Media converter optimized for use in EtherCAT networks

Beckhoff continues to extend its range of infrastructure components with the EtherCAT media converter for the bidirectional conversion of optical fibre physics to copper physics. The DIN rail-mountable devices are optimized for the use in highly deterministic EtherCAT networks with extremely short cycle times. They ensure fast control in the case of cable interruptions or the establishment of Hot Connect group connections. They are useful wherever EtherCAT is to be transmitted over long distances, where increased electromagnetic interference is to be expected, in the realization of data links to rotating parts such as slip rings, or of data light barriers in high-bay warehouses with carriages that travel long distances.

Conventional Ethernet media converters do not meet the requirements for a highly deterministic EtherCAT network. In addition to that, standard convertors behave "transparently" towards the bus, i.e. they are not seen by the master – which has a disadvantageous effect on the diagnostic properties. This gap is now closed with the EtherCAT media converters for Industrial Fast Ethernet (100 Mbaud). The devices from the CU1521 series convert optical fibre physics to copper physics and vice versa. The CU1521 is suitable for multimode, the CU1521-0010 for singlemode fibre optic and therefore significantly longer transmission links. Using the CU1561, POF (Plastic Optical Fibre), which is simple to install in the field, can be converted to copper physics.

The DIN rail-mountable CU1521 and CU1561 EtherCAT media converters are implemented with IP 20 protection. They operate bidirectionally and collision-free with constant delay and can be diagnosed as independent EtherCAT devices. In this way, unlike standard media converters, they enable fast link control and the safe closing of the EtherCAT strand even in the event of a fault. Since the transfer direction is relevant for the bus, the devices can be configured via a switch. This switch is also used to set the "Link Loss Forwarding" function for the support of a "normal" 100 Mbaud Ethernet network.

The CU1521 is useful in applications where EtherCAT is to be transmitted over distances of up to 2,000 m between two stations or where increased electromagnetic interference on the bus is to be expected. The CU1561 is suitable for situations with increased electromagnetic interference and where simplified wireability is demanded.

The EP952x devices are conceived for applications requiring IP 67 protection. Both media converters are suitable for multimode fibre optic cables. In addition to the copper branch, the 2-channel EP9522-0020 enables further optical fibre topologies to be configured via the second optical fibre port, while the single-channel EtherCAT Box EP9521-0020 is used for direct transfers between the two media.

Estimated market release:
4th quarter 2012

Further Information:
www.beckhoff.com/CU1521
www.beckhoff.com/CU1561
www.beckhoff.com/EP9521
www.beckhoff.com/EP9522