Temperature Sensor Conditioner - PC24-5TS

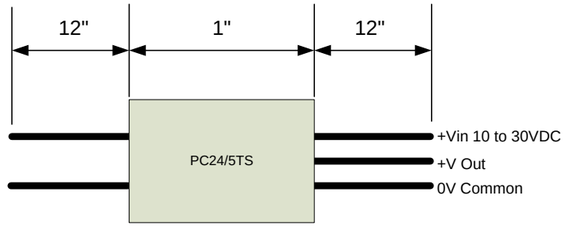
Dimensional and Connector Data:

Sensor Connections:

- White Wire: To MetriPack series 150
- Black Wire: To MetriPack series 150

NOTE – Sensor is NON-POLARIZED

- RED LED: +V DC power Input = ON
- GREEN LED +5V DC Output = ON



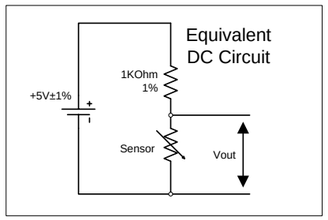
Sensor Interface and Operational Details:

Connection to the PC 24/5TS are made by the user via 16 gauge color coded wires.

Care should always be taken by the user to avoid short circuits in system wiring.

This is a DC device and care should also be taken regarding strong radio frequency signals and placement of this unit near high voltage or switching signals that may effect the performance.

The diagnostic indicator LED's are non critical to function of the converter and the unit will continue to function if these LEDS are damaged or broken.



The circuit shown here indicates how to use the PC24/5TS with an external temperature sensors and the DVC series controllers to allow temperature measurement.

This configuration allows the DVC analog 0-5VDC voltage inputs to be used successfully with passive NTC temperature sensor devices, expanding the capabilities of the controller as required.

See HCT 201-00083 (Wet fluids) and 201-0084 (Dry fluids) sensors for use with this accessory.

Need more information ?

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High Country Tek, Inc.

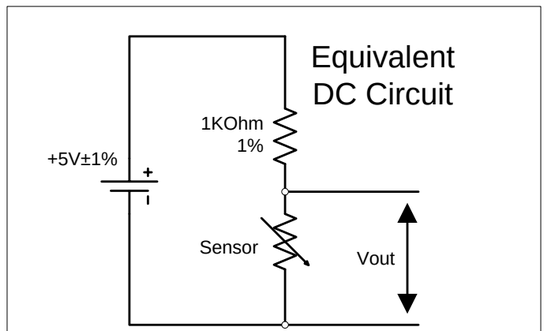
Temperature Sensor Conditioner - PC24-5TS

Electronic Control Solutions for the Global Fluid Power Industry

Application Information:

- Conditions standard resistive Delphi temperature sensors
- Stabilized +5VDC ±1% voltage output
- Short and Open circuit protected
- Input / Output Condition and diagnostic LED's
- Use with all DVC series controllers
- Linearize output using DVC I/O function curve feature
- Easy connect color coded wiring
- Pre-fitted 2 Way GT 150 Sealed Female Connector
- Small 'fit-anywhere' size and format
- Fully potted construction in flame retardant resin
- Automotive grade wires for application reliability

Electrical Connection Diagram:



IMPORTANT NOTE:

The user should be aware that the PC24/5T has a common 0V connection between input voltage and output voltage.

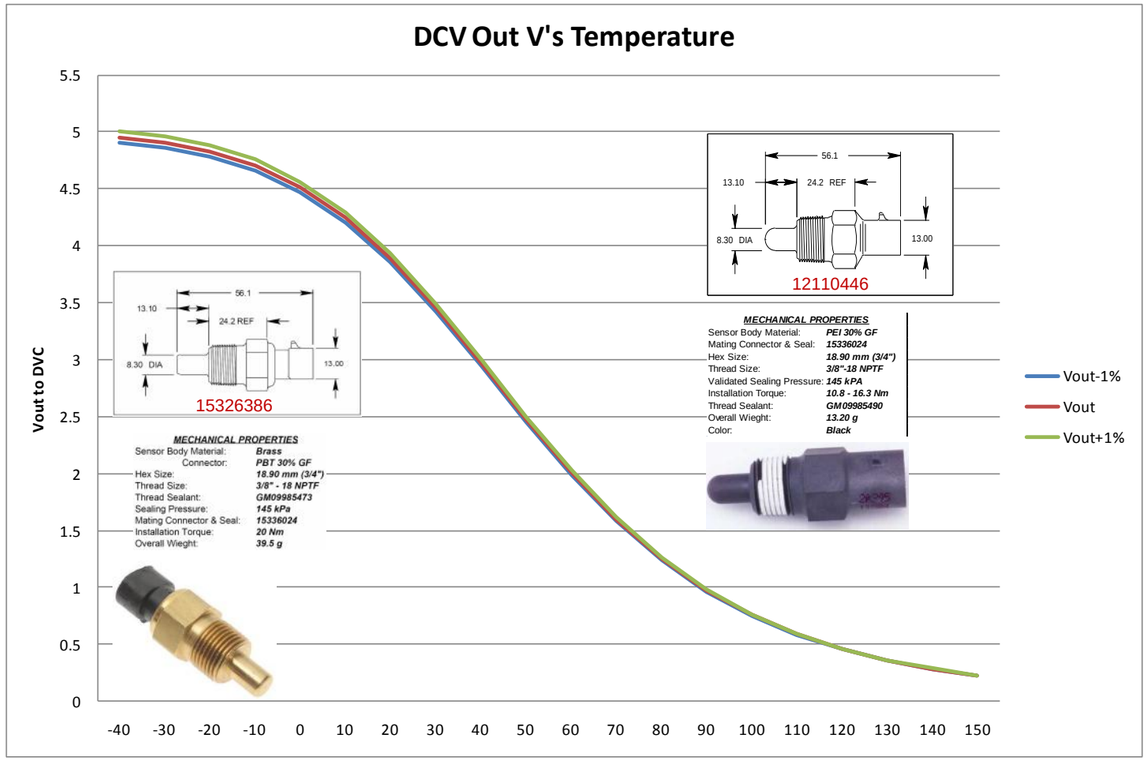
This device DOES NOT provide galvanic isolation between Input and Output.

Converter Specification Overview:

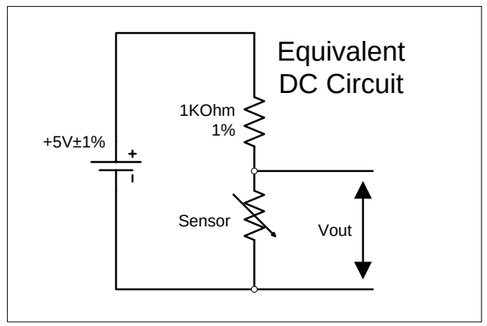
Housing Type:	HCT unique 'encapsulated' block.
Input Supply Voltage:	10 – 30VDC (Absolute Maximum)
Input protection:	Reverse polarity
Output Voltage:	+5V (±1%) or ± 50mV)
In-Line resistor:	1KOhm
Output Protection:	Short circuit protected (continuous)
Input Supply Current:	50mA Quiescent (Max)
Output Current:	~5mA (series resistor limit)
Wire Connections:	Red = +Vin Black = 0V Common White = +5VDC Output
Housing Material:	Black, plastic potting box
Encapsulation:	Flameproof epoxy resin
Mounting:	In-line with sensor
Temperature range:	- 40 to +80 ºC (operational)
NEMA/IP Rating:	NEMA 6P/68

Temperature Sensor Conditioner - PC24-5TS

Dimensional and Connector Data:



TEMP °C	Ohms	Vout-1%	Vout	Vout+1%
-40	100865	4.901	4.951	5.000
-30	52594	4.858	4.907	4.956
-20	28582	4.783	4.831	4.879
-10	16120	4.661	4.708	4.755
0	9399	4.474	4.519	4.564
10	5658	4.207	4.249	4.292
20	3511	3.853	3.892	3.931
30	2240	3.422	3.457	3.491
40	1465	2.942	2.972	3.001
50	980	2.450	2.475	2.499
60	671	1.988	2.008	2.028
70	469	1.580	1.596	1.612
80	334	1.239	1.252	1.264
90	241.8	0.964	0.974	0.983
100	178	0.748	0.756	0.763
110	133.1	0.581	0.587	0.593
120	100.9	0.454	0.458	0.463
130	77.5	0.356	0.360	0.363
140	60.3	0.282	0.284	0.287
150	47.5	0.224	0.227	0.229



Note:

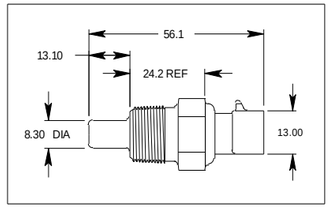
Connector: GM Delphi / Packard - 2-way Shrouded GT 150 3.5mm centerline sealed female assembly.

Resistor	1000	Ohms
Vcc	5	Nom
Vcc+1%	5.05	Max
Vcc-1%	4.95	Min

Temperature Sensor Conditioner - PC24-5TS

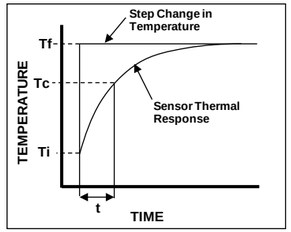
Fluid Sensor Data - 201-00083:

Housing Type:	Delphi Unique
Typical supply voltage:	+5VDC
Dissipation Constant*:	24mW/°C
Thermal Time Constant**:	17.5 to 23.5 seconds
Temperature range:	-40 to +150 ºC (operational)
NEMA/IP Rating:	NEMA 6P/68
Connector rating:	>IP67
Sensor Body:	Brass
Connector Body:	PBT 30% Glass Filled
Hex Size:	18.9mm / 3/4”
Thread Size:	3/8’ - 18 NPTF
Thread Sealant:	GM09985473
Sealing Pressure:	145kPa
Installation Torque:	20Nm
Overall Weight:	40g

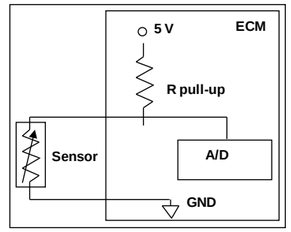


201-00083

Thermal Time Constant



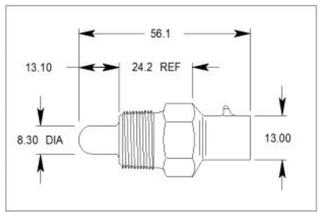
Circuit Schematic



- The ratio, at a specified ambient temperature, of the change in the power dissipation of the sensor to the resultant temperature change of the thermistor. Test medium: silicone oil
- ** The time required for the sensor to achieve 63.2% of its steady state value when subjected to a step change in ambient temperature [Tc=(Tf-Ti)*63.2%+Ti]. Test medium: silicone oil.

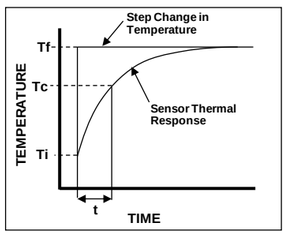
Air Sensor Data - 201-00084:

201-00084

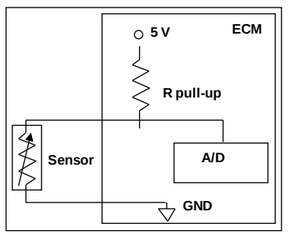


Housing Type:	Delphi Unique
Typical supply voltage:	+5VDC
Dissipation Constant*:	18mW/°C
Thermal Time Constant**:	60seconds
Temperature range:	-40 to +150 ºC (operational)
NEMA/IP Rating:	NEMA 6P/68
Connector rating:	>IP67
Sensor Body:	PEI (polyetherimide) 30% GF
Connector Body:	PBT 30% Glass Filled
Hex Size:	18.9mm / 3/4”
Thread Size:	3/8’ - 18 NPTF
Thread Sealant:	GM09985490
Sealing Pressure:	145kPa
Installation Torque:	10.8 - 16.3 Nm
Overall Weight:	13.2g

Thermal Time Constant



Circuit Schematic



- The ratio, at a specified ambient temperature, of the change in the power dissipation of the sensor to the resultant temperature change of the thermistor. Test medium: silicone oil
- ** The time required for the sensor to achieve 63.2% of its steady state value when subjected to a step change in ambient temperature [Tc=(Tf-Ti)*63.2%+Ti]. Test medium: silicone oil.