MICROPROCESSOR CONTROLLER RE18 TYPE

CE

APPLICATION

The RE18 microprocessor is destined to a constant valued control of temperature and other physical quantities e.g. pressure, humidity, level, converted into an electrical signal.

The process value and the set point or the output signal are displayed on two displays.

This controller has two outputs enabling the on/off, three-state heating-cooling and motorized valve control.

The autotuning of PID controller ensures a satisfying quality of control.

TECHNICAL DATA

Input signals	according table 1
Basic measurement error	0.2% (for B, R and S thermocouples 0.3%)
Control algorythm	ON/OFF with hysteresis PID with autotuning
Sampling period	0.5 s
Control parameters:	
- proportional band	0...999.9%
- integral time	0...3600 s
- derivative time	0...1000 s
- cycle time	1...250 s
- dead band	0.0...99.9 units
- hysteresis	0.0...99.9 units

Control action:
- reverse (for heating)
- direct (for cooling)

Control:
- on/off reverse or direct
- three-stage heating-cooling or cooling-cooling
- three-stage stepper motor (closing-opening the valve)

Kind of set value	constant
Setpoint ramp rate during softstart	0...999.9 unit/min
Outputs:	two electromagnetic relays, contact loads 220 V, 2 A cos φ =0.4, S= 440 VA
Supply of two-wire object transducers (only in the controller with linear inputs)	24 V d.c./max 25 mA (galvanically isolated)
Rated service conditions:	
- supply voltage	90...230....254 V a.c./d.c. 20...24...40 V a.c./d.c.
- frequency of the supply	40...50...440 Hz
- ambient temperature	5...23...40°C
- relative humidity	25...85%
- external magnetic field	< 400 A/m
- working position	any
- resistance of conductors connecting the resistance thermometer with the controller	< 20 Ω
Power consumption	≤ 5 VA
Protection grade ensured by the housing acc. to EN 60529:	
- from the frontal side	IP65
- from the terminal side	IP20
Safety requirements acc.	EN 61010-1
- insulation	basic
- installation category	III
- pollution level	2
Electromagnetic compatibility:	
- immunity	EN 61000-6-2
- emission	EN 61000-6-4
Weight	200 g
External dimensions	48 x 96 x 93 mm

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Input signals, measuring ranges

Table 1

Sensor type	Designation	Range
Temperature input		
Pt100 /1.3850	Pt100	-200...850°C
Pt1000 /1.3850	PT1000	-200...850°C
Ni100/1.617	Ni100	-60...180°C
Cu100/1.426	Cu100	-50...180°C
Fe-CuNi	J	-100...1200°C
Cu-CuNi	T	-100...400°C
NiCr-NiAl	K	-100...1370°C
PtRh10-Pt	S	-50...1760°C
PtRh13-Pt	R	-50...1760°C
PtRh30-PtRh6	B	300...1800°C
NiCr-CuNi	E	-100...1000°C
NiCrSi-NiSi	N	-100...1300°C
Chromel-kopel		0...800°C
Resistance		0...400 Ω
Linear output		
Current linear	I	0...20 mA, 4...20 mA
Voltage linear	U	0...1 V, 0...10 V

ORDERING CODES

CONTROLLER RE18	X	X	XX	X

Main input:
universal for thermocouples and
resistance thermometers **1**
current linear 0/4...20 mA ....
voltage linear 0...1/10 V **2**
as ordered **9**

Supply voltage:
90...254 V a.c./d.c. **1**
20...40 V a.c./d.c. **2**

Option:
standard **00**
custom-made* **99**

Acceptance test requirements:
without a quality certificate **0**
with a quality certificate **1**
acc. customers requirements ** .... **X**

* The code symbol will be settled by the manufacturer
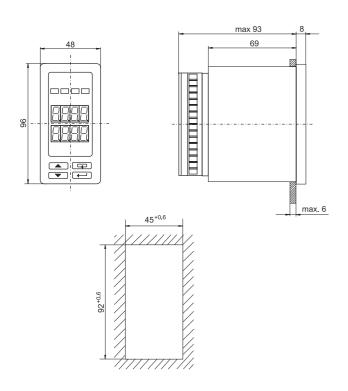** After agreeing by the manufacturer

EXAMPLE OF ORDER

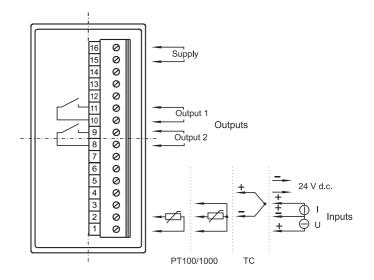The code symbol: **RE18 1 1 00 0** means:
RE18 - microprocessor controller,
1 - with universal input with 2 relays,
1 - supply voltage: 90...254 V a.c./d.c.,
00 - standard version,
0 - without a quality certificate.

EXTERNAL DIMENSIONS OF THE RE18 CONTROLLER

ELECTRICAL CONNECTIONS OF EXTERNAL CIRCUITS