High Temperature Thermal Barrier Data Logging System

OM-CP-THERMOVAULT140

✓ Complete System Includes Data Logger Inside Protective Thermal Enclosure
✓ 300 Series Stainless Steel Enclosure
✓ Small 63.5 mm (2.5”) Diameter
✓ Submersible
✓ Withstands Temperatures up to 350°C (662°F) for 140 Minutes Continuously

The OM-CP-THERMOVAULT140 is an extremely high temperature thermal barrier designed for use with the OM-CP-HITEMP140-5.25 and OM-CP-HITEMP140-PT-1 data loggers. The thermal barrier is made from a stainless steel enclosure containing a Dewar flask and PTFE insulation. This durable system can withstand temperatures up to 250°C (482°F) when completely submerged and 350°C (662°F) in dry heat applications (O-Ring removed). The OM-CP-THERMOVAULT140 is built for use in harsh applications that require extreme temperature monitoring, such as with furnace profiling, geothermal down-hole recording, autoclave validation, and oven data logging.

The OM-CP-THERMOVAULT140 includes the thermal barrier only. The OM-CP-THERMOVAULT140-5.25-TD includes the thermal barrier as well as an OM-CP-HITEMP140-5.25 data logger. The OM-CP-THERMOVAULT140-PT-1 includes the thermal barrier as well as an OM-CP-HITEMP140-PT-1 data logger. The 133 mm (5.25”) probe on the OM-CP-HITEMP140-5.25 data logger is ideal for ambient temperature monitoring, while the 559 mm (22”) flexible probe on the OM-CP-HITEMP140-PT-1 data logger can be easily adjusted to measure hard-to-reach locations, or even the internal temperature of a product.

Using the OM-CP Series data logger software, starting, stopping and downloading the data logger is simple and easy. Graphical, tabular and summary data is provided for analysis and data can be viewed in °C, °F, K or °R. The data can also be automatically exported to Excel® for further calculations. Simply open the enclosure and insert the data logger into the OM-CP-IFC400 docking station (sold separately). Using the software, an immediate or delay start can be chosen, as well as the reading rate. Select start to program the settings and start the data logger. Place the cap back onto the enclosure and screw it back together. The device is ready to be deployed.

SPECIFICATIONS
High Temperature Thermal Barrier Data Logging System (Stainless Steel Barrier and Data Logger)

Operating Environment: Refer to the Time vs. Temperature Chart
IP Rating: IP50 (no O-Ring), IP68 (O-Ring installed)
Probe Junction/Type: 0.130” Thru-Hole, Compression Fitting (⅛” PTFE Sealing Ferrule)

Enclosure Materials
Enclosure: 300 Series stainless steel
Seals: PTFE and silicone rubber
Insulation: Dewar flask and PTFE

Dimensions: 165 L x 63.5 mm dia (6.5 x 2.50”)
Minimum Recommended Probe Length: 133 mm (5.25”)
Weight: 1135 g (2.5 lb)
Maximum Sustainable Pressure: 30 psia
Maximum Sustainable Depth (inh2o): 21 m (70’)

Time vs. Temperature (Data Logger Inside OM-CP-THERMOVAULT140 Thermal Barrier)

<table>
<thead>
<tr>
<th>Ambient Temperature °C (°F)</th>
<th>Maximum Exposure Time in Air (minutes)</th>
<th>Maximum Exposure Time in Liquid (minutes)</th>
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<tbody>
<tr>
<td>150 (302)</td>
<td>525</td>
<td>285</td>
</tr>
<tr>
<td>175 (347)</td>
<td>360</td>
<td>165</td>
</tr>
<tr>
<td>200 (392)</td>
<td>285</td>
<td>120</td>
</tr>
<tr>
<td>225 (437)</td>
<td>240</td>
<td>95</td>
</tr>
<tr>
<td>250 (482)</td>
<td>205</td>
<td>80</td>
</tr>
<tr>
<td>275 (527)</td>
<td>180</td>
<td>—</td>
</tr>
<tr>
<td>300 (572)</td>
<td>165</td>
<td>—</td>
</tr>
<tr>
<td>325 (617)</td>
<td>150</td>
<td>—</td>
</tr>
<tr>
<td>350 (662)</td>
<td>140</td>
<td>—</td>
</tr>
</tbody>
</table>
SPECIFICATIONS, CONTINUED

OM-CP-HITEMP140-5.25/OM-CP-HITEMP140-PT-1
Data Loggers (Without Stainless Steel Thermal Barrier)

Temperature Sensor: 100 Ω Platinum RTD
Temperature Range (Body): -40 to 140°C (-40 to 284°F)
Temperature Measurement Range (Probe): -200 to 260°C (-328 to 500°F)
Temperature Resolution: 0.01°C (0.02°F)
Calibrated Accuracy: ±0.1°C (±0.18°F)
[20 to 140°C (68 to 284°F)]; ±0.3°C (±0.54°F)
[-20 to 19.99°C (-4 to 67.98°F)]; ±0.4°C (±0.72°F)
[-40 to -20.01°C (-40 to -4.02°F)]

Start Modes:
• Software programmable immediate start
• Delay start up to eighteen months in advance

Stop Modes:
• Manual through Software
• Time (specific date and time)

Real Time Recording: May be used with PC to monitor and record data in real time
Memory: 32,700 readings
Reading Rate: One second up to once every 24 hours
Battery Type: 3.6V high-temperature lithium battery (included)
Battery Life: 1 year typical
[1 minute reading rate at 25°C (77°F)]
Calibration: Digital calibration through software
Calibration Date: Automatically recorded within device
Data Format: Date and time stamped °C, °F, K, °R
Time Accuracy: ±1 minute/month at 20 to 30°C
(68 to 86°F) (RS232 cable not in use)
Computer Interface: OM-CP-IFC400 USB docking station required (125,000 baud)
Software: Windows XP SP3/Vista/7 and 8 (32- and 64-bit)
Operating Environment: -40 to 140°C (-40 to 284°F), 0 to 100% RH

Weight: 120 g (4.2 oz)
Material: 316 stainless steel
Dimensions
OM-CP-HITEMP140-5.25
Body: 48 H x 25 mm dia (1.9 x 0.97”)
Probe: 133 L x 4.8 to 3.2 mm transitional dia (5.25 x 0.188 to 0.125”)
OM-CP-HITEMP140-PT-1
Body: 48 H x 25 mm dia (1.9 x 0.97”)
Probe Tip: 42 L x 3.2 mm dia (1.7 x 0.125”)
Flexible Probe Portion: 559 L x 1.6 mm dia (22 x 0.062”)

To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>OM-CP-THERMOVAULT140-5.25-TD</td>
<td>High temperature thermal barrier and OM-CP-HITEMP140-5.25 data logger</td>
</tr>
<tr>
<td>OM-CP-THERMOVAULT140-5.25-TD-C</td>
<td>High temperature thermal barrier and OM-CP-HITEMP140-5.25 data logger and NIST calibration certificate</td>
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<tr>
<td>OM-CP-THERMOVAULT140-PT-1</td>
<td>High temperature thermal barrier and OM-CP-HITEMP140-PT-1 data logger</td>
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<tr>
<td>OM-CP-THERMOVAULT140-PT-1-CERT</td>
<td>High temperature thermal barrier and OM-CP-HITEMP140-PT-1 data logger with NIST calibration certificate</td>
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<tr>
<td>OM-CP-THERMOVAULT140</td>
<td>Submersible stainless steel high temperature thermal barrier only (for use with OM-CP-HITEMP140-5.25 or OM-CP-HITEMP140-PT-1 data loggers)</td>
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<tr>
<td>OM-CP-IFC400</td>
<td>Docking station (for single data logger) with software, USB cable and manual</td>
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<tr>
<td>OM-CP-IFC406</td>
<td>Multiplexer data logger interface (accepts up to 6 data loggers) with software, USB cable and manual</td>
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<tr>
<td>OM-CP-BAT110</td>
<td>Replacement 3.6V lithium battery for data logger</td>
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<tr>
<td>OM-CP-SVP-SYSTEM</td>
<td>FDA 21 CFR Part 11 compliant IQ/OQ/PQ secure software validation workbook and software package (unlimited users, license per computer)</td>
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Comes complete with 3.6V lithium battery. Operator’s manual and USB interface cable are included with the OM-CP-IFC400 software/docking station package (required for data logger operation, sold separately).