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 mm^2 - max 1.5mm^2
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 function as either heating or cooling controllers 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.

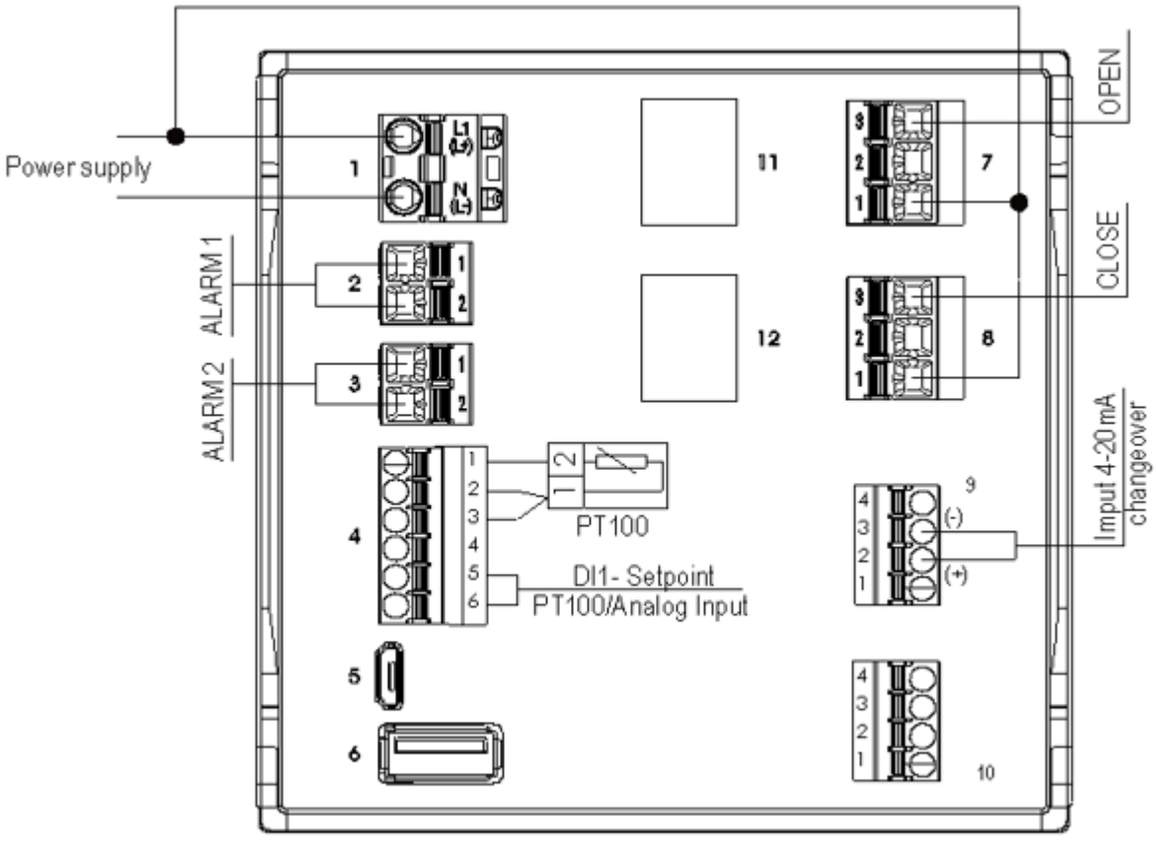
FEATURES

- 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 ENTHERNET commication module - on request.

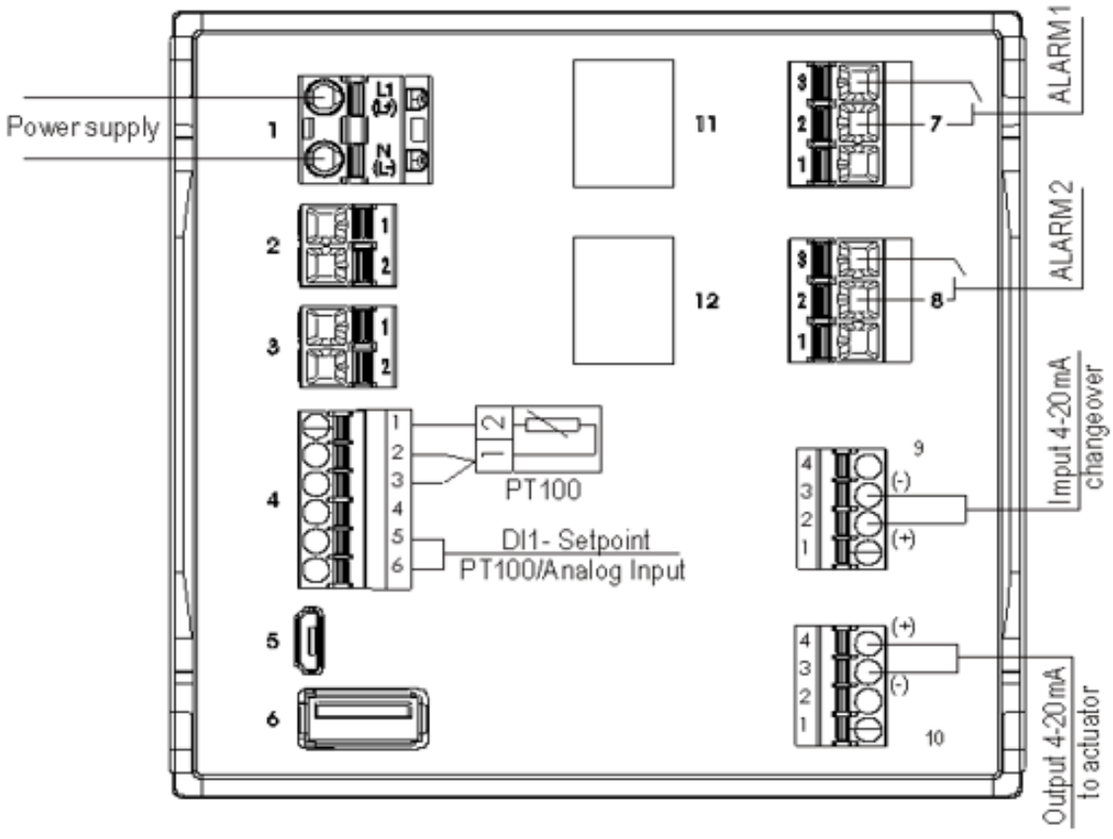
WIRING DIAGRAM - ER 2025S - 3-POINT OUTPUT



TERMINAL	CONNECTION	DESCRIPTION
Block 1		
L1(+) and N(-)	Voltage supply 110-240VAC 24ACDC-Option	
Block 2		
1	ALARM	
2		
Block 3		
1	ALARM	
2		
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 setings	Pt100/analog 4-20mA
6		

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

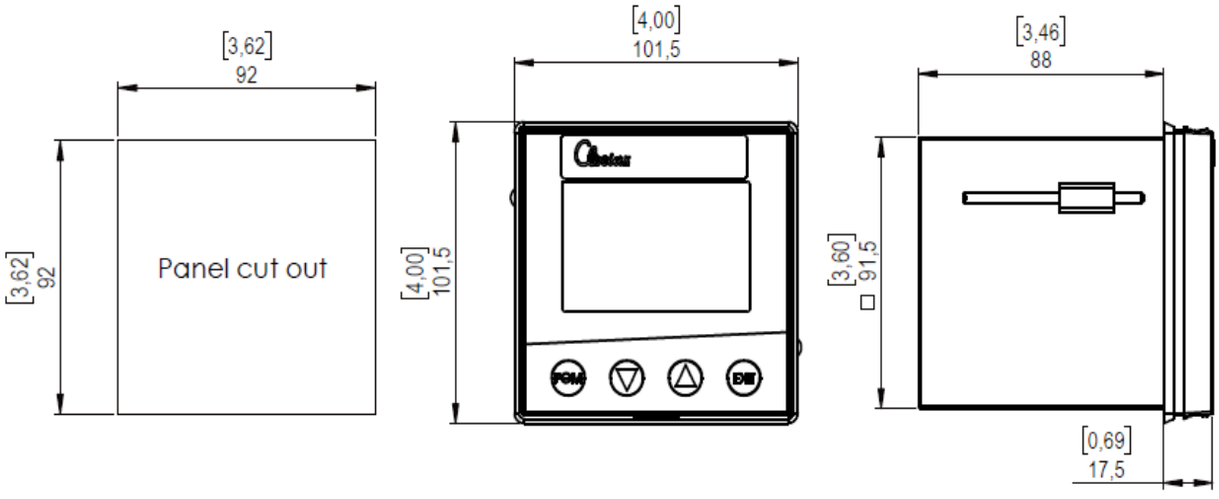
WIRING DIAGRAM - ER 2025SA- ANALOG



TERMINAL	CONNECTION	DESCRIPTION
Block 1		
L1(+) and N(-)	Voltage supply 110-240VAC 24ACDC-Option	
Block 7		
3	ALARM	
2		
Block 8		
3	ALARM	
2		

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