The RTD transducer type MC32-12Ex0-LRP is designed to evaluate temperature dependent changes from PT100 RTDs and to convert them into standard signals. A four digit display on the front of the device indicates the actual temperature, independent of the preset range.

The input circuit of the transducer can process signals from 2-, 3-, or 4-wire PT100 RTDs; the input device type is selected during programming.

Line compensation for 2-wire circuits can be done through the transducer. To do this, a 100Ω resistor must be connected prior to parameter adjustment to close the input circuit of the instrument.

The current signal output (0/4...20 mA) and the voltage signal output (0...10 V) may be used at the same time. Two relay outputs and npn short-circuit protected transistor outputs are available for setpoint indication and alarm indication.

When the temperature falls between the high and low setpoints, the preset outputs are energised (relay contacts closed, transistor conducting). When the temperature falls below the low preset value or exceeds the high preset value, the preset outputs are de-activated (output relay de-energised, transistor not conducting). This function can be reversed during programming.
The input circuit is monitored for wire-break and short-circuit condition. The alarm outputs will de-activate during a malfunction (relay contacts open, transistor not conducting), an "Err" (Error) message will flash on the four digit display and the green Power LED turns red.

The current output during a malfunction (wire-break, short-circuit condition) can be programmed to automatically either go to 0 mA or 22 mA, or to follow the direction of the input signal (0 mA for wire-break, 22 mA for short-circuit condition).

All functions are programmed by two toggle switches on the front panel, or with personal computer (PC). The following parameters can be preselected:
- Low value of analogue range
- High value of analogue range
- Low setpoint
- High setpoint
- Current output: 0/4...20 mA
- Signal flow direction of preset output
- Switching hysteresis (1...30 % of preset output)
- Analogue output characteristics during a malfunction: linear/0 mA/22 mA

The preset output relay can be programmed:
- to energise if the temperature is within the preset range
- to de-energise if the temperature is within the preset range

The four digit LED character display on the front of the device indicates which parameter has been selected and shows the predefined parameter value.

The temperature for the full input range is adjustable from -100 °C...+650 °C (the smallest measuring span is 20 K).