

RELOG

All-or-nothing relays

Interlocking Relais

2 RH 60 – SSP xx

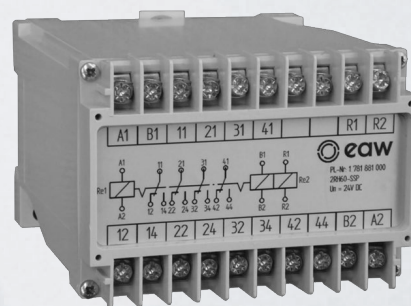
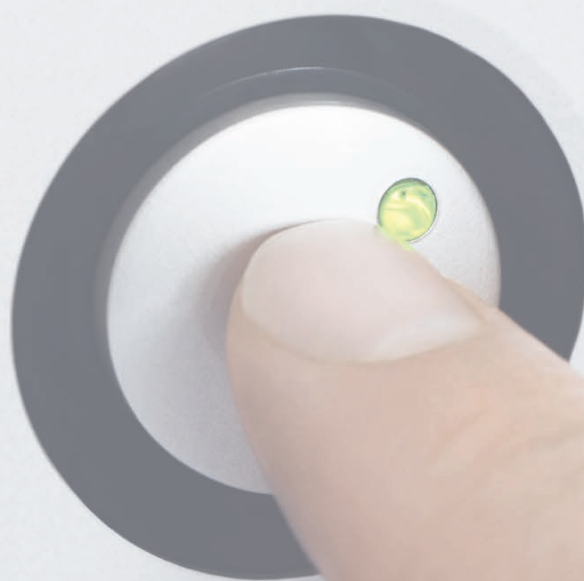


Table of contents	Page
General information	3
Design and action	3
Device types	3
Technical characteristics	4
Standards - conformity	5
CE conformity	5
Circuit diagram	6
Dimensioned drawings	6
Order numbers (Pl. No.)	6

General information

Classic all-or-nothing relays are just as important as ever in electrical engineering. They will continue to remain an important, universally usable component in the future too. The types and variants which can meet the requirements set with a high degree of reliability are to be chosen from the wide range on offer.

RELOG is the name of a system of electromechanical relays designed to modern standards. They meet the high requirements of contemporary industrial controls. The modular system with contacts brings together different control engineering relays, often offered as a single function in different dimensions, to form a practical coordinated system according to uniform electrical and design aspects.

The RELOG system all-or-nothing relays are particularly suitable for individual cases of small-scale automation and the design of diverse control tasks, i.e. for all types of machine controls, lift controls, controls in power generation and distribution systems and in many other areas of control and plant construction. Here these relays can be used in many areas of control, in input, logic, signal or output circuits with low and medium switching power, where high contact reliability and long-term stability under unfavourable ambient conditions are important.

Remanent relays with two stable switching states independent of the operating voltage are suitable not only for pulse duty but also for continuous duty. As a result of the magnetic latching, storage functions can be fulfilled. The special relay types 2 RH60 — SSP AC and 2 RH60 — SSP DC can be used wherever it is important to fix the switching state achieved despite power failure or where a pulse contact must be implemented in a continuous contact. Control through pulses enables substantial power reduction, and is therefore particularly advantageous for battery-operated systems.

Design and action

The relay types 2 RH60 — SSP AC and 2 RH60 — SSP DC are supplied in the standard enclosure. The function is based on a remanent relay which, actuated by pulses, changes its switching state and locks the assumed switching state magnetically. The switching state is retained even in the event of loss of voltage of all inputs.

Two separate inputs are available for targeted selection of the two possible switching states. If the loss of voltage of both inputs is followed by a pulse at one of the control inputs, the relay switches to the switching state corresponding to the selected control input and remains in this state until the alternating input is selected. The current switching state is retained in the event of loss of voltage of all inputs.

In addition to the control inputs, the devices have a separate reset input. In the event of loss of voltage of the control inputs, this input can be used to place the device in a forced normal switching state by a pulse. The galvanic isolation of both pins of the reset input must be ensured for resumption of control mode.

Device types

The device series includes devices for operation with DC or AC control voltages.

2 RH60 — SSP DC: Direct voltage activation
2 RH60 — SSP AC: Alternating voltage activation

The device is selected according to the voltage level available in the control system. The following nominal voltages are offered:

Direct voltage	Alternating voltage
24 V	24 V
48 V	48 V
60 V	115 V
110 V	230 V
220 V	

Technical characteristics

Characteristic value	
Nominal control voltage U_N	24V to 220V DC / 24V to 230V AC
Max. working voltage	$1.1 \times U_N$
Duty	Pulse duty or continuous duty (energisation, negative energisation)
Operate voltage	$\leq 0.8 \times U_N$
Rated power <ul style="list-style-type: none"> • Energisation (standard type) • Energisation (fast type) • Negative energisation via Rv (standard) • Negative energisation via Rv (fast) 	$\leq 3.5 \text{ W}$ $\leq 5.5 \text{ W}$ $\leq 1.5 \text{ W}$ $\leq 3.5 \text{ W}$
Ambient temperature	-30°C to 50°C
Storage temperature	40 °C to 85 °C
Switching voltage max.	$\leq 250 \text{ V DC/AC}$
Number of contacts	4 changeover contacts
Contact type	Single contacts
Contact tip material	AgCu
Contact circuit resistance	approx. 30 mΩ
Making capacity max.	10 A DC/AC
Max. all. continuous current	5 A The sum of the squares of the individual currents must not exceed 64 A ² .
Limiting continuous current	4 A across all 4 break contact circuits
Frequency of operation	$\leq 3600 \text{ cycles / h}$
Mechanical endurance	$\geq 10 \times 10^6$
Nominal breaking capacity <ul style="list-style-type: none"> • $\cos \phi = 1.0$; 230 V AC • $\cos \phi = 0.4$; 230 V AC • $\tau = 0 \text{ ms}$; 220 V DC • $\tau = 40 \text{ ms}$; 220 V DC 	1.5 A 1.0 A 0.4 A 0.15 A
Min. switching capacity	24 V DC, 10 mA, $\tau = 0 \text{ ms}$
Electrical endurance	$\geq 1.0 \times 10^6$
Set response time at nominal coil voltage <ul style="list-style-type: none"> • Standard type DC • Standard type AC • Fast type AC/DC 	$\leq 35 \text{ ms}$ $\leq 45 \text{ ms}$ $\leq 20 \text{ ms}$
Reset response time/manual reset at nominal coil voltage <ul style="list-style-type: none"> • Standard type DC • Standard type AC • Fast type AC/DC 	$\leq 20 \text{ ms}$ $\leq 30 \text{ ms}$ $\leq 20 \text{ ms}$
Pulse duration	$\geq 100 \text{ ms}$
Rated insulation voltage AC <ul style="list-style-type: none"> • via opened contacts 	2.5 kV 1.0 kV
Pollution degree	3 to DIN VDE 0110-1
Rated impulse voltage <ul style="list-style-type: none"> • Control inputs 	2.5 kV, Voltage waveform 1.2 / 50 μs 1.0kV Control voltage inputs
Clearances	$\geq 3 \text{ mm}$
Creepage distances	$\geq 4 \text{ mm}$
Withstand voltage, control inputs	$\leq 500\text{V}$
Installation altitude	$\leq 2000 \text{ m above sea level}$
Relay enclosure	closed plastic enclosure
Installation temperature	$\geq 10^\circ\text{C}$
Installation torque	0.8 Nm
Enclosure dimensions (W x H x D)	100 x 78 x 112 mm
Degree of protection, enclosure	IP 40
Degree of protection, terminal plate	IP 10 (IP 20 with terminal cover)
Type of connection	Screw terminals M3.5, 0.8Nm

Wire cross-sections	2.5 mm ² solid / 1.5 mm ² multi-wired with sleeve
Insulation resistance	≥ 1 × 10 ⁸ Ω when new, UP = 500 VDC
Environmental tests <ul style="list-style-type: none"> • Dry heat • Damp heat, steady state • Damp heat, cyclic • Vibration (sinusoidal) • Shock, half-sine 	Test B, 55°C to IEC 60068-2-2 Test Cab, 25°C, 93% r.H. to IEC 60068-2-78 Test Db, 25°C, 95% r.H./55°C, 93%r.F. to IEC 60068-2-30 Test Fc, 5-150Hz, Amplitude 3.5mm p-p, 1g, 3 axes Test Ea, 5g, half-sine, 3 axes each with 2 directions
Weight	approx. 0.55 kg

Standards – conformity

The data for the RELOG all-or-nothing relays, including accessories, is based on the following national and international standards:

EN 61810-1 / VDE 0435 Part 201: 2004-07

Electromechanical non-specified time all-or-nothing relays;
Part 1: General requirements

EN 61810-5 / VDE 0435 Part 140: 1999-04

Electromechanical non-specified time all-or-nothing relays;
Part 5: Insulation coordination

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

Part 23: Electrical relays; Contact performance

EN 60529 / VDE 0470 Part 1: 2000-09

Degrees of protection provided by enclosures (IP code)

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

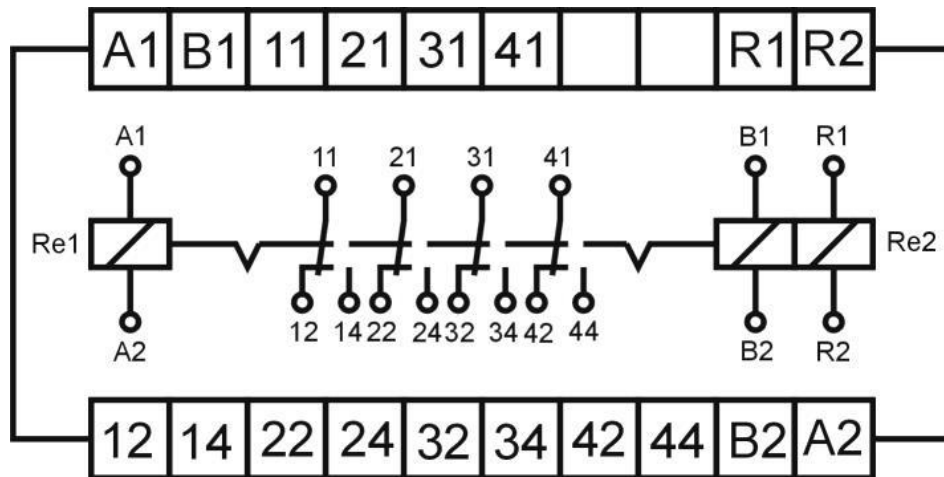
Connecting devices. Electrical copper conductors. Safety requirements for screw-type and screwless-type clamping units

CE conformity

The RELOG system all-or-nothing relays conform to the provisions of the European Directives 2006/95/EC "Low Voltage Directive" of 12/12/2006 and 2004/108/EC "EMC Directive" of 15/12/2004 including the amendments.

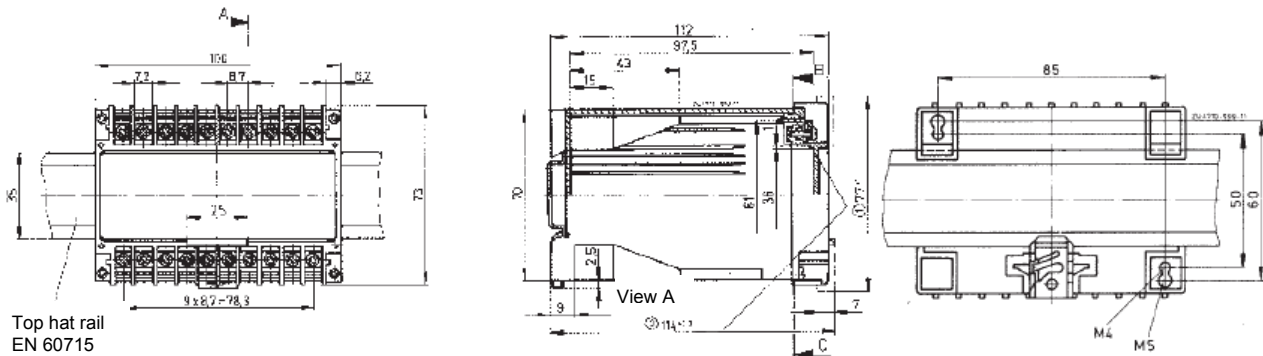
The CE symbol is attached to the packaging or on the side printing of the relay.

Circuit diagram



A1/A2 – Control input switch position 1
 B1/B2 – Control input switch position 2
 R1/R2 – Control input manual reset
 11 – 44 Connections of the switching paths

Dimensioned drawings



Order numbers

Control voltage DC

2 RH60 – SSP DC, 4 changeover contacts, single contacts
 IP 40, standard type

12 V	1 781 880 000
24 V	1 781 881 000
48 V	1 781 885 005
60 V	1 781 882 000
110 V	1 781 883 000
220 V	1 781 884 000

Special types on request

1 781 88. ...

Control voltage AC

2 RH60 – SSP AC, 4 changeover contacts, single contacts
 IP 40, standard type

24 V	1 780 881 000
48 V	1 780 885 005
110 V	1 780 883 000
230 V	1 780 884 000

Special types on request

1 780 88. ...