

PCD Proportional Valve Driver

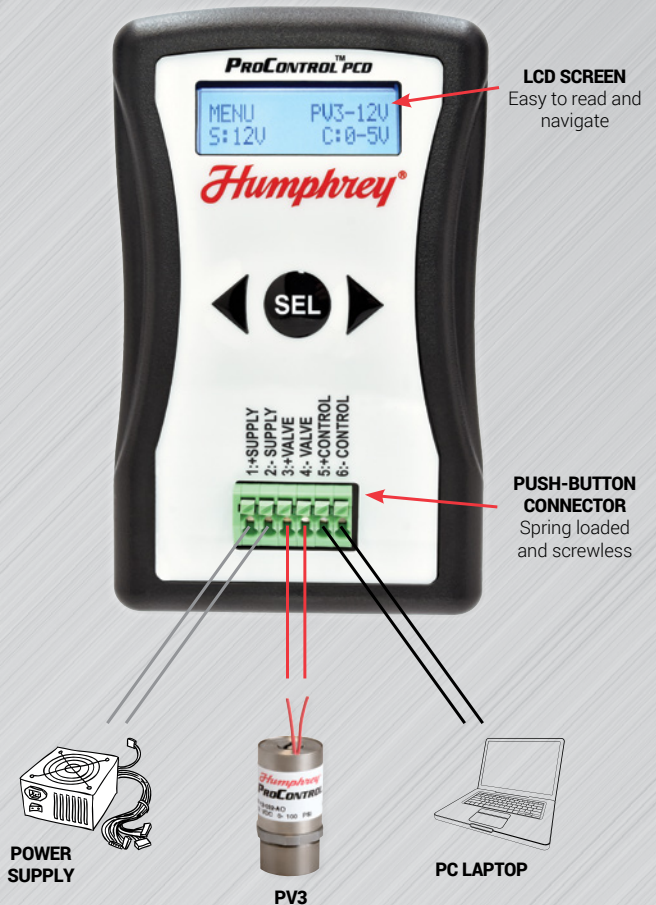
Humphrey ProControl™ PCD is a rugged proportional valve driver designed to drive proportional valves through PWM or constant current signals. The versatile design allows great flexibility of various drive/control inputs, or manual operation. Valve and interface can be controlled with a host of data acquisitions, such as PLCs, IoTs, or sensor feedback (closed loop) systems.

FEATURES

- Control Input Options: 0 to 5v, 0 to 10v, 4-20mA, or manual via navigation buttons.
- Valve Presets: Humphrey valve models PV3, PV10, PC30 and iDP390/391 are loaded as presets, while other proportional valves are controlled via custom mode.
- Signal Conditioning via Linearization attribute (see illustration on back page).
- Connector: Screwless, push-button clamp
- User Interface: LCD Screen (no jumpers or pots to adjust).
- Industry leading LCD readout.
- Setup and Installation instructions included.

FEATURES: OUTPUT OPTIONS

- Constant Current:
 - 0 to 1 Amp
 - Dithering: 0 to 40mA
- PWM:
 - Freq: 500, 1.25k, 2.5k, 5k, 10k Hz
 - Duty Cycle: 0 to 100%
 - Dithering: 0 to 10%



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How to Order

ProControl™ PCD Proportional Valve Driver

PCD

ORDER CODE

PCD is ideal to evaluate and operate proportional valves, such as the Humphrey ProControl™ Series.



iDP390/391



PC30



PV10



PV3



SERVOID SERIES



ProControl™ Series PCD Proportional Valve Driver

SPECIFICATIONS	PCD
SUPPLY VOLTAGE	12-28VDC
CONTROL SIGNAL	0-5v, 0-10v, 4-20mA, PWM signal, or manual via navigation buttons
OUTPUT AMPERAGE	0-1A (internally protected)
VALVE PRESETS	Humphrey Proportional Valves (others controlled via custom preset)
WIRE	16-24AWG, Stranded
CONNECTOR	Screwless - Push-Button Clamp

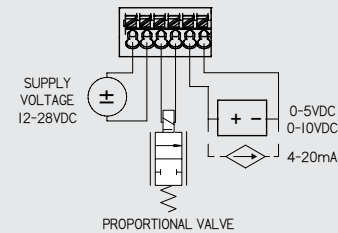
PCD is versatile. Control a proportional valve on your test bench for evaluation, then transition to your production environment. Keeping the same set up, you can now integrate the valve and driver into your system and use your DAQ output for valve control.

For assistance with set up, questions, or for more information on the PCD, please contact our ProControl™ application specialist at 1.844.447.9009 or email procontrolway@humphrey-products.com.

DIMENSIONAL DRAWING



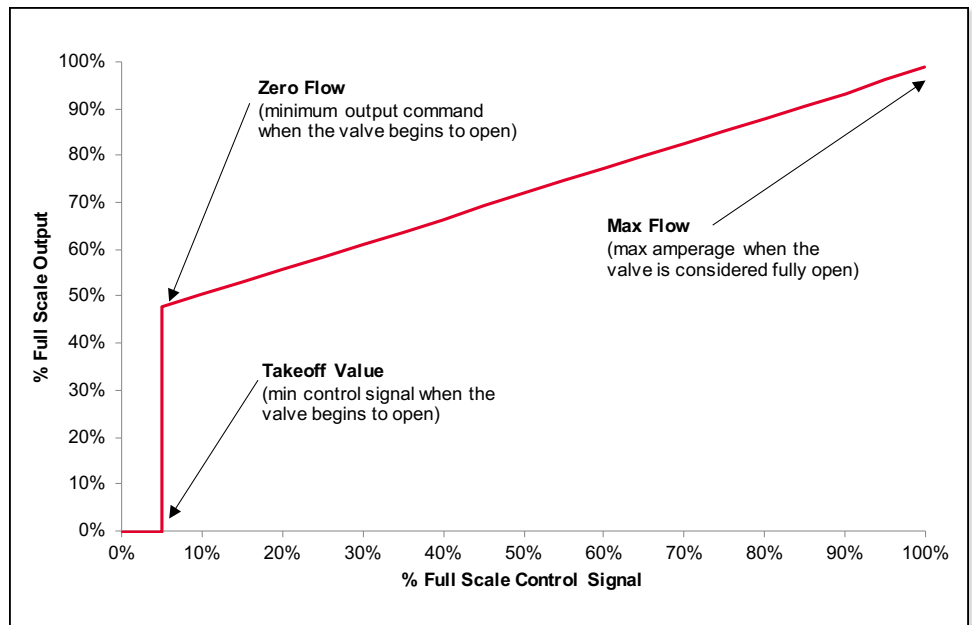
CONNECTION DIAGRAM



PCD LINEARIZATION

Feature amplifies various control/input signals and provides a stable proportional valve output. The amplified and conditioned output signal allows you to "pre-load" or set your current control signal. This maximizes valve control range when driven with the PCD. You can start your flow at 5% control signal and operate the valve through the full control range, equating to the optimal operational range of the valve (lift off to full flow).

EXAMPLE: Takeoff control signal is set to 5% of control signal, and the valve lift off amperage is 100mA. PCD will send 100mA to the valve when 5% signal is reached. Remaining control signal range (95%) is linearized for the remaining valve operational range (100-200mA).



Certified: ISO 9001:2015

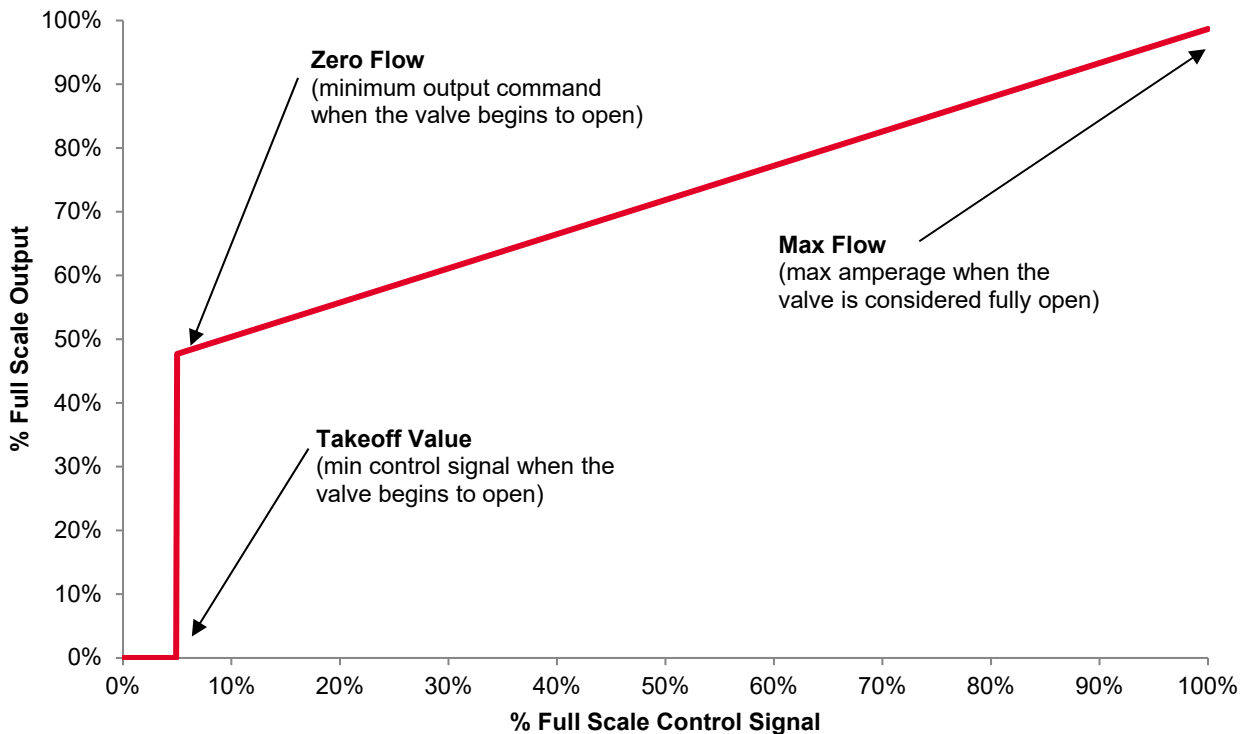


Operational Guidelines: ProControl™ PCD Proportional Valve Driver

Overview

ProControl™ Driver is a rugged device for driving proportional valves through either constant current or PWM signal. The versatile design allows flexibility of various control / input signals and provides stable proportional valve output. Also, the PCD features the ability to fine tune take off voltage, max flow and other settings via the LCD screen. Supply voltage can be a simple, low cost 12v or 24v power supply.

PCD Linearization



Operation

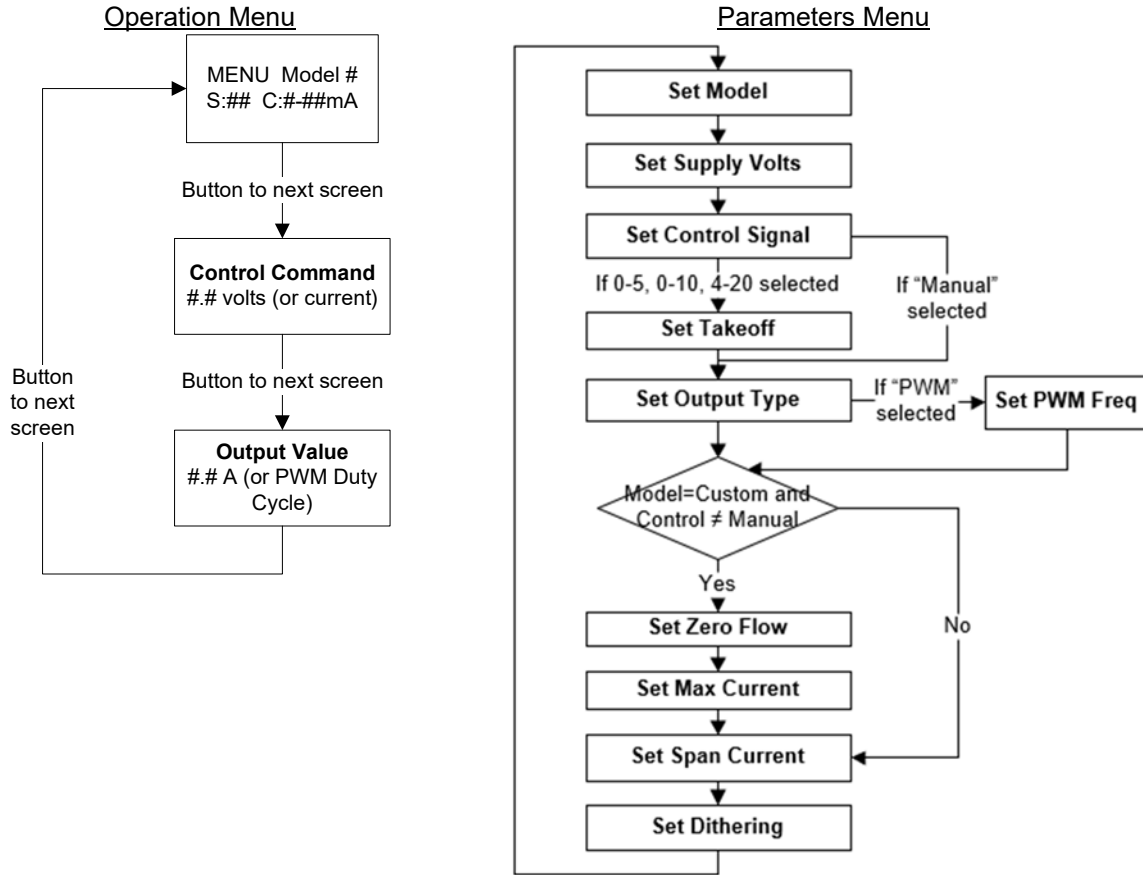
The ProControl™ Driver features navigation buttons which provide easy sequencing through the menus and setting parameters.

In the Operation Menu, pressing the Select button briefly will advance you to the next screen.

To access the Parameters Menu screen, press and hold the Select button for 5 seconds. This will display the Parameters Menu.

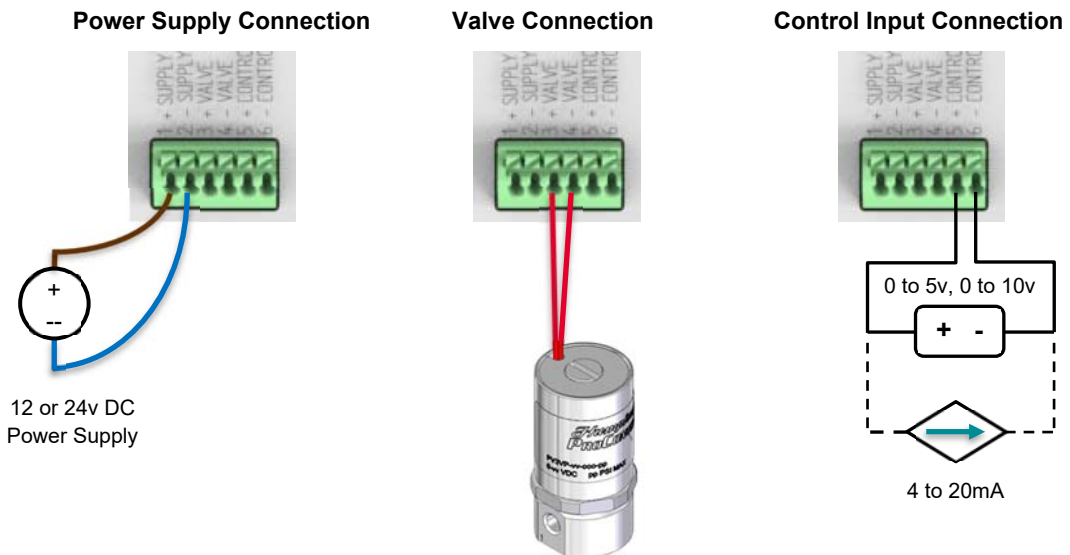
In the Parameters Menu, pressing the Select button briefly will advance the screen to next parameter option. Use the navigation buttons to change parameter values.

The following is a listing of the sequence of the menus.



Installation

The ProControl™ Driver features a simple spring-loaded connector. Press down on the tab, and it opens the connector to allow the wire to be inserted. Wire conductors should be stripped back 0.25". The following diagram shows the connection scheme.



<u>Specifications</u>		<u>Output Options</u>	
Supply Voltage	12 to 28v DC	Constant Current	0 ~ 1 Amp
whee	0 ~ 5v, 0 ~ 10v, 4 ~ 20mA, PWM signal on voltage input, manual via navigation buttons	PWM	500, 1.25k, 2.5k, 5k, 10k Hz
Preset Valves	PV3, PV10, PC30, 390/391, custom	Duty Cycle	0 ~ 100%
Wire	16 ~ 24AWG, Stranded	Dithering	Current: 0 to 40mA
Connector	Screwless - Push Button Clamp	PWM	0 to 10%

Operational Notes

If the Supply voltage is flashing on the MENU screen, this means that the supply voltage is below the supply voltage parameter. Increase the supply voltage from the power supply or correct the parameter.

For additional information, please contact Humphrey Products to speak with a ProControl™ application specialist. Call toll free at 1.844.447.9009 or email procontrolway@humphrey-products.com.

Definitions

- **Available Models:** PV3-12v, PV3-24v, PV10-12v, PV10-24v, PC30-10v, PC30-20v, 390/391-24V, or custom
- **Control Input Signal:** 0 ~ 5V, 0 ~ 10V, 4 ~ 20mA, or manually via buttons
- **Takeoff Value:** Input signal level at which the output (whether constant current or PWM) is at the Zero Flow level.
- **Output Type:** Constant Current or PWM output type. PWM Output allows for the selection of output frequency.
- **Zero Flow** (Custom model only): Depending on output mode, current or PWM percentage at which the valve begins to open.
- **Max Flow** (Custom model only): Depending on output mode, current or PWM percentage at which the valve is considered fully open.
- **Span Current:** Percentage of Max Flow desired at full scale input (5V, 10V, 20mA)
- **Dithering:** Depending on output mode, current or PWM percentage of dithering applied to the output to reduce the effects of stiction.
- **Custom Model option:** This setting allows the operator to setup the PCD for unique linearization characteristics, including zero flow and max flow values.
- **"Manual" Control Signal option:** Allows the use of the PCD navigation buttons to override control signal requirements. This results in the linearization parameters (take off, zero flow, max flow) to be bypassed.

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