Traveling along the fiber-optic Transmission Highway

M12 microFX completes the Product Range

The key trends in the world of industrial automation technology are decentralization, an ever-increasing amount of information and networking of the IT infrastructure with the manufacturing level. These trends are a feature of the present and are also set to continue in the near future. Against this background, Ethernet has, in the last five years, succeeded in securing a significant share of the installed communication nodes.

In view of the transmission distances and the possible interferences in industrial environments, alternative transmission media have to be found in addition to the dominant form of electrical data transmission. Fiber-optic data transmission with corresponding interfaces offers decisive advantages. For network infrastructure components, these interfaces have already become established as the standard for the office environment. To date, however, there has been a lack of suitable variants that offer industrial applications the necessary high protection against environmental influences. In fact, only electrical interfaces have fulfilled the requirements in accordance with IP65/67.

The new M12 microFX is the first active, optical interface with the same dimensions as the proven electrical M12 connector that is also meeting these requirements.

OPTICAL DATA TRANSMISSION LINKS

The key components of an optical data transmission link are the active electro-optical transceiver, the passive fiber-optic connector and an optional coupling unit that passively links two connectors together. Depending on the required transmission distance, various types of optical fibers can be used that, in turn, require different transceiver components as a result of the specific properties of these fibers.

Thanks to the M12 microFX system, HARTING covers the entire product range for fiber-optic transmission links.

PRODUCT RANGE

The system consists of the following individual components:

- Transceivers with a wavelength of 650 nm for plastic optical fibers and short transmission links
- Transceivers with a wavelength of 1300 nm for multi- and single-mode glass fibers for both medium and long transmission distances
- Connectors for plastic fibers with two additionally integrated electrical contacts
- Connectors for single-mode and multi-mode glass fibers with two additionally integrated electrical contacts
- Passive coupling units and panel feed-throughs

IDENTICAL INTERFACES

M12 microFX offers suppliers of automation devices a significant advantage in that the housings of devices with optical interfaces do not differ from those with electrical interfaces, since both M12 designs have identical dimensions. It is thereby possible to save the associated diversification costs. Thanks to the two integrated electrical contacts, the system also supports the concept of hybrid applications in automation engineering.

The utilization of standard ferrules means that users of the M12 microFX can rely on commercially-available tools for fiber termination.
SUMMARY
With the M12 microFX, HARTING is supplementing the existing range of connectivity solutions in the field of fiber optic data transmission by deploying an innovative circular connector technology that is setting new standards worldwide for connectivity and networks. In the field of Automation IT, users can select the optimum solution for their application from the HARTING product range – starting from pure connector components and active and passive network components, all the way through to complete system cabling.