EPIxxxx, ERIxxxx | IO-Link box modules

Since 2013, the IO-Link communication system has been available worldwide as an international standard according to IEC 61131-9 and is thus the first globally standardised technology for communication with sensors and actuators below the fieldbus level. Based on this standard Beckhoff offers a new, extensive range of IO-Link box modules with IP 67 protection for the implementation of inexpensive point-to-point connections directly in the field.

The EPIxxxx and ERIxxxx IO-Link box modules enable the connection of binary and complex sensors and actuators in the field. The connection between the modules and the respective IO-Link master is made via an M12 connecting line (port class A). In case of modules with increased power consumption, an additional voltage infeed is possible (port class B). Economical wiring is possible through the use of unshielded industrial cables. The modules are designed according to IO-Link specification V1.1; the range of the point-to-point connection is 20 m in accordance with the specification. All connected IO-Link devices can be identified, diagnosed and if necessary simply replaced without parameterisation having to be carried out again.

With their compact and space-saving design the IO-Link box modules are suitable for the most diverse applications. The IO-Link connections are integrated both in the proven plastic housings (EPI) and in the die-cast zinc housings (ERI) for additional protection in extremely harsh environments. Binary sensors can be connected to 8- or 16-channel modules with an M8 or M12 screw connection. The universal digital I/O modules with 8 or 16 freely usable input/output channels are particularly flexible in use. Analog signals can be acquired and output with the 4-channel analog input box or combi box with two analog inputs and two analog outputs. In combination with a V1.1 master this allows the sensor parameters to be saved in the master and reloaded.

Apart from process data, acyclic data such as device information (parameters, identification data, diagnosis, etc.) and events (e.g. error message, warning) can be transmitted with the IO-Link box modules. Beckhoff offers IO-Link masters in IP 20 and IP 67 execution:

EL6224 EtherCAT Terminal (IP 20)
EP6224 EtherCAT Box (IP 67)
KL6224 Bus Terminal (IP 20)

The IO-Link configuration tool is directly integrated into the TwinCAT software system. Apart from the programming of the control system, cyclic data from various fieldbuses are collected in process images in TwinCAT, including data from the IO-Link devices, and thus no separate configuration tool is required. With TwinCAT, higher-level fieldbuses such as EtherCAT can be conveniently connected to the sensor/actuator level and simply configured via one software platform. Moreover, the scan function of the IO-Link devices facilitates their integration. In connection with the import of the device description file IODD (IO Device Description), parameters and diagnostic data can be accessed directly via the configuration tool. With the aid of the TwinCAT software system, IO-Link parameters and diagnostic data can also be accessed simply and conveniently from a user program.