Remote Temperature Measurement Unit ConTrace AS-xxx-Ex

Purpose

The remote temperature measurement unit ConTrace AS-xxx-Ex is used for temperature control of process pipelines and tanks in different industries. Designed to be placed near desired monitoring locations, even in hazardous areas.

Description

The remote temperature measurement unit ConTrace AS-xxx-Ex is one of the components of the specialized control system for electrical heating ConTrace. Transmission of temperature data is carried out via RS-485 (Modbus RTU). This makes possible to use ConTrace AS-xxx-EX units as a part of third-party control systems that support this type of communication.

Using ConTrace AS-xxx-Ex units allows for centralized control and transmission values of the temperatures of remote objects, which is particularly effective for a large gathering of measurement points within a radius of 100 m. For each ConTrace AS-xxx-Ex unit, depending on the modification, up to 8 RTD temperature sensors can be connected. Incoming data from sensors are transferred to the control cabinet by means of only one cable according to the RS-485 standard. At a distance of 1 200 m, up to 16 ConTrace AS-xxx-Ex units can be connected in series. This makes it possible to monitor changes in temperature characteristics of the electric heating system at 128 points simultaneously.

The intrinsically safe circuit and hazardous area enclosure allow the installation of the remote temperature measurement unit ConTrace AS-xxx-Ex in zones 1 and 2 (21, 22).

Features and Application Areas

- Connection of 8 temperature sensors
- Up to 16 blocks can be daisy-chained together
- Up to 128 temperature sensors
- Maximum distance of the unit from control cabinet to 1,200 m
- Various modifications
- Operation in hazardous zones 1, 2 (21, 22)

Construction

Modifications

Design	Name	Number of measuring channels	Housing material	Material of cable glands*	Number / type of cable glands	Dimensions, mm HxWxD	Weight, kg	Type of construction**
	AS-8MM-Ex	8	Steel	Brass	Power supply: 2xM25 / Sensors: 8xM20 / Network: 2xM20	340×325×215	8,0	Transit/ Terminal
	AS-8PP-Ex	8	Polyester	Polyester	Power supply: 2xM25 / Sensors: 8xM20 / Network: 2xM20	315×290×125	4,5	Transit/ Terminal
	AS-8PM-Ex	8	Polyester	Brass	Power supply: 2xM25 / Sensors: 8xM20 / Network: 2xM20	380×325×125	6,0	Transit/ Terminal
	AS-4PM-Ex	4	Polyester	Brass	Power supply: 2xM25 / Sensors: 8xM20 / Network: 2xM20	325×325×125	4,5	Terminal

* Brass cable glands are designed for use with armored cables, polyester - for non-armored cables

** Units of transit / terminal type can be used for single installation as well as for serial connection

Units of the terminal type are not structurally designed for further transit of the power and information networks, so they can only be used for a single installation or be the last ones in the AS-xxx-Ex circuit

Electric Heating Control System ConTrace

Technical Data

Ex marking		1 Ex e ia m IIC T6
Supply voltage		90…245 VAC, 50…60 Hz
Power consumption, max		5 W
Interface		RS-485
Communication protocol		Modbus RTU
RS485 interface connection		A, B, com
RS485 communication speed		9 600 … 115 200 bps.
Max length of the RS-485 network segment		1200 m *
Terminal blocks for connections 1. Temperature Sensors 2. Interface cable		up to 2.5 mm²
Terminal blocks for mains power connections		up to 6 mm²
Number of temperature measurement channels		8
The resolution of the ADC of the measuring channel		23 bits
Type of sensors		see the table "Types of sensors"
Temperature measurement range		-100…+500 °C
Accuracy of measurements		0.5 ºC
Maximum sensor distance from the unit		100 m
Sensor connection circuit		three-wire circuit
Operating temperature range		-55…+50 °C
Degree of protection		IP66
Dimensions (W×H×D), mm	AS-8MM-Ex	340×325×215
	AS-8PP-Ex	315×290×125
	AS-8PM-Ex	380×325×125
	AS-4PM-Ex	325×325×125
Weight, kg	AS-8MM-Ex	8.0
	AS-8PP-Ex	4.5
	AS-8PM-Ex	6.0
	AS-4PM-Ex	4.5
Service life		not less than 10 years

* Depends on the selected data rate and the conditions for the protection of the control cable against electromagnetic interference
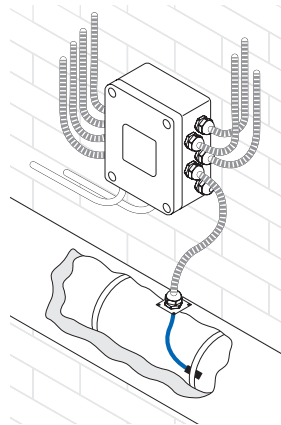
Sensors Types

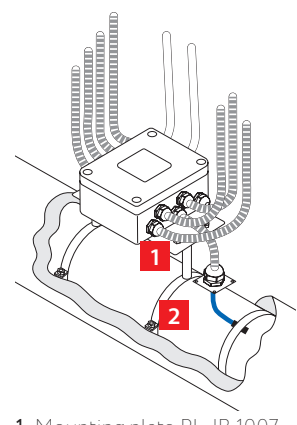| Material	Type of RTD	Measuring range, ˚C
Platinum	PT50	-100 … +500
	PT100	
Copper	Cu50	-100 … +200
	Cu100	
	50M	
	100M	

Accessories

1. Plate PL.JB 1007
2. Bracket K.JB10.YYYxZZZ

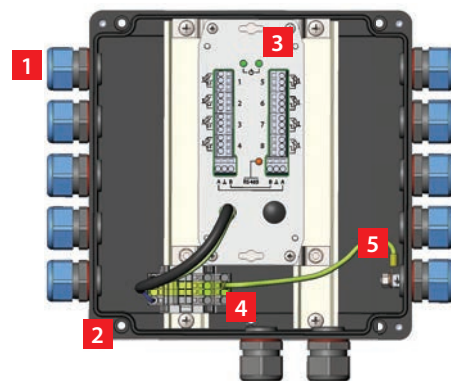## Installation

Surface mount

Mounting on a pipe

1. Mounting plate PL.JB 1007
2. Mounting bracket K.JB10. YYYxZZZ

Construction

The design of the remote temperature measurement unit without a lid, example ConTrace AS-8PP-Ex.

1. Cable glands
2. Explosion proof enclosure
3. Remote temperature measurement module
4. Terminal blocks for mains connection
5. Ground wire

Approvals

CE

Types

Name	Order code
Remote temperature measurement unit ConTrace AS-8MM-Ex	3220002030
Remote temperature measurement unit ConTrace AS-8PP-Ex	3220002031
Remote temperature measurement unit ConTrace AS-8PM-Ex	3220002032
Remote temperature measurement unit ConTrace AS-4PM-Ex	3220002033