

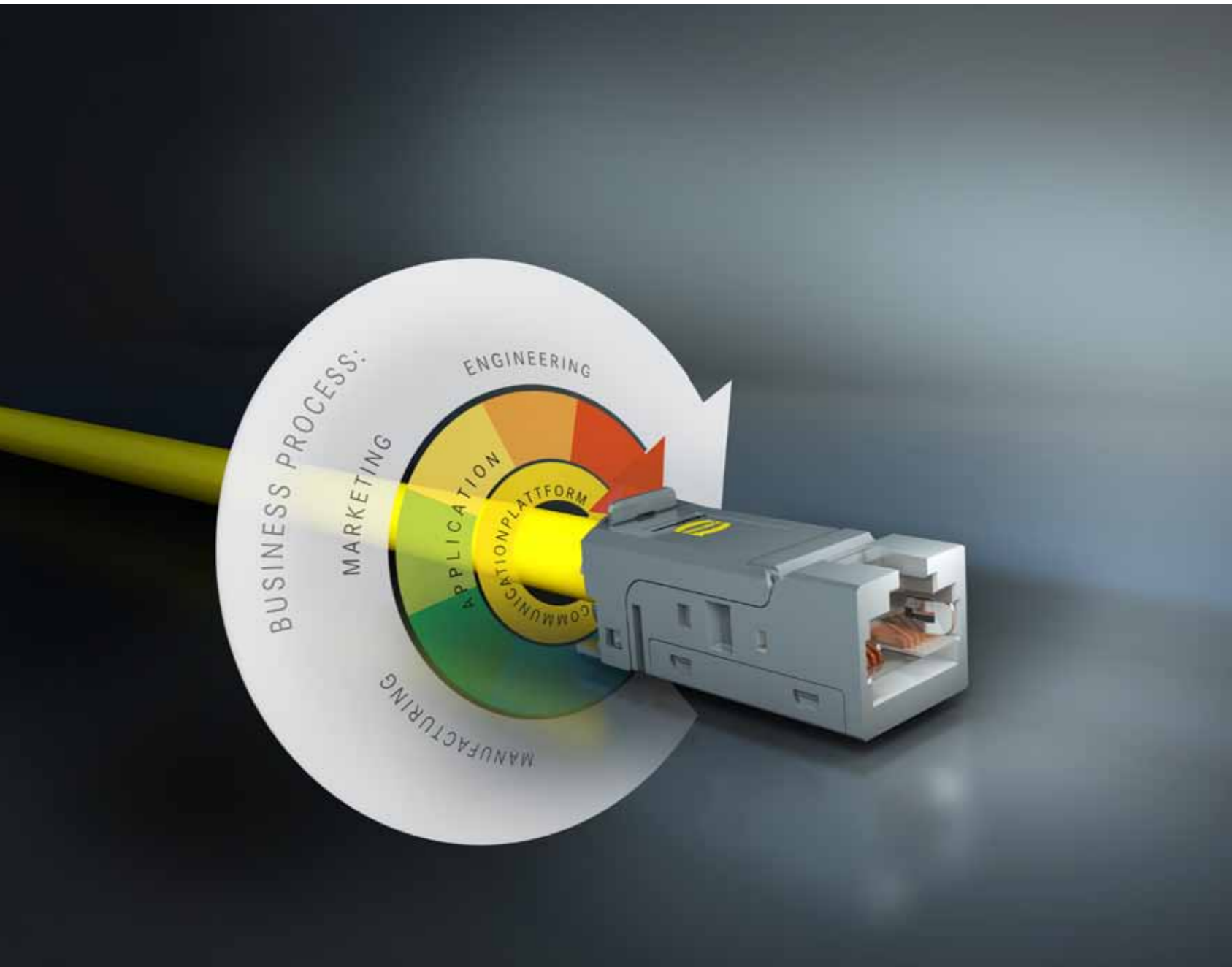


Pushing Performance

# HARTING Automation IT - Structured Cabling



People | Power | Partnership



## HARTING's structured cabling Added value for industrial applications

Communication is the key to mutual understanding. This applies to human beings, as well as to man-machine interfaces and the interaction between machines and distributed I/O devices. Consequently, communication technology is increasingly acting as the driving force in many other fields of technology. HARTING has identified these trends at an early stage, and responded with the development of a standardized Ethernet communication platform for Automation IT. Based on this platform, HARTING is developing and marketing innovative products for active and passive networks, with a strong emphasis on industrial applications that significantly increase customer benefits.

### Innovation driver 10 Gigabit

HARTING developments are geared to providing clients with a future-proof competitive edge based on innovative, high-speed application technologies.

This includes high-performance FTS technology for switches, as well as connectivity components suitable for operation in the high-speed range of 1 Gigabit and 10 Gigabit Ethernet systems.

Consequently, HARTING has extended its product portfolio with the RJ Industrial 10G connector, delivering superior

performance. Additional characteristics of this connector include captive wire manager, multiport functionality in addition to fast and reliable installation.

HARTING has introduced the *har*-speed M12 product range that expands the proven M12 series to eight contacts, featuring an innovative shielding concept for compatibility with 10 Gigabit Ethernet and a new mating face that will also be standardized on an international basis.



### Assembly technology with preLink®

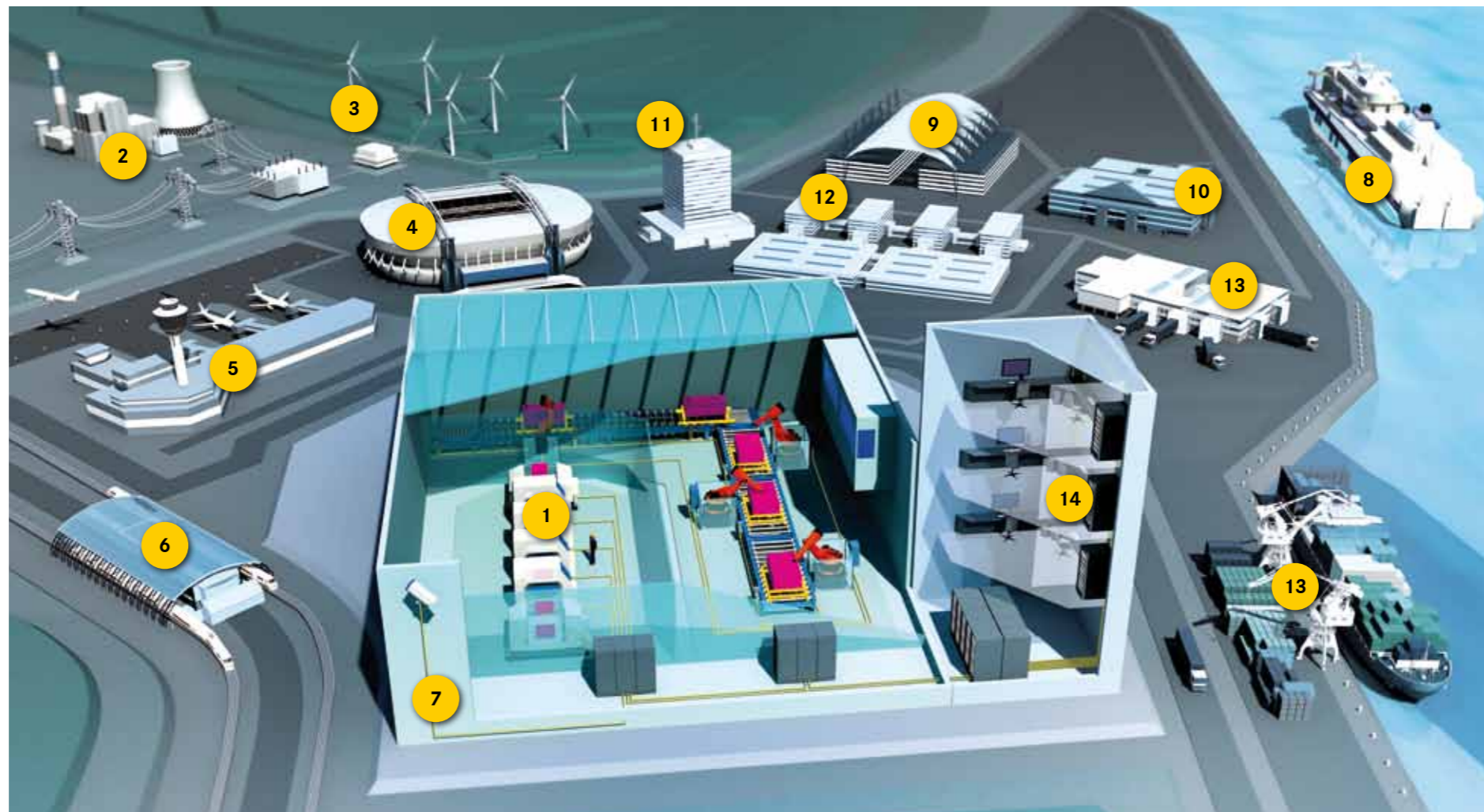
In a further step, HARTING has revolutionized the on-site installation of data network cabling with the launch of its preLink® technology. The splitting of the connectors into a cable termination section (installation part) and the mating face section (kit part) in terms of design and construction represents the core aspect of this technology. This structure offers many advantages: standardization of data network installations, exclusion of wiring faults, as well as a significant acceleration of the installation process. Moreover, users can always decide on the mating face to be employed.

AUTOMATION IT	
Solutions for industrial network infrastructure	
Structured cabling	Ethernet switches
Cabling products	Active components



## Applications for structured cabling with Ha-VIS preLink®

- 1 Industrial buildings, production halls
- 2 Power plants, energy distribution
- 3 Wind and solar parks
- 4 Stadiums, sports facilities, event halls
- 5 Airport, luggage conveying systems, cargo and logistics areas
- 6 Railway stations, trains, railway equipment
- 7 Safety technology, outdoor installations



- 8 Cruise liners, commercial and research fleets
- 9 Trade fair halls, exhibition sites
- 10 Do-it-yourself markets and sales and retail areas
- 11 Integration of base stations and antennas
- 12 Universities, institutes and laboratories
- 13 Harbours, logistics companies, custom authorities
- 14 Office and administration buildings

### Essential properties of the Ha-VIS preLink® cabling system:

#### Independent of industrial sectors

HARTING's solution of an universal cabling system - although available for implementation in any industrial sector - can be customized to meet specific requirements, including all kinds of applications in production halls and office buildings.

#### Neutral solution for every application

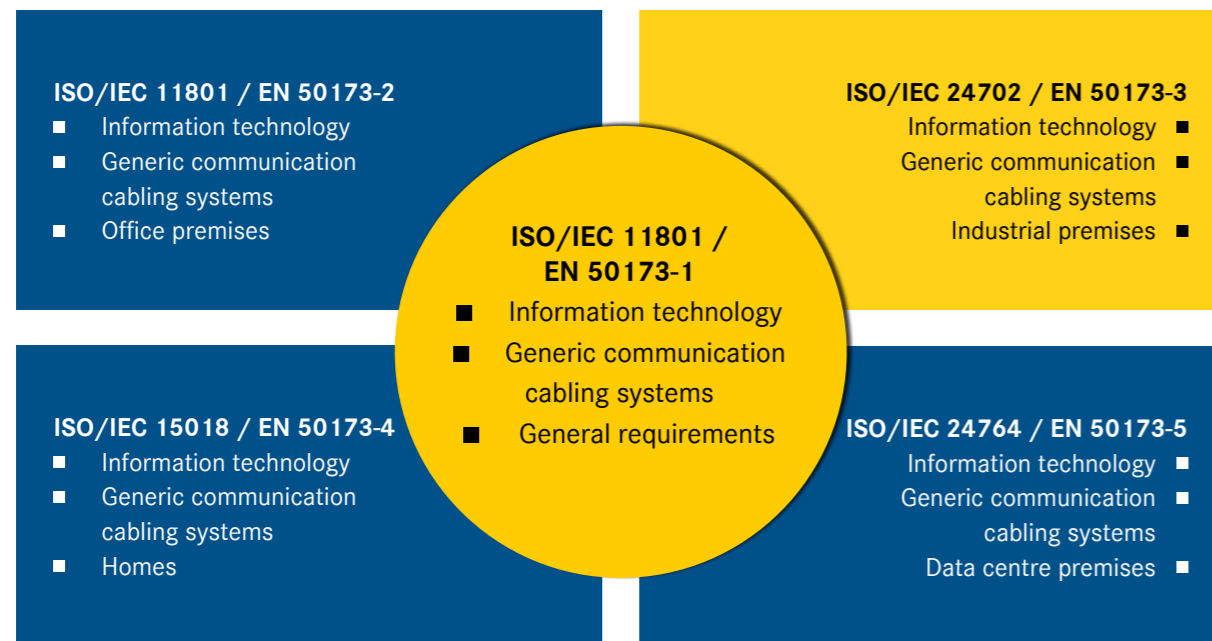
The HARTING standardized solution supports migration and offers many application options. The modular cabling concept ensures adequate performance for any kind of system, whether Fast Ethernet, 1 Gigabit or 10 Gigabit Ethernet.

#### Environmental customization

The components of the Ha-VIS preLink® cabling system cover all applications in the office, production and outdoor environments and are available in all protection classes to suit the specific application fields.

The specifications and the design of the HARTING cabling system are focused consistently on the international cabling standard ISO/IEC 24702. Key advantage: all communication technology services can be transmitted via standard cabling system.

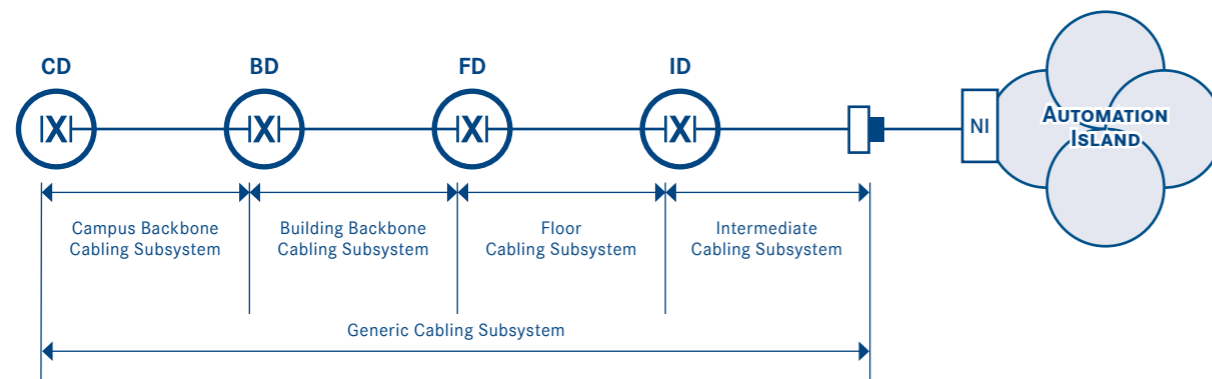
# Cabling structure acc. to ISO/IEC 24702 – fit for industrial and IT applications



The international cabling standards for structured cabling determine the framework of the HARTING cabling system. The implementation of a standardized cabling system enables networking across high-performance,

secure infrastructures, ranging from Office IT to individual machinery in an automation island. In this way, the principle of generic or application-neutral pre-wiring is ported to the industrial environment.

## Structure and fields of application of the cabling acc. to ISO/IEC 24702



## HARTING structured cabling for industrial and commercial buildings

The new HARTING cabling system is strictly compliant with the ISO/IEC 24702 standard and „at the same time“ pin compatible with the profile-specific cabling systems

commonly implemented in conventional industrial and automation projects.

These are in particular:

CABLING COMPONENTS	COPPER BASED	FO BASED	CABLING STANDARDS	MAIN FIELDS OF APPLICATION
Cable	8-wire, Twisted Pair, PIMF	Singlemode & Multimode		
IP 20 Connector	RJ45, 8-pin	SC & LC duplex	ISO/IEC 24702 and ISO/IEC 11801	Cabling of industrial and commercial buildings
IP 65/67 Connector	PushPull V4 / RJ45, 8-pin	PushPull V4 LC duplex		
IP 65/67 Connector	M12, 8-pin			
IP 65/67 Connector	M12 D-coded, 4-pin		IEC 61918	Cabling of automation islands and industrial plants
IP 65/67 Connector	PushPull V14 / RJ45, 4-pin	PushPull V14 / SCRJ POF		
IP 20 Connector	RJ45, 4-pin	SC & LC duplex		
Cable	4-wire, Star quad, STP	POF, Multimode, Singlemode		

Customer benefits are at the core of HARTING's product philosophy. The introduction of the "HARTING Industry Form Factor" (HIFF) enables maximum compatibility between the different mating faces, hoods and housings employed, as well as distribution panels or outlets. This results in an extended portfolio of cabling components for diverse fields of application. The new Ha-VIS preLink® cabling system combines these advantages with simple preLink® assembly technology.

The HARTING preLink® cabling system is therefore suitable for every specific application, including tasks in the harshest industrial environments as well as in protected office environments. Customer requirements are met to the highest degree thanks to this specific adaptation to conditions, while maximum performance is always ensured, in connection with ultimate operational safety and minimum costs.






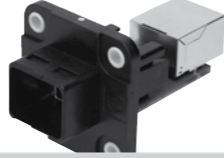

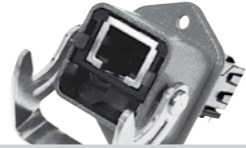




## From preLink® cable termination

### Product range of the Ha-VIS preLink® cabling system

The HARTING Ha-VIS preLink® cabling system provides all of the components electricians require for the installation of a structured cabling system in buildings, in industrial environments and in outdoor areas.



Ha-VIS preLink® also provides a solution for creating an extensive infrastructure for these three areas.

PRE ASSEMBLY	CONNECTORS
 Installation cables, 8-adrig	 Ha-VIS preLink® Module RJ45
 Ha-VIS preLink® Cable connection	 PushPull Panel feed throughs for Ha-VIS preLink® Module RJ45
 Ha-VIS preLink® Mounting tool	 Han® 3 A Panel feed throughs for Ha-VIS preLink® Module RJ45
 RJ Industrial Stripping tool	 Ha-VIS preLink® Module M12 4- and 8-pin

## to a complete cabling system

All core components of the cabling system can be combined, while users can also decide which mating faces are to be implemented at the different positions of their cabling system. The Ha-VIS preLink® technology

guarantees consistent 10 Gigabit performance in conjunction with highly convenient installation and maximum operation safety.

INSTALLATION	COMMISSIONING	
 Cabinet Outlet	 RJ45 <-> RJ45 angled	 RJ45 <-> RJ45 straight
 19" Distribution panel	 RJ45 <-> RJ45	 PushPull RJ45 <-> RJ45
 Industrial Outlet PushPull RJ45	 PushPull RJ45 <-> PushPull RJ45	 Han® 3 A RJ45 <-> RJ45
 Industrial Outlet Han® 3 A RJ45	 Han® 3 A RJ45 <-> Han® 3 A RJ45	 M12 <-> RJ45
 Industrial Outlet M12		

### PRELINK® CABLING SECTION

PERMANENT LINK = FIXED CABLING ACCORDING TO ISO/IEC 11801 ISO/IEC 24702

CHANNEL = COMPLETE NETWORK CABLING READY FOR USE ACCORDING TO ISO/IEC 11801 RESP. ISO/IEC 24702

## Ha-VIS preLink® stands for maximum flexibility



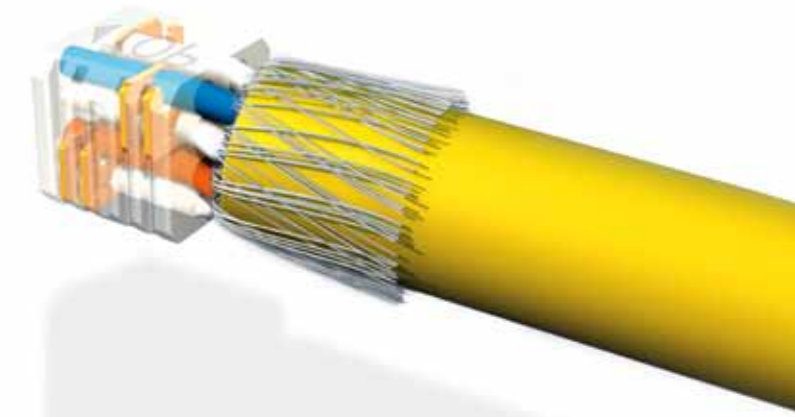
The Ha-VIS preLink® cabling system represents an unit consisting of the pre-assembled preLink® cabling section and the preLink® connectors. In spite of the extensive functional scope, the cable termination is very compact and has a minimum impact on cable diameters. This cable termination is used to prepare the cable ends and basically corresponds to a wire end ferrule. However, the decisive difference here is the fact that the Ha-VIS preLink® terminal not only ensures the electrical, but also consistent HF performance.

Users can decide to assemble the Ha-VIS preLink® on-site, or install a pre-assembled preLink® cabling system, in connection with the free choice of the mating faces.

### Free choice of the mating face

The pre-assembled cabling section can be combined with any mating face. The preLink® connector is simply snapped onto the preLink® termination to create a complete unit that represents the permanent link in accordance with ISO/IEC 11801 (EN 50173), or the end-to-end link as defined for automation profiles such as PROFINET.

Essentially, the Ha-VIS preLink® cabling system can handle all currently employed CAT 5, 6, 6A, 7 or 7A data cables in the form of installation cables (PIMF or S-FTP 4x2xAWG 22, or AWG 23), or patch cables (4x2xAWG 28/27/26).



### Pre-assembly – an alternative

Now - and for the first time - the comprehensive Ha-VIS preLink® technology enables the utilization of both installation philosophies, i. e. simple on-site assembly, or implementation of pre-assembled cables.

The implementation of HARTING's pre-assembled and comprehensively tested Ha-VIS preLink® cabling sections enables the integration of a consistent cabling standard on an international basis. These cabling sections are prepared for routing through the cable ducts and only have to be terminated on-site to the selected preLink® connectors. These pre-assembled cabling sections safely prevent any wiring faults, while considerably reducing the complexity of the cabling system at the same time. Both factors have a positive impact on total costs.

The Ha-VIS preLink® technology combines application flexibility and safety with high-speed performance and

long-term investment security. HARTING regards these factors as essential in delivering maximum customer benefits. Drawing on these strengths, Ha-VIS preLink® is a driving force establishing a consistent office IT and industrial automation infrastructure. Consequently, Ha-VIS preLink® forms the backbone of Automation IT, the consistent communication platform for manufacturing companies.



Ha-VIS preLink® traction leader

### HARTING structured cabling for industrial and commercial buildings

#### AT A GLANCE

- Suitable for applications ranging from office IT through to manufacturing levels
- Application-neutral pre-wiring in all application areas
- Maximum performance, future-proof for 10 Gigabit
- Easy upgrade migration from 100 Megabit up to 1 Gigabit and 10 Gigabit Ethernet, as well as from automation protocols to generic platforms
- Free choice of the mating face – RJ45 or M12
- Simple installation – reduction of costs
- Pre-assembled cabling sections – additional installation safety
- Open and flexible solution to match additional requirements
- Proven HARTING quality = extended useful life of the cabling system



**Pushing Performance**

[www.HARTING.com](http://www.HARTING.com)