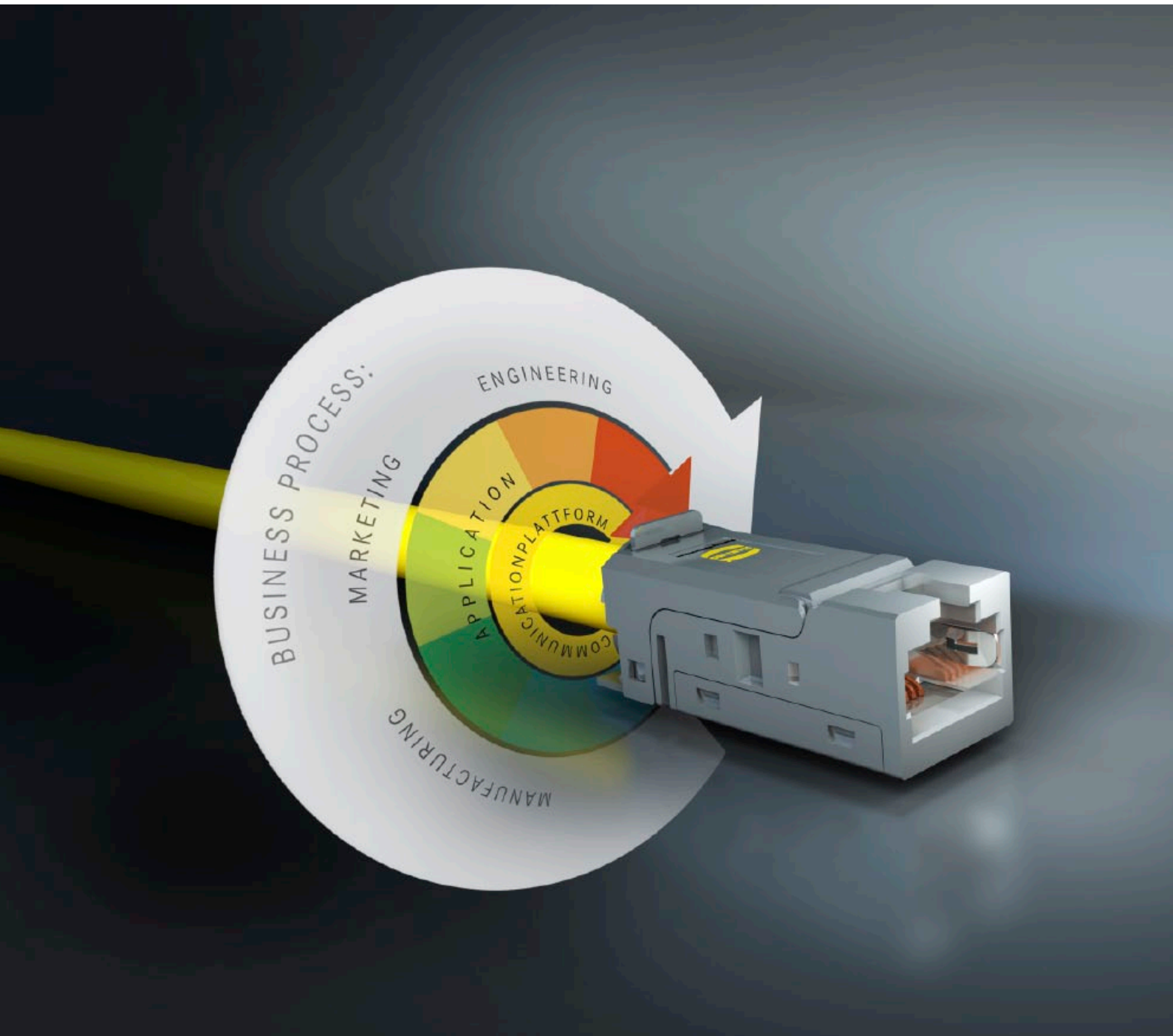




Pushing Performance

HARTING Ha-VIS preLink®





Ha-VIS preLink®:

The link for Automation IT

Automation IT establishes the Ethernet communications platform for office IT as well as the industrial automation area. Seamless communication lays the foundation for workflow efficiency in the manufacturing industry.

Today's network cabling technologies are usually restricted to either industrial automation or office IT applications. In order to span these boundaries, an Automation IT platform requires new universal breakthrough technologies delivering sufficient flexibility to address both

sides of the network. At present, different technologies are utilized on office and industrial automation cabling systems, and the challenge now is to combine the two worlds. RJ 45 jacks are normally installed on site in office applications, whereas RJ 45 plugs are usually mounted onto the cable during automation system installation.

Revolutionary new Ha-VIS preLink® technology supports a standardized cabling solution. With Ha-VIS preLink®, the E_A class link is created before the mating face is chosen.

Ha-VIS pre-Link® technology supports connectors that are specified for structured industrial building cabling, as well as connectors for automation profiles.

Users benefit from great flexibility in mixing and matching the mating faces and housings, which feature protection ratings ranging from IP 20 to IP 67. This solution offers the decisive advantage of standardized handling and performance. This positions Ha-VIS preLink® as the seamless solution for Automation IT.

Ha-VIS preLink® is the link to the link

preLink® connectivity technology delivers excellent link performance.

The mating face and connection technology can be mixed and matched in any optional combination.

HARTING preLink® connectivity technology greatly expands user flexibility:

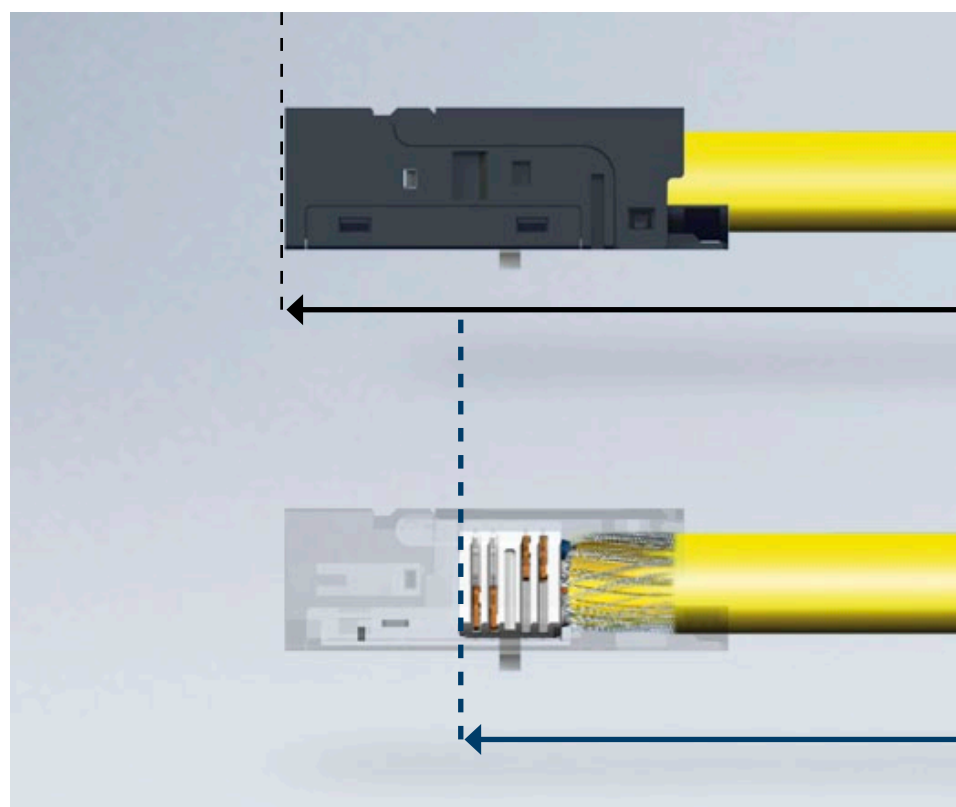
- Ha-VIS preLink® can be used with any mating face
- Ha-VIS preLink® is a general-purpose solution for all applications

Ha-VIS preLink®: the link to the link

The Ha-VIS preLink® cabling system combines pre-fabricated preLink® cabling links with preLink® connectors. The data cable, with cable terminals crimped on at both ends, forms the preLink® cable link that forms the functional backbone of the cabling system.

The cable terminals offer advanced functionality in a small package with minimal increase in cable diameter. The cable terminals dress the ends of the cable and act like an end ferrule. The fact that Ha-VIS preLink® ensures both the electrical and the HF performance of the preLink® connection is the crucial difference here. This makes things a lot easier for users, as the pre-terminated cable can be combined with any mating face, providing maximum flexibility.

The preLink® connector simply snaps on to the preLink® cable terminal. The complete unit forms an ISO/IEC 11801 (EN 50173) compliant permanent link or an end-to-end link which complies with PROFINET automation profiles. preLink® is the first technology that supports pre-terminated cabling for industrial building applications. In the development of preLink® technology a strong emphasis was placed on the specific application profiles involved here.

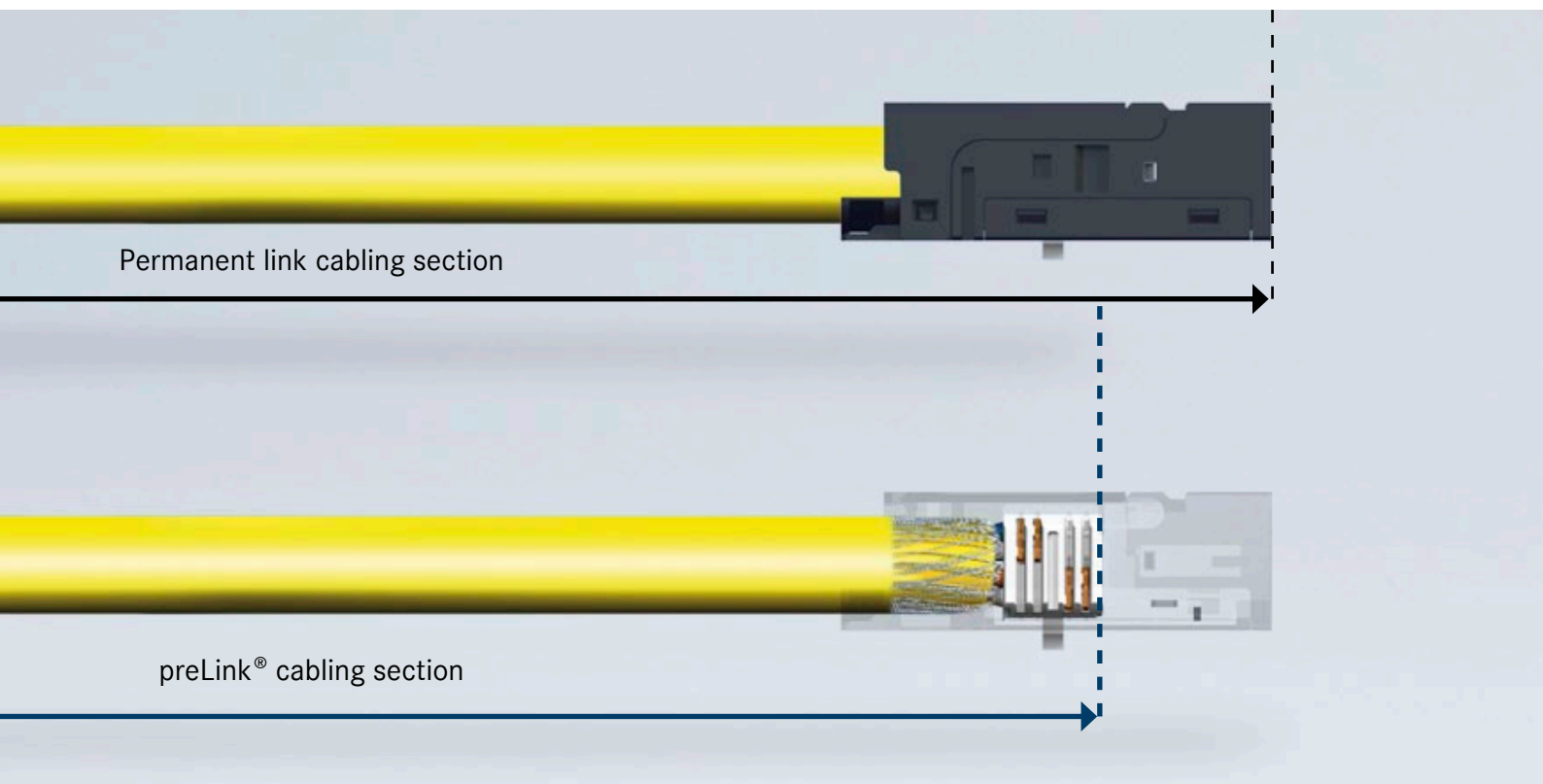


The miniaturized preLink® cable terminals can be pulled through extremely narrow cable ducts. Even cables that are pre-terminated at only one end greatly reduce installation effort. These advantages are already being utilized to a significant degree in today's automation applications.

Most of the automation connectors are pre-fabricated. Ha-VIS pre-Link®

is the first technology which supports both installation philosophies. Users can either install the connectors on site, or opt for tested pre-terminated cables.

Ha-VIS preLink® combines the advantages of automation and IT, thereby positioning HARTING preLink® as a key technology for Automation IT.



Ha-VIS preLink® offers two options

The easy way: field installation

Using the tool that already has a proven track record in RJ 45 applications, the cable terminals can be crimped on after the cables have been installed.

The connections can then be tested quickly and easily on site.

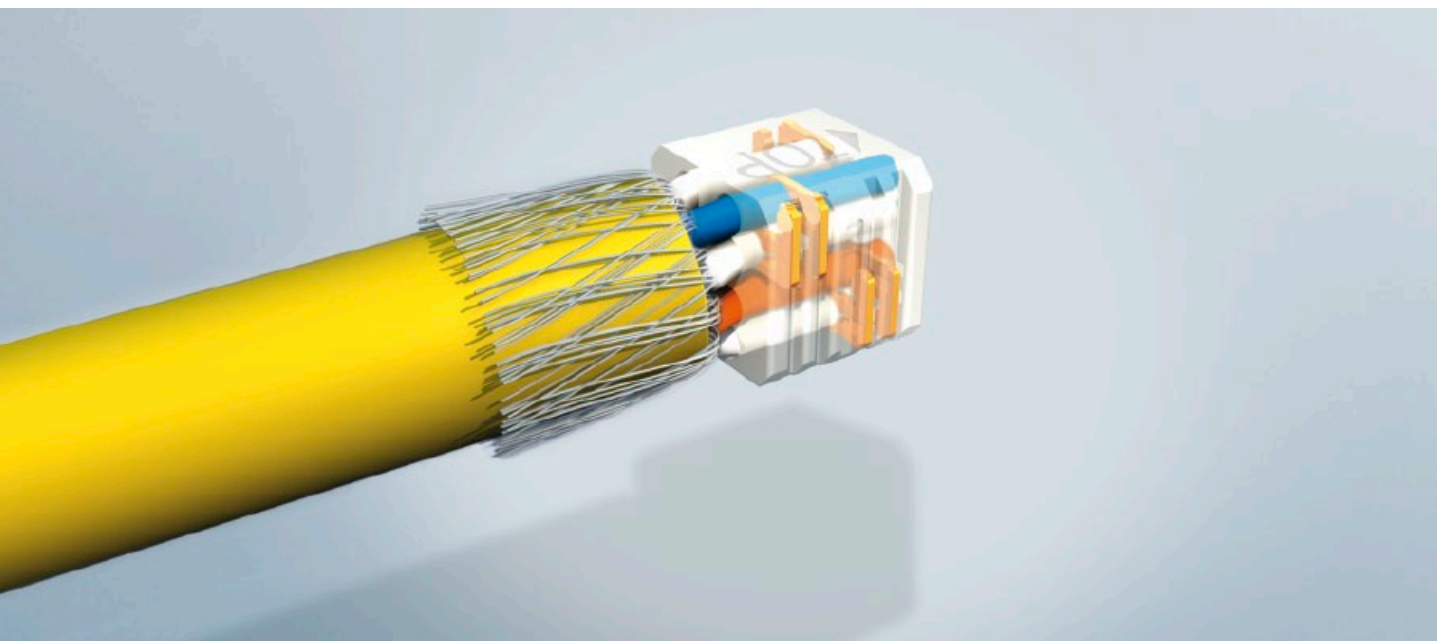
The even easier way: pre-terminated cable assemblies

Pre-terminated cables completely eliminate the need to handle performance-critical parts in the field. The preLink® hardware is tested and certified before it leaves the factory.

This results in reliable, flexible and extremely user-friendly solutions.

Ha-VIS preLink® – step by step:

I. Cable terminal module installation



If the preLink® cabling link is assembled on site, the data cable is pulled through the cabling ducts as usual.

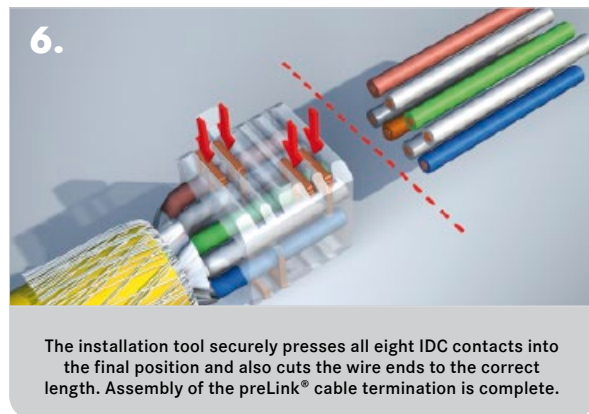
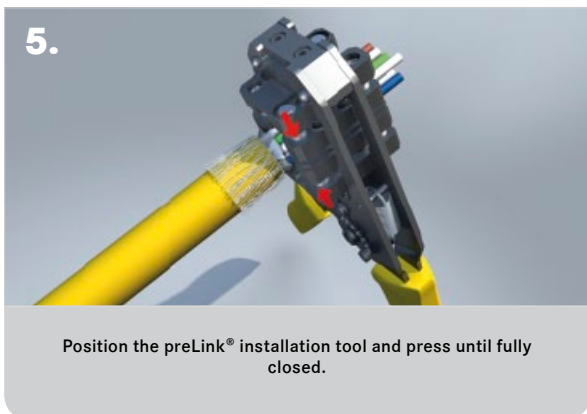
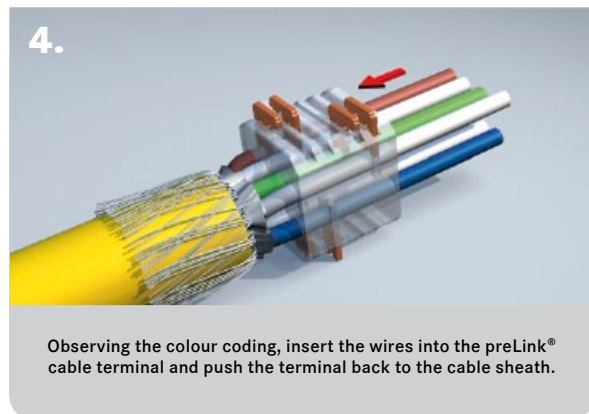
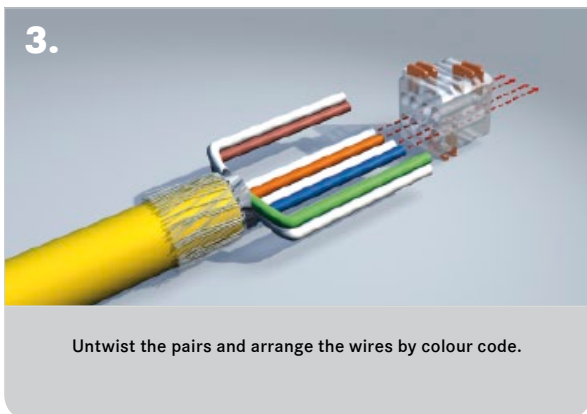
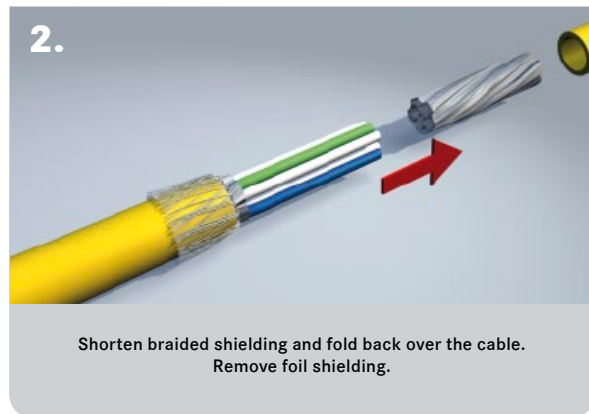
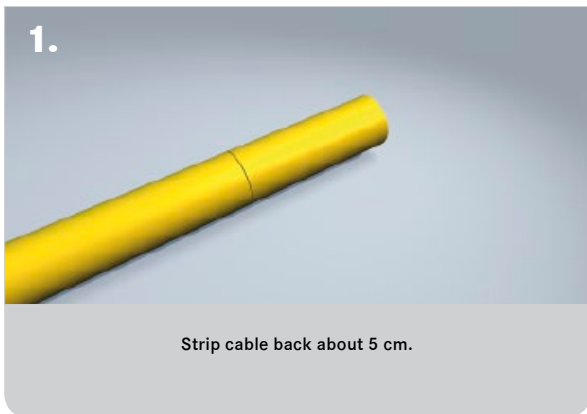
The preLink® cable terminals are then installed on the ends of the cables.

Two versions of the terminals are available:

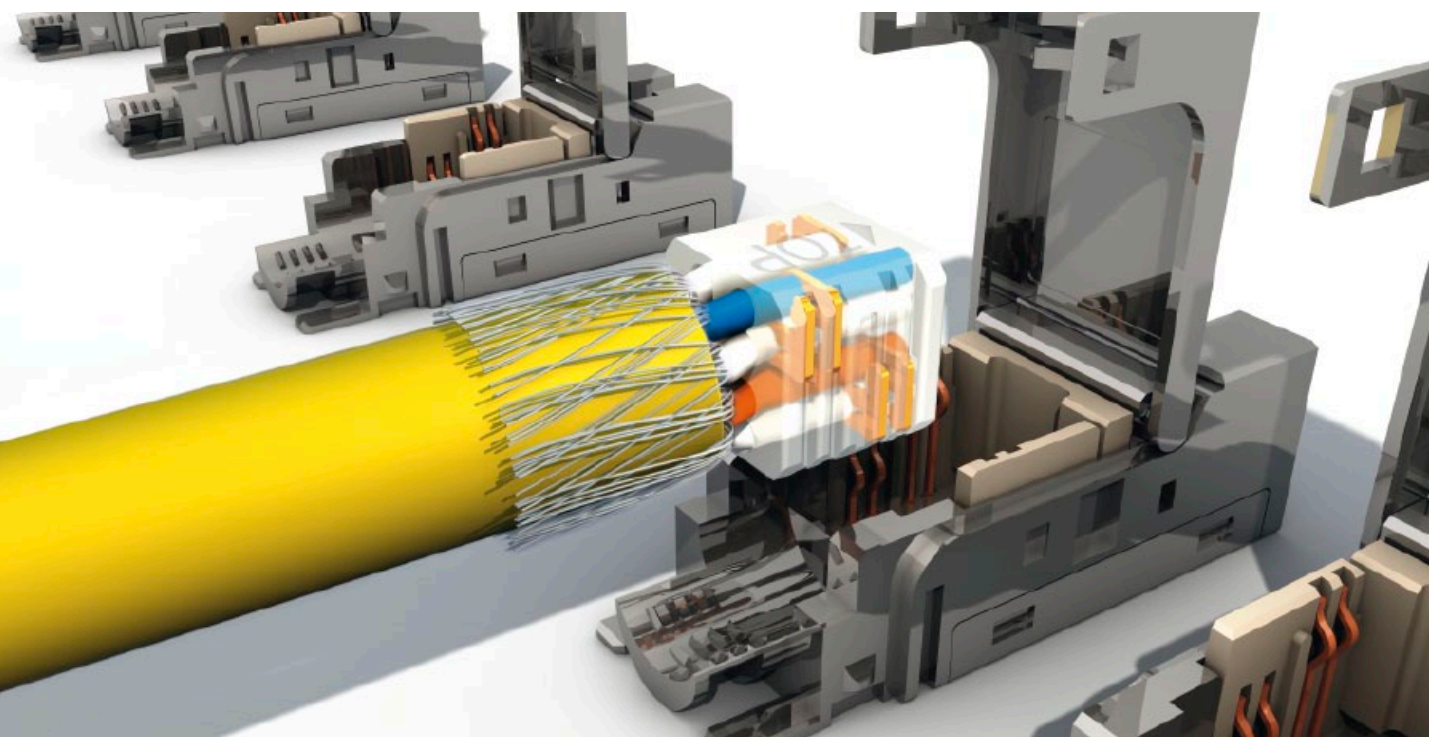
Transparent-yellow AWG 22 or AWG 23 for cables with up to four pairs, and transparent-white AWG 26 – AWG 28 for flexible cables with four pairs. Only two cable terminal modules are required for all of the four and eight wire data cables that are currently available.

The cable terminal is also suitable for two-pair cable, such as the star quad cable commonly used in automation applications, for example.

New IDC contact technology ensures durable, vibration-resistance connections.



II. Snapping on the connector












Simply snap on the correct connector to complete the preLink® cabling link. The HARTING preLink® range contains plugs and jacks with the appropriate mating faces.

Once the connectors have been installed, the preLink® is an ISO/IEC 11801 / EN 50173-1 compliant permanent link which can be tested, certified and accepted using a standard hand-held test device.

Ha-VIS preLink® accepts any combination of plug-in connectors, making it a general-purpose solution for IT office and industrial automation applications.

Users benefit from greater flexibility, lower cost and fast, reliable engineering and installation.

| APPLICATIONS / CABLING STANDARD | | PREFERRED CONNECTORS | |
|----------------------------------|---|---|---|
| IT / OFFICE | ISO/IEC 11801 |  | |
| |  |  | |
| INDUSTRIAL / COMMERCIAL BUILDING | ISO/IEC 24702 | RJ45 |  |
| |  |  | PushPull Var. 4 |
| EQUIPMENT / MACHINERY | IEC 61918 | |  |
| |  |  | M12 |

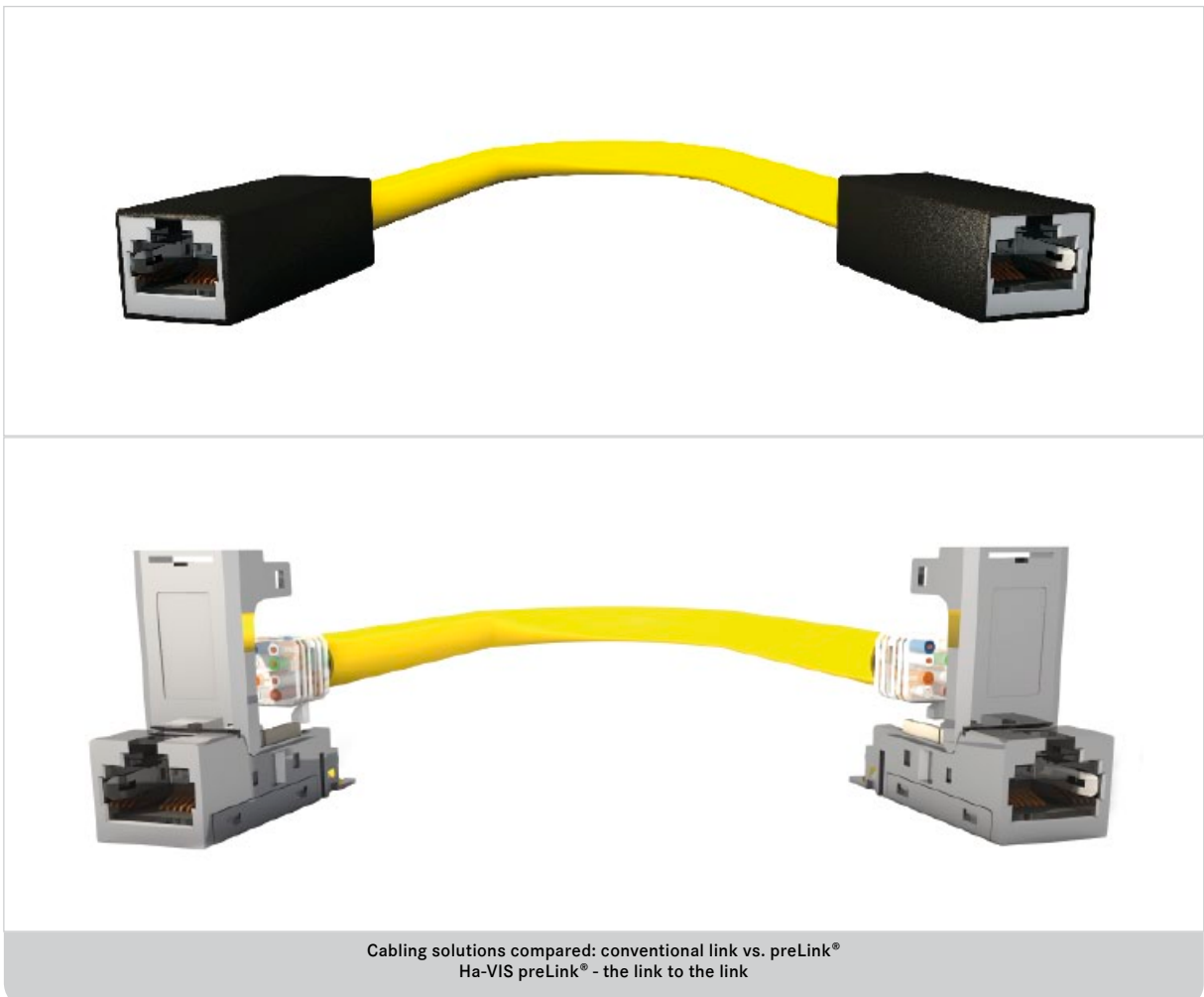
Ha-VIS preLink® Benchmarking

Ha-VIS preLink® cabling solutions offer distinct advantages compared to conventional cabling systems. With conventional cabling, installation of the horizontal link during cable preparation is always carried out on site. The Ha-VIS preLink® offers

this option in addition to tested, pre-terminated preLink® cables.

Whichever option users choose, they can install the mating face they need with the right IP rating on the cables. A range of plugs and jacks is

available. Links assembled in this way can be easily adapted at any time during the lifecycle as cabling requirements evolve. Compared to conventional cabling, users benefit from far greater flexibility as well as the reassuring certainty of having



chosen cabling that will last throughout the entire life cycle. At an early stage of the network design phase, conventional cabling commits users to one mating face and one IP protection class. A lot of installation effort and new acceptance testing are needed when any changes are made at a later time. None of this is necessary with preLink®.

In automation environments where there is a seemingly endless variety of connector types, selection of the correct mating face is one of the most important decisions. Deployment of different connectors in the

network at a manufacturing company has far-reaching consequences that affect inventory levels, technical training, etc. preLink® installations minimize the differences, as cable termination and performance remain unchanged. Conventional links impose significant restrictions on system compatibility. It takes a lot more effort to manage the different connector types.

The differences between conventional cabling and preLink® cabling, which are already evident in the network design phase, continue throughout the entire process chain,

including repair and maintenance. preLink® offers the advantage of a standardized process chain.

There is no difference between planning and installation of an office IT and industrial- or automation solution. This applies both to conventional ISO/IEC 11801 (EN 50 173) compliant permanent links and future IEC 61784 compliant end-to-end links. Innovative preLink® technology merges the installation philosophy of both worlds. This is exactly what Automation IT – which focuses consistently on user benefits – is designed to deliver.

The bottom line – Ha-VIS preLink®:

RELIABILITY

- field installation with a performance guarantee, simple handling during on site assembly
- 10Gig technology for company-wide future-proof networking

FLEXIBILITY

- freedom to choose the best connector for the application; plug&play functionality
- combination of connector and IP rating; IP 20 up to IP 67 versions available

AUTOMATION IT BASED SOLUTION FOR MAXIMUM USER BENEFIT

- IDC technology is an accepted solution in the automation and IT worlds for all types of cables
- universal solution ranging from office links to automation end-to-end links



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