PUSR®
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Communication Expert
of Industrial IOT

Industrial Protocol Converter

USR-PX520



Introduction

The USR-PX series are the latest industrial protocol converters for automation applications lunched by PUSR. With simple parameter configuration, these devices enable efficient conversion between major industrial protocols including EtherCAT, PROFINET, CANopen, and Modbus and will continue to expand, bridging industrial communication between different protocols.

The USR-PX520 is an EtherCAT-to-Modbus industrial field bus protocol converter. On the EtherCAT side, it operates as an EtherCAT slave device, featuring 2*EtherCAT port, 1*RS485, and 1* 10/100M RJ45. It seamlessly integrates Modbus slave devices into EtherCAT master systems.

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Product Features

Reliability & Stability

- Aluminum casing with IP40 protection
- Industrial-grade design for extreme temperatures (-40°C to +85°C)
- Wide-voltage input (DC 9-36V) with reverse polarity protection
- EMC Level 3 protection,
- DIN-rail 35mm mounting

Rich Interface

- 2 EtherCAT ports (IN/OUT) with integrated switch
- 1 standard Ethernet port for parameter configuration
- 1 Type-C interface for debugging
- 1 isolated RS485 serial port

Powerful Functionality

- Compliant with EtherCAT standards for seamless integration with mainstream EtherCAT masters (e.g., PLCs)
- Supports EtherCAT slave to Modbus RTU/TCP master conversion
- Up to 128 TXPDO and 128 RXPDO groups in EtherCAT, with 128 variables per group
- Modbus RTU supports 32 slaves; Modbus TCP supports up to 8 slaves
- Edge data collection and computation for up to 2,000 data points
- ESI file export for EtherCAT master-slave communication setup
- Configuration via PC software, with CSV file import/export
- One-click factory reset (hardware/software)
- Built-in 120Ω terminal resistor, configurable via software
- Modbus function codes: 01, 02, 03, 04, 05, 06, 15, and 16
- User-defined IP address, port, slave ID, and register settings

Dimensions

Unit: mm

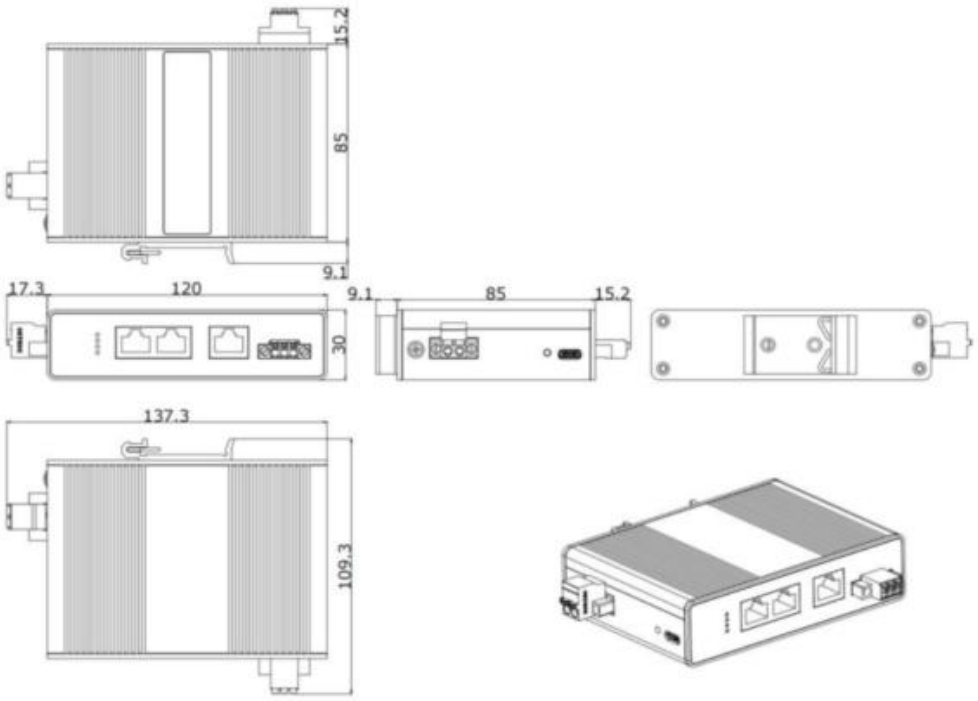
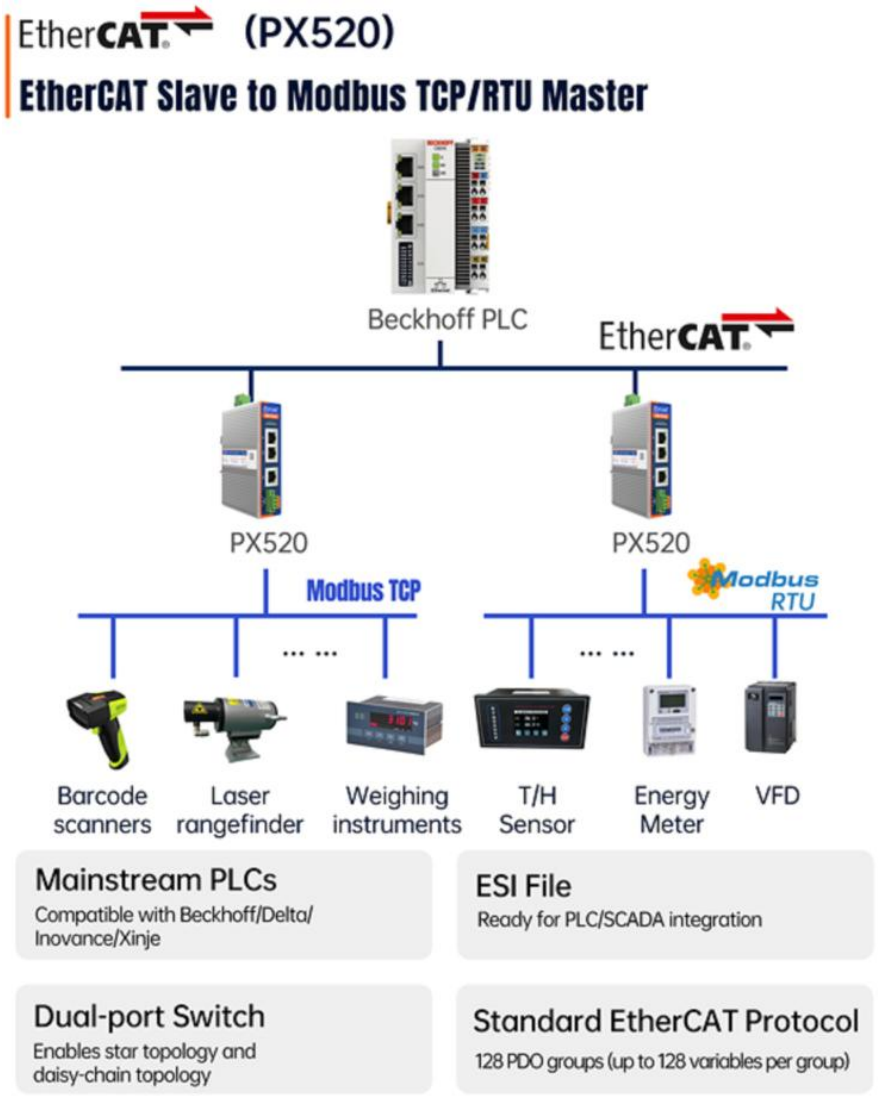


Figure 1 **Dimension of USR-PX520**

Application



Specifications

Catalog	Parameters	Value
Power Supply	Power Input	9-36V DC, 12V/1A is recommended
	Working Current	Idle: 158mA/12V (avg), 163mA/12V (max); Full load: 162mA/12V (avg), 165mA/12V (max)
	Connector	5.08×2P pluggable terminal block with anti-reverse and screw lock
RS485 Interface	Connector	3.81×3P pluggable terminal block with screw lock
	Pin	A (RS485 A), B (RS485 B), G (GND)
	Baud Rate	600~230.4K bps
	Data bits	8
	Stop bit	1, 2
	Parity bit	None, Odd, Even
Ethernet Port	EtherCAT	2× EtherCAT ports (IN/OUT), 10/100Mbps auto-negotiation, integrated switch functoin
	Ethernet	1× RJ45 port (10/100Mbps, auto MDI/MDIX)
	Default IP	192.168.0.7
	Gateway IP	192.168.0.1
Other Interface	Indicators	PWR, WORK, 485, ECAT
	Reload Button	Press for 3-15s to restore factory settings
	Type-C	Debugging interface for troubleshooting
Physical Parameters	EMC Protection	IEC 61000-4-2(ESD): 6kV contact, 8kV air IEC 61000-4-5(Surge): 2kV common mode, 1kV differential mode for power; 2kV for Ethernet/RS485 IEC 61000-4-4(EFT): 2kV for power, 1kV for Ethernet/RS485
	Isolation	Isolation for both serial, Ethernet, CAN, and power
	Dimension	120×85×30mm (without terminals/rail); 137.3×30×109.3mm (with terminals/rail)
	Installation	DIN rail mounting, aluminum housing
	Operating Temperature	-40°C to +85°C
	Storage Temperature	-40°C to +105°C (non-condensing)
	Operating Humidity	5%-95% (non-condensing)
Software	Protocol	EtherCAT slave to Modbus RTU/TCP master
	EtherCAT protocol	Up to 128 TXPDO and 128 RXPDO groups in EtherCAT, with 128 variables per group
	Modbus protocol	Edge data collection and computation for up to 2,000 data

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		points
	Setup	Setup tool on PC

Ordering Guide

Model	Protocol	Interface
USR-PX520	EtherCAT slave to Modbus RTU/TCP master	2 * EtherCAT, 1 * RJ45, 1 * RS485
USR-PX530	Profinet slave to Modbus RTU/TCP master	2 * Profinet, 1 * RJ45, 1 * RS485
USR-PX511	CANopen slave to Modbus RTU/TCP master	1 * CAN(FD), 1 * RJ45, 1 * RS485
USR-PX521*	EtherCAT slave to Modbus RTU/TCP master EtherCAT slave to CANopen master	2 * EtherCAT, 1 * RJ45, 1 * RS485, 1 * CAN(FD)
USR-PX531*	Profinet slave to Modbus RTU/TCP master Profinet slave to CANopen master	2 * Profinet, 1 * RJ45, 1 * RS485, 1 * CAN(FD)

**: In processing*

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