Compact Controller type ER 2025S (Smart) & ER 2025SA (Smart Analog)

For Electronic Temperature Control

TECHNICAL DATA

Line voltage
110 - 230V AC -15% /+10%, 48-63 Hz
24V AC/DC -15% /+10%, 48-63 Hz - **optional**

Power consumption Approx. 6,8 VA
Measuring rate: -200°C/+850°C or -328°F/+1562°F

Permissible ambient temperature
Ambient -10 to +55°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 115 mm
(W x H x D) panel cut out 92 x 92 mm

Installation position Horizontal

Set-point values 4 avaliable

ER 2025S - 3-Point
Input: Pt100, 0-10V, 2-10V, 0-20mA, 4-20mA
Output: 3-point and 2 x 4-20mA

ER 2025SA - Analogue
Analoge Input: Pt100, 0-10V, 2-10V, 0-20mA, 4-20mA
Analoge output: 2 x 4-20mA

Measuring accurancy 0.1% of the measuring range
Over voltage Category II

Displays 18-segment LCD displays
24,8 x 12mm

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

Relay (N/O contact) Switching capacity: 230V AC/3A
Relay (changeover) Switching capacity: 230V AC/8A

Electric connection Conductor cross section
wire min 0,2 mm² - max 1.5mm²
Data protection Semi - conductor memory

Weight Approx. 0,41 kg

Approvals DNV GL - on request

APPLICATIONS

The ER 2025S and ER 2025SA controllers are used for constant temperature control. They are 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 and where it is needed to use remote set point function.

DESIGN

The device is characterized by a simple, clearly structured operation supported with texts. Process values and parameters are represented by two 30-segment LCD displays. The ER 2025S and ER 2025SA types are 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. 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 ER 2025S and ER 2025SA includes, a program controller, manual mode, limit value monitoring functions, digital control signals.

FUNCTION

The temperature input comes via a Pt100 sensor with a single sensing element or from other devices/Remote set point. 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 2025S & ER 2025SA can act as either heating or cooling con-troller, the actuator closes at rising temperature, or as a cooling controller, the actuator opens at rising temperature. The controller 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 stay in current position command in case of sensor short circuit or sensor break. The error message appears in the LED display.

FEATURES

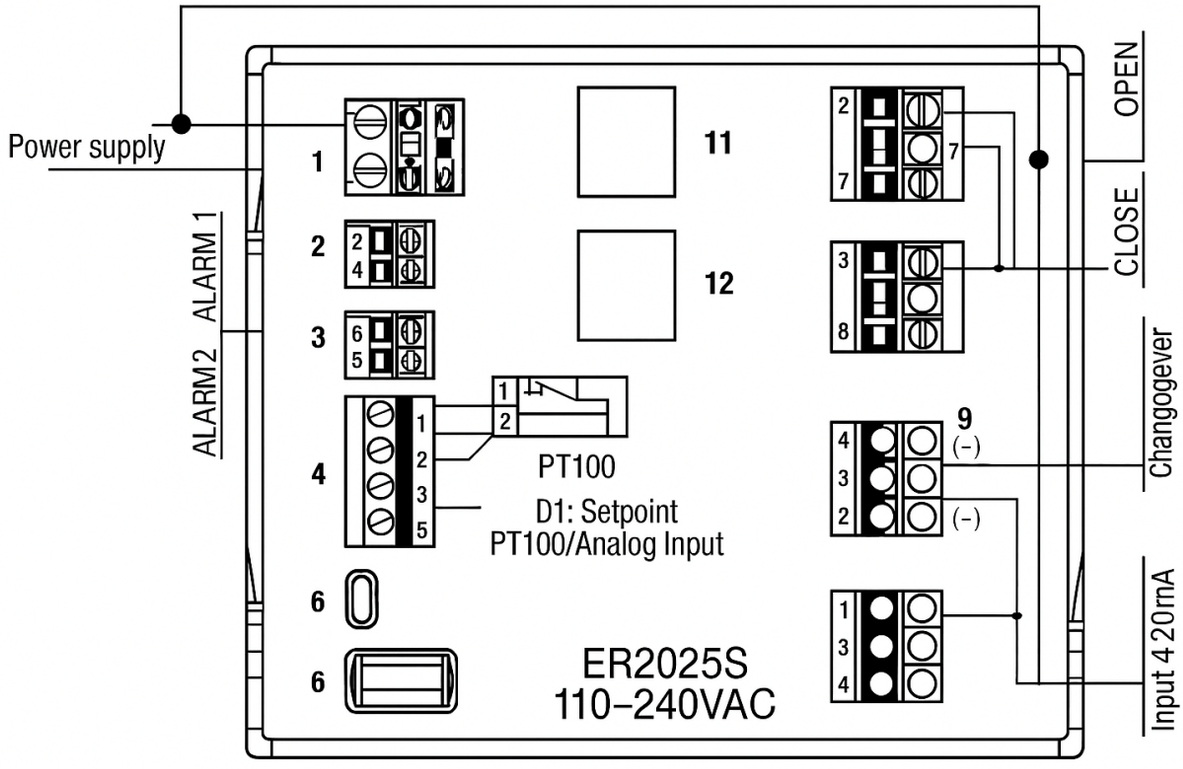
- PI and PID performance
- Easy operation
- For heating and cooling systems in maritime and industrial installations
- Manual and automatic changeover
- Robust self-optimization
- Changeover from remote analog set point to local set point Pt100 and vice versa
- Alarm indication a deviation from det point, positive or negative
- Only one sensor element Pt 100 required for conrol and temperature indication
- User-defined operation
- 3 positional output for controlling the actuator

COMMUNICATION

The controller is equipped with a RS 485, PROFINET communication module or ENTHERNETcommication module - on request.

Subject to change without notice.

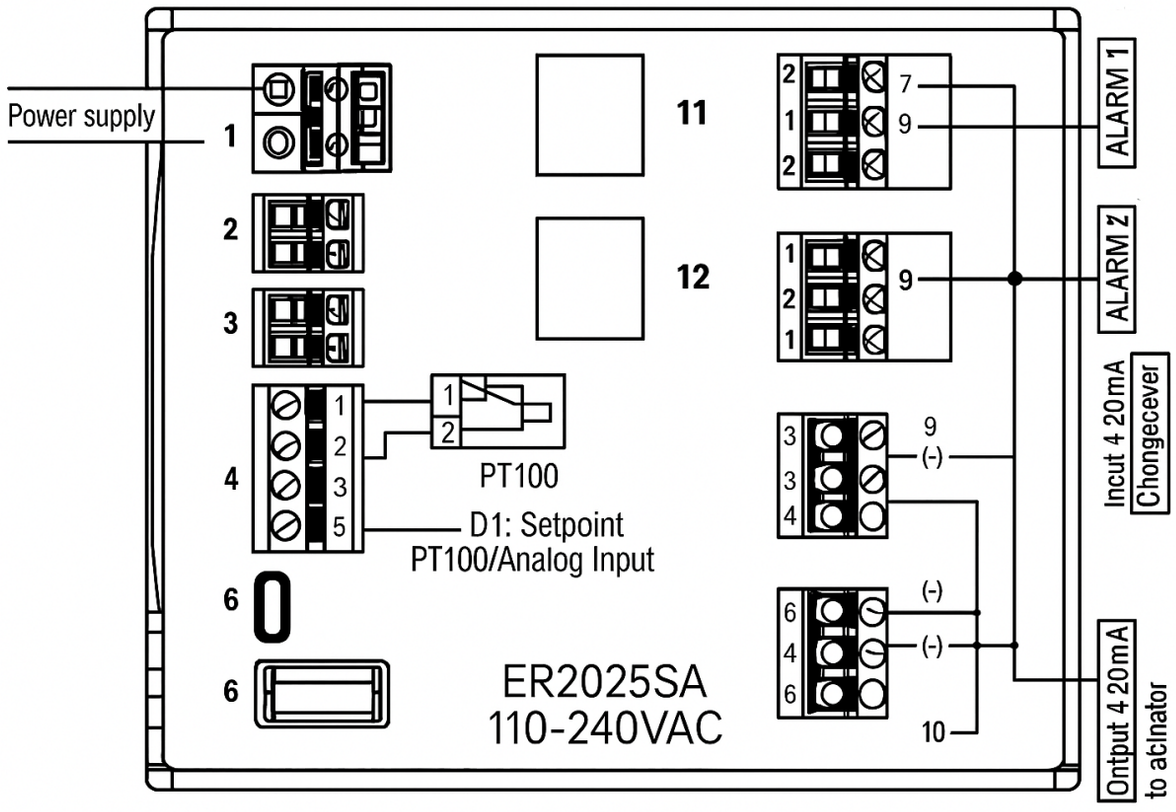
WIRING DIAGRAM - ER 2025S - 3-POINT OUTPUT



	CONNECTION	DESCRIPTION
TERMINAL Block 1		
L1(+) and N(-)	Voltage supply 110-240VAC	
TERMINAL Block 2		
1	ALARM	
2		
TERMINAL Block 3		
1	ALARM	
2		
TERMINAL Block 4		
1	INPUT/Pt100-three -wire/white	
2	INPUT/Pt100-two -wire/red	
3	INPUT/Pt100-two- -wire/red	
5	DI-1 - Digital setpoint settings	Pt100/analog 4-20mA
6		

	CONNECTION	DESCRIPTION
TERMINAL Block 7		
1	Relays 230V/8A - OUTPUT	
3		3 to actuator OPEN
TERMINAL Block 8		
1	Relays 230V/8A - OUTPUT	
3		3 to actuator CLOSE
TERMINAL Block 9		
2	Input signal 4-20mA(+)	Setpoint controller signal 4mA - 65°C/20 mA - 95°C
3	Input signal 4-20mA(-)	

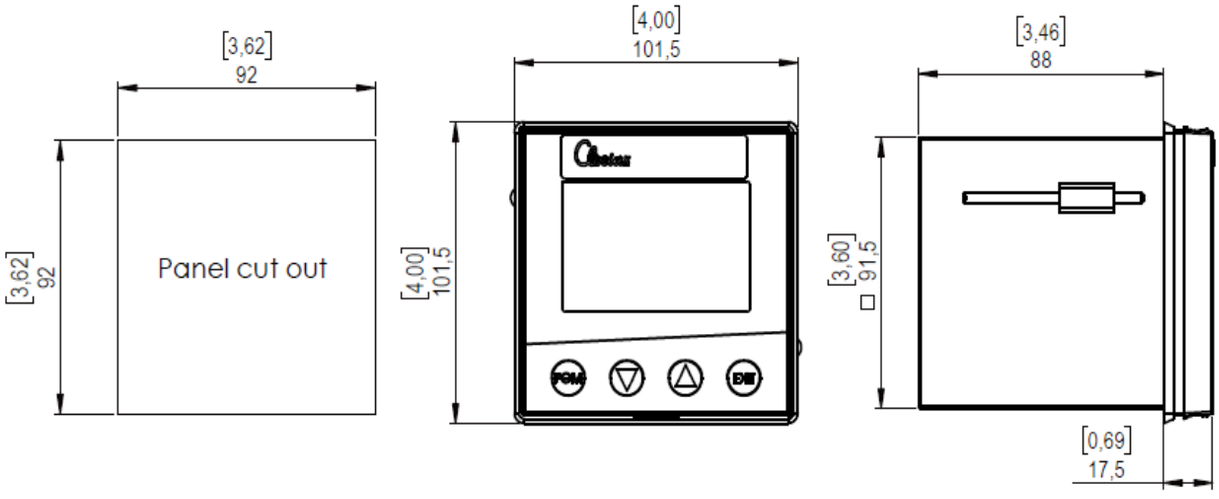
WIRING DIAGRAM - ER 2025SA- ANALOG



	CONNECTION	DESCRIPTION
TERMINAL Block 1		
L1(+) and N(-)	Voltage supply 110-240VAC	
TERMINAL Block 2		
3	ALARM	
2		
TERMINAL Block 3		
3	ALARM	
2		

	CONNECTION	DESCRIPTION
TERMINAL Block 4		
1	INPUT/Pt100-three -wire/white	
2	INPUT/Pt100-two -wire/red	
3	INPUT/Pt100-two -wire/red	
5	DI-1 - Display setpoint settings	Pt100/analog 4-20mA
6		
TERMINAL Block 9		
2	Input signal 4-20mA(+)	Setpoint controller signal 4mA - 65°C/20 mA - 95°C
3	Input signal 4-20mA(-)	
TERMINAL Block 10		
2	Input signal 4-20mA(+)	To actuator
3	Input signal 4-20mA(-)	

DIMENSIONS IN MM/INCH



CAUTION:
Use always shielded cabels.

It is recommended to use the cable end clamps when installing wire.

ELECTRIC CONNECTION:
At the back, via screw terminals, conductor cross-section up to 2.5mm² With core ferrules (lenght: 10mm)