Compact Controller type ER 2022

For Electronic Temperature Control

0-4.6.02-B

TECHNICAL DATA

Line voltage
110-240 V AC -15 % /+10 %, 48-63 Hz
20-30 V AC/DC -15 % /+10 %, 48-63 Hz **-optional**

Power consumption Approx. 6,6 VA
Measuring rate: -200°C/+850°C or -328°F/+1562°F

Permissible ambient temperature
Operation -10 to +50°C
Transport and storage -30 to +70°C

Degree of protection
Front IP 65 according to DIN 60529
IP20 on the back

Design
For control panel installation 96 x 96 x 65 mm
(W x H x D) panel cut out 92 x 92 mm

Installation position Arbitrary

Input Pt100, 0-10V, 2-10V, 0-20mA, 4-20mA
Output 2- or 3-point

Measuring accuracy 0.1% of the measuring range
Overvoltage Category III
Displays 18-segment LCD displays
24,8 mmx 12 mm

Alarm
Alarm functions work with a fixed limit value which corresponds to the limit value entered

Relay 2x switching capacity: 230 V AC/3A

Electric connection Conductor cross section
wire min.0,2 mm² , max 1,5 mm²

Data protection Semi - conductor memory

Weight Approx. 0,22 kg

Approvals DNV GL – on request

APPLICATIONS

The ER 2022 controller is used for constant temperature control. It is suitable for all heating and cooling control systems. The controller is primarily intended for marine installations and other industrial applications - such as cooling water and lubricating oil installations, flow temperature control etc.

DESIGN

The device is characterized by a simple, clearly structured operation supported with texts. Process values and parameters are represented by two 18-segment LCD displays. The ER 2022 type is additionally equipped with a pixel matrix LCD display for displaying text. In addition, the device have individual display elements for the switch positions of the outputs as well as for manual mode, ramp function, and timer. The device is operated using a membrane keyboard with four buttons and can be used under harsh environmental influences thanks to the high IP65 protection.

The ER2022 includes autotuning, a ramp function, a program controller, manual mode, limit value monitoring functions, digital control signals, extensive timer functions, and a service counter.

FUNCTION

The temperature input comes via a Pt100 sensor with a single sensing element. The measured value of the controlled variable is compared with the set point value and adjusted via a PI or a PID control structure.

The ER 2022 can act as either a heating controller, the actuator closes at rising temperature, or as a cooling controller, the actuator opens at

The ER 2022 permits direct reading of the actual temperature value and it is secured from failure in the measuring circuit, i.e. the controller can be set to give either a closing, an opening or remain in current position command in case of sensor short circuit or sensor break. The error message ALARM appears in the LED display.

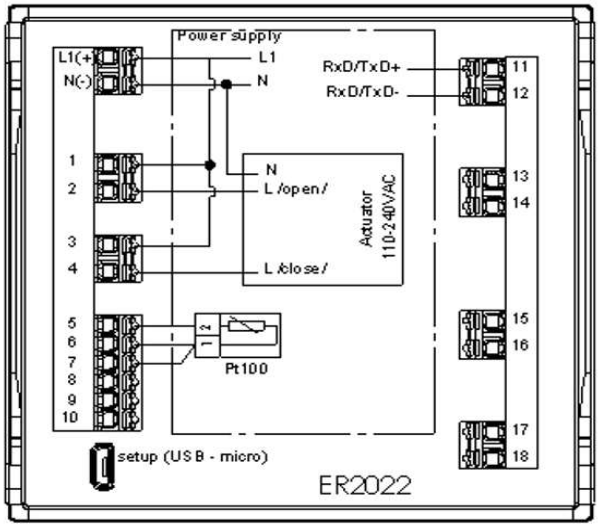
FEATURES

- PI and PID performance
- Easy operation
- For heating and cooling systems in maritime and industrial installations
- Manual and automatic changeover
- Robust self-optimization
- Alarm indicating a deviation from set point, positive or negative
- Only one sensor element Pt 100 required for control and temperature indication
- User-defined operation
- 2 or 3 positional output for controlling the actuator

COMMUNICATION

The controller is equipped with a RS 485 communication module.

WIRING DIAGRAM - 3-Point output



ER 2022 TERMINALS	CONNECTION
L1 (+) N(-)	Voltage supply 110-240VAC
1 - 2	Output 1 (relay)
3 - 4	Output 2 (relay)
5 - 6 - 7	Input/Pt100 - three-wire/
5 ; 7	Input/Pt100-two-wire/
6(+) ; 7(-)	Input 0-20mA or 4-20mA
8(+) ; 7(-)	Input 0-10V or 2-10V
11 - 12	RS485
13 - 14	ALARM

ELECTRICAL CONNECTIONS - OPTIONAL EXTERNAL UNITS

UNIT	ER 2022 TERMINALS		CAR TERMINALS	
ER 2022	Voltage supply	L	-	**CAR MOTOR**
		N	3	
	Output 1	2	10	
	Output 2	4	11	

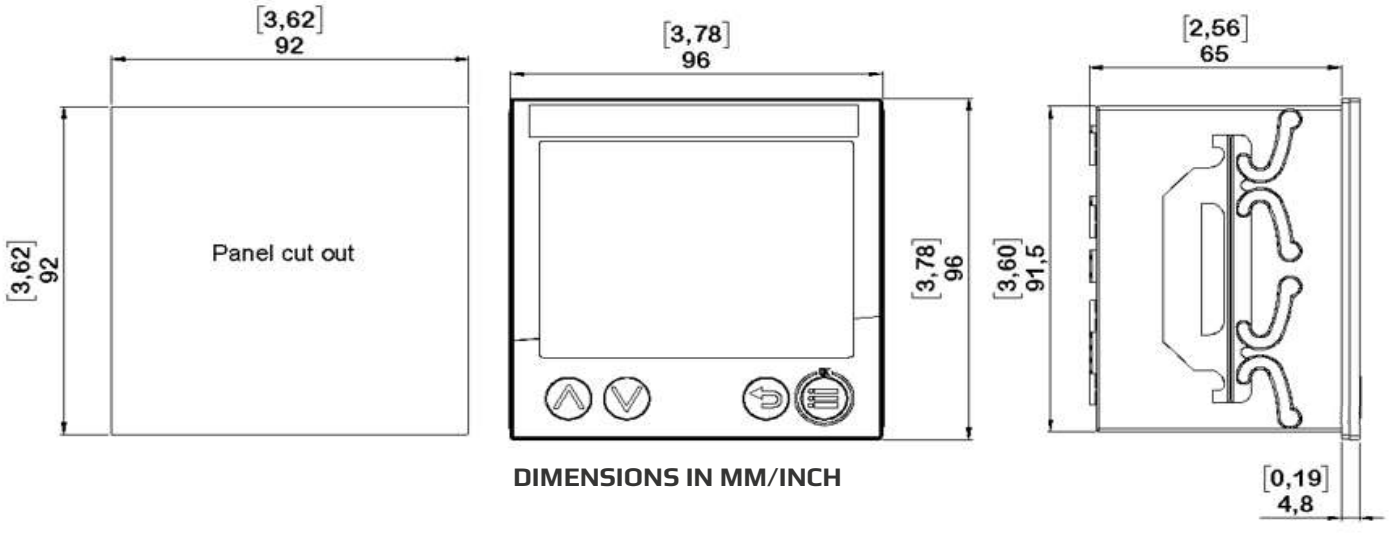
UNIT	ER 2022 TERMINALS		AVM TERMINALS	
ER 2022	Voltage supply	L	-	**AVM 234SK**
		N	N	
	Output 1	2	2a	
	Output 2	4	2b	

UNIT	ER 2022 TERMINALS		AVM TERMINALS	
ER 2022	Voltage supply	L	-	**AVM 321/322**
		N	MM/N	
	Output 1	2	.01	
	Output 2	4	.02	

UNIT	ER 2022 TERMINALS		AVF TERMINALS	
ER 2022	Voltage supply	L	21	**AVF 234SK**
		N	N	
	Output 1	2	2a	
	Output 2	4	2b	

UNIT	ER 2022 TERMINALS		CAL TERMINALS	
ER 2022	Voltage supply	L	X5-2	**CAL M301/M302**
		N	X5-1 and X1-2	
	Output 1	2	X1-1	
	Output 2	4	X1-3	

* AVM321/322/321S/322S and AVM234: Please refer to instruction depending on the type



DIMENSIONS IN MM/INCH