# MR-16

KONGSBERG

# Alarm Unit

## Features

- Easy to install, mounted directly in a rail
- Available in 7 main versions
- Can receive a 1 to 5 V, 1 to 5 mA and 4 to 20 mA signal as well as a signal from a Pt100 or a Pt1000 element

## Description

### Application and general description

The MR-16 Alarm Unit is especially suited as a simple-to-use controller/alarm unit with an analogue input and digital output. It is the perfect controller for fans, pumps and valves in the process, ventilation/sanitation and shipping industries.

The MR-16 Alarm Unit has a wide range of applicability, is easy to install and very small. The MR-16 Alarm Unit can receive signals from a Pt100 temperature element, a 1 to 5 V signal, and a 1 to 5 mA or 4 to 20 mA current signal. The MR-16 Alarm Unit is built into a terminal block housing so that it can be mounted directly in the rail (type TS-15, TS-32 or TS-35 (DIN 46277)). The MR-16 Alarm Unit is available in seven main versions with four types of each main version. See table of the types below.

When a Pt100 element is connected to the MR-16 Alarm Unit, it is possible to compensate for sensor cable resistance by using a potentiometer. When the temperature or voltage/current exceeds the set alarm limit, the relay will operate and a LED located on top of the alarm unit will illuminate. A time delay of approximately 1 second from the moment the alarm limit is reached and the relay is operated is designed into the unit. The outputs from the alarm unit are a relay (change-over contact) and a voltage output of 1 to 5 V. If two or more alarm limits are needed, the 1 to 5 V signal can be taken from the master unit and put into a MR-16 Slave Unit so that high and low alarms can be combined in one and the same sensor.

**Main versions of the MR-16 Alarm Unit**

| Type | Input signal | Alarm range | Range for 1 to 5V Output signal |
|---|---|---|---|
| The MR-16 / B ☐ ☐ | Pt100 | 0 to 255 °C | 0 to 160 °C |
| The MR-16 / D ☐ ☐ | Pt100 | -50 to +205 °C | -50 to +150 °C |
| The MR-16 / F ☐ ☐ | 1 to 5 Volt | 0 to 160 °C | 0 to 160 °C |
| The MR-16 / G ☐ ☐ | 1 to 5 Volt | 0 to 100 % | 0 to 100 % |
| The MR-16 / K ☐ ☐ | 1 to 5 Volt | -50 to +150 °C | -50 to +150 °C |
| The MR-16 / H ☐ ☐ | 1 to 5 mA | 0 to 100 % | 0 to 100 % |
| The MR-16 / I ☐ ☐ | 4 to 20 mA | 0 to 100 % | 0 to 100 % |
| The MR-16 / L ☐ ☐ | Pt1000 | 0 to 255 °C | 0 to 160 °C |
| The MR-16 / P ☐ ☐ | Pt1000 | 0 to 255 °C | 0 to 250 °C |

Type (in/out signal)

RELAY FUNCTION:
N: Operated relay in normal conditions
D: Non-operated relay in normal conditions

ALARM FUNCTION:
H: High alarm
L: Low alarm

## Technical specifications

| | |
|---|---|
| Operating voltage: | 24 VDC (19 to 32 V), 40 mA |
| Measuring range: | See separate table |
| Sensor type/Input signal: | Pt100 Ω/0 °C (Pt1000 Ω/0 °C) resistance sensor type. 2-way conductor connection 8 Ω potentiometer for adjusting the cable resistance. Current input 1 to 5 mA, 4 to 20 mA. Voltage input 1 to 5 V |
| Set-point solution: | 1 °C in the -50 to +255 °C range. 1 % in the 0 to 100 % range |
| Accuracy of alarm limit: | ±1 % of the full range. Sensor deviation in addition |
| Hysteresis: | Approximately 1 °C or approximately 0.4 % of the full range |
| Alarm contacts: | 1 free changeover contact 120 VAC / 0.5 A or 32 VDC / 0.5 A |
| Analogue output signal: | 1 to 5 V. Maximum 10 mA |
| Ambient temperature: | 0 to 60 °C |
| Connections: | Terminal block, maximum cross section 2.5 $mm^2$, in the upper and lower edge of the thermostat |
| Weight: | 80 g |

## Drawings

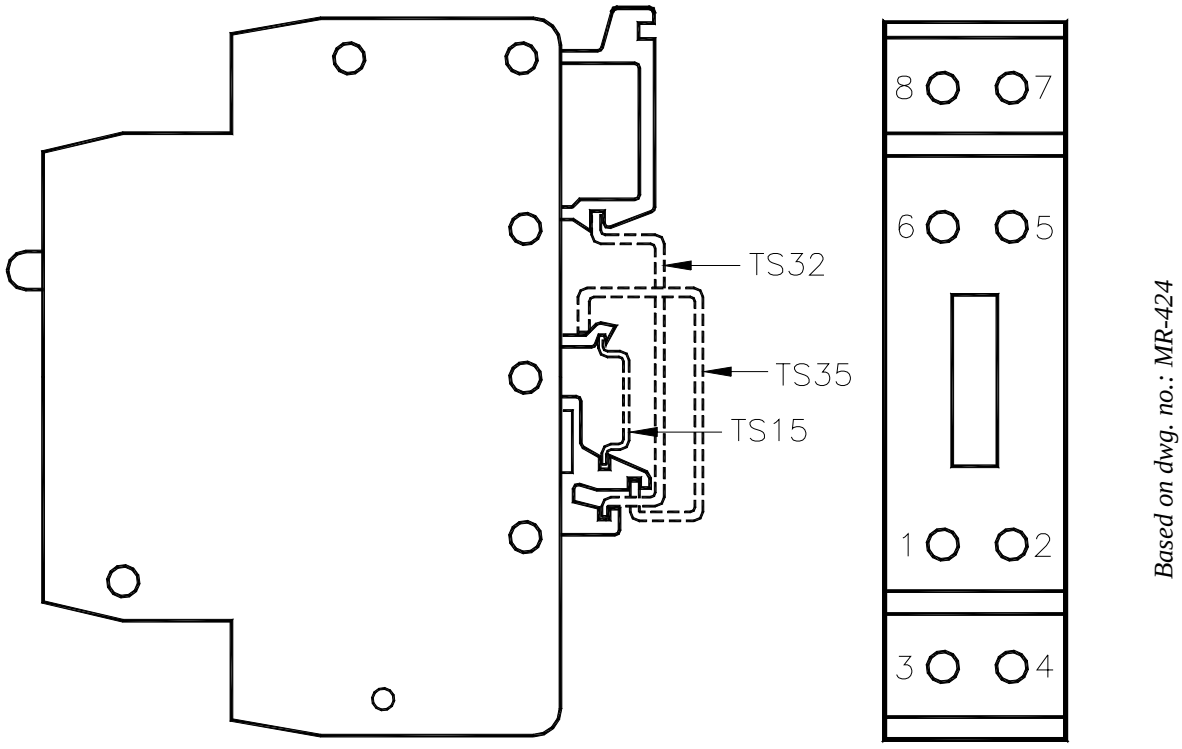


*Fig. 1: The MR-16 Alarm Unit*

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