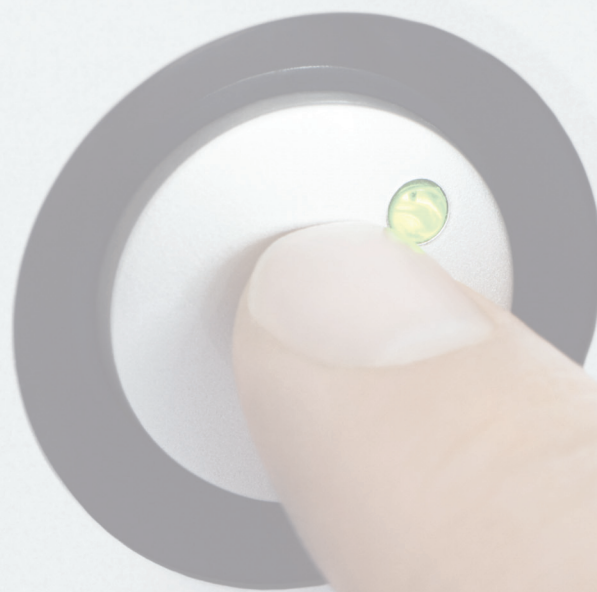


# Relog

## All-or-nothing Relay



POWER



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## RELOG – a Contact Component System for Control Engineering

Classical all-or-nothing relays have not lost their importance in electrical engineering. In future, they will continue to be a significant, universally applicable component. Type and arrangements fully meeting the requirements with high reliability can be chosen from a wide range of varieties.

RELOG is the name of a system of modernly designed electromechanical relays. They are fulfilling the high requirements to contemporary industrial controls.

The RELOG contact component system comprises different relays in the control engineering field, often offered as single function in different dimensions, to constitute a useful coordinated system being in line with uniform electrical and constructive aspects.

The all-or-nothing relays pertaining to the RELOG system are particularly suitable to be applied in small automation systems and to realize different control tasks, i.e., machine controls of any kind, elevator controls, control in energy-generating and distributing plants and in many other fields of control and plant construction.

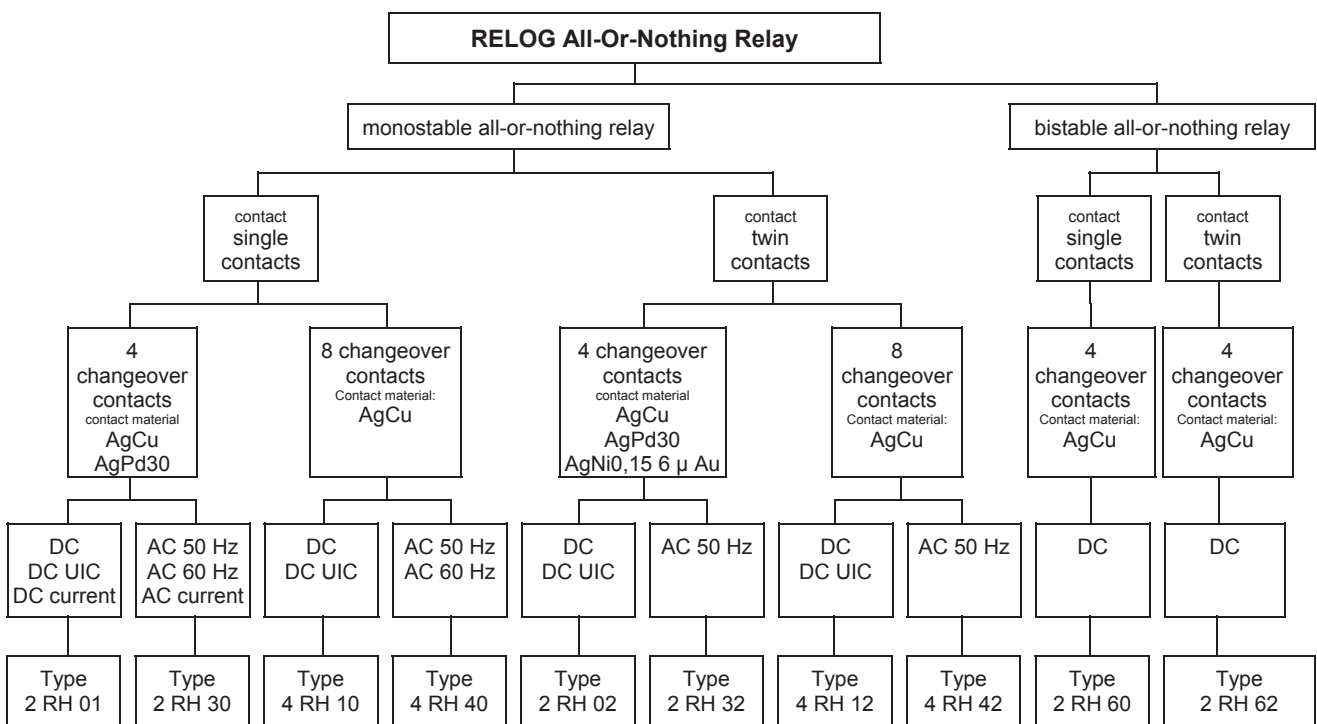
Here, these relays can be used in many fields of control in the fields of input, connection, signal or output circuits covering small and medium switching capacities, where matter are focusing on a high contact reliability and a long-term stability under unfavorable ambient conditions.

RELOG all-or-nothing relays have been developed for different specific applications. They meet the required operating conditions with high a reliability. These are, for example:

- DC all-or-nothing relays with an extended voltage range acc. to UIC and a high working temperature range allow the use in plants subject to high voltage and temperature variations, as for instance, in electrical devices on railway vehicles.
- all-or-nothing relay arrangement for DC (remanence relay) with two stable switching states independent on the operating voltage is suitable for either pulse operation as well as for continuous operation. Memory functions can be fulfilled due to the magnetic latching. The advantageous application of the all-or-nothing relay is its use in any units where the switching state must be maintained despite voltage failures. The control by pulses allows an essential power reduction, so that it is advantageous for battery-operated units.
- An all-or-nothing relay arrangement for AC or DC current control allows the application in units, where the current is monitored, or where processes should be controlled by current. They are particularly suitable as monitoring relay for lamps / position lights. In this case, their winding is in series with the lamps.
- All-or-nothing relay arrangements for AC or DC with visual indication function to indicate the switching state can be equipped with a target in working current arrangement (signals relay in operated condition) and/or closed-circuit arrangement (signals relay in initial state) or they can be equipped with a resettable drop indicator.

The all-or-nothing relays of the RELOG system are supplied in enclosures with clamp-type terminals. By using plug-in connection for quick fastening of bars and/or screw fixing over the fastening sheet, screw-type terminals are possible while maintaining the intermateability. However, it is also possible to accomplish the connection through plug-in connections for solder or wrap terminations and/or adapters with a screw-type terminal for screw fixings used for massive walls or switchboards.

## Survey of the Device Program for All-or-Nothing Relays of the RELOG - System



## Construction of the All-or-Nothing Relay

The driving and the switching element of the relay are arranged on a lead frame made of molding material.

The driving element is designed as clapper-type armature, for DC made of electrical relay iron, for AC made of a special alloy, in a massive form and with high surface protective coating.

The relay contacts and coil terminals are designed as plug-in blades.

Driving and switching system are provided with a transparent PC cover that allows to monitor the contact elements.

The all-or-nothing relays may also be equipped with a free-wheeling diode type GP02 40 (4 kV reverse voltage) arranged between the terminal connections 1.7 (cathode) and 3.7 (anode).

Driving and switching systems in all-or nothing relays with extended voltage range acc. to UIC and relays to monitor current or position lamps are covered by a metal cover conductively connected with two leading earthing plug-in blades. A transparent insert in the cover allows to monitor the contact elements.

All-or-nothing relays can be equipped with a target in working current arrangement (signals that the relay is in the operated condition) and/or closed-circuit arrangement (signals that the relay is in the initial state) or they can be equipped with a resettable drop indicator (except degree of protection IP 50).

For the double components 4 RH all-or-nothing relays, two relay systems are combined, electrically and mechanically, in such a way to jointly switch all in all 8 changeover contacts. These relays are covered by a metal cover conductively connected with two leading earthing plug-in blades. A transparent insert in the cover allows to monitor the contact elements.

## Contact Types

A variety of different factors influence the reliability of the contact making process of all-or-nothing relays. Due to the correct choice of the contact material, the relay enclosure, and the contact design any switching problem can be solved in the field of relay engineering.

For RELOG all-or-nothing relays we differentiate between single or twin contacts. In twin contacts, each contact spring is equipped with two smaller contacts, where the changeover spring is bifurcated for purposes of a uniform power distribution. Due to their higher contact material quantity single contacts have a higher switching capacity compared to twin contacts. However, in case of dusty atmospheres, twin contacts have a 20- to 100-fold higher contact making reliability.

## Contact Materials

The following contact materials are used in RELOG all-or-nothing relays:

### • Hard silver AgCu

|                       |  |
|-----------------------|--|
| Features:             | high hardness in contrast to fine silver<br>high electrical and thermal conductivity<br>tends to form oxide and sulfide layers at sulphurous atmospheres<br>contact resistances $\approx 30 \text{ m}\Omega$ |
| Application:          | General application at medium AC and DC loads in power and light-current engineering   |
| Scope of application: | single contacts 24 V ... 250 V / 10 mA ... 10 A, twin contacts 12 V ... 250 V / 5 mA ... 5 A   |

### • Silver palladium AgPd30

|                       |   |
|-----------------------|---|
| Features:             | high arc-resistance<br>high corrosion resistance<br>highly resistant against (hydrogen sulphide)<br>relatively constant contact resistances $\approx 40 \text{ m}\Omega$                      |
| Application:          | use in unfavorable ambient conditions (sulphurous atmosphere)<br>for a required high endurance at medium loads<br>application at medium AC and DC load in power and light-current engineering |
| Scope of application: | single contacts: 24 V 250 V / 50 mA ... 10 A, twin contacts: 12 V 250 V / 25 mA ... 5 A   |

### • Fine grain silver, gilded - AgNi0,15Au6 "soft"

|                       |   |
|-----------------------|---|
| Features:             | high corrosion resistance<br>high electrical and thermal conductivity<br>high contact reliability due to gold plating<br>relatively constant contact resistances over a long time<br>contact resistances $\approx 20 \text{ m}\Omega$<br>at higher loads after erosion of the golden layer – features as for silver-nickel contacts |
| Application:          | switching of low loads with high contact reliability  |
| Scope of application: | twin contacts 1 mV ... 250 V / 1 mA ... 100 mA, max. up to 5 A<br>with property of silver-nickel after erosion of golden layer  |

Other contact materials such as AgNi0,15, AgNi10, AgSnO<sub>2</sub> can also be supplied upon request and in an appropriate number.

## Suppressor Circuits

Suppressor circuits are used to protect from cut-off voltage peaks caused by switching of inductivities and the reduction of contact load.

It prevents, among other things, the malfunction and/or destruction of electrical and insulation parts caused by overvoltage, radio disturbance as well as it reduces material migration and contact erosion.

The suppressor circuit should be placed directly at the trouble spot.

Normal suppressor circuits are:

### • Diode suppressor circuits

- Advantages:
- no overvoltage (only approx. 0.7 V)
  - low costs
- Disadvantages:
- only for DC
  - causes a dropout delay at the relay
  - not protected against polarity reversal

### • Varistor suppressor circuits

- Advantages:
- for DC and AC
  - only low dropout times at the relay
  - low costs
  - protected against polarity reversal
- Disadvantages:
- relatively high remaining overvoltage

### • RC suppressor circuits

- Advantages:
- for DC and AC
  - low overvoltage
  - only low dropout times at the relay
  - protected against polarity reversal
- Disadvantages:
- relatively high switch-on peaks
  - not for small voltages
  - increased dropout times at the relay
  - R and C must be optimized for  $L_{\text{coil}}$

## Switching Capacity

### Alternating Current - Switching Capacity, Electrical Endurance

The electrical endurance is mainly determined by contact erosion caused by the arc during the make and break of contacts when switching the load. Bouncing of contacts increases the erosion.

Since - due to the high generation of heat at the contacts when switching the load, the contact material vaporizes and/or splashes away, the erosion resistance of the contact material has a great influence on the electrical endurance.

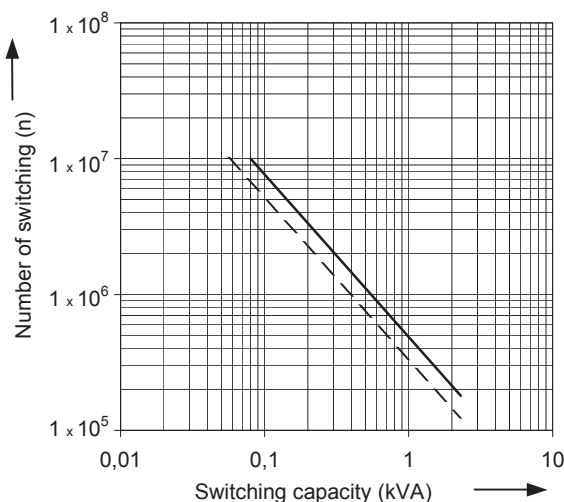
Contact endurance – depending on the switching capacity for different contact materials and relay types - may be taken from the following diagrams, switching rate  $\leq 3,600$  cycles/h

at a resistive load of ( $\cos \varphi = 1$ ) —————

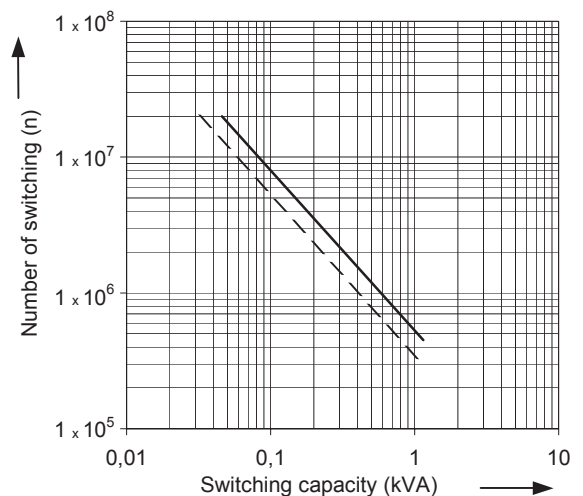
at a reactive load of ( $\cos \varphi = 0.4$ ) - - - - -

The contact endurance given in the diagrams refers to a completely asynchronous switching of the all-or-nothing relays.

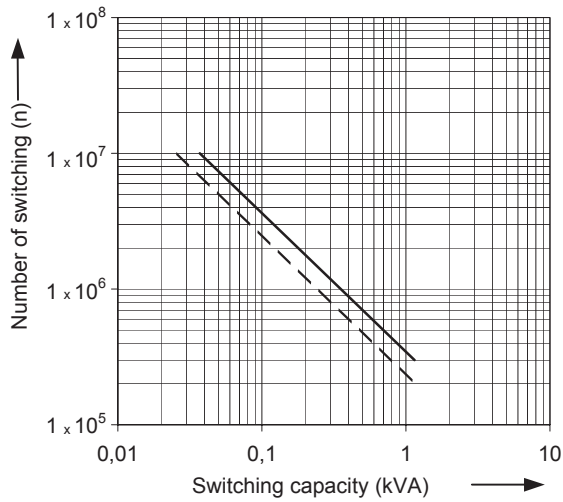
For switching currents between 4 A and 10 A, the type-dependent parameter to the maximum permissible continuous current and/or limiting continuous current have to be observed.



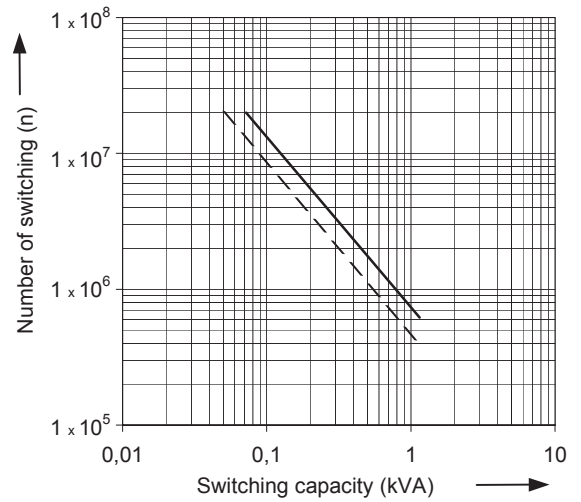
**2 RH 01, 2 RH 30, 2 RH 60, 4 RH10, 4 RH 40**  
contact material: AgCu



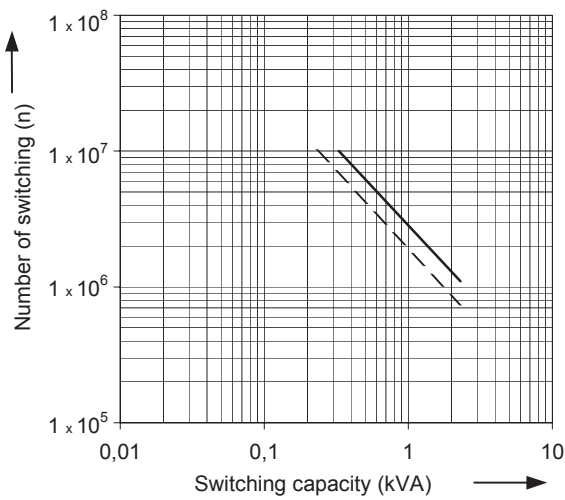
**2 RH 02, 2 RH 62, 4 RH12**  
contact material: AgCu



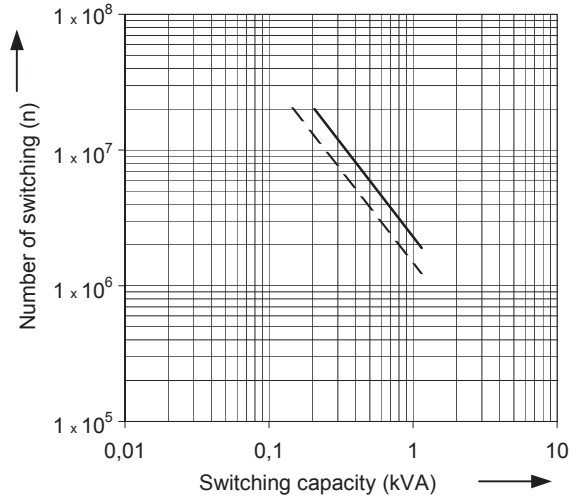
**2 RH 32, 4 RH 42**  
contact material: AgCu



**2 RH 02**  
contact material: AgNi0,15Au6



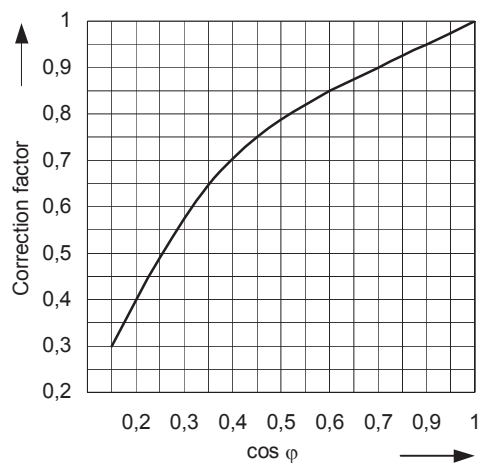
**2 RH 01**  
contact material: AgPd30



**2 RH 02**  
contact material: AgPd30

The increased contact erosion when reactive load is applied where the stored energy in the reactive load cycle causes a longer burning of the arcs when opening the contacts results into a reduced contact endurance compared to resistive load.

The correction factor of the electrical endurance  $C$  depending on the power factor  $\cos \varphi = 0,3 \dots 1$  can be seen in the following diagram.



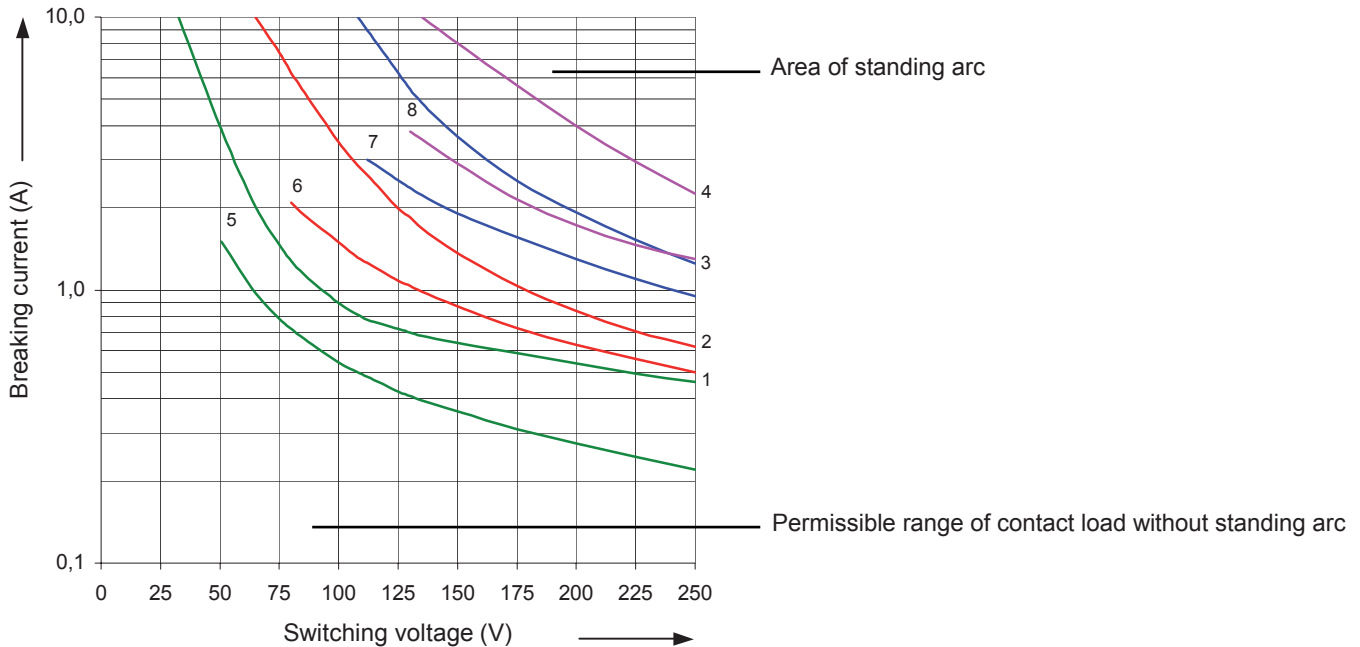


## Direct Current – Switching Capacity, Electrical Endurance

When direct current is applied – in contrast to alternating current, where the arc goes out in current zero, there might be the problem of formation of a standing arc at resistive and reactive load in combination with high voltage. The arc is mainly influenced by contact load, contact distance, contact speed and contact material.

The maximum breaking current dependent on the switching voltage and on the number of series-connected contact elements is shown in the following diagram.

The given values refer to a contact endurance of  $\geq 1 \times 10^4$  operating cycles at an operating frequency of  $\leq 3,600$  cycles per hour and shall be regarded as limits of load capability.



### Direct current – limiting breaking capacity:

Characteristic from 1 to 4: reactive load  $\tau = 0$  ms  
 1  $\Rightarrow$  1 contact  
 2  $\Rightarrow$  2 contacts in series  
 3  $\Rightarrow$  3 contacts in series  
 4  $\Rightarrow$  4 contacts in series

Characteristic from 5 to 8: resistive load  $\tau = 40$  ms  
 5  $\Rightarrow$  1 contact  
 6  $\Rightarrow$  2 contacts in series  
 7  $\Rightarrow$  3 contacts in series  
 8  $\Rightarrow$  c Contacts in series

Data on the electrical endurance at resistive or reactive DC load can only be obtained from switching tests with original load. Switching of DC loads results into material transfer at the contacts, from the anode to the cathode, depending on the load. To reduce this material transfer from contact to contact and to extinguish the arc in a better way, measures extinguishing the arc should be taken (see also paragraph "Suppressor Circuits").

The electrical endurance for some values depending on the series-connected contacts, operating frequency  $\leq 3,600$  cycles per hour, without arc-extinguishing measures, can be taken from the following table.

| Contact load                 | Contact material | Contact start   | 1 contact         | 2 contacts in series | 3 contacts in series | 4 contacts in series |
|------------------------------|------------------|-----------------|-------------------|----------------------|----------------------|----------------------|
| 220 V – 0.40 A $\tau = 0$ ms | AgCu             | single contacts | $8,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.50 A $\tau = 0$ ms  | AgCu             | single contacts | $3,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.60 A $\tau = 0$ ms  | AgCu             | single contacts |                   | $1,5 \times 10^6$    |                      |                      |
| 220 V -0.75 A $\tau = 0$ ms  | AgCu             | single contacts |                   | $0,5 \times 10^6$    |                      |                      |
| 220 V -1.00 A $\tau = 0$ ms  | AgCu             | single contacts |                   |                      | $0,7 \times 10^6$    |                      |
| 220 V -1.50 A $\tau = 0$ ms  | AgCu             | single contacts |                   |                      | $0,2 \times 10^6$    |                      |
| 220 V -2.00 A $\tau = 0$ ms  | AgCu             | single contacts |                   |                      |                      | $1,0 \times 10^6$    |
| 220 V -3.00 A $\tau = 0$ ms  | AgCu             | single contacts |                   |                      |                      | $0,5 \times 10^6$    |
| 220 V -0.15 A $\tau = 40$ ms | AgCu             | single contacts | $1,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.25 A $\tau = 40$ ms | AgCu             | single contacts | $0,5 \times 10^6$ |                      |                      |                      |
| 220 V -0.45 A $\tau = 40$ ms | AgCu             | single contacts |                   | $0,5 \times 10^6$    |                      |                      |
| 220 V -0.50 A $\tau = 40$ ms | AgCu             | single contacts |                   |                      | $0,3 \times 10^6$    |                      |
| 220 V -0.40 A $\tau = 0$ ms  | AgNi0,15Au6      | twin contacts   | $8,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.10 A $\tau = 40$ ms | AgNi0,15Au6      | twin contacts   | $1,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.40 A $\tau = 0$ ms  | AgPd30           | twin contacts   | $8,0 \times 10^6$ |                      |                      |                      |
| 220 V -0.05 A $\tau = 40$ ms | AgPd30           | twin contacts   | $2,0 \times 10^6$ |                      |                      |                      |

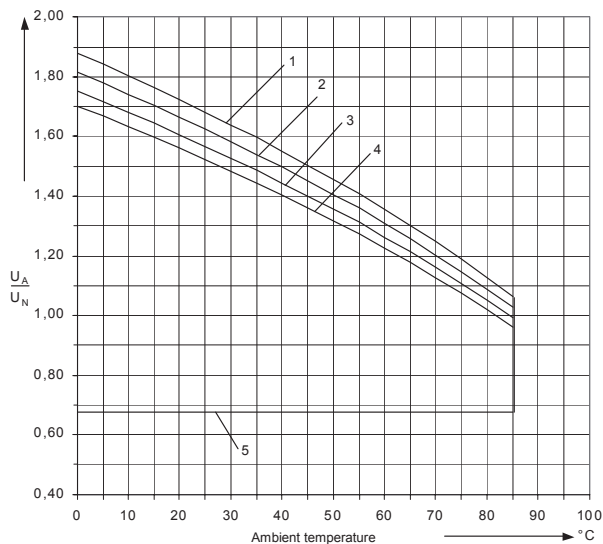
## Working Voltage Range and Ambient Temperature Range of All-or-Nothing Relays

All-or-nothing relays with an extended voltage range acc. to UIC and such relays with a metal cover can be applied principally outside the nominal range of use.

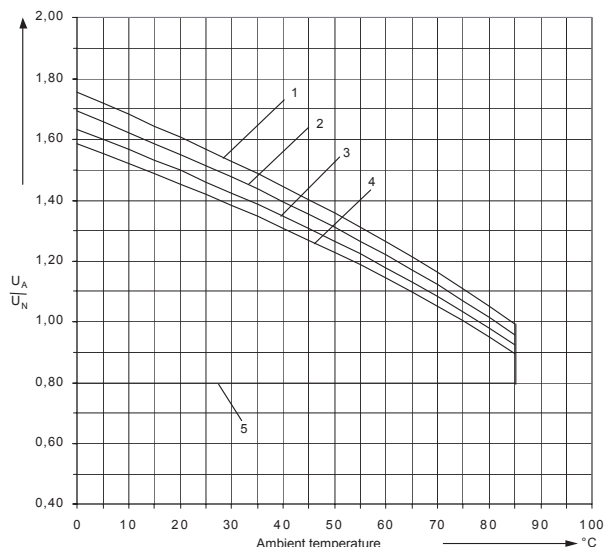
In the following operating voltage diagrams, the permissible ratio of the working voltage to the rated voltage dependent on the ambient temperature is shown under different operating conditions.

The maximum permissible working voltage for the all-or-nothing relays reduces with an increasing temperature.

Working voltage range for the following all-or-nothing relays:  
2 RH 01, 2 RH 02 voltage range acc. to UIC

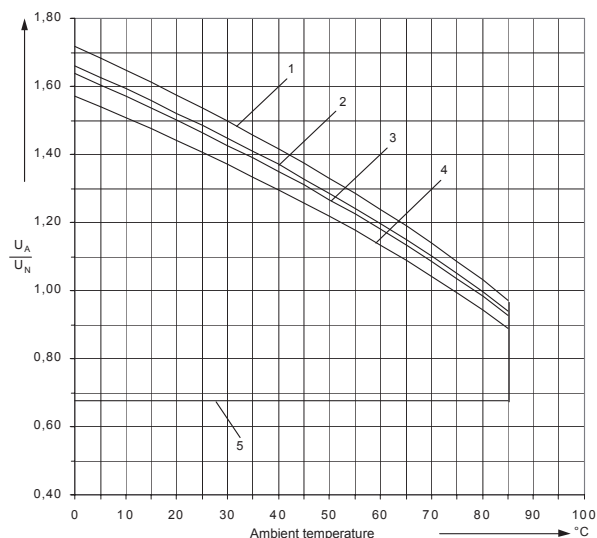


Working voltage range for the following all-or-nothing relays:  
2 RH 01 normal voltage range (metal cover)

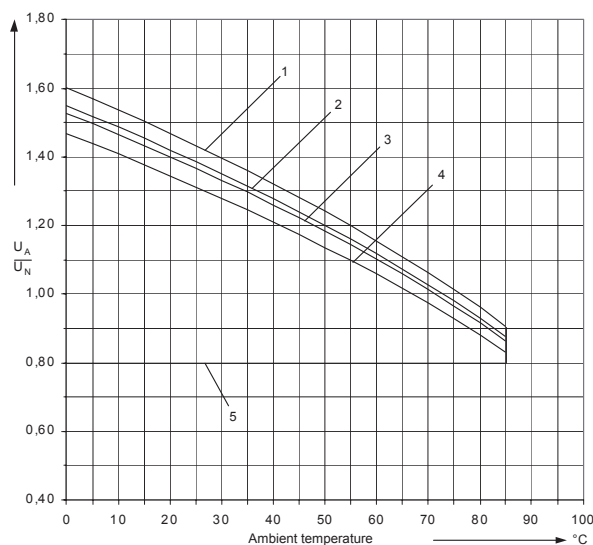


- 1 ⇒ Max. permissible operating voltage at single installation without contact load
- 2 ⇒ Max. permissible operating voltage at single installation, contact limiting current 4 A over 4 make contacts
- 3 ⇒ Max. permissible operating voltage at block installation and without contact load
- 4 ⇒ Max. permissible operating voltage at block installation, continuous contact limiting current 4 A over 4 make contacts
- 5 ⇒ Min. Response voltage at leading operation with maximum permissible operating voltage, single installation and/or block installation  
Continuous contact limiting current 4 A over 4 make contacts and thermal balance state of the end temperature of coil

Working voltage range for the following all-or-nothing relays:  
4 RH 10, 4 RH 12 voltage range acc. to UIC



Working voltage range for the following all-or-nothing relays:  
4 RH 10, 4 RH 12 normal voltage range



- 1 ⇒ Max. permissible operating voltage at single installation without contact load
- 2 ⇒ Max. permissible operating voltage at single installation, contact limiting current 3.6 A over 8 make contacts
- 3 ⇒ Max. permissible operating voltage at block installation and without contact load
- 4 ⇒ Max. permissible operating voltage at block installation, continuous contact limiting current 3.6 A over 8 make contacts
- 5 ⇒ Min. response voltage at leading operation with maximum permissible operating voltage, single installation and/or block installation  
Continuous contact limiting current 3.6 A over 8 make contacts and thermal balance state of the end temperature of coil



## Manufacturing Quality

The products of the RELOG system are manufactured in line with a quality management system according to the requirements of the DIN EN ISO 9004 standard as well as they are documented in line with DIN EN ISO 9001.

## Useful Life

Expectance value  $\geq 20$  years, provided the electrical and/or mechanical endurance are not exceeded before.

## Conformity with Standards

The data given for the RELOG all-or-nothing relays, including accessories, refer to the following national and international standards:

DIN VDE 0435-110 / VDE Part 110: 1989-04

Electrical relays; terms

DIN EN 60810-1 / VDE 0435 Part 201: 1999-04

Electromechanical non-specified-time relays,  
Part 1: General Requirements

DIN EN 60810-5 / VDE 0435 Part 140: 1999-04

Electromechanical non-specified-time relays,  
Part 5: Insulation coordination

DIN EN 60255-23 / VDE 0435 Part 120: 1997-03

Part 23: Electrical relays; contact behavior

DIN EN 60529 / VDE 0470 Part 1: 2000-12

Degrees of protection provided by enclosure (IP code)

DIN EN 60999-1 / VDE 0609 Part 1: 2000-12

Connecting devices – electrical copper conductors – safety requirements for screw-type terminals and screwless terminals

DIN EN 60068-2-1:1995-03

Environment tests – Part 2: Tests, test A: cold

DIN EN 60068-2-2:1994-08

Environment tests- part 2 tests, test B: dry heat

IEC 60068-2-3: 1969-01

Environment tests – Part 2: tests, test Ca: Continuous damp heat

DIN EN 60068-2-30:2000-02

Environment tests- part 2 tests, test Db40: Cyclical damp heat

DIN EN 60068-2-11:2000-02; environment tests – Part 2 Tests; test Ka: Salt fog.

IEC 60068-2-42: 1982-01 / IEC 60068-2-43: 1976-01

Environment tests – part 2 tests; (corrosive atmosphere) test Ki (Kc + Kd): sulphur dioxide + hydrogen sulphide

DIN EN 60068-2-29:1995-03

Environment tests- part 2 tests, test Eb: shock test

DIN EN 60068-2-6:1996-05

Environment tests- part 2 tests, test Fc: vibrations, sinusoidal

## CE Conformity

Presently, no CE labeling for "Electromechanical non-specified-time relays" is required in the guidelines.

However, the all-or-nothing relays of the RELOG system mounted on plug-in connections for quick-rail fastenings and/or screw-type fastenings with a screw terminal are in line with the regulations of the European guidelines

73/23/EEC "Low-voltage guideline" as of 19.02.1973

89/392/EEC of 03.05.89

including their modifications.

The CE marking will be attached to the package or on the side print of the relay.

## Technical Parameters

### Monostable 2 RH 01, 4 RH 10 all-or-nothing relays for direct voltage

| Parameters   | Relay type   |  | 2 RH 01   | 2 RH 01  | 2 RH 01   | 4 RH 10  |
|--|--|--|---|--|---|--|
| rated voltages $U_N$   | 6 V to 220 V DC  |  |   |  |   | 12 V to 220 V DC   |
| Response voltage   | $\leq 0.8 \times U_N$  |  |   |  |   |  |
| max. working voltage   | $1.1 \times U_N$   |  |   |  |   |  |
| operating mode   | continuous operation   |  |   |  |   |  |
| Dropout voltage  | $\geq 5\%$ of $U_N$  |  |   |  |   |  |
| Ambient temperature  | - 40°C up to + 55°C at individual installation<br>- 40°C up to +50°C at block installation                                   |  |   |  |   |  |
| Rated consumption:   | $\leq 2.5$ W   |  |   |  |   | $\leq 5.0$ W   |
| Function indicator   | without function indicator or with target / drop indicator   |  |   |  |   | without  |
| GP02-40 free-wheeling diode  | with or without  |  |   |  |   | without  |
| max. switching voltage   | $\leq 250$ V AC/DC   |  |   |  |   |  |
| Number of contacts   | 4 changeover contacts  |  |   |  |   | 8 changeover contacts  |
| Contact arrangement  | single contacts  |  |   |  |   |  |
| Material of contact-tip  | AgCu   |  | AgPd30  |  | AgCu  |  |
| Contact circuit resistance<br>(24 V-, 100 mA, new condition)   | approx. 30 m $\Omega$  |  | approx. 40 m $\Omega$   |  | approx. 30 m $\Omega$   |  |
| Maximum making capacity  | 10 A DC/AC   |  |   | 3 A DC/AC  |   | 10 A DC/AC   |
| Maximum permitted continuous current   | 5 A<br>the sum of the square of the single currents must not exceed 64 A <sup>2</sup>  |  |   | 3 A<br>the sum of the square of the single currents must not exceed 9 A <sup>2</sup> |   | 5 A<br>the sum of the square of the single currents must not exceed 104 A <sup>2</sup> |
| Limiting continuous current  | 4 A<br>over four making contact circuits   |  |   | 1.5 A<br>over four making contact circuits   |   | 3.6 A<br>over eight making contact circuits  |
| Operating frequency  | $\leq 3,600$ switching cycles per hour   |  |   |  |   |  |
| Mechanical endurance without function indication with target, drop indicator   | $\geq 10 \times 10^6$ switching cycles<br>$\geq 0,1 \times 10^6$ switching cycles  |  |   |  |   | $\geq 10 \times 10^6$ switching cycles<br>-  |
| Rated breaking capacity<br>• $\cos \varphi = 1.0$ 230 V AC<br>• $\cos \varphi = 0.4$ 230 V AC<br>• $\tau = 0$ ms 220 V DC<br>• $\tau = 40$ ms 220 V DC | 1.5 A<br>1.0 A<br>0.4 A<br>0.15 A  |  | 1.5 A<br>1.0 A<br>0.4 A<br>0.05 A                                       |  | 1.5 A<br>1.0 A<br>0.4 A<br>0.15 A   |  |
| Minimum switching capacity   | 24 V-, 10 mA, $\tau = 0$ ms  |  | 24 V-, 50 mA, $\tau = 0$ ms   |  | 24 V-, 10 mA, $\tau = 0$ ms   |  |
| Voltage endurance<br>• at rated breaking capacity<br>• at inherent load<br>• at minimum switching capacity   | $\geq 2,0 \times 10^6$<br>$\geq 5,0 \times 10^6$<br>$\geq 10 \times 10^6$  |  | $\geq 10 \times 10^6$<br>$\geq 10 \times 10^6$<br>$\geq 10 \times 10^6$ |  | $\geq 2,0 \times 10^6$<br>$\geq 2,5 \times 10^6$<br>$\geq 10 \times 10^6$ |  |
| response time of make contacts<br>• without function indication<br>• with target, drop indicator   | $\leq 25$ ms<br>$\leq 35$ ms   |  |   |  |   | $\leq 25$ ms<br>-  |
| closing time of a break contact<br>• with free-wheeling diode  | $\leq 15$ ms<br>$\leq 80$ ms   |  |   |  |   | $\leq 20$ ms<br>$\leq 80$ ms   |
| rated alternating insulation voltage   | 2 kV   |  |   |  |   |  |
| degree of pollution  | 3 acc. to DIN VDE 0110-1   |  |   |  |   |  |
| Impulse voltage withstand level  | 4.0 kV, voltage form 1.2/50 $\mu$ s  |  |   |  |   |  |
| Clearances in air  | $\geq 3$ mm  |  |   |  |   |  |
| Creep age distances  | $\geq 4$ mm  |  |   |  |   |  |
| Site altitude  | $\leq 2,000$ m above sea level   |  |   |  |   |  |
| Relay enclosure  | bifurcated plastic cover (PC), transparent   |  |   | closed plastic cover (PC), transparent   |   | Closed metal cover (Al) transparent display window                                     |
| Insulation resistance  | $\geq 1 \times 10^8 \Omega$ in new condition, $U_P = 500$ V  |  |   |  |   |  |
| Degree of protection   | IP40 enclosure<br>IP00 connecting plug-in blades<br>IP20 connecting terminals with plug-in connection for quick-rail fixings |  |   |  |   |  |
| Climatic type of construction  | normal or climatic type of construction for ships  |  |   |  |   |  |
| Environment tests  | values on request  |  |   |  |   |  |
| Weight   | about 0.22 kg  |  |   |  |   | about 0.44 kg  |

## Monostable 2 RH 02, 4 RH 12 all-or-nothing relays for direct voltage

| Relay type   | 2 RH 02  |                           | 2 RH 02   |  | 2 RH 02  |  | 2 RH 02   |  | 4 RH 12  |  |
|--|--|---------------------------|---|--|--|--|---|--|--|--|
| Parameters   | 2 RH 02  |                           | 2 RH 02   |  | 2 RH 02  |  | 2 RH 02   |  | 4 RH 12  |  |
| rated voltages $U_N$   | 6 V to 220 V DC  |                           |   |  |  |  |   |  | 12 V to 220 V DC   |  |
| Response voltage   | $\leq 0,8 \times U_N$  |                           |   |  |  |  |   |  |  |  |
| max. working voltage   | $1,1 \times U_N$   |                           |   |  |  |  |   |  |  |  |
| operating mode   | continuous operation   |                           |   |  |  |  |   |  |  |  |
| Dropout voltage  | $\geq 5\%$ of $U_N$  |                           |   |  |  |  |   |  |  |  |
| Ambient temperature<br>• at single installation<br>• at block installation   | -40°C up to +50°C<br>-40°C up to +45°C   |                           |   |  |  |  |   |  | -40°C up to +55°C<br>-40°C up to +50°C   |  |
| Rated consumption:   | $\leq 2.5$ W   |                           |   |  |  |  |   |  | $\leq 5.0$ W   |  |
| Function indicator   | with or without target and/or drop indicator   | with or without target    | with or without target and/or drop indicator  |  |  |  | without   |  |  |  |
| GP02-40 free-wheeling diode  | with or without  |                           |   |  |  |  |   |  | Without  |  |
| max. switching voltage   | $\leq 250$ V AC/DC   |                           |   |  |  |  |   |  |  |  |
| Number of contacts   | 4 changeover contacts  |                           |   |  |  |  |   |  | 8 changeover contacts  |  |
| Contact arrangement  | single contacts  |                           |   |  |  |  |   |  |  |  |
| Material of contact-tip  | AgCu   |                           | AgNi0,15Au6   |  | AgPd30   |  | AgCu  |  |  |  |
| Contact circuit resistance<br>24 V-, 100 mA, new condition   | 30 m $\Omega$  |                           | 20 m $\Omega$   |  | 40 m $\Omega$  |  | 30 m $\Omega$   |  |  |  |
| Maximum making capacity  | 10 A DC/AC   |                           |   |  |  |  |   |  |  |  |
| Maximum permitted continuous current   | 3 A<br>the sum of the squares of the single currents must not exceed 64 A <sup>2</sup> in single installation, and 23 A <sup>2</sup> in block installation |                           |   |  |  |  |   |  | 5 A<br>the sum of the square of the single currents must not exceed 104 A <sup>2</sup> |  |
| Limiting continuous current  | 4 A at single installation<br>2.4 A at block installation<br>(over four making contact circuits)   |                           |   |  |  |  |   |  | 3.6A<br>(over eight making contact circuits)   |  |
| Switching frequency  | $\leq 3,600$ cycles / hour   | $\leq 1200$ cycles / hour | $\leq 3,600$ switching cycles per hour  |  |  |  |   |  |  |  |
| Mechanical endurance<br>• without function indication<br>• with sign, drop indicator   | $\geq 20 \times 10^5$ switching cycles<br>$\geq 0,1 \times 10^6$ switching cycles  |                           |   |  |  |  |   |  | $\geq 10 \times 10^6$ cycles<br>-  |  |
| Rated breaking capacity<br>• $\cos \varphi = 1.0$ 230 V AC<br>• $\cos \varphi = 0.4$ 230 V AC<br>• $\tau = 0$ ms 220 V DC<br>• $\tau = 40$ ms 220 V DC | 1.5 A<br>1.0 A<br>0.4 A<br>0.1 A   |                           | 1.5 A<br>1.0 A<br>0.4 A<br>0.05 A   |  | 1.5 A<br>1.0 A<br>0.4 A<br>0.1 A   |  | 1.5 A<br>1.0 A<br>0.4 A<br>0.1 A  |  |  |  |
| Minimum switching capacity   | 24 V-, 5 mA,<br>$\tau = 0$ ms  |                           | 24 V-, 1 mA,<br>$\tau = 0$ ms   |  | 24 V-, 25 mA,<br>$\tau = 0$ ms   |  | 24 V-, 5 mA,<br>$\tau = 0$ ms   |  |  |  |
| Voltage endurance<br>• at rated breaking capacity<br>• at inherent load<br>• at minimum switching capacity   | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 2,5 \times 10^6$<br>$\geq 10 \times 10^6$  |                           | $\geq 3,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 5,0 \times 10^6$<br>$\geq 10 \times 10^6$ |  | $\geq 5,0 \times 10^6$ (AC)<br>$\geq 2,0 \times 10^6$ (DC)<br>$\geq 10 \times 10^6$<br>$\geq 10 \times 10^6$ |  | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 2,5 \times 10^6$<br>$\geq 10 \times 10^6$ |  |  |  |
| response time of make contacts<br>• without function indication<br>• with sign, drop indicator   | $\leq 25$ ms<br>$\leq 35$ ms   |                           |   |  |  |  |   |  | $\leq 25$ ms<br>-  |  |
| closing time of a break contact<br>• without free-wheeling diode<br>• with freewheeling diode  | $\leq 25$ ms<br>$\leq 80$ ms   |                           |   |  |  |  |   |  |  |  |
| Rated alternating insulation voltage   | 2 kV   |                           |   |  |  |  |   |  |  |  |
| degree of pollution  | 3 acc. to DIN VDE 0110-1   |                           |   |  |  |  |   |  |  |  |
| Impulse voltage withstand level  | 4.0 kV, voltage form 1.2/50 $\mu$ s  |                           |   |  |  |  |   |  |  |  |
| Clearances in air  | $\geq 3$ mm  |                           |   |  |  |  |   |  |  |  |
| Creep age distances  | $\geq 4$ mm  |                           |   |  |  |  |   |  |  |  |
| Site altitude  | $\leq 2,000$ m above sea level   |                           |   |  |  |  |   |  |  |  |
| Relay enclosure  | closed plastic covers (PC), transparent  |                           |   |  |  |  |   |  | Closed metal cover (Al)<br>display window transparent                                  |  |
| Insulation resistance  | $\geq 1 \times 10^8 \Omega$ in new condition, $U_p = 500$ V  |                           |   |  |  |  |   |  |  |  |
| Degree of protection<br>• enclosure<br>• Connecting plug-in blades<br>• terminal with plug-in connection for quick-rail fixing                         | IP 40<br>IP 00<br>IP 20  | IP 50<br>IP 00<br>IP 20   | IP 40<br>IP 00<br>IP 20   |  |  |  |   |  |  |  |
| Climatic type of construction  | normal or climatic type of construction for ships  |                           |   |  |  |  |   |  | climatic type of construction  |  |
| Environment tests  | values on request  |                           |   |  |  |  |   |  |  |  |
| Weight   | about 0.22 kg  |                           |   |  |  |  |   |  | about 0.44 kg  |  |

**Monostable 2 RH 01, 2 RH 01, 2 RH 02, 4 RH 12 all-or-nothing relays with a voltage range acc. to UIC**

| Relay type<br>Parameters                                     | 2 RH 01  | 2 RH 02  | 2 RH 02  | 2 RH 02   | 4 RH 10  | 4 RH 12  |
|--|--|--|--|---|--|--|
| rated voltages $U_N$   | 6 V to 220 V DC  |  |  |   | 12 V to 220 V DC   |  |
| Response voltage   | $\leq 0,675 \times U_N$<br>see paragraph "All-or-nothing relays with extended voltage and temperature range"   |  |  |   |  |  |
| max. working voltage   | $1,35 \times U_N$<br>see paragraph "All-or-nothing relays with extended voltage and temperature range"   |  |  |   |  |  |
| operating mode   | continuous operation   |  |  |   |  |  |
| Dropout voltage  | $\geq 5\%$ of $U_N$  |  |  |   |  |  |
| Ambient temperature  | - 40°C up to +55°C at individual installation<br>- 40°C up to +50°C at block installation<br>see paragraph "All-or-nothing relays with extended voltage and temperature range" |  |  |   |  |  |
| Rated consumption:   | 2.0 W $\pm$ 15 %   |  |  |   | 4.0 W $\pm$ 15 %   |  |
| Function indicator   | without function indicator or with sign / drop indicator   |  |  |   | without  |  |
| max. switching voltage                                       | $\leq 250$ V AC/DC   |  |  |   |  |  |
| Number of contacts   | 4 changeover contacts  |  |  |   | 8 changeover contacts  |  |
| Contact arrangement  | single contacts  | twin contacts  |  |   | single contacts  | twin contacts  |
| Material of contact-tip                                      | AgCu   |  | AgNi0,15Au6  | AgPd30  | AgCu   |  |
| Contact circuit resistance<br>(24 V-, 100 mA, new condition) | approx. 30 m $\Omega$  |  | approx. 20 m $\Omega$                                      | approx. 40 m $\Omega$                                     | approx. 30 m $\Omega$  |  |
| Maximum making capacity                                      | 10 A DC/AC   |  |  |   |  |  |
| Maximum permitted continuous current                         | 5 A<br>the sum of the square of the single currents must not exceed 64 A <sup>2</sup>  |  |  |   | 5 A<br>the sum of the square of the single currents must not exceed 104 A <sup>2</sup> |  |
| Limiting continuous current                                  | 4 A<br>over four making contact circuits   |  |  |   | 3.6 A<br>over eight making contact circuits  |  |
| Switching frequency  | $\leq 3,600$ switching cycles per hour   |  |  |   |  |  |
| Mechanical endurance   | $\geq 10 \times 10^6$ cycles   |  | $\geq 20 \times 10^6$ switching cycles                     |   | $\geq 10 \times 10^6$ switching cycles   |  |
| • without function indication                                | $\geq 0,1 \times 10^6$ cycles  |  | $\geq 0,1 \times 10^6$ switching cycles                    |   | -  |  |
| • with sign, drop indicator                                  |  |  |  |   |  |  |
| Rated breaking capacity                                      |  |  |  |   |  |  |
| • $\cos \varphi = 1.0$ 230 V AC                              | 1.0 A  | 1.5 A  | 1.5 A  | 1.5 A   | 1.5 A  | 1.5 A  |
| • $\cos \varphi = 0.4$ 230 V AC                              | 1.0 A  | 1.0 A  | 1.0 A  | 1.0 A   | 1.0 A  | 1.0 A  |
| • $\tau = 0$ ms 220 V DC                                     | 0.4 A  | 0.4 A  | 0.4 A  | 0.4 A   | 0.4 A  | 0.4 A  |
| • $\tau = 40$ ms 220 V DC                                    | 0.15 A   | 0.1 A  | 0.1 A  | 0.05 A  | 0.15 A   | 0.1 A  |
| • $\tau = 20$ ms 220 V DC                                    | -  | 0.04 A   | -  | 0.04 A  | -  | 0.04 A   |
| Minimum switching capacity                                   | 24 V-, 10 mA,<br>$\tau = 0$ ms   | 12 V-, 5 mA<br>$\tau = 0$ ms                               | 12 V-, 1 mA,<br>$\tau = 0$ ms                              | 12 V-, 25 mA,<br>$\tau = 0$ ms                            | 24 V-, 10 mA,<br>$\tau = 0$ ms   | 12 V-, 5 mA,<br>$\tau = 0$ ms                              |
| Voltage endurance  |  |  |  |   |  |  |
| • at rated breaking capacity                                 | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)   | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC) | $\geq 3,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC) | $\geq 10 \times 10^6$ (AC)<br>$\geq 2,0 \times 10^6$ (DC) | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)                             | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC) |
| • at inherent load   | $\geq 5,0 \times 10^6$   | $\geq 5,0 \times 10^6$                                     | $\geq 5,0 \times 10^6$                                     | $\geq 10 \times 10^6$                                     | $\geq 2,5 \times 10^6$   | $\geq 2,5 \times 10^6$                                     |
| • at minimum switching capacity                              | $\geq 10 \times 10^6$  | $\geq 10 \times 10^6$                                      | $\geq 10 \times 10^6$                                      | $\geq 20 \times 10^6$                                     | $\geq 10 \times 10^6$  | $\geq 10 \times 10^6$                                      |
| • response time of make contacts                             | $\leq 25$ ms   |  |  |   | $\leq 25$ ms   |  |
| • without function indication                                | $\leq 35$ ms   |  |  |   | -  |  |
| • with sign, drop indicator                                  |  |  |  |   |  |  |
| closing time of a break contact                              | $\leq 25$ ms   |  |  |   |  |  |
| • with freewheeling diode                                    | $\leq 80$ ms   |  |  |   |  |  |
| Rated alternating insulation voltage                         | 2 kV   |  |  |   |  |  |
| degree of pollution  | 3 acc. to DIN VDE 0110-1   |  |  |   |  |  |
| Impulse voltage withstand level                              | 4.0 kV, voltage form 1.2/50 $\mu$ s  |  |  |   |  |  |
| Clearances in air  | $\geq 3$ mm  |  |  |   |  |  |
| Creep age distances  | $\geq 4$ mm  |  |  |   |  |  |
| Site altitude  | $\leq 2,000$ m above sea level   |  |  |   |  |  |
| Relay enclosure  | closed metal cover (Al), transparent display window  |  |  |   |  |  |
| Insulation resistance  | $\geq 1 \times 10^8 \Omega$ in new condition, $U_p = 500$ V  |  |  |   |  |  |
| Degree of protection   | IP40 - enclosure<br>IP00 - connecting plug-in blades<br>IP20 - connecting terminals with plug-in connection for quick-rail fixings   |  |  |   |  |  |
| Climatic type of construction                                | normal or climatic type of construction  | climatic type of construction                              |  | normal or climatic type of construction for ships         | climatic type of construction  |  |
| Environment tests  | values on request  |  |  |   |  |  |
| Weight   | about 0.22 kg  |  |  |   | about 0.44 kg  |  |

\*The golden layer of the AgNi0,15 Au6 contact tip material is subject under erosion depending on the current value. After that the contacts have the features of silver-nickel (fine silver) contact tip material.

## Monostable All-or-Nothing Relays 2 RH 01, 2 RH 30 to monitor current and navigation lamps

### Specific Parameter for 2 RH 01 (DC) All-or-Nothing Relays

Use as current monitoring relays:

|                                      |              |       |      |      |      |      |      |      |      |      |       |
|--------------------------------------|--------------|-------|------|------|------|------|------|------|------|------|-------|
| Rated current $I_N$                  | [A]          | 0,015 | 0,17 | 0,24 | 0,35 | 0,46 | 0,50 | 0,90 | 1,50 | 2,45 | 4,15  |
| Minimum response current             | [A]          | 0,012 | 0,14 | 0,20 | 0,27 | 0,35 | 0,42 | 0,72 | 1,17 | 1,97 | 2,59  |
| Maximum permitted continuous current | [A]          | 0,020 | 0,24 | 0,35 | 0,48 | 0,61 | 0,75 | 1,25 | 2,11 | 3,61 | 4,69  |
| Coil resistance                      | [ $\Omega$ ] | 4107  | 29,3 | 14,1 | 7,3  | 4,55 | 3,04 | 1,08 | 0,38 | 0,13 | 0,077 |
| Rated consumption:                   | [W]          | 0,92  | 0,85 | 0,81 | 0,89 | 0,96 | 0,76 | 0,87 | 0,86 | 0,78 | 1,33  |

Use as monitoring relays for lamps and navigation lamps:

|                            |     |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Rated current              | [A] | 0,17 | 0,24 | 0,35 | 0,46 | 0,46 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,50 | 0,90 | 0,90 |
| Voltage of lamp            | [V] | 220  | 220  | 220  | 110  | 220  | 24   | 110  | 110  | 220  | 220  | 220  | 24   | 110  |
| Capacity of lamp           | [W] | 34   | 40   | 60   | 40   | 75   | 10   | 60   | 75   | 100  | 3x40 | 2x60 | 20   | 100  |
| $U_{Loss}$ * through relay | [V] | 4,44 | 2,53 | 1,97 | 1,63 | 1,54 | 1,20 | 1,63 | 2,03 | 1,37 | 1,65 | 1,65 | 0,87 | 0,97 |

### Specific Parameter for 2 RH 30 (AC 50 Hz) All-or-Nothing Relays

Use as monitoring relays for lamps and navigation lamps:

|                                      |      |      |      |      |            |      |      |      |      |      |      |      |                     |      |      |      |                     |
|--------------------------------------|------|------|------|------|------------|------|------|------|------|------|------|------|---------------------|------|------|------|---------------------|
| Rated current                        | [A]  | 0,34 | 0,4  | 0,53 | 0,6        | 0,7  | 0,7  | 0,95 | 0,95 | 0,95 | 0,95 | 0,95 | 0,95                | 1,33 | 1,8  | 1,8  | 1,8                 |
| Maximum permitted continuous current | [A]  | 0,5  | 0,75 | 0,9  | 1,0        | 1,0  | 1,4  | 1,4  | 1,4  | 1,4  | 1,4  | 1,4  | 1,4                 | 1,95 | 2,5  | 2,5  | 2,5                 |
| Voltage of lamp                      | [V]  | 230  | 230  | 230  | 230        | 127  | 230  | 24   | 127  | 127  | 127  | 230  | 230                 | 127  | 24   | 127  | 127                 |
| Capacity of lamp                     | [W]  | 34   | 40   | 60   | 2x40<br>80 | 40   | 75   | 10   | 60   | 75   | 2x40 | 100  | 2x60<br>3x40<br>120 | 2x40 | 20   | 100  | 2x60<br>3x40<br>120 |
| Current at $U_N$                     | [mA] | 147  | 173  | 260  | 347        | 314  | 326  | 410  | 471  | 589  | 628  | 434  | 521                 | 629  | 827  | 786  | 944                 |
| $U_{Loss}$ * through relay           | [V]  | 6,85 | 5,84 | 5,34 | 5,20       | 3,51 | 3,64 | 2,58 | 2,96 | 3,70 | 3,94 | 2,73 | 3,27                | 1,95 | 1,54 | 1,46 | 1,75                |

### General Parameter for 2 RH 01 und 2 RH 30 All-or-Nothing Relays

| Parameter                            | Type: 2 RH 01  | Type: 2 RH 30   |
|--------------------------------------|--|---|
| Rated frequency $F_N$                | -  | 50 Hz   |
| Tolerance of rated frequency         | -  | $\pm 6\%$   |
| operating mode                       | continuous operation   |   |
| Release current                      | $\geq 5\%$ of $I_N$  | $\geq 15\%$ of $I_N$  |
| Ambient temperature                  | -30°C up to +55°C at individual installation<br>-30°C up to +50°C at block installation  |   |
| Function indicator                   | optionally without function indicator or with target / drop indicator  |   |
| Maximum switching voltage:           | $\leq 250$ V AC/DC   |   |
| Number of contacts                   | 4 changeover contacts  |   |
| Contact arrangement                  | single contacts  |   |
| Material of contact-tip              | hard silver AgCu   |   |
| Contact circuit resistance           | approx. 30 m $\Omega$ in new condition (24 V DC, 100 mA,)  |   |
| Maximum making capacity              | 10 A DC/AC   |   |
| Maximum permitted continuous current | 5 A<br>the sum of the square of the single currents must not exceed 64 A <sup>2</sup>  |   |
| Limiting continuous current          | 4 A over all 4 making contact circuits   |   |
| Switching frequency                  | $\leq 3,600$ switching cycles as current monitoring relay<br>$\leq 1,800$ cycles as lamp monitoring relay break<br>between two cycles must be $\geq 1$ s | $\leq 600$ switching cycles per hour<br>break between two cycles must be $\geq 5$ s |
| Mechanical endurance                 | $\geq 10 \times 10^5$ cycles without function indication<br>$\geq 0,1 \times 10^6$ cycles with target and/or drop indicator                              |   |
| Rated breaking capacity              | 1.5 A $\cos \varphi = 1.0$ 230 V AC<br>1.0 A $\cos \varphi = 0.4$ 230 V AC<br>0.4 A $\tau = 0$ ms 220 V DC<br>0.15 A $\tau = 40$ ms 220 V DC             |   |
| Minimum switching capacity           | 24 V DC, 10 mA, $\tau = 0$ ms  |   |
| Voltage endurance                    | $\geq 1,0 \times 10^6$ cycles at rated breaking capacity   |   |
| response time of make contacts       | $\leq 30$ ms at $I_N$ without function indication<br>$\leq 40$ ms at $I_N$ with target and/or drop indicator   |   |
| closing time of a break contact      | $\leq 20$ ms   |   |
| Rated alternating insulation voltage | 2 kV   |   |
| degree of pollution                  | 3 acc. to DIN VDE 0110-1   |   |
| Impulse voltage withstand level      | 4.0 kV, voltage form 1.2/50 $\mu$ s  |   |
| Clearances in air                    | $\geq 3$ mm  |   |
| Creep age distances                  | $\geq 4$ mm  |   |
| Site altitude                        | $\leq 2,000$ m above sea level   |   |
| Relay enclosure                      | closed metal cover (Al), transparent display window  |   |
| Insulation resistance                | $\geq 1 \times 10^8 \Omega$ in new condition, $U_P = 500$ V  |   |
| Degree of protection                 | IP40 - enclosure<br>IP00 - connecting plug-in blades<br>IP20 - connecting terminals with plug-in connection for quick-rail fixings                       |   |
| Climatic type of construction        | normal or climatic type of construction for ships  |   |
| Environment tests                    | values on request  |   |
| Weight                               | about 0.22 kg  |   |

## Monostable 2 RH 30, 2 RH 32 All-or-Nothing Relays for Alternating Voltage

| Relay type   | 2 RH 30   | 2 RH 30  | 2 RH 30  | 2 RH 30  | 2 RH 32  | 2 RH 32                       |
|--|---|--|--|--|--|-------------------------------|
| Parameters   |   |  |  |  |  |                               |
| Rated voltages $U_N$   | 6 V up to 230 V AC  |  |  |  |  |                               |
| Rated frequency $F_N$  | 50 Hz   | 60 Hz  | 50 Hz  |  |  |                               |
| Tolerance of rated frequency   | $\pm 6\%$   | $\pm 6\%$  | $\pm 6\%$  |  |  |                               |
| Response voltage   | $\leq 0,8 \times U_N$   |  |  |  |  |                               |
| max. working voltage   | $1,1 \times U_N$  |  |  |  |  |                               |
| operating mode   | continuous operation  |  |  |  |  |                               |
| Dropout voltage  | $\geq 15\%$ of $U_N$  |  |  |  |  |                               |
| Ambient temperature  | -40°C up to +55°C at individual installation<br>-40°C up to +50°C at block installation                               |  |  |  |  |                               |
| Rated consumption:<br>• initial state<br>• Operated condition  | 7.0 VA,<br>$\cos \varphi = 0.32$<br>3.6 VA,<br>$\cos \varphi = 0.62$  | 7.5 VA,<br>$\cos \varphi = 0.3$<br>4.5 VA,<br>$\cos \varphi = 0.6$ | 7.0 VA $\cos \varphi = 0.32$<br>3.5 VA $\cos \varphi = 0.62$ |  |  |                               |
| Function indicator   | with or without target and/or drop indicator  |  |  |  |  | with or without target        |
| max. switching voltage   | $\leq 250$ V AC/DC  |  |  |  |  |                               |
| Number of contacts   | 4 changeover contacts   |  |  |  |  |                               |
| Contact arrangement  | single contacts   |  |  |  | twin contacts  |                               |
| Material of contact-tip  | AgCu  |  |  |  |  |                               |
| Contact circuit resistance   | approx. 30 m $\Omega$ (24 V DC, 100 mA, new condition)  |  |  |  |  |                               |
| Maximum making capacity  | 10 A DC/AC  |  |  | 3 A DC/AC  | 10 A DC/AC   |                               |
| Maximum permitted continuous current   | 5 A<br>the squares of the single currents must not exceed the sum 64 A <sup>2</sup>                                   |  |  | 3 A<br>the squares of the single currents must not exceed the sum of 9 A | 5 A,<br>the squares of the single currents must not exceed in single installation 64 A <sup>2</sup> , in block installation 9 A <sup>2</sup> |                               |
| Limiting continuous current (over four making contact circuits)  | 4 A   |  |  | 1.5 A  | 4.0 A at single installation<br>1.5 A at block installation  |                               |
| Switching frequency  | $\leq 3,600$ switching cycles per hour  |  |  |  |  | $\leq 1,200$ cycles per hour  |
| Mechanical endurance   | $\geq 10 \times 10^6$ cycles without function indication<br>$\geq 0,1 \times 10^6$ cycles without function indication |  |  |  |  |                               |
| Rated breaking capacity<br>• $\cos \varphi = 1.0$ 230 V AC<br>• $\cos \varphi = 0.4$ 230 V AC<br>• $\tau = 0$ ms 220 V DC<br>• $\tau = 40$ ms 220 V DC | 1.5 A<br>1.0 A<br>0.4 A<br>0.15 A   |  |  |  | 1.5 A<br>1.0 A<br>0.4 A<br>0.1 A   |                               |
| Minimum switching capacity   | 24 V-, 10 mA, $\tau = 0$ ms   |  |  |  | 12 V-, 5 mA, $\tau = 0$ ms   |                               |
| Voltage endurance<br>• at rated breaking capacity<br>• at inherent load<br>• at minimum switching capacity   | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 5,0 \times 10^6$<br>$\geq 10 \times 10^6$         |  |  |  | $\geq 1,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 2,5 \times 10^6$<br>$\geq 10 \times 10^6$                                |                               |
| response time of make contacts<br>• without function indication<br>• with sign, drop indicator   | $\leq 20$ ms<br>$\leq 30$ ms  |  |  |  |  |                               |
| closing time of a break contact  | $\leq 20$ ms  |  |  |  |  |                               |
| Rated alternating insulation voltage   | 2 kV  |  |  |  |  |                               |
| degree of pollution  | 3 acc. to DIN VDE 0110-1  |  |  |  |  |                               |
| Impulse voltage withstand level  | 4.0 kV, voltage form 1.2/50 $\mu$ s   |  |  |  |  |                               |
| Clearances in air  | $\geq 3$ mm   |  |  |  |  |                               |
| Creep age distances  | $\geq 4$ mm   |  |  |  |  |                               |
| Site altitude  | $\leq 2,000$ m above sea level  |  |  |  |  |                               |
| Relay enclosure  | bifurcated<br>PC cover,<br>transparent  | closed<br>metal cover (Al)<br>transparent display window           |  | closed plastic covers (PC), transparent                                  |  |                               |
| Insulation resistance  | $\geq 1 \times 10^8 \Omega$ in new condition, $U_P = 500$ V   |  |  |  |  |                               |
| Degree of protection<br>• casing<br>• Connecting plug-in blades<br>• terminal with plug-in connection for quick-rail fixings                           | IP 40<br>IP 00<br>IP 20   |  |  |  |  | IP 50<br>IP 00<br>IP 20       |
| Climatic type of construction  | normal or climatic type of construction for ships   |  |  |  |  | climatic type of construction |
| Environment tests  | values on request   |  |  |  |  |                               |
| Weight   | about 0.22 kg   |  |  |  |  |                               |



## Monostable 4 RH 40, 4 RH 42 All-or-Nothing Relays for Alternating Voltage

| Relay type                           | 4 RH 40  | 4 RH 40   | 4 RH 42  |
|--------------------------------------|--|---|--|
| Parameters                           |  |   |  |
| rated voltages $U_N$                 | 12 V up to 230 V AC  |   |  |
| Rated frequency $F_N$                | 50 Hz  | 60 Hz   | 50 Hz  |
| Tolerance of rated frequency         | $\pm 6\%$  | $\pm 6\%$   | $\pm 6\%$  |
| Response voltage                     | $\leq 0,8 \times U_N$  |   |  |
| max. working voltage                 | $1,1 \times U_N$   |   |  |
| operating mode                       | continuous operation   |   |  |
| Dropout voltage                      | $\geq 15\%$ of $U_N$   |   |  |
| Ambient temperature                  |  |   |  |
| • at single installation             | -40°C up to +55°C  | -40°C up to +50°C   | -40°C up to +55°C  |
| • at block installation              | -40°C up to +50°C  | -40°C up to +45°C   | -40°C up to +50°C  |
| Rated consumption:                   |  |   |  |
| • initial state                      | 14 VA $\cos \varphi = 0,32$  | 15 VA $\cos \varphi = 0,3$  | 14 VA $\cos \varphi = 0,32$  |
| • Operated condition                 | 7.2 VA $\cos \varphi = 0,62$   | 9 VA $\cos \varphi = 0,6$   | 7.2 VA $\cos \varphi = 0,62$   |
| Function indicator                   | without  |   |  |
| max. switching voltage               | $\leq 250$ V AC/DC   |   |  |
| Number of contacts                   | 8 changeover contacts  |   |  |
| Contact arrangement                  | single contacts  |   | twin contacts  |
| Material of contact-tip              | AgCu   |   |  |
| Contact circuit resistance           | approx. 30 m $\Omega$ new condition (24 V DC, 100 mA)  |   |  |
| Maximum making capacity              | 10 A DC/AC   |   |  |
| Maximum permitted continuous current | 5 A,<br>the squares of the single currents must not exceed the sum 98 A <sup>2</sup>   | 5 A,<br>the squares of the single currents must not exceed the sum of 98 A <sup>2</sup> at single installation, and 46 A <sup>2</sup> at block installation | 5 A,<br>the sum of the square of the single currents must not exceed 98 A <sup>2</sup> |
| Limiting continuous current          | 3.5 A<br>(over eight making contact circuits)  | 3.5 A at single installation<br>2.4 A at block installation<br>(over eight making contact circuits)   | 3.5 A<br>(over eight making contact circuits)  |
| Switching frequency                  | $\leq 3,600$ cycles per hour   |   |  |
| Mechanical endurance                 | $\geq 10 \times 10^6$ switching cycles   |   |  |
| Rated breaking capacity              |  |   |  |
| • $\cos \varphi = 1.0$ 230 V AC      | 1.5 A  |   | 1.5 A  |
| • $\cos \varphi = 0.4$ 230 V AC      | 1.0 A  |   | 1.0 A  |
| • $\tau = 0$ ms 220 V DC             | 0.4 A  |   | 0.4 A  |
| • $\tau = 40$ ms 220 V DC            | 0.15 A   |   | 0.10 A   |
| Minimum switching capacity           | 24 V-, 10 mA, $\tau = 0$ ms  |   | 12 V-, 5 mA, $\tau = 0$ ms   |
| Voltage endurance                    |  |   |  |
| • at rated breaking capacity         | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)   |   | $\geq 1,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)                             |
| • at inherent load                   | $\geq 5,0 \times 10^6$   |   | $\geq 5,0 \times 10^6$   |
| • at minimum switching capacity      | $\geq 10 \times 10^6$  |   | $\geq 10 \times 10^6$  |
| response time of make contacts       | $\leq 25$ ms   |   |  |
| closing time of a break contact      | $\leq 25$ ms   |   |  |
| Rated alternating insulation voltage | 2 kV   |   |  |
| degree of pollution                  | 3 acc. to DIN VDE 0110-1   |   |  |
| Impulse voltage withstand level      | 4.0 kV, voltage form 1.2/50 $\mu$ s  |   |  |
| Clearances in air                    | $\geq 3$ mm  |   |  |
| Creep age distances                  | $\geq 4$ mm  |   |  |
| Site altitude                        | $\leq 2,000$ m above sea level   |   |  |
| Relay enclosure                      | closed metal cover (Al), transparent display window  |   |  |
| Insulation resistance                | $\geq 1 \times 10^8 \Omega$ in new condition, $U_P = 500$ V  |   |  |
| Degree of protection                 | IP40 - enclosure<br>IP00 - connecting plug-in blades<br>IP20 - connecting terminals with plug-in connection for quick-rail fixings |   |  |
| Climatic type of construction        | normal or climatic type of construction for ships  |   | climatic type of construction  |
| Environment tests                    | values on request  |   |  |
| Weight                               | about 0.44 kg  |   |  |

## Bistable RH 60, 2 RH 62 All-or-Nothing Relays (Remanence relays)

| Relay type   | 2 RH 60   |  | 2 RH 62 |     |     |     |     |                                   |     |    |     |     |     |     |
|--|---|--|---------|-----|-----|-----|-----|-----------------------------------|-----|----|-----|-----|-----|-----|
| Parameters   |   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| rated voltages $U_N$   | 6 V to 220 V DC   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Response voltage   | $\leq 0,8 \times U_N$   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| max. working voltage   | $1,1 \times U_N$  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Rated consumption:   | $\leq 2.5$ W at excitation<br>$\leq 0.5$ W at negative excitation over $R_V$  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Resistance values $R_V$ ( $\geq 2$ W) for the negative excitation (included in the scope of delivery)  | $U_N$ [V]   | 6  | 12      | 24  | 32  | 36  | 42  | 48                                | 60  | 80 | 100 | 110 | 125 | 220 |
|  | $R_V$ [k $\Omega$ ]   | 0,082  | 0,33    | 1,2 | 2,2 | 2,7 | 3,9 | 5,6                               | 8,2 | 15 | 22  | 27  | 33  | 100 |
| operating mode   | pulse or continuous operation (excitation, negative excitation)   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Ambient temperature  | -30°C up to +55°C at individual installation<br>-30°C up to +50°C at block installation<br>-30°C up to +70°C at pulse operation, pulse time approx. 100 ms  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Function indicator   | optionally without function indicator or with target  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Maximum switching voltage:   | $\leq 250$ V AC/DC  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Number of contacts   | 4 changeover contacts   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Contact arrangement  | single contacts   |  |         |     |     |     |     | twin contacts                     |     |    |     |     |     |     |
| Material of contact-tip  | hard silver AgCu  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Contact circuit resistance   | approx. 30 m $\Omega$ in new condition (24 V DC, 100 mA,)   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Maximum making capacity  | 10 A DC/AC  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Maximum permitted continuous current   | 5 A<br>at continuous operation, the sum of squares of the single currents must not exceed 64 A <sup>2</sup><br>at single installation, at block installation they must not exceed 23 A <sup>2</sup> ,<br>at pulse operation they must not exceed 100 A <sup>2</sup> , |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Limiting continuous current (over four make contacts)  | 5 A at block installation and pulse operation<br>4 A at single installation and permanent closing<br>2,4 A at block installation and permanent closing  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Switching frequency  | $\leq 600$ cycles per hour  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Mechanical endurance   | $\geq 10 \times 10^6$ cycles without function indication<br>$\geq 0,1 \times 10^6$ cycles with target   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Rated breaking capacity<br>• $\cos \varphi = 1.0$ 230 V AC<br>• $\cos \varphi = 0.4$ 230 V AC<br>• $\tau = 0$ ms 220 V DC<br>• $\tau = 40$ ms 220 V DC | 1.5 A<br>1.0 A<br>0.4 A<br>0.15 A   |  |         |     |     |     |     | 1.5 A<br>1.0 A<br>0.4 A<br>0.10 A |     |    |     |     |     |     |
| Minimum switching capacity   | 24 V DC, 10 mA, $\tau = 0$ ms   |  |         |     |     |     |     | 12 V DC, 5 mA, $\tau = 0$ ms      |     |    |     |     |     |     |
| Voltage endurance<br>• at rated breaking capacity<br><br>• at inherent load<br>• at minimum switching capacity   | $\geq 2,0 \times 10^6$ (AC)<br>$\geq 1,0 \times 10^6$ (DC)<br>$\geq 2,5 \times 10^6$<br>$\geq 10 \times 10^6$   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| response time of make contacts   | $\leq 25$ ms without function indicator<br>$\leq 35$ ms with target   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| closing time of a break contact  | $\leq 30$ ms  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Pulse duration at pulse operation  | $\geq 100$ ms<br>$\geq 100$ ms  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Rated alternating insulation voltage   | 2 kV  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| degree of pollution  | 3 acc. to DIN VDE 0110-1  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Impulse voltage withstand level  | kV  | 4.0 kV, voltage form 1.2 / 50 $\mu$ s, at negative excitation over $R_V$ 2 |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Clearances in air  | $\geq 3$ mm   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Creep age distances  | $\geq 4$ mm   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Site altitude  | $\leq 2,000$ m above sea level  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Relay enclosure  | bifurcated plastic covers (PC), transparent   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Insulation resistance  | $\geq 1 \times 10^8 \Omega$ in new condition, $U_P = 500$ V   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Degree of protection   | IP40 - enclosure<br>IP00 - connecting plug-in blades<br>IP20 - connecting terminals with plug-in connection for quick-rail fixings  |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Climatic type of construction  | Normal type of construction   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Environment tests  | values on request   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |
| Weight   | about 0.22 kg   |  |         |     |     |     |     |                                   |     |    |     |     |     |     |

### RELOG Plug-In Connection with Screw Terminal for Quick-Rail Fastening and/or Screw Fastening over Fastening Sheet

For all-or-nothing relays of the 2 RH ..., 4 RH type, the plug-in connections allow to accomplish a screw terminal connection while maintaining their plug ability.

The plug-in connections are available in the following types:

- construction with labeling of connections in DIN standards
- construction with labeling of connections in RELOG standards
- construction without diode
- construction with diode between the terminals A 1 (1.7) – cathode and A2 (3.7) – anode.

The plug-in connection is mounted either by snapping onto a rail acc. to DIN EN 50022, or by single arrangement on a fastening sheet that can be supplied as a separate part.

When using plug-in connections for the type 4 RH 10, 4 RH 12, 4 RH 40, 4 RH 42 relays, two plug-in connections have to be installed.

#### Parameters:

|   |   |
|---|---|
| Rated voltage:                          | 250-volt  |
| Rated insulation alternating voltage:   | 2 kV, 50 Hz (construction without free-wheeling diode)  |
| Rated surge voltage:                    | 3.6 kV, voltage form 1.2/50 $\mu$ s   |
| Over voltage category:                  | III   |
| Degree of pollution:                    | 3   |
| Clearances in air:                      | $\geq 2.5$ mm   |
| Creep age distances:                    | $\geq 4$ mm   |
| Site altitude:                          | 2,000 m above sea level   |
| Ambient temperature:                    | -40°C up to +55°C at single installation:<br>-40°C up to +50°C at block installation  |
| Limiting continuous current:            | 4 A   |
| Maximum permissible continuous current: | 5 A   |
| Number and type of connections:         | 14 terminals, tensile frame construction with solid wire protection<br>protective-conductor terminal  |
| Connectable conductor sizes:            | 1 $\times$ 0.5 mm <sup>2</sup> up to 1 $\times$ 2.5 mm <sup>2</sup> Cu single and multicore<br>1 $\times$ 1.0 mm <sup>2</sup> up to 1 $\times$ 2.5 mm <sup>2</sup> Cu finely stranded |
| Degree of protection:                   | IP 20   |
| Assembly:                               | Snapping onto mounting rail according to DIN EN 50022-35 $\times$ 7.5   |
| Weight:                                 | about 0.12 kg   |

### RELOG Adapter with screw-type terminal for screw fixings at massive walls or switchboards

For all-or-nothing relays of the 2 RH .. , or 4 RH .. type, the adaptors allow to accomplish a screw terminal connection while maintaining the plug ability. The RELOG adaptors are available in the following types:

- wired type for an all-or-nothing relay of the 2 RH type. .
- not-wired with included accessories for individual suppressor circuit for maximum 2 all-or-nothing relays of the 2 RH type. . or 1 all-or-nothing relay of the 4 RH type. . (Attention, only 14 terminals are available!)

This offers a variety of possibilities to connect the functions of the all-or-nothing relays contained in the RELOG system.

For in- and outputs, a maximum of 14 terminals is available plus a M 3.5 protective-conductor terminal. The installation of the adaptor with screw-type terminal can be accomplished at massive walls or boards.

#### Parameters:

|   |   |
|---|---|
| Rated voltage:                          | 250-volt  |
| Rated insulation alternating voltage:   | 2 kV, 50 Hz   |
| Rated surge voltage:                    | 4 kV, voltage form 1.2/50 $\mu$ s   |
| Over voltage category:                  | III   |
| degree of pollution:                    | 3   |
| Clearances in air:                      | $\geq 3$ mm   |
| Creep age distances:                    | $\geq 4$ mm   |
| Site altitude:                          | 2,000 m above sea level   |
| Ambient temperature:                    | -40°C up to +55°C   |
| Limiting continuous current:            | 5 A   |
| Maximum permissible continuous current: | 5 A   |
| Number and type of connections:         | 14 box-type terminals with self-releasing wire protection<br>1 protective-conductor terminal with M 3.5 mm cylinder head terminal point   |
| Connectable conductor sizes:            | 1 $\times$ 0.5 mm <sup>2</sup> up to 1 $\times$ 4,0 mm <sup>2</sup> Cu single and multicore<br>1 $\times$ 0.5 mm <sup>2</sup> up to 1 $\times$ 2.5 mm <sup>2</sup> Cu finely stranded |
| Degree of protection:                   | IP 20 with terminal cover<br>IP 00 without terminal cover   |
| Assembly:                               | Screw fastening with 2 cylinder head screws with maximum M4   |
| Weight:                                 | about 0.2 kg  |

## Plug-in Connections for Solder or Wire-Wrap Termination

For RELOG all-or-nothing relays of the 2 RH .. and 4 RH .. type, the plug-in connections allow to accomplish a solder or wire-wrap termination while maintaining the plug ability.

The plug-in connections are available in the following types:

- type with solder termination lugs; the connection is done by soldering the solder lugs
- type with wire-wrap lugs; the connection is done by fastening the wire onto the wire lugs (connecting wires can also be soldered to the wire-wrap lugs)

The plug-in connection is either mounted onto switchboards with appropriate cutouts, or onto rails using by applying screw fixings.

When using the plug-in connection for the type 4 RH 10, 4 RH 12, 4 RH 40, 4 RH 42 RELOG relays, two plug-in connections have to be installed side by side at a horizontal distance of 30 mm.

A connection for the series circuits of both coils has to be accomplished between the two plug-in connections ( relay A, terminal 3.7 to relay B, terminal 1.7).

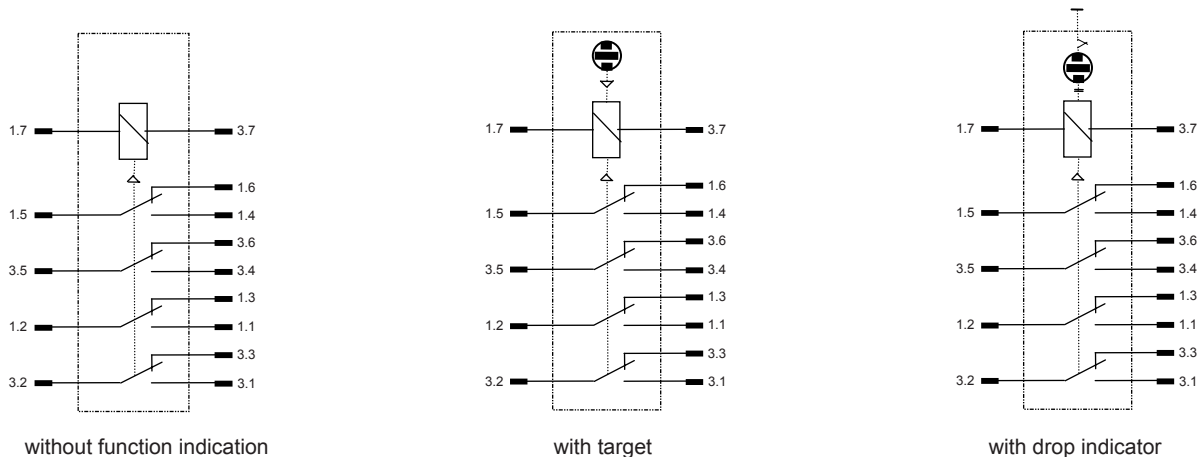
When mounting the supply leads it has to be taken into account for all terminal types that the permitted creeping and air distances are observed according to DIN EN 60810-5 / VDE 0435 Part 140: 1999-04.

### Parameters:

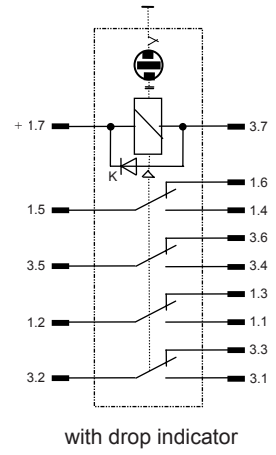
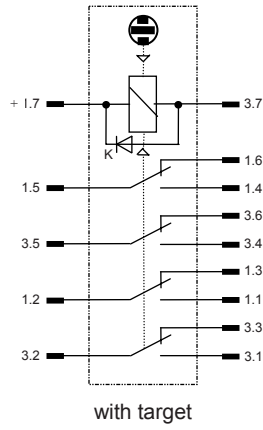
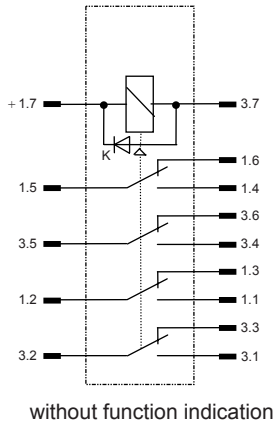
|   |   |
|---|---|
| Rated voltage:                          | 250-volt  |
| Rated insulation alternating voltage:   | 2.5 kV, 50 Hz   |
| Rated surge voltage:                    | 4 kV, voltage form 1.2/50 µs  |
| Over voltage category:                  | III   |
| degree of pollution:                    | 3   |
| Clearances in air:                      | ≥ 3 mm  |
| Creep age distances:                    | ≥ 4 mm  |
| Site altitude:                          | 2,000 m above sea level   |
| Ambient temperature:                    | -40°C up to + 55°C  |
| Limiting continuous current:            | 5 A   |
| Maximum permissible continuous current: | 5 A   |
| Number of terminals:                    | 14 + 2 protective-conductor terminals (necessary for relays with metal cover)<br>22 + 2 protective-conductor terminals (necessary for relays with metal cover)                                |
| Construction types of terminals:        | soldering lugs for wire diameters up to ∅ 1,2 mm<br>wire-wrap lugs with rectangular section 1.0 mm x 1.6 mm<br>Protective-conductor terminals are basically performed as solder terminations. |
| Connectable supply leads:               | 0,5. mm² up to 1 mm² at solder termination types<br>1 terminal ∅ 0,6 mm up to ∅ 0,8 mm Cu at wire termination types   |
| Degree of protection:                   | IP 00 terminal end<br>IP 30 mating side<br>IP 40 mating side with all-or-nothing relay  |
| Assembly:                               | Screw fastening with 2 cylinder head screws with maximum M3   |
| Assembly distances:                     | minimum distance horizontally from center to center of plug-in connection ≥ 30 mm<br>minimum distance vertically from center to center of plug-in connection ≥ 105 mm                         |
| weight:                                 | about 0.04 kg   |

## Diagrams

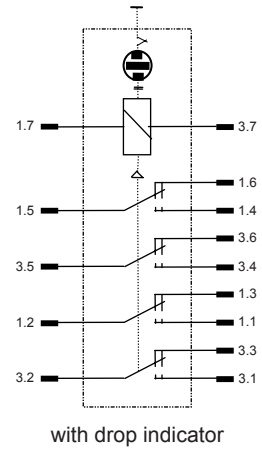
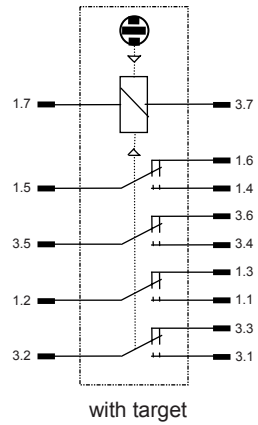
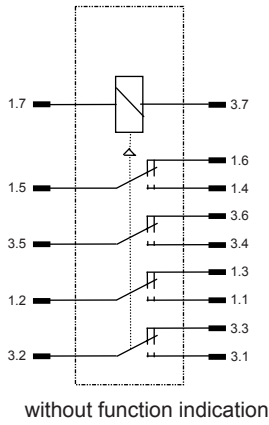
### RELOG 2 RH 01 / 2 RH 30 All-or-Nothing Relay (PC cover)



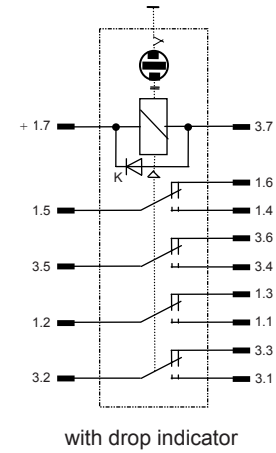
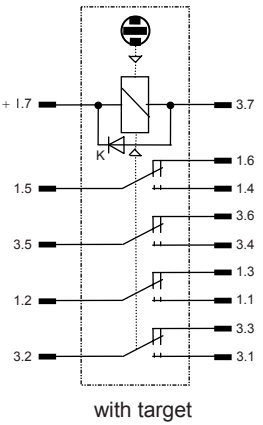
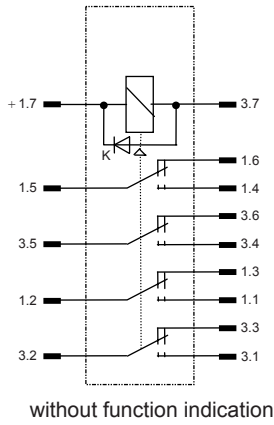
**RELOG 2 RH 01 All-or-Nothing Relay, Diode Type (PC cover)**



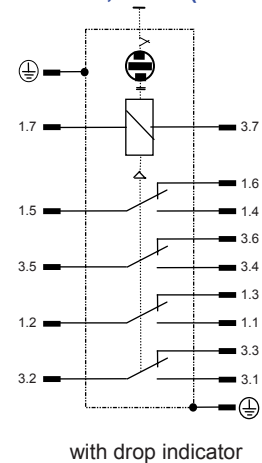
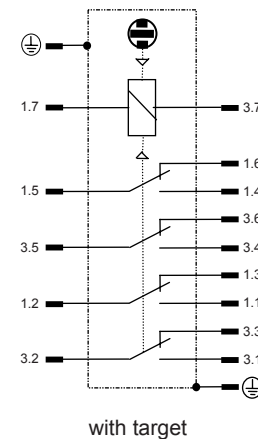
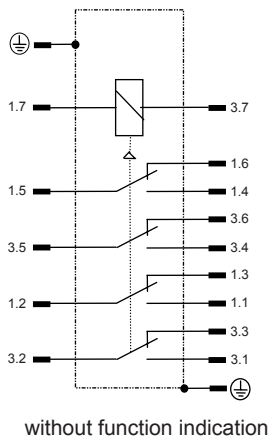
**RELOG 2 RH 02 / 2 RH 32 All-or-Nothing Relay (PC cover)**



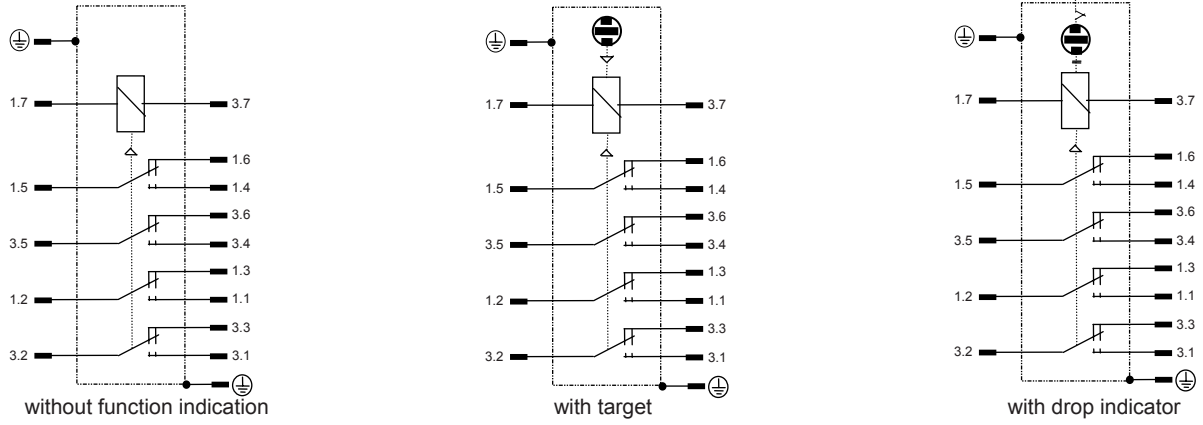
**RELOG 2 RH 02 All-or-Nothing Relay, Diode Type (PC cover)**



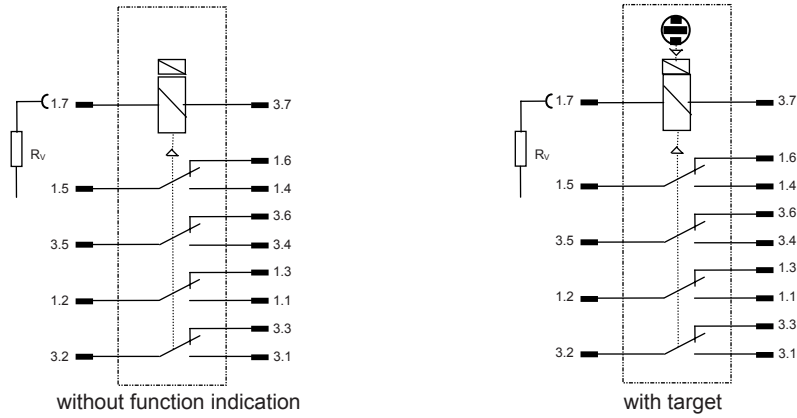
**RELOG 2 RH 01 All-or-Nothing Relay UIC Type, 2 RH 01/2 RH 30 Current Type 50 Hz, 2 RH 30 50Hz, 60 Hz (AI cover)**



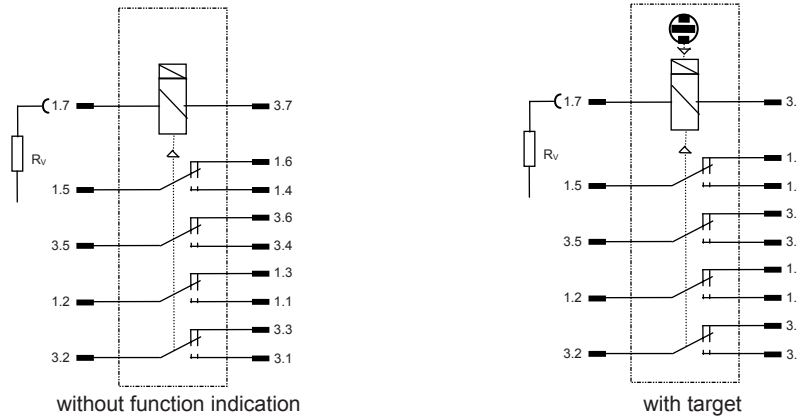
**RELOG 2 RH 02 All-or-Nothing Relay, UIC Type (AI cover)**



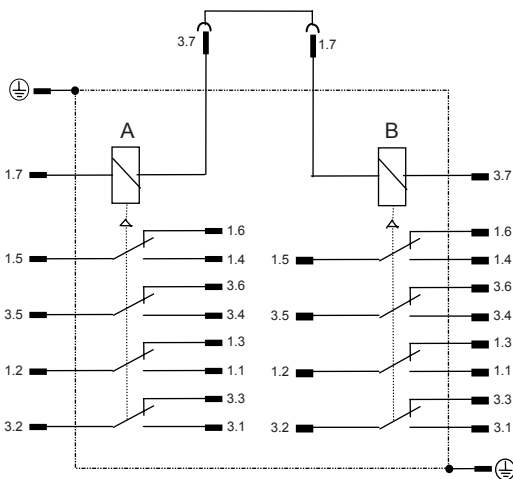
**RELOG 2 RH 60 Bistable All-or-Nothing Relay (PC cover)**



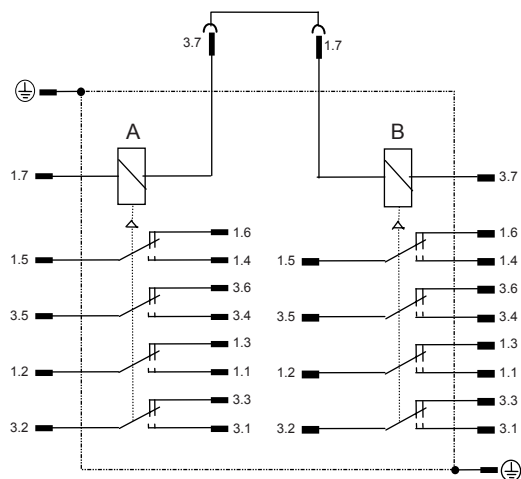
**RELOG 2 RH 62 Bistable All-or-Nothing Relay (PC cover)**



**RELOG 4 RH 10 / 4 RH 40 All-or-Nothing Relay (AI cover)**



**RELOG 4 RH 12 / 4 RH 42 All-or-Nothing Relay (AI cover)**





**RELOG Plug-In Connection for Quick-Rail Fixing with screw-type terminal provided with 2 RH. . Relay**

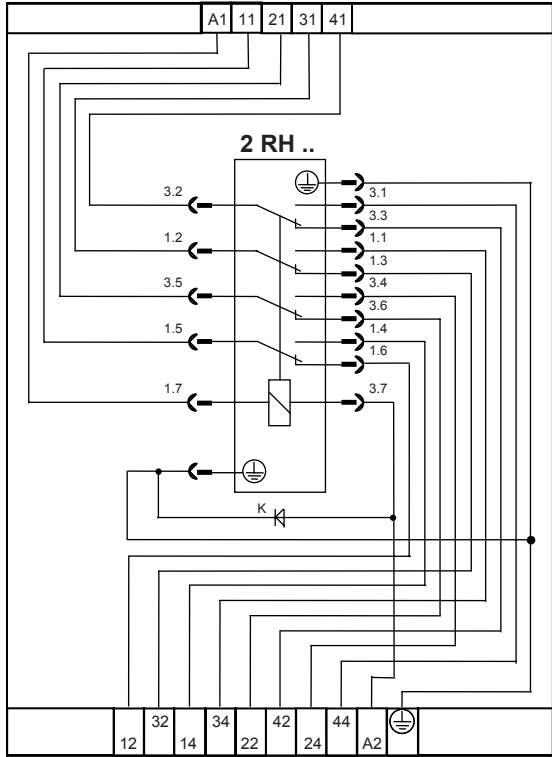


Diagram Rs 802 338 (type with free-wheeling diode)  
Labeling acc. to German DIN standard

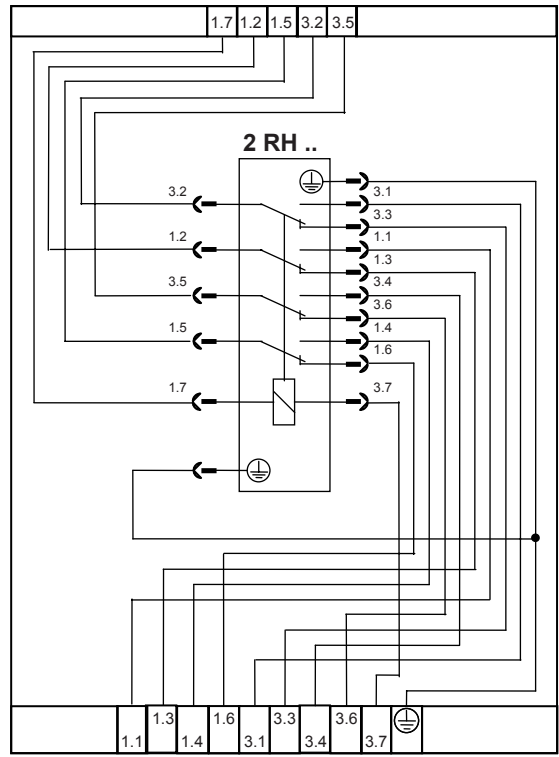
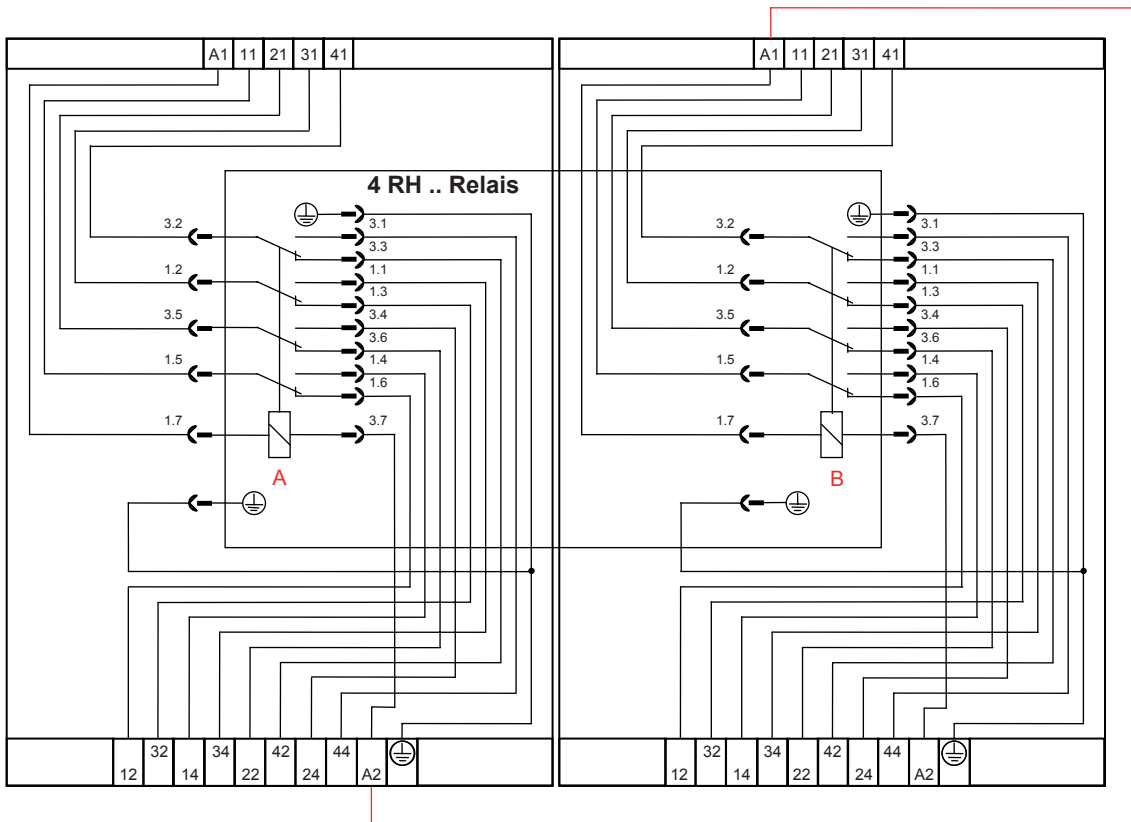


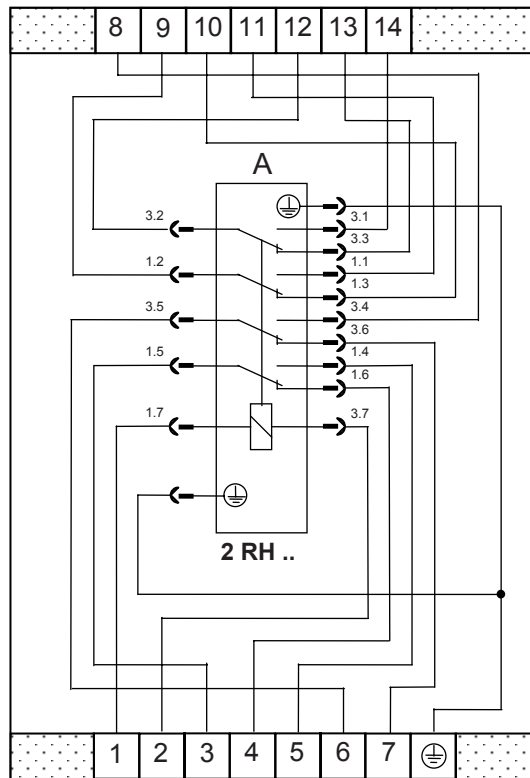
Diagram Rs 802 339 (type without free-wheeling diode)  
Labeling acc. to RELOG standard

**RELOG Plug-In Connection for Quick-Rail Fixing with screw-type terminal provided with 4 RH. . Relay**



Wiring diagram for RELOG all-or-nothing relays: 4 RH 10 / 4 RH 12 / 4 RH 40 / 4 RH 42  
with 2 RELOG plug-in connections for quick-rail fixing (DIN labeling, without free-wheeling diode)

RELOG Adaptor Diagram for 2 RH. . All-or-Nothing Relay

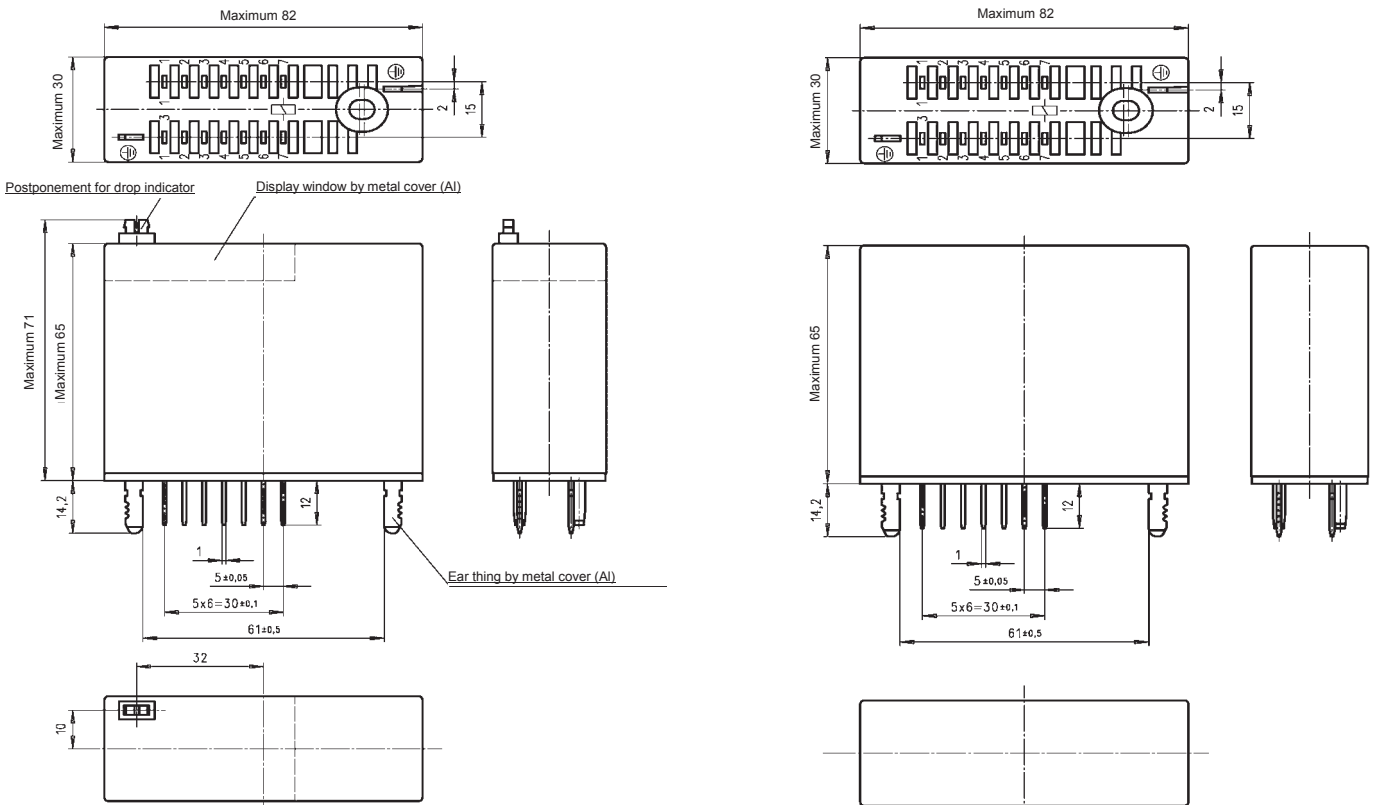


Circuit diagram Rs 801487

Dimensioned drawings

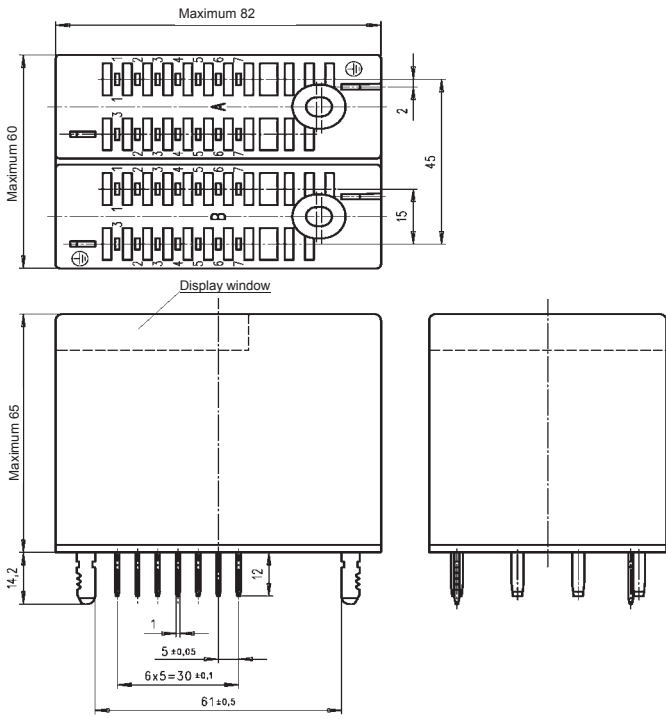
RELOG All-or-Nothing Relays 2 RH 01, 2 RH 02, 2 RH 30, 2 RH 32

RELOG All-or-Nothing Relay 2 RH 60, 2 RH 62

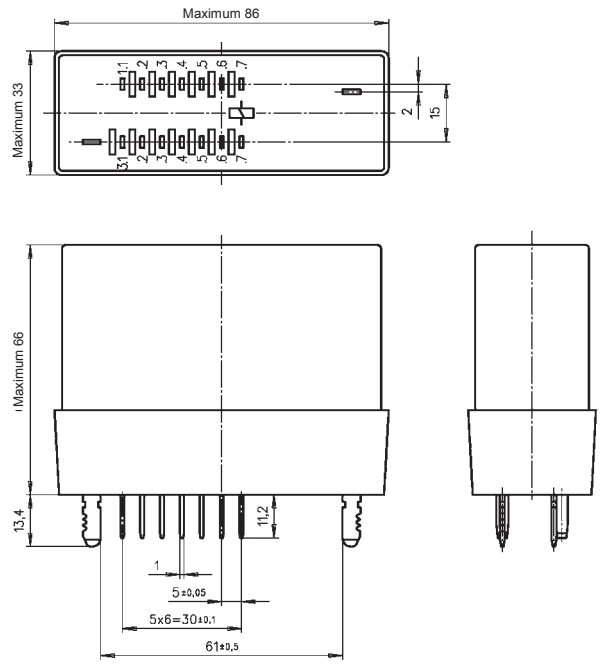


Dimensioned drawing Rs 805,540

**RELOG All-or-Nothing Relays 4 RH 10, 4 RH 12, 4 RH 40, 4 RH 42 RELOG 2 RH 02, 2 RH 32 All-or-Nothing Relay (IP 50)**

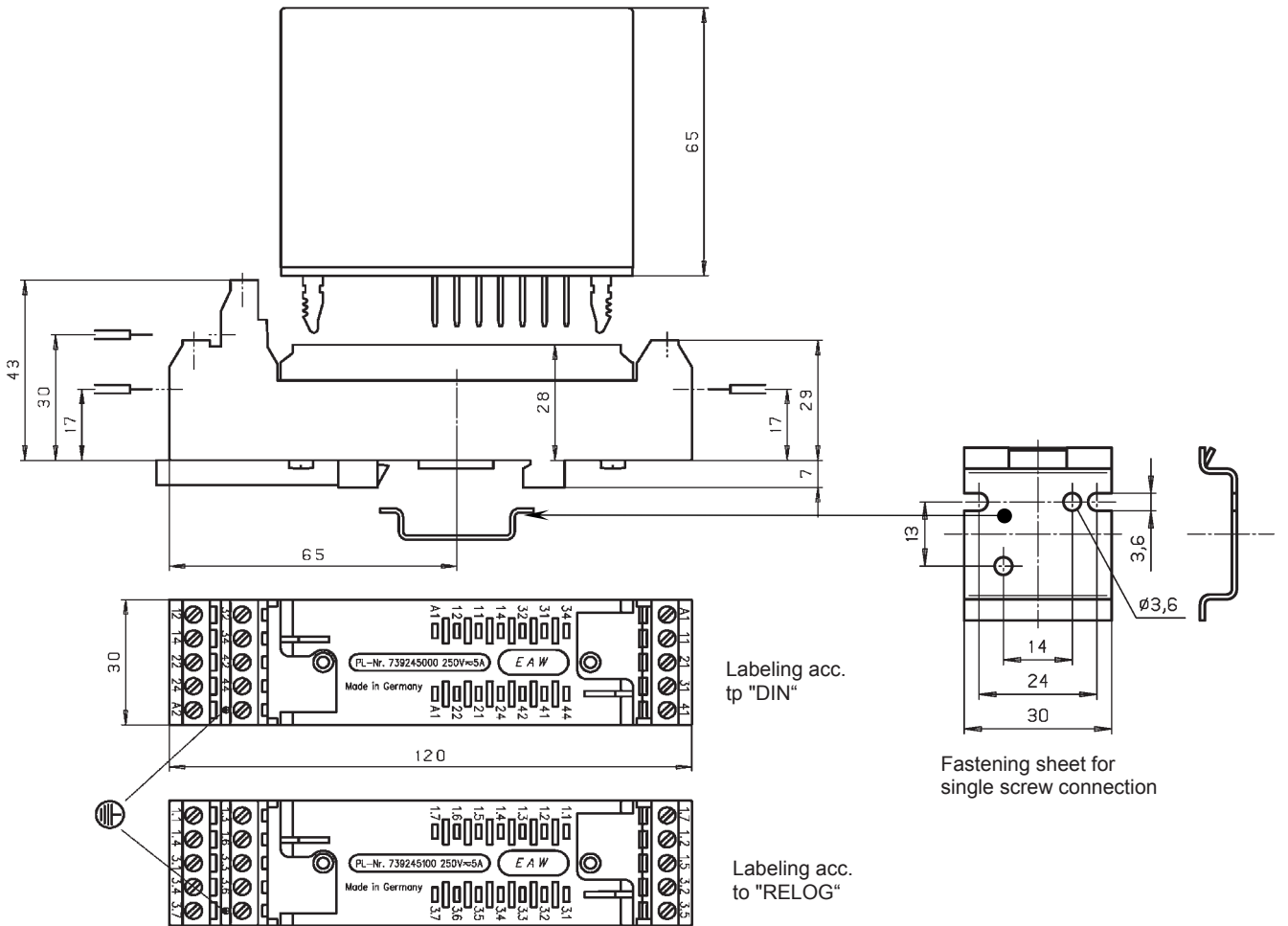


Dimensioned drawing Rs 805543



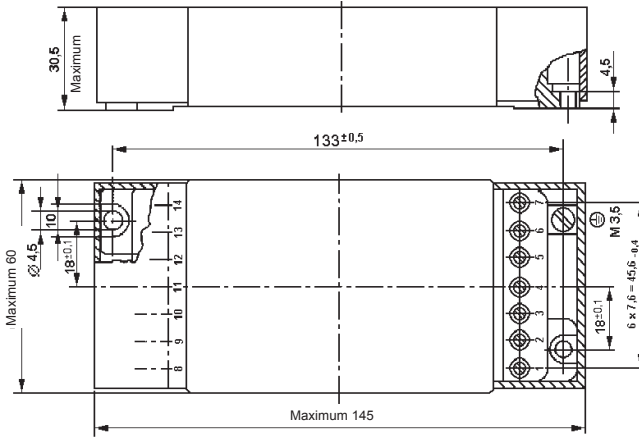
Dimensioned drawing Rs 805495

**RELOG Plug-In Connection for Quick-Rail Fastening and/or Fastening Sheet with Screw Termination**



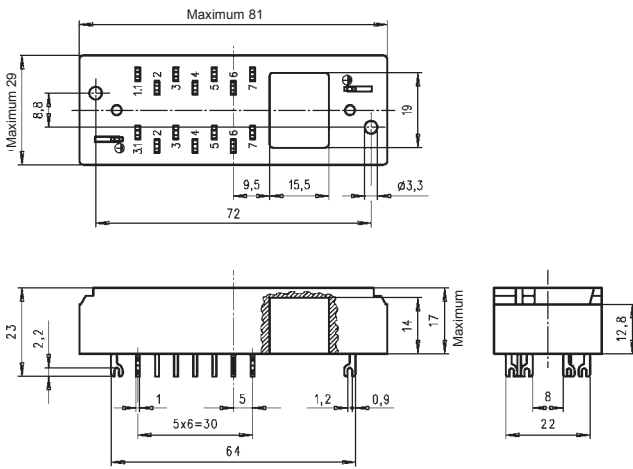
Dimensioned drawing Rs 805042

**RELOG – Adaptor for 2 RH .. and/or 4 RH .. All-or-Nothing Relay**

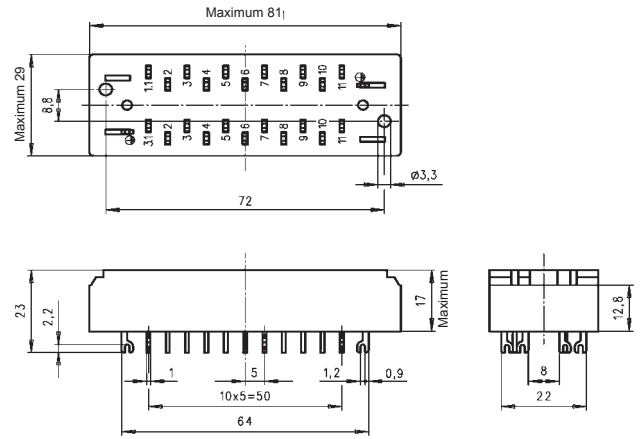


Dimensioned drawing Rs 805541

**RELOG Plug-In Connections, Solder Termination Type**

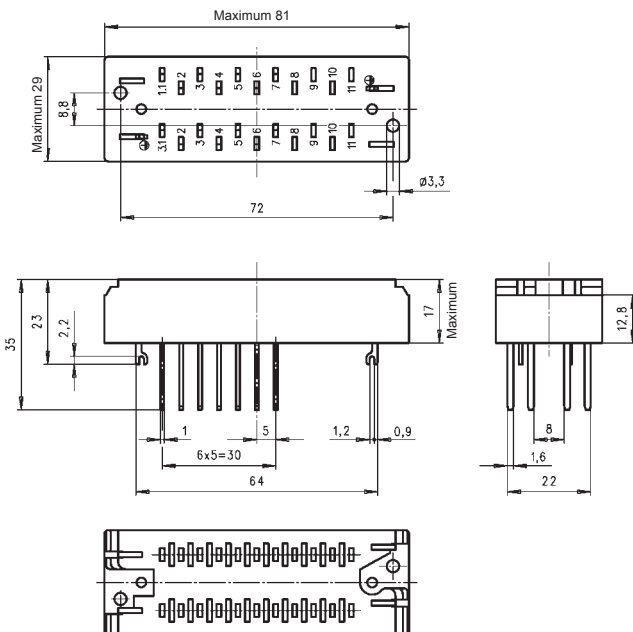


Dimensioned drawing Rs 805 202 Sheet 01; 14 poles

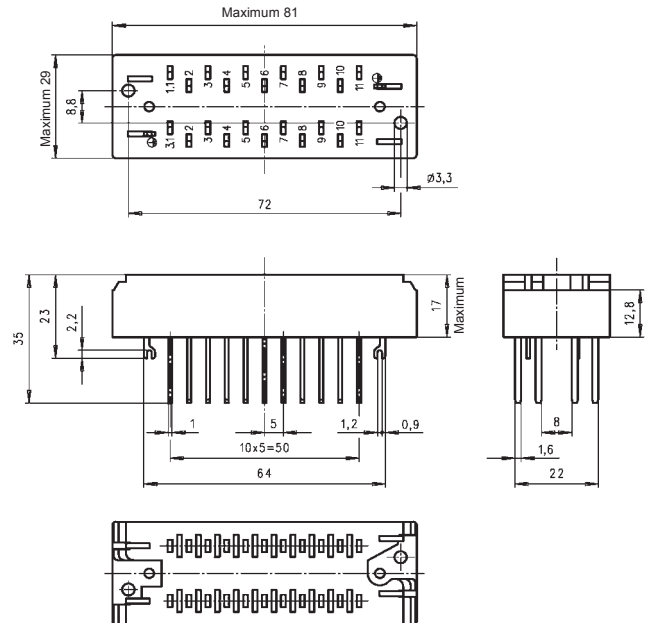


Dimensioned drawing Rs 805 202 Sheet 02; 22 poles

**RELOG Plug-In Connections, Wire-Wrap Termination Type**



Dimensioned drawing Rs 805255 Sheet 01; 14 poles



Dimensioned drawing Rs 805255 Sheet 02; 22 poles

## List of Order Numbers (Pl. Nos.)

### RELOG 2 RH 01 All-or-Nothing Relay Types:

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 732 691 000   |
| 24 volt-         | 1 732 692 000   |
| 60 volt-         | 1 732 693 000   |
| 110 volt-        | 1 732 694 000   |
| 220 volt-        | 1 732 695 000   |
| Special voltages | 1 732 696 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40 target: operating current, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 732 703 000   |
| 24 volt-         | 1 732 704 000   |
| 60 volt-         | 1 732 705 000   |
| 110 volt-        | 1 732 706 000   |
| 220 volt-        | 1 732 707 000   |
| Special voltages | 1 732 708 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40 target: closed-circuit, current, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 732 709 000   |
| 24 volt-         | 1 732 710 000   |
| 60 volt-         | 1 732 711 000   |
| 110 volt-        | 1 732 712 000   |
| 220 volt-        | 1 732 713 000   |
| Special voltages | 1 732 714 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, drop indicator, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 732 697 000   |
| 24 volt-         | 1 732 698 000   |
| 60 volt-         | 1 732 699 000   |
| 110 volt-        | 1 732 700 000   |
| 220 volt-        | 1 732 701 000   |
| Special voltages | 1 732 702 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 533 000   |
| 24 volt-         | 1 771 534 000   |
| 60 volt-         | 1 771 535 000   |
| 110 volt-        | 1 771 536 000   |
| 220 volt-        | 1 771 537 000   |
| Special voltages | 1 771 538 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, target operating current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 545 000   |
| 24 V-            | 1 771 546 000   |
| 60 V-            | 1 771 547 000   |
| 110 V-           | 1 771 548 000   |
| 220 V-           | 1 771 549 000   |
| Special voltages | 1 771 500 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, target closed-circuit current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 551 000   |
| 24 V-            | 1 771 552 000   |
| 60 V-            | 1 771 553 000   |
| 110 V-           | 1 771 554 000   |
| 220 V-           | 1 771 555 000   |
| Special voltages | 1 771 556 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, drop indicator, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 539 000   |
| 24 V-            | 1 771 540 000   |
| 60 V-            | 1 771 541 000   |
| 110 V-           | 1 771 542 000   |
| 220 V-           | 1 771 543 000   |
| Special voltages | 1 771 544 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, bifurcated cover, IP 40, GP02-40 diode, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 018 000   |
| 24 V-            | 1 774 019 000   |
| 60 V-            | 1 774 020 000   |
| 110 V-           | 1 774 021 000   |
| 220 V-           | 1 774 022 000   |
| Special voltages | 1 774 023 0 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed Al cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 504 500   |
| 24 volt-         | 1 731 505 500   |
| 60 volt-         | 1 731 506 500   |
| 110 volt-        | 1 731 507 500   |
| 220 volt-        | 1 731 508 500   |
| Special voltages | 1 731 509 5 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed Al cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 328 500   |
| 24 volt-         | 1 770 329 500   |
| 60 volt-         | 1 770 330 500   |
| 110 volt-        | 1 770 331 500   |
| 220 volt-        | 1 770 332 500   |
| Special voltages | 1 770 333 5 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed Al cover, IP 40, target: operating current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 770 322 500   |
| 24 V-            | 1 770 323 500   |
| 60 V-            | 1 770 324 500   |
| 110 V-           | 1 770 325 500   |
| 220 V-           | 1 770 326 500   |
| Special voltages | 1 770 327 5 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed Al cover, IP 40, target: closed-circuit current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 770 316 500   |
| 24 V-            | 1 770 317 500   |
| 60 V-            | 1 770 318 500   |
| 110 V-           | 1 770 319 500   |
| 220 V-           | 1 770 320 500   |
| Special voltages | 1 770 321 5 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed Al cover, IP 40, drop indicator, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 770 334 500   |
| 24 V-            | 1 770 335 500   |
| 60 V-            | 1 770 336 500   |
| 110 V-           | 1 770 337 500   |
| 220 V-           | 1 770 338 500   |
| Special voltages | 1 770 339 5 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed Al cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 504 000   |
| 24 volt-         | 1 731 505 000   |
| 60 volt-         | 1 731 506 000   |
| 110 volt-        | 1 731 507 000   |
| 220 volt-        | 1 731 508 000   |
| Special voltages | 1 731 509 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed Al cover, IP 40 target: operating current, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 484 000   |
| 24 volt-         | 1 731 485 000   |
| 60 volt-         | 1 731 486 000   |
| 110 volt-        | 1 731 487 000   |
| 220 volt-        | 1 731 488 000   |
| Special voltages | 1 731 489 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 504 000   |
| 24 volt-         | 1 731 505 000   |
| 60 volt-         | 1 731 506 000   |
| 110 volt-        | 1 731 507 000   |
| 220 volt-        | 1 731 508 000   |
| Special voltages | 1 731 509 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40 target: operating current, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 484 000   |
| 24 volt-         | 1 731 485 000   |
| 60 volt-         | 1 731 486 000   |
| 110 volt-        | 1 731 487 000   |
| 220 volt-        | 1 731 488 000   |
| Special voltages | 1 731 489 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40 target: closed-circuit, current, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 474 000   |
| 24 volt-         | 1 731 475 000   |
| 60 volt-         | 1 731 476 000   |
| 110 volt-        | 1 731 477 000   |
| 220 volt-        | 1 731 478 000   |
| Special voltages | 1 731 479 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, drop indicator, standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 494 000   |
| 24 volt-         | 1 731 495 000   |
| 60 volt-         | 1 731 496 000   |
| 110 volt-        | 1 731 497 000   |
| 220 volt-        | 1 731 498 000   |
| Special voltages | 1 731 499 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 328 000   |
| 24 volt-         | 1 770 329 000   |
| 60 volt-         | 1 770 330 000   |
| 110 volt-        | 1 770 331 000   |
| 220 volt-        | 1 770 332 000   |
| Special voltages | 1 770 333 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, target operating current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 322 000   |
| 24 volt-         | 1 770 323 000   |
| 60 volt-         | 1 770 324 000   |
| 110 volt-        | 1 770 325 000   |
| 220 volt-        | 1 770 326 000   |
| Special voltages | 1 770 327 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, target closed-circuit current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 316 000   |
| 24 volt-         | 1 770 317 000   |
| 60 volt-         | 1 770 318 000   |
| 110 volt-        | 1 770 319 000   |
| 220 volt-        | 1 770 320 000   |
| Special voltages | 1 770 321 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed AI cover, IP 40, drop indicator, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 310 000   |
| 24 volt-         | 1 770 311 000   |
| 60 volt-         | 1 770 312 000   |
| 110 volt-        | 1 770 313 000   |
| 220 volt-        | 1 770 314 000   |
| Special voltages | 1 770 315 0 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed PC cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 732 691 800   |
| 24 V-            | 1 732 692 800   |
| 60 V-            | 1 732 693 800   |
| 110 V-           | 1 732 694 800   |
| 220 V-           | 1 732 695 800   |
| Special voltages | 1 732 696 8 . . |

DC, 4 changeover contacts, single contacts, AgCu, closed PC cover, IP 40, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 533 800   |
| 24 V-            | 1 771 534 800   |
| 60 V-            | 1 771 535 800   |
| 110 V-           | 1 771 536 800   |
| 220 V-           | 1 771 537 800   |
| Special voltages | 1 771 538 8 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed AI cover, IP 40, standard type

|                          |                 |
|--------------------------|-----------------|
| 0.015 A                  | 1 731 509 438   |
| 0.17 A                   | 1 731 509 439   |
| 0.24 A                   | 1 731 509 440   |
| 0.35 A                   | 1 731 509 441   |
| 0.46 A                   | 1 731 509 447   |
| 0.5 A                    | 1 731 509 442   |
| 0.9 A                    | 1 731 509 443   |
| 1.5 A                    | 1 731 509 444   |
| 2.45 A                   | 1 731 509 445   |
| 4.15 A                   | 1 731 509 446   |
| for other rated currents | 1 731 509 4 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed AI cover, IP 40, climatic/ship type

|                          |                 |
|--------------------------|-----------------|
| 0.015 A                  | 1 770 333 438   |
| 0.17 A                   | 1 770 333 439   |
| 0.24 A                   | 1 770 333 440   |
| 0.35 A                   | 1 770 333 441   |
| 0.46 A                   | 1 770 333 447   |
| 0.5 A                    | 1 770 333 442   |
| 0.9 A                    | 1 770 333 443   |
| 1.5 A                    | 1 770 333 444   |
| 2.45 A                   | 1 770 333 445   |
| 4.15 A                   | 1 770 333 446   |
| for other rated currents | 1 770 333 4 . . |

DC, UIC, four changeover contacts, single contacts, AgCu, closed AI cover, IP 40, drop indicator, climatic/ship type

|                          |                 |
|--------------------------|-----------------|
| 0.015 A                  | 1 770 315 438   |
| 0.17 A                   | 1 770 315 439   |
| 0.24 A                   | 1 770 315 440   |
| 0.35 A                   | 1 770 315 441   |
| 0.46 A                   | 1 770 315 447   |
| 0.5 A                    | 1 770 315 442   |
| 0.9 A                    | 1 770 315 443   |
| 1.5 A                    | 1 770 315 444   |
| 2.45 A                   | 1 770 315 445   |
| 4.15 A                   | 1 770 315 446   |
| for other rated currents | 1 770 315 4 . . |

DC, 4 changeover contacts, single contacts, AgPd30, bifurcated PC cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 732 721 000   |
| 24 V-            | 1 732 722 000   |
| 60 V-            | 1 732 723 000   |
| 110 V-           | 1 732 724 000   |
| 220 V-           | 1 732 725 000   |
| Special voltages | 1 732 726 0 . . |

DC, 4 changeover contacts, single contacts, AgPd30, bifurcated PC cover, IP 40, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 563 000   |
| 24 volt-         | 1 771 564 000   |
| 60 volt-         | 1 771 565 000   |
| 110 volt-        | 1 771 566 000   |
| 220 volt-        | 1 771 567 000   |
| Special voltages | 1 771 568 0 . . |



## RELOG 2 RH 02 All-or-Nothing Relay Types:

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 292 400   |
| 24 V-            | 1 771 293 400   |
| 60 V-            | 1 771 294 400   |
| 110 V-           | 1 771 295 400   |
| 220 V-           | 1 771 296 400   |
| Special voltages | 1 771 297 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, target operating current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 298 400   |
| 24 volt-         | 1 771 299 400   |
| 60 volt-         | 1 771 300 400   |
| 110 volt-        | 1 771 301 400   |
| 220 volt-        | 1 771 302 400   |
| Special voltages | 1 771 303 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu4, closed PC cover, IP 40, target closed-circuit current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 304 400   |
| 24 V-            | 1 771 305 400   |
| 60 V-            | 1 771 306 400   |
| 110 V-           | 1 771 307 400   |
| 220 V-           | 1 771 308 400   |
| Special voltages | 1 771 309 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, drop indicator, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 856 000   |
| 24 volt-         | 1 771 857 000   |
| 60 volt-         | 1 771 858 000   |
| 110 volt-        | 1 771 859 000   |
| 220 volt-        | 1 771 860 000   |
| Special voltages | 1 771 861 0 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, GP02-40 diode, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 012 400   |
| 24 V-            | 1 774 013 400   |
| 60 V-            | 1 774 014 400   |
| 110 V-           | 1 774 015 400   |
| 220 V-           | 1 774 016 400   |
| Special voltages | 1 774 017 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, target: operating current, GP02-40 diode, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 030 400   |
| 24 V-            | 1 774 031 400   |
| 60 V-            | 1 774 032 400   |
| 110 V-           | 1 774 033 400   |
| 220 V-           | 1 774 034 400   |
| Special voltages | 1 774 035 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, target: closed-circuit current, GP02-40 diode, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 040 400   |
| 24 V-            | 1 774 041 400   |
| 60 V-            | 1 774 042 400   |
| 110 V-           | 1 774 043 400   |
| 220 V-           | 1 774 044 400   |
| Special voltages | 1 774 045 4 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 40, drop indicator, GP02-40 diode, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 000 000   |
| 24 V-            | 1 774 001 000   |
| 60 V-            | 1 774 002 000   |
| 110 V-           | 1 774 003 000   |
| 220 V-           | 1 774 004 000   |
| Special voltages | 1 774 005 0 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 50, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 292 000   |
| 24 volt-         | 1 771 293 000   |
| 60 volt-         | 1 771 294 000   |
| 110 volt-        | 1 771 295 000   |
| 220 volt-        | 1 771 296 000   |
| Special voltages | 1 771 297 0 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 50, target operating current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 298 000   |
| 24 volt-         | 1 771 299 000   |
| 60 volt-         | 1 771 300 000   |
| 110 volt-        | 1 771 301 000   |
| 220 volt-        | 1 771 302 000   |
| Special voltages | 1 771 303 0 . . |

DC, 4 changeover contacts, twin contacts, AgCu4, closed PC cover, IP 50, target closed-circuit current, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 304 000   |
| 24 V-            | 1 771 305 000   |
| 60 V-            | 1 771 306 000   |
| 110 V-           | 1 771 307 000   |
| 220 V-           | 1 771 308 000   |
| Special voltages | 1 771 309 0 . . |

DC, 4 changeover contacts, twin contacts, AgCu, closed PC cover, IP 50, GP02-40 diode, climatic / ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 012 000   |
| 24 V-            | 1 774 013 000   |
| 60 V-            | 1 774 014 000   |
| 110 V-           | 1 774 015 000   |
| 220 V-           | 1 774 016 000   |
| Special voltages | 1 774 017 0 . . |

DC, UIC, four changeover contacts, twine contacts, AgCu, closed AI cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 292 500   |
| 24 V-            | 1 771 293 500   |
| 60 V-            | 1 771 294 500   |
| 110 V-           | 1 771 295 500   |
| 220 V-           | 1 771 296 500   |
| Special voltages | 1 771 297 5 . . |

DC, UIC, four changeover contacts, twine contacts, AgCu, closed AI cover, IP 40, target: operating current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 298 500   |
| 24 V-            | 1 771 299 500   |
| 60 V-            | 1 771 300 500   |
| 110 V-           | 1 771 301 500   |
| 220 V-           | 1 771 302 500   |
| Special voltages | 1 771 303 5 . . |

DC, UIC, four changeover contacts, twine contacts, AgCu, closed AI cover, IP 40, target: closed-circuit current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 304 500   |
| 24 V-            | 1 771 305 500   |
| 60 V-            | 1 771 306 500   |
| 110 V-           | 1 771 307 500   |
| 220 V-           | 1 771 308 500   |
| Special voltages | 1 771 309 5 . . |

DC, UIC, four changeover contacts, twine contacts, AgCu, closed AI cover, IP 40, drop indicator, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 771 310 500   |
| 24 V-            | 1 771 311 500   |
| 60 V-            | 1 771 312 500   |
| 110 V-           | 1 771 313 500   |
| 220 V-           | 1 771 314 500   |
| Special voltages | 1 771 315 5 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 40, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 500 000   |
| 24 V-            | 1 774 501 000   |
| 60 V-            | 1 774 502 000   |
| 110 V-           | 1 774 503 000   |
| 220 V-           | 1 774 504 000   |
| Special voltages | 1 774 505 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 40, target: operating current, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 537 000   |
| 24 V-            | 1 774 538 000   |
| 60 V-            | 1 774 539 000   |
| 110 V-           | 1 774 540 000   |
| 220 V-           | 1 774 541 000   |
| Special voltages | 1 774 542 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 40, target: closed-circuit current, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 543 000   |
| 24 V-            | 1 774 544 000   |
| 60 V-            | 1 774 545 000   |
| 110 V-           | 1 774 546 000   |
| 220 V-           | 1 774 547 000   |
| Special voltages | 1 774 548 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 40, target: drop indicator, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 549 000   |
| 24 V-            | 1 774 550 000   |
| 60 V-            | 1 774 551 000   |
| 110 V-           | 1 774 552 000   |
| 220 V-           | 1 774 553 000   |
| Special voltages | 1 774 554 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 50, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 512 000   |
| 24 V-            | 1 774 513 000   |
| 60 V-            | 1 774 514 000   |
| 110 V-           | 1 774 515 000   |
| 220 V-           | 1 774 516 000   |
| Special voltages | 1 774 517 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 50, target: operating current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 774 518 000   |
| 24 volt-         | 1 774 519 000   |
| 60 volt-         | 1 774 520 000   |
| 110 volt-        | 1 774 521 000   |
| 220 volt-        | 1 774 522 000   |
| Special voltages | 1 774 523 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 50, target: closed-circuit current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 774 524 000   |
| 24 volt-         | 1 774 525 000   |
| 60 volt-         | 1 774 526 000   |
| 110 volt-        | 1 774 527 000   |
| 220 volt-        | 1 774 528 000   |
| Special voltages | 1 774 529 0 . . |

DC, four changeover contacts, twin contacts, AgNi0,15 6 µm Au, closed PC cover, IP 40, target: drop indicator, GP02-40 diode, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 774 506 000   |
| 24 V-            | 1 774 507 000   |
| 60 V-            | 1 774 508 000   |
| 110 V-           | 1 774 509 000   |
| 220 V-           | 1 774 510 000   |
| Special voltages | 1 774 511 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 868 000   |
| 24 volt-         | 1 771 869 000   |
| 60 volt-         | 1 771 870 000   |
| 110 volt-        | 1 771 871 000   |
| 220 volt-        | 1 771 872 000   |
| Special voltages | 1 771 873 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, target: operating current, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 874 000   |
| 24 volt-         | 1 771 875 000   |
| 60 volt-         | 1 771 876 000   |
| 110 volt-        | 1 771 877 000   |
| 220 volt-        | 1 771 878 000   |
| Special voltages | 1 771 879 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, target: closed-circuit current, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 880 000   |
| 24 volt-         | 1 771 881 000   |
| 60 volt-         | 1 771 882 000   |
| 110 volt-        | 1 771 883 000   |
| 220 volt-        | 1 771 884 000   |
| Special voltages | 1 771 885 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, target: drop indicator, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 886 000   |
| 24 volt-         | 1 771 887 000   |
| 60 volt-         | 1 771 888 000   |
| 110 volt-        | 1 771 889 000   |
| 220 volt-        | 1 771 890 000   |
| Special voltages | 1 771 891 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, GP02-40 diode, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 774 050 000   |
| 24 volt-         | 1 774 051 000   |
| 60 volt-         | 1 774 052 000   |
| 110 volt-        | 1 774 053 000   |
| 220 volt-        | 1 774 054 000   |
| Special voltages | 1 774 055 0 . . |

DC, four changeover contacts, twin contacts AgPd30, closed PC cover, IP 40, , GP02-40 diode, drop indicator, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 774 006 000   |
| 24 volt-         | 1 774 007 000   |
| 60 volt-         | 1 774 008 000   |
| 110 volt-        | 1 774 009 000   |
| 220 volt-        | 1 774 010 000   |
| Special voltages | 1 774 011 0 . . |

DC, UIC, four changeover contacts, twin contacts, AgPd30, closed AI cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 868 500   |
| 24 volt-         | 1 771 869 500   |
| 60 volt-         | 1 771 870 500   |
| 110 volt-        | 1 771 871 500   |
| 220 volt-        | 1 771 872 500   |
| Special voltages | 1 771 873 5 . . |

DC, UIC, four changeover contacts, twin contacts, AgPd30, closed AI cover, IP 40, target: operating current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 874 500   |
| 24 volt-         | 1 771 875 500   |
| 60 volt-         | 1 771 876 500   |
| 110 volt-        | 1 771 877 500   |
| 220 volt-        | 1 771 878 500   |
| Special voltages | 1 771 879 5 . . |

DC, UIC, four changeover contacts, twin contacts, AgPd30, closed Al cover, IP 40, target: closed-circuit current, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 880 500   |
| 24 volt-         | 1 771 881 500   |
| 60 volt-         | 1 771 882 500   |
| 110 volt-        | 1 771 883 500   |
| 220 volt-        | 1 771 884 500   |
| Special voltages | 1 771 885 5 . . |

DC, UIC, four changeover contacts, twin contacts, AgPd30, closed Al cover, IP 40, drop indicator, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 771 886 500   |
| 24 volt-         | 1 771 887 500   |
| 60 volt-         | 1 771 888 500   |
| 110 volt-        | 1 771 889 500   |
| 220 volt-        | 1 771 890 500   |
| Special voltages | 1 771 891 5 . . |

### RELOG 4 RH 10 All-or-Nothing Relay Types:

DC, eight changeover contacts, single contacts, AgCu, closed Al cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 464 000   |
| 24 V-            | 1 731 465 000   |
| 60 V-            | 1 731 466 000   |
| 110 V-           | 1 731 467 000   |
| 220 V-           | 1 731 468 000   |
| Special voltages | 1 731 469 0 . . |

DC, UIC, eight changeover contacts, single contacts, AgCu, closed Al cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 464 500   |
| 24 V-            | 1 731 465 500   |
| 60 V-            | 1 731 466 500   |
| 110 V-           | 1 731 467 500   |
| 220 V-           | 1 731 468 500   |
| Special voltages | 1 731 469 5 . . |

DC, eight changeover contacts, single contacts, AgCu, closed Al cover, IP 40, climatic/ship type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 437 000   |
| 24 volt-         | 1 770 438 000   |
| 60 volt-         | 1 770 439 000   |
| 110 volt-        | 1 770 440 000   |
| 220 volt-        | 1 770 441 000   |
| Special voltages | 1 770 442 0 . . |

DC, UIC, eight changeover contacts, single contacts, AgCu, closed Al cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 770 437 500   |
| 24 volt-         | 1 770 438 500   |
| 60 volt-         | 1 770 439 500   |
| 110 volt-        | 1 770 440 500   |
| 220 volt-        | 1 770 441 500   |
| Special voltages | 1 770 442 5 . . |

### RELOG 4 RH 12 All-or-Nothing Relay Types:

DC, eight changeover contacts, twin contacts, AgCu, closed Al cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 770 510 000   |
| 24 V-            | 1 770 511 000   |
| 60 V-            | 1 770 512 000   |
| 110 V-           | 1 770 513 000   |
| 220 V-           | 1 770 514 000   |
| Special voltages | 1 770 515 0 . . |

DC, UIC, eight changeover contacts, twine contacts, AgCu, closed Al cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 770 510 500   |
| 24 V-            | 1 770 511 500   |
| 60 V-            | 1 770 512 500   |
| 110 V-           | 1 770 513 500   |
| 220 V-           | 1 770 514 500   |
| Special voltages | 1 770 515 5 . . |

### RELOG 2 RH 60 All-or-Nothing Relay Types:

remanence relay, four changeover contacts, single contacts, AgCu, bifurcated PC cover, IP 40, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 880 000   |
| 24 V-            | 1 731 881 000   |
| 60 V-            | 1 731 882 000   |
| 110 V-           | 1 731 883 000   |
| 220 V-           | 1 731 884 000   |
| Special voltages | 1 731 885 0 . . |

remanence relay, four changeover contacts, single contacts, AgCu, bifurcated PC cover, IP 40, target: closed-circuit current, standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 724 000   |
| 24 V-            | 1 731 725 000   |
| 60 V-            | 1 731 726 000   |
| 110 V-           | 1 731 727 000   |
| 220 V-           | 1 731 728 000   |
| Special voltages | 1 731 729 0 . . |

remanence relay, four changeover contacts, single contacts, AgCu, closed PC cover, IP 40, target: operating current, Standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 524 000   |
| 24 V-            | 1 731 525 000   |
| 60 V-            | 1 731 526 000   |
| 110 V-           | 1 731 527 000   |
| 220 V-           | 1 731 528 000   |
| Special voltages | 1 731 529 0 . . |

### RELOG 2 RH 62 All-or-Nothing Relay Types:

remanence relay, four changeover contacts, single contacts, AgCu, closed PC cover, IP 40, Standard type

|                  |               |
|------------------|---------------|
| 12 volt-         | 1 731 880 990 |
| 24 volt-         | 1 731 881 990 |
| 60 volt-         | 1 731 882 990 |
| 110 volt-        | 1 731 883 990 |
| 220 volt-        | 1 731 884 990 |
| Special voltages | 1 731 885 990 |

remanence relay, four changeover contacts, single contacts, AgCu, closed PC cover, IP 40, target: operating current, Standard type

|                  |                 |
|------------------|-----------------|
| 12 V-            | 1 731 249 000   |
| 24 V-            | 1 731 250 000   |
| 60 V-            | 1 731 251 000   |
| 110 V-           | 1 731 252 000   |
| 220 V-           | 1 731 253 000   |
| Special voltages | 1 731 254 0 . . |

remance relay, four changeover contacts, single contacts, AgCu,  
closed PC cover, IP 40, target: closed-circuit current,  
Standard type

|                  |                 |
|------------------|-----------------|
| 12 volt-         | 1 731 714 000   |
| 24 volt-         | 1 731 715 000   |
| 60 volt-         | 1 731 716 000   |
| 110 volt-        | 1 731 717 000   |
| 220 volt-        | 1 731 718 000   |
| Special voltages | 1 731 719 0 . . |

### RELOG 2 RH 30 All-or-Nothing Relay Types:

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 732 791 000   |
| 42 V~            | 1 732 792 000   |
| 60 V~            | 1 732 793 000   |
| 127 V~           | 1 732 794 000   |
| 230 V~           | 1 732 795 000   |
| Special voltages | 1 732 796 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed PC cover, IP 40, target: operating current,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 732 803 000   |
| 42 V~            | 1 732 804 000   |
| 60 V~            | 1 732 805 000   |
| 127 V~           | 1 732 806 000   |
| 230 V~           | 1 732 807 000   |
| Special voltages | 1 732 808 0 . . |

DC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40, target: closed-circuit current,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 732 809 000   |
| 42 V~            | 1 732 810 000   |
| 60 V~            | 1 732 811 000   |
| 127 V~           | 1 732 812 000   |
| 230 V~           | 1 732 813 000   |
| Special voltages | 1 732 814 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40, target: drop indicator,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 732 797 000   |
| 42 V~            | 1 732 798 000   |
| 60 V~            | 1 732 799 000   |
| 127 V~           | 1 732 800 000   |
| 230 V~           | 1 732 801 000   |
| Special voltages | 1 732 802 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 575 000   |
| 42 V~            | 1 771 576 000   |
| 60 V~            | 1 771 577 000   |
| 127 V~           | 1 771 578 000   |
| 230 V~           | 1 771 579 000   |
| Special voltages | 1 771 580 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed PC cover, IP 40, target: operating current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 587 000   |
| 42 V~            | 1 771 588 000   |
| 60 V~            | 1 771 589 000   |
| 127 V~           | 1 771 590 000   |
| 230 V~           | 1 771 591 000   |
| Special voltages | 1 771 592 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40, target: closed-circuit current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 593 000   |
| 42 V~            | 1 771 594 000   |
| 60 V~            | 1 771 595 000   |
| 127 V~           | 1 771 596 000   |
| 230 V~           | 1 771 597 000   |
| Special voltages | 1 771 598 0 . . |

DC, 50 Hz, four changeover contacts, single contacts, AgCu,  
bifurcated PC cover, IP 40, target: drop indicator,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 581 000   |
| 42 V~            | 1 771 582 000   |
| 60 V~            | 1 771 583 000   |
| 127 V~           | 1 771 584 000   |
| 230 V~           | 1 771 585 000   |
| Special voltages | 1 771 586 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed PC cover, IP 40,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 732 791 800   |
| 42 V~            | 1 732 792 800   |
| 60 V~            | 1 732 793 800   |
| 127 V~           | 1 732 794 800   |
| 230 V~           | 1 732 795 800   |
| Special voltages | 1 732 796 8 . . |

DC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed PC cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 575 800   |
| 42 V~            | 1 771 576 800   |
| 60 V~            | 1 771 577 800   |
| 127 V~           | 1 771 578 800   |
| 230 V~           | 1 771 579 800   |
| Special voltages | 1 771 580 8 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 731 280 000   |
| 42 V~            | 1 731 281 000   |
| 60 V~            | 1 731 282 000   |
| 127 V~           | 1 731 283 000   |
| 230 V~           | 1 731 284 000   |
| Special voltages | 1 731 285 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 455 000   |
| 42 V~            | 1 770 456 000   |
| 60 V~            | 1 770 457 000   |
| 127 V~           | 1 770 458 000   |
| 230 V~           | 1 770 459 000   |
| Special voltages | 1 770 460 0 . . |

DC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40, target: operating current,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 487 000   |
| 42 V~            | 1 770 488 000   |
| 60 V~            | 1 770 489 000   |
| 127 V~           | 1 770 490 000   |
| 230 V~           | 1 770 491 000   |
| Special voltages | 1 770 492 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40, target: closed-circuit current,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 493 000   |
| 42 V~            | 1 770 494 000   |
| 60 V~            | 1 770 495 000   |
| 127 V~           | 1 770 496 000   |
| 230 V~           | 1 770 497 000   |
| Special voltages | 1 770 498 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu4,  
closed AI cover, IP 40, target: drop indicator,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 481 000   |
| 42 V~            | 1 770 482 000   |
| 60 V~            | 1 770 483 000   |
| 127 V~           | 1 770 484 000   |
| 230 V~           | 1 770 485 000   |
| Special voltages | 1 770 486 0 . . |

AC, 60 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 455 600   |
| 42 V~            | 1 770 456 600   |
| 60 V~            | 1 770 457 600   |
| 127 V~           | 1 770 458 600   |
| 220 V~           | 1 770 459 600   |
| Special voltages | 1 770 460 0 . . |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic/ship type

|         |               |
|---------|---------------|
| 0.34 A~ | 1 770 460 450 |
| 0.40 A~ | 1 770 460 451 |
| 0.53 A~ | 1 770 460 452 |
| 0.60 A~ | 1 770 460 453 |
| 0.70 A~ | 1 770 460 454 |
| 0.95 A~ | 1 770 460 455 |
| 1.33 A~ | 1 770 460 456 |
| 1.80 A~ | 1 770 460 457 |

## RELOG 2 RH 32 All-or-Nothing Relay Types:

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 854 400   |
| 42 V~            | 1 771 855 400   |
| 60 V~            | 1 771 838 400   |
| 127 V~           | 1 771 839 400   |
| 230 V~           | 1 771 840 400   |
| Special voltages | 1 771 841 4 . . |

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 40, target: operating current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 842 400   |
| 42 V~            | 1 771 843 400   |
| 60 V~            | 1 771 844 400   |
| 127 V~           | 1 771 845 400   |
| 230 V~           | 1 771 846 400   |
| Special voltages | 1 771 847 4 . . |

AC, 60 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40, target: operating current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 487 600   |
| 42 V~            | 1 770 488 600   |
| 60 V~            | 1 770 489 600   |
| 127 V~           | 1 770 490 600   |
| 220 V~           | 1 770 491 600   |
| Special voltages | 1 770 492 6 . . |

AC, 60 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40, target: closed-circuit current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 493 600   |
| 42 V~            | 1 770 494 600   |
| 60 V~            | 1 770 495 600   |
| 127 V~           | 1 770 496 600   |
| 220 V~           | 1 770 497 600   |
| Special voltages | 1 770 498 6 . . |

AC, 60 Hz, four changeover contacts, single contacts, AgCu4,  
closed AI cover, IP 40, target: drop indicator,  
climatic/ship type

|                  |               |
|------------------|---------------|
| 24 V~            | 1 770 481 600 |
| 42 V~            | 1 770 482 600 |
| 60 V~            | 1 770 483 600 |
| 127 V~           | 1 770 484 600 |
| 220 V~           | 1 770 485 600 |
| Special voltages | 1 770 486 600 |

AC, 50 Hz, four changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
Standard type

|         |               |
|---------|---------------|
| 0.34 A~ | 1 731 285 450 |
| 0.40 A~ | 1 731 285 451 |
| 0.53 A~ | 1 731 285 452 |
| 0.60 A~ | 1 731 285 453 |
| 0.70 A~ | 1 731 285 454 |
| 0.95 A~ | 1 731 285 455 |
| 1.33 A~ | 1 731 285 456 |
| 1.80 A~ | 1 731 285 457 |

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 40, target: closed-circuit current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 848 400   |
| 42 V~            | 1 771 849 400   |
| 60 V~            | 1 771 850 400   |
| 127 V~           | 1 771 851 400   |
| 230 V~           | 1 771 852 400   |
| Special voltages | 1 771 853 4 . . |

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 40, target: drop indicator,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 862 000   |
| 42 V~            | 1 771 863 000   |
| 60 V~            | 1 771 864 000   |
| 127 V~           | 1 771 865 000   |
| 230 V~           | 1 771 866 000   |
| Special voltages | 1 771 867 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts,  
AgNi0,15 6 µm Au, closed PC cover, IP 40, climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 774 555 000   |
| 42 V~            | 1 774 556 000   |
| 60 V~            | 1 774 557 000   |
| 127 V~           | 1 774 558 000   |
| 230 V~           | 1 774 559 000   |
| Special voltages | 1 774 560 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts,  
AgNi0,15 6 µm Au, closed PC cover, IP 40, target: operating current,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 774 561 000   |
| 42 V~            | 1 774 562 000   |
| 60 V~            | 1 774 563 000   |
| 127 V~           | 1 774 564 000   |
| 230 V~           | 1 774 565 000   |
| Special voltages | 1 774 566 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts,  
AgNi0,15 6 µm Au, closed PC cover, IP 40, target: closed-circuit  
current, climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 774 567 000   |
| 42 V~            | 1 774 568 000   |
| 60 V~            | 1 774 569 000   |
| 127 V~           | 1 774 570 000   |
| 230 V~           | 1 774 571 000   |
| Special voltages | 1 774 572 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts,  
AgNi0,15 6 µm Au, closed PC cover, IP 40, target: drop indicator,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 774 573 000   |
| 42 V~            | 1 774 574 000   |
| 60 V~            | 1 774 575 000   |
| 127 V~           | 1 774 576 000   |
| 230 V~           | 1 774 577 000   |
| Special voltages | 1 774 578 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts,  
AgNi0,15 6 µm Au, closed PC cover, IP 50, climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 774 531 000   |
| 42 V~            | 1 774 532 000   |
| 60 V~            | 1 774 533 000   |
| 127 V~           | 1 774 534 000   |
| 230 V~           | 1 774 535 000   |
| Special voltages | 1 774 536 0 . . |

DC, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 50, target: operating current,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 842 000   |
| 42 V~            | 1 771 843 000   |
| 60 V~            | 1 771 844 000   |
| 127 V~           | 1 771 845 000   |
| 230 V~           | 1 771 846 000   |
| Special voltages | 1 771 847 0 . . |

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 50, target: closed-circuit current,  
climatic/ship type

|                  |               |
|------------------|---------------|
| 24 V~            | 1 771 848 000 |
| 42 V~            | 1 771 849 000 |
| 60 V~            | 1 771 850 000 |
| 127 V~           | 1 771 851 000 |
| 230 V~           | 1 771 852 000 |
| Special voltages | 1 771 853 000 |

AC, 50 Hz, four changeover contacts, twin contacts, AgCu,  
closed PC cover, IP 50,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 771 854 000   |
| 42 V~            | 1 771 855 000   |
| 60 V~            | 1 771 838 000   |
| 127 V~           | 1 771 839 000   |
| 230 V~           | 1 771 840 000   |
| Special voltages | 1 771 841 0 . . |

### RELOG 4 RH 40 All-or-Nothing Relay Types:

AC, 50 Hz, eight changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 731 444 000   |
| 42 V~            | 1 731 445 000   |
| 60 V~            | 1 731 446 000   |
| 127 V~           | 1 731 447 000   |
| 230 V~           | 1 731 448 000   |
| Special voltages | 1 731 449 0 . . |

AC, 60 Hz, eight changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
Standard type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 731 444 600   |
| 42 V~            | 1 731 445 600   |
| 60 V~            | 1 731 446 600   |
| 127 V~           | 1 731 447 600   |
| 220 V~           | 1 731 448 600   |
| Special voltages | 1 731 449 6 . . |

AC, 50 Hz, eight changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 443 000   |
| 42 V~            | 1 770 444 000   |
| 60 V~            | 1 770 445 000   |
| 127 V~           | 1 770 446 000   |
| 230 V~           | 1 770 447 000   |
| Special voltages | 1 770 448 0 . . |

AC, 60 Hz, eight changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic/ship type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 443 600   |
| 42 V~            | 1 770 444 600   |
| 60 V~            | 1 770 445 600   |
| 127 V~           | 1 770 446 600   |
| 220 V~           | 1 770 447 600   |
| Special voltages | 1 770 448 6 . . |

### RELOG 4 RH 42 All-or-Nothing Relay Types:

AC, 50 Hz, eight changeover contacts, single contacts, AgCu,  
closed AI cover, IP 40,  
climatic type

|                  |                 |
|------------------|-----------------|
| 24 V~            | 1 770 520 000   |
| 42 V~            | 1 770 521 000   |
| 60 V~            | 1 770 522 000   |
| 127 V~           | 1 770 523 000   |
| 230 V~           | 1 770 524 000   |
| Special voltages | 1 770 525 0 . . |

## List of Extended Order Numbers

The 9<sup>th</sup> and 10<sup>th</sup> digit of the order number acc. to the "List of Order Numbers (Pl.nos) must be supplemented with the requested special voltage.

| Special voltage | 9. and 10. digit of the Pl. nos. |
|-----------------|----------------------------------|
| 6 V DC          | 1 . . . . . 11                   |
| 12 V AC         | 1 . . . . . 01                   |
| 32 V DC         | 1 . . . . . 03                   |
| 36 V DC         | 1 . . . . . 10                   |
| 36 V AC         | 1 . . . . . 10                   |
| 42 V DC         | 1 . . . . . 04                   |
| 48 V DC         | 1 . . . . . 05                   |
| 48 V AC         | 1 . . . . . 05                   |
| 52 V DC         | 1 . . . . . 12                   |
| 80 V DC         | 1 . . . . . 07                   |
| 96 V DC         | 1 . . . . . 14                   |
| 100 V DC        | 1 . . . . . 08                   |
| 100 V AC        | 1 . . . . . 08                   |
| 110 V AC        | 1 . . . . . 11                   |
| 125 V DC        | 1 . . . . . 09                   |
| 250 V DC        | 1 . . . . . 13                   |
| 400 V AC        | 1 . . . . . 12                   |

Other special voltages upon request.

## Accessoires

|   |               |
|---|---------------|
| Plug-in connection with quick-rail fixing, DIN labeling                                       | 1 739 245 000 |
| Plug-in connection with quick-rail fixing, RELOG labeling                                     | 1 739 245 100 |
| Plug-in connection with quick rail fixing, GP02-40 diode ( $U_{RRM} = 4$ kV), DIN labeling    | 1 739 245 010 |
| Plug-in connection with quick rail fixing, BYW 56 diode ( $U_{RRM} = 1$ kV), DIN labeling     | 1 739 245 011 |
| Plug-in connection with quick rail fixing, GP02-40 diode ( $U_{RRM} = 40$ kV), RELOG labeling | 1 739 245 110 |
| Plug-in connection with quick rail fixing, BYW 56 diode ( $U_{RRM} = 1$ kV), RELOG labeling   | 1 739 245 111 |
| Fastening sheet "Single-screw fixing" for plug-in connection with quick-rail fixing           | 1 739 246 000 |
| RELOG Adaptor connected for 2 RH all-or-nothing relay   | 1 739 194 000 |
| RELOG Adaptor for 2 RH all-or-nothing relay . / 4 RH . without wiring                         | 1 739 195 000 |
| Plug-in connection for 2 H all-or-nothing relay 14 poles, solder termination                  | 1 770 335 000 |
| Plug-in connection for 2 H all-or-nothing relay 14 poles, wire-wrap termination               | 1 770 594 000 |
| plug-in connection 22 poles, solder termination   | 1 770 334 000 |
| plug-in connection 22 poles, wire-wrap termination  | 1 770 595 000 |



# Schließen Sie Kontakt mit uns!

## Please contact us!

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