

DATASHEET: PHARMALOGG PROBE T-100100 TEMPERATURE PROBE

- Temperature range from -100 °C to +100 °C
- Fully calibrated with 0.1 °C accuracy
- Platinum wire (99.999 % pure) excellent stability
- Affordable wide-range accuracy
- Digital output, I2C interface
- Low power consumption
- Excellent long term stability

PHARMALOGG PROBE T-100100 is temperature sensor of AliusGrupa d.o.o. is about to set new standards in terms of size and intelligence.

With a completely new designed PHARMASens® chip, the sensor performance has been lifted even beyond the outstanding level of the previous sensor generation.

Every sensor is individually calibrated and tested. Lot identification is printed on the sensor and an electronic identification code is stored on the chip - which can be read out by command. Furthermore, the resolution of PHARMALOGG PROBE T-100100 can be changed by command (8/12bit up to 12/14bit for), low battery can be detected and a checksum helps to improve communication reliability.

SENSOR CHIP

PHARMALOGG PROBE T-100100 features a generation PHARMASens® chip . Probes have a fully supported sensing element, making them more durable than SPRTs. The element is protected in an ultrahigh-purity ceramic case with a hermetic glass seal to improve output stability by locking out moisture and contaminants. contains an amplifier, A/D converter, OTP memory and a digital I2C processing unit.

MATERIAL CONTENTS

The element is constructed of reference-grade platinum wire (99.999 % pure) for excellent stability. The wire is wound in a coil and placed in a mandrel where it's uniformly supported in a manner that virtually eliminates hysteresis. The device is fully RoHS and WEEE compliant, e.g. free of Pb, Cd and Hg.

SENSOR PERFORMANCE:

Temperature range:	-100°C+100°C
Maximum and minimum temperature that the sensor can tolerate without damage:	-200°C +200°C
14-bit resolution ¹ :	0.05°C (-100 to -40°C) 0.09°C (-40 to 0°C) 0.02°C (0 to 40°C) 0.05°C (40 to 100°C)
Temperature sensor:	PHARMASens® chip

Accuracy ² :	$\pm 0.15^{\circ}\text{C}$ at -100°C , $\pm 0.1^{\circ}\text{C}$ at 0°C , $\pm 0.15^{\circ}\text{C}$ at 100°C
Drift	$0,04^{\circ}\text{C}/\text{yr}$
Response time (time for 90% change in reading) ³ :	8 seconds (in water, with stirring) 150 seconds (in still air) 30 seconds (in moving air)

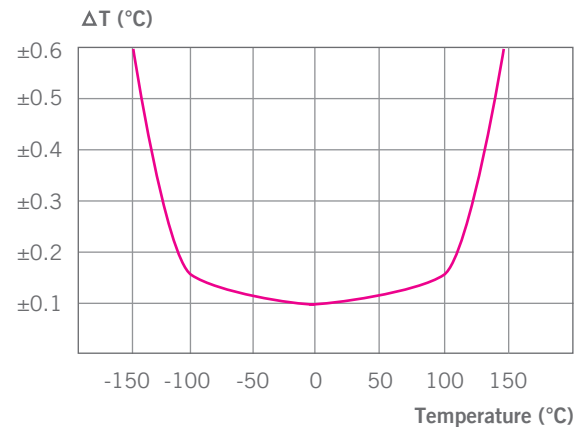


Figure 1: Maximal tolerance for temperature sensor in °C

- 1 Default measurement resolution is 14bit. It can be reduced to 12/8bit, 11/11bit or 13/10bit by command to user register.
- 2 Accuracies are tested at Outgoing Quality Control at 25°C and 3.0V. Values exclude hysteresis and long term drift and are applicable to non-condensing environments only.
- 3 Response time depends on heat conductivity of sensor substrate.