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APPLICATION NOTE	FEA-ACDR-AN-205

PID Control with Pressure Transducer Wiring and Function Code Settings

Inverter type	FRENIC-MEGA G2 series
Software version	All versions
Required options	None
Related documentation	FEA-ACDR-IN-125
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Introduction:

This application note will address the wiring set up of a pressure transducer with a **FRENIC-MEGA G2** drive, and parameter settings, to operate under PID control using a 4-20mA feedback signal.

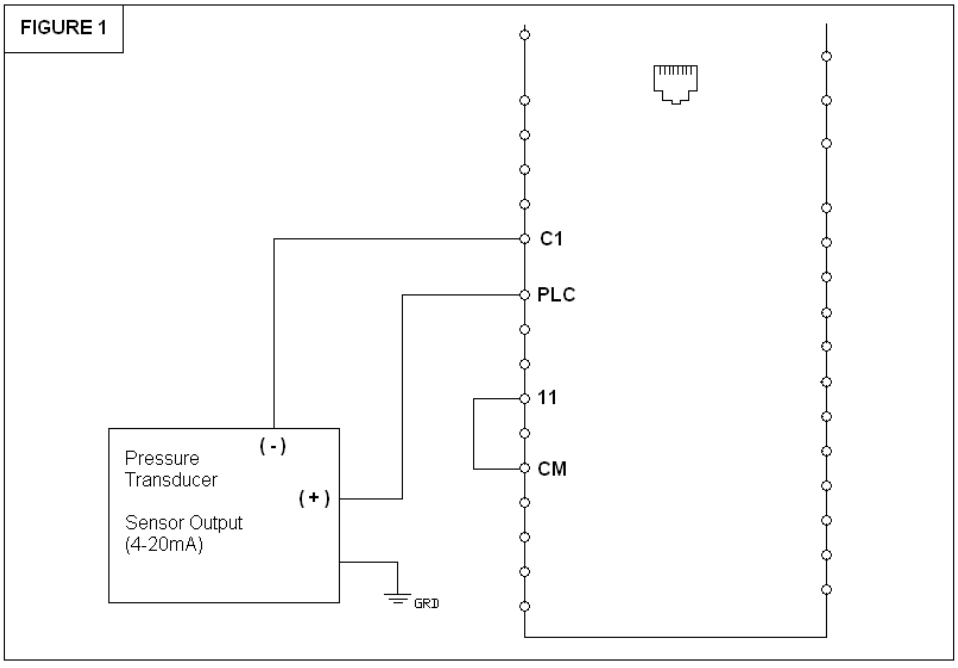
Wiring:

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:

FIGURE 1



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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 4 – communication command	PID Process Command (how to set target value)
J03	**5** (*)	P – Proportional Gain
J04	**1** second (*)	I – Integral Time
J105	**46** - psi	PID Control Display Unit
J106	Highest value of sensor range	PID Control Maximum Scale
J107	Lowest value of sensor range	PID Control Minimum Scale
E43	**10** – for PID process command (SV) 12 – for PID feedback (PV) 14 – for PID output (MV)	LED Monitor (Item Selection)
E62	**5** – PID feedback value	Analog Input Terminal C1 Function Selection
C64	**46** - psi	C1 Terminal Feedback Display Unit
C65	Highest value of sensor range	C1 Terminal Feedback Maximum Scale
C66	Lowest value of sensor range	C1 Terminal Feedback Minimum Scale
P01	Motor Poles	Motor 1 Number of Poles
P02	Motor HP on Nameplate	Motor 1 HP Rated Capacity
P03	Motor Amps / FLA on Nameplate	Motor 1 Amps Rated Current

Custom Function Codes:

Refer to function codes **K15**, **K16** and **K17** in the Mega G2's User's Manual to customize what specs you see on the display at the main Home Screen based on each setting.

(*) 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.

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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 **LEFT** and **UP** arrow keys to set the value. Pressing **LEFT** will allow you to move the cursor to the left most digit for faster setting. Press **SET** to save it.

For more information refer to the **FRENIC-MEGA G2 Instruction Manual (FEA-ACDR-IN-125).**