

PEOPLE. POWER. PARTNERSHIP.

HARTING News 2022

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Industrial connectors Han[®] Miniaturisation & Modularisation

Han[®] ES Press with PE press





One of the main requirements for versatile production is the ability to quickly install machines and modules, reconfigure them at will, and run them without interruptions. Han[®] ES Press is a tool-free quick termination technology that now offers this option for the PE connection.

- Reduced installation time by up to 50% because of faster PE connection
- Tool-free assembly lowers costs



Han® 3 A HMC and Han® TC HMC





Connections that must be mated frequently are subject to particular stresses. The Han[®] HMC series was specially developed for such applications; it ensures safety and durability even after frequent mating cycles.

- Saves time in applications that need to be mated frequently, e.g. tool change
- Reduced costs thanks to longevity from high mating cycles



Industrial connectors Han[®] Miniaturisation & Modularisation

Han-Modular[®] Gigabit Cat. 8 module





Data communications are increasing throughout all sectors. To meet these requirements, sustainable applications need powerful network and data interfaces. The connectors must be enclosed in robust housings and, like the cables, be shielded against electromagnetic interference. The new Han-Modular[®] Gigabit Cat. 8 module meets all these requirements.

- Significantly improved signal integrity increases the immunity to interference
- Up to 40 Gbit/s at an operating frequency of up to 2000 MHz
- Future-oriented Cat. 8.2 interface for continually increasing data transmission rates
- Can be flexibly combined with over 100 different modules for power, data and signals from the Han-Modular[®] series



Han-Modular[®] M12 module





Thanks to the M12 module, there is now another way to integrate 10 Gbit/s Ethernet into modular connectors. The module significantly reduces the space requirements, since two D- or X-coded M12 connectors fit into a single module.

- Saves costs by significantly reducing space requirements and weight
- Improved safety due to new complex shielding design options, thanks to the new M12 module GND version



Industrial connectors Han[®] Miniaturisation & Modularisation

Han-Modular[®] Domino Modules



With the introduction of the Han-Modular[®] in 1993, HARTING set a new standard in the industry: delivering the first modular industrial connector that carries power, signals, data and even compressed air side by side in a single connector. Almost 30 years later, HARTING is setting the next milestone with the new Han-Modular[®] Domino Modules. These hybrid modules deliver up to 50% additional space savings.

- Up to 50% less space due to smaller and lighter connectors
- Maximum flexibility, scalable to meet your requirements
- Shorter installation times because several individual connections are combined
- Compatible with existing components of the Han-Modular[®] series,
- Sustainable thanks to consistent modularisation



Han® HPR Compact





With the new Han[®] HPR Compact, HARTING satisfies the industry's requirements for reduced installation space and weight. Due to the smaller connectors, installation areas that are difficult to reach can now be accessed more efficiently, and spaces once too cramped may now be considered for installation (e.g. in the narrow installation space of railway vehicles.)

- Up to 25% less weight compared to the previous standard housing
- Can be installed in the tightest of spaces thanks to the space reduction of up to 20%
- Can be safely assembled in narrow installation spaces by means of "blind mating" using guide pins
- Very flexible and expandable with the extender frame



Industrial connectors Han[®] Miniaturisation & Modularisation

Han[®] HPR PYD 1 to 2





HARTING's new Han[®] HPR PYD 1 to 2 connector offers a scalable power interface (e.g. to the bogie). The distributor unites the contact multiplication in a standard connector and, thus, provides outstanding flexibility. The installation does not require an electrician. This saves time and money.

- Contact multiplication in a standard connector ensures outstanding flexibility
- Reduced costs due to elimination of distribution boxes
- Saves time because shielded motor cables can be plugged in (e.g. when replacing bogies)
- Coded Plug & Play solution saves time and money (no electricians required)



Industrial Ethernet switches All for Ethernet

Ha-VIS eCon 3011BT-AT1-SPE





The new SPE media converter facilitates the migration to future-oriented Single Pair Ethernet (SPE) technology. It is available for Fast or Gigabit Ethernet.

- Easy to retrofit because SPE end devices are easy to integrate into existing Ethernet networks
- Durable thanks to robust EMC-tested design for control cabinets in automation



Industrial Ethernet switches All for Ethernet

Ha-VIS eCon 3026BT-AT1-SPE





The Ethernet technology of the future requires compatible Ethernet switches. HARTING's new SPE switch ensures maximum versatility in the smallest installation space.

- Outstanding flexibility: 6 SPE end devices can be networked with the standardised HARTING T1 Industrial[®] interfaces
- Time-saving thanks to Plug & Play SPE integration with unmanaged Ethernet switches for the control cabinet
 Future-oriented: New SPE sub-systems can easily be

integrated into existing facilities thanks to 6 SPE ports (single-pair Ethernet) and 2 RJ45 ports (four-pair Ethernet)



PCB connectors All for PCB

har-flex® HD Card Edge





The one-piece PCB connectors of the *har*-flex[®] HD Card Edge series have a contact pitch of 0.8 mm. They enable printed circuit boards with a thickness of 1.6 mm to be plugged into directly. Benefiting from their small number of contact points, these card-edge PCB connectors can be used in high-speed applications with data rates of up to 25 Gbps. From 20 to 140 poles and optional hold-downs (SMT or THR): Users can customise the connectors to their individual industrial requirements.

- Small contact pitch of 0.8 mm
- Directly pluggable circuit boards of 1.6 mm
- Data rates of up to 25 Gbps
- Number of poles: 20 to 140



PCB connectors All for PCB

har-flex® Hybrid





A special feature of the *har*-flex[®] product family and modular manufacturing is the combination of signal and power contacts: the birth of the *har*-flex[®] Hybrid. Thus, compact and versatile connectivity solutions can be implemented that are ideal for miniaturised PCBs. *har*-flex[®] Hybrid PCB connectors are available in straight and angled versions, so they can be used in applications with parallel boards (mezzanine), with extender cards, and in the motherboard-to-daughtercard configuration. You can save space and effort when using hybrid PCB connectors: They are ideal for modular IO systems and other miniaturised control applications.

- Simultaneous transmission of signals and power
- Reduced number of contacts saves space
- Many available contact combinations ensure outstanding flexibility



har-flex® Power





In addition to the standard *har*-flex[®] in 1.27 mm pitch, the *har*-flex[®] product family also offers connectors in 2.54 mm pitch. *har*-flex[®] Power has been specifically developed for transmitting high currents from 18 A to 29 A. The modular production allows the flexible number of poles (from 2 to 12). Users can also choose between SMT and THR versions for the power contacts. *har*-flex[®] Power PCB connectors are available in straight and angled versions, so they can be used in applications with parallel boards (mezzanine), with extender cards, and in the motherboard-to-daughtercard configuration.

- Small, flexible and robust.
- Transmitting power in a small size
- Versatile scalable solution for individual requirements



PCB connectors All for PCB

har-flexicon® for Ethernet





There is a significant trend in the industry to make Ethernet available down to the field level in order to standardise communications. Many applications, especially in the IIoT, manage with transmission rates of up to 100 Mbit/s and can be connected to the Ethernet network via SPE. In such cases, *har*-flexicon[®] for Ethernet PCB terminals may be used. Thus, connections can be implemented compactly and cost-effectively. Different contact pitches and colour coding offer a wide choice. The termination techniques make them easy to work with in the field without special tools.

- Single-pair, two-pair and four-pair Ethernet can be directly terminated to the PCB in the device.
- Inexpensive solution for permanent connections
- Fast and uncomplicated terminations for cables using Push-In, IDC and spring-clamp terminations.
- 10 100 MBit/s and faster can be transferred
- Space saving compact terminals

SEK Mezzanine





Until now, only cable-to-board connections were possible with SEK. These new female connectors for the PCB open up completely new applications for users of SEK connectors when using board-to-board connections. Mezzanine and motherboard-to-daughtercard applications can now also be implemented.

- Enables SEK Mezzanine and motherboard-to-daughtercard connections/applications
- 2.54 mm contact pitch with from 6 64 poles, as a supplement to DIN and *har*-flex[®]
- Many termination techniques: wave soldering, reflow soldering and press-fit connection
- Tape & reel packaging for the automated pick & place process



Interface connectors

D-Sub coding system





The new coding system for D-Sub is a safe way to prevent improper mating. Thus, it reduces outages and repairs on the device. The robust mechanical coding is available for sizes 1 and 2. In addition to the 36 different mechanical coding variants, it provides an additional colour differentiation, which facilitates the assignment of different mating partners. Suitable for any D-Sub-based interface.

- Mechanical coding of size-1 or size-2 D-Sub connectors for reliable protection against improper mating
- Additional colour coding so the different mating partners can be visually differentiated.
- Can be used for front panel thickness from 1.6 to 2.0 mm
- Special screw bolts used to mount on the device side
- Suitable for all HARTING cable housings with 2 mounting slots



D-Sub Straight THR for automated assembly processes





Our proven D-Sub THR connectors can now be assembled fully automatically. Shortened pins ensure an optimal solder joint, since less solder paste is forced through the PCB. An adequate gap to the PCB ensures optimum airflow during the reflow process. Powerless ground pins, a large suction surface and our tape & reel packaging meet the requirements for standardised pick & place processes.

- Standardised connectors for fully automated manufacturing processes
- Meets the requirements of IPC J-STD-020 MSL 1 and IPC J-STD-075 PSL R0
- Optimum pin length for pin-in-paste processes
- Large suction surface for automated processing
- Black insulation body for better detection by the pick & place camera
- Tape & reel packaging
- Very low insertion forces



Interface connectors All for Ethernet

HARTING ix Industrial[®] 90° angled





HARTING ix Industrial[®]: the miniaturised interface according to IEC 61076-3-124. The perfect solution when minimal installation space is available in Industrial Ethernet (type A) as well as for signals and serial BUS systems (type B). A 70% smaller device socket compared to the familiar RJ45: This saves valuable space in the device. The new angled cable connector now saves even more space outside the device.

- Miniaturised interface according to IEC 61076-3-124
- Transmission category: Cat. 6_A / Class E_A for
 - 1/10 Gbit Ethernet
- EMC protected
- High packing density is possible
- Resistant to shock and vibration
- PoE / PoE+



https://b2b.harting.com/09451812580XL

HARTING ix Industrial[®] AWG 22





The AWG 22 variant of the HARTING ix Industrial[®] connector (according to IEC 61076-3-124) adds a third IDC option for connecting cables to HARTING's growing ix Industrial[®] portfolio. This product is particularly important for PROFINET applications. Since June 2021, HARTING's ix Industrial[®] type A is an official mating face for PROFINET applications. Thus, PROFINET users can now also benefit from the HARTING ix Industrial[®]. HARTING ix Industrial[®]: the future of miniaturised Industrial Ethernet.

- Miniaturised interface according to IEC 61076-3-124
- Transmission category: Cat. 6_A / Class E_A for
 - 1/10 Gbit Ethernet
- EMC protected
- High packing density is possible
- Resistant to shock and vibration
- PoE / PoE+



https://b2b.harting.com/09451812563XL

Interface connectors All for Ethernet

HARTING Mini PushPull ix Industrial®





Mini PushPull is the perfect IP65/IP67 housing for the HARTING ix industrial[®]. It combines the well-known advantages of HARTING's PushPull technology with the robust miniaturised Ethernet interface according to IEC 61076-3-124. The capabilities of the HARTING Mini PushPull ix industrial[®] interface are highlighted in industrial Ethernet (type A) as well as in signals and serial BUS systems (type B).

- IP65/IP67 miniaturised Ethernet data interface based on HARTING ix Industrial[®] and according to IEC 61076-3-124
- Connectors with IDC contacts that can be assembled in the field
- Transmission category: Cat. 6_A / Class E_A for 1/10 Gbit Ethernet
- Resistant to shock and vibration according to IEC 61373



HARTING RJ Industrial[®] MultiFeature





At the top of any Ethernet network installer's wish list is a simple and quick assembly of the network infrastructure. When working with conventional RJ45 solutions for industrial networks, the assembly time is 50% for preparing the cable and 50% for the termination. Our new HARTING RJ Industrial[®] Multifeature provides you with a robust and reliable connector that has integrated cutting tools for quick and easy assembly. This results in approx. 25% less time required during the assembly.

- Automatic shortening and capping of individual wires during assembly, thanks to the integrated miniature blades
- Simple, error-free assembly in the field, with practical strain relief
- Robust metal housing for industrial usage
- Suitable for PoE versions
- Transmission characteristics Cat. 6_A / Class E_A up to 500 MHz
- Data rate up to 10 Gbit/s
- Toolless assembly



Interface connectors All for Ethernet

preLink® RJ45 Slim





The incredibly process-safe, simple and fast preLink[®] system has been extended. The IP20 facelift provides the preLink[®] RJ45 with an optimised strain relief using a cable gland, as well as the option of flexibly designing the cable outlet direction at 0°, 35° and 90°. As usual, the preLink[®] termination block can be clipped in place in just a few seconds. Those who value simplicity, error-avoidance and speed will love the preLink[®].

- Very simple and error-free assembly in the field
- Performance-tested cable assemblies can be installed separately from the connector
- Absolute process reliability
- Outstanding flexibility
- Suitable for all PoE versions
- Transmission category: Cat. 6_A / Class E_A for 1/10 Gbit Ethernet



HARTING T1 Industrial IP20





The Single Pair Ethernet (SPE) technology achieves Industrial Ethernet transmission speeds of up to 10 GBit/s over only one twisted pair of wires. This saves space, resources and costs. Thinner cables and smaller connectors enable efficient Ethernet connections at the industrial field level. This makes the IIoT a reality and achieves TCP/IP communications all the way from the sensor to the cloud.

- Up to 10 Gbit/s
- Link lengths up to 1000 metres
- Less space required for Ethernet up to the sensor
- Simultaneously transmits power via PoDL up to 50 W at the device



Circular connectors All for Railway

HARTING UIC 558 connector





HARTING is expanding its wide portfolio for railway applications with two UIC-558-compliant interfaces (13 and 18 pole inserts) and an additional solution with a 22-pole insert + PE for the inter-car jumper. The new series of connectors is used to connect remote control and information cables on locomotive-hauled passenger trains. These lifelines for the rail vehicles are used to transmit signals and data. This enables, for example, remotely switched lighting, the opening and closing of doors, and the transmission of acoustic information or binary data packets.

- Complies with all relevant railway standards: IEC 61372 (Category 2), IEC 45545 (Class: HL3/R23), UL-94-V-0 High
- Flexible because compatible with UIC 558 standard
- Durable even under adverse weather conditions thanks to IP69 protection
- Outstanding installation safety ensured by the mechanical and visual coding
- A solution that is resistant to vibration and shock



Circular connectors All for Ethernet

M12 SPE T1





For use in demanding environments, HARTING's T1 Industrial® interface is now also available in the familiar M12 format. The Single Pair Ethernet (SPE) technology achieves Industrial Ethernet transmission speeds of up to 10 GBit/s over only one twisted pair of wires. This saves space, resources and costs. Thinner cables and smaller connectors enable efficient Ethernet connections at the industrial field level. This makes the IIoT a reality and achieves TCP/IP communications all the way from the sensor to the cloud.

- Miniaturisation made possible by thinner cables
- Interface internationally standardised according to IEC 63171-6
- EMC protected
- IP65/67 protection
- Resistant to shock and vibration



Circular connectors All for Ethernet

M8 SPE T1



The M8 interface is a size that has been proven in field usage for I/O boxes and other applications that need to be both robust and compact. The M8 hybrid interface simultaneously transmits Single Pair Ethernet at up to 10 Gbit/s and power at up to 50 W at the device.

- Simultaneous transmission of data and power
- Hybrid interface saves space and resources: no separate power interface required
- Internationally standardised according to IEC 63171-7
- Up to 10 Gbit/s



Circular connectors Miniaturisation & Modularisation

M12 PushPull inverse



The IEC standard 61076-2-010 finally introduces an industry-wide uniform push-pull locking system for circular connectors into factory automation. The slow screw-in process has become obsolete. With PushPull, it's "Click & Produce"! Regardless of whether the device socket is vertical or recessed, a PushPull locking mechanism according to IEC 61076-2-010 always provides device manufacturers with the best solution.

- Time-saving: 80 times faster to connect than screw locking
- Miniaturisation: higher packing density because of tool-free PushPull assembly
- Safe handling: acoustic feedback ensuring safe locking
- Backwards compatible with conventional screw locking
- Reliable: IP65/67 protection
- Resistant to shock and vibration according to IEC 61373



Circular connectors

M12 Power K-coding





M12 circular connectors with K-coding provide up to 630 V and 16 A power supplies via a space-saving interface. This makes them ideal for supplying power to many devices and smaller drives. In addition to the classic screw locking, the M12 Power in K-coding is available with the tool-free PushPull locking that complies with the international standard IEC 61076-2-010.

- Transmits power up to 630 V, 16 A
- IEC 61076-2-010
- Available with PushPull locking according to IEC 61076-2-010
- Resistant to shock and vibration
- CE Tested



System cabling All for Energy

Han® 1A Power system cabling, overmoulded





In compliance with the trend towards miniaturisation, HARTING now offers the overmoulded Han[®] 1A Power system cabling. These compact robust system cables transmit up to 16 A and 400 V of power. They provide IP67 protection when mated. The pre-assembled cabling solutions are tested under the highest quality standards so that they can be used immediately via Plug & Play.

- Robust construction makes them suitable for industrial environments
- High IP67 protection against water and dust
- Pre-assembled and overmoulded cable assembly
- Plug-and-Play solution saves time during the installation



System cabling All for Energy

Han® F+B 17D system cabling





With this portfolio expansion, HARTING is offering tested Plugand-Play solutions for the food and packaging industry that reduce machine downtimes. Han® F+B 17D inserts combined with the well-known Han® D contacts can carry currents of up to 10 amps at 400 volts. They achieve IP69 protection when mated. The PUR cable, with Ecolab® approval, is resistant to aggressive cleaning agents. The Han® F+B 17D system cabling is tested under the highest quality standards so that it can be used immediately via Plug-and-Play.

- Plug-and-Play solution reduces time and costs during the initial commissioning
- Reduced operating costs since no tooling, storage or labour costs are necessary
- Easy to clean design: well suited for use in splash zones
- Cable is resistant to microbes, hydrolysis, UV and Ozone
- Connectors according to FDA21 approval



Han® S 200 system cabling





Featuring simple, fast and safe contacting, the Han[®] S 200 system cabling is the perfect termination for the front wiring on modular battery storage systems. These cabling solutions enable high power transmission with up to 200 A and 1500 V DC or 1000 AC. There is a red variant of the Han[®] S for the positive terminal and a black variant for the negative terminal. Both are also mechanically coded to eliminate the risk of improper mating. These characteristics are advantageous during service and maintenance.

- Plug-and-Play solution reduces time and costs during the initial commissioning
- Reduced operating costs since no tooling, storage or labour costs are necessary
- Visible check of the locking status ensures safe installation
- Mechanical and coloured-based coding system
- Cable is resistant to heat, cold, UV, Ozone and acids



System cabling All for Ethernet

HARTING ix Industrial[®] to M12 X-coded panel feed through



The trend towards miniaturisation is omnipresent, demanding that objects, such as flat mobile devices, displays, controllers, cameras and sensors become smaller and smaller. With this panel feed through assembly based on a using HARTING ix Industrial® and M12 X-coded connectors, HARTING offers a solution that, on the one hand, follows the miniaturisation trend and, on the other hand, combines IP65/67 characteristics with the familiar M12 mating face of industrial applications.

- Adapter solution that enables transmissions from IP20 to the IP65/67 range
- Can transmit data up to 10 Gbit/s
- Easy assembly in a very compact installation space, thanks to the miniaturised ix Industrial type A solution
- Can be combined flexibly with the standard screw termination technology or the PushPull locking system



M8 T1 SPE system cabling, overmoulded





Cabling components must become smaller and lighter, despite higher data rates and parallel power transmission. The Single Pair Ethernet technology (SPE) transmits data and supplies power to end devices via a single pair of wires via PoDL (Power over Data Line). With our M8 T1 SPE system cabling, HARTING provides solutions for IP65/67 applications in industrial environments. The interaction of the T1 Industrial IP20 assemblies in the control cabinet and the M8 T1 SPE assemblies for the field level make it possible to implement continuous cabling.

- Single Pair Ethernet for industrial environment IP65/67
- Can transmit data up to 1 Gbit/s
- Compact size
- No field assembly necessary due to overmoulded cables
- Different variants available for industry and railway

Customer-specific solutions Miniaturisation & Modularisation

Expanded beam modules, pre-assembled





Expanded beam technology is robust and insensitive to dirt. In addition to cable assemblies, modules are available in combination with the Han-Modular[®] system. HARTING's expanded beam modules enable you to regularly disconnect and reconnect the plug-in connection outdoors without requiring any time-consuming cleaning of the mating faces. Expanded beam modules are used wherever extreme contamination prevails and fibre-optic connections are necessary.

- Can be combined with the Han-Modular[®] system
- High data rates up to10 Gbit/s
- Weighs less than copper-based cabling
- Insensitive to electromagnetic influences
- Modules are easy to clean

Han[®] 1A Y distributor





The Han[®] 1A Y distributor extends HARTING's portfolio in the field of miniaturisation. This fast space-saving solution enables power to be safely and continually distributed to components such as the motors and converters in conveyor systems. Integrated snap-in technology ensures that components can be locked together safely using no tools. Due to the modular design of the Han[®] 1A series, the Y and H distributors are available with different numbers of poles and locking types. This makes them suitable for a wide variety of applications.

- Compact size: All-purpose usage in the smallest spaces is possible
- Tool-free assembly helps save time
- Can be flexibly combined due to the modular design of the Han[®] 1A series



Customer-specific solutions All for Energy

AIDA H distributor





In the field of energy distribution and storage, HARTING supplies robust solutions for transmitting data, signals and power. Its compact and robust size make the AIDA H distributor the perfect solution for efficiently distributing energy. The AIDA H distributor can be used wherever space is limited and the environment is somewhat harsher.

- Robust construction ensures a long service life even in harsh environments
- Compact size and flexible mounting possible in very confined spaces
- The Han[®] PushPull (V14) termination type helps to save time when plugging in
- Safely designed AIDA-compliant wiring



Automotive All for E-Mobility

Combo type-2 vehicle charging plug





For DC charging technology, the standardised Combo type-2 charging plug has a range from 80 kW to 250 kW peak charging power. This enables electric vehicles to be charged much faster than would be possible when using AC charging. The preassembled charging cable is available in different lengths, with an open end that can be assembled as needed. Its ergonomic design guarantees outstanding handling.

 Ergonomic design ensures good handling
Special encapsulation prevents water from penetrating between the cable and the connector housing



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