

**FEATURES**

- ❖ Two channel output
- ❖ Isolated phase cut inputs
- ❖ Isolated milliamp inputs
- ❖ One or two channel input
- ❖ High reliability mosfet outputs
- ❖ On-board fuse protection

**APPLICATIONS**

- ❖ Signal splitting
- ❖ Dual valve driver
- ❖ Same signal sequencing
- ❖ One or two channel mA or DC to phase-cut

**DESCRIPTION**

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 to 20 mA, 0 to 10V DC and 10 to 90% phase cut. Each phase cut output may be independently scaled and channel two may be inverted.

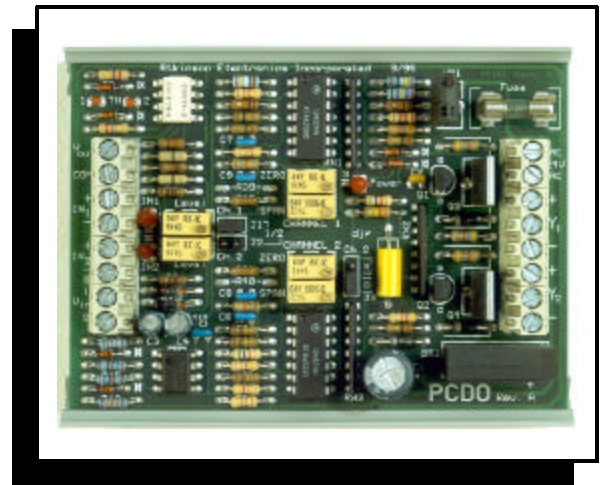
**OPERATION**

The power supply consists of a 6 Amp bridge rectifier, filter capacitor, and a LM317T voltage regulator provides the on-board power. 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 to 20 mA signal. The non-isolated inputs are configured for 0 to 10V DC 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 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 24V AC isolation transformer be used when the following condition exist:

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

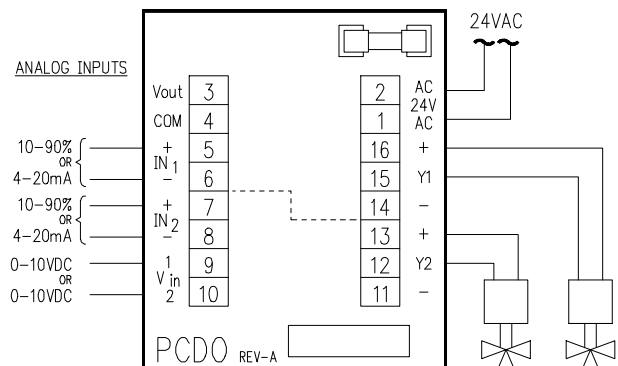
*Note:* A half-wave power supply is being employed when the signal reference or common is the same as one side of the AC power source. This can be checked by measuring the resistance between the signal common terminal and the AC supply terminals. If either one measures approximately Zero ohms, then the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



**SPECIFICATIONS**

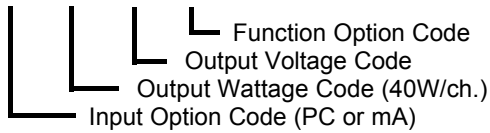
|               |   |
|---------------|---|
| SIZE:         | 4.2" L x 3" W x 1.5" H  |
| MOUNTING:     | 3" RDI snap-track (supplied)  |
| POWER:        | 24V AC, ±10%, 50/60Hz, 4VA*<br>* NOTE: When sizing the power transformer the power rating of the valve must be added. |
| INPUTS:       | 10 - 90% Phase Cut<br>4 - 20 mA<br>0 - 10V DC   |
| OUTPUTS:      | 0 - 20 V Phase Cut 40 Watts   |
| ADJUSTMENTS:  | ZERO & SPAN ± 20%   |
| AMBIENT TEMP: | 0 to 50°C   |

**WIRING CONFIGURATION**



**ORDERING INFORMATION**

**PCDO/XX/PCM-XX/XXX**



**INPUT CODE OPTIONS**

- PC - 10-90% Phase cut Isolated input
- mA - 4-20mA Isolated input

\*Note: 0-10V DC input comes standard as a second input on both phase cur and 4-20mA versions of the PCDO.

**OUTPUT VOLTAGE CODE OPTIONS**

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

**FUNCTION ORDERING CODE**

- STD - Independent or parallel phase cut output operation
- SEQ - Sequenced phase cut output operation (indicate desired sequence for each output when ordering.)
- AMP - Two 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 to 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 to 100% of input signal.    |
| PCDO/PC/ /AMP       | Isolated 10 to 90% phase cut inputs dual phase cut 40 watt output amplifier.  |

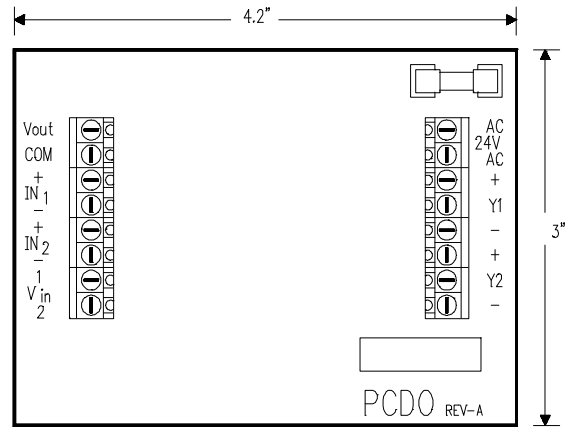
**FIELD SETUP AND CALIBRATIONS**

The PCDO has a 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 2.5V DC 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.

Call for other calibration ranges and versions.

**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'  |