HARTING

®

Pushing Performance

HARTING Products and Solutions
for the Machine Building Industry

People | Power | Partnership

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HARTING solutions for the machine building industry

HARTING offers scalable interface solutions for machine connections involving all types of power, signal and data. They can be used in machines in practically all industries and sectors.
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
- Electric cranes
- Machines that produce semiconductors
- Food processing and packaging machinery

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 the corresponding HARTING product catalogues and chapters.

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. References to the corresponding HARTING Product Catalogue and chapter are also included.

Plastics and rubber machinery:
Solutions for standardized 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 standardized connections (such as EUROMAP) used in the plastics industry. Customized solutions for your applications are also possible.
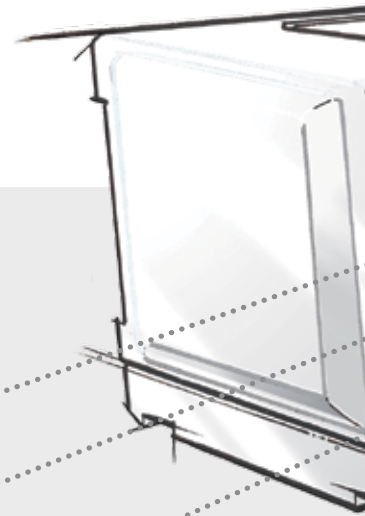
Connector drive unit

Han-Modular® Twin housing
- Optimized for drive solutions – the housing combines the power and signal inserts
- Excellent EMC protection
- Easy installation because of the two-part housing
- Wide range of modules
- An additional shielding transfer to the electrical cabinet is available optionally

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→ HARTING Industrial Connectors Han® / Chapter 06
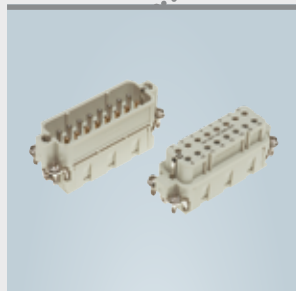
Temperature detection tool

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

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Interface to the tool

Han® HighTemp
- 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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→ HARTING Innovations 2013 and HARTING Industrial Connectors Han®
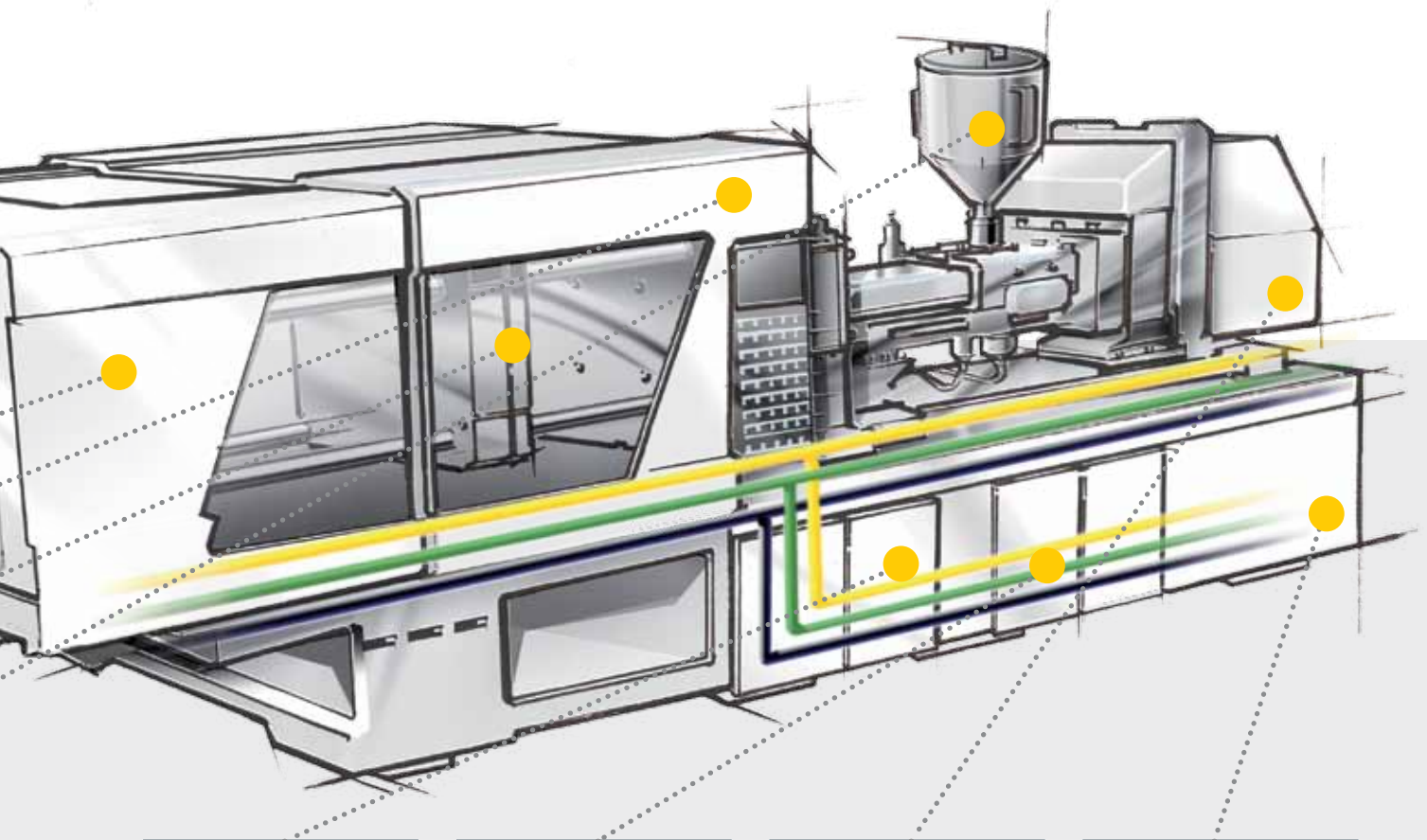
Power supply Drying

Han® PushPull Power
- A compact design for 16 A (up to 690 V)
- Available with plastic and metal housings, in different sizes and contact numbers
- PushPull ensures simple insertion and removal
- Also available with Han-Quick Lock® (tool-free) contacts

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→ HARTING Device Connectivity / Chapter 02

Backplane and I/O modules for the controller

Connectors in compliance with DIN 41 612

■ A wide range of standard connectors
■ Available in designs which supplement the standards
■ Variants with 3 – 160 pins, with various termination techniques
■ Also power contacts for currents up to 40 A

Control and power connections Electrical cabinet

Han-Snap® housing series

■ 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 housing
■ Replaces a separate terminal strip

Interface External devices

Han® D and Han® Q inserts in Han® 3 A

■ Variants with crimp and Han-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 inserts up to 40 A, or high density with up to 21 contacts

## Ethernet network machine

Ha-VIS unmanaged Ethernet switch

■ Variants for Fast Ethernet, Gigabit Ethernet or fibre-optic
■ Available in variants with M12 and RJ45 Ethernet interfaces, with up to 16 ports
■ Variants available with extra vibration resistance and IP65 protection
■ Compact design for vertical or flat mount to DIN rail
■ High EMC protection in compliance with industry standards

Printing machines and machines
for print finishing: reliable interfaces
for highly available machines

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 24-hour availability for print-media machines.
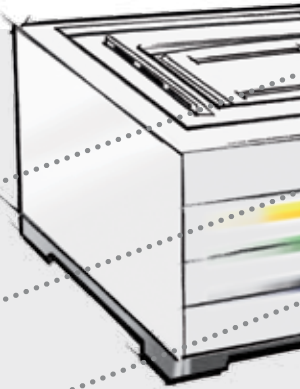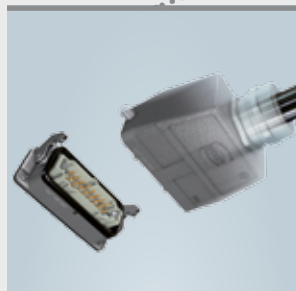
Connector sensors and I/O box

M12 A-coded connectors

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

Connections for stations with frequent changing

Han® HMC

- 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 optimized 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

Connections machine modules

Han E® / Han® ES inserts

- The standard connector with tool-free terminations 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
- Han® ES inserts with two connections per contact are available

## Ethernet network machine modules

Ha-VIS unmanaged Ethernet switch

- Simple Ethernet connection for all machine modules
- Variants for Fast Ethernet, Gigabit Ethernet or fibre-optic
- Available in variants with M12 and RJ45 Ethernet interfaces, with up to 16 ports
- Variants available with extra vibration resistance and IP65 protection
- High EMC protection in compliance with industry standards
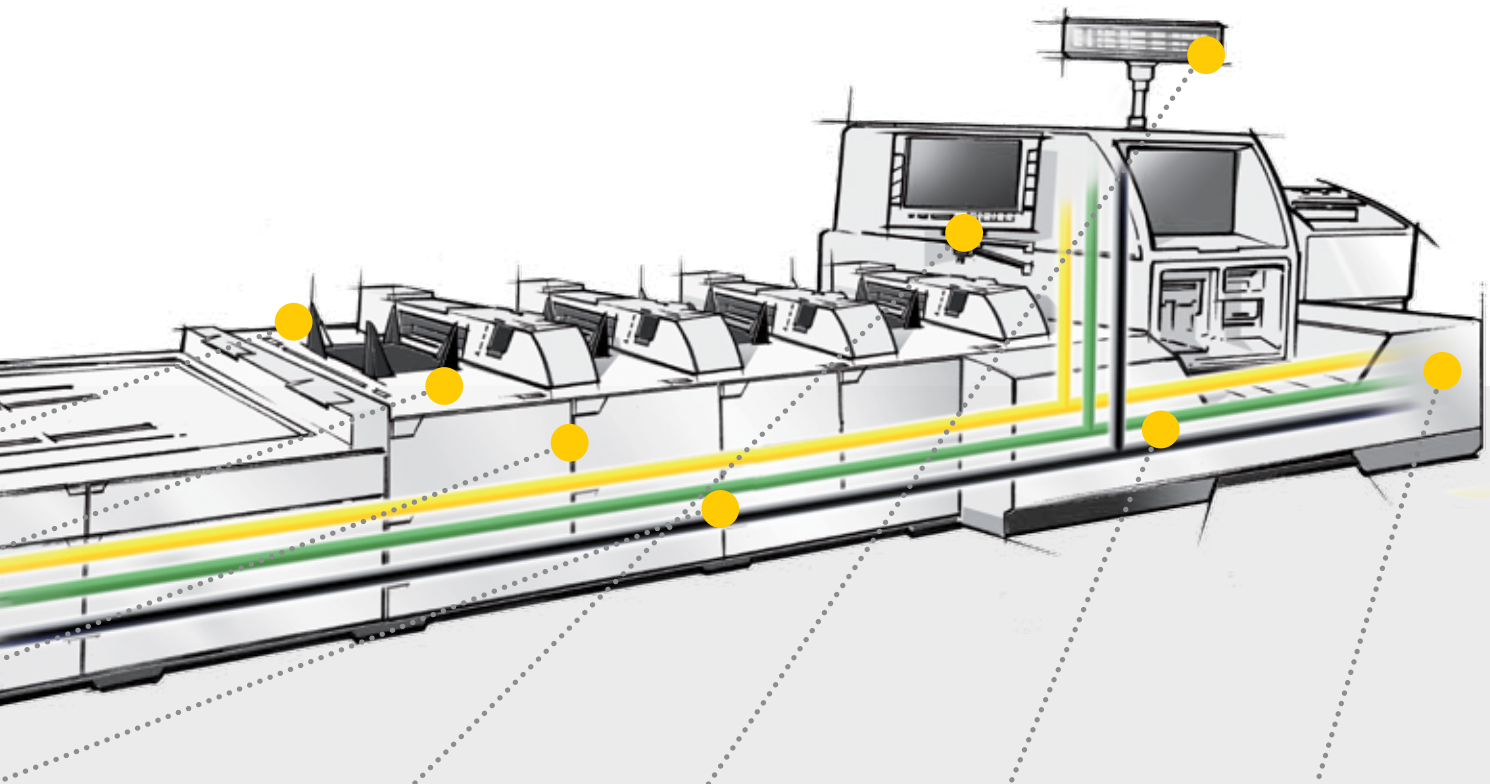
Data interfaces to machine HMIs

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 housings available in both sizes (variant 4 and variant 14) and also as straight or angled
- PushPull ensures simple insertion and removal

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→ HARTING Device Connectivity / Chapter 02

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 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® housing series

- 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 housing

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Scalable connection to the subsequent machine

Han-Eco® connectors

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

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Metal-forming machines:
Secure connections for bending, stamping and cutting
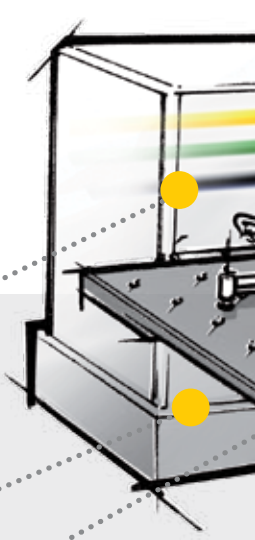
Continual optimizations to machines, tools and processes lead to accelerated motion sequences for the machines. This is especially true for metal-forming machines. HARTING's broad product portfolio allows you to select a reliable connectivity solutions for all highly dynamic applications with high impact and shock loads.

Higher-level Ethernet network

Ha-VIS mCon managed Ethernet switch
- For setting up high availability fully manageable machine networks, in accordance with all industry and IT standards
- Can be configured via the HTML-based web interface or with IT management tools (SNMP)
- All management and security functions: VLAN, RSTP, QoS, DHCP including password protection
- Variants for Fast Ethernet, Gigabit Ethernet or fibre-optic are available
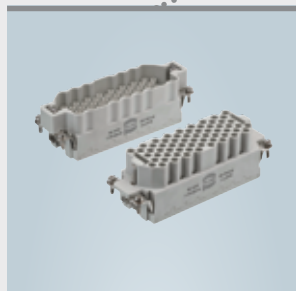
Connections to the main electrical cabinet

Han® EE / Han® EEE inserts
- Connectors for 16 A / 500 V, with extremely high contact density with crimp termination
- Machined contacts with silver or gold coating
- Can be used in all housing types and sizes from the Han® B series
- For IP20 coupling and housing variants, can also be used with included extra accessories (shielding plates, cable strain relief mechanisms, etc.)

Fibre-optic interface to tool head

Han® Multi and Han® SC-module fibre-optic modules
- Fibre-optics ensure a complete galvanic isolation between the transmitter and the receiver
- The fibre-optic link is protected against electro-magnetic interferences
- 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® housings
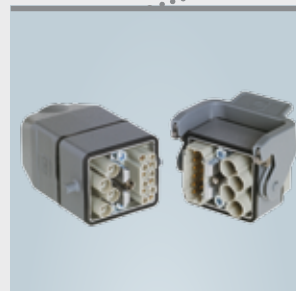
Drive interface Material supply

Han-Modular® Twin housing
- Optimized for all highly dynamic drive applications
- Can be used in all power, signal and data inserts from the Han-Modular® series
- Can also be used in fibre-optic and pneumatic modules
- Excellent EMC protection
- Easy installation because of the two-part housing
- An additional shielding transfer to the electrical cabinet is available optionally

Connectors
sensors and I/O box

M12 A-coded connectors

■ 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

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)

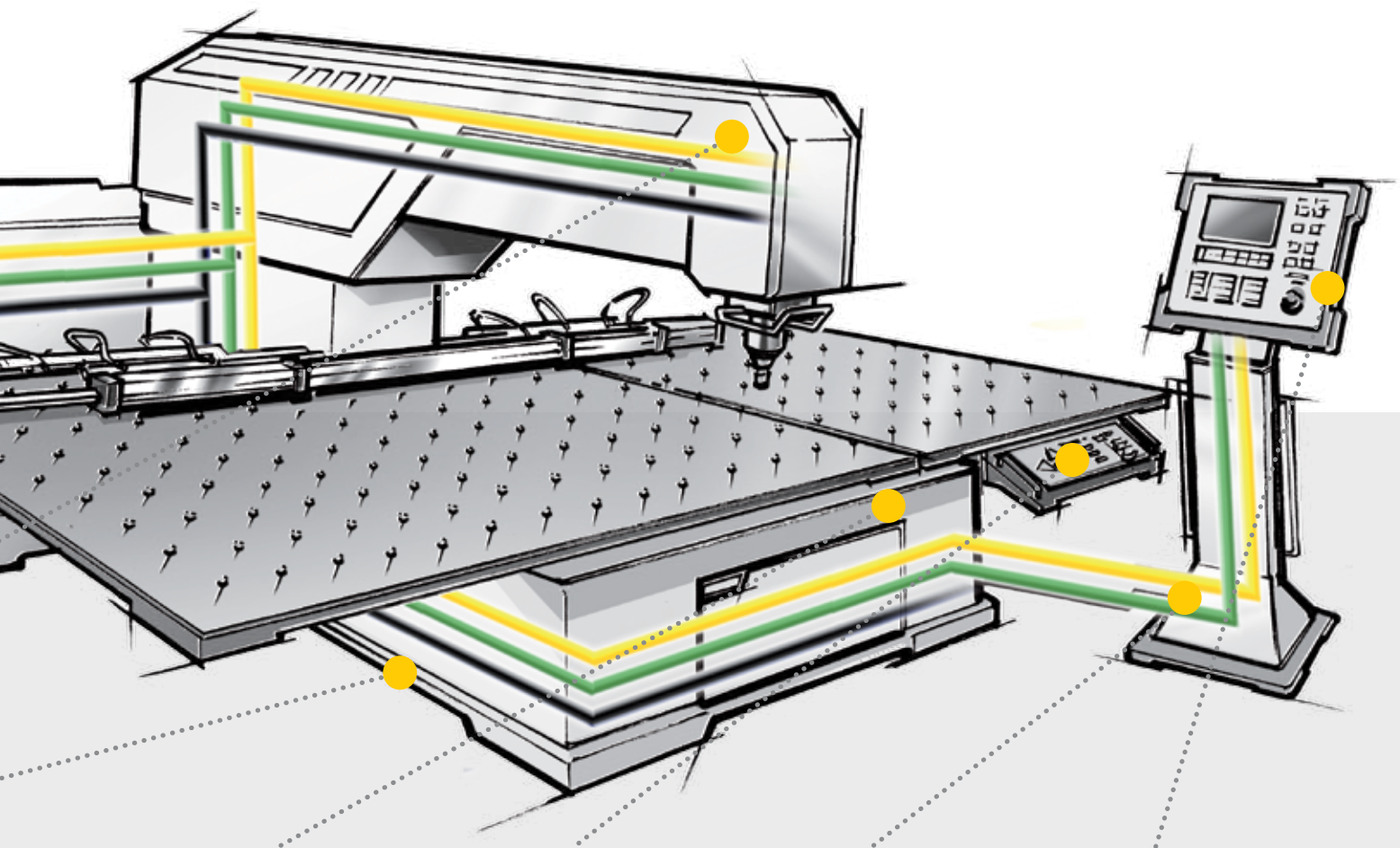■ Plastic and metal housing in the established Han® 3 A size

■ Tool-free variants for Ethernet and power connections

Pluggable interface
Remote terminal

Han-*Yellock*® connector system

■ 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 series can be used
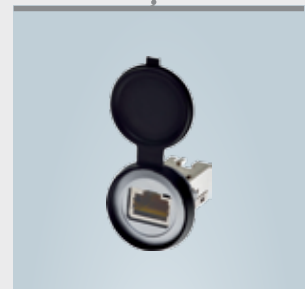
Service interface
HMI system

***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 Firewire variants are available

■ Practical accessories, such as label carrier, covers and cables

■ Optimized for use with HARTING Ethernet connectors and cables

Metal-working machine tools:
Standardized 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 standardized 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
- Optimized for 2- or 4-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^2
- Han® 3 A housing series: can be used in metal or plastic variants

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→ HARTING Industrial Connectors Han® / Chapter 19

Connecting auxiliary aggregate units

Inserts: Han E®/Han® ES
- 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 housing types and sizes from the Han® B series
- Inserts with different termination technologies are compatible with each other

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→ HARTING Industrial Connectors Han® / Chapter 03

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 technique, and with machined (precision turned) or stamped contacts
- Wide range of housings: metal, plastic or metallized plastic with locking and shielding variants

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→ HARTING Device Connectivity / Chapter 05

Interface drive unit

**Han-Drive® motor terminal housing**
- Plug-in connection for drive units and electric motors – thus 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 housing
- Number of contacts is designed for AC motors including sensors

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→ HARTING Industrial Connectors Han® / Chapter 31
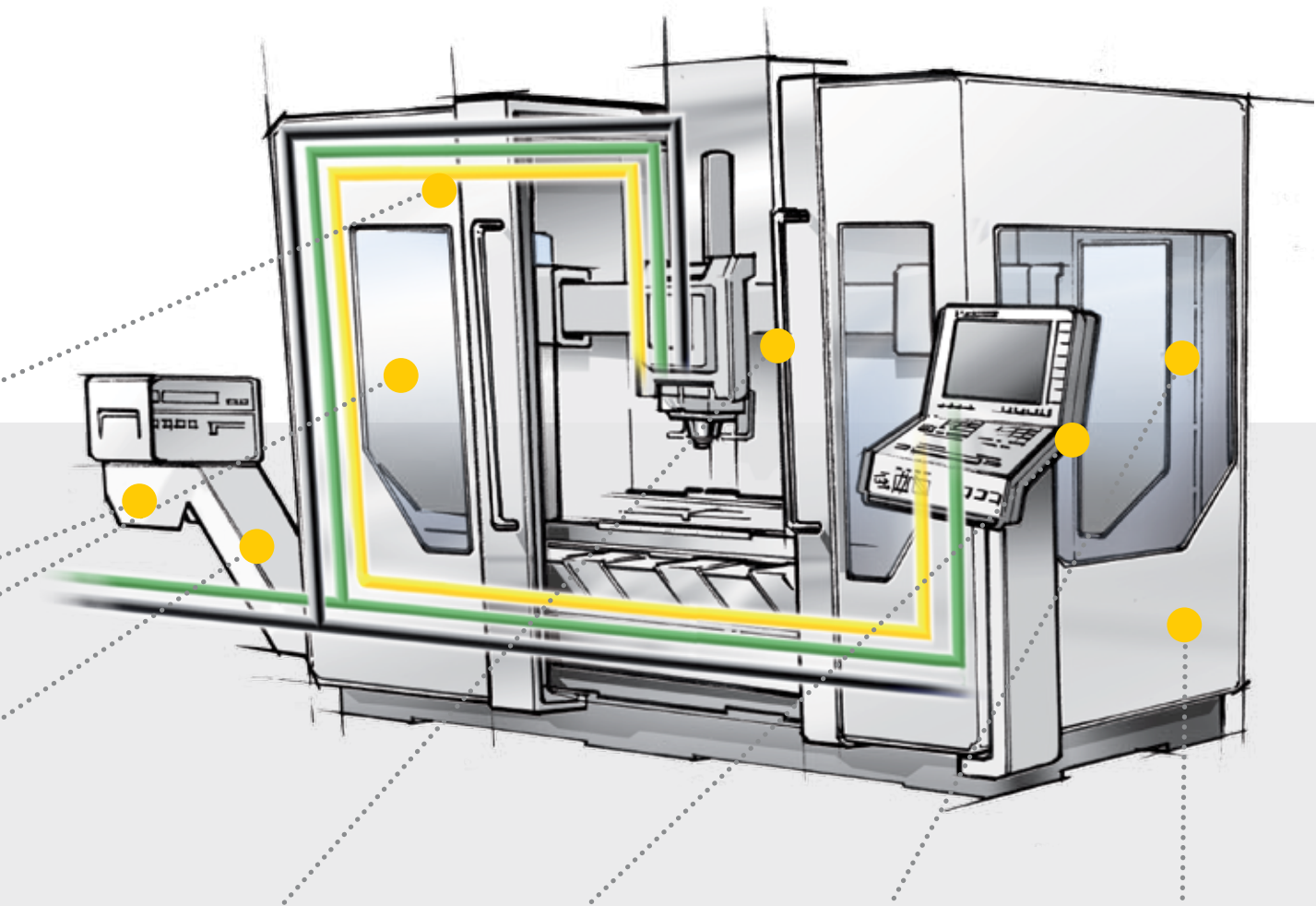
Detection of tools and workpieces

Ha-VIS RFID tags

- Unique identification for tools or workpieces
- Active and passive versions of the tags 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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→ HARTING Smart Network Infrastructure / Chapter C
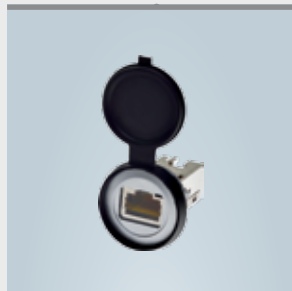
Programming and service interface

***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 Firewire variants are available
- Practical accessories, such as label carrier, covers and cables
- Optimized for use with HARTING Ethernet connectors and cables

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→ HARTING Device Connectivity / Chapter 01

Variable interface tool magazine

Han-Eco® connectors

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

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→ HARTING Industrial Connectors Han® / Chapter 29

Bus interface I/O and pneumatics box

M12 B-coded connectors

- M12, B-coded, 2-pin and shielded 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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→ HARTING Device Connectivity / Chapter 03

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

Highly specialized and highly automated machinery is now being used in the wood-working 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 A® series EMC housing
- Housings from the Han A® series provide compact interfaces with increased EMC specifications
- Very compact motor connections when using Han® 3 A housings with the corresponding Han A® or Han® Q inserts
- Ensures effective EMC connections because of the circumferential contact
- Wide range of inserts providing up to 40 A / 830 V

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→ HARTING Industrial Connectors Han® / Chapter 31

Ethernet network machine

Ha-VIS unmanaged Ethernet switch
- Perfect for constructing highly available industrial-grade, machine-internal Ethernet networks
- Variants for Fast Ethernet, Gigabit Ethernet or fibre-optics
- Available in variants with M12 and RJ45 Ethernet interfaces, with up to 16 ports
- Variants available with extra vibration resistance and IP65 protection
- High EMC protection in compliance with industry standards

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→ HARTING Smart Network Infrastructure / Chapter A-1

M12 Ethernet connector to the electrical cabinet

M12 D-coded or X-coded panel feed throughs
- Simple transition from M12 D-coded machine cabling to RJ45 cabling
- A standardized, cost-effective connection for all transitions within building 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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→ HARTING Device Connectivity / Chapter 03

## Connections safety mechanisms

Inserts: Han E®/Han® ES
- Easy to connect all safety-related mechanisms:
- With tool-free termination: the key standard connector for the machine construction sector
- 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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→ HARTING Industrial Connectors Han® / Chapter 03
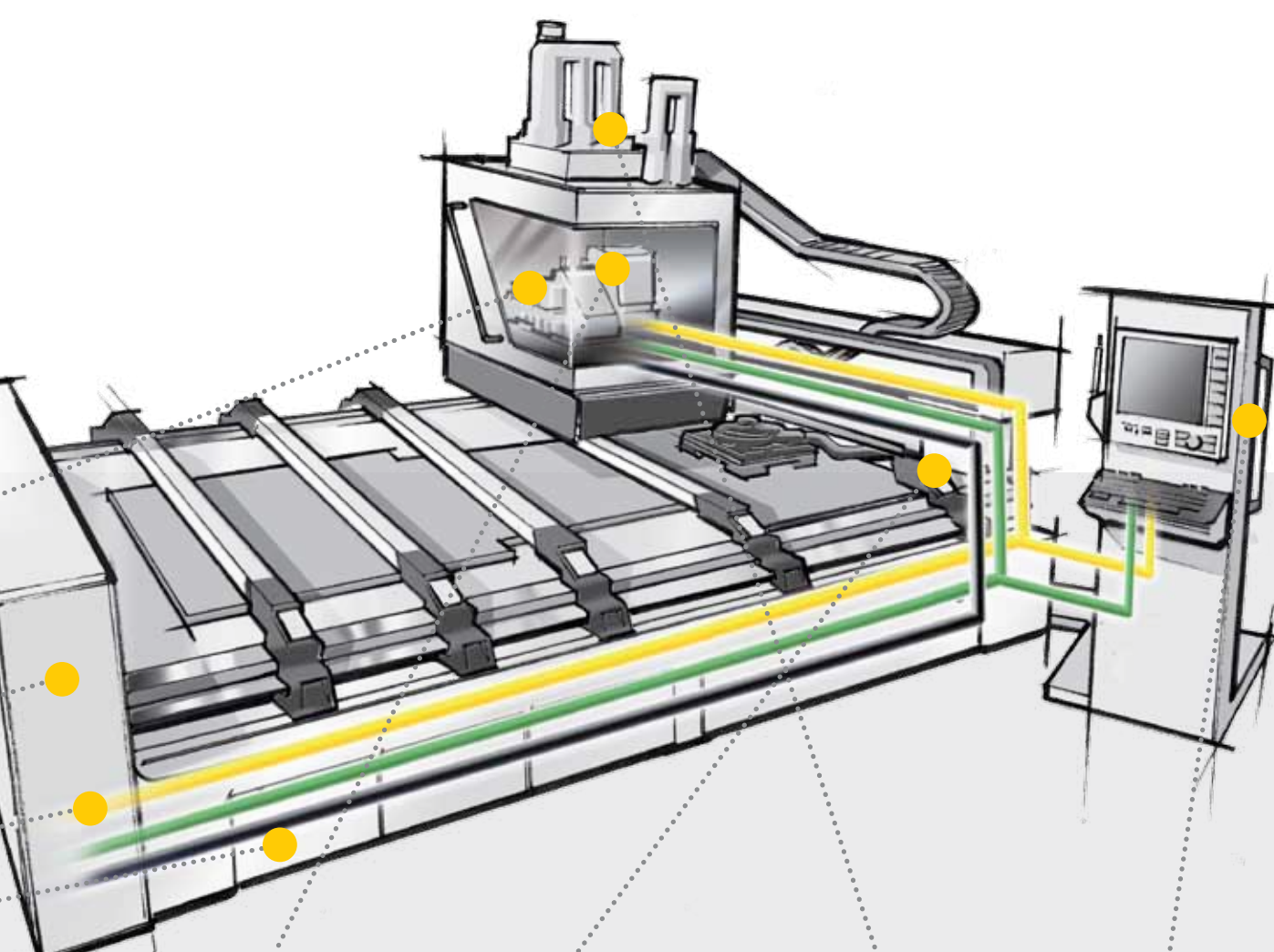
Sensor connections machining portal

M12 A-coded connectors

- 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

→ Page 26
→ HARTING Device Connectivity / Chapter 03

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 housing types and sizes from the Han® B housing series
- Secure module connections even under vibration and shock load

→ Page 27
→ HARTING Industrial Connectors Han® / Chapter 06

Interface drives machining portal

Han-Compact® connector series

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

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→ HARTING Industrial Connectors Han® / Chapter 13

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 USB, optics and signals
- Plastic and metal housings are available in two sizes (variant 4 and variant 14)
- PushPull ensures simple insertion and removal

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→ HARTING Device Connectivity / Chapter 02

Electric cranes:
Heavy-duty 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 crane

Han® HC Modular high current connectors
- Permits matable connections for high power consumer loads
- Contacts are held with a mounting frame in 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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→ HARTING Industrial Connectors Han® / Chapter 14
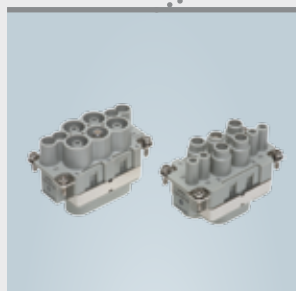
Power and control connections drives

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 housing types and sizes from the Han® B series

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→ HARTING Industrial Connectors Han® / Chapter 05 and Chapter 14

Connectors Main crane hoist

Han® M connector housing series
- Offering all the advantage of the Han® B housing series – and designed for more extreme environmental conditions
- Featuring a special seal and stainless steel locking bracket
- 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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→ HARTING Industrial Connectors Han® / Chapter 31

Ethernet network video monitoring system

Ha-VIS mCon managed Ethernet switch
- Facilitates construction of video networks in accordance with all industry and IT standards
- Devices in IP65 and designed for temperatures from -40°C to +85°C, including Gigabit Ethernet interfaces
- Can be configured via the HTML-based web interface or with IT management tools (SNMP)
- Management and security functions such as VLAN, RSTP, QoS, DHCP, and also password protection

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→ HARTING Smart Network Infrastructure / Chapter A-4
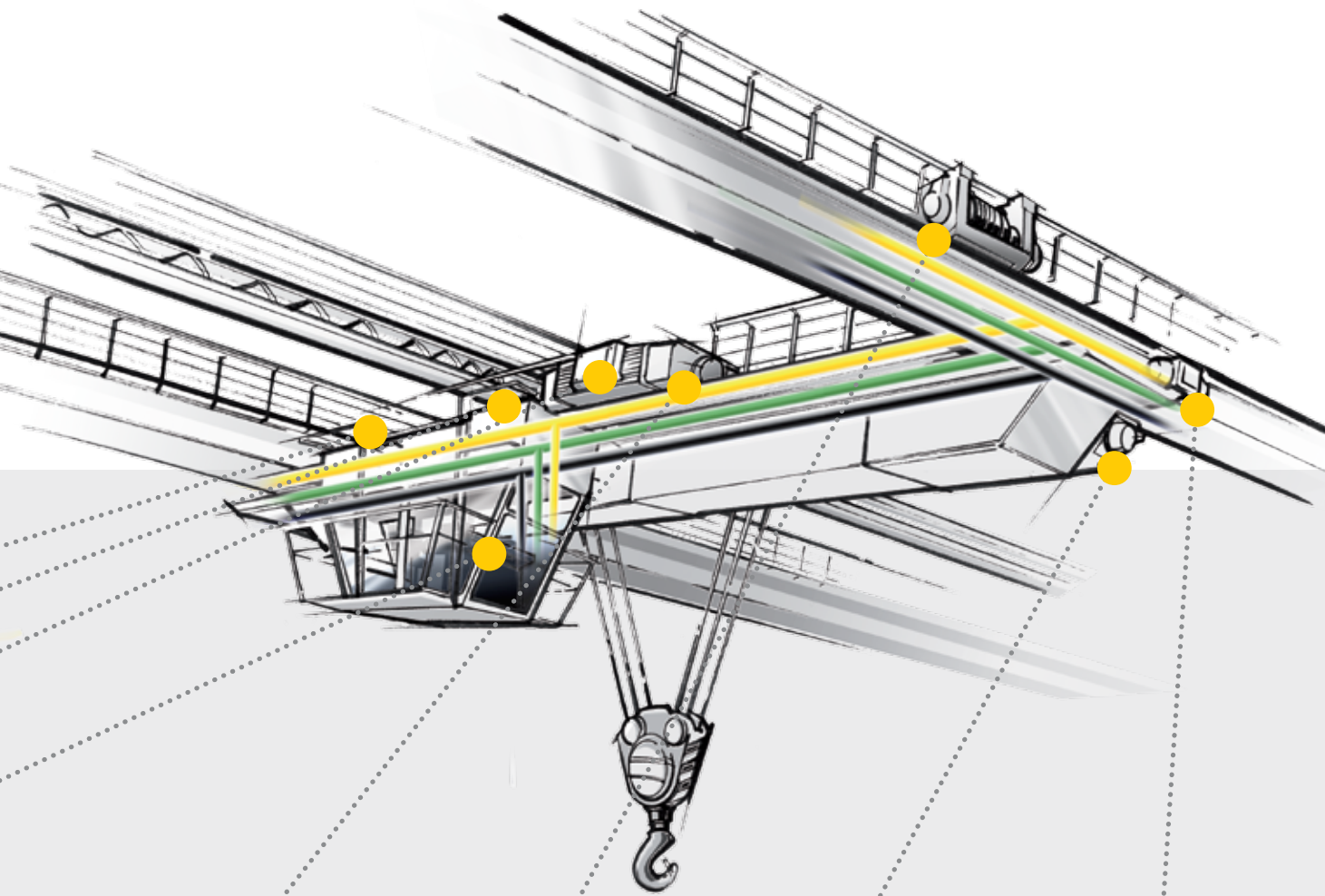
Connections crane control cables

Han® EE / Han® EEE inserts

- Connectors with very densely packed contacts, with vibration-resistant crimp terminations
- Machined contacts are silver or gold plated and very robust
- Can be used as electrical cabinet or coupling versions in all housing types and sizes from the Han® B series; with many extra accessories (shielding plates, cable strain relief mechanisms, etc.)

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→ HARTING Industrial Connectors Han® / Chapter 03

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 metallized plastic, with various locking and shielding options
- Inserts with IDC, solder or crimp termination technique

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→ HARTING Device Connectivity / Chapter 05

Video interface crane camera system

Han-Quintax® contact insert

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

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→ HARTING Industrial Connectors Han® / Chapter 06 and Chapter 19

Hybrid connection travel drives

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 Han® B housing types and sizes 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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→ HARTING Industrial Connectors Han® / Chapter 06

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 unmanaged Ethernet switch
- Perfect for constructing highly available industrial-grade, machine-internal Ethernet networks
- Variants for Fast Ethernet, Gigabit Ethernet or fibre-optic
- Available in variants with M12 and RJ45 Ethernet interfaces, with up to 16 ports
- Compact design for vertical or flat mount to DIN rail
- High EMC protection in compliance with industry standards

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→ HARTING Smart Network Infrastructure / Chapter A-1

Power supply complete machine

Han-Eco® connectors
- Permits variable placement of the interface depending on the machinery configuration that is currently required
- Connector housing series 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 housings together with low weight and high resistance to environmental influences

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→ HARTING Industrial Connectors Han® / Chapter 29

Connections for Control and data cables

Han-*Yellock*® connector system
- Shared connector for all connections to the machinery module
- Combines new functions (such as contact bridges) with robustness and modern design
- Only use 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 series can be used

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→ HARTING Industrial Connectors Han® / Chapter 25

Connector drive unit

Han-Modular® Twin housing
- Optimized for drive solutions – the housing combines the power and signal inserts
- Excellent EMC protection
- Easy installation because of the two-part housing
- Wide range of modules can be used
- An additional shielding transfer to the electrical cabinet is available optionally

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→ HARTING Industrial Connectors Han® / Chapter 06

Docking frame for plug-in units

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

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→ HARTING Industrial Connectors Han® / Chapter 06

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 metallized plastic, with various locking and shielding options
- Inserts with IDC, solder or crimp termination

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→ HARTING Device Connectivity / Chapter 05

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 Firewire variants are available
- Practical accessories are available, including label carrier, covers and cables
- Optimized for use with HARTING Ethernet connectors and cables

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→ HARTING Device Connectivity / Chapter 01
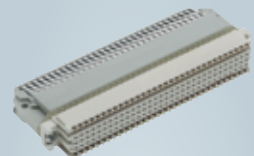
Interface connector controller

***har*-bus® 64 connectors**
- Proven backplane and front-connector system for mounting on rack systems
- Robustness ensured because soldered on fastening clips relieve strain on the solder pins
- A complete series of products for transitions from backplane, daughter cards, cables, connectors and reverse transfers

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→ HARTING connectors DIN 41 612

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 mCon managed Ethernet switch
- Simple interface for machines to the higher level networks, in accordance with all industry and IT standards
- Devices in IP65 and designed for temperatures from 40 °C to +85 °C, including Gigabit Ethernet interfaces
- Can be configured via the HTML-based web interface or with IT management tools (SNMP)
- Management and security functions such as VLAN, RSTP, QoS, DHCP, and also password protection

→ Page 32
→ HARTING Smart Network Infrastructure / Chapter A-4

Power and control interfaces electrical cabinet

Inserts: Han E®/Han® ES
- 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 construction sector
- Can be used in all housing types and sizes from the Han® B series
- Inserts with different termination techniques are compatible with each other

→ Page 27
→ HARTING Industrial Connectors Han® / Chapter 03

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
- All inserts in size Han® 3 A: can be used 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

→ Page 38
→ HARTING Industrial Connectors Han® / Chapter 31

Connectors sensors and actuators

M12 A-coded connectors
- 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

→ Page 26
→ HARTING Device Connectivity / Chapter 03
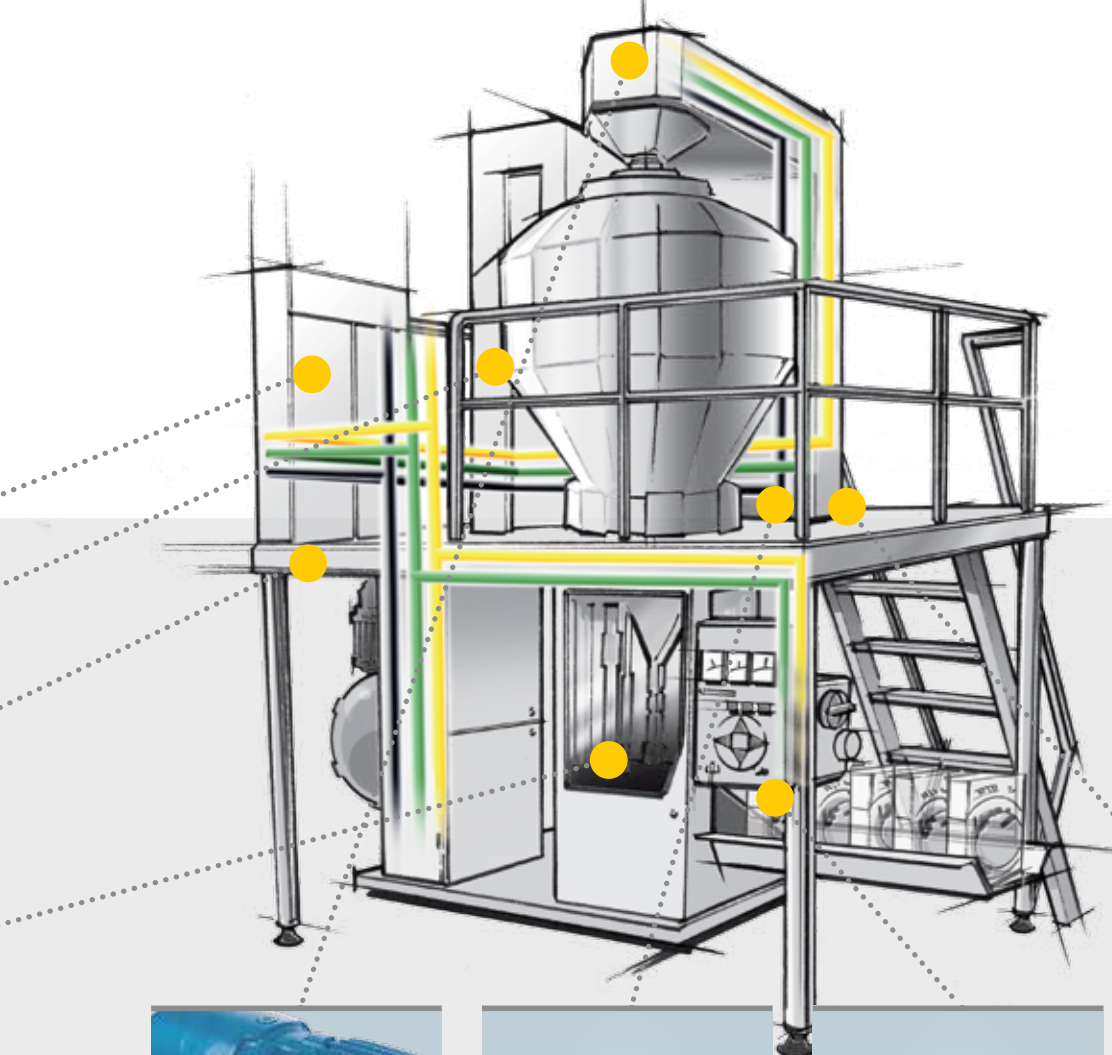
Interface drives
Material supply

Han-Drive® motor terminal housing

- Plug-in connection for drive units and electric motors – thus 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 housing
- Number of contacts is designed for AC motors including sensors

→ Page 29
→ HARTING Industrial Connectors Han® / Chapter 31

Power connectors
drying

Han® Q high power inserts in Han® 3 A

- Ideally suited for compact pluggable connections for single- or three-phase loads (such as heaters or motors)
- Compact connectors in 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

→ Page 38
→ HARTING Industrial Connectors Han® / Chapter 13

Connectors
HMI and control unit

Han-*Yellock*® connector system

- Shared connector for all connections to the controller unit
- Combines new functions (such as contact bridges and lockable latch) with robustness and modern design
- Only male contacts for the Han-*Yellock*® modules; the female side is chosen later
- Over 40 modules from the Han-Modular® series can be used
- Installation of the modules in the housings requires no tools

→ Page 33
→ HARTING Industrial Connectors Han® / Chapter 25
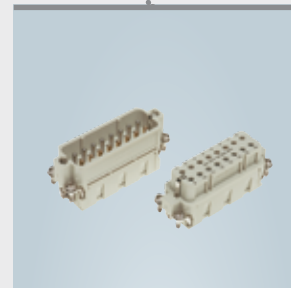
Temperature
detection drying

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 housing types
- Screw inserts for Han® A or Han® B housing sizes

→ Page 23
→ HARTING Industrial Connectors Han® / Chapter 02 and Chapter 13

Han-Modular® Twin housing

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 housing
- Only one 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 and female contact
- Additional shielding transfer within the electrical cabinet is also possible when using the additional panel feed through housing
- → HARTING Industrial Connectors Han® / Chapter 06
- → **Application: pages 6, 10, 18**

Passive Ha-VIS RFID tags

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
- → HARTING Smart Network Infrastructure, Intelligent Network Solutions / Chapter C
- → **Application: page 13**

Han® Thermocouple inserts
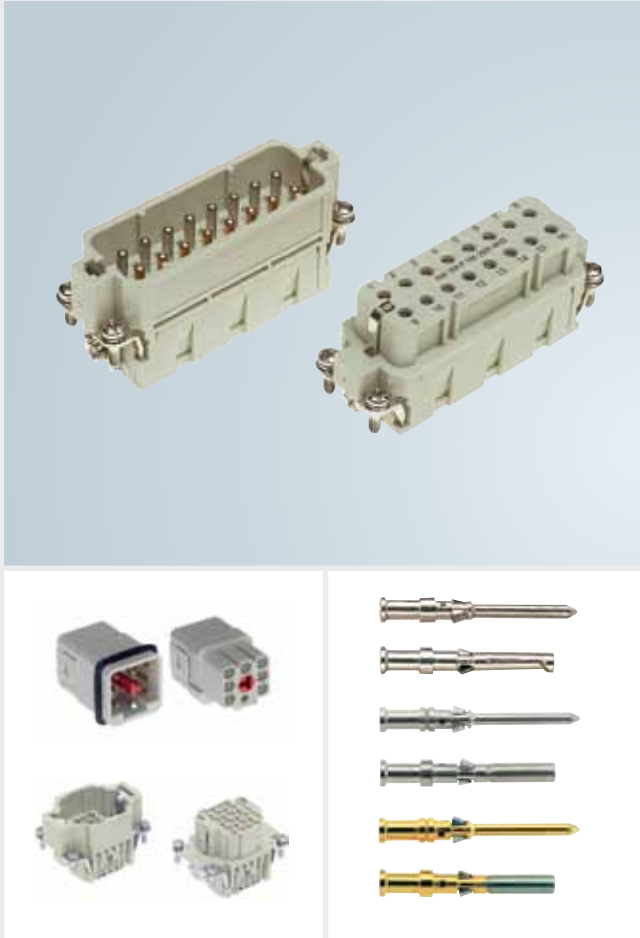
Features

- 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 connector housings from 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® modules
- Mixed combination of thermocouple contacts and standard contacts in a single insert is also possible
- All inserts are available in accordance with EUROMAP 14, Part 1
- → HARTING Industrial Connectors Han® / Chapter 02 and Chapter 13
- → **Application: pages 6 and 21**

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 mating
- PushPull housing and inserts are available, in accordance with IEC 61 076-3-106 / Variant 4 and IEC 61 076-3-117 / Variant 14
- Housing available in metal and plastic variants
- Inserts available with crimp contacts and Han-Quick Lock® (tool-free) contacts
- Easily integrated housing because of the angled and straight versions for bulkhead inserts
- Also available as cable-to-cable connection
- → HARTING Device Connectivity / Chapter 02
- → **Application: page 6**

Connectors in accordance with DIN 41 612
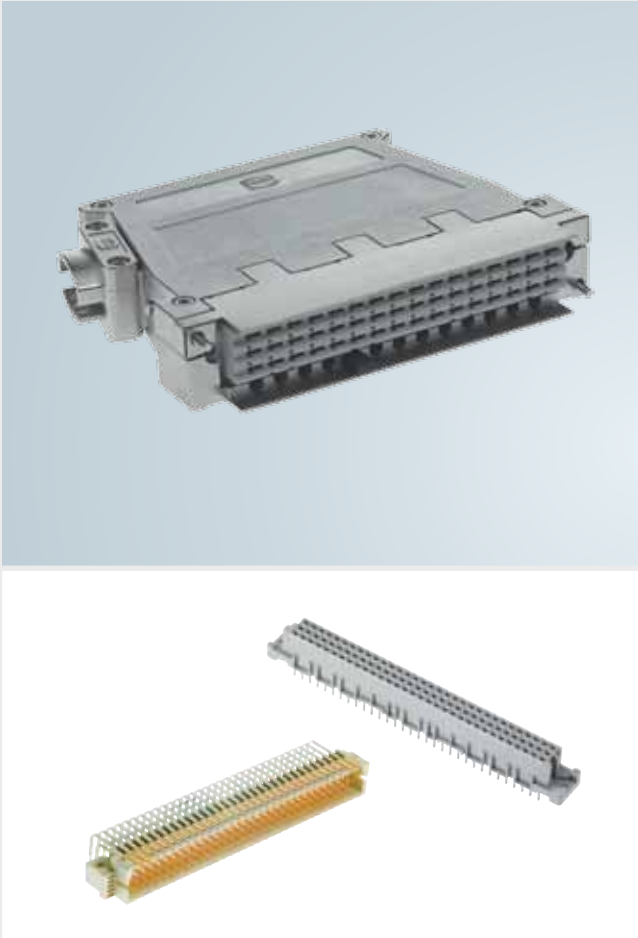
Features

- Provides many efficient ways (both technically and economically) for setting up rack systems and elements – thanks to the broad range of standardized 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, pressed-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, metallized 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
- → HARTING DIN 41 612 Connectors / Chapter 06
- → Application: page 7

Han-Snap® housings and mounting parts
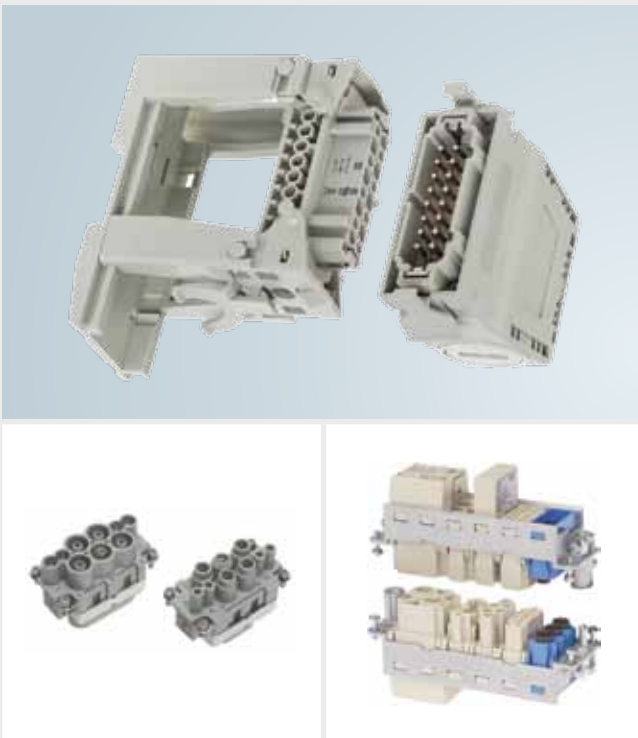
Features

- 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 housing, including mechanisms for cable strain relief
- Ideally suited for use in electrical cabinets, junction boxes or housings that have their own sealed cable entries
- Variants available for transverse or lengthwise mounting to DIN rails or also as a wall mount
- When using the Han-Snap® adapter, the standard inserts from the Han A® series also fit
- → HARTING Industrial Connectors Han® / Chapter 11
- → Application: pages 7, 9

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 code 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 contact 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

→ HARTING Industrial Connectors Han® / Chapter 02 and Chapter 13

→ **Application: page 7**

Ha-VIS unmanaged Ethernet switch

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

■ Optimized 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

→ HARTING Smart Network Infrastructure / Chapter A-1

→ **Application: pages 7, 8, 14, 18**

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 housing
- Very compact design for data connectors, with inserts in 4-pin and 8-pin RJ45 variants (Cat. 5 or Cat. 6) or USB, optics 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 standardized inserts
→ HARTING Device Connectivity / Chapter 02
→ **Application: pages 9, 15**

M12 A-coded connectors

Features

- M12 is widely used throughout the industry and a standardized 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
→ HARTING Device Connectivity / Chapter 03
→ **Application: pages 8, 11, 15, 20**

Han-Modular® modules

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 housing
- Can be used in all housing types from the Han® B series when using a hinged frame, in the Han-Eco® or Han-Modular® housings directly, or in the Han-*Yellock*® with an adapter frame
- Leading PE contacts can be implemented in all housing variants
- Installation of the modules requires no tools
- Virtually unlimited number of combinations are possible
- Secure module connections even under vibration and shock load
→ HARTING Industrial Connectors Han® / Chapter 06
→ **Application: pages 15, 17**

Han E® / Han® ES 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 the simple, very effective and functionally reliable construction of interfaces to machine modules, aggregates or separate electrical cabinets
- Designed to be used in all housing types and housing sizes from the Han® B series: Han® M, Han® EMC, Han® HPR or Han-Snap®
- Inserts are available with the tool-free screw or cage clamp termination technique, or with crimp termination
- All inserts of the same size can be mixed freely with different termination technique
→ HARTING Industrial Connectors Han® / Chapter 03
→ **Application: pages 8, 12, 14, 20**

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-pin RJ45 variants (Cat. 5 / Cat. 6) can be chosen; variants featuring tool-free installation are also available
- Plastic and metal 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
- → HARTING Device Connectivity / Chapter 02
- → Application: pages 9, 11

Han-Eco® connectors

Features

- Combines the advantages of our established Han® B connector housing product series and the enormous versatility of the Han-Modular® inserts, with their low weight and outstanding resistance to environmental influences
- Connector housing 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 housing using "click and mate"
- In each of the four sizes, a module has more space than in the equivalent Han® B housing; a PE module can optionally be used
- Ensures excellent mechanical strength and outstanding resistance to environmental influences
- Outdoor housing variants are available
- Surface-mount, bulkhead and coupling variants
- Cable side available in straight and angled variants
- → HARTING Industrial Connectors Han® / Chapter 29
- → Application: pages 9, 13, 18

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 repair/start-up down times
- ▪ Usage with all inserts in the Han® 10 B size, including the Han-Modular® series in a modular frame
- ▪ Also available as an EMC housing
- ▪ 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 counter connector
- → HARTING Industrial Connectors Han® / Chapter 31
- → **Application: pages 12, 21**

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
- ▪ Optimized for use with HARTING data connectors and cables
- → HARTING Device Connectivity / Chapter 01
- → **Application: pages 11, 13, 19**

D-Sub connectors for signals and power

Features

■ Easy setup for all industrial bus interfaces, with D-Sub connector 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 techniques, 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 metallized 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

→ HARTING Device Connectivity / Chapter 05

→ Application: pages 12, 17, 19

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^2 – can be used for power supply or signal transfer

■ The complete Han® 3 A housing product series can be used in metal or plastic variants

■ Cable-to-cable connections are also possible when using coupling housings

→ HARTING Industrial Connectors Han® / Chapter 19

→ Application: page 12

M12 B-coded connectors

Features

- M12 B-coded 2-pin variant with shield connection, standardized for Profibus data interfaces
- Perfect for use when constructing standardized 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
- → HARTING Device Connectivity / Chapter 03
- → **Application: page 13**

Han® EE and Han® EEE inserts

Features

- Facilitates 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 housing types and housing sizes from the Han® B series: Han® M, Han® EMC, Han® HPR or Han-Snap®
- For IP20 coupling and housing variants in the electrical cabinet; can also be used with included extra accessories (shielding plates, cable strain relief mechanisms, etc.)
- Machine contacts (thus very robust), silver or gold plated contacts, or thermocouple contacts can be combined in the same insert
- → HARTING Industrial Connectors Han® / Chapter 03
- → **Application: pages 10, 17**

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 optical fibre 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 Han® B housing types and sizes, or in all Han-Modular® housings

➜ HARTING Industrial Connectors Han® / Chapter 06

➜ Application: page 10

Ha-VIS mCon managed Ethernet switch

Features

■ Perfect for constructing highly available fully manageable networks (either within the machine or higher-level networks), suitable for demanding requirements in accordance with all industry and IT standards

■ All parameters can be configured via the HTML-based web interface or using IT management tools (SNMP)

■ Complete management and security functionality (VLAN, RSTP, QoS, DHCP, etc. including password protection) compatible with IT standards

■ Device variants are available with IP65 protection and extended temperature range from -40 °C to 85 °C

■ Variants for Fast Ethernet, Gigabit Ethernet or fibre-optic interfaces are available

➜ HARTING Smart Network Infrastructure / Chapter A-4

➜ Application: pages 10, 16, 20

Han-*Yellock*® connector system

Features

- This connector provides new functionality (contact bridges for multiplying potentials, lockable latch, separated housing)
- Achieves the same or higher IP protection and robustness 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 cable 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
➜ HARTING Industrial Connectors Han® / Chapter 25
➜ Application: pages 11, 18, 21

M12 D- or X-coded panel feed throughs

Features

- Easy to change from M12-based Ethernet machine cabling to cabinet-internal RJ45-based wiring
- Standardized and cost-effective Ethernet connections for all transitions within the electrical cabinet and housing walls.
- Facilitates the simple use of standard RJ45 patch cables in the electrical cabinet
- Panel feed through variants available as with RJ45, coloured wire strands or as M12 gender changer
- For Gigabit Ethernet (Cat. 6A): 8-pin X-coded variants available
- Variants are available with straight or angled RJ45 entry and also for direct connection to circuit boards
➜ HARTING Industrial Connectors Han® / Chapter 03
➜ Application: page 14

Han A® series EMC housing

Features

- Ideal for use as very compact connectors in applications with increased EMC requirements, such as three-phase drives with frequency controllers
- The Han® 3 A EMC housing is 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 with housing lock
- 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 and female guide pins (for Han A® housings)
- An EMC screw is required to connect the cable shielding
- → HARTING Industrial Connectors Han® / Chapter 31
- → Application: page 14

Han-Compact® connector series

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.)
- Housing available in plastic and as coated or nickel plated metal variants
- All closed cable housing variants offer an integrated cable gland
- Cable housing variants with side covers enable a precise, high quality cable installation
- Wide range of inserts in the Han-Compact® size are available with up to 40 A / 690 V, or with up to 17 10 A contacts
- EMC housing variants are also available for applications with more demanding EMC requirements
- → HARTING Industrial Connectors Han® / Chapter 13
- → Application: page 15

Han® M connector housing series

Features

- Especially well suited for outdoor applications: designed for tougher environmental requirements and also featuring the established excellence of our Han® B standard housing series
- Equipped with a special seal that is resistant to ultraviolet 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 all housing sizes and types
- → HARTING Industrial Connectors Han® / Chapter 31
- → **Application: page 16**

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 housing from the Han® 3 A housing series
- The Han-Quintax® module with two interfaces can be used in all types and series of 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 insert, regardless of the housing's potential
- → HARTING Industrial Connectors Han® / Chapter 06 and Chapter 19
- → **Application: page 17**

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 of from 1 to 10 high current contacts in a single housing is possible
- Contacts are held with a mounting frame in housings from 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
- → HARTING Industrial Connectors Han® / Chapter 14
- → Application: page 16

Han-Com® / Han® K connectors

Features

- High current and control contacts can be combined in a single housing. This allows multiple circuits to be combined and provides a cost-effective, compact and space-saving method for designing interfaces.
- Available with 100 A high current inserts 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 housing types and housing sizes from 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.
- → HARTING Industrial Connectors Han® / Chapter 05 and Chapter 14
- → Application: page 16

Han-Modular® docking frames

Features

- Allows direct docking of plug-in units in plug-in systems, for interfaces constructed using connector modules from the Han-Modular® series
- Complex plug-in units are easy to handle: similar to circuit boards with backplane connections
- Stable male and female leading guide pins as well as floating-bearing 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
- → HARTING Industrial Connectors Han® / Chapter 06
- → **Application: page 19**

har-bus® 64 connectors
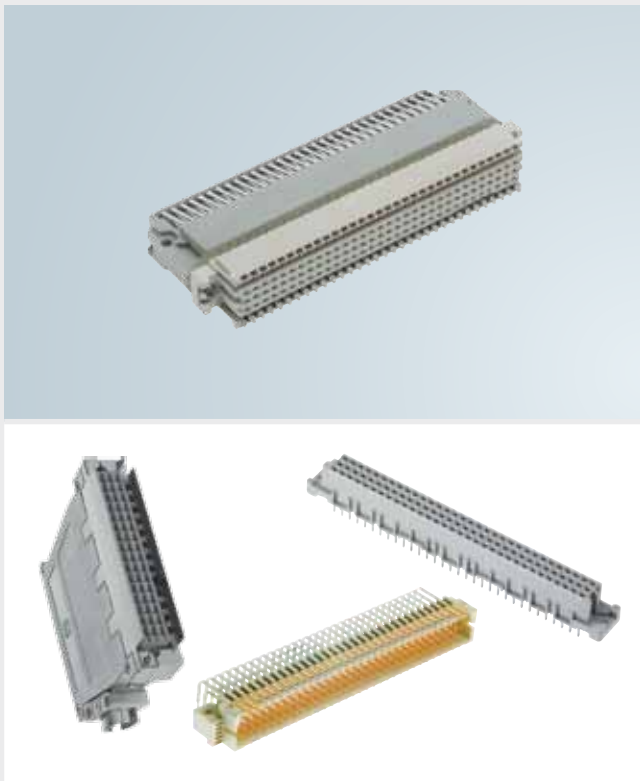
Features

- A wide range of standardized 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 41612
- A complete series of products for transitions from backplane, daughter cards, cables, 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
- → HARTING connectors DIN 41 612
- → **Application: page 19**

Han® Q high power inserts in 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 power connectors on the market
- Perfect for use as compact power connectors (e.g. for 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 housings
- Finger-safe design for both the male and female sides of the inserts
- The connector can be coded by using a coding pin
- → HARTING Industrial Connectors Han® / Chapter 13
- → Application: page 21

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 housings, electrical cabinets or machine modules
- Also available in EMC variant or in Han® M for aggressive climatic conditions
- Cable glands on both housing sides must be used
- → HARTING Industrial Connectors Han® / Chapter 31
- → Application: page 20

Han® HighTemp connectors

Features

- The series is based on our established Han® B 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 housing has a special surface and the seal has a non-stick coating – thus minimizing stickiness even during continuous usage
- All housings and inserts are available in the popular sizes and shapes of the Han® B series
- All Han® HighTemp inserts are available with screw or crimp termination
- → HARTING innovations 2013 and HARTING Industrial Connectors Han®
- → Application: page 6

## Han® HMC connectors for many mating cycles

Features

- Series based on our established Han® B 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 connector components in use are designed for 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 housings are available in sizes Han® 10 to Han® 24 B
- Available as insert 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
- → HARTING innovations 2013 and HARTING Industrial Connectors Han®
- → Application: page 8

Information
about the HARTING Catalogues

Intelligent and high-performance connectivity solutions make up the foundation for industrial applications and production systems. HARTING's trio of solutions – for installation technique, device connectivity and smart network infrastructure – provide clear advantages for your application.
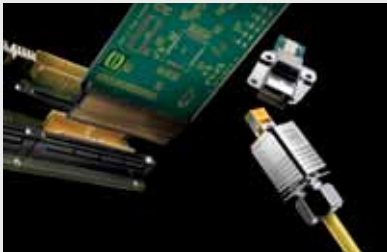
Device Connectivity
The *har* device connectivity products from HARTING are an all-purpose, innovative series of PCB connectors and device connectivity solutions with protection levels ranging from IP20 to IP65/IP67.

Smart network infrastructure – intelligent network solutions
HARTING's Ha-VIS offers a comprehensive series of Ethernet network components and cabling products. They provide a stable communications platform on which to build a convergent IT automation network. Our Ha-VIS RFID products provide fully integrated RFID solutions.

Industrial Connectors Han®
Han® connectors have become the standard connector for the industry world-wide. Applications that use Han® connectors stand out around the world for their rugged design, ease of handling and modularity when connecting data, signal and power.

The following HARTING catalogues provide more information on tools, accessories and contacts:

- HARTING Device Connectivity
- HARTING Intelligent Network Solutions
- HARTING Industrial Connectors Han®

HARTING
Global

AE - **United Arab Emirates**
HARTING Middle East FZ-LLC
Knowledge Village
Block 2A, Office F72
Dubai, United Arab Emirates
E-Mail: uae@HARTING.com, www.HARTING.ae

AT - **Austria**
HARTING Ges. m. b. H.
Deutschstraße 19, A-1230 Wien
E-Mail: at@HARTING.com, www.HARTING.at

AU - **Australia**
HARTING Pty Ltd
Suite 11 / 2 Enterprise Drive
Bundoora 3083, AUS-Victoria
E-Mail: au@HARTING.com, www.HARTING.com.au

BE - **Belgium**
HARTING N.V./S.A.
Z.3 Doornveld 23, B-1731 Zellik
E-Mail: be@HARTING.com, www.HARTING.be

BR - **Brazil**
HARTING Ltda.
Rua Major Paladino 128 – Prédio 11
CEP 05307-000 – São Paulo – SP – Brasil
E-Mail: br@HARTING.com, www.HARTING.com.br

CA - **Canada**
HARTING Canada Inc.
8455 Trans-Canada Hwy., Suite 202
St. Laurent, QC, H4S1Z1, Canada
E-Mail: info.ca@HARTING.com, www.HARTING.ca

CH - **Switzerland**
HARTING AG
Industriestrasse 26, CH-8604 Volketswil
E-Mail: ch@HARTING.com, www.HARTING.ch

CH - **Switzerland**
HARTING AG Mitronics
Leugenestrasse 10, CH-2500 Biel 6
E-Mail: mit@HARTING.com
www.HARTING-mitronics.ch

CN - **China**
HARTING (Zhuhai) Sales Limited
Room 3501- 3503
No. 1, Hong Qiao Road, Grand Gateway I
Xu Hui District, Shanghai 200030, China
E-Mail: cn@HARTING.com, www.HARTING.com.cn

CZ - **Czech Republic**
HARTING s.r.o.
Mlýnská 2, CZ-160 00 Praha 6
E-Mail: cz@HARTING.com, www.HARTING.cz

DE - **Germany**
HARTING Deutschland GmbH & Co. KG
P.O. Box 2451, D-32381 Minden
Simeonscarré 1, D-32427 Minden
E-Mail: de@HARTING.com,
www.HARTING.de

DK - **Denmark**
HARTING ApS
Hjulmagervej 4a, DK – 7100 Vejle
E-Mail: dk@HARTING.com, www.HARTING.dk

EE - **Eastern Europe**
HARTING Eastern Europe GmbH
Bamberger Straße 7, D-01187 Dresden
E-Mail: Eastern.Europe@HARTING.com
www.HARTING.com

ES - **Spain**
HARTING Iberia S.A.
Avda. Josep Tarradellas 20-30 4o 6a, E-08029 Barcelona
E-Mail: es@HARTING.com, www.HARTING.es

FI - **Finland**
HARTING Oy
Teknobulevardi 3-5, FI-01530 Vantaa
E-Mail: fi@HARTING.com, www.HARTING.fi

FR - **France**
HARTING France
181 avenue des Nations, Paris Nord 2
BP 66058 Tremblay en France
F-95972 Roissy Charles de Gaulle Cédex
E-Mail: fr@HARTING.com, www.HARTING.fr

GB - **Great Britan**
HARTING Ltd.
Caswell Road, Brackmills Industrial Estate
GB-Northampton, NN4 7PW
E-Mail: gb@HARTING.com, www.HARTING.co.uk

HK - **Hong Kong**
HARTING (HK) Limited
Regional Office Asia Pacific
3512 Metroplaza Tower 1, 233 Hing Fong Road
Kwai Fong, N. T., Hong Kong
E-Mail: ap@HARTING.com, www.HARTING.com.hk

HU - **Hungary**
HARTING Magyarország Kft.
Fehérvári út 89-95, H-1119 Budapest
E-Mail: hu@HARTING.com, www.HARTING.hu

IN - **India**
HARTING India Pvt Ltd
7th Floor (West Wing), Central Square II
Unit No.B-19 Part, B 20&21, TVK Industrial Estate
Guindy, Chennai – 600032, India
E-Mail: in@HARTING.com, www.HARTING.co.in

IT - **Italy**
HARTING SpA
Via dell'Industria 7, I-20090 Vimodrone (Milano)
E-Mail: it@HARTING.com, www.HARTING.it

JP - **Japan**
HARTING K. K.
Yusen Shin-Yokohama 1 Chome Bldg., 2F
1-7-9, Shin-Yokohama, Kohoku
Yokohama 232-0033 Japan
E-Mail: jp@HARTING.com, www.HARTING.co.jp

KR - **Korea**
HARTING Korea Limited
#308 Yatap Leaders Building, 342-1 Yatap-dong
Bundang-gu, Sungnam-City, Kyunggi-do
463-828 Republic of Korea
E-Mail: kr@HARTING.com, www.HARTING.co.kr

MY - **Malaysia (office)**
HARTING Singapore Pte Ltd
Malaysia Branch, 11-02 Menara Amcorp,
Jln. Persiaran Barat, 46200 PJ, Sel. D. E., Malaysia
E-Mail: sg@HARTING.com, www.HARTING.com

NL - **Netherlands**
HARTING B.V.
Larenweg 44, NL-5234 KA 's-Hertogenbosch
Postbus 3526, NL-5203 DM 's-Hertogenbosch
E-Mail: nl@HARTING.com, www.HARTINGbv.nl

NO - **Norway**
HARTING A/S
Østensjøveien 36, N-0667 Oslo, Norway
E-Mail: no@HARTING.com, www.HARTING.no

PL - **Poland**
HARTING Polska Sp. z o.o.
ul. Duńska 9, Budynek DELTA, PL-54-427 Wrocław
E-Mail: pl@HARTING.com, www.HARTING.pl

PT - **Portugal**
HARTING Iberia, S. A.
Avda. Josep Tarradellas, 20-30, 4o 6a, E-08029 Barcelona
E-Mail: es@HARTING.com, www.HARTING.es/pt

RO - **Rumania**
HARTING Romania SCS
Europa Unita str. 21, 550018-Sibiu, Romania
E-Mail: ro@HARTING.com, www.HARTING.com

RU - **Russia**
HARTING ZAO
Maily Sampsoniyevsky prospect 2A
194044 Saint Petersburg, Russia
E-Mail: ru@HARTING.com, www.HARTING.ru

SE - **Sweden**
HARTING AB
Gustavslundsvägen 141 B 4tr, S-167 51 Bromma
E-Mail: se@HARTING.com, www.HARTING.se

SG - **Singapore**
HARTING Singapore Pte Ltd.
25 International Business Park
#04-108 German Centre, Singapore 609916
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SK - **Slowakei**
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E-Mail: tr@HARTING.com, www.HARTING.com.tr

TW - **Taiwan**
HARTING TaiwanLimited
Room 1, 5/F, 495 GuangFu South Road
RC-110 Taipei, Taiwan
E-Mail: tw@HARTING.com, www.HARTING.com.tw

US - **USA**
HARTING Inc. of North America
1370 Bowes Road, USA-Elgin, Illinois 60123
E-Mail: us@HARTING.com, www.HARTING-USA.com

ZA - **South Afrika**
HARTING South Africa (Pty) Ltd
Ground Floor, Twickenham Building, The Campus
Cnr Main & Sloane Street Bryanston
Johannesburg (Bryanston), 2021
South Africa
E-Mail: za@HARTING.com, www.HARTING.co.za

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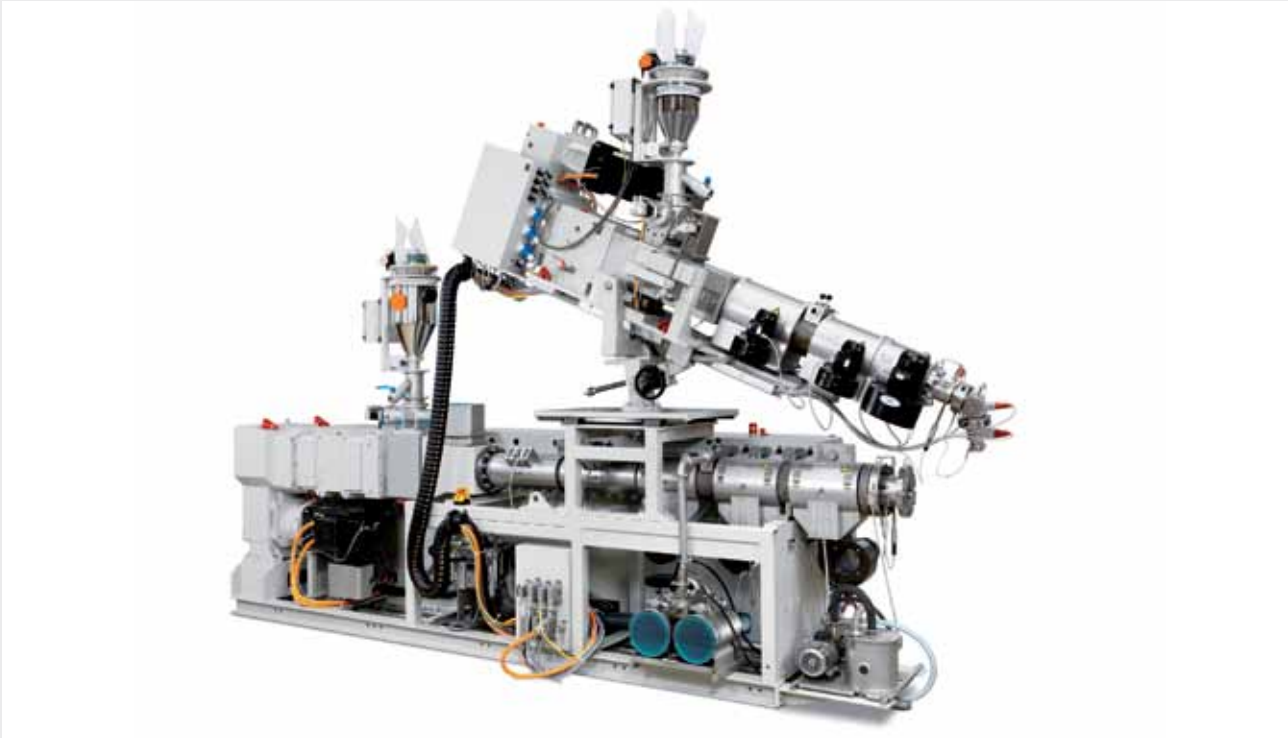
Courtesy of:
KraussMaffei Technologies GmbH (Fig. 1: co-extrusion facility for window profile production)
ARBURG GmbH & Co. KG and ZAHORANSKY AG Systemtechnik (Fig. 2, 3: production cell for medical devices)

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