DCIM-PCD
PHASE CUT SIGNAL DRIVERS

FEATURES

- **Input to output isolation**
- **27, 40, or 80 watts output power**
- **Fused 24V AC power supply**
- **Input and power LED indication**
- **Input and power LED indication**

APPLICATIONS

- **MA/V DC to phase cut conversion**
- **DDC control of Staefa magnetic valves**
- **Phase cut signal scaling & sequencing**
- **High or low signal selection**
- **Minimum position override**

DESCRIPTION

The DCIM-PCD (Digital Controller Interface Module - Phase Cut Driver) is used when interfacing between DDC controllers and Staefa magnetic valves or damper actuators. The DCIM can convert 4 to 20 mA or 0 to 10V DC to phase cut, and perform special phase cut to phase cut operations. The DCIM-PCD is available with a 27 watt, a 40 watt, or an 80 watt output power rating.

OPERATION

The DCIM main board consists of a 24V AC full-wave bridge rectifier, 20V DC regulated supply, two input sections and an amplifier section, and phase cut output section. The two inputs can be factory configured as both isolated, or as one isolated and one non-isolated. The isolated inputs can be either 0 to 20V phase cut, or 4 to 20mA. The non-isolated input will accept 0 to 10V DC. After the input signal is isolated, the amplifier section performs all signal conditioning (high or low signal selection, scaling, inverting, and sequencing). This conditioned signal then drives the phase-cut output section.

The standard output ranges are as follows:

2 to 10V phase cut for damper actuators
6 to 18V phase cut for Staefa magnetic valves
1 to 17V phase cut for the Staefa AM1S valves
0 to 20V phase cut full scale

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

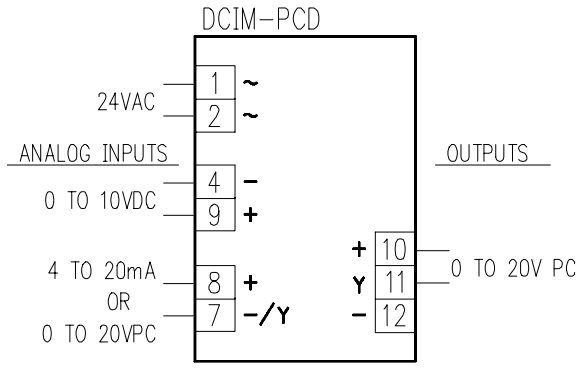
* 0 to 10V input signal comes from a device that uses a half-wave rectifier and is powered by the same 24V AC source as the DCIM-PCD.

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" L x 3" W x 1.5" H
MOUNTING:	3" RDI snap-track (supplied).
POWER:	24V AC ± 10% 50/60Hz, 2VA* **NOTE: When sizing the power transformer the power rating of the valve must be added.*
INPUT SIGNALS:	0 to 20V phase cut isolated 4-20mA isolated DC voltage 100K ohms isolation
OUTPUT SIGNALS:	0-20V phase cut 27, 40, & 80 watts (For 120W see SMVD)
ACTION:	Dir./Rev. with 2 Hz Filtering
ADJUSTMENT:	ZERO & SPAN ±20%
AMBIENT TEMP:	0 to 50°C.

WIRING CONFIGURATION



ORDERING INFORMATION

DCIM-PCD/XX/PCX-X/XXX

- Function Option Code
- Output Voltage Code
- Output Wattage Code (L,M,H)
- Input Option Code (PC or mA)

INPUT CODE OPTIONS

PC	-	10 - 90% phase cut isolated input
mA	-	4 - 20mA isolated input
135Ω	-	135Ω, 2 wire potentiometer

*Note: Both the Minimum Position Pot and 0 to 10V DC input come standard as a second input on both phase cut and 4 to 20mA versions of the DCIM-PCD.

OUTPUT WATTAGE CODE OPTIONS

L	-	27 watts, phase cut low power
M	-	40 watts, phase cut medium power
H	-	80 watts, phase cut high power

OUTPUT VOLTAGE CODE OPTIONS

10	-	0-10V DC phase cut for damper motors
16	-	6-18V DC phase cut for magnetic valves
17	-	2-17V DC phase cut for AM1S actuators
20	-	0-20V DC phase cut full range

FUNCTION CODE OPERATION

HS	-	High select of 2 input signals
LS	-	Low select of 2 input signals
AVE	-	Average of 2 input signals
AMP	-	Isolated power amplifier

Note: for the following Function Codes it is RECOMMENDED to USE the SMVD interface module.

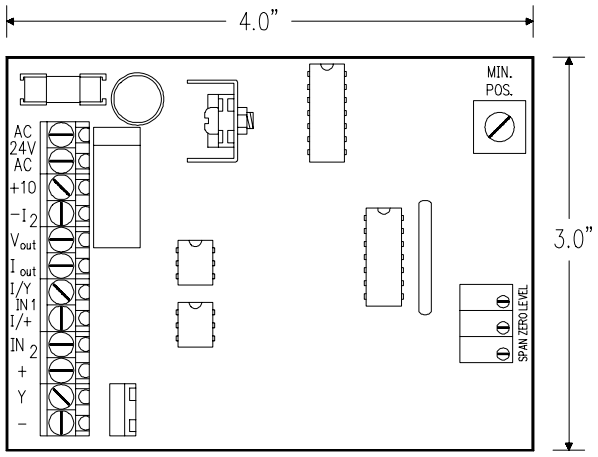
INV	-	Inverted amplifier only	SIV	-	Scaling / inverting on phase cut signals
SEQ	-	Sequencing on phase cut signals.			

ORDERING CODE EXAMPLES

DCIM/MA/PCM-16 -	4 to 20mA & 0 to 10V DC input, 6 to 18V phase cut output, 40 watt valve driver. Field adjustable.
DCIM/PC/PCL-16 -	10 to 90% phase cut & 0 to 10V DC input, 6 to 18V phase cut output, 27 watt. Field adjustable.
DCIM/PC-PC/PCM-16-L	Lowest of two (2) 10 to 90% phase cut input signals, 6 to 18V phase cut output, 40 watt. Output voltage range is field adjustable.
DCIM/MA-MA/PCL-20-L	Lowest of two (2) 4-20ma input signals, 0 to 20V phase cut output, 27 watt. Output voltage range is field adjustable.

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
27W	50'	75'	100'	120'
40W	40'	60'	75'	100'
80W	20'	30'	40'	60'