3. Please have the following information available before contacting OMEGA.

1. Purchase Order number under which the product was purchased.
2. Model and serial number of the product under warranty.
3. Repair instructions and/or specific problems relative to the product.

4. OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

5. For warranty returns, please have the following information available before contacting OMEGA:
   1. Purchase Order number under which the product was purchased.
   2. Model and serial number of the product under warranty.
   3. Repair instructions and/or specific problems relative to the product.
   4. OMEGA’s policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

6. OMEGA is a registered trademark of OMEGA ENGINEERING, INC. © Copyright 2015 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

Step 8: Configure Device

“Next” and “OK” to program the transducer. Click “Exit” or “Setup Another Transducer”.

RS485 Bus Requirements

Consideration should be given to apply best practices for the RS485 bus.

1. Proper wiring topology: Wire in a multi-drop configuration. Minimize stub lengths (max length 5 m). A stub is a branch off of the main RS485 trunk line.

2. Use twisted pair cable designed for RS485 busses: We recommend UL 2919 style cable, 22-24 AWG, 120 Ohm Nom. Char. Impedance, 42±F/m Nom. Capacitance, 100% foil, 90% braided shield with drain wire. Signals A and B should be routed in one twisted pair. It is recommended to tie drain wire to shield connection on PX409-485 side, and to earth ground on supply side. The PX409-485 case must be grounded.

3. Cable routing and length up to 1200 meters, but might be reduced by a noisy environment or other installation issues.

4. Number of devices on the bus: Maximum of 16 units on the bus when requiring a sample rate of 1 sample per second. The PX409-485 is a 1/8 unit load.

5. Termination: It is recommended that RS485 busses are terminated at each end with a 120 Ohm resistor across signals A and B. This prevents reflections and ensures proper impedance matching. The PX409-485 has a built-in 120 Ohm resistor that is software enabled.

External Referenced Materials

OMEGA PX409-485 Transducer Command Reference (TCR): Defines the protocol used to communicate with PX409-485. Use this if writing your own app or using a terminal program. FTP site: ftp://ftp.omega.com/public/DASGroup/products/USBH/

Texas Instruments App Note SLLA272B


TIA application recommendation document TSB-89
Using This Quick Start Manual

Use this Quick Start Manual with your Omega PX409-485 or PXM409-485 series high speed RS485 pressure transmitter for quick configuration of the transducer RS485 settings and RS485 bus.

General Description

The PX409-485 pressure transmitter is an industrial Silicon Pressure Transmitter with both a digital RS485 and analog output. This enables you to connect and monitor multiple devices on one RS485 bus while using the analog output to provide process control.

Connecting To A Computer

To connect to a Computer, a RS485 hardware interface must be used, which can be purchased from Omega. You can use either a RS485 to USB converters, or card that plugs directly into the PC’s motherboard.

Follow the setup instructions of the interface before connecting the PX409-485, and configure the interface as Half Duplex, 115200 Baud, No Parity, 8 Data bits, 1 Stop bit, No Hardware Flow control.

Pinout Of PX409-485

PX409-485 has an integral 8 pin Type - A Male M12 connector. Mating connectors are available at Omega.com part number: M12.8-S-F-FM

There are two modes that the PX409-485 can operate in:

1. Multidrop Mode: Multiple PX409-485 units can coexist on the same RS485 bus. Each unit must have a unique address. The master computer sends specific commands to the addressed device. Maximum poll rate for each transducer is 1 SPS with up to 16 units.
2. Standalone Mode: Standalone mode allows the full bandwidth of the transducer (up to 640 SPS) to be used. Only one PX409-485 unit is allowed on the bus at a time. The unit is not addressed.

Digital Transducer Application (DTA)

The Digital Transducer Application is a free software solution provided by Omega that allows you to interface with pressure and load digital transducers manufactured by Omega. The software enables you to monitor, chart, and data log outputs from your devices, while also providing a convenient way to set-up your PX409-485 transducer.

Analog Output

The PX409-485 comes with either a 0-5 VDC (-5V Part is required). If only one PX409-485 is to be on the bus, no RS-485 configuration besides adding the terminating resistor is required. If multiple units are to be on the bus in Multidrop mode, each unit must be physically added to the bus one at a time, changing the address of the newly added unit from the default of “123” to a unique address from 001 to 127.

RS-485 Configuration Using The Digital Transducer Application (DTA)

If only one PX409-485 is to be on the bus, no RS-485 configuration besides adding the terminating resistor is required. If multiple units are to be on the bus in Multidrop mode, each unit must be physically added to the bus one at a time, changing the address of the newly added unit from the default of “123” to a unique address.

Step 1: Install


Step 2: Connect

Transducer to the computer and power it on.

Step 3: Open

DTA software, Click “Click here to configure your serial ports. (Rs485)”. OR Tools menu → Configure Serial Ports.

Step 4: Click

“Scan COM ports for device”. The Rs485 COM port should appear in the “COM Ports associated with selected device” area. Close this window.

Step 5: Select

1. Configuration Tab in the DTA and select a transducer in the Channels window.

Step 6: Click

1 “Configure RS485” button in the “Sensor Configuration” area, which will open the RS485 Setup Wizard. Select the appropriate transducer in the drop-down list, and click “Next”.