

FEATURES

- 2 channel output
- Isolated phase cut inputs
- Isolated milliamp inputs
- 1 or 2 channel inputs
- High reliability Mosfet outputs
- On-board fuse protection

APPLICATIONS

- Signal splitting
- Dual valve driver
- Same signal sequencing
- 1 or 2 channel mA or DC to phase cut

DESCRIPTION & OPERATION

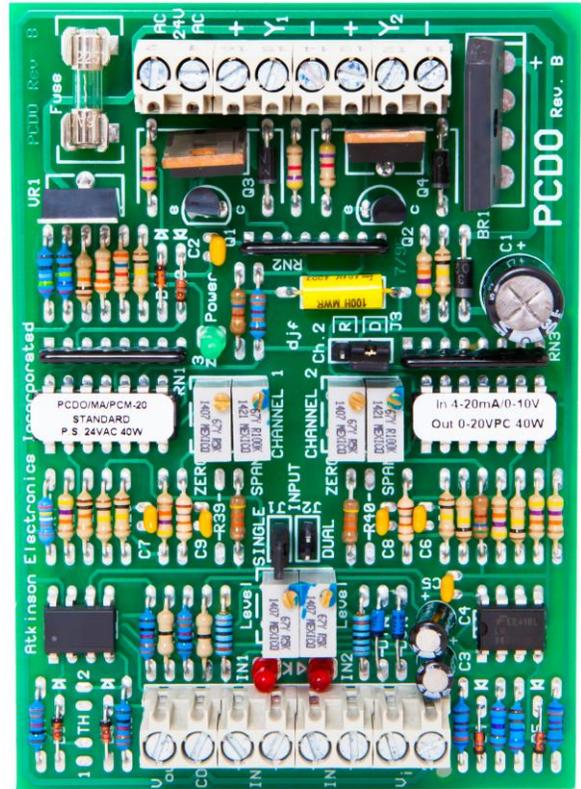
The PCDO provides two phase cut outputs rated at 40 watts per channel. The outputs may be controlled by either one input signal, for signal splitting or sequencing applications, or by two input signals for independent two-channel applications. The inputs accept either 4-20 mA, 0-10VDC or 10-90% phase cut. Each phase cut output may be independently scaled and channel 2 may be inverted.

The power supply consists of a 6 Amp bridge rectifier, filter capacitor, and a LM317T voltage regulator. Two optically isolated and two non-isolated inputs control two independent Amplifier circuits. The isolated inputs are configured for either a phase cut signal or 4-20 mA signal. The non-isolated inputs are configured for 0-10VDC signals. By installing a jumper on JP1 both outputs can be controlled with one input signal for signal splitting and sequencing applications. JP3 selects direct or reverse action of the channel 2 output. Each channel has ZERO and SPAN potentiometers for field calibration. The Mosfet outputs on the PCDO provide short circuit protection and low temperature operation.

It is RECOMMENDED that a 24VAC isolation transformer be used when the following condition exist:

- 0-10V input signal comes from a device that uses a half-wave rectifier and is powered by the same 24VAC source as the PCDO.

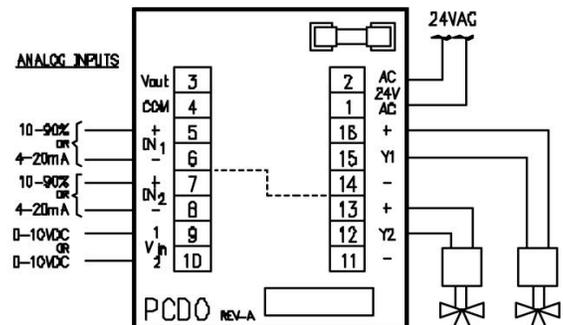
Note: A half-wave power supply is being employed when the signal reference or common is the same as one side of the AC power source. This can be checked by measuring the resistance between the signal common terminal and the AC supply terminals. If either one measures approximately zero Ohms, then the power supply section in half-wave.



SPECIFICATIONS

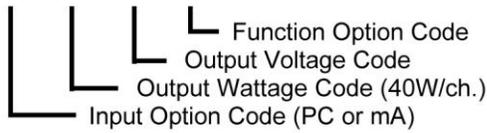
SIZE:	4.2"L x 3"W x 1.5H
MOUNTING:	3.0" RDI snap track supplied
POWER:	24VAC, ± 10%, 50/60Hz, 4VA* *Note: When sizing the power transformer the power rating of the valve must be added
INPUTS:	10-90% phase cut 4-20mA 0-10VDC
OUTPUTS:	0-20V phase cut 40 watts
ADJUSTMENTS:	ZERO & SPAN ± 20%
AMBIENT TEMP:	0 to 50°C

WIRING CONFIGURATION



ORDERING INFORMATION

PCDO/XX/PCM-XX/XXX



OUTPUT CODE OPTIONS

- PC 10-90% phase cut isolated input
- mA 4-20mA isolated input

OUTPUT VOLTAGE CODE OPTIONS

- 10 2-10V phase cut output for damper actuators
- 16 6-18V phase cut output for magnetic valves
- 17 1-17V phase cut output for Am1s valves
- 20 0-20V phase cut output for general purpose

OUTPUT VOLTAGE CODE OPTIONS

- STD Independent or parallel phase cut output operation
- SEQ Sequenced phase cut output operation (indicate desired sequence for each output when ordering.)
- AMP 2-channel Amplifier only (no scaling)

ORDERING CODE EXAMPLES

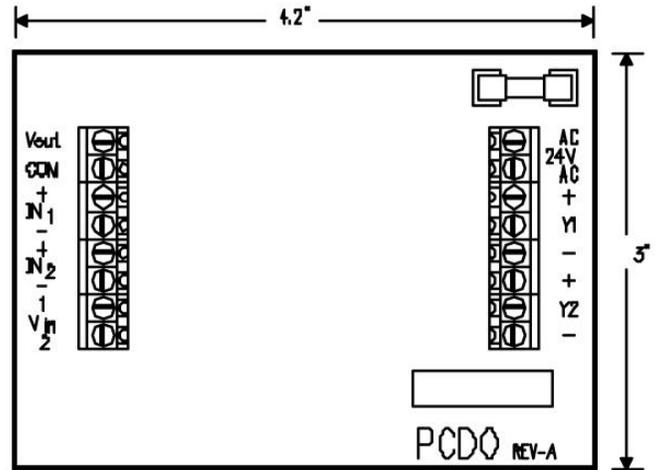
- PCDO/MA/PCM/STD-10 Isolated 4-20mA, inputs, independent or parallel. Dual 2-10V phase cut, 40 watt outputs.
- PCDO/PC/PCM/SEQ2-20 Isolated 10-90% phase cut inputs with dual 0-20V phase cut 40 watt outputs. Channel 1 operating over 0-50% of input signal. Channel 2 operating over 50-100% of input signals.
- PCDO/PC/PCM/SEQ3-16 Isolated 10-90% phase cut inputs with dual 6-18V phase cut 40 watt outputs. Channel 1 operates over 0-33% of input signal, channel 2 operates over 33-100% of input signal.
- PCDO/PC/ /AMP Isolated 10-90% phase cut inputs dual phase cut 40 watt output amplifier.

ORDERING CODE EXAMPLES

The PCDO has an input LEVEL adjustment for each channel for factory calibration. The test point for channel 1 is the left pin of JP1, the right pin of JP1 is the test point for channel 2. When a 100% input signal is applied to each input, the signal at each test point should be set for 2.5VDC using the corresponding LEVEL potentiometer. After the LEVEL is verified, the outputs may be scaled as desired with the ZERO and SPAN potentiometers for each channel. Adjustments are made as follows:

- Adjust the ZERO with a minimum input signal applied. Adjustments should be no greater than 75% of the desired output.
- Adjust the SPAN with a maximum input signal applied. Adjustments should be no greater than 75% of the desired output.
- Repeat ZERO and SPAN adjustments until desired output is achieved.
- All potentiometers are configured so that a clockwise revolution will increase the corresponding adjustment.

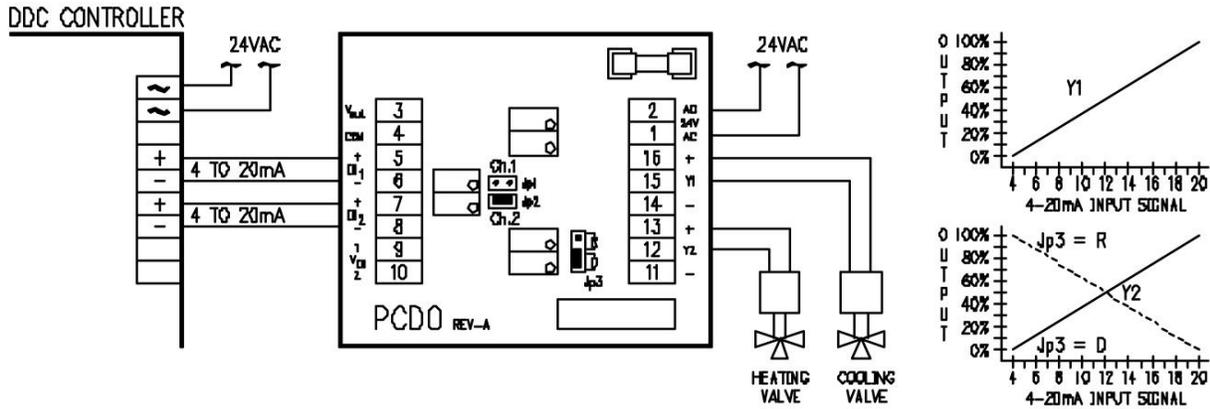
PHYSICAL CONFIGURATION



STAEFA'S RECOMMENDED WIRE LENGTH & SIZE CHART

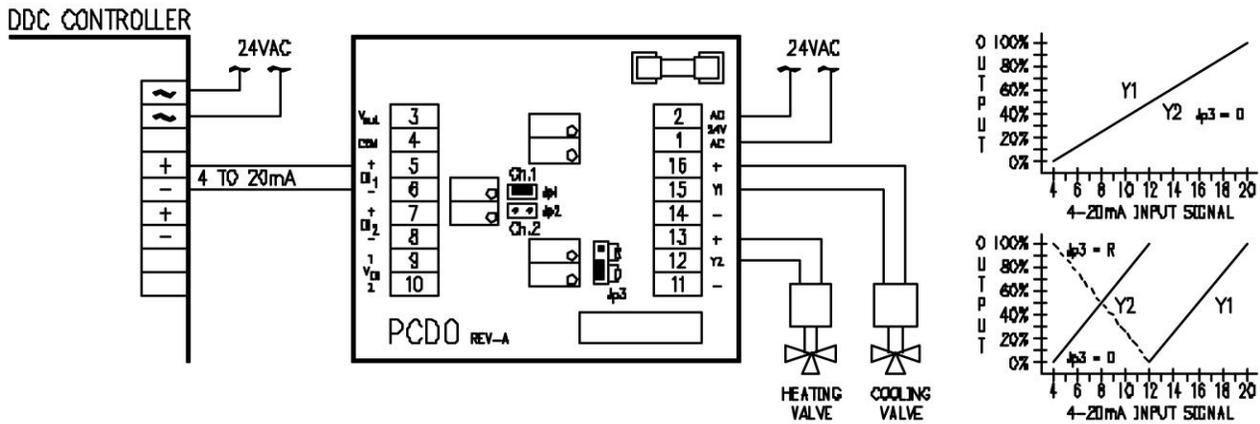
NORMAL POWER	COPPER WIRE SIZE			
	18GA	16GA	14GA	12GA
40W	40'	60'	75'	100'
80W	20'	30'	40'	60'
120W	12'	20'	30'	50'

APPLICATION 1
2-CHANNEL INDEPENDENT MILLIAMPS TO PHASE CUT OUTPUTS



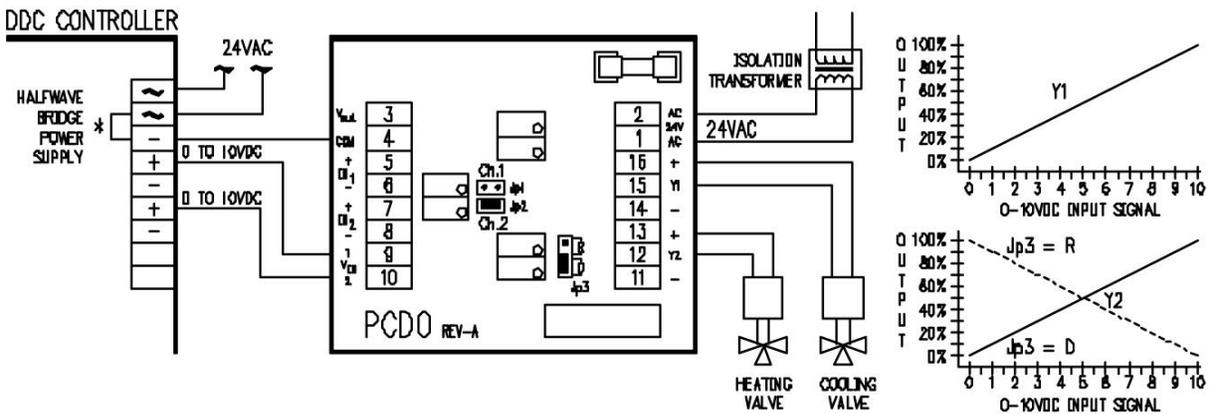
Application 1 converts two 4-20mA inputs to two phase cut outputs. Each output is modulated by its corresponding 4-20mA input. **Note:** JP2 must be installed, and JP1 must be removed.

APPLICATION 2
1-CHANNEL MILLIAMPS TO 2-CHANNEL PHASE CUT OUTPUTS



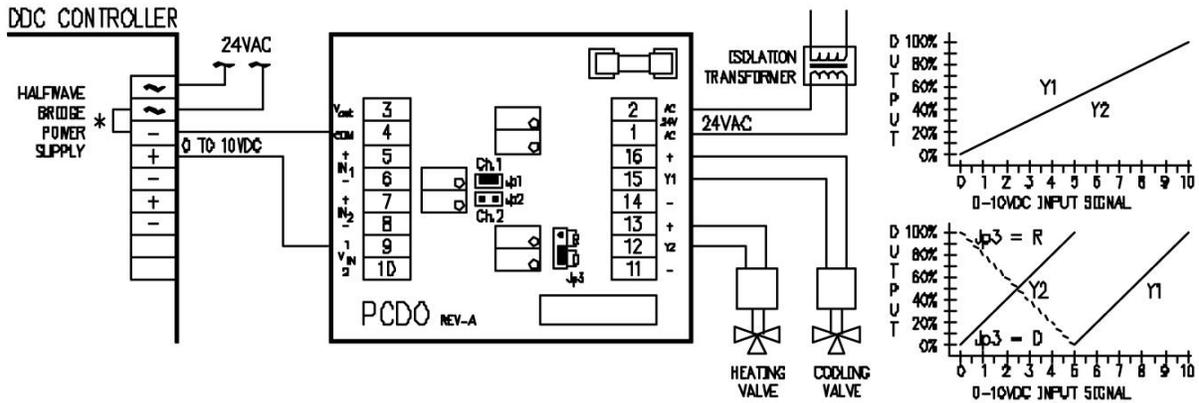
Application 2 converts one 4-20mA input signal to two phase cut outputs. The outputs are modulated by the same input signal, however, may be scaled differently. **Note:** For this application, JP1 must be installed and JP2 removed.

APPLICATION 3
2-CHANNEL INDEPENDENT 0-10VDC TO PHASE CUT OUTPUTS



Application 3 accepts two 0-10VDC inputs and provides two phase cut outputs. Each output is modulated by its corresponding 0-10VDC input signal. **Note:** JP2 must be installed, and JP1 must be removed. **Warning: the 0-10VDC inputs are not isolated.**

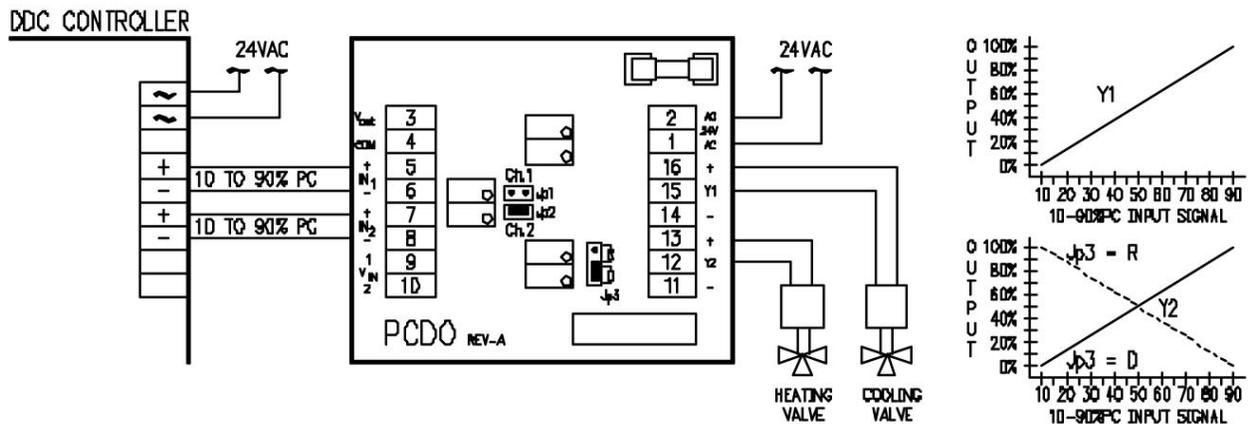
APPLICATION 4
1-CHANNEL 0-10VDC TO 2-CHANNEL PHASE CUT OUTPUTS



Application 4 accepts one 0-10VDC input and provides two phase cut outputs. The outputs are modulated by the same input signal, however, they may be scaled differently. **Note:** For this application, JP1 must be installed and JP2 removed.

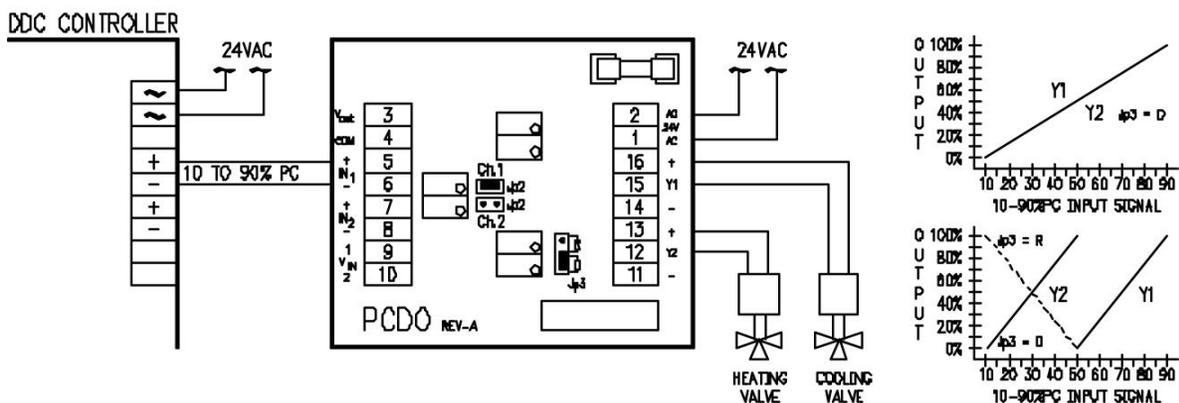
Warning: the 0-10VDC inputs are not isolated.

APPLICATION 5
2-CHANNEL INDEPENDENT PHASE CUT TO PHASE CUT OUTPUTS



Application 5 accepts two 10%-90% phase cut inputs and provides two phase cut outputs. Each output is modulated by its corresponding 10%-90% phase cut input signal. **Note:** JP2 must be installed, and JP1 must be removed.

APPLICATION 6
1-CHANNEL PHASE CUT TO 2-CHANNEL PHASE CUT SPLITTER



Application 6 accepts one 10%-90% phase cut input and provides two phase cut outputs. The outputs are modulated by the same input signal, however they may be scaled differently. **Note:** For this application, JP1 must be installed and JP2 removed.