

APPLICATION NOTE	FECA-AN-167
PID Control with Pressure Transducer Wiring and Function Code Settings	

Inverter type	FRENIC-Mini (C2) series
Software version	All versions
Required options	None
Related documentation	INR-SI47
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Introduction:

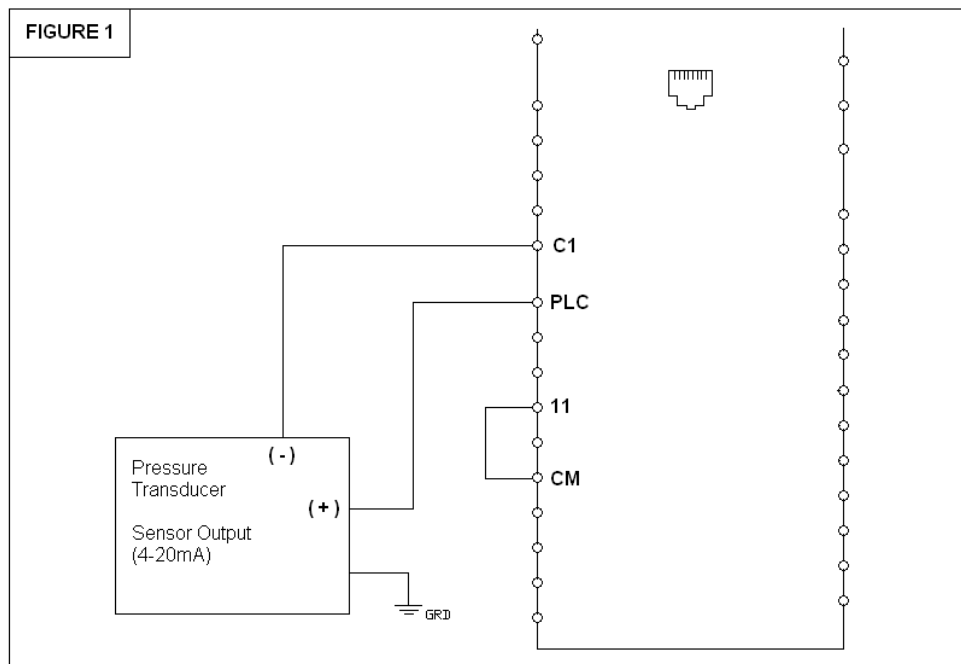
This application note will address the wiring set up of a pressure transducer with a **FRENIC-Mini (C2)** drive, and parameter settings, to operate under PID control using a 4-20mA feedback signal.

Wiring:

The pressure regulator sensor with a 4-20mA output is to be connected as follows:

- 1) Connect drive terminal **PLC** (24VDC) to the sensor's **red** lead or terminal **1 (+)**
- 2) Connect drive terminal **C1** (+) to the sensor's **black** lead or terminal **2 (-)**
- 3) Connect a wire jumper between drive terminals **11** and **CM**

Refer to FIGURE 1 below:



Function Codes

The following table displays the parameters that need to be set in the drive to operate PID control using the keypad to set the command (target) value, and 4-20mA feedback signal.

Code	Setting	Description
J01	1 - for normal operation (typically used) 2 - for inverse operation	PID Control Mode
J02	0 – keypad process command	PID Process Command (how to set target value)
J03	5 (*)	P – Proportional Gain
J04	1 second (*)	I – Integral Time
E40	Highest value of sensor range	PID Coefficient A
E41	Lowest value of sensor range	PID Coefficient B
E43	10 – for PID process command (SV) 12 – for PID feedback (PV)	LED Monitor (Item Selection)
E62	5 – PID feedback value	Analog Input Terminal C1 Function Selection

(*)**Note:** These are initial settings and will need to be adjusted to provide optimum performance per the actual system characteristics and desired response. Changes should be made gradually as you will want to have stable operation with the maximum regulation; excessive settings could result in unstable operation.

Entering the Set value

To enter the set value, the setting the PID loop is to maintain, for the above settings you will enter the set value through the keypad. Utilize the **UP** arrow key to set the value. Press **FUNC/DATA** to save it.



For more information refer to the **FRENIC-Mini (C2) Instruction Manual (INR-SI47-1729a-E)**.