

Characteristics

- PI and PID performance
- Easy operation
- For heating and cooling systems in maritime and industrial installations
- Manual- / 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 level
- 2- or 3-positional output for controlling the actuator

Applications

The ER 2000 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 ER 2000 controller is designed for panel mounting.

For easy start-up it has optimization for automatic determination of favourable control parameters. The optimization starts when changing the set point or when switching over from manual mode to automatic control. The optimization can be disregarded.

For easy operation it has three keys - two for scrolling or changing values and an enter key. Two digital displays show the process variable and the set point. 3 LEDs indicate actuator opens, actuator closes and alarm.

The controller can be switched from auto mode to manual mode. In manual mode the actuator can be opened, closed or stopped in a certain position.

Three different alarm settings are possible:

A: Alarm at a deviation from the set point SP

B: Alarm at a fixed limit value

C: Alarm at leaving a band around the set point SP.

It can operate either as a three position or as a two position controller and has adjustable proportional band, integral action time and derivative action time.

Function

The temperature input comes via a Pt 100 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 2000 can act as either a heating controller, the actuator closes at rising temperature, or as a cooling controller, the actuator opens at rising temperature. The ER 2000 permits direct reading of the actual temperature value (PV) 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 Err appears in the LED display PV.

Communication

The controller is equipped with a RS 485 communication module.

Technical Data

Line voltage
230 V AC }
115 V AC* } -15 % / +10 %, 50 / 60 Hz
24 V AC* }
*- optional (please specify)

Power consumption approx. 7 VA

Weight approx. 1 kg

Permissible ambient temperature
- Operation 0 to 50°C
- Transport and storage -25 to + 65°C

Degree of protection
Front: IP 65 according to DIN 40050
Terminals: IP00

Design
For control panel installation
96 x 96 x 135 mm (W x H x D)
panel cut out 92 x 92 mm

Installation position arbitrary

Input
Pt100, 0°C to 300°C
Connection in three - wire system
Option: 4-20 mA



Output
2- or 3-point
Option: 4-20 mA

Measuring accuracy
0.1% of the measuring range

Displays
Two 4 - digit 7 segment displays,
LED, red,
character height = 13 mm

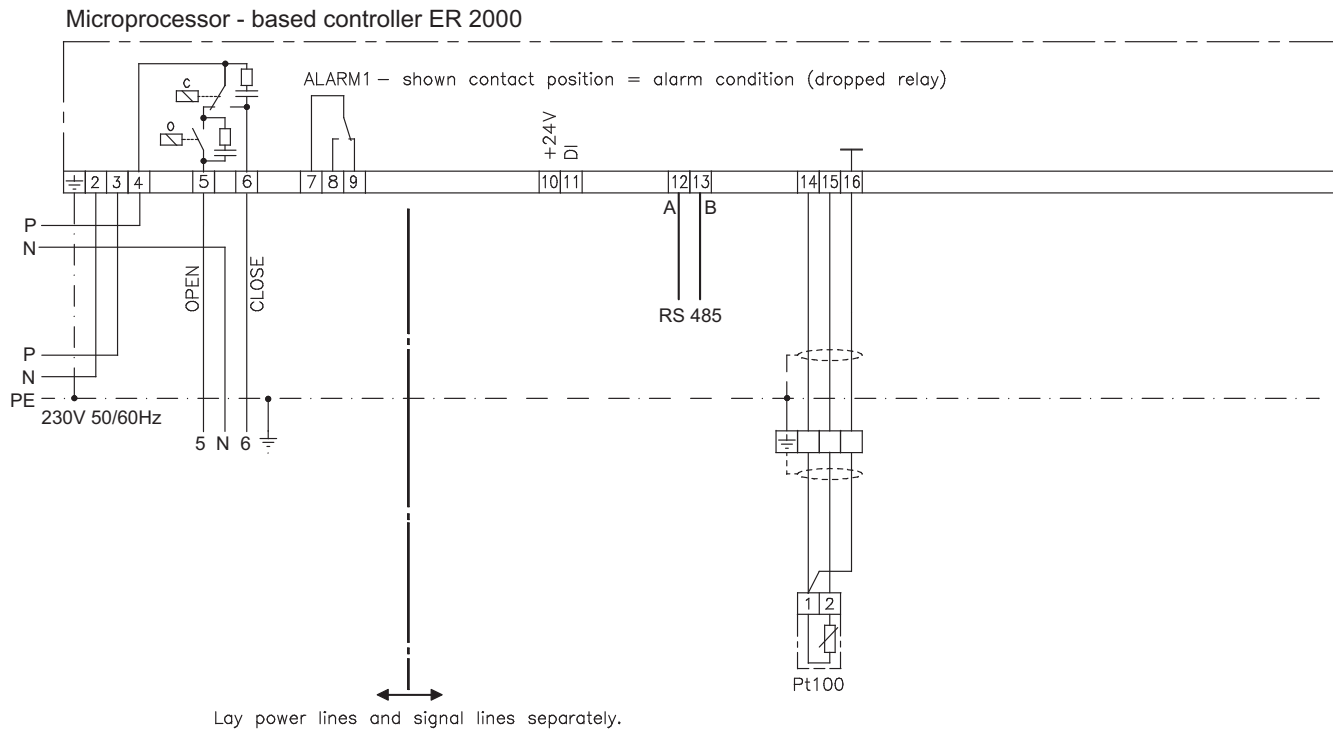
Alarm
Alarm type A, B, C;
working contact normally closed
circuit principle

Relay
Switching capacity: 250 V AC / 3 A
Spark quenching element

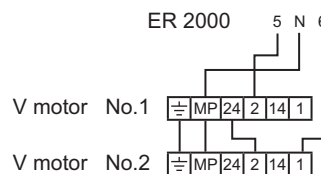
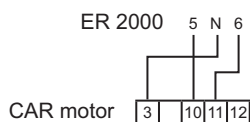
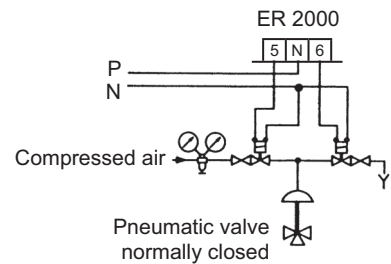
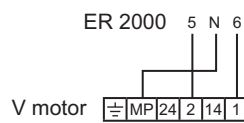
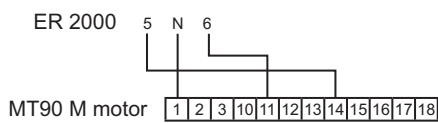
Data protection
Semi - conductor memory

Subject to changes without notice.

Wiring diagram

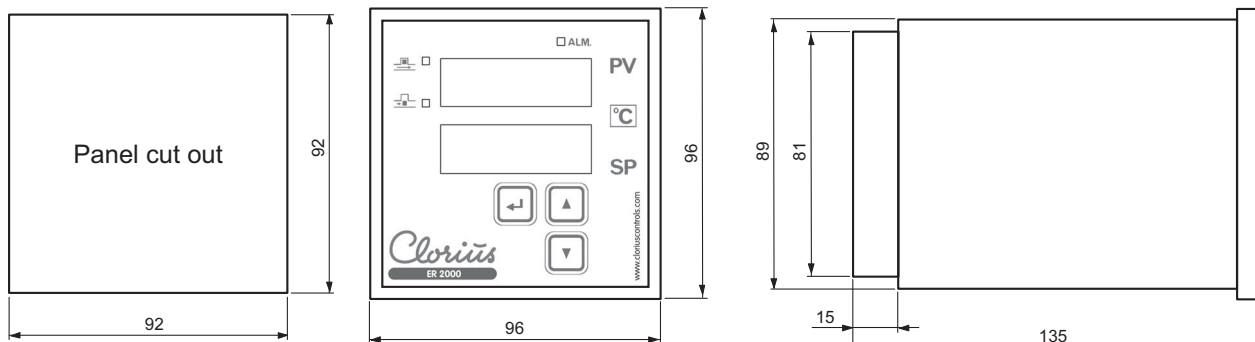


Electrical Connections - Optional external units



Cooling: Remember to set controller into cooling mode.

Dimensions in mm



Subject to changes without notice.