

FEATURES

- ❖ Field selectable input
- ❖ Field adjustable output
- ❖ 256 step resolution
- ❖ Timing calibrated to input signal
- ❖ No rollover
- ❖ Optically isolated inputs
- ❖ Input and power LED indication
- ❖ Short resistant mosfet output

APPLICATIONS

- ❖ Pulse width modulation to phase cut
- ❖ Tri-state floating to phase cut
- ❖ DO Control of Staefa mag valves
- ❖ DO Control of Damper actuators

DESCRIPTION

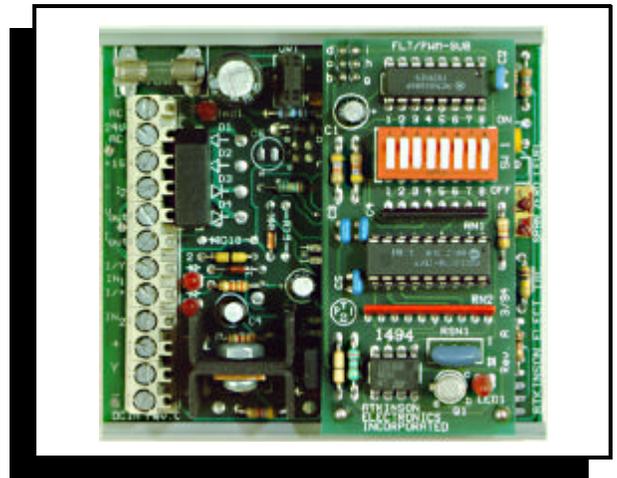
The DCIM-FP (Digital Controller Interface Module FLT/PWM module) is used when interfacing between DDC controllers and Staefa magnetic valves or damper actuators. The DCIM-FP, with its dedicated FP sub-module, can receive pulse-width modulated or tri-state floating signals from DDC digital outputs (DO's) and then convert them to a phase cut signal. The DCIM-FP is available with a 27 watt, a 40 watt, or an 80 watt output power rating.

OPERATION

The DCIM consists of a main mother board housing a 24V AC full wave bridge rectifier, 20V DC regulated supply, two opto-isolators, an amplifier section and phase cut output section. The isolated inputs can accept either 24V AC or DC in pulse form, or either dry contact or open collector pulses using the on board +10V DC supply as a reference. Phase cut output circuitry on the main board is driven by the amplifier section. The amplifier section receives its signal from the FP sub-module.

The FP sub-module is designed to accept digital pulse width modulated or three point floating inputs of various time bases and convert them to a usable 0 to 5V DC signal. This signal is then fed back onto the mother-board where it is converted to phase cut.

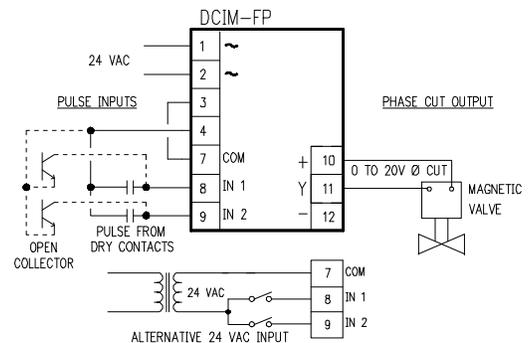
- The standard output ranges are as follows:
- 2 to 10V phase cut for damper actuators
 - 6 to 18V phase cut for Staefa magnetic valves
 - 1 to 17V phase cut for Staefa AM1S valves
 - 0 to 20V phase cut full scale



SPECIFICATIONS

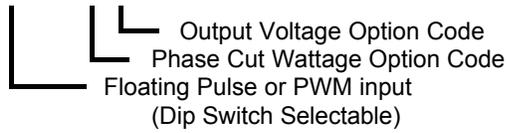
SIZE:	4" L x 3" W x 1.5" H
MOUNTING:	3" RDI snap-track (supplied).
POWER:	24V AC ± 10% 50/60Hz, 2VA* *Note: When sizing the power transformer, the power rating of the valve must be added.
INPUT SIGNALS:	PWMC, PWMD or FLT may be: ♦ 24V AC pulse ♦ >5V DC pulse ♦ open collector ♦ dry contact
INPUT TIMING:	2.5, 5, 10, 25, 60, 120, & 255 Seconds
OUTPUT SIGNALS:	Phase cut, 27, 40, or 80 watts
ACTION:	Dir./Rev. with 2Hz Filtering
ADJUSTMENT:	ZERO & SPAN ± 20%
AMBIENT TEMP:	0 to 50° C

WIRING CONFIGURATION



ORDERING INFORMATION

DCIM-FP/PCX-X



INPUT CODE

FP - Pulse types and pulse rates are dip switch selectable. Inputs accept 24VAC, dry contact or open collector configurations.

OUTPUT CODE OPTIONS

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

FUNCTION CODE OPERATION

- 10 - 2 - 10V phase cut output for damper motors
- 16 - 6 - 18V phase cut output for magnetic valves
- 17 - 1 - 17V phase cut output for AM1S valves
- 20 - 0 - 20V phase cut output full range

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'

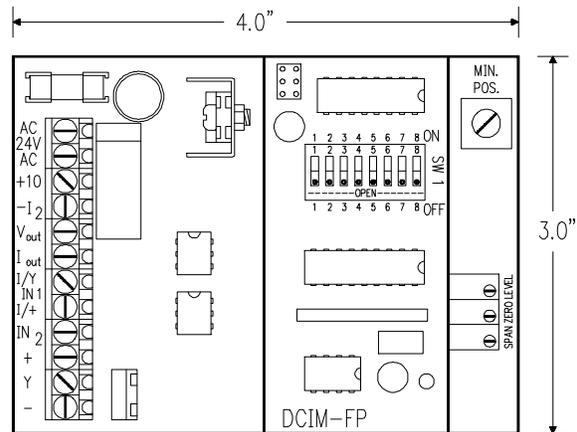
ORDERING CODE EXAMPLES

DCIM/FP/PCL-10	FLT, PWMC, or PWMD input, 2 to 10V phase cut output 27 watt. Field adjustable.
DCIM/FP/PCL-16	FLT, PWMC, or PWMD input, 6 to 18V phase cut output 27 watt. Field adjustable.
DCIM/FP/PCL-20	FLT, PWMC, or PWMD input, 0 to 20V phase cut output 27 watt. Field adjustable.
DCIM/FP/PCM-10	FLT, PWMC, or PWMD input, 2 to 10V phase cut output 40 watt. Field adjustable.
DCIM/FP/PCM-16	FLT, PWMC, or PWMD input, 6 to 18V phase cut output 40 watt. Field adjustable.
DCIM/FP/PCH-16	FLT, PWMC, or PWMD input, 6 to 18V phase cut output 80 watt. Field adjustable.

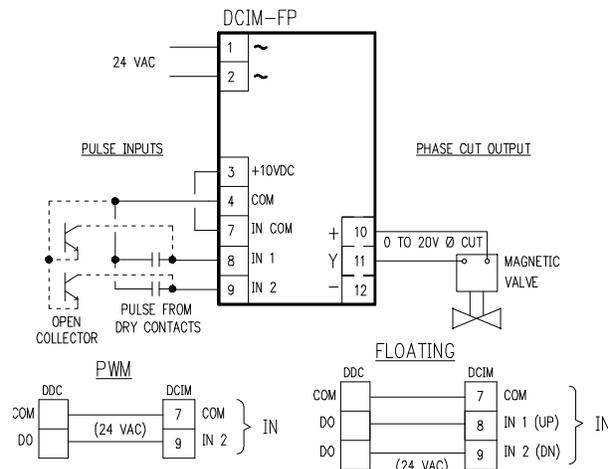
Call for other calibration ranges and versions.

If you have a different application or need, please call 1-801-261-3600 and discuss your needs with our Sales Engineers.

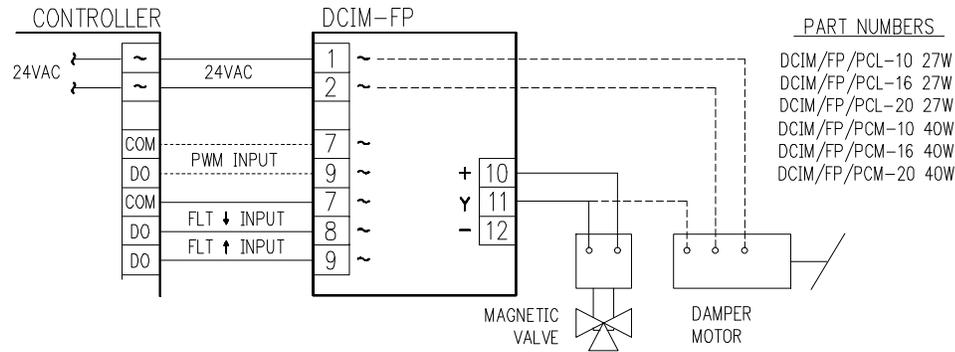
PHYSICAL CONFIGURATION



WIRING CONFIGURATION

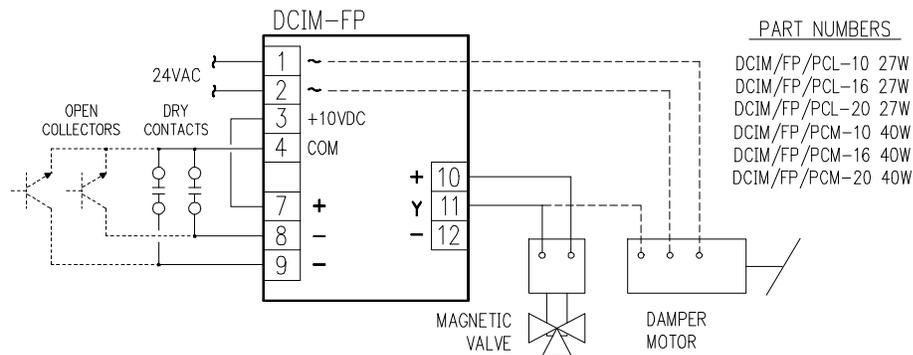


APPLICATION 1 - FLT OR PWM INPUT TO PHASE CUT CONVERSION



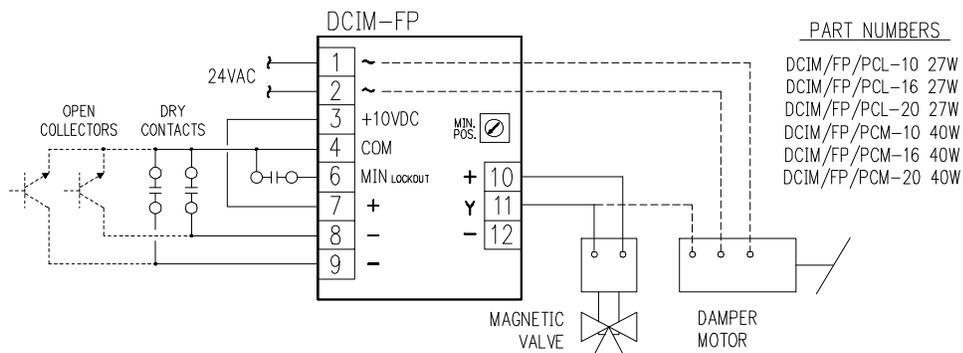
This application used for control of Staefa magnetic valves, damper actuators, and other Staefa equipment. Zero and Span adjustment potentiometers allow for field setup and calibration. Input type and time bases selection are accomplished with DIP switch setting. See FIELD SETUP & CALIBRATION for details.

APPLICATION 2 - DRY CONTACT OR OPEN COLLECTOR INPUT



Same as Application 1 except that either dry contacts or open collector transistors are used to generate the PWM or FLT signals.

APPLICATION 3 - FLT OR PWM WITH MINIMUM POSITION POT TO PHASE CUT CONVERSION



This application is used to provide a minimum position or override signal for modulating outside dampers. The onboard minimum position signal is fed out on terminal #6, where it can be interlocked through a fan status or override relay. When the relay energizes (closing the normally open contact) the minimum position signal goes to zero.

Call for other calibration ranges and versions.

If you have a different application or need, please call 1-800-261-3602 and discuss your needs with our Sales Engineers.

FIELD SETUP & CALIBRATION

An eight position DIP switch is used to facilitate easy selection of input type and time base.

1. Input selection - The first two positions on the DIP switch control the input type. When both 1 and 2 are in the off position, the card will accept a three point floating input. When position 1 is on and 2 is off, the card will accept a PWM-C input. When positions 1 and 2 are in the on position, the card will accept a PWM-D input.
2. Timing selection - Positions 3 thru 8 on the DIP switch are used to select the time base for operation. (*NOTE: Only one of these six switches should be on at one time.*) With all switches (3-8) off, the time base is set for 255 seconds. The other time bases are detailed below:

Position 3 = 2.5 seconds
Position 4 = 5 seconds
Position 5 = 10 seconds

Position 6 = 25 seconds
Position 7 = 60 seconds
Position 8 = 120 seconds

**** Note: any time the input or timing dip switches are changed the card must be reset by powering it down for about 15 seconds.**

Output adjustments are made with the zero and span potentiometers on the DCIM main module.

- Zero adjustment, clockwise, decreases output level
- Span adjustment, clockwise, increases signal differential
- Zero adjustment is made with 100% input signal applied
- Span adjustment is made with 0% input signal applied

* Only make adjustments of 50% at a time, of the difference between the current output and the desired output.

DEFINITIONS

- FLT - This is an abbreviation for a three point floating signal. This signal is controlled by two digital outputs. When one of the outputs are high, it causes an increase. When the other output goes high, it causes a decrease. When neither are high (or both are) there is no change.
- PWM-C - Pulse Width Modulated signals are controlled by one digital output that has a set period and whose on-time will vary within that given period. PWM-C is a signal that is continuous, which means, that at the end of every period, if there is no change in output, the same pulse width signal will be given.
- PWM-D - Much the same as above, however, PWM-D is a directed signal. The difference being, if at the end of the period, there is no change, there will be no pulse given. PWM-D only sends a pulse when there is a change from the last value.

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