
Liimi 1, EE-10621 Tallinn
Phone +372 699 0171, Fax +372 699 0170
E-Mail: tehnika@sks.fi
Internet: www.sks.fi

FINLAND

INTOTEL OY
Kutojantie 4, 02630 Espoo, Finland
P.O. Box 125, 02631 Espoo, Finland
Phone +358-9-521 300, Fax +358-9-7553581
E-Mail: into@intotel.fi, Internet: www.intotel.fi

ISLAND – HARTING ELECTRIC:

Smith & Norland, Nóatún 4, IS – 105 Reykjavík
Phone +354 520 3000, Fax +354 520 3011
E-Mail: olaf@sminor.is, Internet: www.sminor.is

ISRAEL:

COMTEL Israel Electronics Solutions Ltd.
Bet Hapamon, 20 Hataas st., P.O.Box 66
Kefar-Saba 44425
Phone +972-9-7677240, Fax +972-9-7677243
E-Mail: sales@comtel.co.il
Internet: www.comtel.co.il

SOUTH AFRICA – HARTING ELECTRIC:

HellermannTyton Pty Ltd.
Private Bag X158 Rivonia 2128
34 Milky Way Avenue
Linbro Business Park 2065
Johannesburg, South Africa
Phone +27(0)11879-6600
Fax +27(0)11879-6606
E-Mail: sales.jhb@hellermann.co.za

SOUTH AFRICA – HARTING ELECTRONICS:

Cabcon Technologies (PTY)Ltd
P.O. Box 13002, Northmead, Benoni, 1511 Gauteng
Phone +27 1184533258
Fax +27 118454077
E-Mail: cabcon@mweb.co.za

SWITZERLAND – HARTING ELECTRIC:

Distrelec AG
Grabenstrasse 6, CH-8606 Nänikon
Phone +4119449911, Fax +4119449988
E-Mail: info@distrelec.com
Internet: www.distrelec.com

TURKEY:

Gökhan Elektrik San. Tic. Ltd. Sti.
Perpa Elektrikçiler Is Merkezi A Blok
Kat:7-8-9 No.694
TR – 80270 Okmeydani/Istanbul
Phone +90(212) 2213236 (pbx)
Fax +90(212) 2213240
E-Mail: gokhan@gokhanelektrik.com.tr
Internet: www.gokhanelektrik.com

Subsidiary companies – worldwide:**AUSTRALIA:**

HARTING Pty Ltd
Suite 11 / 2 Enterprise Drive
Bundoora 3083, AUS-Victoria
Phone +61 9466 7088, Fax +61 9466 7099
E-Mail: au@HARTING.com, www.HARTING.com

AUSTRIA:

HARTING Ges. m. b. H.
Deutschstraße 19, A-1230 Wien
Phone +431 6162121, Fax +431 6162121-21
E-Mail: at@HARTING.com, www.HARTING.at

BELGIUM:

HARTING N.V./S.A.
Z.3 Doornveld 23, B-1731 Zellik
Phone +32 2 466 0190, Fax +32 2 466 7855
E-Mail: be@HARTING.com, www.HARTING.be

BRAZIL:

HARTING Ltda.
Av. Dr. Lino de Moraes, Pq. Jabaquara, 255
CEP 04360-001 – São Paulo – SP – Brazil
Phone +55 11 5035 0073, Fax +55 11 5034 4743
E-Mail: br@HARTING.com, www.HARTING.com.br

CHINA:

Zhuhai HARTING Limited, Shanghai branch
Room 5403, HK New World Tower
300 Huai Hai Road (M.), Shanghai 200021, China
Phone +86 21 6386 2200, Fax +86 21 6386 8636
E-Mail: cn@HARTING.com, www.HARTING.com.cn

CZECH REPUBLIC:

HARTING spol. s.r.o.
Mlýnská 2, CZ-160 00 Praha 6
Phone +420 220 380 460, Fax +420 220 380 461
E-Mail: cz@HARTING.com, www.HARTING.cz

FINLAND:

HARTING Oy
Teknobulevardi 3-5, PL 35, FI-01530 Vantaa
Phone +358 9 350 87 300, Fax +358 9 350 87 320
E-Mail: fi@HARTING.com, www.HARTING.fi

FRANCE:

HARTING France
181 avenue des Nations, Paris Nord 2
BP 66058 Tremblay en France
F-95972 Roissy Charles de Gaulle Cédex
Phone +33 1 4938 3400, Fax +33 1 4863 2306
E-Mail: fr@HARTING.com, www.HARTING.fr

GERMANY:

HARTING Deutschland GmbH & Co. KG
Postfach 2451, D-32381 Minden
Simeonscarré 1, D-32427 Minden
Phone +49 571 8896 0
Fax +49 571 8896 282
E-Mail: de@HARTING.com, www.HARTING.com

OFFICE GERMANY:

HARTING Deutschland GmbH & Co. KG
Blankenauer Straße 99, D-09113 Chemnitz
Phone +49 0371 429211, Fax +49 0371 429222
E-Mail: de.sales@HARTING.com, www.HARTING.com

GREAT BRITAIN:

HARTING Ltd.
Caswell Road, Brackmills Industrial Estate
GB-Northampton, NN4 7PW
Phone +44 1604 827 500, Fax +44 1604 706 777
E-Mail: gb@HARTING.com, www.HARTING.co.uk

HONG KONG:

HARTING (HK) Limited,
Regional Office Asia Pacific
3512 Metroplaza Tower 1, 223 Hing Fong Road
Kwai Fong, N. T., Hong Kong
Phone +852 2423 7338, Fax +852 2480 4378
E-Mail: ap@HARTING.com, www.HARTING.com.hk

HUNGARY:

HARTING Magyarország Kft.
Fehérvári út 89-95, H-1119 Budapest
Phone +36 1 205 34 64, Fax +36 1 205 34 65
E-Mail: hu@HARTING.com, www.HARTING.hu

INDIA:

HARTING India Private Limited
No. D, 4th Floor, 'Doshi Towers'
No. 156 Poonamallee High Road,
Kilpauk, Chennai 600 010, Tamil Nadu, Chennai
Phone +91 44 435604 15, Fax +91 44 435604 17
E-Mail: in@HARTING.com, www.HARTING.com

ITALY:

HARTING SpA
Via dell'Industria 7, I-20090 Vimodrone (Milano)
Phone +39 02 250801, Fax +39 02 2650 597
E-Mail: it@HARTING.com, www.HARTING.it

JAPAN:

HARTING K. K.
Yusen Shin-Yokohama 1 Chome Bldg., 2F
1-7-9, Shin-Yokohama, Kohoku-ku,
Yokohama 222-0033 Japan
Phone +81 45 476 3456, Fax +81 45 476 3466
E-Mail: jp@HARTING.com, www.HARTING.co.jp

KOREA:

HARTING Korea Limited
#308 Yatap Leaders Building, 342-1, Yatap-dong,
Bundang-gu, Sungnam-City, Kyunggi-do
463-828, Republic of Korea
Phone +82 31 781 4615, Fax +82 31 781 4616
E-Mail: kr@HARTING.com
www.HARTING.com.cn/kr

NETHERLANDS:

HARTING B.V.
Larenweg 44, NL-5234 KA ,s-Hertogenbosch
Postbus 3526, NL-5203 DM ,s-Hertogenbosch
Phone +31 736 410 404, Fax +31 736 440 699
E-Mail: nl@HARTING.com, www.HARTINGbv.nl

NORWAY:

HARTING A/S
Østensjøveien 36, N-0667 Oslo
Phone +47 22 700 555, Fax +47 22 700 570
E-Mail: no@HARTING.com, www.HARTING.no

POLAND:

HARTING Polska Sp. z o. o.
ul. Kamieńskiego 201-219, PL-51-126 Wrocław
Phone +48 71 352 81 71, Fax +48 71 320 74 44
E-Mail: pl@HARTING.com, www.HARTING.pl

PORTUGAL:

HARTING Iberia, S. A.
Avda. Josep Tarradellas, 20-30, 4º 6ª
E-08029 Barcelona
Phone +351 219 673 177, Fax +351 219 678 457
E-Mail: es@HARTING.com, www.HARTING.es/pt

RUSSIA:

HARTING ZAO
Maliy Sampsoniyevsky prospect 2A
194044 Saint Petersburg, Russia
Phone +7 812 327 6477, Fax +7 812 327 6478
E-Mail: ru@HARTING.com, www.HARTING.ru

SINGAPORE:

HARTING Singapore Pte Ltd.
25 International Business Park
#02-06 German Centre, Singapore 6099 16
Phone +65 6225 5285, Fax +65 6225 9947
E-Mail: sg@HARTING.com, www.HARTING.com

SPAIN:

HARTING Iberia S.A.
Josep Tarradellas 20-30 4º 6ª
E-08029 Barcelona
Phone +34 93 363 84 75, Fax +34 93 419 95 85
E-Mail: es@HARTING.com, www.HARTING.es

SWEDEN:

HARTING AB
Gustavslundsvägen 141 B 4tr, S-167 51 Bromma
Phone +46 8 445 7171, Fax +46 8 445 7170
E-Mail: se@HARTING.com, www.HARTING.se

SWITZERLAND:

HARTING AG
Industriestrasse 26, CH-8604 Volketswil
Phone +41 44 908 20 60, Fax +41 44 908 20 69
E-Mail: ch@HARTING.com, www.HARTING.ch

TAIWAN:

HARTING R.O.C. Limited
Room 1, 5th Floor, No. 495 GuangFu South Road
Taiwan - Taipei 110
Tel. +886 02-2 758-6177, Fax +886 02-2758-7177
E-Mail: tw@HARTING.com, www.HARTING.com.tw

USA:

HARTING Inc. of North America
1370 Bowes Road, USA-Elgin, Illinois 60123
Phone +1 877 741-1500 (toll free)
Fax +1 866 278-0307 (Inside Sales)
Fax +1 847 717-9430 (Sales and Marketing)
E-Mail: us@HARTING.com, www.HARTING-USA.com

EASTERN-EUROPE:

HARTING Eastern Europe GmbH
Bamberger Straße 7, D-01187 Dresden
Phone +49 351 4361 760, Fax +49 351 4361 770
E-Mail: Eastern.Europe@HARTING.com
www.HARTING.com

Distributors – worldwide:

Farnell: www.farnell.com;
in US: Newark: www.newark.com

RS Components, www.rs-components.com;
in US: Allied Electronics: www.alliedelec.com

FUTURE Electronics – HARTING Electronics
www.futureelectronics.com

Other countries:

HARTING Electric GmbH & Co. KG
P.O. Box 1473, D-32328 Espelkamp
Phone +495772/47-97100
Fax + 495772/47-495
E-Mail: HARTING.electric@HARTING.com

HARTING Electronics GmbH & Co. KG
P.O. Box 1433, D-32328 Espelkamp
Phone +495772/47-97200
Fax +495772/47-777
E-Mail: electronics@HARTING.com



Pushing Performance

www.HARTING.com