FIC-4000 Modbus to Dual 4-20mA translator Field Installation Manual

Field Installation Manual
Doc. No. 10025524 Rev AB

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Introduction

This manual provides instruction for field wiring a Modbus to Dual 4-20mA translator (#10025591) to interface an FIC-4000 or FSK gauge interface assembly.   The Modbus to Dual 4-20mA translator module (#10025591) is based on the Datexel DAT9011 RTU. Sercel-GRC has pre-configured and programmed the DAT9011 RTU as a Modbus Master device that Polls two modbus addresses on the FIC-4000 or FSK Gauge Interface module.

C-4000/C4500/PCP-4000/PCP-4500 Modbus address and configuration

Pressure Register: 41010 (actual register 1011)
Pressure Range on 4-20mA: 0-5000.0 PSI
Temperature Register: 41012 (actual register 1013)
Temperature Range on 4-20mA: 0-200.00 F
Baud: 9600
Modbus Address: Master poll Slave add #1 on FIC-4000/FSK
Poll Rate: 500mS update on 4-20mA channels
4-20mA: Passive < 12VDC-24VDC
Operating Voltage: 12VDC-24VDC

Warning and Advisory Information

Installation is only to be performed by qualified personnel that are trained to install electronic assemblies where voltages as high as 250VAC are present.
Always exercise caution around electronic equipment.
Never perform wiring on a "live" assembly where voltages are present to reduce the risk of electric shock.

! Danger !
! High voltages may be present with risk of electric shock !

Material and Equipment Required

Qty	Description
1	Small flathead screwdriver for Terminal Wiring
1	Sercel-GRC Modbus to Dual 4-20mA translator module (#10025591)
1	FIC-4000 or FSK gauge interface assembly
1m	24-18ga, 200V minimum, Insulated stranded wire
1	Wire Strippers for 24-18ga wire

Installation Guide

Install the Sercel-GRC Modbus to Dual 4-20mA translator module (#10025591) into a Waterproof enclosure (FIC-4000 utilizes a NMEA enclosure).   The Modbus to Dual 4-20mA translator module (#10025591) is designed to be snapped in-place on a DIN rail inside an enclosure.

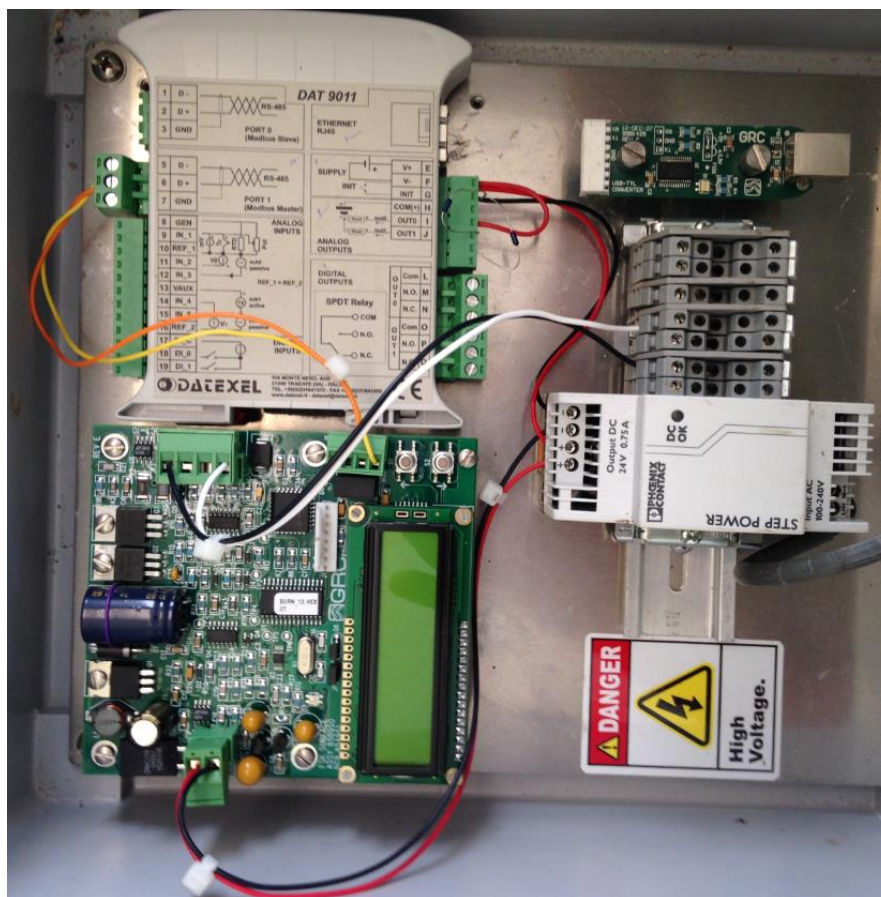See Figure below for example installation.   Wiring instructions follow in the next section.

Figure 1 Finished Installation of DAT0911 inside FIC-4000
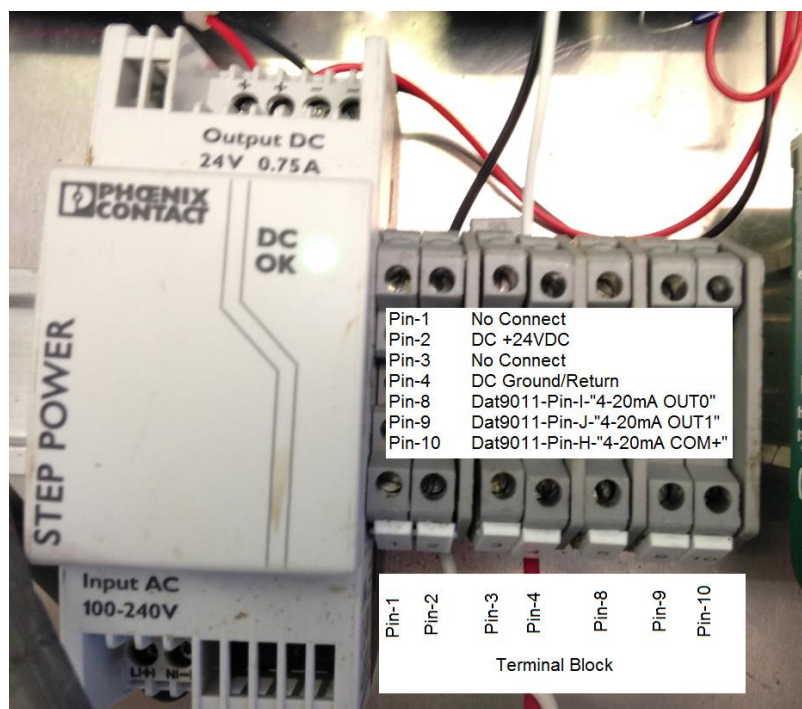
Figure 2 Terminal Block and Pinout

Pin-1   No Connect
Pin-2   DC +24VDC
Pin-3   No Connect
Pin-4   DC Ground/Return
Pin-8   Dat9011-Pin-I-"4-20mA OUT0"
Pin-9   Dat9011-Pin-J-"4-20mA OUT1"
Pin-10   Dat9011-Pin-H-"4-20mA COM+"

Figure 3 DAT9011 RTU Module

Pin-5   Modbus D-
Pin-6   Modbus D+

Pin-E   DC +24VDC
Pin-F   DC Return/GND
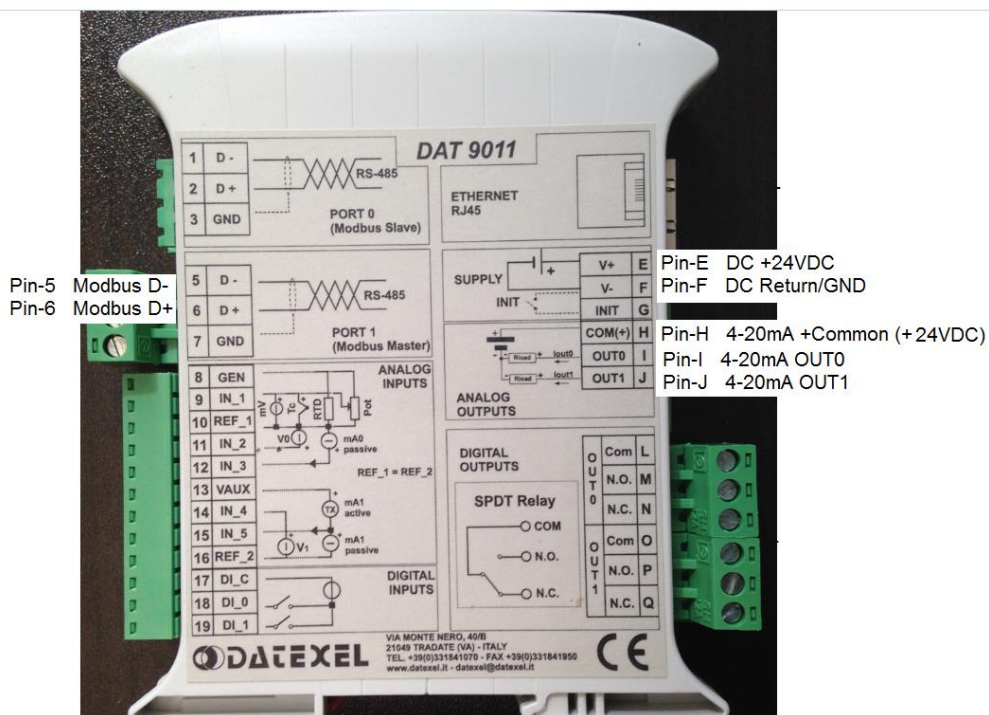Pin-H   4-20mA +Common (+24VDC)
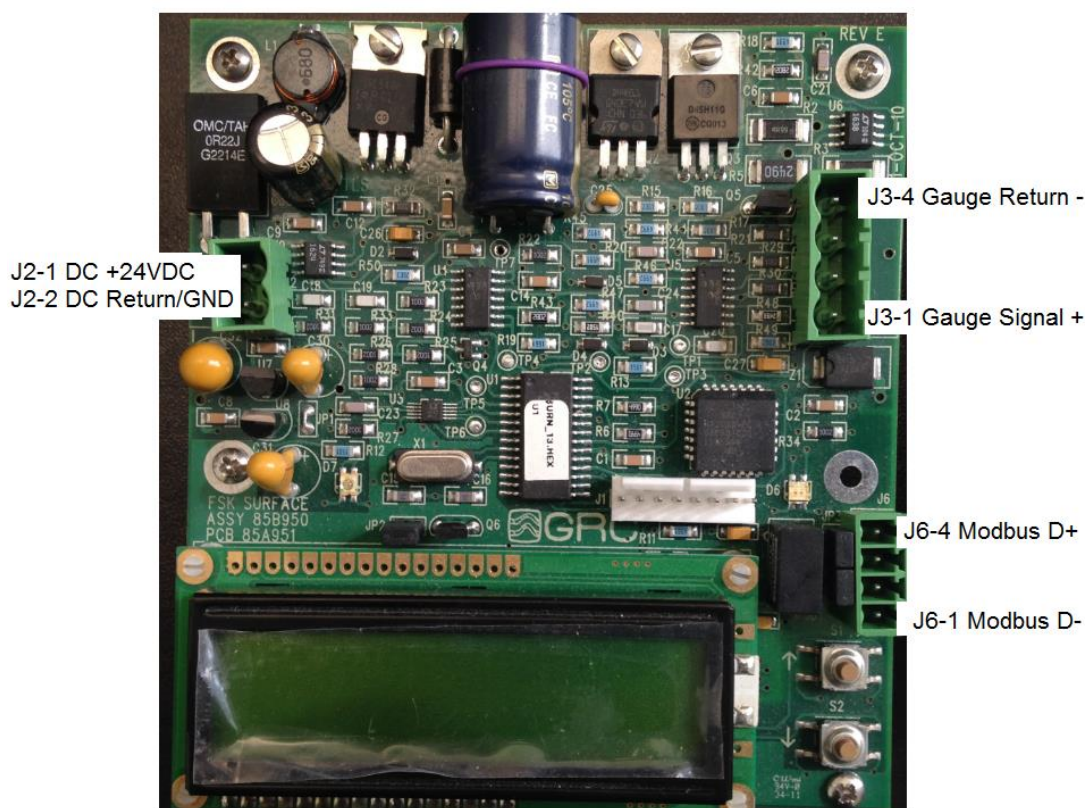Pin-I   4-20mA OUT0
Pin-J   4-20mA OUT1

Figure 4 FSK Gauge Interface Assembly

Wiring List

Connect and verify the following modules:

Signal Description	From Connection	To Connection
+24VDC	Power Supply +24VDC	FSK Assy J2-1
+24VDC	Power Supply +24VDC	DAT9011 Pin-E
120VAC Line	Input AC Power Cable	Power Supply AC Line
120VAC Neutral	Input AC Power Cable Neutral	Power Supply AC Neutral
Modbus +	DAT9011 Pin-5	FSK Assy J6-4
Modbus -	DAT9011 Pin-6	FSK Assy J6-1
4-20mA +Common	DAT9011 Pin-H	User Connection 4-20mA Com
4-20mA Out0 Pressure	DAT9011 Pin-I	User Connection 4-20mA Pres
4-20mA Out1 Temperature	DAT9011 Pin-J	User Connection 4-20mA Temp

The Terminal Block can be used to expand connections as shown in Figure 2 as needed.

Operation Checks

Verify operation at room temperature by Checking the 4-20mA connections when the FSK Assy LCD Display shows a temperature and pressure reading.