

## 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*

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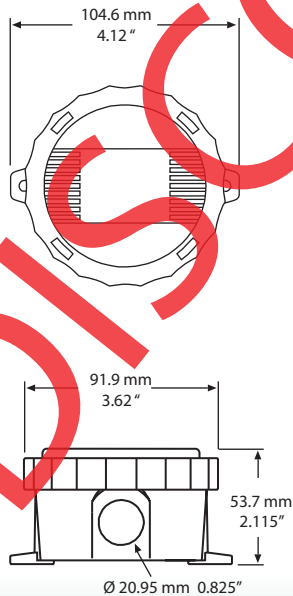
# HATS - HIGH ACCURACY PROBE TEMPERATURE SENSORS:

## SPECIFICATIONS:

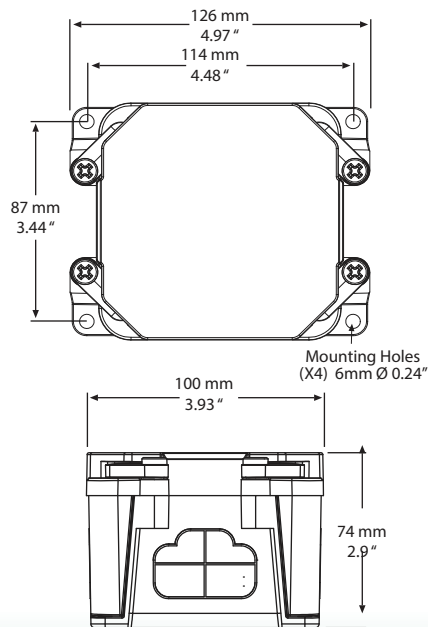
Sensor.....	Several High Accuracy Thermistors or Platinum RTD's available.
Sensor Accuracy.....	<b>18 &amp; 41</b> 1000 Ω Platinum, Class A: ±0.15°C @ 0°C <b>48 &amp; 49</b> 1000 Ω Platinum, 1/3 DIN: ±0.1°C @ 0°C <b>22 &amp; 50</b> 1000 Ω Platinum, 1/10 DIN: ±0.03°C @ 0°C <b>39</b> 10,000 Ω, Type 2, NTC Thermistor, ±0.05 C, 0-70°C <b>55</b> 10,000 Ω, Type 2, NTC Thermistor, ±0.03 C, 0-70°C <b>40</b> 10,000 Ω, Type 3, NTC Thermistor, ±0.1 C, 0-70°C <b>46</b> 20,000 Ω, NTC Thermistor, ±0.1 C, 0-70°C
Operating Temperature .....	<b>BM, CN, RP, SO, OS, GL:</b> -20 - 105°C (-4 - 221°F) <b>BB, DF, DC, DR, FL:</b> -20 - 60°C (-4 - 140°F)
Probe Material .....	<b>BB, BM, DR, CN, FL, RP:</b> 304 series stainless steel <b>DC:</b> Soft copper <b>SO:</b> 38 mm (1.5") square aluminum plate w/ compressible foam backing <b>GL:</b> Aluminum
Probe Dimensions.....	<b>BB, BM, DR, CN, FL, RP:</b> 6.35 mm (0.250") Diameter <b>DC:</b> 7.94 mm (0.3125") Diameter <b>GL:</b> 31.75mm L x 95.25mm W x 9.525mm H (1.25" x 0.375" x 0.375")
Wire Material.....	<b>BM, CN, RP, SO, OS, GL:</b> PVC insulated, parallel bonded, 22 AWG <b>BB, DF, DC, DR, FL:</b> FT-6 rated plenum cable, 22 AWG <b>DR:</b> Kynar, PVDF, 28 AWG
Wire Length .....	<b>BB:</b> 3.05 m (10') <b>GL:</b> 1.524 m (5') <b>FL:</b> 1.83 m (6')
Enclosure .....	<b>(E)</b> Round Grey ABS - UL94-V0 - IP65 (NEMA 4X) <b>(P)</b> PVC - IP65 (NEMA 4X) <b>(A)</b> Grey ABS - UL94-V0 - IP61 (NEMA 2)
Wiring Connections.....	Pigtail, 2 or 3 wire

## ENCLOSURE DIMENSIONS:

Round ABS Enclosure



PVC Enclosure



# 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
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## 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)

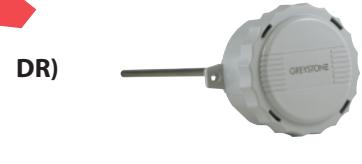
**DF, D, DC & DR) Duct Averaging Sensor** – All models incorporate numerous sensors along the assembly and act as a single sensor averaging the temperature across the sensors. They are available in various lengths. The DF flexible multi-point duct average temperature sensor utilizes several high accuracy 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.

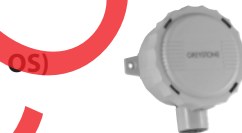


RP)



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 penetration.



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 steel probe.



FL)



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*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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