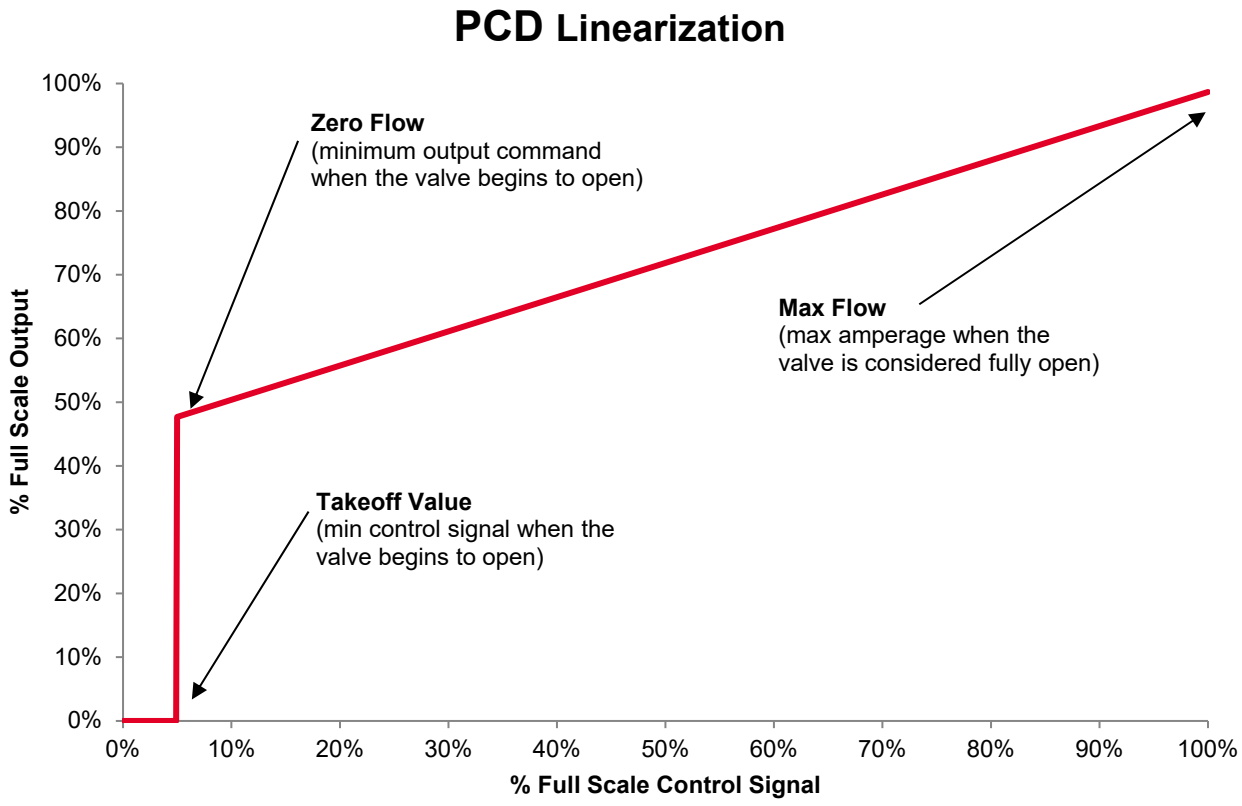
Operational Guidelines: ProControl™ PCD Proportional Valve Driver

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.



Operation

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

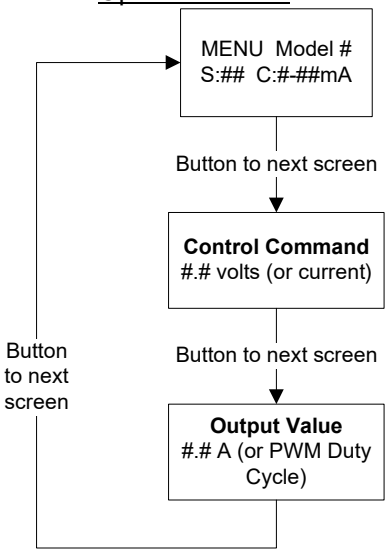
In the Operation Menu, pressing the Select button briefly will advance you to the next screen.

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

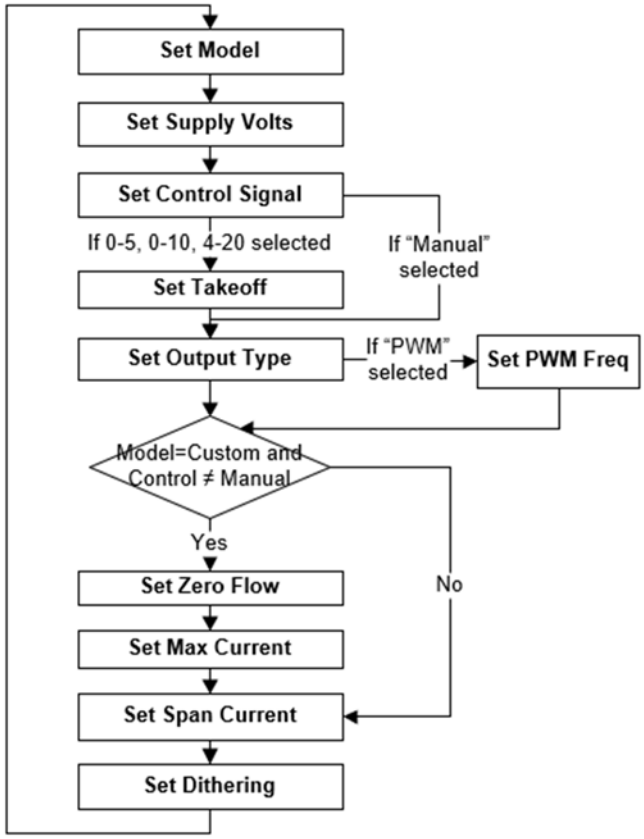
In the Parameters Menu, pressing the Select button briefly will advance the screen to next parameter option. Use the navigation buttons to change parameter values.

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

Operation Menu



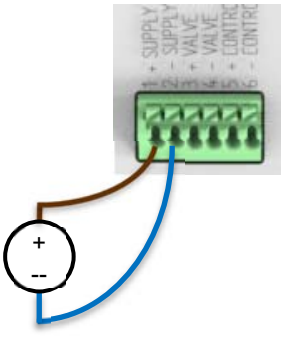
Parameters Menu



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.

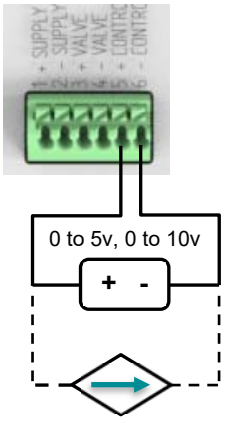
Power Supply Connection



12 or 24v DC
Power Supply

Valve Connection

Control Input Connection



4 to 20mA

Specifications

Supply Voltage	12 to 28v DC
whee	0 ~ 5v, 0 ~ 10v, 4 ~ 20mA, PWM signal on voltage input, manual via navigation buttons
Preset Valves	PV3, PV10, PC30, 390/391, custom
Wire	16 ~ 24AWG, Stranded
Connector	Screwless - Push Button Clamp

Output Options

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