240/241 Series Modbus

Quick Install Guide

This Quick Install Guide is applicable for InnovaMass® and InnovaFlo® models 240 and 241.

A copy of this Quick Install Guide, the 240/241 Series Modbus and the 240/241Series product instruction manual are also included on the digital communication information CD included in your shipment. The information is also available for download.

Connecting to a Modbus Network

You will need the following to connect Modbus to your device:

1. A Model 240 or 241 equipped with Modbus slave.
2. A Modbus master. This could be a PLC, DCS, or a personal computer (PC) equipped with a 2-wire RS-485 interface card.
3. Software for your Modbus Master.
4. 2-wire RS-485 network. You may need an end-of-line terminator, pull up and pull down resistors. See your Modbus Master's documentation for these requirements.
5. The 240/241 Modbus is offered in 12 to 36 VDC at 300 mA or 100 to 240 VAC power options.

Installation Steps

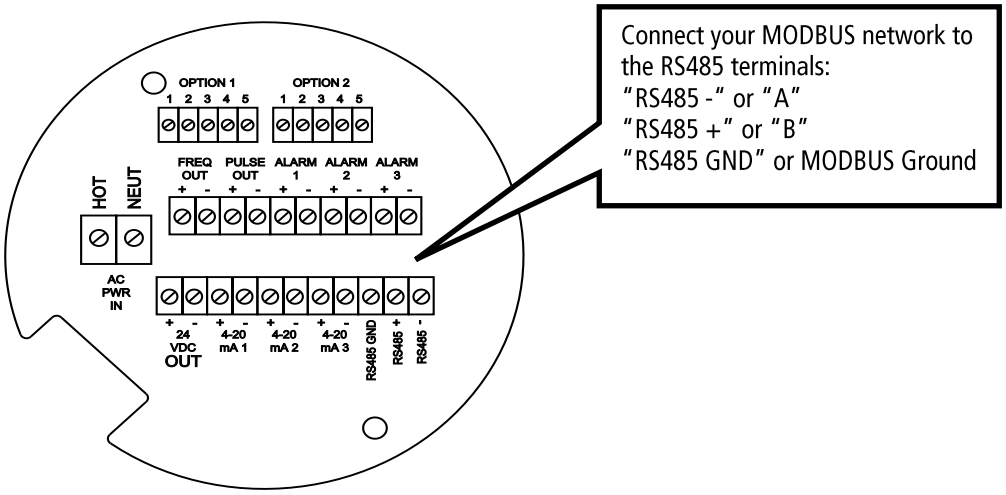

Figure 1: 240/241 Series Terminal Board

1. Connect the instrument to your RS-485 network.
2. Power-up the instrument with your power supply.
   You have either the DC or AC power option on your meter. Power it appropriately.
3. The Modbus settings are located at the end of the Output Menu of the 240/241 menu in the 240/241 Series product manual chapter 3.
   Modbus settings include:
   - Modbus Units : "Display" same engineering units as LCD display, "Internal" (seldom used)
   - Modbus Order: Byte order
   - Comm Protocol Modbus RTU: Parity and stop bits
   - MODBUS Baud Rate: Chose from list

- Address: Set Modbus ID# (1 to 247)

4. You should now be able to add the 240/241 salve to your Modbus network software.
5. The available registers and functions are listed below.

Holding Registers

Registers	Variable	Data Type	Units	Function Code	Addresses
65100-65101	Serial number	unsigned long	—	03, 04	
30525-30526	Totalizer	unsigned long	display units*	03, 04	524-525
32037-32042	Totalizer units	string	—	03, 04	2036-2041
30009-30010	Mass flow	float	display units*	03, 04	8-9
30007-30008	Volume flow	float	display units*	03, 04	6-7
30005-30006	Pressure	float	display units*	03, 04	4-5
30001-30002	Temperature	float	display units*	03, 04	0-1
30029-30030	Velocity	float	ft/sec	03, 04	28-29
30015-30016	Density	float	display units*	03, 04	14-15
30013-30014	Viscosity	float	cP	03, 04	12-13
30031-30032	Reynolds number	float	—	03, 04	30-31
30025-30026	Vortex frequency	float	Hz	03, 04	24-25
34532	Gain	char	—	03, 04	4531
30085-30086	Vortex amplitude	float	Vrms	03, 04	84-85
30027-30028	Filter setting	float	Hz	03, 04	26-27

Available with Energy Meter Firmware

Registers	Variable	Data Type	Units	Function Code	Addresses
30527-30528	Totalizer #2	unsigned long	display units*	03, 04	526-527
32043-32048	Totalizer #2 units	string	—	03, 04	2042-2047
30003-30004	Temperature #2	float	display units*	03, 04	2-3
30011-30012	Energy flow	float	display units*	03, 04	10-11

Display Unit Strings

Registers	Variable	Data Type	Units	Function Code	Addresses
32007-32012	Volume flow units	string	—	03, 04	2006-2011
32001-32006	Mass flow units	string	—	03, 04	2000-2005
32025-32030	Temperature units	string	—	03, 04	2024-2029
32019-32024	Pressure units	string	—	03, 04	2018-2023
32031-32036	Density units	string	—	03, 04	2030-2035
32013-32017	Energy flow units	string	—	03, 04	2012-2017