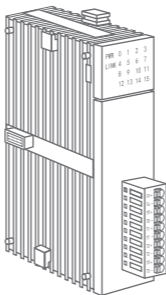




EKF



TECHNICAL MANUAL

Temperature module
PRO-Logic EKF

1 DESCRIPTION

The temperature modules for the programmable controller PRO-Logic are designed to expand the number of inputs/outputs and connect temperature sensors. The temperature modules for the programmable controller PRO-Logic comply with IEC 61131-2:2017.

2 TECHNICAL DATA

Table 1 - Power supply characteristics

Characteristics	Value
Voltage	24 V DC [20,4...28,8 V]
Power consumption	<4,8 W
Max. operating time with power failure	10 ms

Table 2 - Operation conditions

Characteristics	Value
Ambient temperature	0...55 °C
Storage temperature	-20 to +70 °C
Humidity	5-95% RH (no condensate)
Noise immunity	±2500 V AC, ±1000 V DC
Degree of protection	IP20

Table 3 - Temperature inputs

Characteristics	Value	
	RTD	TC
Sensor		
Sensor type	Pt100, Pt1000, Cu50, Cu100	S, K, E, J, B, N, R, Wre3/25, Wre5/26, [0,20] mV, [0,50] mV, [0,100] mV
Resolution	0,1 °C	0,1 °C
Input resistance	6 MOhm	6 MOhm
Indication	LED (for every channel)	

Continuation to table 3

Characteristics	Value
Response time	560 ms / 4 channels, 880 ms / 8 channels
Signal form	12 bit (0...32000)
Relative error	0,1%
Insulation	Optic coupler for every channel

3 OVERALL DIMENSIONS

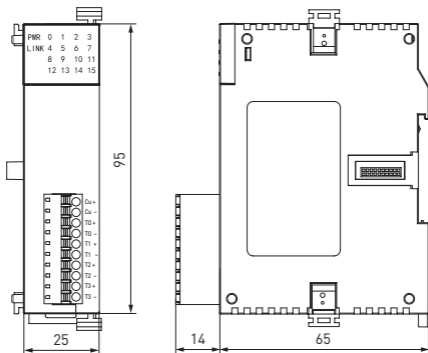


Fig. 1 - Overall dimensions of temperature module

4 MAIN ELEMENTS

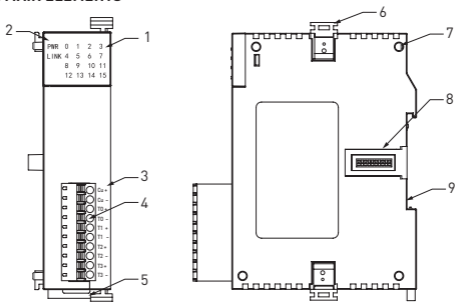


Fig. 2 - Main elements of temperature module

- 1 - Indication panel
- 2 - Operating mode LED
- 3 - Inputs/Outputs
- 4 - Removable terminal blocks
- 5 - DIN rail mounting clamp
- 6 - Expansion module lock
- 7 - Holes for expansion module/controller connection
- 8 - Port for expansion module connection
- 9 - DIN rail mounting seat

5 TEMPERATURE MODULE VERSIONS

Table 4

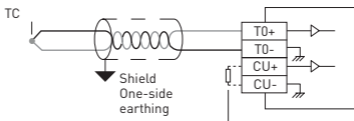
Item code	Name
EMF-T-4TC	Thermocouple input module EMF 4 PRO-Logic EKF
EMF-T-4TR	Thermal resistance input module EMF 4 PRO-Logic EKF
EMF-T-8TC	Thermocouple input module EMF 8 PRO-Logic EKF

6 DETAILS OF TEMPERATURE MODULE VERSIONS

Table 5

Item code	Temperature inputs
EMF-T-4TC	4 TC
EMF-T-4TR	4 RTD
EMF-T-8TC	8 TC

7 TEMPERATURE SENSOR CONNECTION



Temperature sensor Cu50 (to be connected if the cold junction compensation required)

Fig. 3 - Thermocouple connection

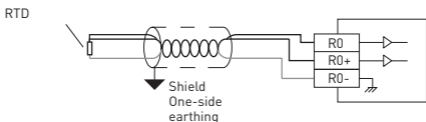


Fig. 4 - RTD connection

8 INPUT SPECIFICATION

EMF-T-4TC

Cu+	Cu-	T0+	T0-	T1+	T1-	T2+	T2-	T3+	T3-
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EMF-T-4TR

R0	R0+	R0-	R1	R1+	R1-	•	•	•	•	R2	R2+	R2-	R3	R3+	R3-	•	•	•
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EMF-T-8TC

Cu+	Cu-	T0+	T0-	T1+	T1-	T2+	T2-	T3+	T3-	T4+	T4-	T5+	T5-	T6+	T6-	T7+	T7-	•
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9 LED INDICATION

PWR: power, green. Steady ON - power ON. OFF - power OFF.

LINK: multi-status indicator (red/yellow/green). For details, refer to the table below.

Table 6

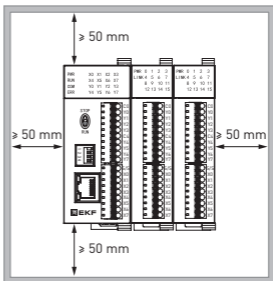
Troubleshooting	Value	LINK LED status
Normal operation. No actions required.	No link with module	OFF
	Controller has detected module, but is not communicating with it	Steady green
	Controller is communicating with module	Flashing green
Connect a higher power supply	Higher power supply is required	Flashing yellow
Correct the program and reload it to the controller	Module firmware error	Flashing red
Contact the manufacturer	Device error	Steady red

10 INSTALLATION AND CONNECTION

Install the programmable controller in the enclosed cabinet. Leave 50 mm gaps between the device and all sides of the cabinet for heat dissipation.

Mount the controller to a standard 35 mm DIN rail. Connect the programmable controller to the expansion modules concurrently via the built-in port (to the controller's right).

Power supply, input and output signals shall be connected with clamp terminals, max. wire cross-section of 1 mm².





WARNING! Follow the sequence for connecting the expansion modules to the controller! The interface modules shall be installed first in line.

11 DELIVERY SCOPE

Temperature module - 1 pc.

Terminal block - 1 or 2 pcs. (depends on version)

Technical manual - 1 pc.

12 SAFETY REQUIREMENTS

Do not operate the temperature modules with visual mechanical damage. The temperature modules shall be operated and serviced only by qualified personnel.

Failure to follow the guidelines herein may result in severe injuries and equipment damage.

13 TRANSPORTATION AND STORAGE

The temperature module can be transported by any means of enclosed transport that ensures protection of packed products from mechanical and atmospheric impacts.

The expansion modules shall be stored in the original package indoors at the ambient temperature from -20°C to $+70^{\circ}\text{C}$ and relative humidity of max. 98% at $+25^{\circ}\text{C}$.

14 DISPOSAL

Life-expired and failed products shall be disposed of in compliance with the laws and regulations in force in the territory of product sale.

To dispose of the product, send it to an authorized company for recycling in compliance with the national and local laws and regulations in force.

15 MANUFACTURER'S WARRANTY

The manufacturer guarantees the products comply with the declared characteristics, provided that the consumer follows the operation, transportation and storage conditions.

Warranty period: 3 years from the date of sale.

Shelf life: 3 years from the date of manufacture.

Service life: 10 years.

Manufacturer: for information, refer to the product package.

Importer and EKF trademark service representative:

EKF ELECTRICAL SOLUTION – FZCO, Dubai Silicon Oasis, DDP,
Building A2, Dubai, United Arab Emirates.

Importer and EKF trademark service representative on the territory of the Russian Federation: OOO «Electroresheniya», Otradnaya st., 2b bld. 9, 5th floor, 127273, Moscow, Russia. Tel.: +7 (495) 788-88-15.

Importer and EKF trademark service representative on the territory of the Republic of Kazakhstan: TOO «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

16 CERTIFICATE OF ACCEPTANCE

The temperature module has been manufactured in compliance with laws and regulations in force and has been approved for operation.

Date of manufacture:

For information, refer to the product package.

Quality control stamp



ekfgroup.com

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