High Country Tek, Inc.

e-Fan System Controller: emc-1V

Electronic Control Solutions for the Global Fluid Power Industry

Application Information:

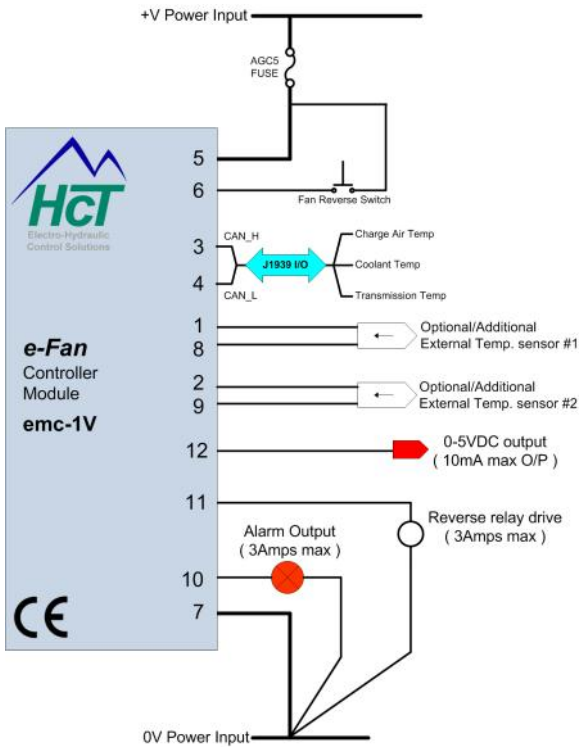
- Optimizes fan speed control relative to temperature requirements
- Interfaces with VFD or other high voltage motor controllers
- Used with Engines or systems **with SAE J1939** capability
- Bi-Directional fan feature allows radiator 'purge' or 'De-Ice'

RS232 connector removed for clarity

Product Feature Overview:

- Pre-written Windows™ software application, ready for user values
- **3x temperature zone inputs direct from SAE J1939 data bus**
- 2x additional discrete inputs temperature sensor
- 1x 0-5VDC output for interface with 'smart' *e-Fans*
- 2x ON/OFF outputs for fan reverse indicator and external alarm
- 1x Manual fan reverse sequence trigger
- SAE J1455 (load dump) compliant power protection
- System 'error' indicator LED with blink code

Electrical Connection Diagram:



Controller Specification Overview:

Housing Type:	HCT unique 'encapsulated' block.
Input Supply Voltage:	9 to 32VDC (Absolute Maximum)
Input Supply Current:	Approx. 200mA Quiescent (Max)
Command Input Type:	***SAE J1939*** for charge air, transmission and water temps 2 x additional discrete input for HCT temperature sensor
Command Input Values:	Digital or Resistance only (Max temp = 50 Ω Min temp = 2MΩ)
Output Type:	0 to 5VDC
Output Current:	10mA maximum
Housing Material:	Black, Polycarbonate
Wire Connections:	12 way male Deutsch - polarized
RS232 Communications:	4 way WeatherPack connector
Encapsulation:	Flameproof epoxy resin
Mounting:	3 x No. 8 (5mm) screws .
Temperature range:	-40 to +85 ºC (operational)
NEMA/IP Rating:	NEMA 6P/68
Connector Rating:	IP69K

e-Fan System Controller: emc-1V

emc-1V Information:

This version of the fan system controller has been designed to interface with an ***e-Fan*** cooling system and outputs a protected low current 0-5VDC proportional signal that is scaled via the configurable settings, to represent the 0 to100% fan speed demand.

The Controller uses the vehicle SAE J1939 temperature information to determine fan speed requirements and utilizes an easy to use PC based **G**raphical **U**ser **I**nterface (GUI) to allow complete user configuration of the controller and system operation, including fan speed limiting, the reverse / purge / de-ice feature, data logging and system health monitoring.

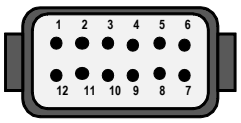
The unit has an alarm output that can be used to interface with external systems, alerting the vehicle operator to a cooling issue that needs attention.

The controller has an extended supply voltage and operating temperature range and is fully protected by flame resistant resin to ensure reliable operation under extreme environmental conditions.

All electrical connections are made through the industry standard IP69K 12 way male Deutsch connector ,with set-up via a 4 way female WeatherPack connector (not shown for clarity).

Connector Details:

NOTE:-
View looking at 12 way male connector on
emc-1V controller - DTF15-12PB

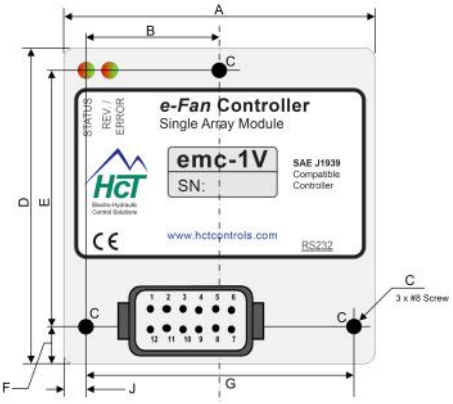


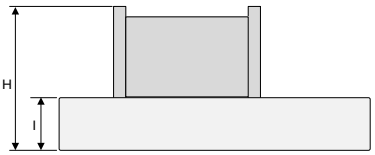
Pin 1:- Thermistor #1 +signal input.
Pin 2:- Thermistor #2 +signal input
Pin 3:- SAE J1939 HI_I/P
Pin 4:- SAE J1939 LO_I/P
Pin 5:- +Vin - 9 to 32VDC Power supply Input
Pin 6:- Reverse fan input (Momentary)
Pin 7:- Power Supply 0V (GND)
Pin 8:- 0V - Signal common for thermistor #1
Pin 9:- 0V - Signal common for thermistor #2
Pin 10:- Alarm output drive (3A max sourcing)
Pin 11:- Reverse output drive (3A max sourcing)
Pin 12:- 0-5VDC @ 10mA output to *e-Fan* bank

For all your connector and cable needs,
Contact HCT Customer service for price & delivery

Dimensional Data:

Label	Inches	Millimeters
A	3.77	96.0
B	1.89	48.0
C	Ø 0.186	5.0
D	3.82	97.0
E	3.10	78.8
F	0.46	12.0
G	3.25	82.6
H	0.1.6	41.5
I	0.64	16.5
J	0.26	6.5





Notes:

- Unit weight is approx. 250 grams
- RS232 cable removed for clarity
- RS232 cable is approx. 6" long
- Not to scale, please contact HCT for exact dimensions

Need More Information ?

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