

# PRODUCT-INFO



measuring - controlling - regulating  
all from a single source

## FAULT WARNING SYSTEM



## Functional description

The fault warning systems of the SM... series are used to monitor small and medium-sized industrial plants. Not least because of their universal applicability, these fault indicators have already proven themselves many times over in practice.

In the past, individual indicator lights for faults or the operational readiness of system components had to be installed and wired in control panels, etc., which was a complex process. This was not only very time-consuming and costly, but also required a lot of space on the control panel.

Welba's fault warning systems offer enormous advantages in all areas. In addition to space-saving monitoring of up to ten external system components simultaneously, the installation of individual indicator lights is no longer necessary.

Furthermore, all connected fault inputs are combined with a collective fault contact. This allows incoming fault messages to be forwarded to a higher-level control centre.

Different variants are available for different areas of application.

### Functional principle

Up to ten external system components can be monitored simultaneously in a simple and clear manner. A green power supply LED continuously indicates that the device is ready for operation.

In the event of a fault message, the error is indicated by the corresponding LED and a potential-free collective fault contact is switched.

Depending on the device variant, the message disappears automatically once the fault has been rectified (AUTO reset function) or an error memory stores the message until it is acknowledged with the RESET button.

### Collective fault contact

If the fault warning system receives a fault signal, the 'Fault' LED lights up and the potential-free collective fault contact, which is always energised in standby mode, drops out.

This relay can be used to control additional signalling devices such as acoustic signal transmitters or other control functions.

### Optocoupler inputs

To ensure maximum operational reliability, incoming interference signals are transmitted to the internal electronics of the interference detector via optocoupler inputs.

### LED test

To check that the fault indicator is working properly, a lamp test can be carried out at any time at the touch of a button, causing all LEDs to light up simultaneously.

### Version -L (optional)

Input signals are processed LOW-ACTIVE, which means that voltage must be present at the fault inputs during operation. An error is then displayed when the voltage drops.

### Version -5S (optional)

Incoming faults (whether HIGH-ACTIV or LOW-ACTIV) are reported with a delay of the specified number of seconds.

This ensures that brief disturbances are ignored.

# Fault warning system SM-10..



48 x 96 mm

## Built-in fault warning system with LED fault display

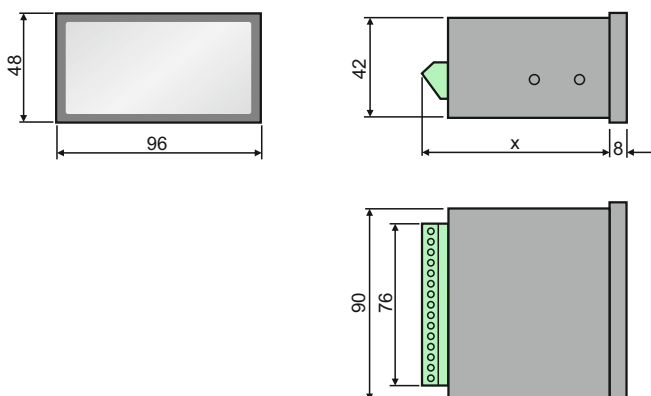
Designed for monitoring the function of technical control and regulation systems.

- 10 independent fault inputs
- Collective fault signal contact
- Various function variants
- Option "-L" with wire break protection (see page 3)
- Option "-5S" with time-delayed fault signal (see page 3)

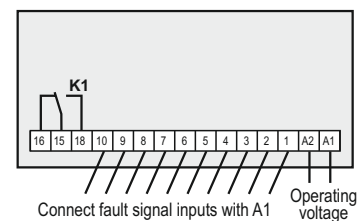
### Technical data

Operating voltage	230V AC +/-10%, 50/60 Hz 115V AC +/-10%, 50/60 Hz 24V AC +/-10%, 50/60 Hz 24V DC 24V UC
Fault signal inputs	10 (via optocoupler)
Display	5 mm LED per fault input + mains control LED + collective fault LED
Relay contact	1 changeover contact potential-free
Max. switching current	8 A AC1
Max. switching voltage	250 V ~
Housing	- Front dimensions: 48 x 96 mm - Panel cut-out: 42 x 90 mm - Installation depth: 88 mm
Protection class	IP 64 (front of housing)
Connection	pluggable terminal strips
Ambient temperature	- Operating temperature 0° to +50°C - Storage temperature -20° to +70°C - Max. humidity 75% (no condensation)

### Dimensions



### Connection

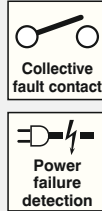


# Fault warning system SM-10..

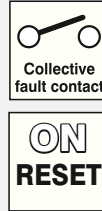
## Overview of variants



SM-10z (L)\*



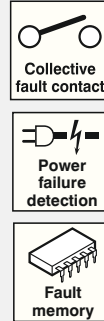
SM-10b (L)\*



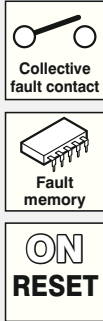
SM-10m (L)\*



SM-10v (L)\*



SM-10q (L)\*



\* In the SM-10m-L version, the input signals are processed LOW-ACTIVE (wire break protection).

### Collective fault contact

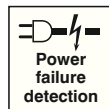


In addition to the visual fault indication via the LEDs, all fault warning systems of the SM.. series have a collective fault contact.

This relay can be used to switch additional alarm indicators or perform other switching processes.

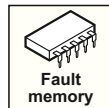
The collective fault contact operates according to the closed-circuit current principle, i.e. the contact is closed in the OK state and opens when a fault occurs.

### Power failure detection



In the event of a power failure, the collective fault contact drops out and reports the fault to the processing device.

### Fault memory



For some system components, such as cooling units, it can be very important to document a fault or interruption in operation even if the fault has been rectified automatically.

In fault warning systems with integrated fault memory, the LED of the relevant fault input remains lit until it is reset using the RESET button.

If the LED of the collective fault contact is lit on its own, this indicates that a power failure has occurred.

### AUTO reset



On devices with an AUTO reset function, fault messages caused by power failures or fault messages are automatically reset as soon as the fault no longer exists or the power supply is restored.

It is not necessary to acknowledge the fault using the RESET button. The collective fault contact automatically re-engages.

### Power-on reset

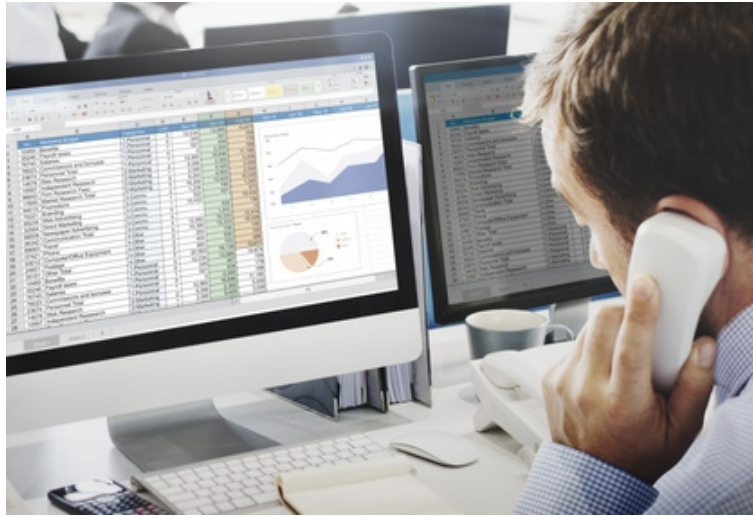


When the power is switched on or after a power failure, it is not necessary to acknowledge the fault using the RESET button.

An fault message is automatically reset as soon as the power is restored.

# Fault warning system SM-10..

## Customized Development



The development of solutions tailored to solve our clients' specific problems is one of Welba's major strengths. Here we can offer extensive experience, as well as excellent references.

On the basis of many previous development projects we are in a position to devise a solution to meet your specific needs. Nor is our know-how not restricted to temperature measurement technology; we can also develop solutions in completely different areas of measurement and regulation technology. We can often achieve the necessary simply by modifying our standard products.

In any event, we will always recommend the best solution for you.

### A full service

In many cases we offer more than just development work.

At Welba we also understand service to include the development of concepts for the use of the new product by your own customers, the design and production of frontal foils or even housings, or the provision of operating instructions with your own corporate design.

### Not always major developments...

For many of our clients we also develop and manufacture simple electronic systems for straightforward applications.

