NTC Thermistors, Immersion Temperature Sensor, Screw Threaded

LINKS TO ADDITIONAL RESOURCES

3D Models

DESCRIPTION

Thermistor NTC sensor to acquire the medium temperature in heat pumps, heat exchangers, storage tanks, boilers. The sensor is for a direct immersion into the medium and is screwed to the threaded hole. A heat-resistant O-ring is to be used for the sealing.

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	10K	Ω
Tolerance on R_{25}-value	± 2	%
$B_{25/85}$-value	3984	K
Tolerance on $B_{25/85}$-value	± 0.5	%
Thermal time constant at 63.2 % (25 °C to 85 °C water)	20	s
Operating temperature range at zero power	-25 to +125	°C
Min. dielectric withstanding voltage between the metallic housing and the terminals/NTC	500	V_{AC}
Maximum power dissipation	150	mW
Climatic category (IEC 60539)	25 / 125/ 56	

FEATURES

- Immersion sensor
- Rugged construction
- High grade stainless steel housing (316L / V4A)
- The sensor housing has a M8-6g screw thread and is mounted with a spanner size 12
- Connector Molex 39-01-2026 or equivalent
- RoHS-, REACH-, and SVHC-compliant. (e3) termination
- Halogen-free cable, with electron-beam cross-linked lead wire with improved fire performance and increased resistance to temperature and good oil resistance
- PVC-free
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

APPLICATIONS

Sensor used for temperature sensing and control in:

- Heat pumps
- Water boilers
- Heating systems
- Water and used water systems
- Water and oil tanks
- Consumer appliances
- Industrial appliances
- Solar heating systems
- Buildings

MOUNTING

- O-ring
- Cable allowed bending radius: 4 x outer diameter
- Electrical connection to the counter-connector
- Use spanner size 12

DESIGN-IN SUPPORT

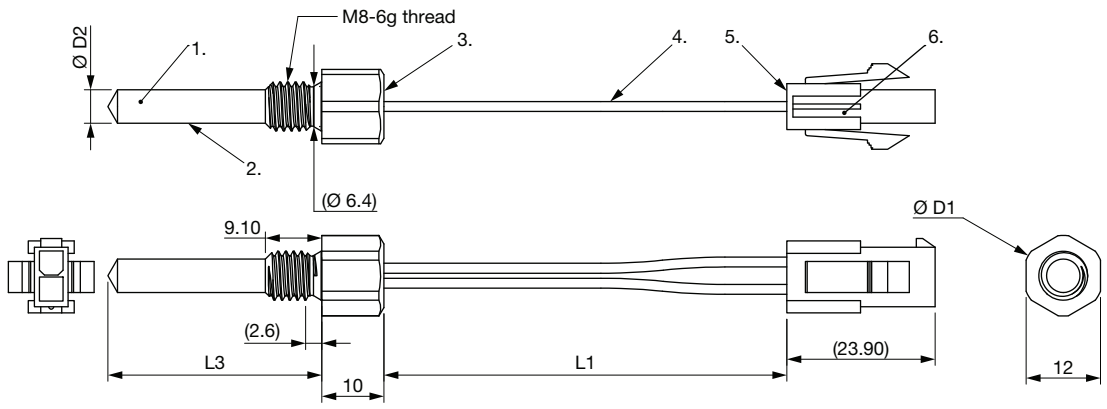
- Other resistance curves and tolerances are available on request
- 3D solid models: www.vishay.com/doc?29253
- NTC curve computation: www.vishay.com/thermistors/ntc-rt-calculator/

ELECTRICAL DATA AND ORDERING INFORMATION					
R_{25} (Ω)	R_{25}-TOL. (± %)	$B_{25/85}$ (K)	$B_{25/85}$-TOL. (± %)	SAP MATERIAL AND ORDERING NUMBER	DESCRIPTION
10 000	2	3984	0.5	NTCASCW78A103GA	NTC screw 10K 2 % 91 mm M8 SS316L lead (Pb)-free

Note

- Other resistance and tolerance values available

DIMENSIONS in millimeters



L1	L3	Ø D1	Ø D2
91 ± 5	34.5 ± 0.5	13 ± 0.2	5.4 ± 0.1

Notes

1. Thermistor NTC position
2. High grade stainless steel 316L
3. Epoxy potting
4. Cable PEX insulated
5. Connector terminals MOLEX 39-00-0061 or JS-4202-T / Mini-Fit Male Crimp Terminal, Tin
6. Connector housing MOLEX 39-01-2026 or JS-4202-H-02 / Mini-Fit Jr. Plug Housing, Dual Row, 2 Circuits, UL 94 V-0, with Panel Mounting Ears

- Available without connector or with another connector type
- Detailed mounting drawing available on request.
  For 3D solid model please see www.vishay.com/doc?29253

RELIABILITY DATA

TEST	CONDITIONS	$\Delta R_{25}/R_{25}$ (TYPICAL)
Dry heat storage (steady state) IEC 60068-2-2	T = 125 °C t = 1000 h	< 3 %
Damp heat storage (steady state) IEC 60068-2-78	T = 85 °C (air) 85 % RH t = 56 days	< 3 %
Rapid temperature cycling (air) IEC 60068-2-14	T1 = -40 °C T2 = 125 °C t < 30 s 1000 cycles	< 3 %

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.