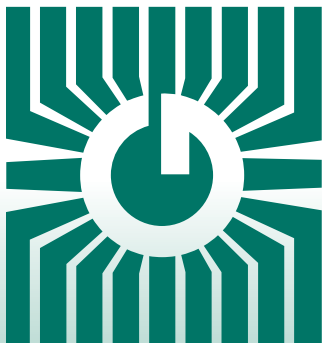
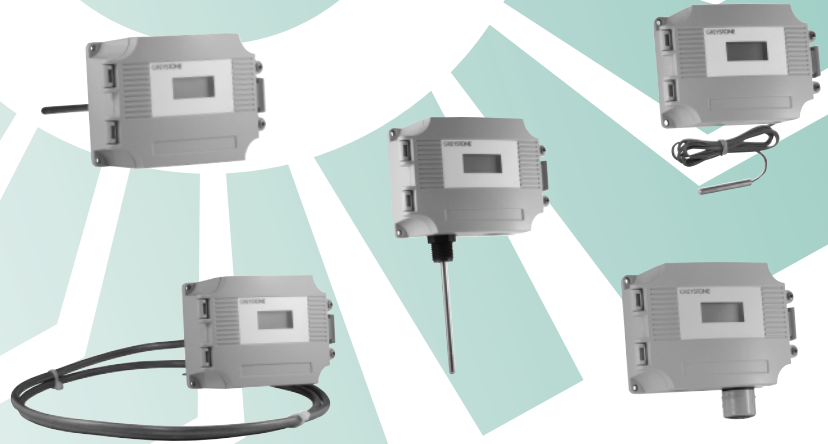


# GREYSTONE

ENERGY SYSTEMS INC



## HIGH ACCURACY TEMPERATURE TRANSMITTERS with LCD DISPLAY HATL Series



### Precision temperature sensing/control

#### FEATURES:

- High Accuracy RTD sensing element
- Choice of scaled ranges and outputs
- LCD available in either °C or °F
- Hinged ABS weatherproof enclosure

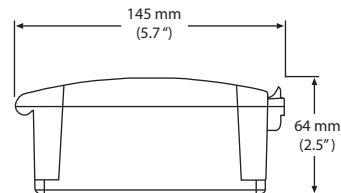
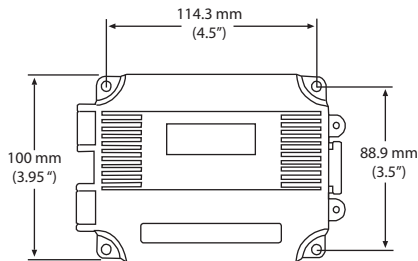
*Peace of mind  
through reliable  
temperature monitoring*

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM

## SPECIFICATIONS:

Sensor.....	1000 Ω Platinum, IEC 751, 385 Alpha, thin film
Sensor Accuracy.....	<b>RTD Class A:</b> ±0.15°C @ 0°C <b>RTD 1/3 DIN:</b> ±0.1°C @ 0°C <b>RTD 1/10 DIN:</b> ±0.03°C @ 0°C
Transmitter Output Signal.....	4-20mA current loop, 0-5 vdc, or 0-10 Vdc (factory configured)
Transmitter Accuracy.....	±0.25% of span, including linearity
Power Supply.....	<b>4-20 mA:</b> 15-35 Vdc or 22-32 Vac <b>0-5 Vdc:</b> 10-35 Vdc or 10-32 Vac <b>0-10 Vdc:</b> 15-35 Vdc or 15-32 Vac
Consumption.....	<b>Current:</b> 22.5 mA Max (On open sensor) <b>Voltage:</b> 5 mA nominal
Maximum Output (Voltage).....	Limited to <5.5 Vdc for 0-5 Vdc, <10.5 for 0-10 vdc
Input Voltage Effect.....	Negligible over specified operating range
RFI rejection.....	Good RFI rejection of normal frequencies with standard installation
Protection Circuitry.....	Reverse voltage protected and output limited
Probe Sensing Range.....	<b>BM, CN, RP, SO, GL:</b> -20 - 105°C (-4 - 221°F) <b>DC, DF, DR, RN, FL:</b> -20 - 60°C (-4 - 140°F) <b>OS:</b> 0 - 70°C (32 - 158°F)
Ambient Operating Range.....	0 - 70°C (32 - 158°F)
Operating Humidity.....	0-95% RH non-condensing
Probe Material.....	<b>BM, CN, DR, FL, RN, RP:</b> 6.35 mm (0.25") O.D., 304 series stainless steel <b>DC:</b> Soft copper <b>GL, SO:</b> Aluminum
Probe Dimension.....	<b>BM, LC, DR, LR, RP:</b> 6.35 mm (0.25") Diameter <b>DC:</b> 7.94 mm (0.3125") Diameter <b>FL:</b> 50.8 x 6.35 mm (2 x 0.25") <b>GL:</b> 9.525 x 9.525 x 31.75 mm (75" x .75" x 1.25") <b>SO:</b> 38.1 x 38.1 mm (1.5" x 1.5")
Wire Material.....	<b>BM, CN, GL, RP, SO:</b> PVC insulated, parallel bonded, 22 AWG <b>DC, DF, FL, RN:</b> FT-6 rated plenum cable, 22 AWG <b>DR:</b> Kynar, PVDF, 28 AWG
Wire Length.....	<b>FL:</b> 1.83 m (6') <b>GL, RN, RP:</b> 1.524 m (5')
Wiring Connections.....	Screw terminal block (14 to 22 AWG)
Enclosure.....	Hinged Weatherproof - Grey ABS - UL94-V0 - IP65 (NEMA 4X)
Display Units.....	°C or °F (factory configured)
Display Range.....	3 Digit for -88.8 to 888 as necessary
Display Size.....	24 mm x 11 mm (0.95" x 0.45"), three digit.

## ENCLOSURE DIMENSIONS:

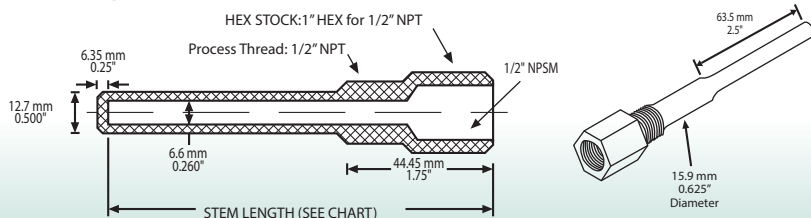


## THERMOWELLS:



NOTE:

6" and up machined thermowells have a two step stem as shown. welded construction have a 9.5 mm (0.375") diameter



### THERMOWELL PART NUMBERING SYSTEM

SERIES NUMBER	NPT THREAD SIZE	MATERIAL	STEM LENGTH	CONSTRUCTION
T1	1/2"	P - 304 SS R - 316 SS	2" 4" 6" 8" 12" 18"	- MACHINED W - WELDED (12" and up only)

EXAMPLE: T1 1/2 P 4  
4" 304 STAINLESS THERMOWELL  
WITH 1/2" NPT PROCESS THREAD

# PRODUCT ORDERING INFORMATION:

MODEL	Product Description
HATL	High Accuracy Temperature Transmitter with and LCD display

CODE	Mounting Style
BM	Duct
DC	Duct average, copper probe
DF	Duct average, flexible cable
DR	Duct average, rigid stainless steel probe
CN	Immersion, Nylon Fitting, 1/2" NPT
RN	Immersion w/Remote Probe, Nylon Fitting, 1/2" NPT
RP	Strap-on - Remote Probe
SO	Strap-on - Assembly clamps around pipe with aluminum plate c/w 254 mm (10") stainless clamp
OS	Heavy Duty Room
FL	Flying lead
GL	Glass

CODE	LCD Display
C	LCD display °C
F	LCD display °F

CODE	Sensor
18	1000 Ω Platinum, IEC 751, 385 Alpha, thin film, Class A
48	1000 Ω Platinum, IEC 751, 385 Alpha, thin film, 1/3 DIN
22	1000 Ω Platinum, IEC 751, 385 Alpha, thin film, 1/10 DIN

CODE	Probe Length	Lengths are applicable to these Mounting Styles
A	50 mm (2")	BM, RP, RN & CN
B	100 mm (4")	BM, RP, RN & CN
C	150 mm (6")	BM, RP, RN & CN
D	200 mm (8")	BM, RP, RN & CN
E	300 mm (12")	BM
F	450 mm (18")	BM, DR
G	600 mm (24")	DR
H	900 mm (36")	DR
I	1800 mm (6')	DC, DF
J	3600 mm (12')	DC, DF
K	6100 mm (20')	DC, DF
L	7300 mm (24')	DC, DF

**OMIT FOR  
SO, OS,  
FL & GL**

CODE	Output
A	4-20 mA
D	0-5 Vdc
E	0-10 Vdc

CODE	Scaled Range
1	0-35°C (32-95°F)
2	0-50°C (32-122°F)
3	0-100°C (32-212°F)

HATL	BM	C	18	E	A	2
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## FEATURES:

The HATL series temperature transmitters offer a platinum RTD's with transmitter which can be interfaced with a computerized monitoring or control system. Each model incorporates a LCD in either °C or °F. A wide variety of configurations are available such as:

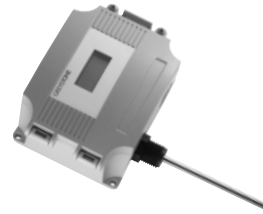
**BM) Duct Sensor** – The BM single point duct temperature transmitter incorporates a high accuracy platinum RTD encapsulated in a 6.35 mm (0.25") OD, 304 stainless steel probe.

BM)



**CN) Immersion Sensor** – The CN single point immersion temperature transmitter incorporates a high accuracy platinum RTD encapsulated in a 6.35 mm (0.25") OD, 304 stainless steel probe.

CN)



**DF, D, DC & DR) Duct Averaging Sensor** – The DF, D, DC & DR models incorporate numerous sensors along the assembly and act as a single sensor averaging the temperature across the sensors. The DC is a continuous sensing element that senses a temperature change along the entire probe length. They are available in various lengths. The DF probe is constructed of FT-6 rated plenum cable which allows for easy installation. The D & DC probes are constructed of bendable soft copper and the DR is a constructed of rigid stainless steel.

DF)



DC)



DR)



**RP & SO) Strap-on Sensor** – The RP single point strap-on temperature transmitter incorporates a high accuracy platinum RTD encapsulated in a 6.35 mm (0.25") OD, 304 stainless steel probe. The SO single point strap-on temperature sensor has a high accuracy platinum RTD bonded to a 38.1 mm x 38.1 mm (1.5" x 1.5") aluminum plate and adhered to a 1" compressible foam.

RP)



SO)



**OS) Heavy Duty Room Sensor** – The OS single point wall temperature sensor utilizes a high accuracy platinum RTD sensor. The probe is constructed to provide excellent heat transfer, fast response and is potted to resist moisture penetration.

OS)



FL)



**FL) Flying Lead** – The FL comes with a 2" stainless steel probe and 1.8 m (6') of FT6 plenum rated cable for remote mounting.

**GL) Glass** – The GL single point glass temperature sensor utilizes a high accuracy sensor encapsulated in a 31.75mm L x 9.525mm W x 9.525 mm H (1.25" x .375" x .375") Aluminum probe. Standard wire length is 600 mm (24").

GL)



# GREYSTONE

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RoHS  
COMPLIANT



*Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems.*

*We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.*

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