

HUMIDITY AND TEMPERATURE SENSOR

CSHT-1



Catalogue card



DESCRIPTION

Humidity and temperature sensor CSHT-1 is a stationary device for measuring humidity and temperature content in explosion hazard areas in underground coal mines. Mainly it cooperates with telemetric central station CST-40A, CST-40C in transmission data area. It may also cooperate with other centrals provided that the terminal of the feeder-measurement line is compatible.

CSHT-1 sensor provides humidity measuring range from 0 to 100% and temperature measuring range from -20 to 50°C. Its autonomous power supply (battery) supplies the humidity and temperature sensor system when the supply line is disconnected. The communication with the CSHT-1 sensor is carried out by means of digital or frequency transmission through the feeder-measurement line of the central station and through the type KR-2 calibrator. The calibrator communicates with the humidity and temperature sensor through a radio link.

Humidity and temperature sensor CSHT-1 is a microprocessor device and it independently performs measurement, control and transmission functions. Its main tasks include continuous measurement of humidity and temperature content, checking the measured value against the preset alarm thresholds, control of the contacts of the switching-off device (electronic relays). The switching-off contacts operate under positive logic, that is, supply failure, wrong measurement or overrun of alarm threshold causes the contact to open.

When the sensor CSHT-1 sensor is connected to the central telemetric station type CST, the central station initiates a connection and exchanges information with the humidity and temperature sensor (serial number, condition of batteries, contacts, etc.). The CSHT-1 sensor accepts the operator's orders concerning the control of the switching-off contact and the settings of alarm thresholds. During its normal operation, as requested by the central station, the humidity and temperature sensor sends measurement data and other information concerning its operation.

BASIC TECHNICAL PARAMETERS

Humidity and temperature sensor CSHT-1

Supply (line current) - (current source of the supply-transmission line)	from 27 mA to 40 mA
Measurement range (type of measurement)	Humidity 0÷100%RH Temperature -20÷50oC
Resolution	0,1% humidity 0,1 oC temperature
Measurement method	Continuous
Response time t_{90}	for humidity measurement ≤ 4s, for temperature measurement ≤ 30s.
Sensor working position	any, recommended for sensor inlet downwards
Working time of autonomous power supply source	> 4 min
Transmission method	Digital: two-way or frequency
Frequency range for measuring range 0-100%RH	0%RH - 10kHz 100%RH – 5kHz
Transmission time (of control cycle)	≤ 2 s
Working temperatures	from -10 °C to + 40°C
Relative humidity range	from 15% to 95% without condensation
External dimensions	110 x 75 x 80 mm
Weight	0,6 kg
Casing internal protection	IP-54
ilość wyjść sterujących	1
tryby pracy wyjścia:	styk z szeregową diodą

EXPLOSION-PROOF MARK



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EC type examination certificate: KDB 08 ATEX 131