



IL230x-B110 | Fieldbus Box modules for EtherCAT

EtherCAT → EtherCAT (Ethernet Control Automation Technology) is the Ethernet solution for industrial automation, characterised by outstanding performance and particularly simple handling. EtherCAT enables the Ethernet star topology to be replaced with a simple line structure. Optionally, EtherCAT can also be wired in the “classic” way using switches in order to integrate further Ethernet devices. The master requires no special plug-in card and can be implemented on any existing Ethernet controller using a very simple interface. EtherCAT is therefore also well suited for small and medium control applications, where it will open up new areas of application for distributed I/Os.

The IL230x-B110 Coupler Box extends EtherCAT for the IP 67 range. All Extension Box modules from the proven Beckhoff Fieldbus Box range can be connected via IP-Link. A station consists of an IL230x-B110 Coupler Box and any number of Extension Box modules (up to 120).

The Coupler Box detects the connected modules and automatically generates the allocation into the process image of the EtherCAT system. The upper EtherCAT interface is used to connect the Fieldbus Box to the network, the lower M12 socket can be used to connect further EtherCAT devices to the same strand. In the EtherCAT network, the IL230x-B110 Coupler Box can be installed anywhere in the Ethernet signal transfer section (100BASE-TX) – except directly at the switch.

Diagnostics

The extensive diagnostic functions of the Beckhoff devices allow rapid fault localisation. Diagnostic messages are transmitted via EtherCAT and collected by the master. LEDs on the module indicate the status of the network connection, the device status, the status of the inputs and outputs and of the power supply.

Coupler Box

The EtherCAT Coupler Box gathers the I/O data from the Extension Box modules over the interference-free IP-Link optical fibre cable. It detects the connected modules and automatically allocates the input and output data to the process image. The Coupler Box has four digital inputs and four digital outputs; all other signal types are available in the form of an Extension Box.

System data	EtherCAT IL230x-B110
Number of I/O stations	65,535
Number of I/O points	depending on controller
Data transfer medium	Ethernet/EtherCAT CAT5 cable
Distance between stations	100 m (master/box, box/box)
Data transfer rates	100 Mbaud
Topology	line topology

Technical data	IL230x-B110
Extension modules	max. 78 with max. 512 byte input and 512 byte output data
Digital peripheral signals	max. 624 inputs and 624 outputs
Analog peripheral signals	max. 127 inputs and 127 outputs
Protocol	EtherCAT
Configuration possibility	via KS2000
Data transfer rates	100 Mbaud
Bus interface	2 x M12 socket, 4-pin (D-coded)
Power supply	control voltage: 24 V DC (-15 %/+20 %); load voltage: according to I/O type
Power supply connection	feed: 1 x M8 male socket, 4-pin; downstream connection: 1 x M8 female socket, 4-pin
Box supply current	30 mA + current consumption of sensors, max. 0.5 A
Auxiliary power current	according to I/O type
Electrical isolation	control voltage/fieldbus: yes, control voltage/inputs or outputs: according to I/O type
Weight	approx. 250 g
Operating/storage temperature	0...+55 °C/-25...+85 °C
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 65/66/67 (conforms to EN 60529)/variable
Approvals	CE, UL

Accessories	
KS2000	configuration software for extended parameterisation
Cordsets	cordsets and connectors

System	
EtherCAT	For further EtherCAT products please see the system overview .

Coupler Box

The Coupler Box for EtherCAT has four digital inputs and four digital outputs, optionally with snap type 8 mm diameter connectors, screw type M8 or screw type M12 connectors. Up to 120 Extension Box modules can be connected via the IP-Link communication facility.

IL230x-B110	Coupler Box for EtherCAT systems	Plug
Digital combi		
IL2300-B110	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	8 mm
IL2301-B110	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M8
IL2302-B110	Coupler Box, 4 digital inputs 24 V, 3 ms filter, 4 digital outputs 24 V, 0.5 A	M12

System overview

