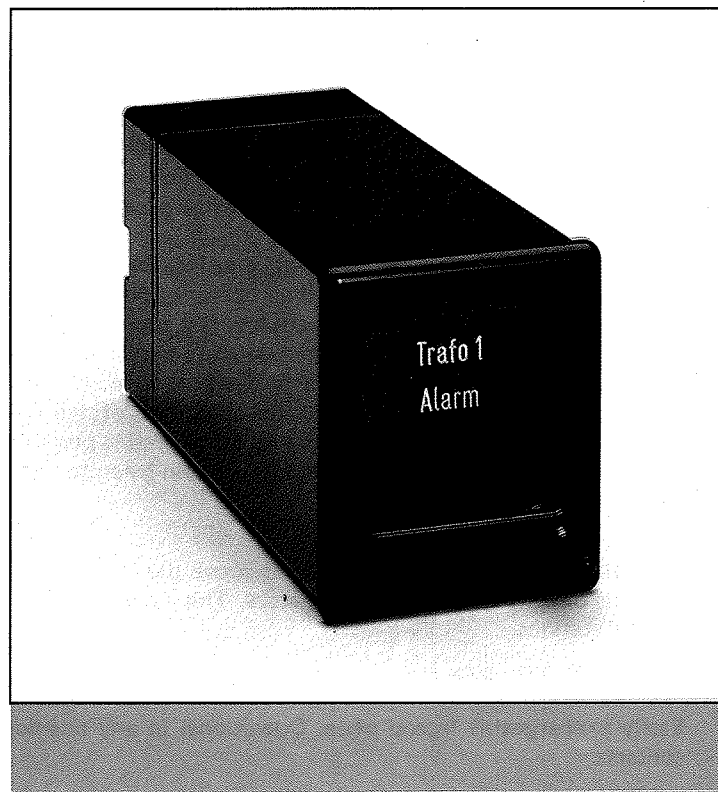


Illuminated Annunciator Relays



MR 12 and MR 22

Application: The illuminated annunciator relay MR 12 is used for indication of fault and operating conditions. It is especially qualified for such cases where an illuminated indication is preferred to a mechanical flag indicator. Its very small dimensions (base area 39 x 46 mm) permits an assembling in banks of large quantities. This model is ideally suited for signalling in control rooms and switchboards, as well as in mimic diagrams.

Construction: The illuminated annunciator relay MR 12 is a semi-automatic relay that can be activated optionally by NO or NC contacts. The required control is adjusted by simply changing the position of two operating screws on the bell crank. The display is made by a lamp box with a tubular lamp being installed in the relay. The front of the lamp box is covered by an engravable black plastic plate. For the optical display no additional auxiliary voltage is necessary beside the coil energizing voltage. This is especially important for applications where the relay is used for the supervision of voltages.

Function: In the normal condition the indicating area is black, with the response of the relay the contacts are brought to their operating position and the bulb in the lamp box is energized by a relay contact. The engraved legend lights up. By pressing the reset button below the lamp box the message is acknowledged, and the lamp contact is switched to a second circuit. The other contacts retain their normal position. With the clearance of the fault the bulb is switched off automatically. Customarily the operating position is signalled by flashing light and the acknowledgement position by steady light.

Diagrams: page 5

In addition to the operation described above the relay is also available with contacts directly driven by the armature. This type is used mainly in remote control stations.

Special diagrams: page 7

Features: Easily exchangeable legend plate. Operational in any position. Heavy duty contacts.

Tropicalized version is available, if desired.

Indicating area: Normal execution:
Area black, illuminated legend white.

Special types:

Illuminated area white, legend black.

Illuminated area white, legend white - only slight legibility when not illuminated / clearly legible when illuminated.

Area black, illuminated legend coloured.

Illuminated area coloured, legend black.

Illuminated annunciator relays**MR 12 and MR 22****Mounting:****Individual relays**

Panel surface mounting, plug-in type
Accessories: socket, mounting screws with nuts
Dimension print: page 8

Panel flush mounting, plug-in type
Accessories: socket, mounting brackets, mounting frame
Dimension print: page 8

Relay banks

For mounting of relay banks there are several housings for panel flush mounting as well as for panel or wall surface mounting and cabinet mounting.

Housings for flush mounting
96 x 96 mm instrument housing for 4 relays
144 x 144 mm instrument housing for 9 relays
Dimension prints: page 9

Housings for banks with up to 60 relays for flush mounting
Dimension print: page 10

Housings for surface mounting
144 x 144 mm housing for 4 and 9 relays with 30 screw-type terminals
Dimension print: page 10

Bus-wiring of the relay banks can be neatly achieved using conduction angles of different heights and special connecting wires. Relay banks in housings for surface mounting can be wired in the factory, or by the client. If the lamp voltage exceeds 60 V, the dropping resistors of the lamps will be mounted at the rear of the annunciator relay bank.

To meet the requirements for protection against electric shock according to VBG 4 the terminals can optionally be covered with a plastic plate.

Supplementary type: Annunciator relay MR 22

Application: Similar to annunciator relay MR 12.

Function: The annunciator relay MR 22 operates fully-automatically. A manual reset and a possibility for an adjustment from normally de-energized to normally energized are not provided. Depending on the input contact (NO or NC) the relay reponds if energized or de-energized, respectively. Simultaneously the contacts are actuated and the legend lights up. With the clearance of the the lamp is extinguished and the contacts return to their normal position.

Diagrams: page 6

Mounting: Similar to annunciator relay MR 12.

Illuminated annunciator relays

MR 12 and MR 22

Relay coils:	Current type	DC or AC (50 c/s or 60 c/s)
	Voltage rating (U_r)	up to 150 V DC or 220 V AC
	Voltage rating with built in series-resistor	up to 220 V DC
	Overvoltage continuous	$1,2 \times U_r$
	Response voltage	$\leq 0,8 \times U_r$
	Current rating (I_r) (current coil)	up to 6 A DC or AC
	Response time	12 - 25 ms
	Power consumption at U_r at DC	0,5 - 1,5 W
	with series resistor at AC	1 - 2,5 W
	Armature closed	1,4 - 1,8 VA
Armature open	2,8 - 3,6 VA	
Contacts:	Rush current	6 A DC or AC
	Continuous current	4 A DC or AC
	Breaking current $220 \text{ V DC } \frac{L}{R} = 40 \text{ ms}$	0,2 A
	$220 \text{ V AC } \cos \varphi = 0,4$	4 A
	Max. switching voltage	220 V DC or 220 V AC
	Momentary contact, closure	appr. 60 ms
Lamp:	Lamp voltage ratings	12, 24, 48 and 60 V
	Lamp voltage rating with series resistor mounted at the rear of the relay	max. 220 V
	Power consumption of the lamp (without resistor)	1,2 W
General data:	Protection type	IP 40, connections IP 00 (DIN 40 050)
	Insulation group and series voltage	group C 250 V DC/AC (VDE 0110/11.72)
	Test voltage	2 kV, 50 c/s (VDE 0435 a/9.72)
	Ambient temperature range	- 5° C to + 40° C
	Legend	1- or 3- lines, max. 15 letters per line
	Weight	310/370 g normal execution with socket

Illuminated annunciator relays

MR 12 and MR 22

Diagrams MR 12

Diagram—no.

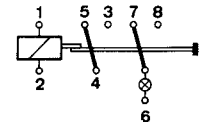
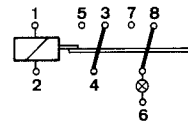
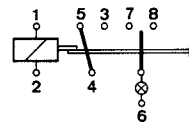
Relay position

Normal

Alarm

Acknowledged

12-2 normally de-energized

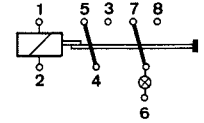
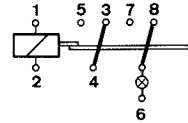
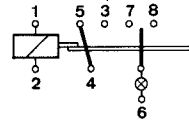


coil de-energized

coil energized

coil energized

12-2 normally energized

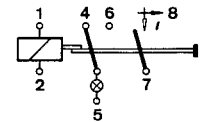
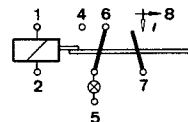
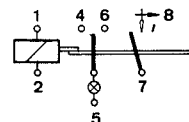


coil energized

coil de-energized

coil de-energized

12-3 normally de-energized

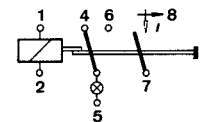
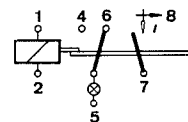
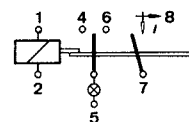


coil de-energized

coil energized

coil energized

12-3 normally energized

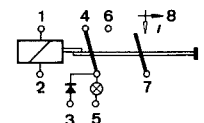
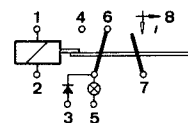
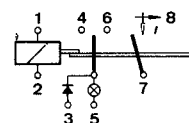


coil energized

coil de-energized

coil de-energized

12-3D normally de-energized

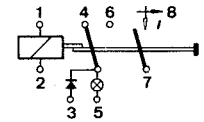
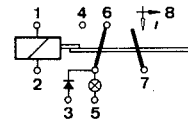
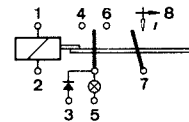


coil de-energized

coil energized

coil energized

12-3D normally energized

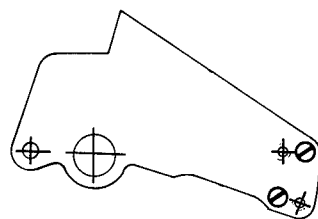


coil energized

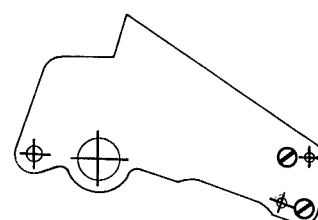
coil de-energized

coil de-energized

Screw positions from normally energized or de-energized
(can be retrospectively changed on site)



Normally de-energized



Normally energized

Diagrams MR 22

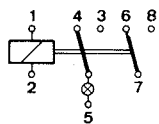
Diagram-no.

Relay position

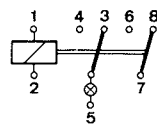
Normal

Alarm

22-1 normally de-energized

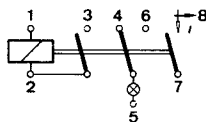


coil de-energized

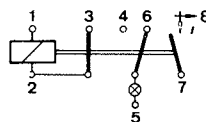


coil energized

22-3 normally de-energized

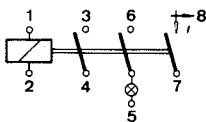


coil de-energized

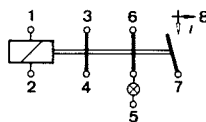


coil energized

22-4 normally energized



coil energized



coil de-energized

The illuminated annunciator relay MR 22 is available only with the above diagrams.

(Later re - adjustment is only possible at our works!)

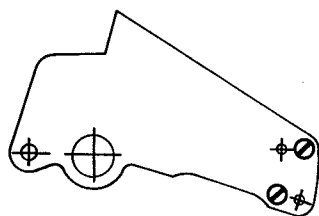
Illuminated annunciator relays

MR 12 and MR 22

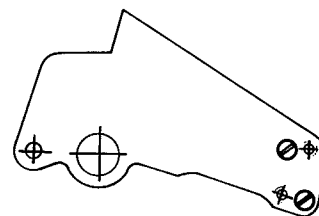
Special diagrams MR 12

Diagram-no.	Relay position	Normal	Alarm	Acknowledged
12-2a normally de-energized	coil de-energized			
12-2a normally energized	coil energized			
12-2D normally de-energized	coil de-energized			
12-2D normally energized	coil energized			
12-2aD normally de-energized	coil de-energized			
12-2aD normally energized	coil energized			

Screw positions from normally energized or de-energized
(can be retrospectively changed on site)



Normally de-energized



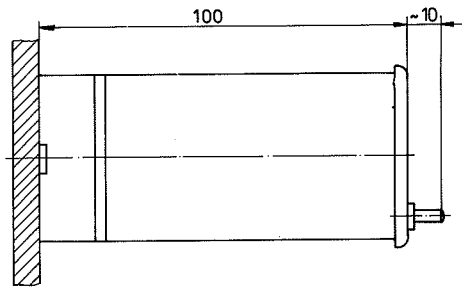
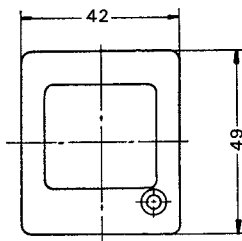
Normally energized

Illuminated annunciator relays

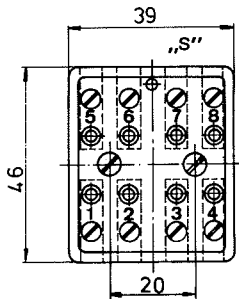
MR 12 and MR 22

Dimension prints: Individual relays

Surface mounting plug-in type



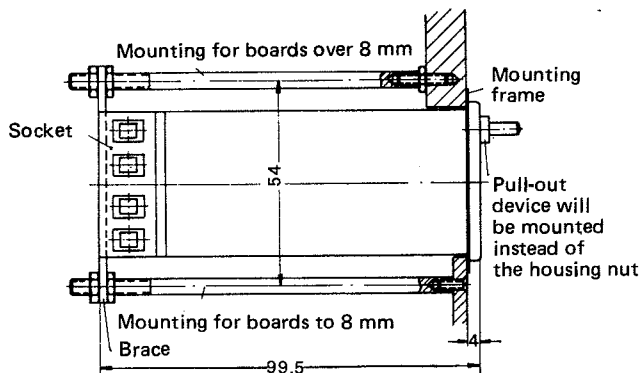
Accessories: socket
 2 cylinder screws M 3 x 30 DIN 84 with nuts
 2 wooden screws M 3 x 30 DIN 96
 will be supplied



Socket
 (after connection of the wires the relay is plugged-in and secured by screw 'S')

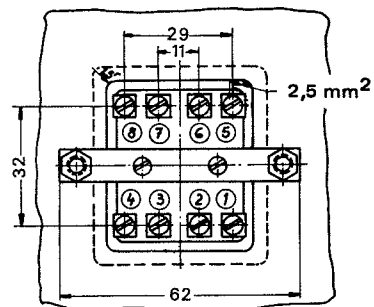
Flush mounting plug-in type

Top view



Cutout: 40 x 47 mm

Rear view



Accessories: socket
 mounting bracket
 mounting frame
 pull-out device

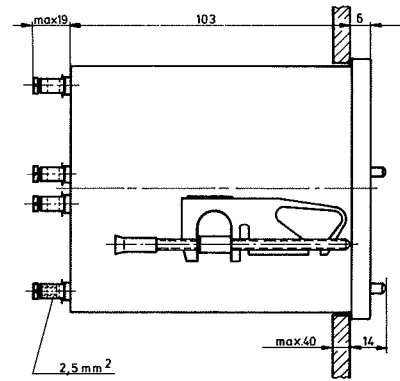
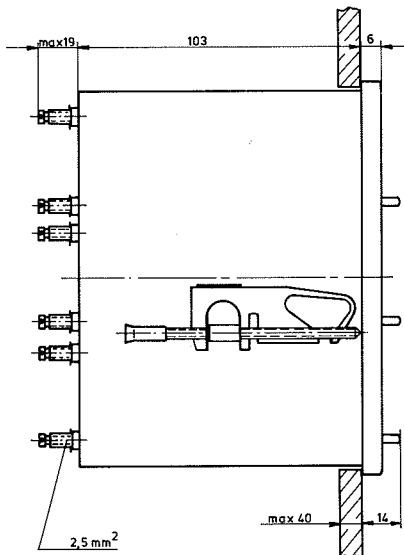
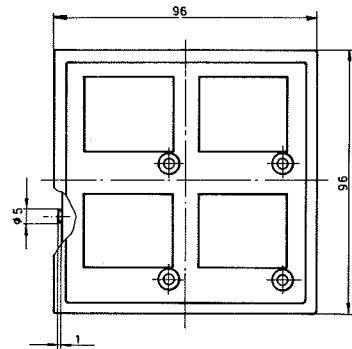
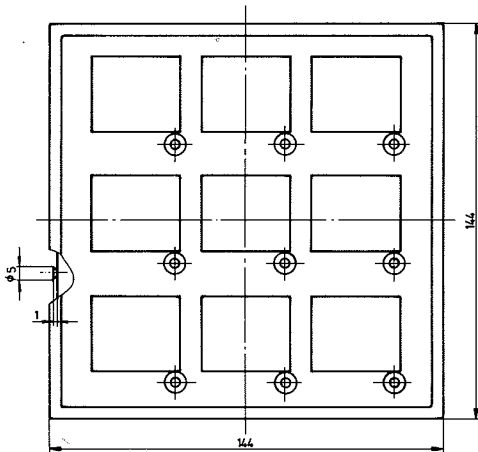
Illuminated annunciator relays

MR 12 and MR 22

Dimension prints: Housings for flush mounting according to DIN 43700

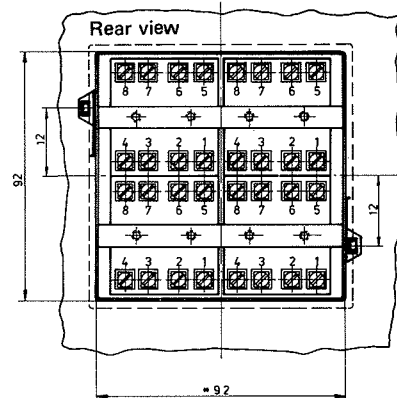
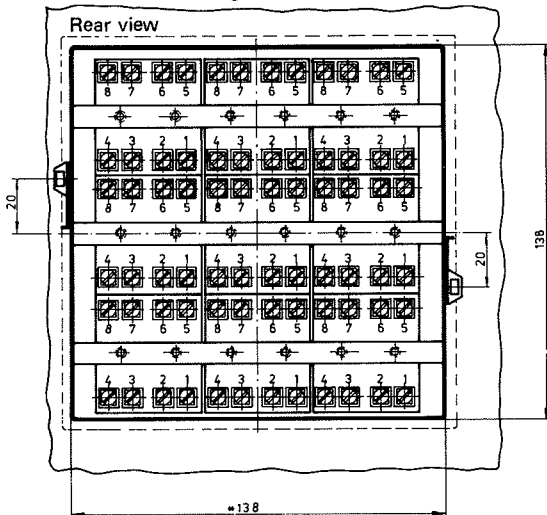
9 relays MR 12 or MR 22

4 relays MR 12 or MR 22



Accessories: 2 fixing elements form B (DIN 43835)

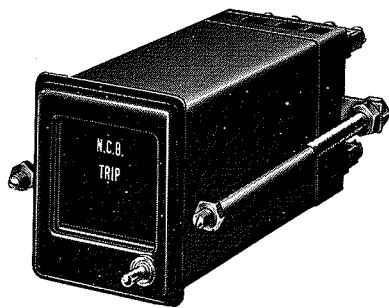
Accessories: 2 fixing elements form B (DIN 43835)



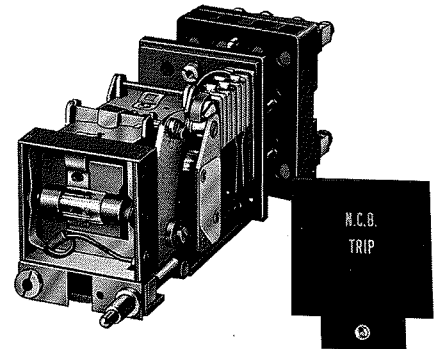
Outer dimensions without cone headed rivets

Illuminated annunciator relays

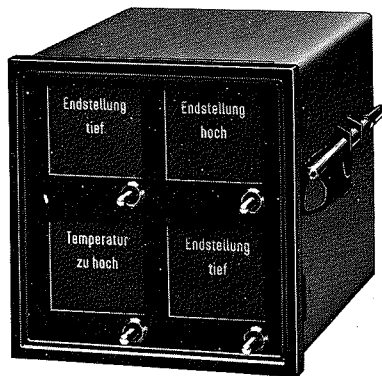
MR 12 and MR 22



Annunciator relay MR 12
for flush mounting



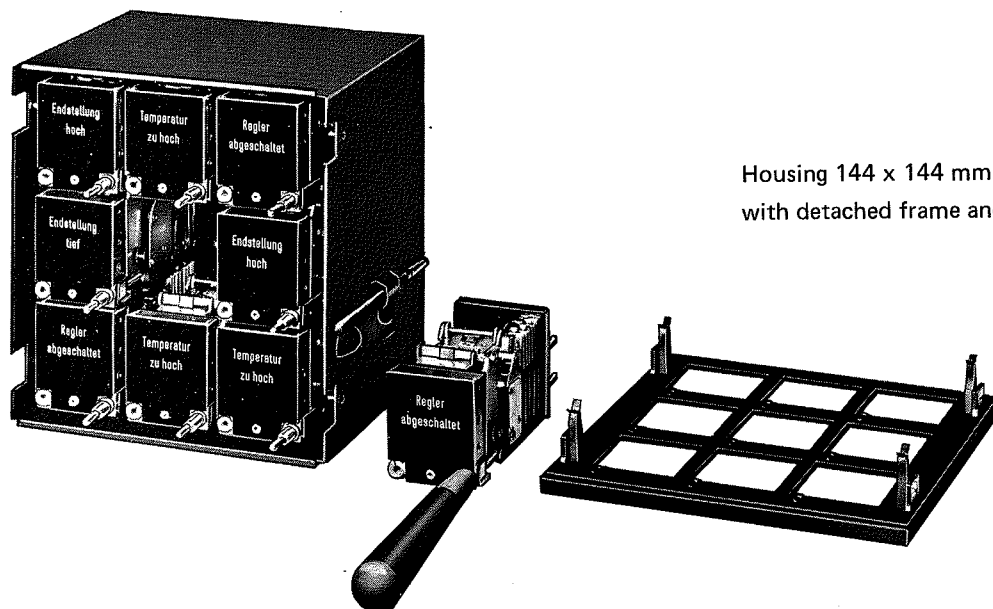
Internal structure of the
annunciator relay MR 12



Housing 96 x 96 mm
with 4 annunciator relays



Housing 96 x 96 mm
rear view



Housing 144 x 144 mm
with detached frame and removed relay