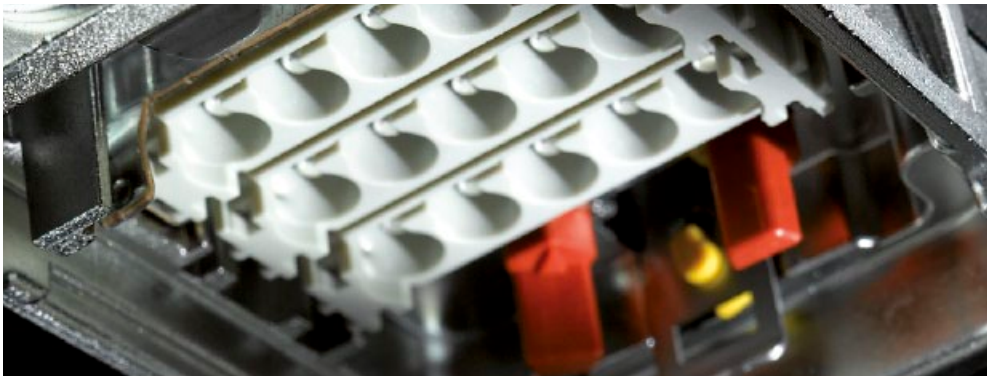
> “The experience and vision to create something new.”

Mind wide open

HARTING has done some serious rethinking of connection technology. The result: Han-*Yellock*®, a special Han® connector that turns everything upside down.

» *Frank Quast, Product Manager, Germany,* HARTING *Technology Group, frank.quast@*HARTING*.com*



And the connector looks good too. Which is intended, as its form is an expression of its functionality. Han-*Yellock*® is a paragon of connection technology that has been designed and finessed down to the very last detail and is set to adorn every modern machine. Connection technology in which form and function match and meld. The design of the Han-*Yellock*® is as functional as its appearance is elegant.

The Han® product family has established itself successfully as a standard across the globe – and is frequently copied. HARTING Han® connectors are deployed in the most important industries, under tough conditions and wherever data, signal and power have to be transmitted reliably. Offering a wide range of applications and functions, the well thought-out concept and high quality form the basis for the success of the Han® range.

This is precisely why Han-*Yellock*® is an outstanding Han® connector. Functionalities are transferred to the connector, its applicability and variability are increased, its potential is multiplied several times over and its handling is simplified, all the while the number of failures in the application are minimized and reliability is elevated to the highest level. It is now the primary solution in applications that were previously not accessible. And where all this used to be invisible, it is now visible in all its beauty. Han-*Yellock*® represents a huge step in connection technology because it is more flexible, offers maximum reliability and eases the burden for highly technical complex components, such as control cabinets.

The basic ideas that entered into the all-new Han-*Yellock*® are both amazingly simple and tremendously effective: On the strength of its design, Han-*Yellock*® can be assembled and, if necessary, dismantled from both sides – either from the machine or the cabling side. Consequently, it can be adapted to meet new requirements at any time.

The connections are moved from the control cabinet to the connector, which effectively multiplies potential. The connector thereby eases the load on the control cabinet, facilitates installation and prevents errors that can be caused during installation in the control cabinet. In the short-term, this enables the further reduction of the size of the control cabinet in mechanical engineering.

Flexibility, easy handling and potential multiplication converge to form a comprehensive safety concept. The plug concept minimizes wiring errors; assembly and dismantling are much easier, even when working with one hand. The locking technology is simple, clear and resilient. Click together and lock for a permanent connection. That's it – plain and simple.

Rethinking means drawing on HARTING's wealth of experience and expertise to create new ideas that have one key aim: To increase the application range, deployability and performance of connectors in the field. Creativity is a process, an attitude, and therefore, it has to have a capable and innovative company behind it. HARTING has been demonstrating these capabilities for decades. Han-*Yellock*® is a genuine highlight – and there are more to come. ■

Form follows function

Han-*Yellock*® is characterized by potential multiplication, outstanding reliability and plug-in systems, eliminating the risk of faulty connections while meeting a wide range of applications. HARTING has developed a new design, extending connector functionality with greatly simplified handling.

» *Frank Quast, Product Manager, Germany,* HARTING *Technology Group, frank.quast@*HARTING*.com*

The Han-*Yellock*® technical concept is thought-out and finessed down to the very last detail. Five-pin modules can be snapped into the casing system without tools. The potential multiplication moves capabilities from the control cabinet to the connector. Depending on requirements, the five contacts, each with a current carrying capacity of 20 A, can be switched to 2, 3, 4 or 5-way links. Switching is via colored socket adapters that are snapped on by customers on the mating side. The socket adapter can be placed in the connector from either the cable side or the casing side.

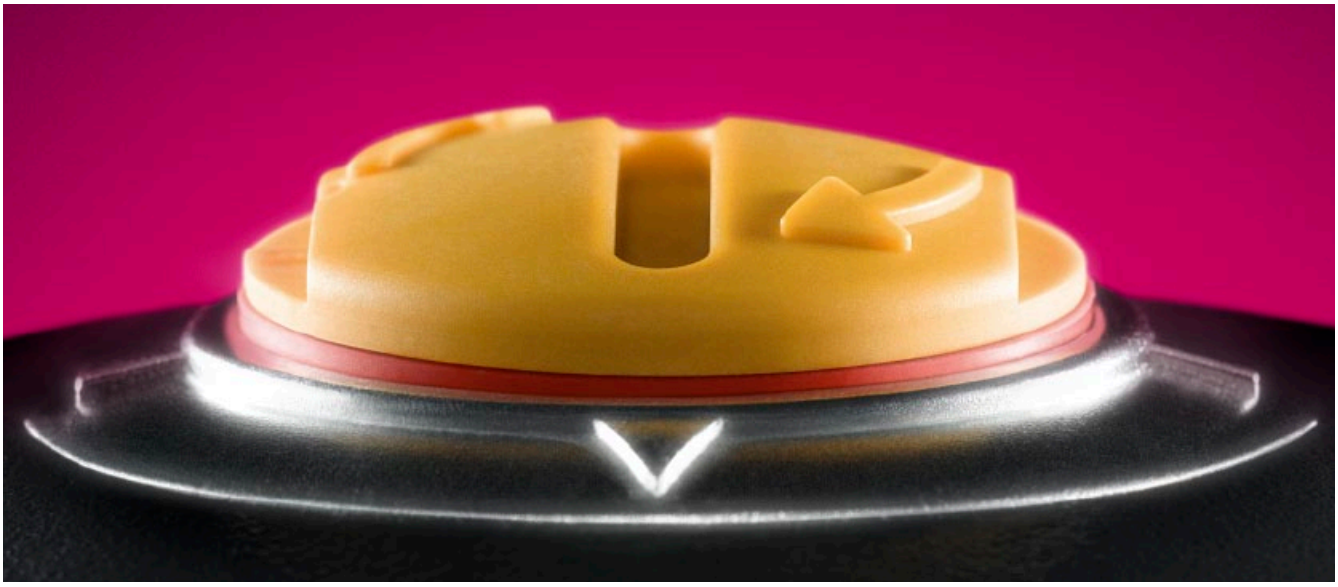
This terminal block function is now integrated in the connectors; integration is quick and service friendly, while space requirements are minimal. This connectivity approach is attractive for market areas that require increasingly smaller and ever more compact machinery and equipment. These solutions open up a number of different options and possibilities for electrical planning and procurement, such as the simplification of circuit diagrams and reductions in material and wiring costs. Lower wiring costs are the result, while wiring errors are minimized. Fewer components are required for the system as a whole and this, in turn, cuts procurement costs. The Han-*Yellock*® potential multiplication thereby enables streamlined systems with sustained reductions in overall costs – at the accustomed high quality levels.

CABLE-SIDE ASSEMBLIES

The challenge for assemblers is to achieve a successful mix of quality, speed and components. The Han-*Yellock*® system opens up new possibilities in cabling practice.

With Han-*Yellock*®, the protective earth (PE contact) can be either a crimp contact or a Han-Quick Lock® connection. Fewer tools are required and a bundle of conductors, including the protective contact, can be crimped at the same time. The cabling no longer has to be split into two steps. All cabling work is performed in a single work step. In addition, the Han-*Yellock*® modules only have to be fitted with a male contact on the customer side. There are no female contacts whatsoever.

Han-*Yellock*® also offers pre-assembly advantages. Extensive modifications as a result of incorrect installations are now a thing of the past. Han-*Yellock*® corrects any twisting of the angle of cable exit by 180° with a simple rotation of the casing cover. This procedure does not cause any tensile or torsional stress in the wiring and, in the event of maintenance work, helps to ensure a reliable connection.



As a matter of principle, screw connections were minimized in the development of the Han-*Yellock*® system. Inserts and modules are simply locked into position manually in the hood and housing. The assemblies are dismantled with a fork-shaped tool that is captive in the hood.

DEVICE INSTALLATION

The Han-*Yellock*® bulkhead mounted housing is extremely flat when installed. When not connected, only an all-round surround is discernable that blends with the machine design. There are two options for fastening the bulkhead-mounted housing. So-called Jack-Nuts® can be used for assembly on device panels up to 4 mm thick. The advantage of these "metal anchors" is that the bulkhead-mounted housing can be fixed to the device panel on the mating side with four fixing points and then screwed on the same side. All the work required is carried out from one direction only; installation is much quicker than when using lock nuts. The conventional fastening technique with M4 threaded screws is the second fastening option, and finds use in solid casing installations for standard fixing, for example. Both types of fastening benefit from the Han-*Yellock*® IP 67 flange seal, which also covers the fastening holes and screws. The fixing screws do not require separate sealing discs.

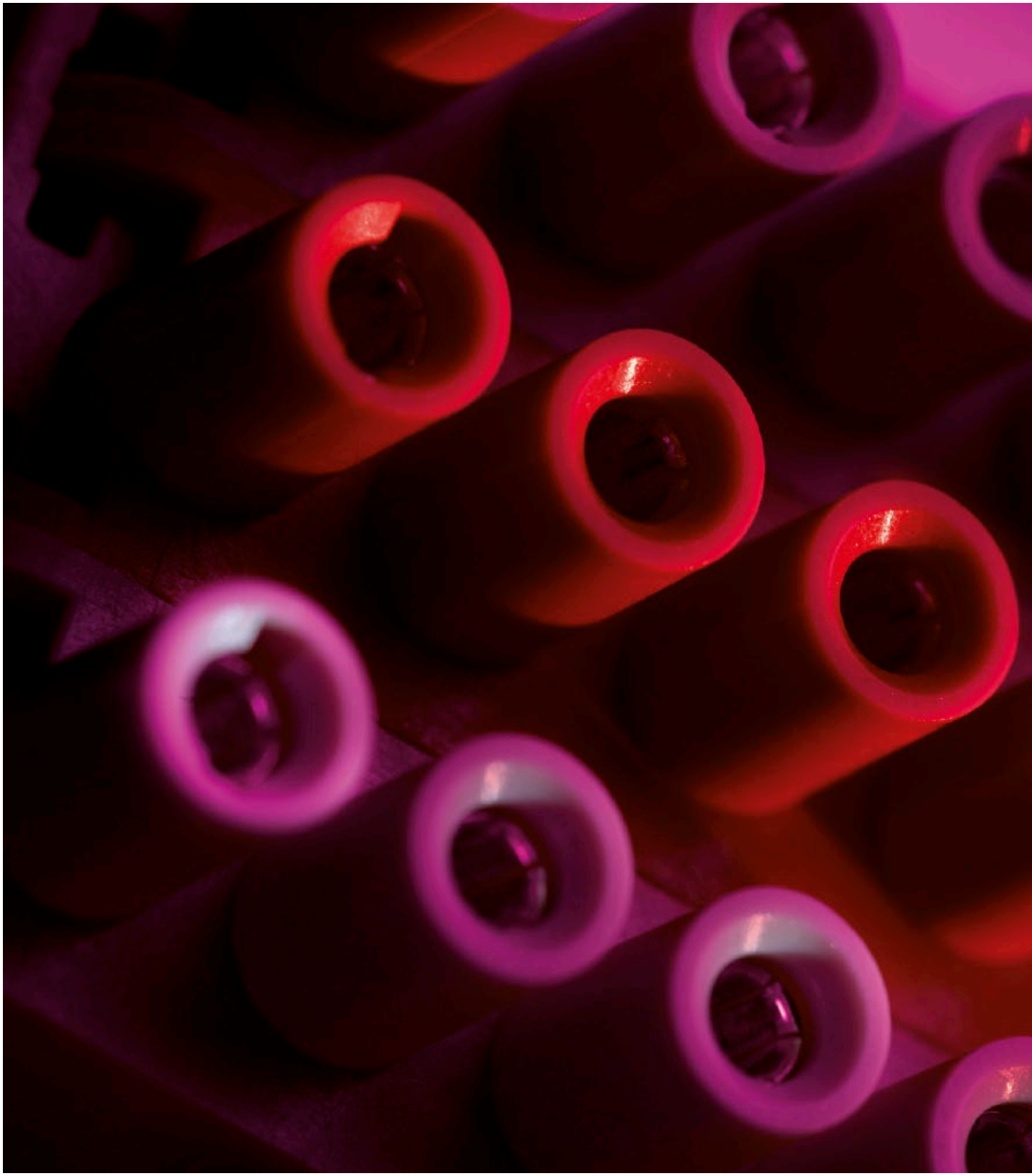
The assembly sequence is also relevant. Until now, this was mainly determined by the connector, which was designed for either front or rear-panel mounting. Han-*Yellock*® offers greater flexibility because, even if the bulkhead-mounted housing is designed for front mounting, the Han-*Yellock*® modules and insulators can be snapped into position from the mating and connection side. Now, there is nothing to stop pre-assembly of the insulator with subsequent snapping into position inside the control cabinet or machine.

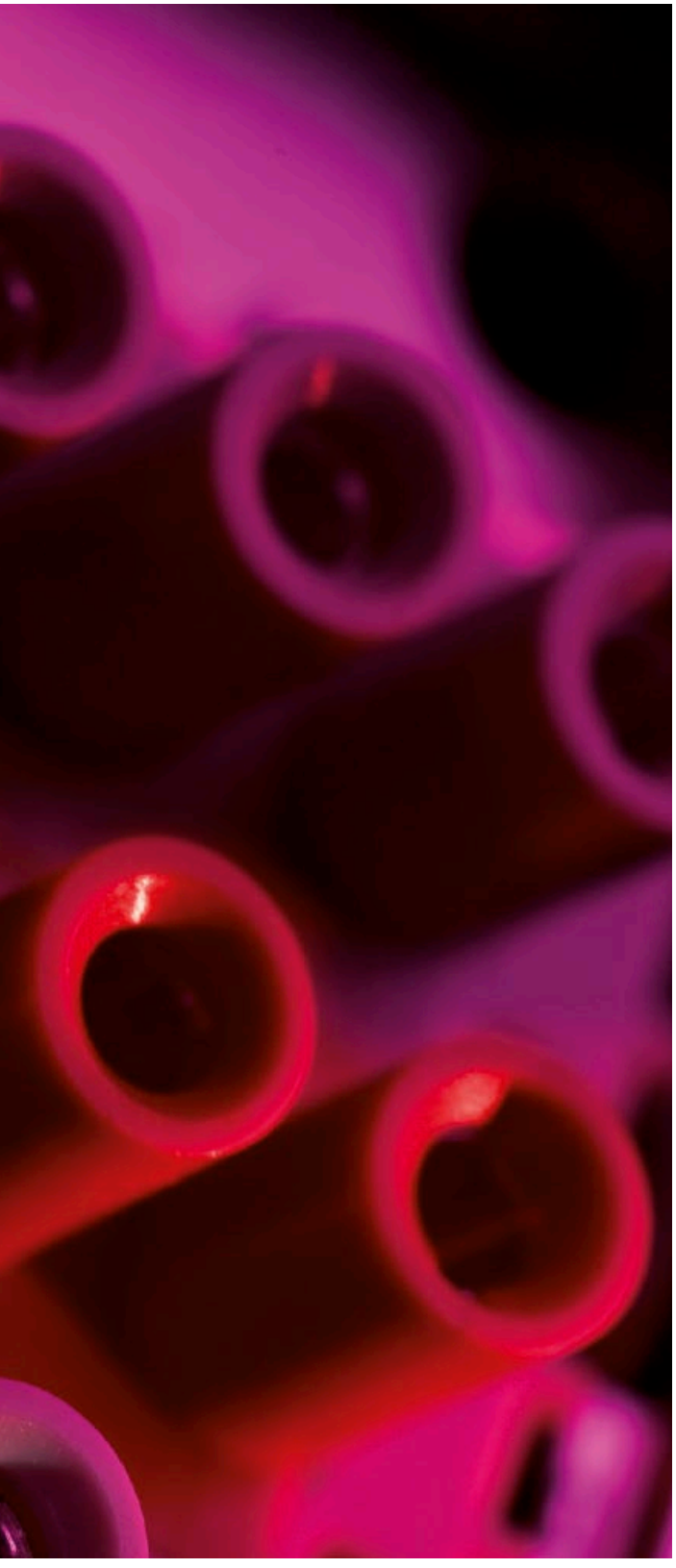
HANDLING

Last but not least: The locking action is a core function of the connector. In tough industrial environments, it has to enable safe, simple and quick opening and closing. The main requirements here include good handling, vibration and shock resistance, protection against inadvertent and unauthorized unlocking and a space-saving, compact design.

Han-*Yellock*® features a patented, interior locking facility that virtually acts as a safety belt. The locking action is a simple mating of the cable and device side. If the hood and housing are not snapped into position, a red ring is visible around the push button. Furthermore, this push-button lock has a blocking function. Turning the slot contour of the actuator button through 90° blocks the lock.

Han-*Yellock*® can be released and opened by turning it again through 90°. The pushbutton contour clearly shows that the connector has been released. Unlocking by pressing on the yellow bar uncouples the hood and housing. This elegantly prevents inadvertent opening of the connector without the need for additional components. The principle can even be extended since, in combination with protective caps on the cable side, it is also possible to protect against unauthorized plugging. ■





Every market, every application

Whatever the application, the functional structure of Han-*Yellock*® opens up a wide range of uses in industrial environments. Energy technology and automation are just two salient examples.

» *Andre Beneke, Director Product Marketing Connectors, Germany,* HARTING *Technology Group, andre.beneke@*HARTING*.com*

Industrial connectors have to ensure durable and reliable electrical connections, while also offering easy handling. In addition, depending on the application, individual requirements are made. Up to now these have either not been realized at all or only with a great deal of additional effort. Han-*Yellock*® solves this dilemma and delivers considerable user benefits.

ENERGY

In complex machinery, it is essential that plug-in connections are quick, easy and reliable, even when working with just one hand. The simple locking action of the Han-*Yellock*® lends itself to applications in the field which have a compact design and difficult access possibilities, for example, in the hub of a wind turbine, without compromising on the reliability of the connection.

AUTOMATION

Downtimes in production facilities are extremely costly. Components are particularly vulnerable if they are peripheral and freely accessible for operating facilities. On the strength of its locking action, Han-*Yellock*® can be used in applications where connectors have to be protected against inadvertent and unauthorized opening – without the need for any other built-in parts or modifications.

DEVICE AND CONTROL CABINET MANUFACTURE

Han-*Yellock*® caters to the trend for increasingly complex devices and control cabinets that can be installed quickly. The integrated multiple contacts replace terminal blocks and reduce the amount of wiring. More compact solutions are also possible, as Han-*Yellock*® connectors can be fitted closer together. ■