

Industrial Protocol Converter

USR-PX530



Introduction

The USR-PX series are the latest industrial protocol converters for automation applications launched 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-PX530 model in this series is a PROFINET to Modbus industrial field bus protocol converter. On the network side, it acts as a PROFINET Slave device, featuring 2 PROFINET ports, 1 RS485 interface, and 1 standard 10/100M Ethernet interface. It easily integrates Modbus slave devices from the industrial field into PROFINET master devices.

Product Features

■ Reliability & Stability

- Aluminum casing with IP40 protection
- Industrial-grade design for extreme temperatures (-20°C to +70°C)
- Wide-voltage input (DC 9-36V) with reverse polarity protection
- EMC Level 3 protection, with full isolation for all the interface
- DIN-rail 35mm mounting

■ Rich Interface

- Dual PROFINET ports (IN/OUT) with integrated switch, redundant link
- 1 standard Ethernet port for parameter configuration
- 1 Type-C interface for debugging
- 1 optically isolated RS485 serial port

■ Powerful Functionality

- Compliant with PROFONET standards for seamless integration with mainstream PROFINET masters (e.g., PLCs)
- Supports PROFINET slave to Modbus RTU/TCP master conversion
- Supports up to 1400 input/output bytes, with support for 16 slots
- Modbus RTU supports 32 slaves; Modbus TCP supports up to 8 slaves
- Edge data collection and computation for up to 2,000 data points
- Provides GSDML file for import into PROFINET master devices.
- 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

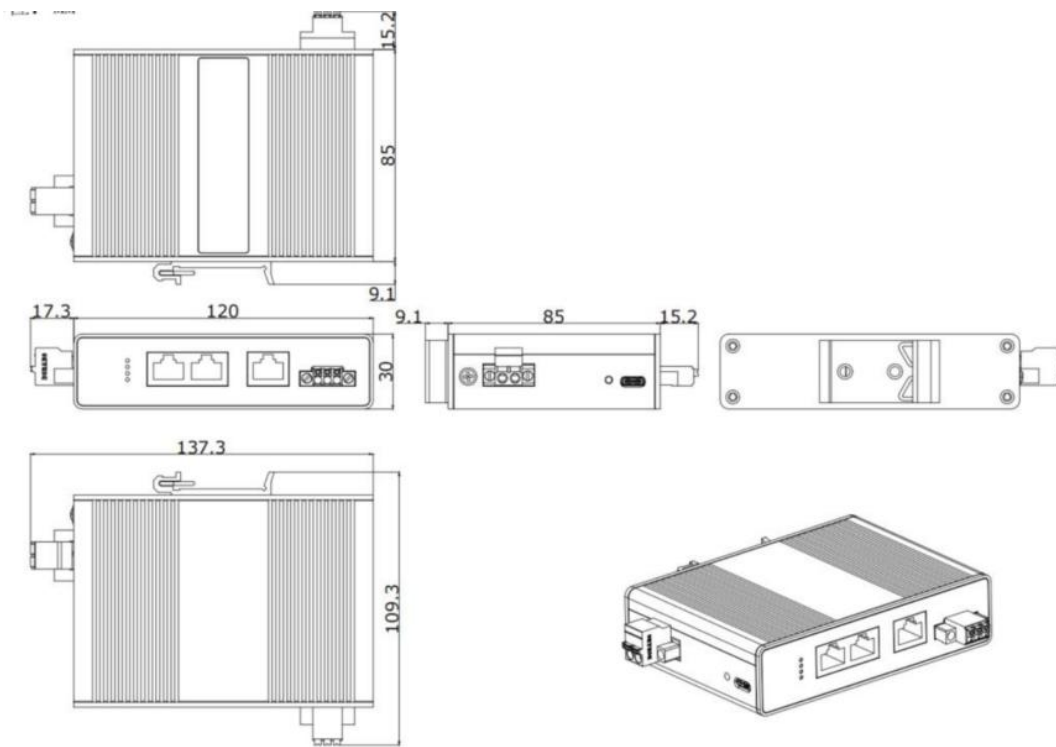
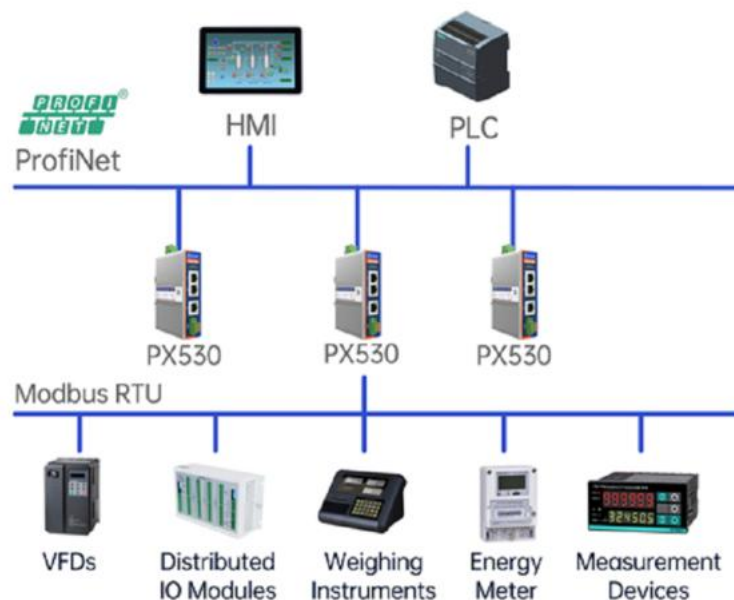


Figure 1 Dimension of USR-PX530

Application

PROFINET® (PX530)

ProfiNET Slave to Modbus TCP/RTU Master



Siemens PLC
Standard PROFINET protocol support

TIA Portal/STEP7
GSDML file provided for easy import

Dual-port Switch
Enables star topology and daisy-chain topology

Supports 16 Slots
1400-byte input/output capacity

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 | PROFINET | 2× PROFINET (P1, P2), 10/100Mbps auto-negotiation, integrated switch function |
| | Ethernet | 1× RJ45 port (10/100Mbps, auto MDI/MDIX), for parameters configuration |
| | Default IP | 192.168.0.7 |
| | Gateway IP | 192.168.0.1 |
| Other Interface | Indicators | PWR, WORK, 485, PN |
| | 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 | -20°C to +70°C |
| | Storage Temperature | -40°C to +105°C (non-condensing) |
| | Operating Humidity | 5%-95% (non-condensing) |
| Software | Protocol | PROFINET slave to Modbus RTU/TCP master |
| | PROFINET protocol | Supports 16 slots, up to 1400 input/output bytes |
| | Modbus protocol | Edge data collection and computation for up to 2000 data points |
| | Setup | PX Tool |

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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