

DFCM

DUAL CHANNEL FLOATING CONTROLLER MODULE

FEATURES

- ❖ Jumper selectable analog input
- ❖ Jumper selectable output pulse timing
- ❖ Two 24V AC tri-state Triac outputs
- ❖ Dual pipe system change-over option

APPLICATIONS

- ❖ 0 - 20 mA to tri-state floating
- ❖ 0 - 10V DC to tri-state floating
- ❖ Phase cut to tri-state floating
- ❖ Dual tri-state damper or valve operation

DESCRIPTION

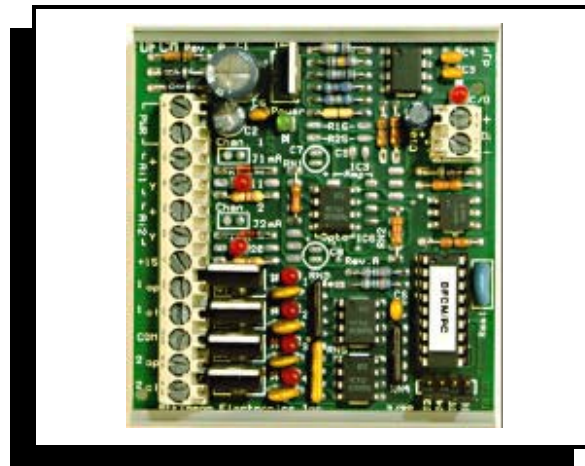
The DFCM is a 2 channel analog to tri-state floating controller module. It's available in two versions; voltage and milli-Amp input to tri-state 24V AC triac outputs, and phase cut input to tri-state 24V AC triac outputs. The DFCM has two output time bases for each of the independent tri-state outputs. The DFCM uses state of the art micro controller technology that provides superior system performance. The DFCM is useful when interfacing to tri-state floating damper actuators, valves, or other tri-state input devices.

OPERATION

The DFCM's 24V AC input uses a half-wave rectifier configuration, which is filtered and regulated to provide power for the on-board circuitry and to supply a 15V DC reference voltage on terminal 7. The DFCM uses an embedded micro controller to interpret the input signals and provide a corresponding tri-state output signals. The analog inputs may be configured to accept 0-10V DC or 0 to 20mA by making a jumper selection on the voltage version. The phase cut version accepts a 10 to 90% phase cut signal. The tri-state floating output signals can be configured for either of two time bases, 60 or 120 seconds, for 2 and 5 minute actuators.

The DFCM scales the analog input signal to 0 to 5V DC for the micro controller. It is then processed digitally and a tri-state output signal is generated. The tri-state output is updated every 30 seconds, and an 100% input will result in a pulse that is 25% of the selected time base.

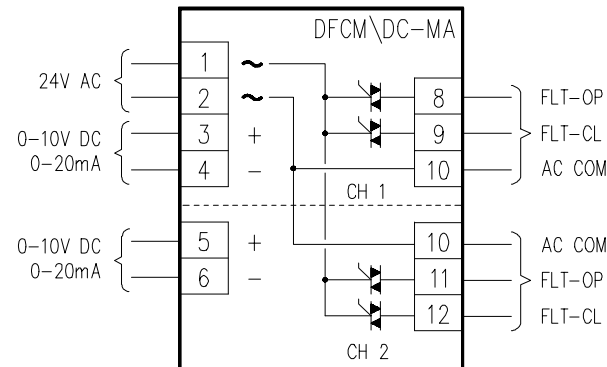
Example: input signal is 0 to 10V DC, 60 sec. output time base is selected. With a 0V input signal applied, the output calculation will result in a 100% call to drive closed (15 sec. pulse every 30 sec.), a 2.5V input will result in a 50% calculation (7.5 sec. Pulse). See *Field setup and calibration instructions*.



SPECIFICATIONS

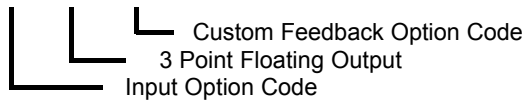
SIZE:	2.75" L x 3" W x 1.1" H
MOUNTING:	3" RDI snap-track (supplied)
POWER:	24V AC, ± 10%, 50/60Hz, 2VA
INPUTS:	10 - 90% Phase Cut 0 - 20 mA, 0 - 10V DC
OUTPUTS:	Tri-state @ 60 and 120 seconds
OUTPUT RATINGS:	24V AC Triac @ 4Amps
AMBIENT TEMP:	0 to 50°C

WIRING CONFIGURATION



ORDERING INFORMATION

DFCM/XXX/3PF/XXX



INPUT CODE OPTIONS

- V-mA - 0 to 10V DC, 0 to 20mA inputs.
- PC - 10 to 90% phase cut, (isolated).
- HTMC - Hansen temperature mixing controller (for touch-less faucets).

CUSTOM FEEDBACK CODE OPTIONS

- ICO - Isolated change-over input option (24VAC Di).
- FB10 - 0-10 VDC Feedback option. (V-mA input only)
- FBP - Potentiometer feedback option *specify resistance.

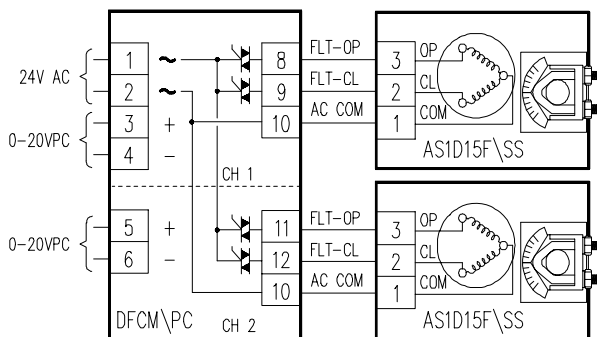
JUMPER DEFINITION

- J1 - Ch 1 voltage & mA input selection jumper. (Open - 0 to 10V, Closed - 0 to 20mA input).
- J2 - Ch 2 voltage & mA input selection jumper. (Open - 0 to 10V, Closed - 0 to 20mA input).
- J3 - Ch 1 output time base. (Open - 60 sec base, max. 15 sec pulse. Close - 120 sec base, max. 30 sec pulse).
- J4 - Ch 2 output time base. (Open - 60 sec base, max. 15 sec pulse. Close - 120 sec base, max. 30 sec pulse).
- J5 - Feedback option, Ai2 becomes the feedback input, single tri-state output (V-mA input option only).
- J6 - Change over option, Ch 2's output controlled by Ch 1's input and will track Ch 1's output (same as ICO).

ORDERING CODE EXAMPLES

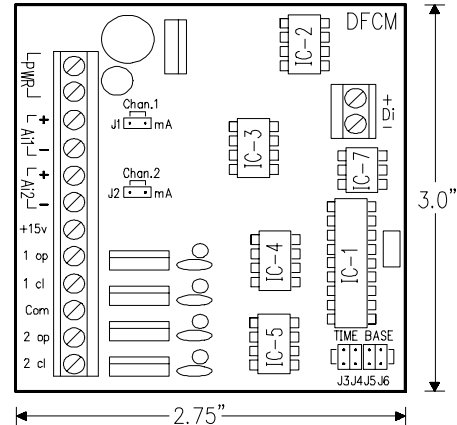
- DFCM/V-mA - 0 to 10V DC or 0 to 20mA input to 24V AC tri-state floating output.
- DFCM/PC - 10 to 90% phase cut input to 24V AC tri-state floating output.
- DFCM/PC/ICO - 10 to 90% phase cut input with optional isolated change-over input.

TYPICAL PHASE CUT APPLICATION

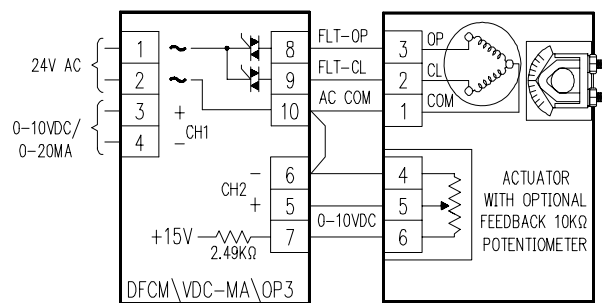


The DFCM/PC uses two logic triacs per channel to switch the open/close 24V AC outputs. The DFCM's output can be jumper configured for one of two output time bases to fit your actuator or valve requirements.

PHYSICAL CONFIGURATION



TYPICAL FEEDBACK APPLICATION



The DFCM/V-mA can be configured for feedback operation by inserting a jumper on J5. The ch 2 input "Ai2" serves as the input for the feedback signal, a series resistor is used to bias the 10k ohm potentiometer for a 0 to 10V DC feedback signal.