



High Country Tek, Inc.

Electric Fan System Controller: **emc-1**

Electronic Control Solutions for the Global Fluid Power Industry



Application Information:

- Optimizes fan speed control relative to temperature requirements
- Engines or systems **with SAE J1939** capability
- Bi-Directional fan feature allows radiator 'purge' or 'De-Ice'
- OEM, Re-power and Retro-fit opportunities
- On-road and Off-Road suitable mechanical package
- Very cost effective 'all-in-one' hydraulic fan system controller

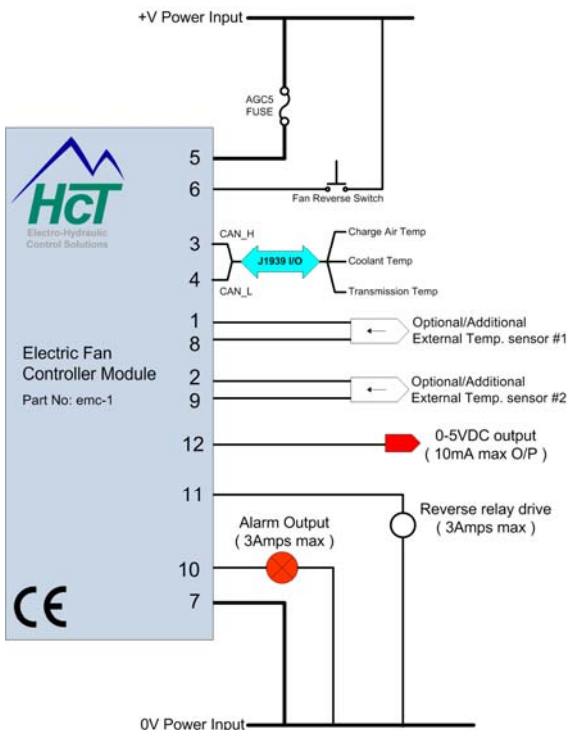
Product Feature Overview:

- Pre-written Windows™ software application, ready for user values
- **3 x temperature zone inputs direct from SAE J1939 bus**
- 2 x discrete inputs for switches OR temperature sensors
- 1 x 0-5VDC output for interface with 'smart' E-Motors or controllers
- 2 x ON/OFF outputs for fan reverse valve and external alarm
- SAE J1455 (load dump) compliant power protection
- Heavy duty industry standard Deutsch connector
- System 'error' indicator LED with blink code



RS232 connector removed for clarity

Electrical Connection Diagram:



Controller Specification Overview:

- Housing Type:** HCT unique 'encapsulated' block.
- Input Supply Voltage:** 10 – 30VDC (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 inputs for switch OR temperature sensors
- Command Input Values:** Contact closure OR Ohms only (Max temp = 50 Ω Min temp = 2MΩ)
- Dither Frequency :** Software adjustable, ~33 to 500Hz
- Housing Material:** Black, Polycarbonate
- Wire Connections:** 12 way male Deutsch—polarized
- Connector type:** DTF15-12PB
- RS232 Communications:** 4 way WeatherPack connector
- Encapsulation:** Flameproof epoxy resin
- Mounting:** 3 x No. 8 (5mm) screws .
- Temperature range:** - 40 to +85 °C (operational)
- NEMA/IP Rating:** NEMA 6P/68
- Connector Rating:** IP69K



Hydraulic Fan System Controller: emc-1

emc-1 Information:

This version of the fan system controller has been designed to interface with an electric motor cooling system controller and outputs a protected low current DC proportional voltage that is scaled to represent the 0 to 100% fan speed demand.

The Controller uses the vehicle SAE J1939 temperature information to determine fan speed requirements while the standard and familiar HFS-J PC set-up graphical user interface allows the customer to set separate fan start, fan full on and alarm set points for each temperature zone being monitored.

All other system features of the controller are available including a reverse output which can be interfaced via a relay to the E-motor controller or as required to change the direction of the motor drive signal.

The alarm output can be used to send the fan to full speed or connected to an annunciator to alert the vehicle operator to a cooling issue that needs attention.

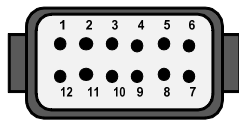
The controller has an extended supply voltage and operating temperature range and is fully protected by flame resistant resin to ensure reliable operation under extreme environmental conditions. All electrical connections are made via the industry standard IP69K 12 way male Deutsch connector with programming via the 4 way female WeatherPack connector (not shown for clarity).

Connector Details:

NOTE:-

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

- Pin 1:- Thermistor #1 +signal input.
- Pin 2:- Thermistor #2 +signal input.
- Pin 3:- CAN_H Input (J1939)
- Pin 4:- CAN_L Input (J1939)
- Pin 5:- +Vin - 10 – 30VDC Power supply Input
- Pin 6:- Reverse fan input (Momentary)
- Pin 7:- 0V power input (Common)
- Pin 8:- 0V—Signal common #1
- Pin 9:- 0V—Signal common #2
- Pin 10:- Alarm output drive (3A max sourcing)
- Pin 11:- Reverse valve output drive (3A max sourcing)
- Pin 12:- 0-5VDC output (10mA max source)

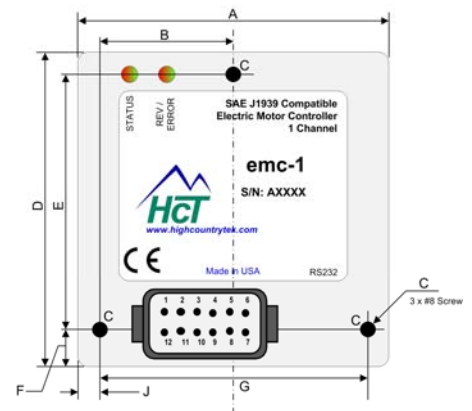


Mating connector Parts:-

- Deutsch # DT06-12SB-P012
- Deutsch # W12S – Lock
- Deutsch # 0462-201-16141 – Socket pins
- Deutsch distributor U.S.:
- Ladd Industrial sales – 1-800-223-1236

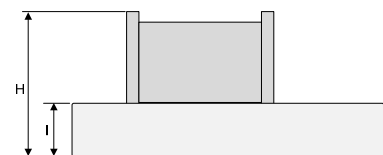
Dimensional Data:

Label	Inches	Millimeters
A	3.77	96.0
B	1.89	48.0
C	∅ 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	0.16	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 ?

For the latest company and product information, visit us at www.hctcontrols.com or for customer service, pricing, order placement and application support, contact us through E-mail at : info@hctcontrols.com



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