



Pushing Performance



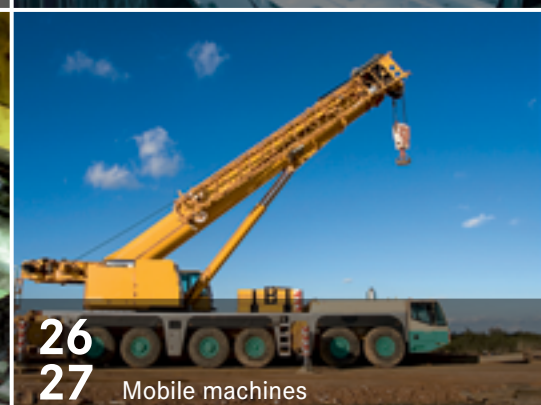
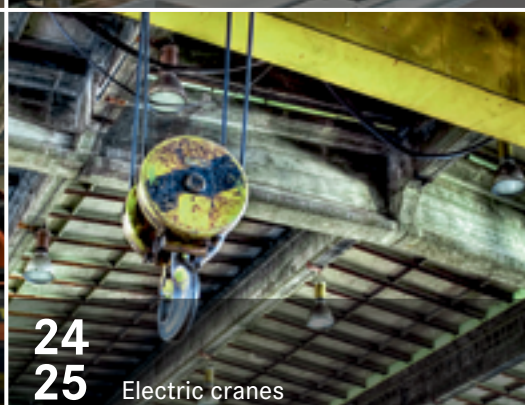
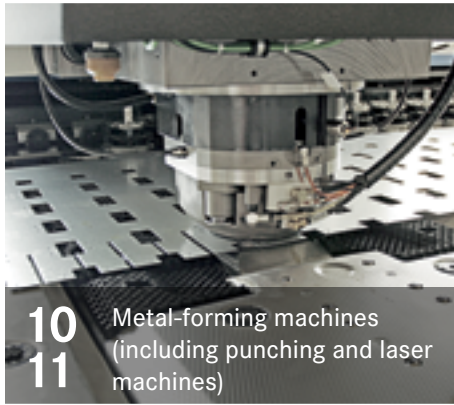
## **HARTING** Products and Solutions for the Machine Building Industry

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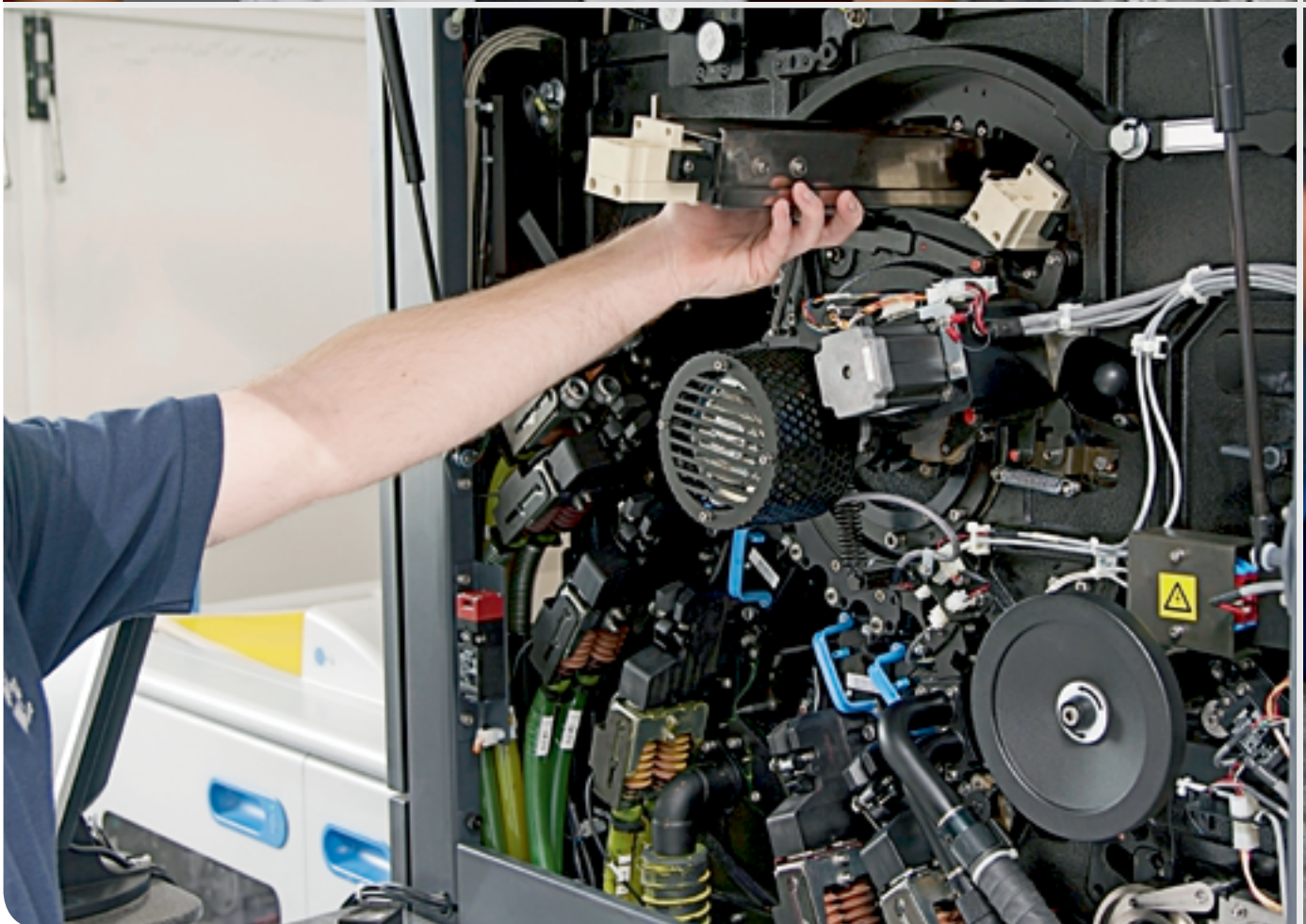
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## **HARTING solutions for the machine building industry**

The HARTING Technology Group accompanies you through technological transformations. Our innovative components, consultants, services and systems help us to guide our customers into the digital future. We are your single-source solution: offering everything from individual components to custom-fit systems. HARTING is advancing the digitalisation of the machine building industry with innovative, scalable interface solutions for all types of power, signal or data connections in machinery. These solutions can take advantage of demands in practically any industrial sub-segment. This brochure describes proven HARTING solutions for selected machines in the key sub-segments of the machine building industry. It shows how to best configure the interfaces for power, signal or data, and describes which combinations of HARTING products are preferred. The solutions presented here are also well suited for use in other sub-segments – as long as the application requirements and the applicable standards are comparable.

The first section of this brochure describes typical machines that use HARTING solutions for the following sub-segments of machine building:

- Plastics and rubber machinery
- Printing machines and machines for print finishing
- Metal-forming machines (including punching and laser machines)
- Metal-working machine tools
- Wood-working machinery
- Machines that produce semiconductors
- Food processing and packaging machinery
- Robotics
- Handling and assembly
- Electric cranes
- Mobile machines

The main features and advantages of HARTING solutions for specific applications are described here. References are included:

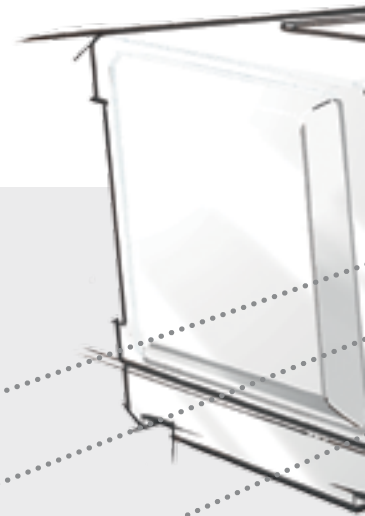
A. to the brochure pages with information detailing the HARTING product series and product combinations used.

B. to our eCatalogue in the internet (<https://b2b.harting.com/>)

The second section of this brochure describes ideal combinations of HARTING products. It also describes in detail the features and applications for HARTING product series which were mentioned in the first section.

# Plastic and rubber machinery: Solutions for standardised connections

Flexibility and modularity are imperative for plastics machinery – because the tools, material supply and control of process variables are dependant on the product. HARTING provides solutions for all of the standardised connections (such as EUROMAP) used in the plastics industry. Customised solutions for your applications are also possible.

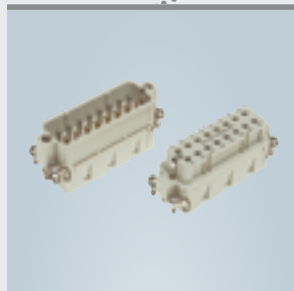


## Connector drive unit

### Han-Modular® Twin hoods and housings

- Optimised for drive solutions – the hoods and housings combine the power and signal inserts
- Excellent EMC protection
- Easy installation because of the two-part hood
- Wide range of modules
- An additional shielding transfer to the electrical cabinet is available as an option

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## Temperature detection tool

### Han® Thermocouple inserts

- Constantan-iron contacts for measurement lines, in accordance with DIN IEC 584
- In accordance with EUROMAP 14
- Available as inserts for sizes Han A® and Han E®
- Also as crimp contacts, therefore they can be combined with the standard contacts as well as hoods and housings

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## Interface to the tool

### Han® High Temp

- Can be used in areas with temperatures up to +200°C
- All components are designed for temperature resistance
- Design is based on the Han® B series
- Variants are available with crimp and screw contacts

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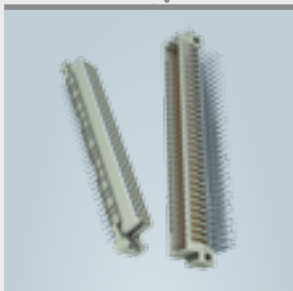
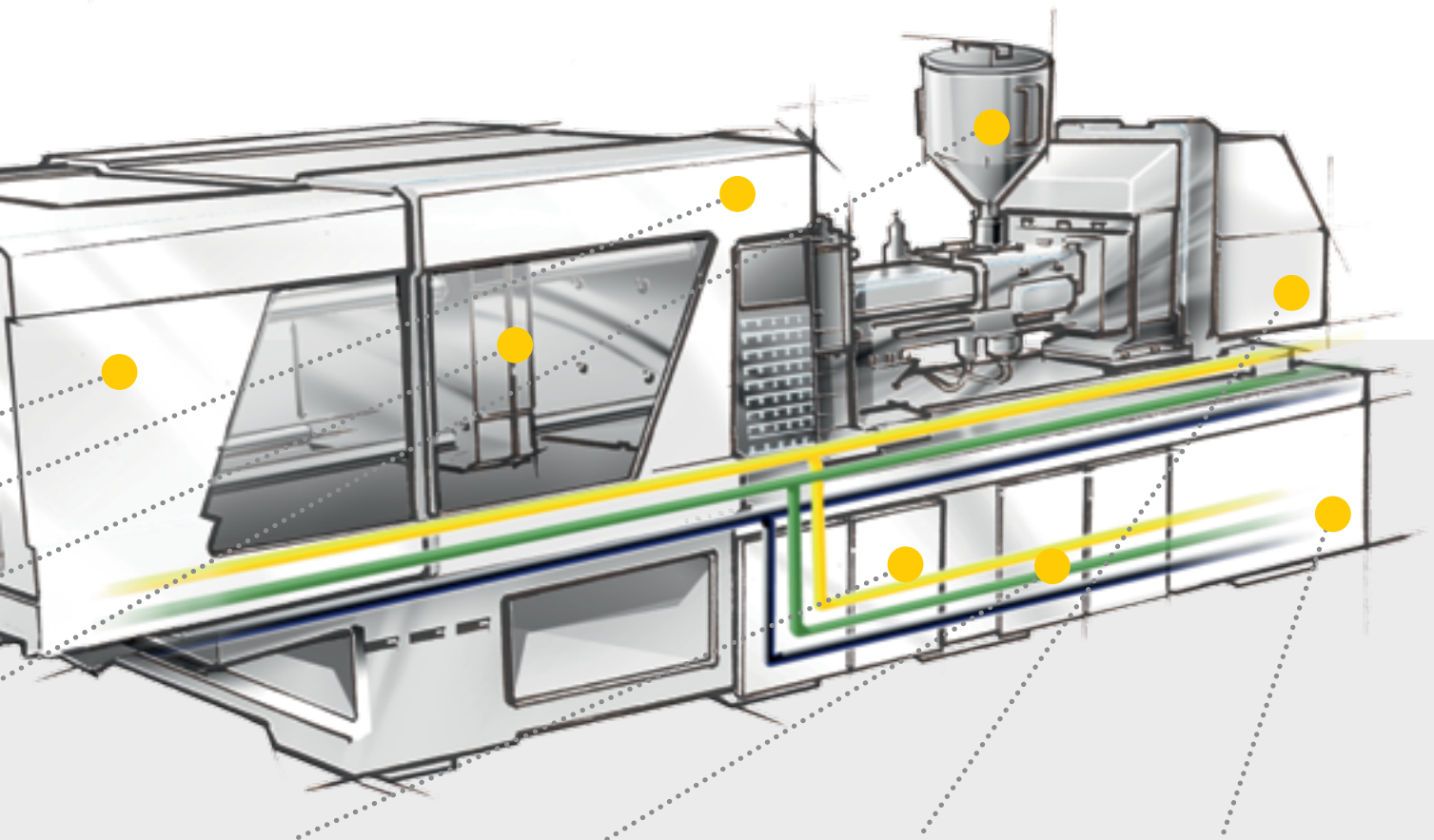


## Power supply drying

### Han® PushPull Power

- A compact design for 16 A (up to 690 V)
- Available with plastic and metal hoods and housings, in different sizes and contact numbers
- PushPull ensures simple insertion and removal
- Also available with Quick Lock (tool-free) contacts
- Different configurations with up to 4 + PE power contacts available
- Also available as cable to cable connection

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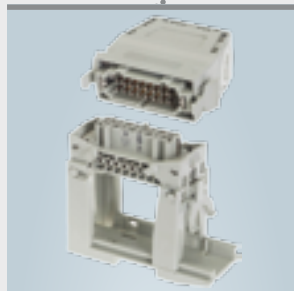


### Backplane and I/O modules for the controller

#### Connectors in accordance with DIN 41 612

- A wide range of standard connectors
- Available in designs which supplement the standards
- Variants with 3 - 160 poles, with various termination techniques
- Power contacts available for currents up to 40 A

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### Control and power connections Electrical cabinet

#### Han-Snap® hoods and mounting parts

- For all of the established standard, hybrid and modular inserts in the Han® B size
- Mounts easily to DIN rail or panel cut out
- Fastening and locking variants are available, with or without hoods and housings
- Replaces a separate terminal strip

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### Interface External devices

#### Han® D and Han® Q inserts for Han® 3 A

- Variants with crimp and Quick Lock contacts (no tools required)
- Han® 8 D as standard interface, defined in accordance with EUROMAP 16
- Different crimp contacts can be used in a single application
- Available with contact inserts up to 40 A, or high density with up to 21 contacts

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[b2b.harting.com/ebusiness/en/364544](http://b2b.harting.com/ebusiness/en/364544) (Han® D)  
[b2b.harting.com/ebusiness/en/364554](http://b2b.harting.com/ebusiness/en/364554) (Han® Q)  
[b2b.harting.com/ebusiness/en/380506](http://b2b.harting.com/ebusiness/en/380506) (Han® 3 A)



### Ethernet network machine

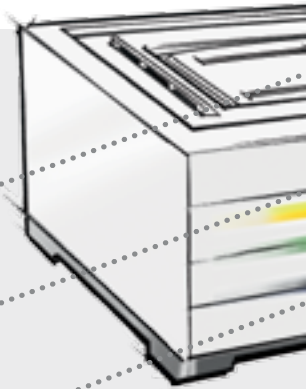
#### Ha-VIS eCon Ethernet Switch unmanaged

- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Excellent EMC characteristics, in compliance with industrial standards
- Automatic recognition of data transfer rate and cable types (1:1, cross-over)

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# Printing machinery and machines for print finishing: Reliable interfaces for constantly used equipment

Rapid access to information is more important than ever – and this also holds true for print media. The reliability of our HARTING interfaces is truly legendary; they guarantee the highest constant availability for print-media machines.

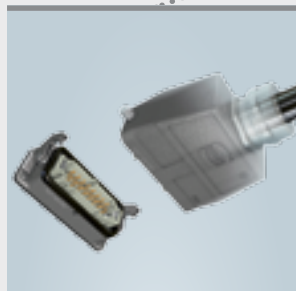


## Connectors Sensors and I/O box

### M12 connectors, A-coded

- Available as ready-made cable sets or for direct on-site installation
- M12 with tool-free screw contacts: available with HARAX® rapid termination or crimp contacts
- Unshielded and shielded variants available with all contact options
- Angled and straight variants also available

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## Connections for stations with frequent changing

### Han® HMC Special hoods and housings for high mating cycles

- Optimal for modules with frequent changes, such as material feed/discharge units or handling units
- Designed for applications with very frequent connecting and disconnecting of interfaces
- All components are optimised for up to 10,000 mating cycles
- Low insertion and extraction forces due to the high-quality contacts
- Sizes from the established Han® B series

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## Connections Machine modules

### Han E® / Han® ES / Han® ES Press connector inserts

- The standard connector with tool-free termination for the machine building industry
- Can be used in all hoods and housings of the Han® B series
- Inserts with different termination techniques are compatible with each other
- Han® ES inserts with two connections per contact are available

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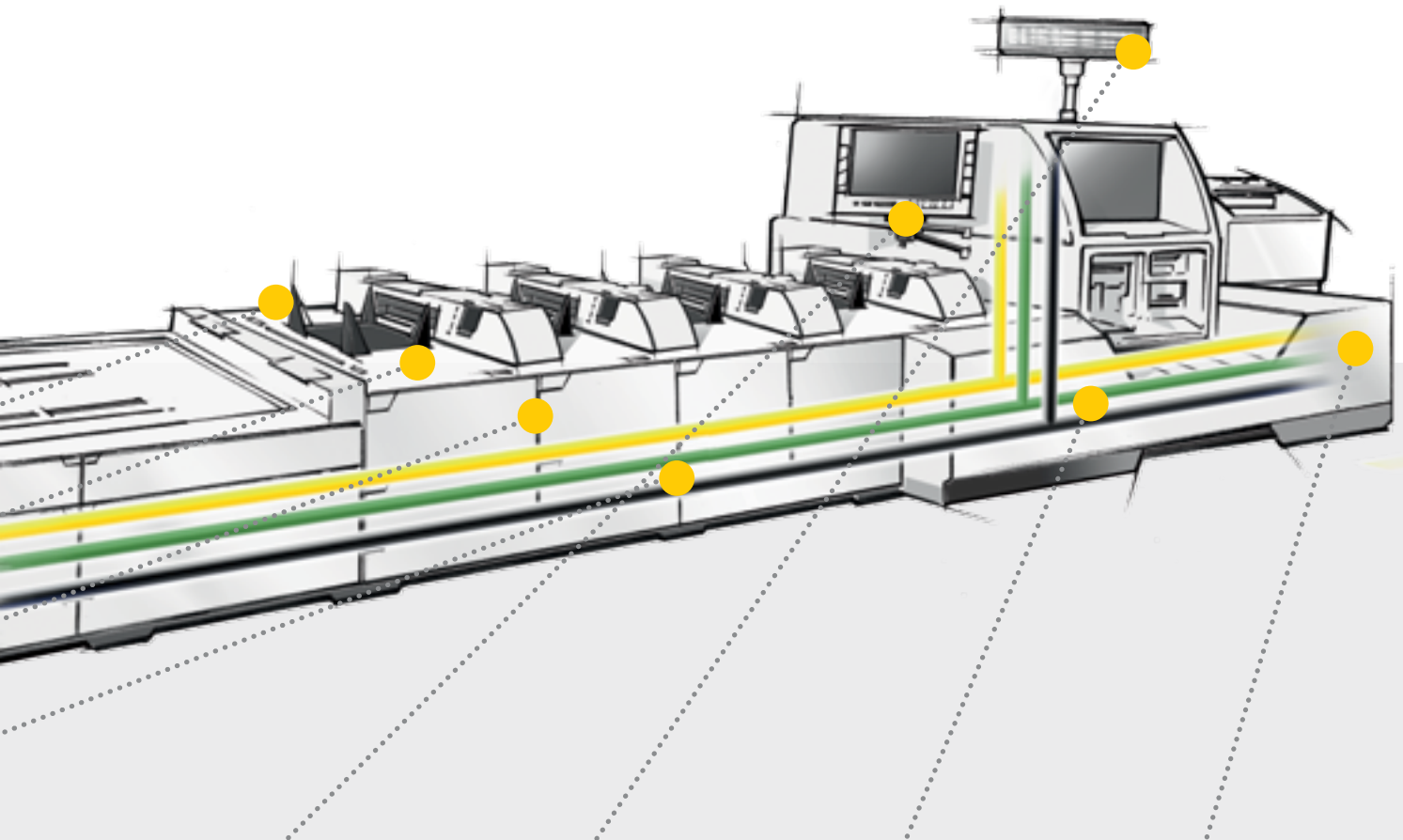
## Ethernet network Machine modules

### Ha-VIS eCon Ethernet Switch unmanaged

- Plug-and-Play connection for the machine modules, without any complex configuration
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Variants available with extra vibration resistance and IP65 protection
- Automatic recognition of data transfer rate and cable type

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### Data interfaces to machine HMIs

#### PushPull connectors for RJ45, USB or signals

- Compact design for device integration or as coupling variant
- Inserts as 4- and 8-pin RJ45 variants (Cat. 5 or Cat 6), or for USB, optics and signals
- Plastic and metal hoods and housings available in both sizes (var. 4 and var. 14) and also as straight or angled version
- PushPull ensures simple insertion and removal

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[b2b.harting.com/ebusiness/en/34747](http://b2b.harting.com/ebusiness/en/34747) (RJ45)

[b2b.harting.com/ebusiness/en/34751](http://b2b.harting.com/ebusiness/en/34751) (USB)

[b2b.harting.com/ebusiness/en/34750](http://b2b.harting.com/ebusiness/en/34750) (signals)



### Hybrid interface for machine display

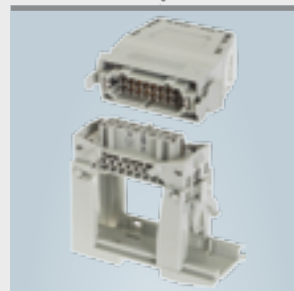
#### Hybrid connectors for RJ45 and power interfaces

- Shared connector for Ethernet and power supply
- Ethernet inserts, with 4- and 8-pin RJ45 variants (Cat. 5 / Cat. 6)
- Plastic and metal hoods and housings in the established Han® 3 A size
- Tool-free variants for Ethernet and power connections

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### Interface machine modules to the electrical cabinet

#### Han-Snap® hoods and mounting parts

- For cost-effective connections in the electrical cabinet
- Replaces a separate terminal strip
- For all of the established standard, hybrid and modular inserts in the Han® B size
- Mounts easily to DIN rail or panel cut out
- Fastening and locking variants, with or without hood

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### Scalable connection to the subsequent machine

#### Han-Eco® connectors

- Combines the well-known advantages of the Han® hoods and housings with minimal weight and high resistance to environmental influences
- Series of hoods and housings made of high strength plastic: for direct use of all modules from the Han-Modular® series
- Tool-free assembly of the modules in the hoods and housings using "click and mate"

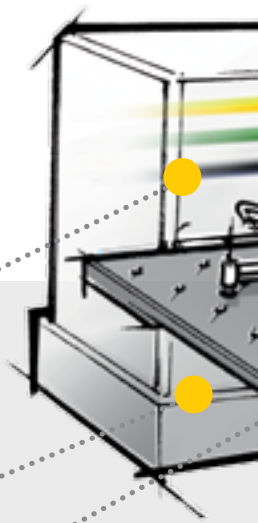
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# Metal-forming machines:

## Secure connections for bending, stamping and cutting



Continual improvements to machines, tools and processes lead to accelerated motion sequences for the machines, especially for metal-forming machines HARTING's broad product portfolio allows you to select reliable connectivity solutions for all highly dynamic applications with high impact and shock loads.

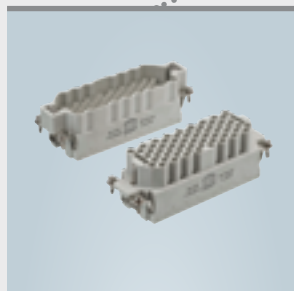


### Ethernet network machine

#### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Excellent EMC characteristics, in compliance with industrial standards
- Compact, space-saving design, thin or flat for the DIN rail
- Automatic recognition of data transfer rate and cable type

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### Connections to the main electrical cabinet

#### Han® EE / Han® EEE inserts

- Connectors for 16 A / 500 V, with extremely high contact density with crimp termination
- Turned contacts with silver or gold coating
- Can be used in all hoods and housings of the Han® B series
- For IP20 cable to cable housings and other hoods and housings variants, including extra accessories (shielding plates, cable strain relief, etc.)

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### Fibre-optic interface to tool head

#### Han® Multi and Han® SC fibre-optic modules

- Fibre optic paths ensure complete galvanic insulation between the transmitter and the receiver
- Fibre optic paths are immune to electromagnetic influences
- Han® Multi module is designed for use with SI fibre (HCS®), glass fibre or 1 mm plastic fibre
- Han® SC module: for glass fibre or 1 mm plastic fibre
- Can be used in all Han® B or Han-Modular® hoods and housings

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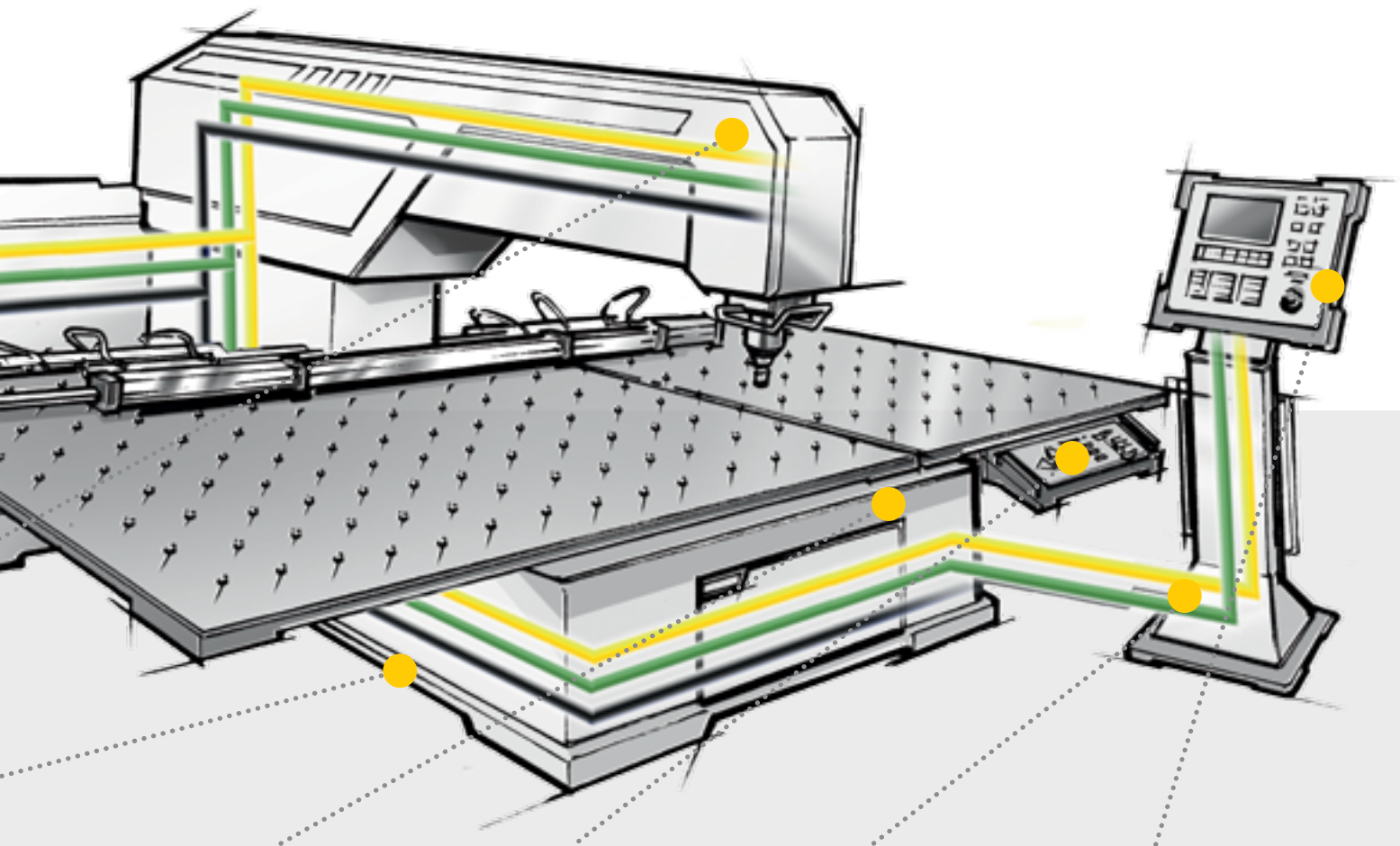


### Drive interface material supply

#### Han-Modular® Twin hoods and housings

- Optimised for all highly dynamic drive applications
- Can be used with all power, signal and data inserts from the Han-Modular® series
- Fibre optic and pneumatic modules can also be used
- Excellent EMC protection
- Easy installation because of the two-part hood
- An additional shielding transfer to the electrical cabinet is available as an option

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### Connectors sensors and I/O box

#### M12 connectors, A-coded

- Perfect for dimensionally accurate assembly of sensor lines directly at the machine
- M12 with tool-free screw contacts: available with HARAX® rapid termination or crimp contacts
- Unshielded or shielded variants available with 3, 4 or 5 contacts
- Assembled system cables with angled or straight variants

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### Hybrid interface control panel machine

#### Hybrid connectors for RJ45 and power interfaces

- Shared connector for Ethernet and power supply
- High degree of mechanical and EMC protection
- Ethernet inserts, with 4- and 8-pin RJ45 variants (Cat. 5 / Cat. 6)
- Plastic and metal hoods and housings in the established Han® 3 A size
- Tool-free variants for Ethernet and power connections

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### Pluggable interface remote terminal

#### Han-Yellock® connector series

- Shared connector for all connections to the HMI terminal
- Unifies new functions (such as contact bridges and lockable latch) with robustness and a modern design
- Only male contacts for the Han-Yellock® modules; the female side is chosen later
- More than 40 modules for power, signal and network connections in the Han-Modular® product line can be used

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### Scalable data processing for interfacing to the factory network

#### MICA (Modular Industry Computing Architecture)

- Saves up to 70% of costs compared to an industrial PC
- Linux-based virtual industrial computing
- Your choice of programming language
- Configurable function-based circuit boards
- Robust and maintenance-free since there are no movable parts and no fan
- IP67 protection
- Very compact, only 130 × 80 × 35 mm

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# Metal-working machine tools: Standardised connections for high-precision technologies

Because they use robotics and concentrate all manufacturing steps in one machine, machine tools are seen as the embodiment of consistent automation technology. Here the use of HARTING's standardised connections allow for a cost-effective and resource-efficient design when configuring multiple machines and facilities.



## Bus interface remote I/O modules

### Han-Brid® data interface

- IP67 hybrid interface for data and power in one connector
- Optimised for two- or four-wire bus systems, including large-area EMC shield transfers
- Power contacts with crimp termination, for 10 A / 50 V and wires from 0.14 to 2.5 mm<sup>2</sup>
- Series of Han® 3 A hoods and housings: can be used in metal or plastic variants

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## Connecting auxiliary aggregate units

### Han E® / Han® ES / Han® ES Press connectors

- Easy to connect all handling and auxiliary aggregate units
- With tool-free termination: the key standard connector for the machine building industry
- Can be used in all hoods and housings of the Han® B series
- Inserts with different termination techniques are compatible with each other

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## Interface I/O cards Controller unit

### D-Sub connectors for signals and power

- Easy to setup for all common industrial bus interfaces – such as Profibus, CAN or DeviceNet
- Variants with IDC and soldered termination techniques, and with turned or stamped contacts
- Wide range of hoods and housings: metal, plastic or metallised plastic with locking and shielding variants

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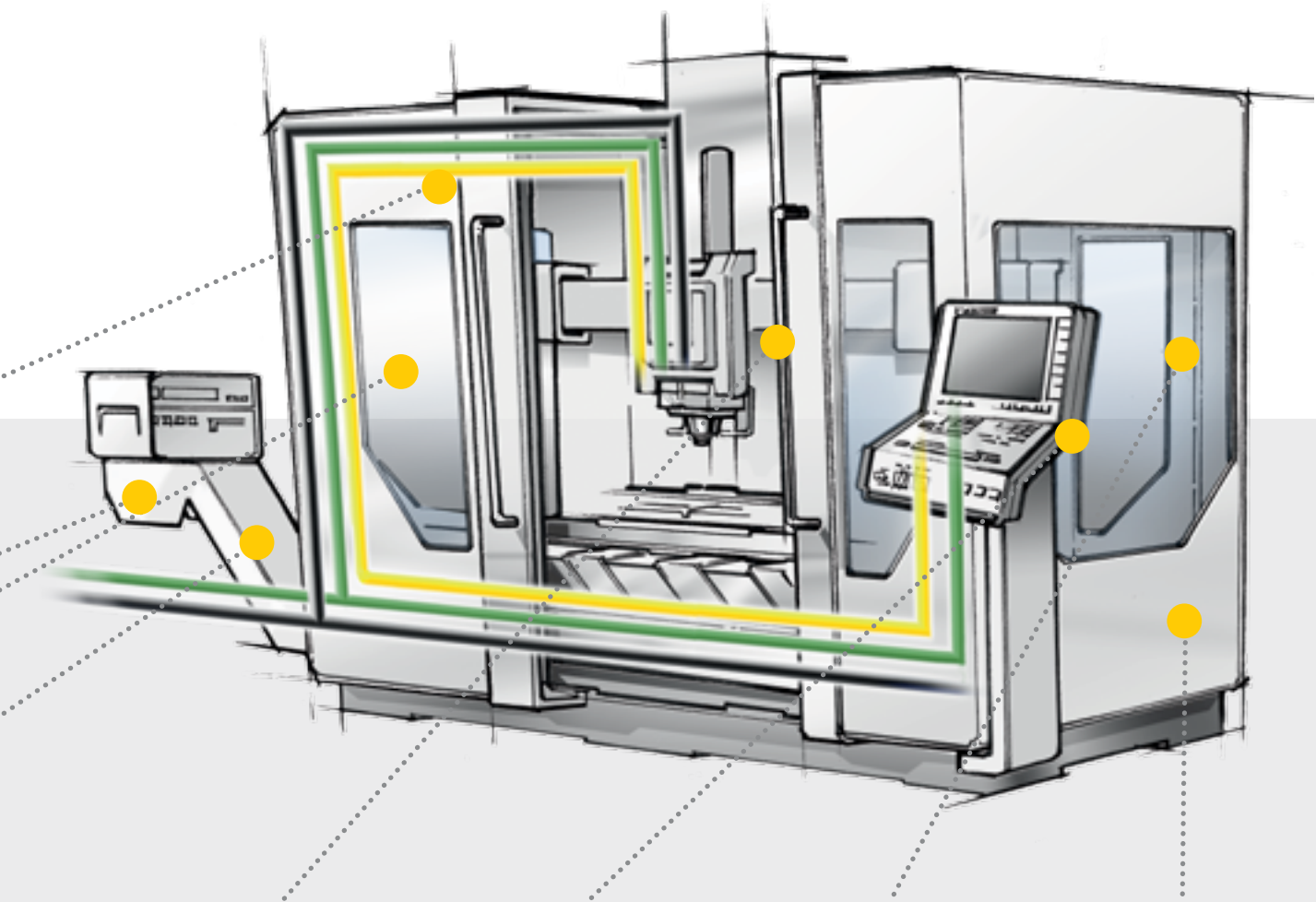


## Interface drive unit

### Han-Drive® motor terminal housings

- Plug-in connection for drive units and electric motors – so that down times during repairs are shortened
- Usage with all inserts in the Han® 10 B size, including the Han-Modular® series in a modular frame
- Also available as an EMC hoods and housings
- Number of contacts is designed for AC motors including sensors

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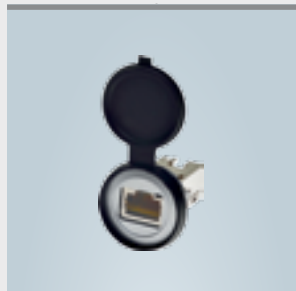


### Detection of tools and workpieces

#### Ha-VIS RFID transponder

- Unique identification for tools or workpieces
- Active and passive variants are available
- Can also be reliably detected on metals
- Save and read the key info using an RFID Reader
- RFID tags and readers are designed for harsh industrial environments

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### Programming and service interface

#### har-port service interfaces

- A compact, robust and practical service interface for HMI systems
- Industrial standard design; protection degree with cover is IP65 / IP67
- Ethernet, USB and HDMI variants are available
- Practical accessories (labelling tags, protective covers in cables)
- Optimised for use with HARTING Ethernet connectors and cables

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### Variable interface Tool magazine

#### Han-Eco® connectors

- Permits variable placement of the interface depending on the machinery configuration that is currently required
- Hoods and housings made from high strength plastic
- Excellent mechanical strength and high resistance to environmental influences
- Direct use ("click and mate") of all modules in the Han-Modular® series within hoods and housings

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### Bus interface I/O and pneumatics box

#### M12 connectors, B-coded

- M12, B-coded, 2-pin and shielding standard for Profibus
- Variants available with the HARAX® tool-free rapid termination technique, or with crimp contacts
- Assembled system cables with angled or straight variants also available
- Panel feed through available as male or female version

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[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)

# Wood-working machinery: Solutions for dust-proof power and signal transmissions

Highly specialised and highly automated machinery is now being used in the woodworking and furniture industries. These are heavy-duty machines that function well in high dust environments. HARTING's scalable solutions provide power, data and signal transmissions for these industrial applications which ensure reliability and high availability.



## EMC-protected motor connection

### Han® EMC hoods and housings for the Han A® series

- Hoods and housings from the Han A® series provide compact interfaces with increased EMC requirements
- Very compact motor connections when using Han® 3 A hoods and housings with the corresponding Han A® or Han® Q inserts
- Ensures effective EMC connections because of the circumferential contact
- Wide range of contact inserts providing up to 40 A / 830 V

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## Ethernet network machine

### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade, machine-internal Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Excellent EMC characteristics, in compliance with industrial standards
- Compact, space-saving design, thin or flat for the DIN rail
- Automatic recognition of data transfer rate and cable type

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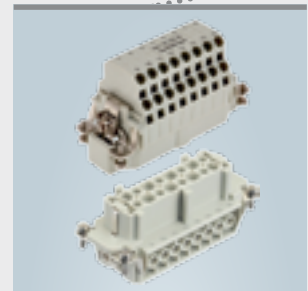


## M12 Ethernet connector at the electrical cabinet

### M12 panel feed through, D- or X-coded

- Simple transition from M12-based IP67 machine cabling to RJ45 cabling
- A standardised, cost-effective connection for all transitions within enclosure walls
- Allows the use of standard RJ45 patch cables in the electrical cabinet
- Variants with RJ45, coloured wire strands or as M12 gender changer
- Available with straight or angled RJ45 entry

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[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)

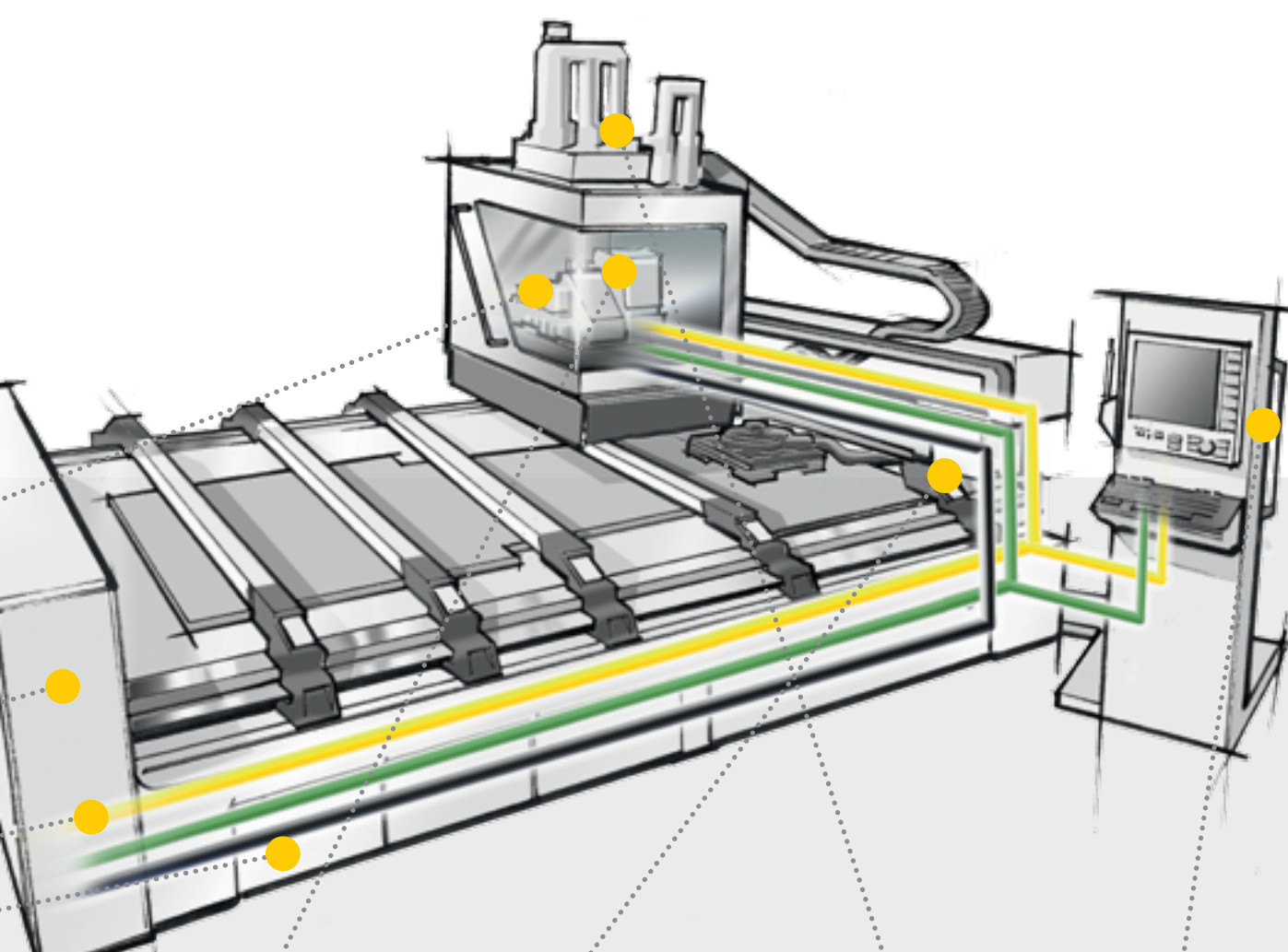


## Connections safety mechanisms

### Han E® / Han® ES / Han® ES Press connector inserts

- Easy to connect all safety-related mechanisms: protective covers, emergency stop buttons, etc.
- With tool-free termination: the key standard connector for the machine building industry
- Can be used in all housing types and sizes from the Han® B series
- Inserts with different termination techniques are compatible with each other

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### Sensor connections machining portal

#### M12 connectors, A-coded

- Perfect for dimensionally accurate assembly of sensor lines directly at the machine
- M12 with tool-free screw contacts: available with HARAX® rapid termination or crimp contacts
- Unshielded or shielded variants available with 3, 4 or 5 contacts
- Assembled system cables with angled or straight variants

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### Hybrid connection machine frame

#### Han-Modular® connector modules

- Allows different power, signal and data cables to connect using a shared connector
- More than 40 modules for power, signal, bus and network connections
- Can be used in all hoods and housings of the Han® B series
- Secure module connections even under vibration and shock load

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[b2b.harting.com/ebusiness/en/34113](http://b2b.harting.com/ebusiness/en/34113)



### Interface drives machining portal

#### Han-Compact® hoods and housings

- Very space-saving, compact design – thus perfect for motor connections, cable transitions to drag chains, etc.
- Hoods and housings available in plastic and as coated or nickel plated metal variants
- Wide range of Han-Com® contact inserts available with up to 40 A / 690 V

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[b2b.harting.com/ebusiness/en/380520](http://b2b.harting.com/ebusiness/en/380520)



### Data interface to HMI and control system

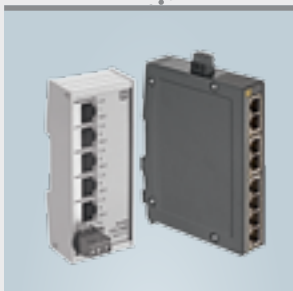
#### PushPull connectors for RJ45, USB or signals

- Very compact data interface in IP67: for device integration or as a coupling variant
- Inserts as 4- and 8-pin RJ45 variants (Cat. 5 or Cat 6), or for USB, optics and signals
- Plastic and metal hoods and housings are available in two sizes (variant 4 and variant 14)
- PushPull ensures simple insertion and removal

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[b2b.harting.com/ebusiness/en/34747](http://b2b.harting.com/ebusiness/en/34747) (RJ45)  
[b2b.harting.com/ebusiness/en/34751](http://b2b.harting.com/ebusiness/en/34751) (USB)  
[b2b.harting.com/ebusiness/en/34750](http://b2b.harting.com/ebusiness/en/34750) (signals)

# Machines that produce semiconductors: Pioneering interfaces for innovative technologies

The development of pioneering interfaces is not left to chance at HARTING – we actively identify and design new solutions for key technology trends. This benefits all of our customers – especially the manufacturers of semiconductor machines who are constantly searching for innovative technologies.



## Ethernet network machine control

### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Excellent EMC characteristics, in compliance with industrial standards
- Automatic recognition of data transfer rate and cable types (1:1, cross-over)

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[b2b.harting.com/ebusiness/en/34259](http://b2b.harting.com/ebusiness/en/34259)



## Power supply complete machine

### Han-Eco® connectors

- Permits variable placement of the interface depending on the machinery configuration that is currently required
- Hoods and housings made from high strength plastic for direct use (via "click and mate") with all modules in the Han-Modular® series
- Combines all the advantages of the Han® B hoods and housings together with low weight and high resistance to environmental influences

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[b2b.harting.com/ebusiness/en/36112](http://b2b.harting.com/ebusiness/en/36112)



## Connections for control and data cables

### Han-Yellock® connector series

- Shared connector for all connections to the machinery module
- Combines new functions (such as contact bridges) with robustness and modern design
- Only male contacts for the Han-Yellock® modules; the female side is chosen later
- More than 40 modules for power, signal and network connections in the Han-Modular® product line can be used

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## Connector drive unit

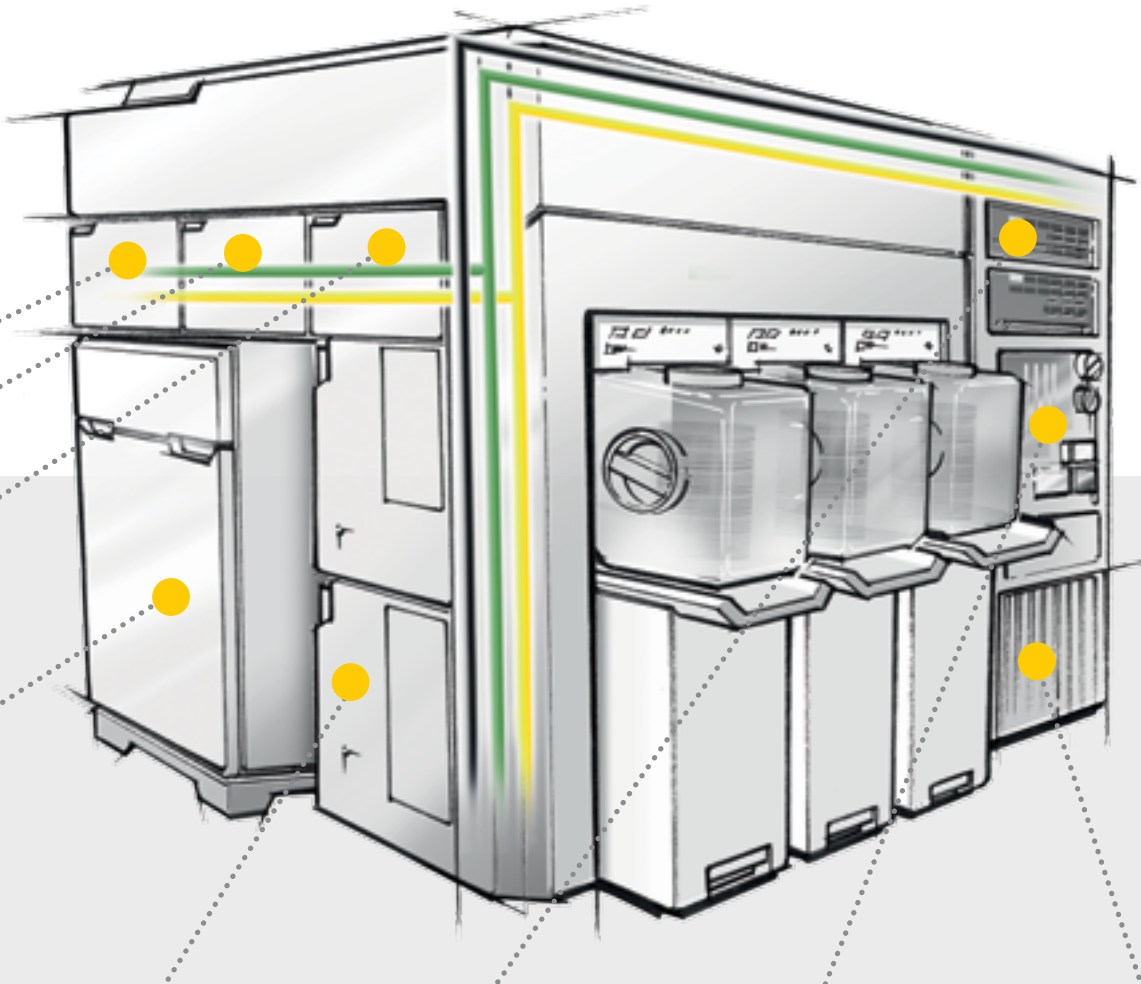
### Han-Modular® Twin hoods and housings

- Optimised for drive solutions – the hoods and housings combine the power and signal inserts
- Excellent EMC protection
- Easy installation because of the two-part hoods
- Wide range of modules can be used
- An additional shielding cabinet for power, signal and network connections in the Han-Modular® product line can be used

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[b2b.harting.com/ebusiness/en/373610](http://b2b.harting.com/ebusiness/en/373610)





### Docking frames for plug-in units

#### Han-Modular® docking frames

- Docking system for modular plug-in systems with Han® connectors
- Robust male guide pins and female guide sockets
- The complex plug-in units are easy to handle: similar to circuit boards with backplane connections
- Can be used with all power, signal and data inserts from the Han-Modular® series

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[b2b.harting.com/ebusiness/en/380784](http://b2b.harting.com/ebusiness/en/380784)



### Bus interface machine control

#### D-Sub connectors for signals and power

- Easy to setup for all common industrial bus interfaces – such as Profibus, CAN or DeviceNet
- Robust, shielded and vibration-proof housing variants: in metal, plastic or metallised plastic, with various locking and shielding options
- Inserts with IDC, solder or crimp termination

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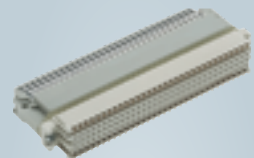


### Service interface rotary encoder

#### har-port service interfaces

- A compact, robust and practical data interface for controller, IPC and HMI systems
- Industrial standard design
- Ethernet, USB and HDMI variants are available
- Practical accessories (labelling tags, protective covers in cables)
- Optimised for use with HARTING Ethernet connectors and cables

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[b2b.harting.com/ebusiness/en/34731](http://b2b.harting.com/ebusiness/en/34731)



### Interface connector controller

#### har-bus® 64 connectors

- Proven backplane and front-conductor system for mounting on rack systems
- Robustness ensured because soldered-on fastening clips relieve strain on the solder pins
- A complete line of products for backplanes, daughter cards, cable connectors and reverse transfers

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# Food processing and packaging machinery: Coordinated product combinations for all application sites

A high degree of protection against water, dust and other aggressive environmental factors is required for food processing and packaging machinery. HARTING's very broad range of products enables product combinations to be implemented which are tailored exactly to the requirements of the application site.



## Higher level Ethernet network

### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Excellent EMC characteristics, in compliance with industrial standards
- Automatic recognition of data transfer rate and cable types (1:1, cross-over)

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## Power and control interfaces electrical cabinet

### Han E® /Han® ES /Han® ES Press inserts

- Simple interface of all power and control cables to the consumer loads in the machine modules
- With tool-free termination: the key standard connector for the machine building industry
- Can be used in all housing types and sizes from the Han® B series
- Inserts with different termination techniques are compatible with each other

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[b2b.harting.com/ebusiness/en/364546](http://b2b.harting.com/ebusiness/en/364546)



## Sealed pluggable cable feed through on both sides

### Han® 3 A panel feed through housing

- Simple setup for connectors to be used as panel or floor feed throughs, with high IP protection on both sides
- Can be used with all inserts in size Han® 3 A, with Han-Power® and Han® Q or the Han-Brid® signal and data inserts
- Also available as Han® M for harsh climatic conditions and aggressive environmental loads, or as an EMC variant

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→ eCatalogue:  
[b2b.harting.com/ebusiness/en/380506](http://b2b.harting.com/ebusiness/en/380506)

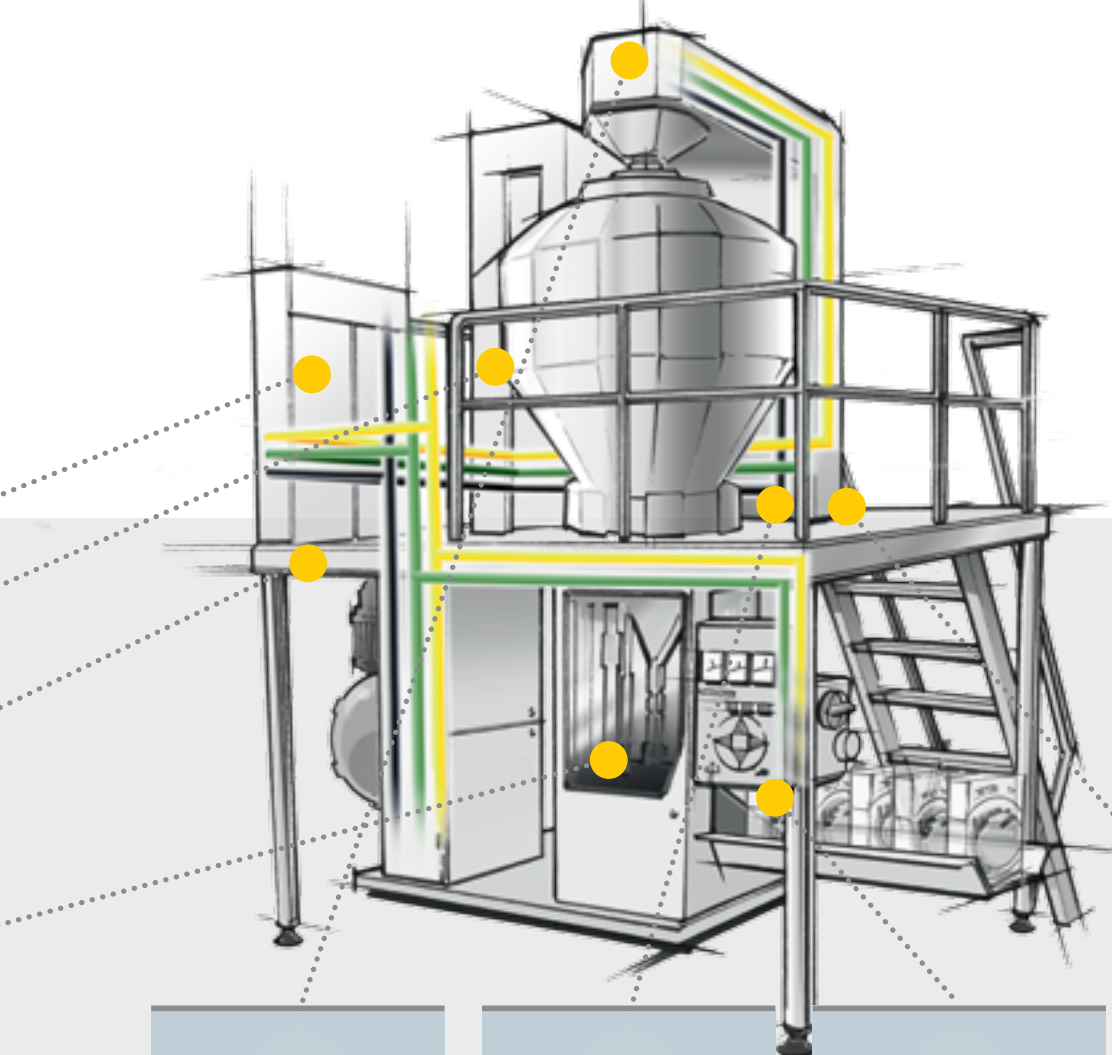


## Connectors sensors and actuators

### M12 connectors, A-coded

- Perfect for dimensionally accurate assembly of sensor lines directly at the machine
- M12 variants with HARAX® rapid termination technique (tool-free) and with crimp contacts
- Unshielded or shielded variants available with 3, 4 or 5 contacts
- Assembled system cables with angled or straight variants

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[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)



### Interface drives material supply

- Han® F+B connectors**
- An evolution of the globally successful Han® series for the food industry
  - Easy-to-clean design in accordance with ISO 14159 and DIN EN 1672-2
  - Particularly well suited for interfaces within the spray zone, for frequent cleaning cycles or when resistance to chemicals or frequent cleaning is required.
  - Using the adapter, all contact inserts with the Han® 3 A size can be used. This allows any type of signal, data or power (up to 40 A) to be transmitted.

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[b2b.harting.com/ebusiness/en/35216](http://b2b.harting.com/ebusiness/en/35216)



### Power connectors drying

- Han® Q high current inserts für Han® 3 A**
- Ideally suited for compact pluggable connections for single- or three-phase loads (such as heaters or motors)
  - Compact connectors in the Han® 3 A size, with up to 50 A current-carrying capacity
  - Han® Q 2/0 variant, with axial screw terminals
  - Coding options
  - Finger-safe male and female contacts for all variants

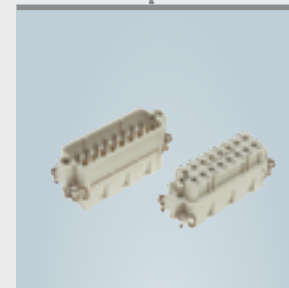
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[b2b.harting.com/ebusiness/en/364554](http://b2b.harting.com/ebusiness/en/364554)



### Connectors HMI and control unit

- Han'INOX® hoods and housings**
- Supplements the Han® A und Han® B housing series, for applications involving extreme loads
  - Hoods and housings as well as levers are made from high quality stainless steel. Thus, they are extremely resistant to mechanical loads and chemicals.
  - Available in Han® 3 A and Han® 10 B sizes, as bulkhead, surface-mounted and cable to cable housings, including stainless steel cover

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[b2b.harting.com/ebusiness/en/380516](http://b2b.harting.com/ebusiness/en/380516)



### Temperature detection drying

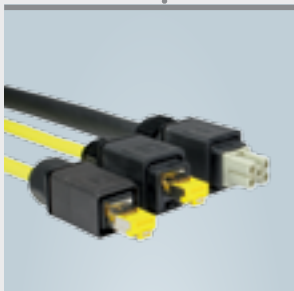
- Han® Thermocouple inserts and contacts**
- Constantan-iron contacts for measurement lines, in accordance with DIN IEC 584
  - Available as complete screw inserts or as crimp contacts – thus they can be combined with standard contacts and hoods and housings
  - Screw inserts for Han® A or Han® B hoods and housings

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[b2b.harting.com/ebusiness/en/364558](http://b2b.harting.com/ebusiness/en/364558)

# Robotics:

## Customised solutions and standardised interfaces for all types of applications

High-performance highly available power, signal, data and pneumatic connections for all types and sizes of robots: HARTING provides interfaces for the robotic controllers, drives, as well as for task-specific gripper and transfer systems.

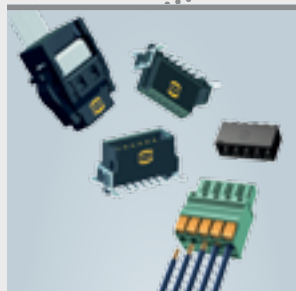


### Connections within dress-pack machines

#### HARTING PushPull system cable

- Pre-assembled cables available in various lengths
- Large portfolio of system connectors for data, signals and power
- Available with plastic and metal hoods and housings, in different sizes and contact numbers
- PushPull ensures simple insertion and removal

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### Wire, cable or board-to-board connectors

#### har-flex® / har-flexicon® SMT connectors

- Perfect for robust IP20 device interfaces or device-internal interfaces
- SMT PCB connectors for wire-to-board and cable-to-board solutions
- Excellent versatility for system design
- Robust miniature design
- Suitable for fully automatic assembly and reflow soldering processes
- Robust connection to the PCB because of extra SMT retainer

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[b2b.harting.com/ebusiness/en/34261](https://b2b.harting.com/ebusiness/en/34261)



### Ethernet network robotic control

#### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Excellent EMC characteristics, in compliance with industrial standards
- Automatic recognition of data transfer rate and cable types (1:1, cross-over)

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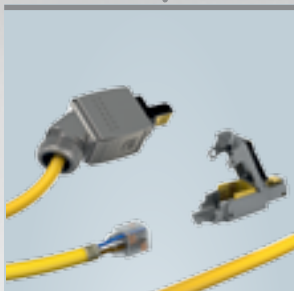
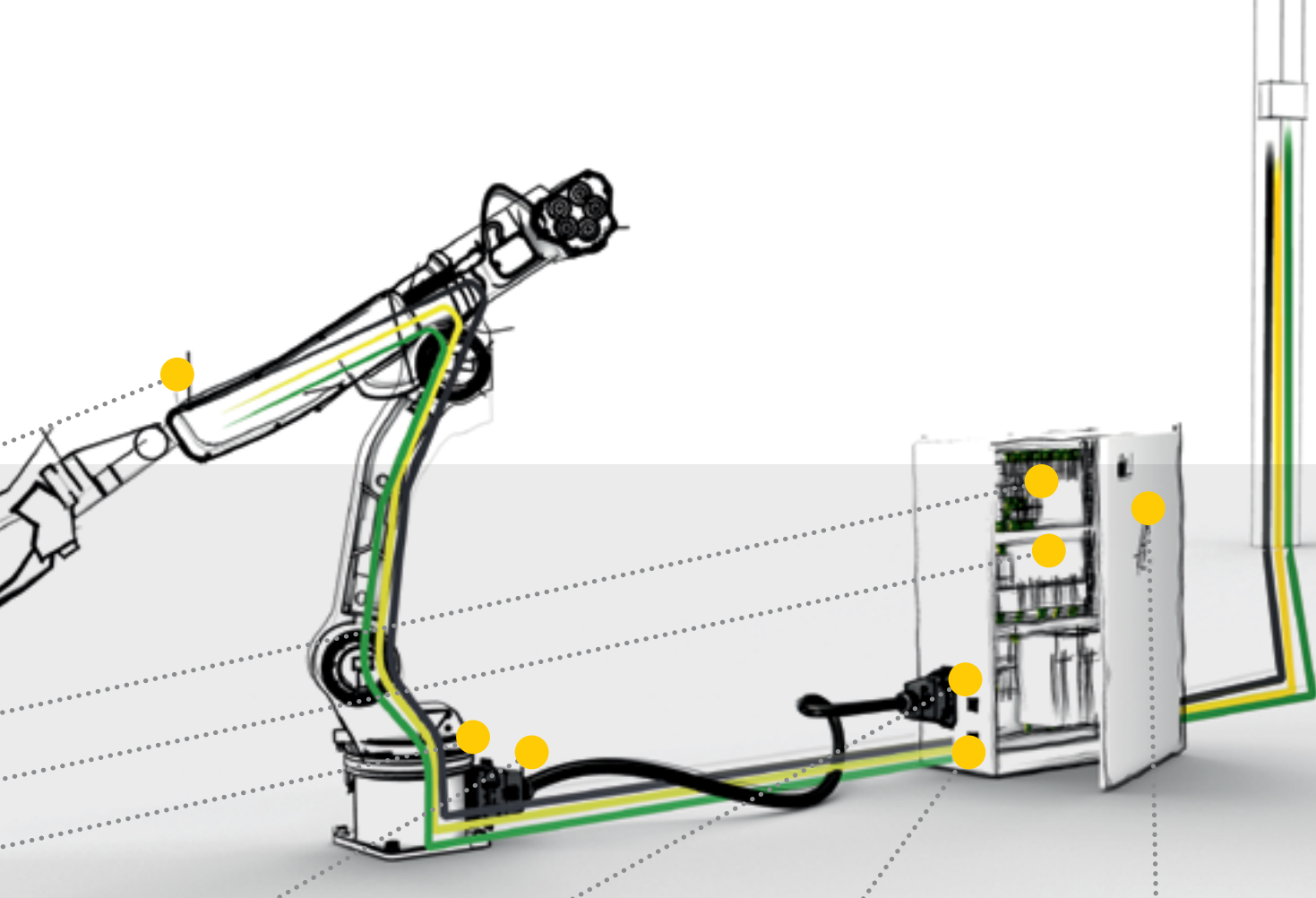


### Hybrid connection control unit to robot

#### Han-Modular® connector modules

- Allows different power, signal and data cables to connect using a shared connector
- More than 40 modules for power, signal, bus and network connections
- Can be used in all hoods and housings of the Han® B series
- Secure module connections even under vibration and shock load

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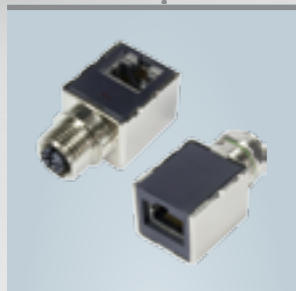


### Ethernet interfaces electrical cabinets and robots

#### Ha-VIS preLink® Ethernet cabling

- Simple, versatile and safe installations for all standard types of Ethernet cables thanks to our Ha-VIS preLink® technology
- Available for all connector and data outlet types: RJ45, M12 D and X-coded in IP20 or IP65 / IP67 protection and as cable extender
- Compliant with PROFINET and AIDA

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[b2b.harting.com/ebusiness/en/39589](http://b2b.harting.com/ebusiness/en/39589)



### Panel feed through at electrical cabinet

#### M12 panel feed through, D- or X-coded

- Simple transition from M12-based IP65 / IP67 robotics cabling to RJ45 cabling
- A standardised, cost-effective connection for all transitions within enclosure walls
- Allows the use of standard RJ45 patch cables in the electrical cabinet
- Variants with RJ45, coloured wire strands or as M12 gender changer
- Available with straight or angled RJ45 entry
- Variants for 10 gigabit data rate are available

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[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)

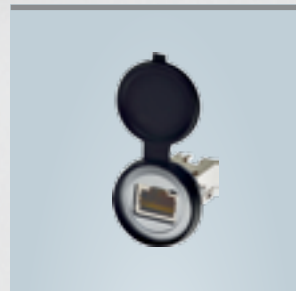


### Power supply to the robot

#### Han® Q high current inserts für Han® 3 A

- Compact size yet capable of transmitting currents up to 50 A
- Resistant, thanks to IP65 / IP67 in Han® 3 A hoods and housings
- For use in all Han® 3 A hoods and housings: plastic, metal or EMC version
- Finger-safe male and female versions for all contact inserts

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### Programming and service interface

#### har-port interfaces

- A compact, robust and practical interface
- Industrial standard design; protection degree with cover is IP65 / IP67
- Ethernet, USB and HDMI variants are available
- Practical accessories (labelling tags, protective covers in cables)
- Optimised for use with HARTING Ethernet connectors and cables

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[b2b.harting.com/ebusiness/en/34731](http://b2b.harting.com/ebusiness/en/34731)

# Handling and assembly:

## Scalable interfaces, precisely customised for the user's application

Interfaces that are evolving and cost-efficient, yet also robust: HARTING solutions are precisely matched to the application yet still provide scalability for further expansions.



### Industrial outlet for Ethernet networks

#### Industrial Ethernet outlet

- For setting up robust Ethernet cabling in machines and industrial buildings
- Variants with up to 10 Gbit/s, with versatile preLink® termination technique or tool-free quick connect
- Available in IP65 / IP67 protection, with PushPull or Han® 3 A or as IP20 variants for the DIN rail
- Wide range of accessories, such as labelling tags, covers, etc.

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[b2b.harting.com/ebusiness/en/396610](http://b2b.harting.com/ebusiness/en/396610)



### Ethernet connection camera monitoring

#### PushPull connectors for RJ45, USB or signals

- Compact design for device integration or as coupling variant
- Inserts as 4- and 8-pin RJ45 variants (Cat. 5 or Cat 6), or for USB, optics and signals
- Plastic and metal hoods and housings available in both sizes (var. 4 and var. 14) and also as straight or angled
- PushPull ensures simple insertion and removal

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/34747](http://b2b.harting.com/ebusiness/en/34747) (RJ45)  
[b2b.harting.com/ebusiness/en/34751](http://b2b.harting.com/ebusiness/en/34751) (USB)  
[b2b.harting.com/ebusiness/en/34750](http://b2b.harting.com/ebusiness/en/34750) (signals)

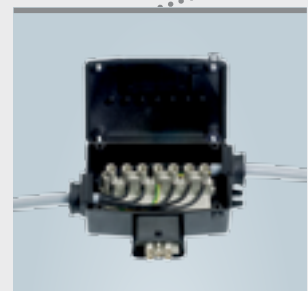


### Sensor and actuator connections conveyer systems

#### M12 connectors, A-coded

- Dimensionally accurate assembly of sensor lines directly at the machine
- Variants available with the HARAX® tool-free rapid termination technique, or with crimp contacts
- Panel feed through available as male or female variant
- Unshielded or shielded variants available with 3, 4 or 5 contacts
- Assembled system cables with angled or straight variants

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[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)

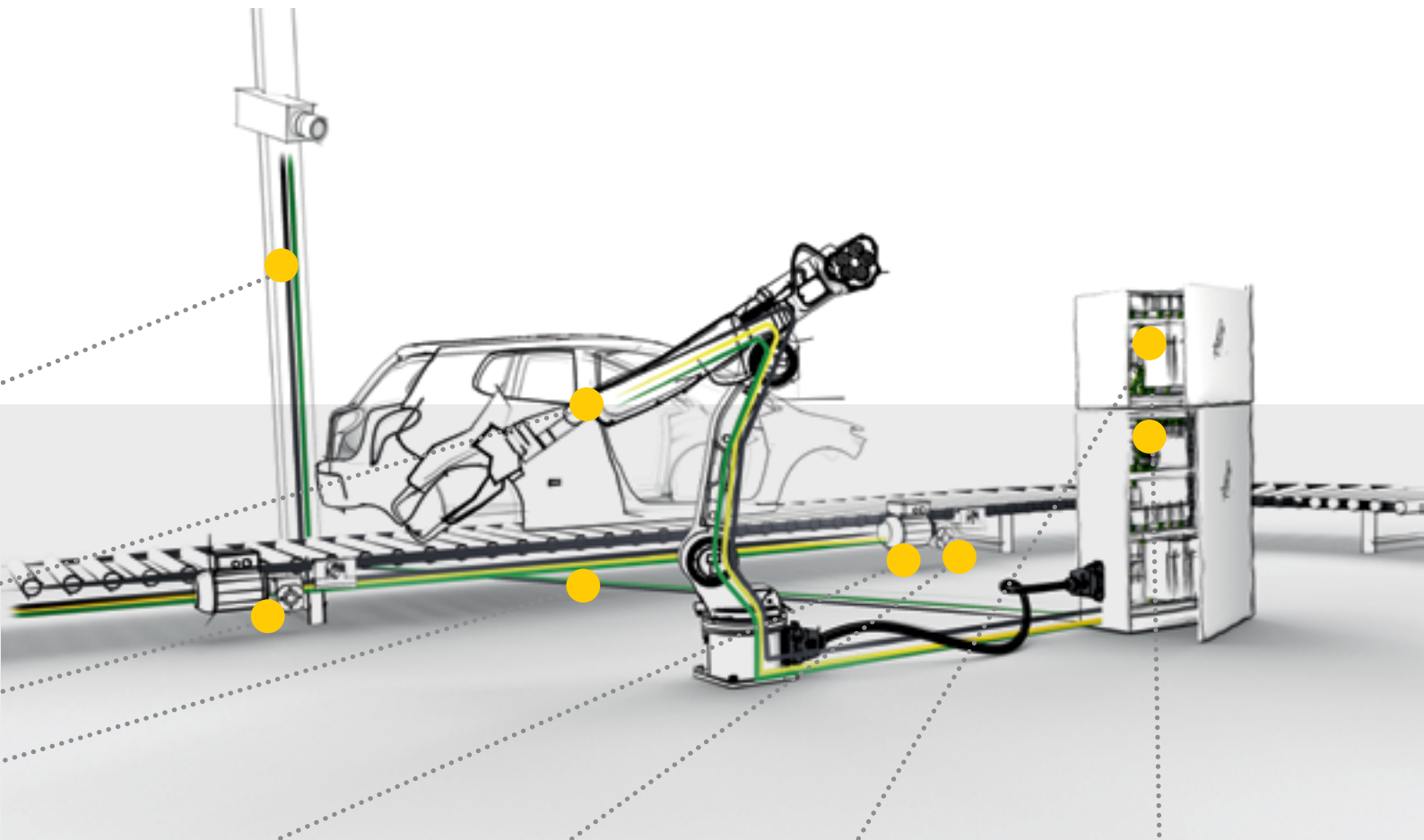


### Power distribution conveyer lines

#### Han-Power® S and Han-Power® T distributor

- Simple, customised design of power lines with IP65
- Quick and short-circuit-proof assembly of the T-tap, thanks to IDC or using a connector
- Reduced cabling work (e.g. with decentralised drive configurations)
- Variants with connector or cable entry

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### M8 and M12 sensor cables

#### Preassembled M8/M12 system cables

- Preassembled cables for quick mounting in IP65 / IP67 protection
- Highly available, even during vibrations and shocks
- Various lengths available for customised applications
- Optimised shield designed for extreme EMC requirements

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[b2b.harting.com/ebusiness/en/40589](http://b2b.harting.com/ebusiness/en/40589)



### Power supply for conveyer units

#### Han® Q system cables

- Customised cable assemblies according to customer requirements
- Power supply of up to 40 A current
- System cables and connectors that are optimised for decentralised drive configurations
- Unshielded or shielded variants available
- Other cable and connector combinations are available on request

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[b2b.harting.com/ebusiness/en/391834](http://b2b.harting.com/ebusiness/en/391834)



### Current sensors process control

#### HARTING Hall effect current sensors

- For constructing precise controllers of power-electronic systems
- Perfect for constructing robust units that can be used under extreme conditions
- Construction and installation size comply with standard footprints
- High accuracy over a wide measuring range
- Very low susceptance to external magnetic fields

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[b2b.harting.com/ebusiness/en/34265](http://b2b.harting.com/ebusiness/en/34265)



### Power supply and data for Ethernet devices

#### Ha-VIS eCon Ethernet Switch unmanaged PoE

- Power supply of up to 4 terminal devices via PoE+ (137 watts) according to IEEE 802.3a
- Variants with built-in DC/DC converters, with 24 VDC input voltage and 48 VDC for PoE ports
- All the functions found in modern Ethernet switches: such as auto-negotiation, auto-crossing, auto-polarity, Jumbo frames, etc.
- Compact, space-saving design, thin or flat

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[b2b.harting.com/ebusiness/en/34259](http://b2b.harting.com/ebusiness/en/34259)

# Electric cranes: Robust connections for harsh industrial conditions

Outdoor applications expose components to some of the most extreme requirements: there may be persistent high temperatures, water, strong shock and vibration loads. HARTING's absolutely reliable and robust solutions have been developed specifically to meet these requirements.



## Main connection to crane

### Han® HC Modular high current connectors

- Permits pluggable connections for high current consumer loads
- Contacts are held with mounting frames in hoods and housings from the Han® HPR series
- Variants available with from 2 to 10 high current contacts
- Contacts with crimp, axial screw or screw contacts (for bus bars) with up to 650 A are available

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[b2b.harting.com/ebusiness/en/364556](http://b2b.harting.com/ebusiness/en/364556)



## Power and control connections for drives

### Han-Com® / Han® K connector inserts

- Power and control contacts combined in one connector for merging several circuits
- Different sizes and number of contacts: contact inserts with up to 100 A, with up to 8 power contacts or 24 control contacts
- Variants with screw, axial screw or crimp contacts
- Can be used in all hoods and housings of the Han® B series

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[b2b.harting.com/ebusiness/en/364553](http://b2b.harting.com/ebusiness/en/364553)



## Connectors main crane hoist

### Han® M hoods and housings

- Offering all the advantages of the Han® B hoods and housings – and designed for more extreme environmental conditions
- Featuring a special seal and stainless steel locking lever
- Can be assembled with all inserts from the Han E® and Han® ES series, including the Han-Com® combi-connectors and the Han-Modular® series of modules

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[b2b.harting.com/ebusiness/en/380511](http://b2b.harting.com/ebusiness/en/380511)



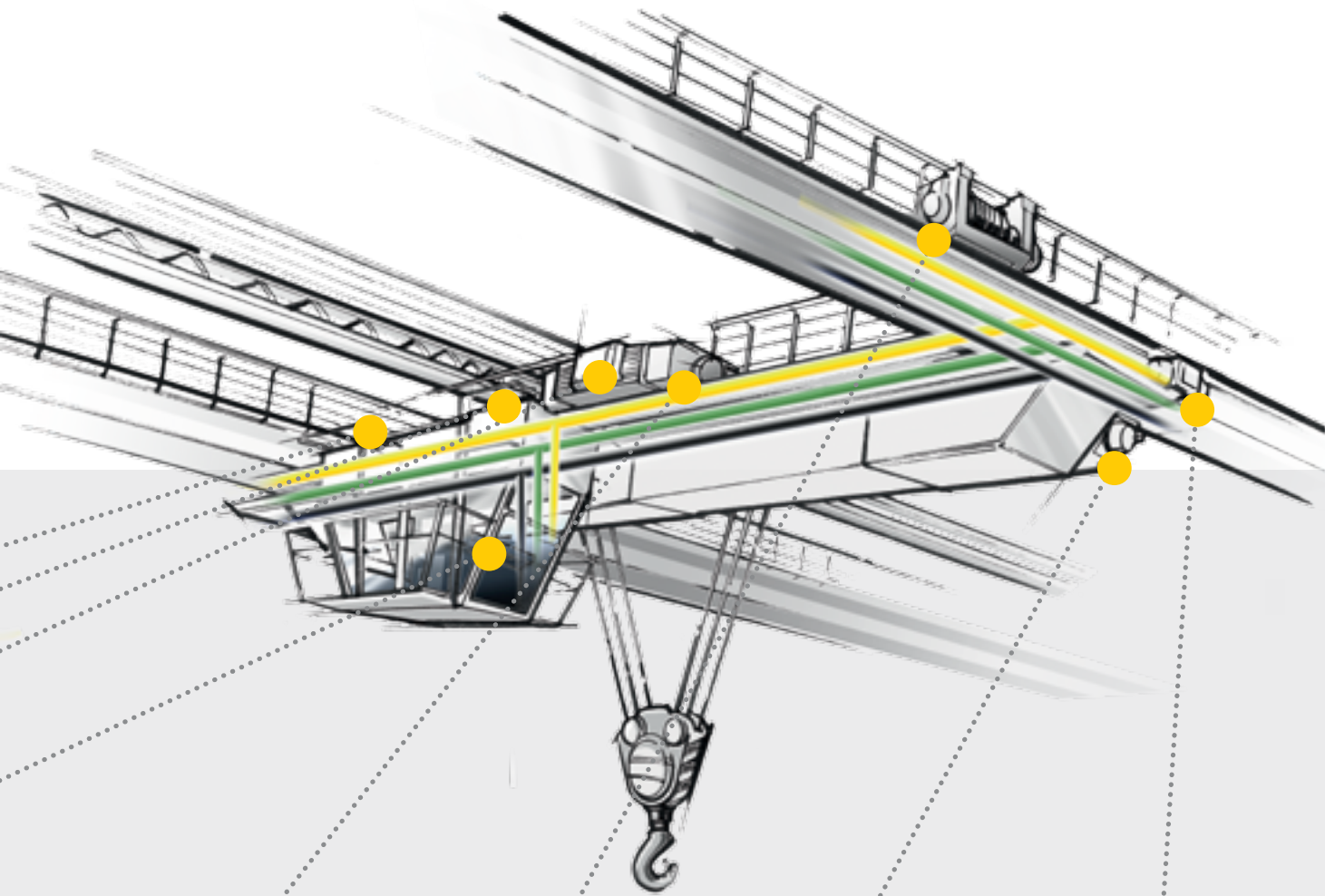
## Ethernet network video monitoring system

### Ha-VIS eCon Ethernet Switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full gigabit Ethernet non-blocking
- Variants with M12, RJ45, fibre optic with up to 16 ports
- Compact, space-saving design, thin or flat for the DIN rail
- Excellent EMC characteristics, in compliance with industrial standards
- Automatic recognition of data transfer rate and cable types (1:1, cross-over)

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→ eCatalogue:  
[b2b.harting.com/ebusiness/en/34259](http://b2b.harting.com/ebusiness/en/34259)





### Connections crane control cables

#### Han® EE / Han® EEE inserts

- Connectors with very densely packed contacts, with vibration-resistant crimp terminations
- Turned contacts are silver or gold plated and very robust
- Can be used in electrical cabinets or as coupling versions in all hoods and housings of the Han® B series; with many extra accessories (shielding plates, cable strain relief, etc.)

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/364546](http://b2b.harting.com/ebusiness/en/364546)



### Bus interface rotary encoder

#### D-Sub connectors for signals and power

- Easy to setup for all common industrial bus interfaces – such as Profibus, CAN or DeviceNet
- Robust, shielded and vibration-proof housing variants: in metal, plastic or metallised plastic, with various locking and shielding options
- Inserts with IDC, solder or crimp termination

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/34728](http://b2b.harting.com/ebusiness/en/34728)



### Video interface crane camera system

#### Han-Quintax® insert

- Excellent shielding characteristics – thus ideal as a data or signal interface
- The Han® 3 A insert can be used as a hybrid connector for data and power in the Han® 3 A hoods and housings
- The Han-Modular® double insert can be used in all hoods and housings of the Han® B, Han-Eco®, the Han-Yellock® or the Han-Modular® series

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/364560](http://b2b.harting.com/ebusiness/en/364560)



### Hybrid connection travel drives

#### Han-Modular® connector modules

- Allows different power, signal and data cables to make a compact connection using a shared connector
- More than 40 modules for power, signal, bus and network connections
- Can be used in all Han® B hoods and housings when using a hinged frame, Han-Eco® (directly) or the Han-Yellock® (with an adapter)
- Secure module connections even under vibration and shock load

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/35389](http://b2b.harting.com/ebusiness/en/35389)

# Mobile machines:

## Highly available power and data connection for extreme working conditions

High availability even under extreme weather conditions and under extreme mechanical loads on the road or construction site: HARTING's solutions for any conceivable power, signal and data connection on mobile machines are extremely reliable, robust and cost-effective.



### Signal connections crane outriggers

#### Han-Eco® Outdoor connectors

- Series of hoods and housings made of high strength plastic: for direct use in all Han-Modular® modules and Han-Eco® Monoblock inserts
- Combines low weight with excellent durability under extreme environmental conditions: resistant to UV radiation, stone chips, dirt, etc.
- Modules and contact inserts feature "click and mate" assembly requiring no tools

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→ eCatalogue:  
[b2b.harting.com/ebusiness/en/36112](http://b2b.harting.com/ebusiness/en/36112)



### Power and signals for high-density assemblies

#### Han® EE / Han® EEE inserts

- Connectors for 16 A / 500 V, with extremely high contact density, with crimp termination
- Turned contacts with silver or gold coating
- Can be used in all hoods and housings of the Han® B series
- For IP20 cable to cable housings and other hoods and housings variants, can also be used with included extra accessories (shielding plates, cable strain relief, etc.)

→ Page 40  
→ eCatalogue:  
[b2b.harting.com/ebusiness/en/364546](http://b2b.harting.com/ebusiness/en/364546)

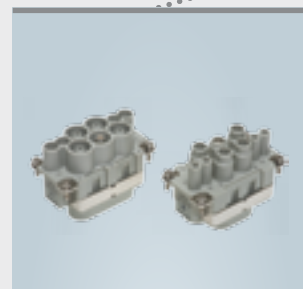


### Sensor connections

#### M12 connectors, A-coded

- Precise assembly of sensor cables, directly at the machine, to meet extreme requirements
- Variants available with the HARAX® tool-free rapid termination technique, screw contacts, or with crimp contacts
- Unshielded or shielded variants available with 3, 4 or 5 contacts
- Assembled system cables with angled or straight variants
- Panel feed through available as male or female version

→ Page 48  
→ eCatalogue:  
[b2b.harting.com/ebusiness/en/34756](http://b2b.harting.com/ebusiness/en/34756)

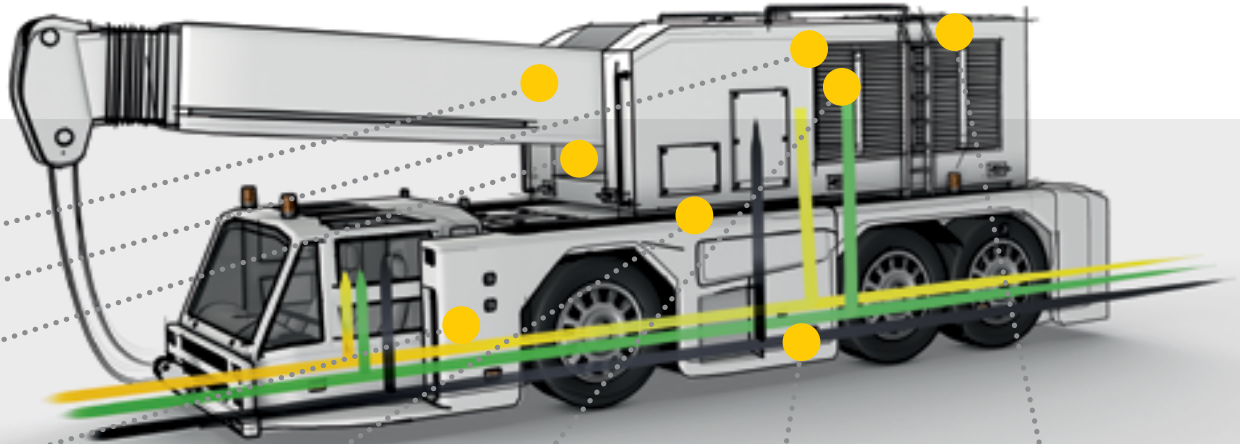


### Main connection power generator

#### Han-Com® / Han® K connectors

- Power and control contacts combined in one connector for merging several circuits
- Different sizes and number of contacts: Inserts with up to 100 A, with up to 8 power contacts or 24 control contacts
- Variants with screw, axial screw or crimp contacts
- Can be used in all hoods and housings variants of the Han® B series

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→ eCatalogue:  
[b2b.harting.com/ebusiness/en/364553](http://b2b.harting.com/ebusiness/en/364553)



### Connections for external units

#### Han® B Snap Cap housings with cap

- Perfect for connections requiring a high degree of protection, with optional use of cable plug-in point
- Compatible with all Han® B hoods and housings in IP66 and IP67 protection degree
- Caphas automatic shutting mechanism
- Special cap collar provides extra protection for the seal

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/380507](http://b2b.harting.com/ebusiness/en/380507)



### Hybrid connection electrical cabinet

#### Han-Modular® connector modules

- Allows different power, signal and data cables to connect using a shared connector
- More than 40 modules for power, signal, bus and network connections
- Can be used in all hoods and housings of the Han® B series
- Secure module connections even under vibration and shock load
- Modules for different media types are available (such as pneumatic or optical interfaces)

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/380507](http://b2b.harting.com/ebusiness/en/380507)



### Interfaces with extreme loads

#### Han® M hoods and housings

- Robust die-cast housing for extreme mechanical and chemical loads
- Available in all established Han® B sizes
- Can be used with all contact inserts from the Han E®, Han-Com® and Han-Modular® series
- Continual protection against stone chips, icing, salt spray, UV radiation and industrial exhaust gases

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/380511](http://b2b.harting.com/ebusiness/en/380511)



### Ethernet network external video cameras

#### Ha-VIS eCon Ethernet switch unmanaged

- Perfect for constructing highly available industrial-grade Ethernet networks
- Fast and full Gigabit Ethernet, non-blocking variants with M12, RJ45, fibre optic with up to 16 ports
- Excellent EMC characteristics, in compliance with industrial standards
- Compact, space-saving design, thin or flat for the DIN rail
- Automatic recognition of data transfer rate and cable type

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 → eCatalogue:  
[b2b.harting.com/ebusiness/en/34259](http://b2b.harting.com/ebusiness/en/34259)

## Han-Modular®

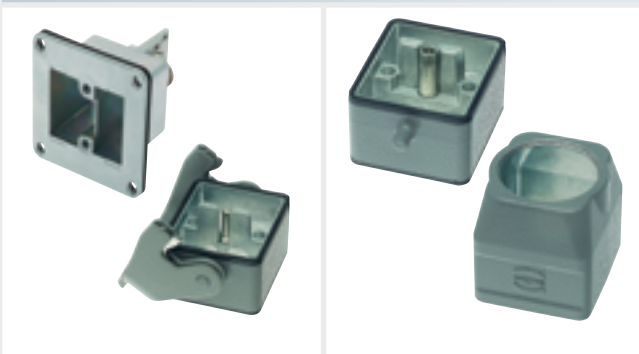


### Features

- Connectors can be put together to match specific application requirements from more than 40 modules for power, signal, bus and network connections
- Connections for different cable types and media (optics or compressed air) can be combined in a single hood and housing
- Can be used in all hoods and housings of the Han® B series when using a hinged frame, in the Han-Eco® or Han-Modular® hoods and housings directly, or in the Han-Yelllock® with an adapter frame
- Leading PE contacts can be implemented in all hoods and housings variants
- Installation of the modules requires no tools
- Virtually unlimited number of combinations are possible
- Secure module connections even under vibration and shock load

- ➔ See p. 14, Wood-working machinery
- ➔ See p. 20, Robotics
- ➔ See p. 24, Electric cranes
- ➔ See p. 26, Mobile machines
- ➔ eCatalogue: [b2b.harting.com/ebusiness/en/34113](http://b2b.harting.com/ebusiness/en/34113)

## Han-Modular® Twin hoods and housings



### Features

- Especially well suited for drive applications because of their simple yet robust internal shield connection for shielded cables
- Easily installed shielded cables; high quality shield transfer because of the split hood
- Only one hood/housing with two individual modules is required – thus providing compact, space-saving connections for Servos and rotary encoders
- All the individual modules from our established Han-Modular® system can be used
- No additional frame is needed for mounting the modules
- Especially well suited for servo connections when using individual modules with finger-safe contacts, for both male contacts and female sockets
- Additional shielding transfer within the electrical cabinet is also possible when using the additional panel feed through housing

- ➔ See p. 6, Plastic and rubber machinery
- ➔ See p. 10, Metal-forming machines
- ➔ See p. 16, Machines that produce semiconductors
- ➔ eCatalogue: [b2b.harting.com/ebusiness/en/373610](http://b2b.harting.com/ebusiness/en/373610)

## Han-Modular® docking frames



### Features

- Allows direct docking of plug-in units in plug-in systems, for interfaces constructed using modules from the Han-Modular® series
- Complex plug-in units are easy to handle: similar to circuit boards with backplane connections
- Stable male leading guide pins and bushes, as well as a floating frame on one side: ensures excellent guidance and pluggability for the interface
- Connectors can be assembled according to specific application requirements
- Over 40 modules for power, signal, bus and network connections from the Han-Modular® series can be used
- Secure module connections even under vibration and shock load

→ See p. 16, Machines that produce semiconductors  
→ eCatalogue: [b2b.harting.com/ebusiness/en/380784](http://b2b.harting.com/ebusiness/en/380784)

## Han-Yellock® series



### Features

- This connector provides new functionality (contact bridges for multiplying potentials, lockable levers, separated hoods and housings)
- Achieves the same or higher IP protection and durability as our established Han® B series
- Only the male contacts are required for the Han-Yellock® crimp modules; the female side is chosen later
- Two sizes are available: Han-Yellock® 30 and Han-Yellock® 60: with 3 or 6 Han-Yellock® modules
- All typical housing variants are available: surface-mounted and bulkhead-mounted on the device side, and shell hoods with top or side entries
- When using adapter modules, it is possible to use over 40 modules for power, signal, bus and network connections from the Han-Modular® product series

→ See p. 10, Metal-forming machines  
→ See p. 16, Machines that produce semiconductors  
→ eCatalogue: [b2b.harting.com/ebusiness/en/38394](http://b2b.harting.com/ebusiness/en/38394)

## Han-Eco® series



### Features

- Combines the advantages of the hoods and housings of our established Han® B series and the enormous versatility of the Han-Modular® inserts, with their low weight and outstanding resistance to environmental influences
- Hoods and housings series made from high strength plastic – allows for the direct use of all power, data, signal and pneumatic modules from the Han-Modular® series: tool-free assembly of the modules in the hoods and housings using "click and mate"
- In each of the four sizes, a module has more space than in the equivalent Han® B hoods and housings; a PE module can optionally be used
- Ensures excellent mechanical strength and outstanding resistance to environmental influences
- Outdoor hoods and housings variants are available
- Surface-mount, bulkhead and cable to cable variants are available
- Cable side available in straight and angled variants

- ➔ See p. 8, Printing machinery and machines for print finishing
- ➔ See p. 12, Metal-working machine tools
- ➔ See p. 16, Machines that produce semiconductors
- ➔ eCatalogue: [b2b.harting.com/ebusiness/en/36112](http://b2b.harting.com/ebusiness/en/36112)

## Han-Eco® Outdoor series



### Features

- Evolution of the successful Han-Eco® connector series for outdoor applications: such as construction machines, snowploughs, cranes and other mobile machines
- Designed to meet extreme environmental requirements – resistant to UV radiation, stone chips and dirt
- Hoods and housings made of high strength plastic: for direct use in all Han-Modular® modules and Han-Eco® Monoblock inserts
- All four sizes of this connector series are available in surface-mount, bulkhead and cable to cable housing types.
- Hood with side or angled cable entry, with or without the matching cable gland
- Seal made of fluoro-rubber which ensures excellent long-term resistance to UV and ozone
- Protective covers, with or without retaining cords, are available for all cable and device side variants for the connectors
- Modules and contact inserts feature "click and mate" assembly requiring no tools

- ➔ See p. 26, Mobile machines
- ➔ eCatalogue: [b2b.harting.com/ebusiness/en/36112](http://b2b.harting.com/ebusiness/en/36112)

## Han® B Snap Cap housings with cap



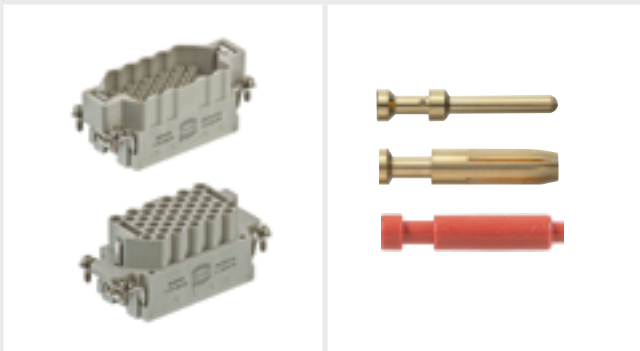
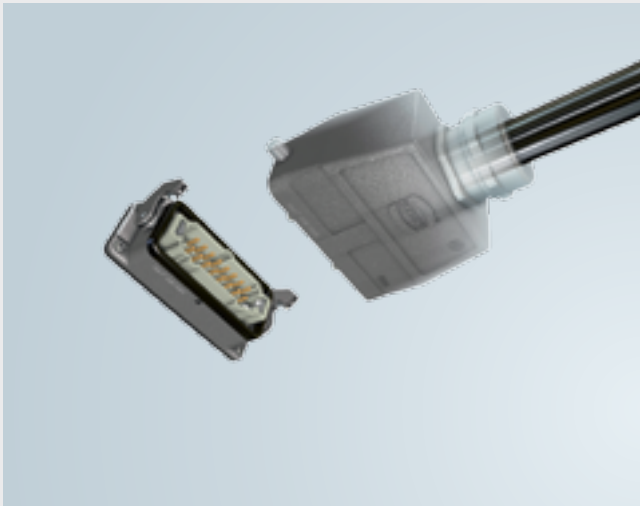
### Features

- Perfect for connections that require a high degree of protection when they are not plugged in, when the connector may also be used regularly
- Compatible with all Han® B hoods and housings of the corresponding size
- Can be used for all Han E® and Han D®, with all available termination types, Han-Com®, Han® HsB and Han-Modular® modules, in the corresponding Han-Modular® frames
- Also suitable for use for inserts with thermal contacts, in the Han E® sizes: this makes them perfect for temperature detection and similar applications
- IP66 and IP67 protection while closed (plugged in or with cap on)
- Cap closes automatically when the connector is unplugged
- Special cap collar provides extra protection for the seal
- Available with single locking lever only

→ See p. 26, Mobile machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/380507](http://b2b.harting.com/ebusiness/en/380507)

## Han® HMC special hoods and housings for high mating cycles



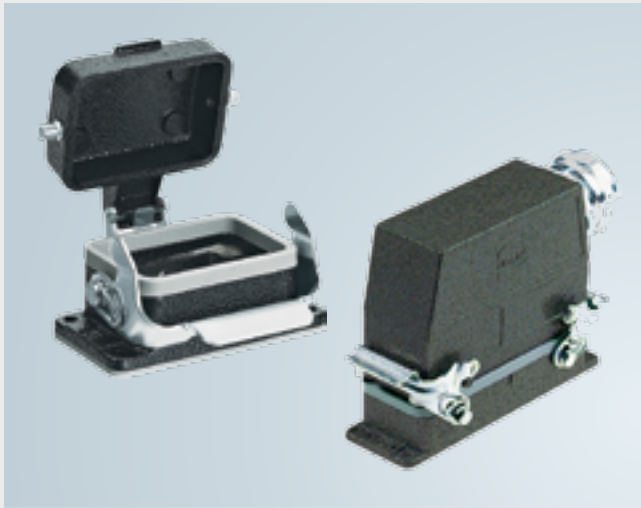
### Features

- Series based on our established Han® B hoods and housings and the Han E® and Han D® inserts, with crimp termination; designed for industrial applications that require frequent disconnect/connect cycles for the interfaces
- All connectors components in use are designed for up to 10,000 mating cycles
- The Han E® and Han® D crimp contacts which are used have a special HMC gold surface and a permanent constant contact force
- The Han® HMC hoods and housings are available in sizes Han® 10 to Han® 24 B
- Available as contact inserts in the Han® HMC version: Han E®, Han® EEE, Han® D, Han® DD and all modules with Han E® and Han® D crimp contacts from the Han-Modular® series

→ See p. 8, Printing machinery and machines for print finishing

→ eCatalogue: [b2b.harting.com/ebusiness/en/380508](http://b2b.harting.com/ebusiness/en/380508)

## Han® M hoods and housings series



### Features

- Especially well suited for outdoor applications: designed for tougher environmental requirements and also featuring the established excellence of our standard Han® B hoods and housings
- Equipped with a special seal that is resistant to UV light and oil, as well as a stainless steel locking mechanism
- Special surface treatment (black powder coating) with improved adhesion compared to the Han® B
- Assembly is identical to Han® B sizes: Han E®, Han® EE, Han® EEE, Han® ES, Han® ESS, Han® D and Han® DD can be used, including the Han-Com® combi-connector and all modules from the Han-Modular® series (with the corresponding hinged frames)
- Matching covers are available for hoods and housings in all sizes and types



→ See p. 24, Electric cranes

→ See p. 26, Mobile machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/380511](http://b2b.harting.com/ebusiness/en/380511)

## Han® 3 A Panel feed-through housing



### Features

- Ideal for constructing connectors as panel or floor feed throughs, with high IP protection (IP65/67) on both sides
- All inserts in size Han® 3 A: Han® 3 A and Han® Q are for power connections. For signal and data connections: Han-Brid® or Han-Quintax® can be used
- Very simple to attach as feed throughs directly in the wall, floor or support walls in enclosures, electrical cabinets or machine modules
- Also available in EMC variant or in Han® M for aggressive climatic conditions
- Cable glands on both hoods and housings sides must be used



→ See p. 18, Food processing and packaging machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/380506](http://b2b.harting.com/ebusiness/en/380506)



## Han D® and Han® Q inserts in Han® 3 A



### Features

- Used for constructing very compact connectors for power and data connections
- Variants available with crimp contacts and Han-Quick Lock® (tool-free) contacts
- Usage of different contact types in the same insert (including Thermocouple contacts) is possible
- All inserts are designed for metal and plastic housings
- Coding pin can be used to polarise the connector (the Han® 7 D / 8 D and Han® Q 12, Q 3/0 and Q 4/0)
- High-power variants (up to 40 A / 830 V) in crimp or axial screw contacts
- Han® Q High Density insert is available with 21 contacts: allows for densely assembled connectors
- Han® 8 D defined as the interface for external devices, in accordance with EUROMAP 16

→ See p. 6, Plastic and rubber machinery

→ eCatalogue:

[b2b.harting.com/ebusiness/en/364544](https://b2b.harting.com/ebusiness/en/364544) (Han® D)

[b2b.harting.com/ebusiness/en/364554](https://b2b.harting.com/ebusiness/en/364554) (Han® Q)

[b2b.harting.com/ebusiness/en/380506](https://b2b.harting.com/ebusiness/en/380506) (Han® 3 A)

## Han-Quintax® inserts



### Features

- Excellent transmission and shielding characteristics – thus ideal for use as simple functionally reliable data and signal connectors for applications with high mechanical loads and high IP protection
- The Han-Quintax® insert in the Han® 3 A size can be used as a hybrid connector for data and power when in a metal or plastic hood and housing from the Han® 3 A series
- The Han-Quintax® module with two interfaces can be used in all hoods and housings in the Han® B size
- Variants for 4- or 8-wire interfaces are available
- It is very simple and safe to attach the cable shield directly to the contact insert, regardless of the housing's potential

→ See Electric cranes, page 25

→ eCatalogue: [b2b.harting.com/ebusiness/en/364560](https://b2b.harting.com/ebusiness/en/364560)

## Han® Q high current inserts for Han® 3 A



### Features

- For constructing extremely compact connectors intended for power applications with currents up to 40 A
- One of the most compact high current connectors on the market
- Perfect for use as compact power connectors (e.g. on drive motors or heaters)
- Inserts available with 2 + PE contacts, with crimp termination or the tool-free axial screw termination
- Inserts with 3 + PE or 4 contacts, with crimp termination
- All inserts are designed for use in the Han® 3 A metal and plastic hoods and housings
- Finger-safe design for both the male and female sides of the inserts
- The connector can be coded by using a coding pin

- See p. 18, Food processing and packaging machinery
- See p. 20, Robotics
- eCatalogue: [b2b.harting.com/ebusiness/en/364554](http://b2b.harting.com/ebusiness/en/364554)

## Han® Q system cables



### Features

- System cables – customised cable assemblies according to customer requirements
- System cables ideally suited for use with Han-Power® S distributors
- Power supply of up to 40 A current
- System cables and connectors that are optimised for decentralised configurations of power lines with multiple taps, such as the power supplies for sub-units or drives
- Unshielded or shielded variants are available in several standard lengths, from 1.5 to 30 metres
- Other cable and connector combinations are available on request

- See p. 22, Handling and assembly
- eCatalogue: [b2b.harting.com/ebusiness/en/391834](http://b2b.harting.com/ebusiness/en/391834)

## Han-Compact® hoods and housings



### Features

- Very space-saving, compact design – thus perfectly suited for applications that require high assembly density (cable transitions to drag chains or drive units and tight cable channels etc.)
- Hoods and housings available in plastic and as coated or nickel plated metal variants
- All closed hoods as well as cable to cable housings come with a built-in cable gland
- Hoods with side covers enable a precise, high-quality cable installation
- Wide range of inserts in the Han-Com® size are available with up to 40 A / 690 V, or with up to 17 10 A contacts
- EMC hoods and housings are also available for applications with more demanding EMC requirements

→ See p. 14, Wood-working machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/380520](http://b2b.harting.com/ebusiness/en/380520)

## Han-Power® S and Han-Power® T distributor



### Features

- Simple, customised design of power lines with IP65 protection
- Reduced cabling work (e.g. with decentralised drive configurations or power supplies for handling/mounting units)
- Quick and simple short-circuit-proof assembly of the T-termination, thanks to IDC with Han-Power® S
- Variants with one or two T-terminations, as connector or with cable
- Distributor with IDC, for cables with 10 mm<sup>2</sup> conductor cross-sections
- Available in various sizes and with different connector combinations: with Han® Q 2/0, Han® Q 5/0, Han® Q 4/2, Han® Q8/0 or Han-Modular® Twin: designed for currents up to 50 A, with up to 8 power contacts and up to 8 control or signal contacts (up to 10A)
- The current-carrying capacity and mechanical/environmental characteristics for the distributor are equal to or better than the connector being used

→ See p. 22, Handling and assembly

→ eCatalogue: [b2b.harting.com/ebusiness/en/36243](http://b2b.harting.com/ebusiness/en/36243)

## Han® EMC hoods and housings for the Han A® series



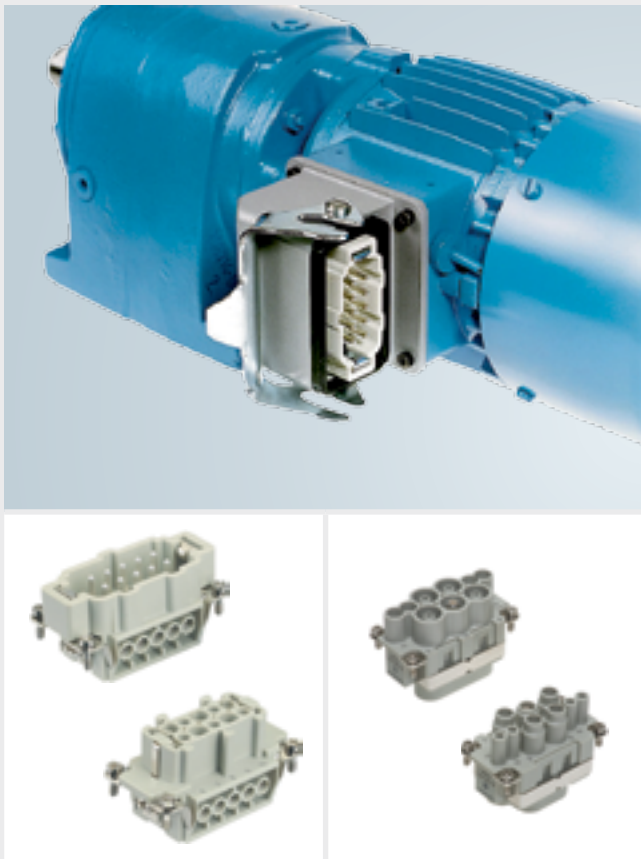
### Features

- Ideal for use as very compact connectors in applications with more demanding EMC requirements, such as three-phase drives with frequency controllers
- The Han® 3 A EMC hoods and housings are used with the corresponding Han A® or Han® Q inserts for the smallest three-phase motor connections
- Ensures functionally reliable EMC connections that are durable and effective – thanks to the circumferential contact when hood and housing are locked
- Wide range of Han A® and Han® Q inserts with up to 40 A / 830 V
- Connectors are easy to code using coding pins (for Han® 3 A inserts) or with male guide pins and female bushes (for Han A® hoods and housings)
- An EMC screw is required to connect the cable shielding

→ See p. 14, Wood-working machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/380512](http://b2b.harting.com/ebusiness/en/380512)

## Han-Drive® motor terminal housing



### Features

- Designed to be used on three-phase motors instead of standard motor terminal boards
- Enables pluggable connections for electric motors, drive units and compact aggregate units (e.g. pumps) – thus shortening down times for start-up and repair
- Usage with all inserts in the Han® 10 B size, including the Han-Modular® series in a modular frame
- Also available as an EMC hoods and housings
- Number of contacts is designed for AC motors including sensors
- Star or delta bridges can be implemented very effectively with a Han® ESS insert in the mating connector

→ See p. 10, Metal-forming machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/380507](http://b2b.harting.com/ebusiness/en/380507)

## Han-INOX® hoods and housings



### Features

- Supplements the Han® A and Han® B hoods and housings series, for applications involving extreme loads, such as in the food processing industry and chemical or water preparation, etc.
- Hoods and housings as well as levers are made from high quality stainless steel. Thus, they are extremely resistant to mechanical loads and chemicals.
- Available in Han® 3 A and Han® 10 B sizes, as bulkhead, surface mounted and cable to cable housings, including stainless steel cover
- In the Han® 3 A INOX hoods and housings, all standard inserts for these sizes may be used: Han® 4 A, Han® Q with up to 21 contacts, or with up to 40 A current with screw, crimp, axial screw or quick-lock contacts
- In the Han® 10 B INOX hoods and housings, all standard contact inserts for these sizes may be used, including the Han-Com® and up to 3 Han-Modular® modules in the corresponding Han-Modular® frames

→ See p. 18, Food processing and packaging machinery  
→ eCatalogue: [b2b.harting.com/ebusiness/en/380516](http://b2b.harting.com/ebusiness/en/380516)

## Han® F+B series



### Features

- An evolution of the globally successful Han® series for food industry applications, available as a circular connector with a threaded screw-on connection
- Straight and angled bulkhead mounted or cable to cable housing variants, included with protective covers, are available
- Easy-to-clean design in accordance with ISO 14159 and DIN EN 1672-2
- Particularly well suited for interfaces within the spray zone, for frequent cleaning cycles or when resistance to chemicals is required.
- Degree of protection in closed position: IP67/IP69K
- Using the adapter, all contact inserts with the Han® 3 A size can be used. This allows any type of signal, data or power (up to 40 A) to be transmitted.
- The hybrid contact inserts Han-Brid® in Han® 3 A size, with their excellent EMC characteristics, can also be used: RJ45 or USB+Power or Han-Brid® Quintax 3 A with up to 8 signal contacts, or as coaxial insert

→ See p. 18, Food processing and packaging machinery  
→ eCatalogue: [b2b.harting.com/ebusiness/en/35216](http://b2b.harting.com/ebusiness/en/35216)

## Han® High Temp connector system



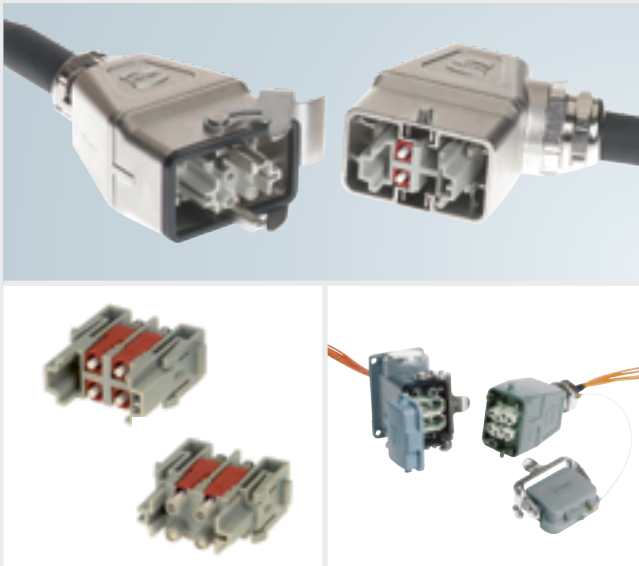
### Features

- The series is based on our established Han® B hoods and housings and Han E® inserts
- All components are built from high-quality heat-resistant materials so they are ideal for long-lasting use in applications with ambient temperatures up to +200°C
- The hoods and housings have a special surface and the seal has a non-stick coating – thus minimising stickiness even during continuous usage
- All hoods and housings and inserts are available in the popular sizes and shapes of the Han® B series
- All Han® HighTemp contact inserts are available with screw or crimp termination

→ See p. 6, Plastic and rubber machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/380522](http://b2b.harting.com/ebusiness/en/380522)

## Han® Multi and Han® SC-Module fibre-optic modules



### Features

- Fibre-optic modules allow pluggable connections to be constructed with IP65 /IP67 protection for optical fibre-based data links
- Fibre-optic data transmission guarantees complete galvanic isolation between the transmitter and receiver; the connections are also immune to electro-magnetic interferences
- The Han® Multi module is designed for different fibre optic types: SI (HCS® - 200/230 µm), glass (50/125 µm or 62.5/125 µm) or 1 mm plastic fibre
- Han® SC module for glass (50/125 µm or 62.5/125 µm) or 1 mm plastic fibre
- Can be used in all hoods and housings of the Han® B series, or of the Han-Modular® series

→ See p. 10, Metal-forming machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/365121](http://b2b.harting.com/ebusiness/en/365121)

## Han-Com® / Han® K inserts



### Features

- High current and control contacts can be combined in a single hood/housing. This allows multiple circuits to be combined and provides a cost-effective, compact and space-saving method for designing interfaces.
- Contact carriers are available with 100-A high current contacts or with up to 24 control contacts
- Different sizes are available with different combinations of control and power contacts
- Designed to be used in all hoods and housings of the Han® B series: Han® M, Han® EMC, Han® HPR or Han-Snap®. It is thus possible to find the perfect match for your requirements.

→ See p. 24, Electric cranes

→ See p. 26, Mobile machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/364553](http://b2b.harting.com/ebusiness/en/364553)

## Han® HC Modular high current connectors



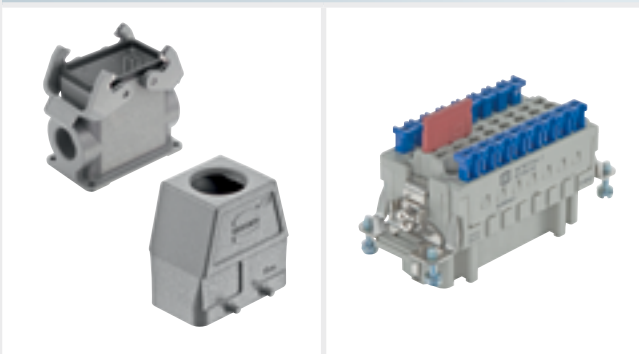
### Features

- Permits pluggable connections of consumer loads, machine modules or machine aggregate units with extremely high power – thus shortening the service, commissioning and installation times
- Contact variants are available with 250 A, 350 A and 650 A; assembly from 1 to 10 high current contacts in a single hood/housing is possible
- Contacts are held with a mounting frame in the hoods and housings of the Han® HPR series
- Variants available with contacts featuring crimp, axial screw and screw terminations (for bus bars)
- The corresponding Han® HPR housing variants are available as bulkhead and surface-mounted housing, in straight or angled versions
- Variants are available for mixed use of both high current and signal contacts

→ See Electric cranes, page 24

→ eCatalogue: [b2b.harting.com/ebusiness/en/364556](https://b2b.harting.com/ebusiness/en/364556)

## Han E® / Han® ES / Han® ES Press inserts



### Features

- The de facto standard rectangular insert for the machine building industry – used for control and power connections with up to 20 A / 500 V
- Enables simple, very effective and functionally reliable construction of interfaces to machine modules, aggregates or separate electrical cabinets
- Designed to be used in all hoods and housings of the Han® B series: Han® M, Han® EMC, Han® HPR or Han-Snap®
- Connector inserts are available with the tool-free cage clamp termination, screw or with crimp termination
- The Han® ES Press enables multiple adjacent contacts to be bridged directly in the connector insert.
- All inserts of the same size can be mixed freely with different termination techniques

→ See p. 8, Printing machinery and machines for print finishing

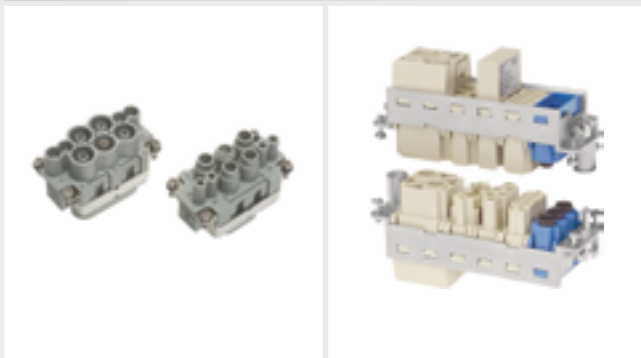
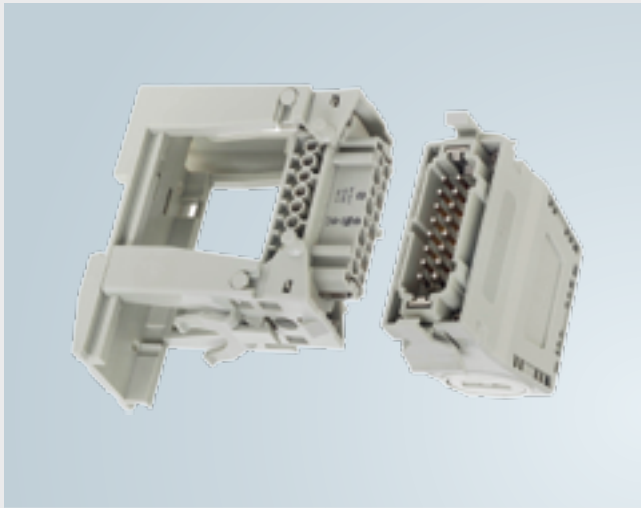
→ See p. 10, Metal-forming machines

→ See p. 14, Wood-working machinery

→ See p. 18, Food processing and packaging machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/364546](https://b2b.harting.com/ebusiness/en/364546)

## Han-Snap® hoods and mounting parts



### Features

- For direct plug-in connections of power, data and signal lines; without a separate terminal strip in the electrical cabinet
  - All inserts from the standard series (Han E®, Han® ES, and Han D®), the Han-Com® combi-connectors, and the Han-Modular® series can be used
  - Different mounting variants are available with and without hood, including mechanisms for cable strain relief
  - Ideally suited for use in electrical cabinets, junction boxes or enclosures that have their own sealed cable entries
  - Variants available for transverse or lengthwise mounting to DIN rails as well as a wall mount
  - When using the ® adapter, the standard inserts from the Han A® series also fit
- See Plastics and rubber machinery, page 7  
→ See Printing machines and machines for print finishing, page 9  
→ eCatalogue: [b2b.harting.com/ebusiness/en/380521](https://b2b.harting.com/ebusiness/en/380521)

- See p. 6, Plastic and rubber machinery  
→ See p. 18, Food processing and packaging machinery  
→ eCatalogue: [b2b.harting.com/ebusiness/en/364558](https://b2b.harting.com/ebusiness/en/364558)

## Han® EE / Han® EEE inserts



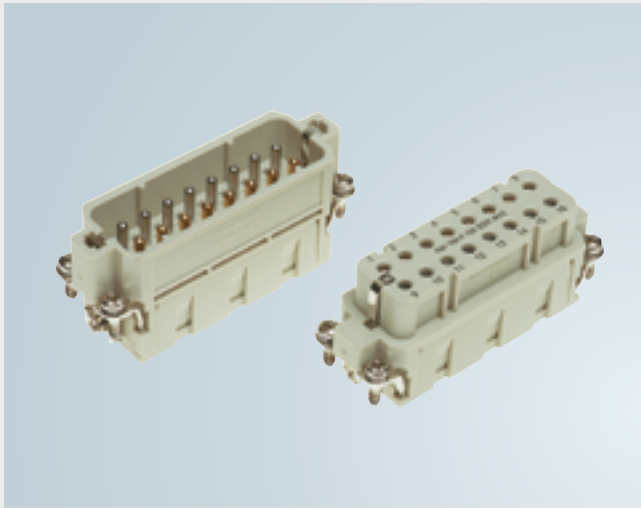
### Features

- Enables the construction of connectors with very densely packed contacts, because crimp terminations are used
- For control and power connections of up to 20 A / 500 V
- Designed to be used in all hoods and housings of the Han® B series: Han® M, Han® EMC, Han® HPR or Han® Snap
- For IP20 cable to cable housings and other hoods and housings variants in the electrical cabinet; can also be used with included extra accessories (shielding plates, cable strain relief mechanisms, etc.)
- Turned contacts (thus very robust), silver or gold plated contacts, or Thermocouple contacts can be combined in the same insert

- See p. 10, Metal-forming machines  
→ See p. 24, Electric cranes  
→ See p. 26, Mobile machines  
→ eCatalogue: [b2b.harting.com/ebusiness/en/364546](https://b2b.harting.com/ebusiness/en/364546)



## Han® Thermocouple inserts and contacts



### Features

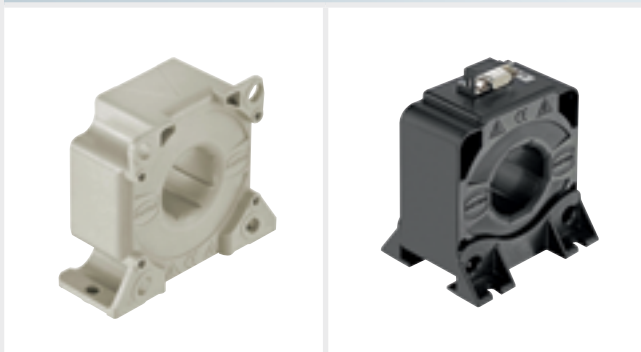
- Provides very accurate temperature recording because of the constantan-iron contacts, in accordance with DIN IEC 584 for type-J temperature measuring lines
- Available as complete inserts in size Han A® and Han E® with screw contacts
- Or as separate Han D® or Han E® crimp contacts, for the corresponding inserts in the hoods and housings of the Han A® or Han® B series
- Crimp contacts can also be used with the corresponding inserts from the Han® 3 A, Han-Compact® or Han-Com® series, or in Han-Modular® system modules
- Mixed combination of Thermocouple contacts and standard contacts in a single contact insert is also possible
- All inserts are available in accordance with EUROMAP 14, Part 1

→ See p. 6, Plastic and rubber machinery

→ See p. 18, Food processing and packaging machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/364558](https://b2b.harting.com/ebusiness/en/364558)

## HARTING Hall effect current sensors



### Features

- Current sensors are available for different measuring ranges, from 100 A to 3600 A
- Variants are available with direct or compensated Hall effect measuring
- For constructing precise controllers of electronic systems for power measurements and power control (e.g. in welding facilities or large drive systems)
- Perfect for constructing robust units that can be used under extreme conditions – variants are also available for usage under extreme vibration and shock conditions
- Construction and installation size comply with standard footprints
- High accuracy over a wide measuring range
- Very low susceptance to external magnetic fields

→ See p. 22, Handling and assembly

→ eCatalogue: [b2b.harting.com/ebusiness/en/34265](https://b2b.harting.com/ebusiness/en/34265)

## MICA (Modular Industrial Computing Architecture)



### Features

- The MICA is a compact, extremely robust industrial computer. It has been tested in compliance with IP67 and the prevalent industrial and railway standards.
- All components are designed to have very long life spans under harsh industrial conditions.
- The hardware and software has a modular design so that users, developers and system integrators can implement it quickly and affordably into integrated industrial projects.
- Compact size: 132 mm × 86 mm × 35 mm
- 1 GHz ARM processor
- 1 GB RAM
- Up to 32 GB microSD card
- Optional USB, Ethercat, ProfiNET
- 24 V or Power over Ethernet (PoE) power supply
- Customer-specific function-based circuit boards
- Standards-based design (Linux, LXC, USB)
- See **Metal-forming machines**, page 11
- eCatalogue: [b2b.harting.com/ebusiness/en/37428](https://b2b.harting.com/ebusiness/en/37428)

→ See **Handling and assembly**, page 23

→ eCatalogue: [b2b.harting.com/ebusiness/en/34259](https://b2b.harting.com/ebusiness/en/34259)

## Ha-VIS eCon Ethernet Switch unmanaged



### Features

- A broad range of unmanaged Ethernet switches for industrial applications that make demanding requirements for EMC, environmental and mechanical characteristics
- Simple "plug and play" setup for internal machine networks or for connecting to higher-level systems
- All the functions found in modern Ethernet switches: such as auto-negotiation, auto-crossing, auto-polarity, etc.
- Especially compact and robust design
- Optimised for use with all Ethernet connector products, such as HARTING's RJ Industrial® or M12
- Variants are available with IP65 and with an extended temperature range from -40 °C to 85 °C
- Device variants for Fast Ethernet (100 Mbit/s) and Gigabit Ethernet (1 GBit/s) are available

→ See p. 6, **Plastic and rubber machinery**

→ See p. 8, **Printing machinery and machines for print finishing**

→ See p. 10, **Metal-forming machines**

→ See p. 14, **Wood-working machinery**

→ See p. 16, **Machines that produce semiconductors**

→ See p. 18, **Food processing and packaging machinery**

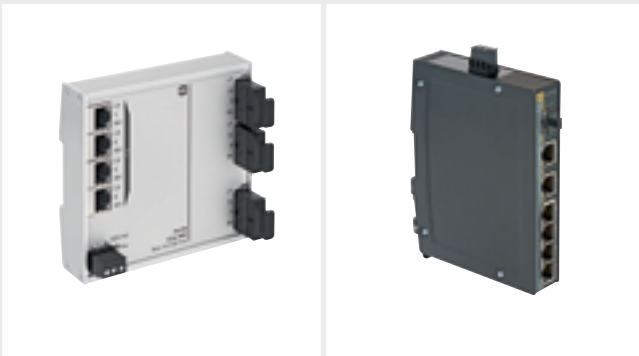
→ See p. 20, **Robotics**

→ See p. 24, **Electric cranes**

→ See p. 26, **Mobile machines**

→ eCatalogue: [b2b.harting.com/ebusiness/en/34259](https://b2b.harting.com/ebusiness/en/34259)

## Ha-VIS eCon Ethernet Switch unmanaged PoE



### Features

- Ideal for constructing industrial Ethernet networks with PoE-compliant (Power over Ethernet) terminal devices
- Variants with built-in DC/DC converters, with 24 VDC supply voltage and PoE standard-compliant output voltage on the Ethernet ports
- Variants with fibre optic ports are also available
- Simple "plug and play" setup for internal machine networks or for connecting to higher-level systems
- All the functions found in modern Ethernet switches: such as auto-negotiation, auto-crossing, auto-polarity, Jumbo frames, etc.
- Maximum data transfer rate without restrictions, even if all ports are in use
- Compact, space-saving design, thin or flat

→ See p. 22, Handling and assembly

→ eCatalogue: [b2b.harting.com/ebusiness/en/34259](https://b2b.harting.com/ebusiness/en/34259)

## Ha-VIS RFID transponder



### Features

- RFID transponder for extremely harsh environments
- Particularly well suited for setting up tracking and logistics systems – such as management/monitoring tools or for workpiece logistics
- The RFID tags can also be used on metal surfaces
- An RFID reader is available for industrial environments with a reading range of up to 16 m
- Middleware for software connectivity to enterprise software, without programming overhead
- An RFID reader for industrial environments is available which includes the I/O and web interface
- RFID antennas designed specifically for use on and in the machines
- PLC connection using functional blocks or OPC UA communications

→ See p. 12, Metal-working machine tools

→ eCatalogue: [b2b.harting.com/ebusiness/en/39191](https://b2b.harting.com/ebusiness/en/39191)

## Han-Brid® data interface



### Features

- Facilitates the construction of hybrid interfaces for two- or four-wire bus systems (Profibus, CAN-Bus, etc.) in IP65 / IP67 environments, for both data and power connections in a shared connector
- Ensures very robust and functionally reliable connections, including a large-area EMC shield transfer
- Power contacts with crimp; designed for 10 A / 50 V for wires from 0.14 to 2.5 mm<sup>2</sup> – can be used for power supply or signal transfer
- The complete series of Han® 3 A hoods and housings can be used in metal or plastic variants
- Cable to cable connections are also possible when using cable to cable housings

→ See p. 12, Metal-working machine tools

→ eCatalogue: [b2b.harting.com/ebusiness/en/364560](https://b2b.harting.com/ebusiness/en/364560)

## Han® PushPull power connector



### Features

- Extremely compact design for power connections of up to 4 contacts at 16 A (up to 690 V)
- PushPull technology: so particularly well suited for use on machines and modules which involve frequent disconnecting and plugging
- PushPull housing and contact inserts are available, in accordance with IEC 61 076-3-106 / Variant 4 and IEC 61 076-3-117 / Variant 14
- Housings available in metal and plastic variants
- Inserts available with crimp contacts and Han-Quick Lock® (tool-free) contacts
- Easily integrated housings because of the angled and straight versions for bulkhead inserts
- Also available as cable to cable connection

→ See p. 6, Plastic and rubber machinery

→ eCatalogue: [b2b.harting.com/ebusiness/en/34749](https://b2b.harting.com/ebusiness/en/34749)

## PushPull connectors for RJ45, USB or signals



### Features

- Connectors in IP65 / IP67 protection; easy closing and opening is triggered by pulling or pushing on the housings
- Very compact design for data connectors, with inserts in 4-pole and 8-pole RJ45 variants (Cat. 5 or Cat. 6) or for USB, fibre optic and signals
- Different variants for device integration or as a coupling variant are available
- Plastic and metal housings available in both sizes (var. 4 and var. 14) and also as straight or angled
- Identical housing technology used for both the power and data PushPull connectors, so device integration is very easy
- Very simple assembly of the data connections and shielding because of the use of consistently standardised inserts



- See p. 8, Printing machinery and machines for print finishing
- See p. 14, Wood-working machinery
- See p. 22, Handling and assembly
- eCatalogue:
  - [b2b.harting.com/ebusiness/en/34747](http://b2b.harting.com/ebusiness/en/34747) (RJ45)
  - [b2b.harting.com/ebusiness/en/34751](http://b2b.harting.com/ebusiness/en/34751) (USB)
  - [b2b.harting.com/ebusiness/en/34750](http://b2b.harting.com/ebusiness/en/34750) (signals)

## Hybrid connectors for RJ45 and power interfaces



### Features

- Designed for the construction of very compact, combined data interfaces with simultaneous power supply for the connected devices or systems
- Only one connector for Ethernet and power supply or auxiliary circuits is necessary
- Ethernet inserts, with 4- and 8-pole RJ45 variants (Cat. 5 / Cat. 6) can be chosen; variants featuring tool-free installation are also available
- Plastic and metal hoods and housings are available in the established Han® 3 A size
- Very simple and robust panel feed throughs are available featuring separate power and Ethernet interfaces, and with a safe shielding transfer
- Variants can also be used for direct device or housing integration



- See p. 8, Printing machinery and machines for print finishing
- See p. 10, Metal-forming machines
- eCatalogue: [b2b.harting.com/ebusiness/en/40995](http://b2b.harting.com/ebusiness/en/40995)

## har-port service interfaces

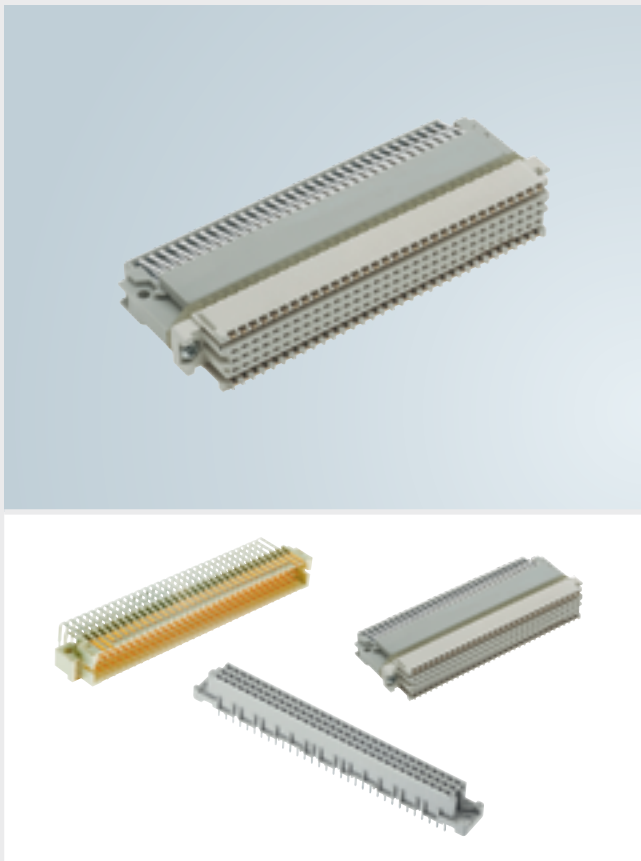


### Features

- A compact, robust and practical data interface for control, IPC and HMI systems: designed for non-permanent connections (e.g. for initial commissioning, service or maintenance)
- Industrial standard design with an extra heavy-duty construction: with up to IP65 / IP67 protection when protective covers are used
- Ethernet, USB and Firewire variants are available
- Variants are available with integrated gender changer or with cable entry
- Practical accessories are available, including label carrier, covers and cables
- Optimised for use with HARTING data connectors and cables

- See p. 12, Metal-working machine tools
- See p. 16, Machines that produce semiconductors
- See p. 20, Robotics
- eCatalogue: [b2b.harting.com/ebusiness/en/34731](https://b2b.harting.com/ebusiness/en/34731)

## har-bus® 64 connectors



### Features

- A wide range of standardised and standard-supplementing connectors and accessories (from 3 to 160 contacts): providing a variety of technically and economically efficient options for constructing rack systems and rack units.
- Proven backplane and front-connector system for mounting on rack systems
- Up to 160 contacts in 5 rows
- Forwards and backwards compatible to Type C 96, in accordance with DIN 41 612
- A complete line of products for backplanes, daughter cards, cable connectors and reverse transfers
- Robustness ensured because soldered-on fastening clips relieve strain on the solder pins
- Connector with integrated switch contacts for bridging daisy-chained lines when the daughter cards have been pulled out

- See p. 16, Machines that produce semiconductors
- eCatalogue: [b2b.harting.com/ebusiness/en/34722](https://b2b.harting.com/ebusiness/en/34722)

## Connectors in accordance with DIN 41 612



### Features

- Provides many efficient ways (both technically and economically) for setting up rack systems and elements – thanks to the broad range of standardised and standard-supplementing connectors and accessories from 3 to 160 contacts
- An established backplane and front-connector system for mounting on rack systems according to DIN 41 612
- Connector variants available for the following termination technologies: reflow, solder-in, press-in, crimp, IDC, wire wrap, receptacles (insertion sleeves), and cage clamp.
- Robustness ensured because soldered-on fastening clips relieve strain on the solder pins
- Jacket housing available in plastic, metallised plastic and metal variants, with various fastening and locking elements
- Variants with power contacts up to 40 A are available for many uses, especially for direct high current board-to-board backplane applications
- Mezzanine, daughter card to backplane, cable to board and extender card connections are all possible

→ See Plastics and rubber machinery, page 7

→ eCatalogue: [b2b.harting.com/ebusiness/en/34716](https://b2b.harting.com/ebusiness/en/34716)

## D-Sub connectors for signals and power



### Features

- Easy setup for all industrial bus interfaces, with D-Sub connectors as standard Profibus, CANopen, DeviceNet and others
- Also has many uses as a front interface for I/O and control signals in control systems
- Connector variants are available with IDC and solder termination technologies, and with machined or stamped contacts
- D-Sub inserts are available with standard and high-density assembly, or with power contacts
- A wide range of housings are available in metal, plastic or metallised plastic, with different locking and shielding variants, and in IP65
- D-Sub inserts are available with power contacts up to 40 A, also with mixed assemblies

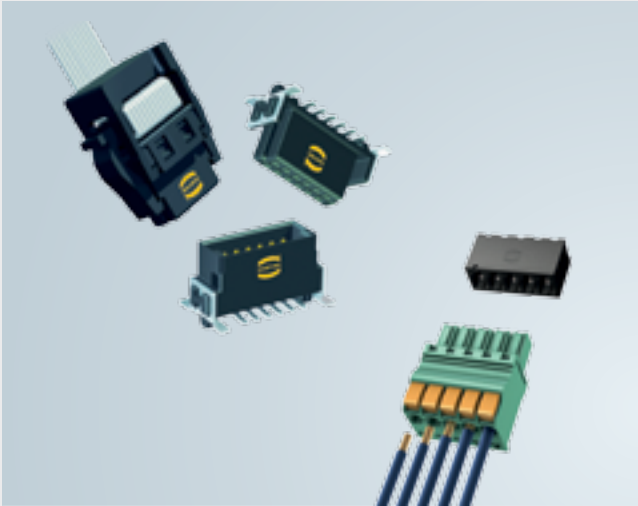
→ See p. 12, Metal-working machine tools

→ See p. 16, Machines that produce semiconductors

→ See p. 24, Electric cranes

→ eCatalogue: [b2b.harting.com/ebusiness/en/34728](https://b2b.harting.com/ebusiness/en/34728)

## har-flex® / har-flexicon® SMT connectors



### Features

- Perfect for robust IP20 device interfaces or device-internal interfaces
- As an SMT connector for wire-to-board and cable-to-board solutions, the *har-flex*® provides excellent versatility during the design of the system, since this product line features straight, angled and compatible IDC connectors.
- The *har-flex*® is available with 6 – 100 poles, and for board-to-board connection with height differentials from 8 to 13.8 mm
- The *har-flexicon*® is the ideal solution for making robust, space-saving connections of single wires to the PCB
- Suitable for fully automatic assembly and reflow soldering processes
- Robust connection to the PCB because of extra SMT retainer
- The *har-flexicon*® is available with Push-In spring force or IDC terminations that can be assembled in the field: in 1.27 mm, 2.54 mm, 3.50/3.81 mm 5.00/5.08 mm and 10.16/15.00 mm pitches

→ See p. 20, Robotics

→ eCatalogue: [b2b.harting.com/ebusiness/en/34261](https://b2b.harting.com/ebusiness/en/34261)

## M12 connectors, A-coded



### Features

- M12 is widely used throughout the industry as a standardised sensor/actuator interface
- HARTING offers a very wide range of M12 product variants: with the tool-free *HARAX*® rapid termination technique, with crimp contacts or as pre-assembled cables with single- or double-ended connectors
- Unshielded and shielded variants are available with various number of contacts
- The *HARAX*® and crimp variants are very versatile to use; they are designed for different cable types and sizes
- All connectors are available as a female or male variants, and in straight or angled versions
- Panel feed through available as male or female version

→ See p. 8, Printing machinery and machines for print finishing

→ See p. 10, Metal-forming machines

→ See p. 14, Wood-working machinery

→ See p. 18, Food processing and packaging machinery

→ See p. 22, Handling and assembly

→ See p. 26, Mobile machines

→ eCatalogue: [b2b.harting.com/ebusiness/en/34756](https://b2b.harting.com/ebusiness/en/34756)



## M12 connectors, B-coded



### Features

- M12 B-coded 2-pole variant with shield connection, standardised for Profibus data interfaces
- Perfect for use when constructing standardised cost-effective connections for all bus transitions in electrical cabinets, housings, and to I/O and pneumatic boxes
- HARTING offers a very wide range of M12 product variants: with the tool-free *HARAX*® rapid termination technique, with crimp contacts or as pre-assembled cables with single- or double-ended connectors
- Assembled system cables with angled or straight variants
- Panel feed through available as male or female version, and as M12 B-coded terminating connector

→ See p. 12, Metal-working machine tools

→ eCatalogue: [b2b.harting.com/ebusiness/en/34756](https://b2b.harting.com/ebusiness/en/34756)

## M12 panel feed through, D- or X-coded



### Features

- Easy to change from M12-based Ethernet machine cabling to cabinet-internal RJ45-based wiring
- Standardised and cost-effective Ethernet connections for all transitions within the electrical cabinet and enclosure walls.
- Facilitates the simple use of standard RJ45 patch cables in the electrical cabinet
- Panel feed through variants available with RJ45, coloured wire strands or as M12 gender changer
- For Gigabit Ethernet (Cat. 6A): 8-pole X-coded variants available
- Variants are available with straight or angled RJ45 entry and also for direct connection to circuit boards

→ See p. 14, Wood-working machinery

→ See p. 20, Robotics

→ eCatalogue: [b2b.harting.com/ebusiness/en/367306](https://b2b.harting.com/ebusiness/en/367306)

## Pre-assembled M8 / M12 system cables



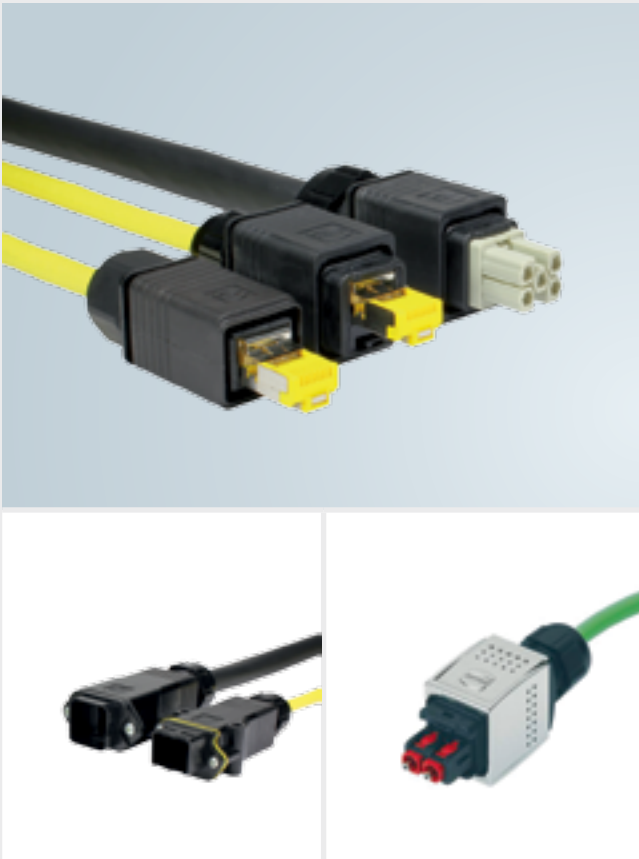
### Features

- Comprehensive product portfolio of pre-assembled M8 and M12 sensor cables
- Allows an easy, reliable and fast termination of sensors and actuators by means of standardised interfaces
- M12 sensor cables available as 3-, 4-, 5-, 8- and 12-pole variants
- Straight and angled versions available, as well as versions with pre-assembled connectors on one or two sides in diverse combinations
- M8 and M12 cables also for drag chain applications variants with PUR and PVC as cable material available, also as M12 system cables as 4-pole combination with LED and in diverse lengths available

→ See p. 22, Handling and assembly

→ eCatalogue: [b2b.harting.com/ebusiness/en/40589](https://b2b.harting.com/ebusiness/en/40589)

## HARTING PushPull system cables



### Features

- Pre-assembled system cables with PushPull connectors: according to IEC 61076-3-106 / Var. 4 and IEC 61076-3-117 / Var. 14 in IP65 / IP67 protection, and available in various lengths
- Different system cables configurations are available for data, signal and power connections, with plastic or metal hoods and housings, in shielded or unshielded versions
- Variants for power connections with up to 4 contacts each with 16 A / 690 V
- Variants for Ethernet with different connectors on both sides – RJ45 in IP20 and IP67, M12, etc.
- System cables for fibre optic signal transmission are also available: with PushPull SCRJ / Var. 14 or PushPull LC duplex / Var. 4, etc.
- System cable variants for cable extensions, in IP65 / IP67 variants
- PushPull ensures simple insertion and removal

→ See p. 20, Robotics

→ eCatalogue: [b2b.harting.com/ebusiness/en/40589](https://b2b.harting.com/ebusiness/en/40589)

## Ha-VIS preLink® Ethernet cabling



### Features

- The preLink® system is designed for constructing Cat.6<sub>A</sub> transmission lines: it is suitable for 1 / 10 Gigabit Ethernet
- Enables Ethernet cables to be assembled very quickly and safely, using a terminating block with IDC termination
- Compliant with PROFINET and AIDA
- Connectors with the preLink® system, available as 4- and 8-pole variants, RJ45 and M12 variants, with D- and X-coding
- M12 variants and PushPull RJ45 variants feature IP65 / IP67 protection
- Consistently high quality installations are ensured by the colour-coded connections in the terminating blocks and the use of preLink® mounting pliers
- Suitable for terminating solid and flexible wires, designed for PoE and PoE+
- An extender is available for lengthening the cable, with connection options on both sides
- preLink® RJ45 connectors can also be used in the Han® 3 A distributor outlets with double terminations, and with IP65 / IP67 protection

→ See p. 20, Robotics

→ eCatalogue: [b2b.harting.com/ebusiness/en/39589](http://b2b.harting.com/ebusiness/en/39589)

## Industrial Ethernet outlets



### Features

- For setting up robust Ethernet cabling in machines and industrial buildings
- Variants with up to 10 Gbit/s, with versatile preLink® termination technique or tool-free quick connect
- Available in IP65 / IP67 protection, with PushPull or Han® 3 A connectors, or as IP20 variants for the DIN rail
- The IP20 variants are ideal for constructing versatile and extensible Ethernet distribution points in the electrical cabinet
- PushPull outlet with two PushPull Var. 4 in plastic, or with two PushPull Var. 14 in metal and with IP65 / IP67 protection
- Wide range of accessories, such as labelling tags, covers, etc.

→ See p. 22, Handling and assembly

→ eCatalogue: [b2b.harting.com/ebusiness/en/396610](http://b2b.harting.com/ebusiness/en/396610)



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