GREYSTONE ENERGY SYSTEMS INC

HIGH ACCURACY PROBE TEMPERATURE SENSORS HATS Series

Precision temperature sensing/control

FEATURES:

- Thermistor or Precision RTD
- Various configurations available
- Selection of enclosures
- Custom laser etching available

Peace of mind through reliable temperature monitoring

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

HATS - HIGH ACCURACY PROBE TEMPERATURE SENSORS:

SPECIFICATIONS:

Sensor.....Several High Accuracy Thermistors or Platinum RTD's available.

Sensor Accuracy.....**18 & 41** 1000 Ω Platinum, Class A: ±0.15˚C @ 0˚C
48 & 49 1000 Ω Platinum, 1/3 DIN: ±0.1˚C @ 0˚C
22 & 50 1000 Ω Platinum, 1/10 DIN: ±0.03˚C @ 0˚C
39 10,000 Ω, Type 2, NTC Thermistor, ±0.05 C, 0-70˚C
55 10,000 Ω, Type 2, NTC Thermistor, ±0.03 C, 0-70˚C
40 10,000 Ω, Type 3, NTC Thermistor, ±0.1 C, 0-70˚C
46 20,000 Ω, NTC Thermistor, ±0.1 C, 0-70˚C

Operating Temperature .....**BM, CN, RP, SO, OS, GL:** -20 - 105˚C (-4 - 221˚F)
BB, DF, DC, DR, FL: -20 - 60˚C (-4 - 140˚F)

Probe Material .....**BB, BM, DR, CN, FL, RP:** 304 series stainless steel
DC: Soft copper
SO: 38 mm (1.5") square aluminum plate w/ compressible foam backing
GL: Aluminum

Probe Dimensions.....**BB, BM, DR, CN, FL, RP:** 6.35 mm (0.250") Diameter
DC: 7.94 mm (0.3125") Diameter
GL: 31.75mm L x 95.25mm W x 9.525mm H (1.25" x 0.375" x 0.375")

Wire Material.....**BM, CN, RP, SO, OS, GL:** PVC insulated, parallel bonded, 22 AWG
BB, DF, DC, DR, FL: FT-6 rated plenum cable, 22 AWG
DR: Kynar, PVDF, 28 AWG

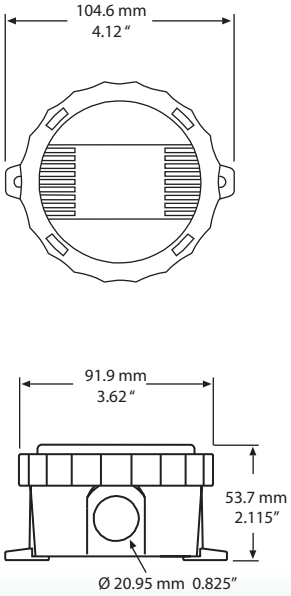
Wire Length .....**BB:** 3.05 m (10')
GL: 1.524 m (5')
FL: 1.83 m (6')

Enclosure.....**(E)** Round Grey ABS - UL94-V0 - IP65 (NEMA 4X)
.....**(P)** PVC - IP65 (NEMA 4X)**(A)** Grey ABS - UL94-V0 - IP61 (NEMA 2)

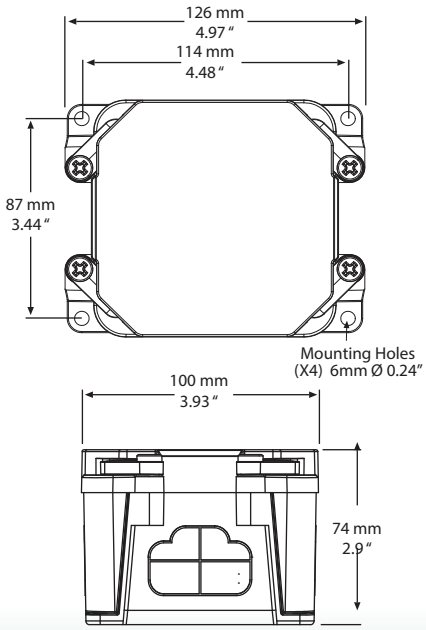
Wiring Connections.....Pigtail, 2 or 3 wire

ENCLOSURE DIMENSIONS:

Round ABS Enclosure



PVC Enclosure



RoHS COMPLIANT

PRODUCT ORDERING INFORMATION:

MODEL	Product Description
HATS	High Accuracy Temperature Sensor Series

CODE	Mounting Style
BB	Duct probe w/ mounting bracket only
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
RP	Strap-on - Remote Probe
SO	Strap-on - Assembly clamps around pipe with aluminum plate c/w 254 mm (10") stainless clamp
OS	Outside Air
FL	Flying lead
GL	Glass

CODE	Enclosure - Omit for BB, FL & GL
E	Round ABS, with gasket cover
P	PVC Weatherproof

CODE	Sensor
18	1000 Ω Platinum, 2 Wire, IEC 751, 385 Alpha, thin film, Class A
48	1000 Ω Platinum, 2 Wire, IEC 751, 385 Alpha, thin film, 1/3 DIN
22	1000 Ω Platinum, 2 Wire, IEC 751, 385 Alpha, thin film, 1/10 DIN
41	1000 Ω Platinum, 3 Wire, IEC 751, 385 Alpha, thin film, Class A
49	1000 Ω Platinum, 3 Wire, IEC 751, 385 Alpha, thin film, 1/3 DIN
50	1000 Ω Platinum, 3 Wire, IEC 751, 385 Alpha, thin film, 1/10 DIN
39	10,000 Ω, Type 2, NTC Thermistor, ±0.05 C
55	10,000 Ω, Type 2, NTC Thermistor, ±0.03 C
40	10,000 Ω, Type 3, NTC Thermistor, ±0.1 C
46	20,000 Ω, NTC Thermistor, ±0.1 C

CODE	Probe Length	Lengths are applicable to these Mounting Styles
A	50 mm (2")	BM, RP & CN
B	100 mm (4")	BM, RP & CN
C	150 mm (6")	BM, RP & CN
D	200 mm (8")	BM, RP & 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

HATS	BM	C	18	E

CONFIGURATIONS:

The HATS Temperature sensors offer a choice of high accuracy platinum RTD's or NTC Thermistors which can be interfaced with a computerized monitoring or control system. A wide variety of configurations are available such as:

BM & BB) Duct Sensor – The BM & BB is for single point monitoring. Both are available with various probe lengths. The B has various enclosures available and the BB provides a mounting bracket for installation.

BM)

BB)

CN) Immersion Sensor – The CN is for single point monitoring. It has a 1/2" NPT fitting to be mounted into a thermowell. It is available in various lengths and enclosures.

CN)

DF, D, DC & DR) Duct Averaging Sensor – All models incorporate numerous sensors along the assembly and act as a single sensor averaging the temperature across the sensors. They are available in various lengths. The DF flexible multi-point duct average temperature sensor utilizes several high accuracy sensors space at equal distances. The DC series multi-point average duct temperature sensor utilizes several high accuracy sensors space at equal distances and encapsulated in a 7.94 mm (0.3125") OD, soft copper probe. The DR is a constructed of rigid stainless steel. Various enclosures are available.

DF)

DC)

DR)

RP & SO) Strap-on Sensor – The RP single point strap-on temperature sensor utilizes a high accuracy sensor 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 sensor bonded to a 38 mm x 38 mm (1.5"x 1.5") aluminum plate and adhered to a 38 mm x 25.4 mm (1.5 x 1") compressible foam.

RP)

SO)

OS) OSA Sensor – The OS, single point outside air temperature sensor utilizes a high accuracy sensor. All probes are constructed to provide excellent heat transfer, fast response and are potted to resist moisture penatration.

OS)

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.

GL)

FL) Flying Lead – FL single point flying lead temperature sensor utilizes a high accuracy sensor encapsulated in 6.35 mm (0.25") OD X 50 mm (2"), 304 series stainless steal probe.

FL)

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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.

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

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