

PD420

Panel Mount 4-20 mA Set-Point Generator



FEATURES

- **4-20 mA Current Loop Set Point Generator**
- **4-20 mA or 3-21 mA Output Ranges**
- **Set Point Displayed as 0-100%, 4-20 mA, or 3-21 mA**
- **Built-in Dial for Changing Output**
- **Backlit Display**
- **Coarse or Fine Set Point Adjustment**
- **+/- 0.5% Output Accuracy**
- **0.01 Display Accuracy**
- **15-30 VDC Power Requirement**
- **< 500 ohms Sampling Resistance**

OVERVIEW

The PD420 4-20 mA current loop set point generator provides a convenient way to generate a 4-20 mA signal that can be used to control another device. The PD420 features a backlit LCD display that can be programmed to display 0-100%, 4-20 mA or 3-21 mA and output either 4-20 mA or 3-21 mA. A built-in dial is provided to vary the displayed / output value. The dial may be programmed for coarse or fine adjustment.

PROGRAMMING INSTRUCTIONS

Parameter Table 1: Entering F002-F007 (FXXX System Settings) requires a password “- - -” first:

Index	Designation	Comments			Default
F001	Output Mode	0: Coarse tuning mode; use F004 to adjust increment value per click 1: Fine tuning mode; use F005 to adjust increment value per click 2: Quick output; Use F100 to enter number of quick output settings 3: Automatic curve output: Use F200 to enter number of curves			0
F002	Output Range	0: 4-20 mA	1: 3-21 mA		0
F003	Display Range	0: Current	1: 0-100%	2: 0-50%	0
F004	Coarse Tuning Increment Value	1-50 Addition and subtraction for each click. Disregard decimal point (1-50) x10			1
F005	Fine Tuning Increment Value	1-50 Addition and subtraction for each click. Disregard decimal point (1-50) x10			1
F006	Auto Save of Adjustment Value	0: Not automatically saved. Need to press knob to save		1: Automatic save	0
F007	Calibration	Factory set only			

The default setup mode for the Set Point Generator is:

1. Coarse tuning mode (display changes in 0.10 increments)
2. Output range is 4-20 mA
3. Display mode is current (ie. 4-20 mA)

Change from coarse to fine tuning mode:

1. Press and hold the knob for two seconds until F001 appears.
2. Press the knob again
3. Change the number from 0 (coarse tuning mode) to 1 (Fine tuning mode)
4. Press the knob again

Entering Passwords:

1. Rotate knob one click clockwise for “-”
2. Rotate knob one click counter-clock for “-”
3. Press the knob to confirm

Change output range from 4-20 mA to 3-21 mA:

1. Enter the password as described above
2. The F002 menu is used to change the output range.
Turn knob until the desired parameter number appears and press enter:
 - a. 0: 4-20 mA
 - b. 1: 3-21 mA
3. Keep turning the knob until FEnd appears and press the knob to exit programming

Change display from current (4-20 or 3-21 mA) to 0.0-100.0% or 0.0-50.0%:

1. Enter the password as described above
2. Turn the knob once clockwise and F003 appears.
3. Press the knob and turn the knob until the desired parameter number appears and press enter:
 - a. 0: Current
 - b. 1: 0.0-100.0%
 - c. 2: 0.0-50.0%
4. Keep turning the knob until FEnd appears and press the knob to exit

Change the value for how much each click on the knob adjusts coarse tuning:

1. Enter the password as described above
2. Turn the knob twice clockwise until F004 appears.
3. Press the knob and turn the knob until the number that represents how much the display will change with each click appears and press enter.
4. Keep turning the knob until FEnd appears and press the knob to exit

Change the value for how much each click on the knob adjusts fine tuning:

1. Enter the password as described above
2. Turn the knob three times clockwise until F005 appears.
3. Press the knob and turn the knob until the number that represents how much the display will change with each click appears and press enter.
4. Keep turning the knob until FEnd appears and press the knob to exit

Change from pressing the knob to save programming to automatic save:

1. Enter the password as described above
2. Turn the knob four times clockwise until F006 appears.
3. Press the knob and turn the knob until the desired parameter number appears and press enter:
 - a. 0: Need to press knob to save programming
 - b. 1: Automatic save
4. Keep turning the knob until FEnd appears and press the knob to exit

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Parameter Table 2: Entering F100... (Quick Output Settings) requires password “-4-4-” first

Index	Designation	Comments	Default
F 100	Number of quick settings	0: Not used 2-9: Number of points	0
F 101-109	Output value of up to 9 points	Range: 3.00-21.00 mA (F100 must be > 0)	

Programming Quick Output Points:

- Press and hold the knob for two seconds until F00 ! appears.
 - Press the knob again
 - Change the number from 0 (coarse tuning mode) to 2 (Quick Output Settings)
 - Press the knob again to return to operation mode

- Press and hold the knob for two seconds until F00 ! appears.
 - Enter password per instructions above to: +-+
- Press the knob and F 100 appears
 - Adjust the knob until the desired number of Output Points appears and press the knob.
- Enter in Output Points
 - F101 and value; enter all points

Parameter Table 3: Entering F200... (Curve Output Settings) requires password “-4-4-” first

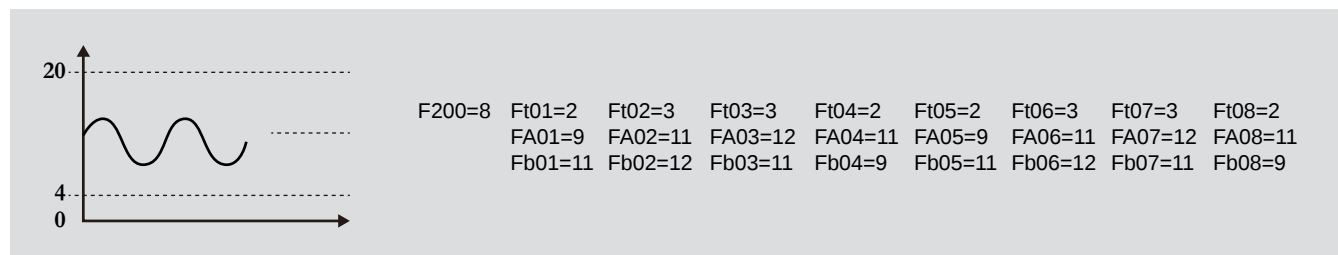
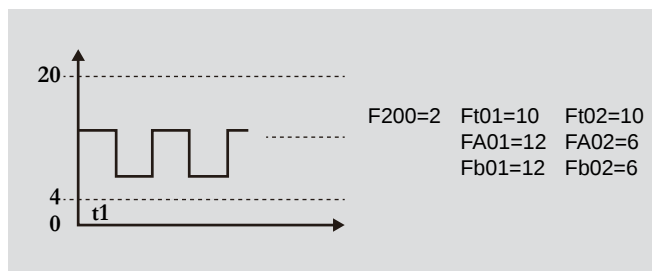
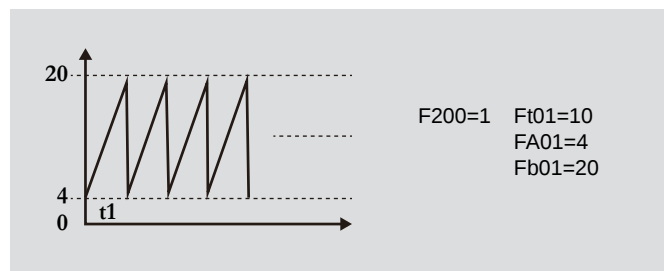
Index	Designation	Comments	Default
F200	Number of curves	0: Not used 1-9: Number of segments	0
Ft01	Curve 1 run time	0-999 seconds (F200 must be > 0)	
FA01	Curve 1 start current	Range: 3.00-21.00 mA	
Fb01	Curve 1 end current	Range: 3.00-21.00 mA	
Ft02	Curve 1 run time	0-999 seconds	
Fb03	Curve 1 end current	Range: 3.00-21.00 mA	

Programming Curve Output Points:

- Press and hold the knob for two seconds until F00 ! appears.
 - Press the knob again
 - Change the number from 0 (coarse tuning mode) to 3 (Automatic curve output)
 - Press the knob again to return to operation mode
- Press and hold the knob for two seconds until F00 ! appears.
 - Enter password per instructions above to: -4-4

- Press the knob and F200 appears
 - Press knob and enter the number of curves to be programmed
 - Set Ft01: Run time for curve (0-999 seconds)
 - Set FA01: Start current value (3.00 to 21.00 mA)
 - Set Fb01: End current value (3.00 to 21.00 mA)
 - Repeat for remaining curves

Examples of Automatic Curve Output Settings:



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AVAILABLE ENCLOSURES



PDA2802

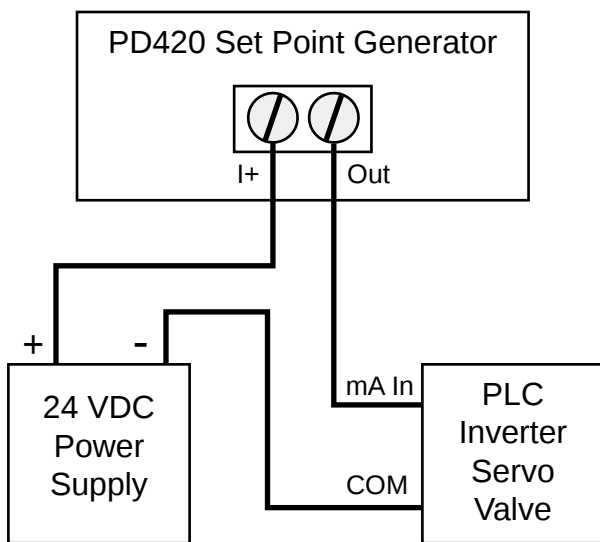


PDA2814

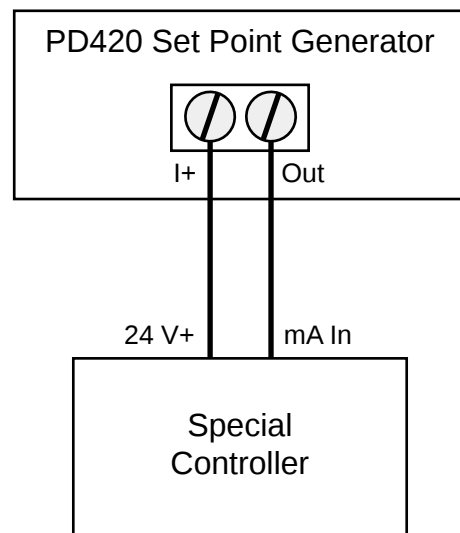


PDA2815

CONNECTIONS



PD420 Powered by 24 VDC Supply

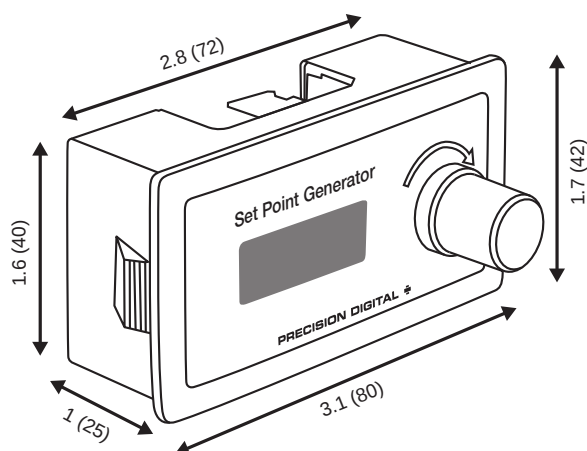


PD420 Powered by Control Device

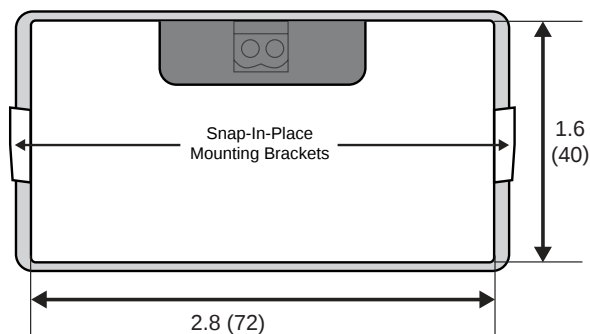
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DIMENSIONS

Units: Inches (mm)



Front View



Back View

Notes:

1. Panel cutout required: 3.0" x 1.6" (77 mm x 40 mm)
2. Panel thickness: must be greater than 0.06" (1 mm)
3. Mounting brackets snap in place for easy mounting

WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

SPECIFICATIONS

Output Accuracy: +/- 0.5%

Output Ranges: 4-20 mA or 3-21 mA

Display: 0.3" (8 mm) high backlit LCD

Display Accuracy: 0.01

Display Modes: Current, 0-100%, 0-50.0 Hz

Display Change Adjustment: User may program coarse and fine adjustments such that each pulse on the dial results in a change of between 1 and 50 counts on the display.

Front Panel: NEMA 1

Operating Temperature Range: -4 to 140°F (-20 to 60°C)

Connections: Removable Screw Terminal Block

Power Requirement: 15-30 VDC

Sampling Resistance: Less than 500 Ω

ORDERING INFORMATION

Model	Description
PD420	4-20 mA Set Point Generator

Accessories

Model	Description
PDA2802	Plastic NEMA 4 Enclosure for 1 PD420
PDA2814	Plastic NEMA 4X Enclosure for 2 PD420
PDA2815	Plastic NEMA 4X Enclosure for 3 PD420

Your Local Distributor is:

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