"ESA Control" Ltd

DIGITAL

TEMPERATURE DATA LOGGER

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Temperature data logger (temperature data archiver) TCA4-1I

Features

The digital single-channel temperature data logger TCA4-1I is a compact microprocessor device which is used for measuring and archiving temperatures within the range of -99ºC to +650ºC. The temperature data logger has one input, which is designed for operation with a 2-wire or 3-wire temperature sensor Pt100. The temperature data logger has a built-in EEPROM memory saving the recorded current temperature each minute in real time. The memory installed in the device allows storage of 8192 recordings (with an option of 16384 recordings). The temperature data logger is designed for incorporation into an industrial network, working with RS485 a standard data exchange protocol on a two-wire line. On the rear panel of the temperature data archiver a “6P4C” telephone plug is mounted through which it communicates with a computer. The transfer of data from the archiver's EEPROM memory to the computer is carried out through the use of the software "esa_net_5.00" and driver "Driver_FT232R", which are pre-installed on the computer.

Type parameters		
Type	Supply voltage	Consumption
TCA4-1I / 220V	220VAC ±10%	16mA (4W)
TCA4-1I / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	85mA (2W)

Technical parameters

LED indicator (red), 4-digits	h=14mm (height)
Measurement range, T	-99º... +650ºC
Supply voltage, Us	220VAC / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 2W (85mA)
Inputs “in-1”, “in-2, “in-3”, for connection of temperature sensor	Pt100
Temperature measurement error	±0,5º / Ta (+10º...+30ºC)
Ambient temperature (Ta)	-20º...+50ºC
Degree of protection	IP40
Joining	Terminal
Joining the RS485 line	Connector 6P4C
Sizes	95x49x113mm
3V battery for real-time and date support (resource 10 years)	CR2032 - 3V
Non-volatile memory for the archived data.	

Schemes of connection

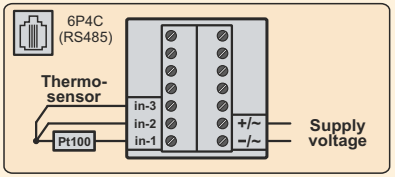


fig.1

Connecting a 3-wire Pt100 sensor

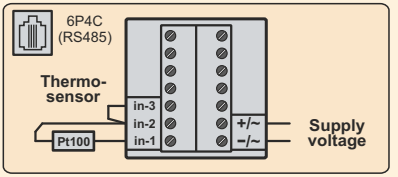


fig.2

Connecting a 2-wire Pt100 sensor

Temperature data logger (temperature data archiver) TCA4-2I

Features

The digital single-channel temperature data logger TCA4-2I is a compact microprocessor device which is used for measuring and archiving temperatures within the range of -45,0ºC to +125,0ºC. The temperature data logger has one input, which is designed for operation with a 2-wire or 3-wire temperature sensor Pt100. The temperature data logger has a built-in EEPROM memory saving the recorded current temperature each minute in real time. The memory installed in the device allows storage of 8192 recordings (with an option of 16384 recordings). The temperature data logger is designed for incorporation into an industrial network, working with RS485 a standard data exchange protocol on a two-wire line. On the rear panel of the temperature data archiver a “6P4C” telephone plug is mounted through which it communicates with a computer. The transfer of data from the archiver's EEPROM memory to the computer is carried out through the use of the software "esa_net_5.00" and driver "Driver_FT232R", which are pre-installed on the computer.

Type parameters		
Type	Supply voltage	Consumption
TCA4-2I / 220V	220VAC ±10%	16mA (4W)
TCA4-2I / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	85mA (2W)

Technical parameters

LED indicator (red), 4-digits	h=14mm (height)
Measurement range, T	-45,0º... +125,0ºC
Supply voltage, Us	220VAC / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 2W (85mA)
Inputs “in-1”, “in-2, “in-3”, for connection of temperature sensor	Pt100
Temperature measurement error	±0,2º / Ta (+10º...+30ºC)
Ambient temperature (Ta)	-20º...+50ºC
Degree of protection	IP40
Joining	Terminal
Joining the RS485 line	Connector 6P4C
Sizes	95x49x113mm
3V battery for real-time and date support (resource 10 years)	CR2032 - 3V
Non-volatile memory for the archived data.	

Schemes of connection

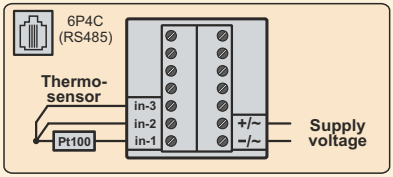


fig.1

Connecting a 3-wire Pt100 sensor

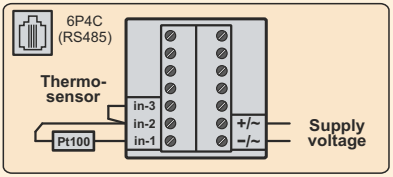


fig.2

Connecting a 2-wire Pt100 sensor

Temperature controller-archiver TCA4-1

Features

The digital single-channel temperature controller-archiver TCA4-1 is a compact microprocessor device which is used for archiving, measuring and regulating temperatures within the range of -99ºC to +650ºC. The temperature controller-archiver has one input and one output. The input of the device is designed for operation with a 2-wire or 3-wire temperature sensor Pt100, and his output is a relay contact. The temperature regulation is carried out in a simple two-position law of control (ON-OFF). The temperature controller-archiver has a built-in EEPROM memory saving the recorded current temperature and status of basic parameters (T, h, Mode) each minute in real time. The memory installed in the device allows storage of 8192 recordings (with an option of 16384 recordings). The temperature controller-archiver is designed for incorporation into an industrial network, working with RS485 a standard data exchange protocol on a two-wire line. On the rear panel of the archiver a “6P4C” telephone plug is mounted through which it communicates with a computer.

Type parameters		
Type	Supply voltage	Consumption
TCA4-1 / 220V	220VAC ±10%	16mA (4W)
TCA4-1 / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	85mA (2W)

Technical parameters

LED indicator (red), 4-digits	h=14mm (height)
Measurement range, T	-99º... +650ºC
Hysteresis, h	0º... 30ºC
Supply voltage, Us	220VAC / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 2W (85mA)
Output - relay, S1	4A / 220VAC
Inputs “in-1”, “in-2, “in-3”, for connection of temperature sensor	Pt100
Temperature measurement error	±0,5º / Ta (+10º...+30ºC)
Ambient temperature (Ta)	-20º...+50ºC
Degree of protection	IP40
Joining	Terminal
Sizes	95x49x113mm
3V battery for real-time and date support (resource 10 years)	CR2032 - 3V
Non-volatile memory for the archived data.	

Programmable parameters

Temperature of regulate (T)	-99º... +650ºC
Hysteresis (h)	0º... 30ºC
Operating mode (Mode) - heating / cooling	HEAT / CooL
Correction coefficient (d)	0º... -9,9ºC

Schemes of connection

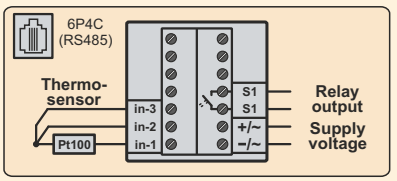


fig.1

Connecting a 3-wire Pt100 sensor

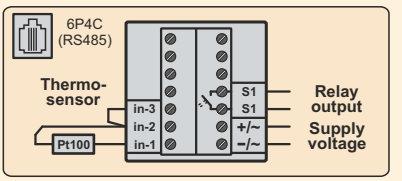


fig.2

Connecting a 2-wire Pt100 sensor

Temperature controller-archiver TCA4-2

Features

The digital single-channel temperature controller-archiver TCA4-2 is a compact microprocessor device which is used for archiving, measuring and regulating temperatures within the range of -45,0ºC to +125,0°C. The temperature controller-archiver has one input and one output. The input of the device is designed for operation with a 2-wire or 3-wire temperature sensor Pt100, and his output is a relay contact. The temperature regulation is carried out in a simple two-position law of control (ON-OFF). The temperature controller-archiver has a built-in EEPROM memory saving the recorded current temperature and status of basic parameters (T, h, Mode) each minute in real time. The memory installed in the device allows storage of 8192 recordings (with an option of 16384 recordings). The temperature controller-archiver is designed for incorporation into an industrial network, working with RS485 a standard data exchange protocol on a two-wire line. On the rear panel of the archiver a “6P4C” telephone plug is mounted through which it communicates with a computer.

Type parameters		
Type	Supply voltage	Consumption
TCA4-2 / 220V	220VAC ±10%	16mA (4W)
TCA4-2 / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	85mA (2W)

Technical parameters

LED indicator (red), 4-digits	h=14mm (height)
Measurement range, T	-45,0º... +125,0ºC
Hysteresis, h	0º... 10,0ºC
Supply voltage, Us	220VAC / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 2W (85mA)
Output - relay, S1	4A / 220VAC
Inputs “in-1”, “in-2, “in-3”, for connection of temperature sensor	Pt100
Temperature measurement error	±0,2º / Ta (+10º...+30ºC)
Ambient temperature (Ta)	-20º...+50ºC
Degree of protection	IP40
Joining	Terminal
Sizes	95x49x113mm
3V battery for real-time and date support (resource 10 years)	CR2032 - 3V
Non-volatile memory for the archived data.	

Programmable parameters

Temperature of regulate (T)	-45,0º... +125,0ºC
Hysteresis (h)	0º... 10,0ºC
Operating mode (Mode) - heating / cooling	HEAT / CooL
Correction coefficient (d)	0º... -9,9ºC

Schemes of connection

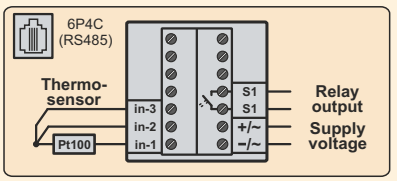


fig.1
Connecting a 3-wire Pt100 sensor

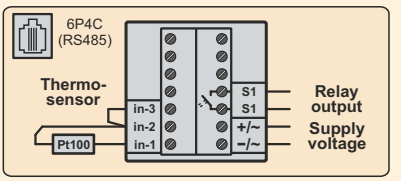
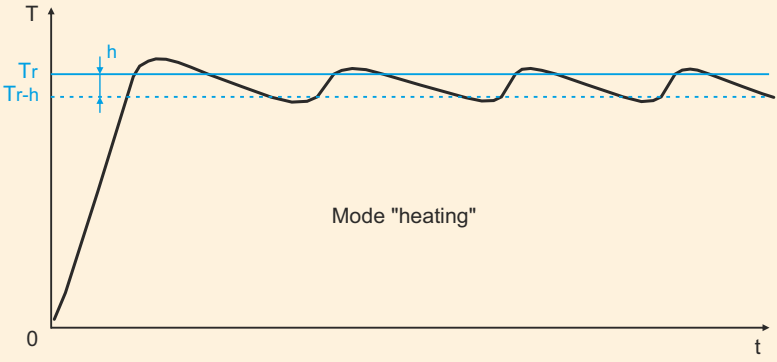


fig.2
Connecting a 2-wire Pt100 sensor



Tr - regulation temperature, h - hysteresis
T - temperature, t - time

Process a temperature regulation “on/off”
of thermocontrollers TCA4-1, TCA4-2

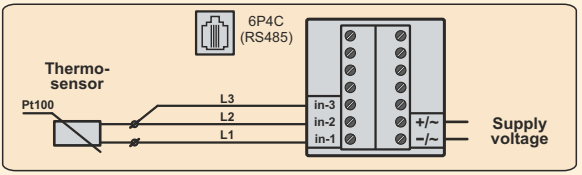


fig.3

Recommended way to extend the 2-wire Pt100 sensor with 3-wire cable ($R_{L1} = R_{L2} = R_{L3} < 150\Omega$)

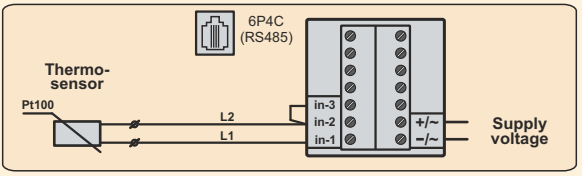


fig.4

Extension of 2-wire Pt100 sensor with 2-wire cable, ($R_{L1} = R_{L2} < 4\Omega$)

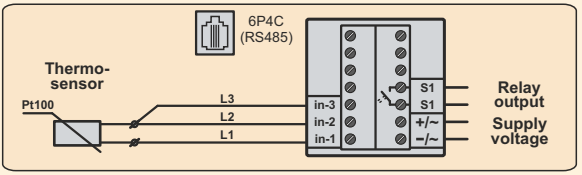


fig.3

Recommended way to extend the 2-wire Pt100 sensor with 3-wire cable ($R_{L1} = R_{L2} = R_{L3} < 150\Omega$)

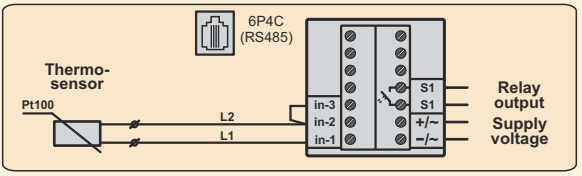
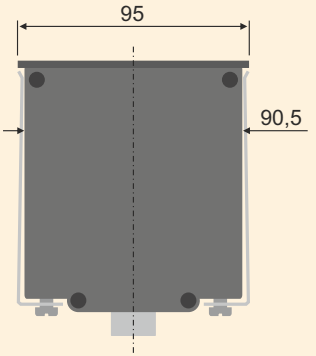
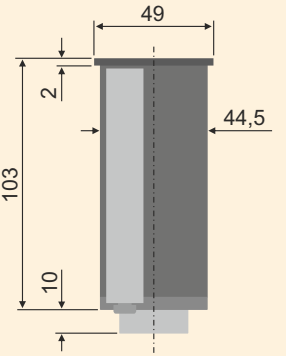
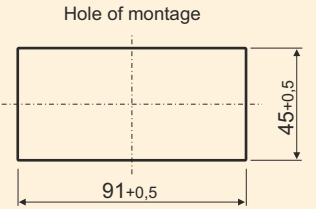


fig.4

Extension of 2-wire Pt100 sensor with 2-wire cable, ($R_{L1} = R_{L2} < 4\Omega$)


95
90,5


49
2
44,5
103
10


Hole of montage
45+0,5
91+0,5