

Beckhoff — IL Coupler Box Units

IL2301-B900

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The **IL2301-B900** is a coupler box unit produced by Beckhoff within the IL Coupler Box Units series. It links decentralized sensors and actuators to higher-level Ethernet networks, acting as the gateway between on-machine I/O and the plant controller. By combining fieldbus conversion and local signal terminals in a sealed housing, the device shortens cable runs and eliminates the need for additional control-cabinet space. It is intended for direct mounting on machinery so that short sensor cables can be wired straight into the module.

Communication is handled through a fieldbus interface that uses **Ethernet TCP/IP**. The coupling port is a ruggedized **RJ45** connection that supports automatic negotiation for operation at 10 or 100 Mbit. Downstream device traffic moves over the IP-Link backplane at a bandwidth of **2 Mbit/s**, supporting cyclical process data exchange. The unit provides **4 digital inputs** for sensors and four digital outputs for actuators, allowing a compact machine segment to be controlled without additional slice modules. Fast Modbus TCP support enables register-based controllers to access the I/O with minimal protocol overhead.

The coupler box accepts up to **120 IP-Link extension modules**, enabling the addition of digital or analog channels as a machine layout grows. The enclosure is molded from **PA6 (polyamide)** and potted with **polyurethane**, which protect the electronics from moisture and vibration. All external connections use **threaded M8 connectors**, and the gasketed body has an **IP65/66/67** protection rating for direct installation on production machinery. Brass structural parts are nickel-plated, while the CuZn signal pins are gold-plated to minimize contact resistance. Two M3 mounting holes support secure fastening, and the unit can be installed in any orientation.

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Specifications

"0" signal voltage:	-3...+5 V	Box Supply Current:	30 mA + current consumption of sensors, max. 0.5 A	Casting Compound:	Polyurethane
Contact Material:	CuZn, gold-plated	Distance Between Stations:	100 m (between hub/switch and Ethernet I/O module)	Extension Modules Max:	120
Fast ModbusTCP:	Supported	Fieldbus Interface:	Ethernet TCP/IP	Fieldbus Port:	RJ45
Housing Material:	PA6 (polyamide)	I/o Connector:	M8 bolted	Input Filter:	3.0 ms
Input/output Connections:	M8, screw type	Installation Position:	Any	Ip-link Rate:	2 Mbit/s
Load Type:	Ohmic, inductive, lamp load	Local Digital Inputs:	4	Local Digital Outputs:	4
Max. Output current:	0.5 A per channel, individually short circuit proof	Metal Parts:	Brass, nickel-plated	Mounting Holes:	2 x M3
Number of Channels:	4 inputs + 4 outputs	Operating Temperature:	0...55°C	Protection Class:	IP65/66/67
rated Load Voltage:	24 V DC (-15%/+20%)	Sensor supply:	from control voltage, max. 0.5 A, short-circuit proof in total	Short-circuit current:	typ. 1.5 A
Storage Temperature:	-25...+85°C	Topology:	star over Ethernet hub or Ethernet Switch	Weight:	approx. 250 g
Last Verified:	10/23/2026 9:05 PM				

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