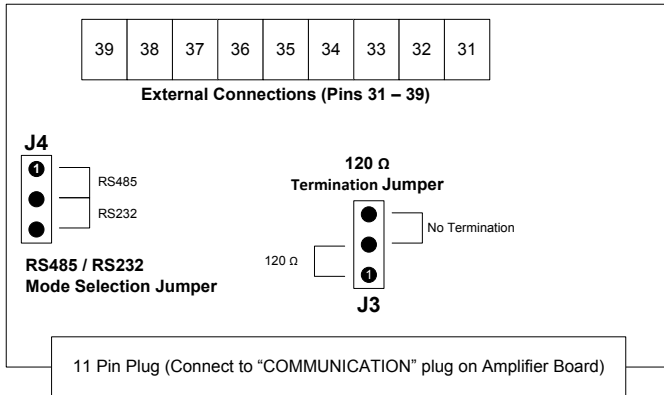


### OVERVIEW

The MODBUS RTU Communication daughterboard expands the connectivity of the M-Series M2000 flow meter by facilitating communication over RS485 using the MODBUS RTU protocol. The RS485 allows for greater communication distances than RS232 and provides for multi-point networking.



Pin No.	Pin Name	Description
31	Analog Output	0...20 mA, 0...10 mA, 2...10 mA, 4...20 mA
32	COM	Common ground connection
33	RS232 RX	Receive input for RS232
34	RS232 TX	Transient output for RS232
35	COM	Common ground connection
36	RS485 ( - )	Inverting signal for RS485
37	RS485 ( + )	Non inverting signal for RS485
38	RS232/485 Shield	Shield input for RS232 or RS485
39	Chassi	Connection for coupling shield to chassi

### INSTALLING THE DAUGHTERBOARD

1. Use the provided self-adhesive tape to secure the foam pad near the 11-pin COMMUNICATION connector.
2. Remove the board support screw near the 11-pin COMMUNICATION connector to install the green chassis connection wire (with an eye washer). Connect the other end of the chassis connection wire to pin 39.

3. Select operation mode RS485 or RS232 for the daughterboard using J4.
4. For RS485 mode only: Select the termination (that is, 120 Ω or No termination) using J3.

**NOTE:** 120 Ω termination is typically required when the meter is the first or last device in the communication link.

**NOTE:** It is assumed all signal biasing is accomplished at the MODBUS RTU master node. For biasing calculations, receiver input impedance is 96 k Ω or 1/8 unit loads.

### CAUTION

**DISCONNECT THE INPUT POWER BEFORE ACCESSING THE EQUIPMENT.**

5. Turn off the meter and insert the daughterboard into the keyed 11-pin COMMUNICATION connector on the amplifier.

### CONFIGURING PORT B MODBUS RTU

The MODBUS RTU Communication Daughterboard is a slave device that communicates over Port B. The following Port B settings are configurable from the meter's menu manager.

Setting	Options
Port address	1 to 247
Ext. port address	Not applicable for MODBUS RTU daughterboard
Baud rate	9600 (default), 19200, 38400
Data bits	5, 7, 8 (default)
Parity	None, Even (default), Odd
Stop bits	1 (default), 2

To change the configuration of Port B to match your system requirements:

1. Turn on the meter.
2. Navigate to *Main Menu > Communication > Port B Settings*.
3. Verify that the settings are an appropriate match for the application. If not, change the settings as necessary.

Please refer to the M2000 MODBUS Memory Map Application Brief for accessible registers.

## Control. Manage. Optimize.

M-Series is a registered trademark of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2015 Badger Meter, Inc. All rights reserved.

**[www.badgermeter.com](http://www.badgermeter.com)**

---

**The Americas | Badger Meter** | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400  
**México | Badger Meter de las Americas, S.A. de C.V.** | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882  
**Europe, Middle East and Africa | Badger Meter Europa GmbH** | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0  
**Europe, Middle East Branch Office | Badger Meter Europe** | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503  
**Czech Republic | Badger Meter Czech Republic s.r.o.** | Maříkova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411  
**Slovakia | Badger Meter Slovakia s.r.o.** | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01  
**Asia Pacific | Badger Meter** | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836  
**China | Badger Meter** | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412

Legacy Document Number: IOM-193-02-EN 53400-193