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Lamp indicator R 462

Description
The lamp indicator R 462 serves as visual indication of the state of the signals at inputs and outputs on the SIGMA-tronic units.

The unit contains 10 independent functional units with one indicating lamp each, operated by a light emitting diode code. With a 1-signal at each input, the appropriate lamp is illuminated.

Order code for module: GH R462 0000 V0
Order code for circuit symbol transparency: GH R700 1901 R35
Identifying colour: brown
double width approx. 150 g

Technical data
Current consumption
Input 5 mA
Max. input voltage 4 loads 65 V–
Lamp operators
R 463 VO and R 463.13

Description
The lamp operators R 463 VO and R 463.13 serve as visual indication of signal conditions. Each unit has three functional units. Each unit has two inputs tied according to an OR function. One input is common to all units, serving mainly for lamp testing.

In the case of unit R 463 VO, the signal lamp is connected with one terminal to output QL, and with the other to the positive terminal of the DC voltage. This voltage can be up to +65 V. Output QL may be loaded to 210 mA, with which either 5 W-lamps of 24 V, or 13 W-lamps of 65 V can be used.

In the case of unit R 463.13, one terminal of the signal lamp is connected to output QL, and the other terminal to the zero rail of the DC voltage. Only 24 V-lamps can be used with a maximum power of 10 W.

The output QL can also be used for driving other loads such as relays, auxiliary contactors, or solenoid valves with a maximum current consumption of 500 mA. A quenching diode is fitted in the unit for demagnetization of inductive loads; however, there is no rapid demagnetization provided.

The outputs QL of more than one functional unit may not be switched in parallel.

The outputs QL have no series resistance and no fuse protection.

The signal delay times between the inputs and outputs are negligible.

Order code for module R 463 VO:
GHR 463 0000 V0
GHR 463 1300 R1

Order code for circuit symbol transparency for module R 463 VO
GHR 700 1901 R17

Identifying colour:
brown

Mechanical structure:
single width

Weight:
approx. 130 g

Technical data

<table>
<thead>
<tr>
<th>Current consumption, all inputs with zero signal</th>
<th>R 463 VO</th>
<th>R 463.13</th>
</tr>
</thead>
<tbody>
<tr>
<td>all three functions activated (without lamp load)</td>
<td>0 mA</td>
<td>0 mA</td>
</tr>
<tr>
<td>Input load at A and B at LP</td>
<td>40 mA</td>
<td>15 mA</td>
</tr>
<tr>
<td>Output capacity at output QL against positive voltage (max. 65 V)</td>
<td>1 load</td>
<td>1 load</td>
</tr>
<tr>
<td></td>
<td>3 loads</td>
<td>3 loads</td>
</tr>
<tr>
<td>Output capacity at output QL against 0 V</td>
<td>210 mA</td>
<td>500 mA</td>
</tr>
<tr>
<td>or lamp</td>
<td></td>
<td>or lamp</td>
</tr>
<tr>
<td>24 V—10W</td>
<td></td>
<td>24 V—10W</td>
</tr>
</tbody>
</table>
Description

The annunciator stores R 464.6 and R 464.16 can be used for status annunciation of transmitters and initiators, e.g. for so-called motor signalling and for new value annunciation of faults.

Signalling can be accomplished on the open or closed circuit principle. When using the open circuit method, the information (1-Signal) is fed to the signalling input B. With the closed circuit method, the information (0-signal) is applied to the annunciator input A. In this case the annunciator input B must have 1-signal. An information can be blocked by a 1-signal at the blocking input C.

As long as an information of the above mentioned type is active, and C has a 0-signal, the output QS will carry a 1-signal. This can be used for various purposes of controlling or chronological recording.

A short 1-signal will appear at the hooter output QH, when the 1-signal begins to appear at QS. This signal will be sufficient to set a SIGMA-tronic store, which can bring in an audible warning element. The outputs QH of various annunciator stores can be connected in parallel and be jointly carried to such store input.

When information is received, the incorporated store is set. A 1-signal will then appear at output Q. A square-wave voltage at the flasher input BL (e.g. from a flasher unit R 435) will cause a lamp connected to the lamp output QL to light up in the rhythm of this voltage.

A 1-signal at reset input R will clear the store. If the information still persists at the input, the lamp will switch to steady light. The lamp extinguishes as soon as the fault information at the input disappears.

A 1-signal at the lamp check input LP will steady light of the connected lamp.

The outputs QL of more than one unit may not be switched in parallel.

The signal state of the output QL is shown by an LED fitted to the module.

The output QL has no series resistance and no fuse protection.

In the case of unit R 464.6 the signal lamp is connected with one terminal to output QL and with the other to the positive terminal of the DC voltage. This voltage can be up to +65 V. Output QL may be loaded at 210 mA, so that 5 W-lamps of 24 V or 13 W-lamps of 65 V can be used.

In the case of unit R 464.16, one terminal of the signal lamp is connected to output QL and the other terminal to the zero rail of the DC voltage. Only 24 V-lamps can be used with a maximum power of 10 W.

The output QL can also be used for driving other loads such as relays, auxiliary contactors, or solenoid valves with a maximum current consumption of 500 mA. A quenching diode is fitted in the unit for demagnetization of inductive loads; however, there is no rapid demagnetization provided.

Order code for module R 464.6:
GHR 464 0006 R1
GHR 464 1800 R1

Order code for module R 464.16:
GHR 700 1901
R15
DGEF 40096 D
DGEF 40097 D
DGEF 40282 D

Order code for circuit symbol transparency:
for module R 464.6:

Order code for application:
brown
single width
approx. 100 g

Identifying colour:
Mechanical structure:
Weight:
Annunciator stores R 464.6 and R 464.16

Technical data

Current consumption, closed circuit
open circuit

Input load, input LP
other inputs

Fan out at QH (up to 100 outputs
switched in parallel)
Fan out at QS and Q

Output capacity at output QL
against positive voltage (max. 65 V —)
Output capacity at output QL
against zero rail (output voltage 24 V —)

For delay see opposite diagram

<table>
<thead>
<tr>
<th>R 464.6</th>
<th>R 464.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mA</td>
<td>10 mA</td>
</tr>
<tr>
<td>50 mA</td>
<td>50 mA</td>
</tr>
<tr>
<td>1 load or 1.3 mA</td>
<td>1 load or 0.3 mA</td>
</tr>
<tr>
<td>3 loads or 3.9 mA</td>
<td>100 loads or 130 mA</td>
</tr>
<tr>
<td>210 mA</td>
<td>420 mA</td>
</tr>
</tbody>
</table>
Initial and new value indicators
R 464.7 and R 464.17

Description
The initial and new value indicators R 464.7 and R 464.17 are installed for status annunciation of transmitters and initiators, e.g. for initial value indication or initial and new value indications of faults (DIN 00 19 235).

Signalling can be accomplished on the open or closed circuit principle. When using the open circuit method, the information (1-signal) is fed to input B. With the close circuit principle, the information (0-signal) is fed to input A. In this case input B must have a 1-signal.

So long as the conditions described above are in operation, output QS will show a 1-signal. With the signal at QS, a short 1-signal (about 30 ms) appears at hoster output OH, and a stored 1-signal shows at output Q.

With the impulse signal at OH a SIGMA-tronic store can be fitted which switches on an audible warning element. Outputs OH of several components can be linked and connected to this store input.

With the impulse at OH the second built-in store is set. This together with a square-wave voltage applied at input BL (e.g. from a flasher unit R 435) a lamp connected to output QL will flash in the sequence of the square-wave voltage.

A 1-signal at initial value input ER or at feed back input R clears the indicator. If the fault signal persists at the input, the lamp illuminates continuously. When the signal disappears, the lamp extinguishes.

The feed back inputs ER and R can be connected in parallel with further corresponding feed back inputs on similar units when operated by reset actuator.

Input LP serves as the lamp tester.

The outputs QL of more than one unit may not be switched in parallel.

The signal state of the output QL is shown by an LED fitted to the module.

The output QL has no series resistance and no fuse protection.

In the case of unit R 464.7 the signal lamp is connected with one terminal to output QL and the other to the positive terminal of the DC voltage. This voltage can be up to +65 V. Output QL may be loaded to 210 mA, so that 5 W-lamps of 24 V or 13 W-lamps of 65 V can be used.

In the case of unit R 464.17, one terminal of the signal lamp is connected to output QL and the other terminal to the zero rail of the DC voltage. Only 24 V-lamps can be used with a maximum power of 10 W.

The output QL can also be used for driving other loads such as relays, auxiliary contactors, or solenoid valves with a maximum current consumption of 550 mA. A quenching diode is fitted in the unit for demagnetization of inductive loads; however, there is no rapid demagnetization provided.

Order code for module R 464.7:
GHR 464 0007 R1
Order code for module R 464.17:
GHR 464 1700 R1
Order code for circuit symbol transparency
for module R 464.7:
GHR 700 1901
R15
Identifying colour:
brown
Mechanical structure:
single width
Weight:
approx. 100 g

Technical data

<table>
<thead>
<tr>
<th>Current consumption, closed circuit</th>
<th>R 464.7</th>
<th>R 464.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>open circuit</td>
<td>25 mA</td>
<td>25 mA</td>
</tr>
<tr>
<td></td>
<td>42 mA</td>
<td>42 mA</td>
</tr>
</tbody>
</table>
Initial and new value indicators R 464.7 and R 464.17

Input load, input LP
input ER
other inputs

Fan out at QH (up to 100 outputs
switched in parallel)
Fan out at OS and Q
Output capacity at output QL
against positive voltage (max. 65 V —)
Output capacity at output QL
against zero rail (output voltage 24 V —)

Delay times see diagram

Initial value indication to DIN standard 00 19 235

The initial value indicator indicates the first appearance of a possible group of alarm conditions. Only this signal is displayed by a flashing lamp; all subsequent signals are shown by steady lamps. For reset, a separate first value reset key is necessary.

For each alarm condition to be stored, a unit R 464.7 or R 464.17 is fitted. Inputs ER and R and outputs Q of all first value indicators are connected in parallel. Furthermore, R and Q must be connected with one another and inputs ER joined to the first value reset key.

The signal to appear first displays a flashing light on the appropriate unit. Via the output Q of this unit, which is connected with all other outputs R - the flashing light of all other units is blocked. Thus the second and subsequent fault indications are shown only by a steady light. If the first fault condition persists when the reset key is operated the first signal changes from flashing to steady light.

Initial and new value indication to DIN standard 00 19 235

Every fault which occurs is displayed by a flashing light. For reset two keys are provided - the visual signal reset key and the first value back-check key. With the application of the visual signal reset key all signals, with the exception of the one which first appeared, go to steady light. The indication for the first fault continues to flash. Only with the operation of the first value reset key does the signal go to a steady light.

For each signal to be stored, a unit R 464.7 or R 464.17 is fitted. Inputs ER and R and outputs Q of all units are connected in parallel. Then R is connected with the visual indicator, and ER with the first value reset key. The signal to appear first displays a flashing light on the appropriate first value indicator. The signal at output Q, which at the same time is the output and the blocking-input of the appropriate store - prevents setting of the auxiliary store of all other units, since all outputs Q are connected with one another. The second and and subsequent fault indications also display a flashing light, which cannot be set by the auxiliary store.

The visual signal reset at R puts into operation all indicating lamps with the exception of the first steady light. By resetting the first value at ER, the first fault indication also goes to steady light.
New value indicators
R 464.8 and 464.18

Description

The new value indicators R 464.8 and R 464.18 can be used for status indication of transmitters and initiators, e.g. for new value indications with single or double flashing lights or faults (DIN 00 19 235).

Signalling can be accomplished on the open or closed circuit principle. With the open circuit principle, the information (1-signal) is applied to input B. On the closed circuit principle, the information (0-signal) is applied at input A. Thus input B must have a 1-signal.

So long as a signal as above is present, output QS will show a 1-signal. With the signal at QS a short 1-signal (about 30 ms) appears at hooter output QH.

With the impulse signal at QH a SIGMA-tronic store can be fitted which switches an audible warning element. Outputs QS on other components can be connected in parallel and be applied together at this store input.

The 1-signal at QH sets also two component stores, and together with a square-wave voltage applied at input BL 2 (e.g. from a flasher unit R 435.3, output 3 Hz) a lamp connected to output QL will flash in the sequence of the square-wave voltage. The information signal is extinguished with a 1-signal at input R. Should the fault be shown only with a single flashing light, the lamp at output QL goes to a continuous light after the reset key is operated if the information signal still holds, but goes out if the information has cleared. With this method of operation a constant 1-signal must be applied at input R1, which prevents the setting of the auxiliary store.

Should the fault be shown by a double flashing light, the lamp at output QL goes to a continuous light after the reset at R, if the information signal still holds. When the fault indication goes, this is shown by a slow flashing of the lamp. At this point a second flasher unit (e.g. R 435.3, output 0.5 Hz) must be connected at input BL1. According to DIN 00 19 235, the existing fault indication is shown by fast flashes (input BL2) and the disappearing fault by slow flashes (input BL1).

By this method a second key is necessary in order to turn off the slow flasher and change the information signal to "all-clear" at input R1. After this the signal lamp goes out.

Input LP serves as the lamp tester.

The outputs QL of more than one unit may not be switched in parallel.

The signal state of the output QL is shown by an LED fitted to the module.

The output QL has no series resistance and no fuse protection.

In the case of unit R 464.8 the signal lamp is connected with one terminal to output QL and with the other to the positive terminal of the DC voltage. This voltage can be up to +65 V. Output QL may be loaded to 210 mA, so that 5 W-lamps of 24 V or 13 W-lamps of 65 V can be used.

In the case of unit R 464.18, one terminal of the signal lamp is connected to output QL and the other terminal to the zero rail of the DC voltage. Only 24 V-lamps can be used with a maximum power of 10 W.

The output QL can also be used for driving other loads such as relays, auxiliary contactors, or solenoid valves with a maximum current consumption of 500 mA. A quenching diode is fitted in the unit for demagnetization of inductive loads; however, there is no rapid demagnetization provided.

Order code for module R 464.8: GHR 464 0800 R1
Order code for module R 464.18: GHR 464 1900 R1

Identifying colour: brown
Mechanical structure: single width
Weight: approx. 160 g
New value indicators R 464.8 and 464.18

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>R 464.8</th>
<th>R 464.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current consumption</td>
<td>25 mA</td>
<td>25 mA</td>
</tr>
<tr>
<td>closed circuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>open circuit</td>
<td>42 mA</td>
<td>42 mA</td>
</tr>
<tr>
<td>Input load</td>
<td>1 load</td>
<td>1 load</td>
</tr>
<tr>
<td>Fan out at QH (up to 100 outputs switched in parallel)</td>
<td>3 loads</td>
<td>3 loads</td>
</tr>
<tr>
<td>Fan out at QS</td>
<td>103 loads</td>
<td>100 loads</td>
</tr>
<tr>
<td>Output capacity at output QL against positive voltage (max. 65 V---)</td>
<td>210 mA</td>
<td></td>
</tr>
<tr>
<td>Output capacity at output QL against zero rail (output voltage 24 V---)</td>
<td>420 mA</td>
<td></td>
</tr>
<tr>
<td>Buffer set delay for 1-signal at QH</td>
<td>approx. 7.8 ms</td>
<td></td>
</tr>
<tr>
<td>Buffer reset delay</td>
<td></td>
<td>approx. 2.5 ms</td>
</tr>
</tbody>
</table>

Delay times see diagramm