

kanmor® - Data Brochure

Universal Sensor 071e

D071e

12/08

The kanmor Universal Sensor 071e has a zinc sleeve for fast response and a wide operating range. This sensor can be used in a multitude of applications. The 071e is supplied with 300 mm of two conductor wire.

Definitions

The following defined terms and symbols are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning the life of the product.



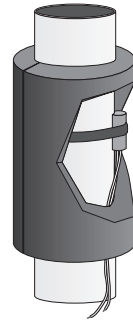
Warning symbol: Indicates presence of hazards which can cause severe personal injury, death or substantial property damage if ignored.

Installation - Universal Sensor 071e

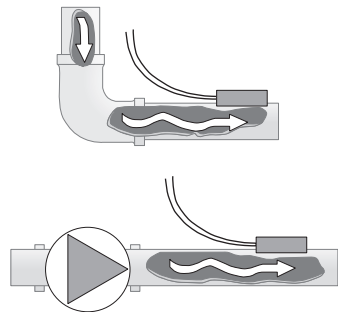
STEP ONE — MOUNTING THE SENSOR

Note: This sensor is designed to mount on a pipe or in a temperature immersion well.

The Universal Sensor can be strapped directly to the pipe using the cable tie provided. Insulation should be placed around the sensor to reduce the effects of air currents on the sensor measurement.



The Universal Sensor should be placed downstream of a pump or after an elbow or similar fitting. This is especially important if large diameter pipes are used as the thermal stratification within the pipe can result in erroneous sensor readings. Proper sensor location requires that the fluid is thoroughly mixed within the pipe before it reaches the sensor.



STEP TWO ————— WIRING AND TESTING THE SENSOR —————

CAUTION: Do not run sensor wires parallel to telephone or power cables. If the sensor wires are located in an area with strong sources of electromagnetic interference, shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit.

- It will be necessary to connect 1 mm² wire to the two sensor wires. Ensure that all wires are stripped to 10 mm. Wire nuts can be used to hold the wires together.
- Follow the sensor testing instructions given in this brochure and then connect the wires to the control.

Sensor Testing Instructions

A good quality test meter capable of measuring up to 5,000 k Ω (1 k Ω = 1000 Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with either a good quality digital thermometer, or if a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared.

First measure the temperature using the thermometer and then measure the resistance of the sensor at the control. The wires from the sensor must not be connected to the control while the test is performed. Using the chart on the following page, estimate the temperature measured by the sensor. The sensor and thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection or a defective sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location.

Do not apply voltage to a sensor at any time as damage to the sensor may result.

Resistance Table

| Temperature | | Resistance | Temperature | | Resistance | Temperature | | Resistance | Temperature | | Resistance |
|-------------|-----|------------|-------------|----|------------|-------------|----|------------|-------------|-----|------------|
| °F | °C | Ω | °F | °C | Ω | °F | °C | Ω | °F | °C | Ω |
| -50 | -46 | 490,813 | 20 | -7 | 46,218 | 90 | 32 | 7,334 | 160 | 71 | 1,689 |
| -45 | -43 | 405,710 | 25 | -4 | 39,913 | 95 | 35 | 6,532 | 165 | 74 | 1,538 |
| -40 | -40 | 336,606 | 30 | -1 | 34,558 | 100 | 38 | 5,828 | 170 | 77 | 1,403 |
| -35 | -37 | 280,279 | 35 | 2 | 29,996 | 105 | 41 | 5,210 | 175 | 79 | 1,281 |
| -30 | -34 | 234,196 | 40 | 4 | 26,099 | 110 | 43 | 4,665 | 180 | 82 | 1,172 |
| -25 | -32 | 196,358 | 45 | 7 | 22,763 | 115 | 46 | 4,184 | 185 | 85 | 1,073 |
| -20 | -29 | 165,180 | 50 | 10 | 19,900 | 120 | 49 | 3,760 | 190 | 88 | 983 |
| -15 | -26 | 139,402 | 55 | 13 | 17,436 | 125 | 52 | 3,383 | 195 | 91 | 903 |
| -10 | -23 | 118,018 | 60 | 16 | 15,311 | 130 | 54 | 3,050 | 200 | 93 | 829 |
| -5 | -21 | 100,221 | 65 | 18 | 13,474 | 135 | 57 | 2,754 | 205 | 96 | 763 |
| 0 | -18 | 85,362 | 70 | 21 | 11,883 | 140 | 60 | 2,490 | 210 | 99 | 703 |
| 5 | -15 | 72,918 | 75 | 24 | 10,501 | 145 | 63 | 2,255 | 215 | 102 | 648 |
| 10 | -12 | 62,465 | 80 | 27 | 9,299 | 150 | 66 | 2,045 | 220 | 104 | 598 |
| 15 | -9 | 53,658 | 85 | 29 | 8,250 | 155 | 68 | 1,857 | 225 | 107 | 553 |

Technical Data

UNIVERSAL SENSOR 071e

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| Literature | D 071e. |
| Packaged weight | 35 g (0.08 lb.), zinc sleeve, 250 mm (10"), 20 AWG XPE wire. |
| Dimensions | 9.5 OD x 19 mm (3/8" OD x 3/4"). |
| Approvals | CSA C US, CE approved. |
| Operating Range | -50 to 125 °C (-60 to 255 °F). |
| Sensor | NTC thermistor, 10 kΩ @ 77 °F (25 °C ±0.2 °C), β=3892. |

Limited Warranty and Product Return Procedure

Limited Warranty *The liability of kanmor Control Systems Ltd. ("kanmor") under this warranty is limited. The Purchaser, by taking receipt of any kanmor product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.*

The kanmor Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each kanmor Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with kanmor's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of kanmor under the Limited Warranty shall be limited to, at kanmor's sole discretion: the cost of parts and labor provided by kanmor to repair defects in materials and/or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from kanmor, and, without limiting the foregoing in any way, kanmor is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to kanmor during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the kanmor Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold kanmor harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than kanmor, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by kanmor; or if the Product was not installed in compliance with kanmor's instructions and/or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with kanmor's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to kanmor through its Representative. If kanmor receives an inquiry from someone other than a kanmor Representative, including an inquiry from Purchaser (if not a kanmor Representative) or Purchaser's customers, regarding a potential warranty claim, kanmor's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.



Symbol for Separate Collection in European Countries

This symbol indicates that this product is to be collected separately. This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste. For more information, contact the local authorities in charge of waste management.

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