USER INSTRUCTIONS English

Programmable Temperature Transmitter D62T 45300

Read these instructions before using the product and retain for future information.

D62T 45300

1. Before Startup

When operating the Temperature Transmitter, certain parts of the module can carry dangerous voltage! Ignoring the warnings can lead to serious injury and/or cause damage!

The Temperature Transmitter should only be installed and put into operation by qualified staff. The staff must have studied the warnings in these operating instructions thoroughly.

The Temperature Transmitter may not be put into operation if the housing is open.

In applications with high operating voltages sufficient distance and isolation as well as shock protection must be ensured.

Safe and trouble-free operation of this device can only be guaranteed if transport, storage and installation are carried out correctly and operation an maintenance are carried out with care.

Appropriate safety measures against electrostatic discharge (ESD) should be taken during range selection and assembly on the transmitter.

2. Short description

The programmable temperature transmitter is designed for operating temperature sensors (RTD and thermocouples). The measured values are converted into a linear current or voltage signal.

The configuration can be done either via DIP switch or via an USB-interface with the PC configuration program DRAGOset.

The 3-way isolation guarantees reliable decoupling of the sensor circuit from the processing circuit and prevents linked measurement circuits from influencing each other.

3. Configuration and startup

3.1 Configuring with DIP switch

Set the input and output ranges with DIP switch as indicated in the table. The factory setting (all switches OFF) can be changed and stored with the configuration software DRAGOset.

3.2 Configuring with software DRAGOset

Changes to the configuration and parameterization data can be performed both during operation with a connected measuring circuit and in a disconnected state.

The DRAGOset software is available for download free of charge at: www.drago-automation.de Use the DRAGOset USB Converter (Order no.: DZU1201) for connecting the device to the PC.

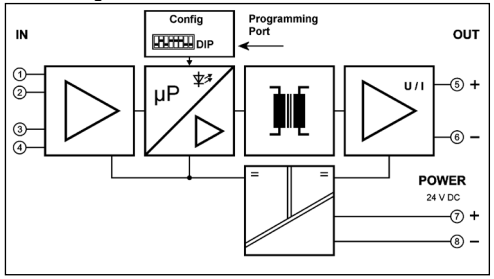
To change the configuration and parameterization, all DIP switches have to be set OFF!

4. Mounting, Electrical Connection

The isolation transmitter is mounted on standard 35 mm DIN rail.

Terminal assignments			
1	Input	5	Output +
2	Input	6	Output -
3	Input	7	Power supply +
4	Input	8	Power supply -

5. Block Diagram



6. Technical Data

Input		
RTD Sensor	**Pt100** / Pt1000	Ni100
Measuring range	-200 … +850 °C	-50 … +175 °C
Minimum span	50 K	
Error max. of	< 0.1 K / 0.05 %	
Temperature influence	< 50 ppm / K	
Sensor connection	**4-wire**, 3-wire, 2-wire	
Sensor wire resistance	< 100 Ω per wire	
Sensor current	0.2 mA	
Diagnostic function	Sensor / wire break Error signal on output programmable	

TC Sensor	Type J	Type K
Measuring range	-200 … +1200 °C	-200 … +1375 °C
Minimum span	50 K	
Error max. of	< 0.3 K / 0.1 %	
Temperature influence	< 50 ppm / K	
Cold junction compensation	intern, extern Pt100, uncompensated	
Cold junction error	< 1.5 K	
Diagnostic function	Sensor- / wire break, error signal at output programmable	

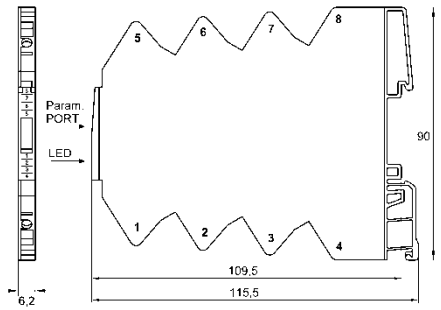
Output	**Current**	**Voltage**
Output signal	**0 - 20 mA** 4 - 20 mA	0 - 10 V 0 - 5 V
Load	≤ 600 Ω	≤ 2 kΩ
Offset	< 20 µA	< 20 mV
Linear transfer range	0 … 102,5 % (3.8 … 20.5 mA at output 4 - 20 mA)	
Error signal	0 % / 110 % of output range (see table)	
Residual ripple	< 10 mV_{rms}	
General data		
Characteristic	Rising / falling linearly	
Transmission error	< 0.1 % v. E.	
Temperature coefficient[2)]	< 100 /K v. E.	
Measurement rate	4 / s	
Test voltage	2,5 kV, 50 Hz Input against output against power supply	
Working voltage[3)] (basic insulation)	600 V AC/DC for overvoltage category II and contamination class 2 acc. to EN 61010 part 1	
Protection against electric shocke[3)]	Protective Separation by reinforced insulation acc. to EN 61010 part 1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply.	
Ambient temperature	Operation - 25 °C to + 70 °C (-13 to 158 °F) Transport - 40 °C to + 85 °C (-40 to 185 °F) and storage	
Power supply	24 V DC 16.8 V … 31.2 V, approx. 0.8 W	
EMV[4)]	EN 61326 -1	
Construction	6.2 mm housing, protection type: IP 20	
Connection	≤ 2.5 mm^2, AWG 14	
Weight	Approx. 50 g	

1) **Factory setting:**
Input: Pt100, 0 - 100°C, 4-wire-sensor connection
Output: 0 - 20 mA, Characteristic rising, error signal 22 mA
2) Average TC in specified operating temperature range
3) As far as relevant the standards and rules mentioned above are considered by development and production of our devices. In addition relevant assembly rules are to be considered by installation of our devices in other equipment's. For applications with high working voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent situated devices.
4) Minor deviations possible during interference

7. Order Information

Product	*Input / Output*	*Part No.*
Temperature Transmitter	programmable	D62T 45300

8. Dimensions



LIMITED WARRANTY

DRAGO Automation GmbH hereby warrants that the Product will be free from defects in materials or workmanship for a period of **five (5) years** from the date of delivery ("Limited Warranty"). This Limited Warranty is limited to repair or replacement at DRAGO's option and is effective only for the first end-user of the Product. This Limited Warranty applies only if the Product:

1. is installed according to the instructions furnished by DRAGO;
2. is connected to a proper power supply;
3. is not misused or abused; and
4. there is no evidence of tampering, mishandling, neglect, accidental damage, modification or repair without the approval of DRAGO or damage done to the Product by anyone other than DRAGO.

Delivery conditions are based upon the „GENERAL CONDITIONS FOR THE SUPPLY OF PRODUCTS AND SERVICES OF THE ELECTRICAL AND ELECTRONICS INDUSTRY" recommended by the Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI) e.V. .

Subject to change!

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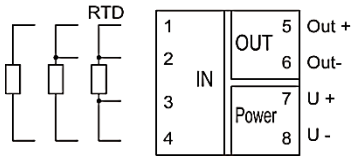
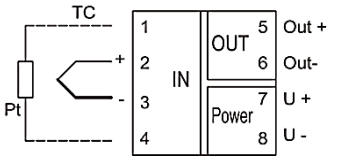
Set the input and output ranges with DIP switches as indicated in the following table:





RTD Sensor

DIP S1

1	2	3	4	5	Type
					Pt100
●					Pt1000
	●				Ni100
					Sensor connection
				●	2-wire
			●		3- wire
					4- wire

TC Sensor

DIP S1

1	2	3	4	5	Type
●	●				J
		●			K
					Cold Junction
					internal
			●		external (Pt100)
				●	off

Configuration

DIP S2

7	8	9	10	Output
				0 … 20 mA
●				4 … 20 mA
	●			0 … 10 V
●	●			0 … 5 V
				Characteristic
				rising
		●		falling
				Diagnostic function
				signalize
			●	not signalize

Start Temperature

DIP S1

6	7	8	9	10	[°C]	[°F]
					--	
●					-200	-328
	●				-175	-283
●	●				-150	-238
		●			-125	-193
●		●			-100	-148
	●	●			-75	-103
●	●	●			-50	-58
			●		-25	-13
●			●		**0**	32
	●		●		25	77
●	●		●		50	122
		●	●		75	167
●		●	●		100	212
	●	●	●		125	257
●	●	●	●		150	302
				●	175	347
●				●	200	392
	●			●	225	437
●	●			●	250	482
		●		●	275	527
●		●		●	300	572
	●	●		●	350	662
●	●	●		●	400	752
			●	●	450	842
●			●	●	500	932
	●		●	●	550	1022
●	●		●	●	600	1112
		●	●	●	700	1292
●		●	●	●	800	1472
	●	●	●	●	900	1652
●	●	●	●	●	1000	1832

End Temperature

DIP S2

1	2	3	4	5	6	[°C]	[°F]
						--	
●						-150	-238
	●					-125	-193
●	●					-100	-148
		●				-75	-103
●		●				-50	-58
	●	●				-25	-13
●	●	●				0	32
			●			25	77
●			●			50	122
	●		●			75	167
●	●		●			**100**	212
		●	●			125	257
●		●	●			150	302
	●	●	●			175	347
●	●	●	●			200	392
				●		225	437
●				●		250	482
	●			●		275	527
●	●			●		300	572
		●		●		325	617
●		●		●		350	662
	●	●		●		375	707
●	●	●		●		400	752
			●	●		425	797
●			●	●		450	842
	●		●	●		475	887
●	●		●	●		500	932
		●	●	●		525	977
●		●	●	●		550	1022
	●	●	●	●		575	1067
●	●	●	●	●		600	1112

DIP S2

1	2	3	4	5	6	[°C]	[°F]
					●	625	1157
●					●	650	1202
	●				●	675	1247
●	●				●	700	1292
		●			●	725	1337
●		●			●	750	1382
	●	●			●	775	1427
●	●	●			●	800	1472
			●		●	825	1517
●			●		●	850	1562
	●		●		●	875	1607
●	●		●		●	900	1652
		●	●		●	925	1697
●		●	●		●	950	1742
	●	●	●		●	975	1787
●	●	●	●		●	1000	1832
				●	●	1025	1877
●				●	●	1050	1922
	●			●	●	1075	1967
●	●			●	●	1100	2012
		●		●	●	1125	2057
●		●		●	●	1150	2102
	●	●		●	●	1175	2147
●	●	●		●	●	1200	2192
			●	●	●	1225	2237
●			●	●	●	1250	2282
	●		●	●	●	1275	2327
●	●		●	●	●	1300	2372
		●	●	●	●	1325	2417
●		●	●	●	●	1350	2462
	●	●	●	●	●	1375	2507
●	●	●	●	●	●	1400	2552

Error diagnostic function on output

Characteristic	Error	Output	Underrange	Overrange	Sensor break / invalid setting
rising S2-9 OFF	signalize S2-10 = OFF	0 … 20 mA 4 … 20 mA 0 … 5 V 0 … 10 V	0 mA 3,8 mA 0 V 0 V	20,5 mA 20,5 mA 5,125 V 10,25 V	22 mA 22 mA 5,5 V 11 V
	not signalize S2-10 = ON	0 … 20 mA 4 … 20 mA 0 … 5 V 0 … 10 V	0 mA 4 mA 0 V 0 V	20 mA 20 mA 5 V 10 V	0 mA 4 mA 0 V 0 V
falling S2-9 ON	signalize S2-10 = OFF	20 … 0 mA 20 … 4 mA 5 … 0 V 10 … 0 V	20,5 mA 20,5 mA 5,125 V 10,25 V	0 mA 3,8 mA 0 V 0 V	22 mA 22 mA 5,5 V 11 V
	not signalize S2-10 = ON	20 … 0 mA 20 … 4 mA 5 … 0 V 10 … 0 V	20 mA 20 mA 5 V 10 V	0 mA 4 mA 0 V 0 V	0 mA 4 mA 0 V 0V