

## AX-DUCT SERIES

# DUCT TEMPERATURE SENSORS

Insert-type passive duct sensor, NTC, probe 150 / 200 / 300 mm, IP65

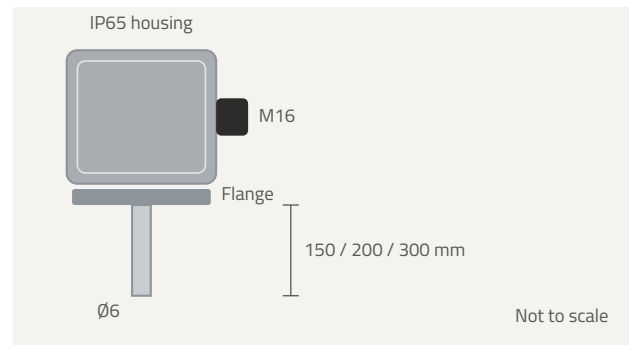
The Axiom Thermal AX-DUCT series is an insert-type duct temperature sensor: a passive resistive sensor designed for HVAC, building automation and industrial duct temperature monitoring. The NTC thermistor converts temperature changes into precise resistance variations for continuous measurement and feedback control of air temperature in ducts. High-protection plastic housing and stainless-steel probe rod for long-term stability.

**Applications:** Air-handling units, supply and return air ducts, ventilation and heat recovery, building automation (BMS), industrial duct temperature monitoring.

### KEY FEATURES

- NTC thermistor 10K / 20K, B value 3950 K (customisable)
- Measuring range  $-40 \dots +125 \text{ }^{\circ}\text{C}$  (customisable)
- Accuracy  $\pm 1\%$  at  $25 \text{ }^{\circ}\text{C}$  ( $\pm 0.3 \text{ }^{\circ}\text{C}$ )
- Passive: no power supply, resistance read by the controller
- Probe length 150 / 200 / 300 mm (custom lengths)
- IP65 plastic housing, stainless-steel probe rod

### DIMENSIONS



### TECHNICAL SPECIFICATIONS

|                         |                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------|
| Sensor chip             | NTC thermistor, 10K / 20K (others on request)                                     |
| B value                 | 3950 K (customisable)                                                             |
| Measuring range         | $-40 \dots +125 \text{ }^{\circ}\text{C}$ (customisable)                          |
| Accuracy class          | $\pm 1\%$ at $25 \text{ }^{\circ}\text{C}$ ( $\pm 0.3 \text{ }^{\circ}\text{C}$ ) |
| Operating voltage       | Passive (no external power; resistance read by the controller)                    |
| Output signal           | Resistance, negative exponential dependence on temperature                        |
| Probe length            | 150 / 200 / 300 mm (custom lengths)                                               |
| Probe material          | Stainless steel                                                                   |
| Wiring                  | 2-wire, no polarity                                                               |
| Operating ambient temp. | $-20 \dots +70 \text{ }^{\circ}\text{C}$ (housing)                                |
| Operating humidity      | 0 ... 96% RH (non-condensing)                                                     |
| Storage                 | $-20 \dots +70 \text{ }^{\circ}\text{C}$ ; 20 ... 60% RH                          |
| Protection rating       | IP65                                                                              |

## ■ RESISTANCE VS. TEMPERATURE (NTC 10K, B3950)

| Temp. (°C) | NTC 10K (Ω) | Temp. (°C) | NTC 10K (Ω) |
|------------|-------------|------------|-------------|
| -40        | 401,860     | +40        | 5,301       |
| -30        | 200,204     | +50        | 3,588       |
| -20        | 105,385     | +60        | 2,486       |
| -10        | 58,246      | +70        | 1,760       |
| 0          | 33,621      | +80        | 1,270       |
| +10        | 20,175      | +90        | 934         |
| +20        | 12,535      | +100       | 698         |
| +25        | 10,000      | +110       | 529         |
| +30        | 8,037       | +125       | 359         |

Indicative values calculated with the  $\beta$ -equation ( $R_{25} = 10 \text{ k}\Omega$ ,  $B = 3950 \text{ K}$ ). The official R/T table is available on request.

## ■ INSTALLATION AND WIRING

Installation: (1) drill a hole in the duct wall matching the probe diameter; (2) insert the probe so that it is fully in the airflow; (3) connect the wires to the marked terminals (NTC 2-wire, no polarity) and close the housing; (4) keep away from VFDs, motors and other high-power interference; (5) mount in a stable airflow zone, away from bends and air outlets; (6) the probe must not touch the duct wall; (7) route cables away from power lines, shielded cable recommended. Commissioning: check wiring for short or open circuits, read the resistance with the controller or a multimeter and compare with the R/T table; controller offset  $\pm 2 \text{ }^{\circ}\text{C}$ ; run 30 minutes and check that the reading is stable. Never exceed the rated temperature or bend the probe.

## ■ ORDERING CODES

| Code             | Description                       |
|------------------|-----------------------------------|
| AX-DUCT-N10K-150 | NTC 10K B3950, probe 150 mm, IP65 |
| AX-DUCT-N10K-200 | NTC 10K B3950, probe 200 mm, IP65 |
| AX-DUCT-N10K-300 | NTC 10K B3950, probe 300 mm, IP65 |
| AX-DUCT-N20K-200 | NTC 20K B3950, probe 200 mm, IP65 |

## ■ OPTIONS FOR OEM AND PRIVATE LABEL

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| Element / B value | Other NTC values and B values on request                |
| Range             | Custom measuring range                                  |
| Probe             | Custom length; optional matching mounting tube          |
| Warranty          | 12 months from date of shipment (repair or replacement) |

- Specifications subject to change without notice.
- OEM and private-label versions available. MOQ, lead time and price on quotation.

**Request a quote or samples:** [info@axiomthermalgroup.com](mailto:info@axiomthermalgroup.com) · [axiomthermalgroup.com/contact-us](https://axiomthermalgroup.com/contact-us)