



# Two-hand CONTROL relay HR-2007

- Performance level e acc. to EN ISO 13849-1
- Type III C (EN 574)
- Status-/fault indication via LEDs
- 2 NO safety outputs
- Short circuit monitoring
- Available with 230VAC and 24V AC/DC supply voltage

What can the new Duelco two-hand relay HR-2007 offer you?

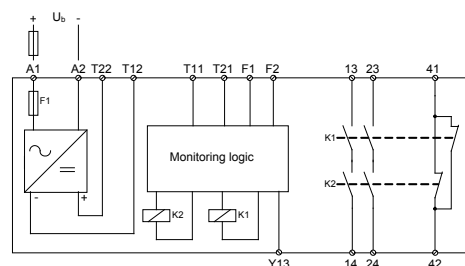
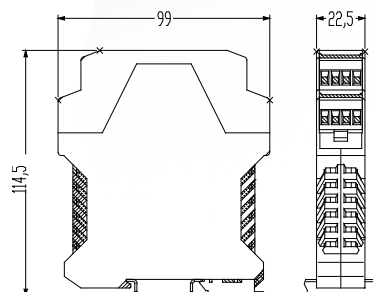
- Simplicity
- Fast and easy installation via user friendly connection examples
- Two-hand control relay for dangerous work processes such as punching or pressing
- Verification of the operation of both control switches within max. 0.5s
- Status-/fault indication LEDs for indication of the status of the internal relays, the outputs and the supply. The LED signalling can reduce trouble shooting time.

Technical facilities regarding safety requirements:

- Forced contacts
- Transistor output
- 2 NO contacts
- 1 NC contact

User's advantages:

- Safety category 4 / performance level e acc. EN ISO 13849-1 and III C cf. EN 574
- Monitoring of external contacts (F1-F2)
- 2 NO contacts, AC1: 230 V AC / 6A ; DC1: 24V / 6A 1 transistor output 18 VDC
- Voltage versions: 24V AC/DC and 230 VAC
- Design is based on the european standard, EN 60204-1/EN 574
- 22,5 mm slimline housing
- LED indication for power, channel 1 and channel 2
- Complies with MD, EMC, LVD (98/37/EC, 89/336/EEC & 93/68/EEC)



## Operation description

Operating voltage must be connected to the terminals A1(+) and A2(-). With terminals F1 and F2 short-circuited, the monitoring and control circuit will be activated. In this condition the output contacts 13-14, 23-24 are open and the NC contact 41-42 is closed / non-conductive.

After operation of the two contact sets TA1 and TA2 - each consisting of one set of forced make and break contacts in channel 1 and channel 2, HR-2007 activates. I.e. the current paths 13-14 and 23-24 are closed while the NC contact 41-42 is open. The LEDs K1 and K2 illuminates. The time period between operation of TA1 and TA2 is max. 500 ms. This period is a requirement of the present standards.

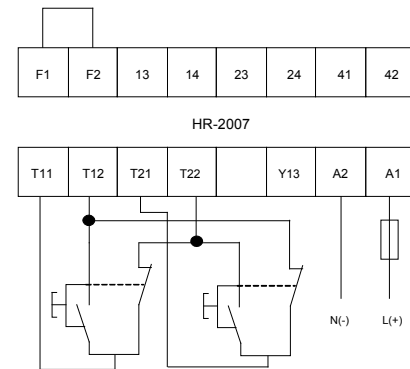
Contact sets TA1 and TA2 ensure that faults such as a welded contact or a short circuit in or between contact sets will be registered by the monitoring circuit. This makes restart impossible until the fault is rectified and the two hand relay HR-2007 is back in its dwell position.

## Technical data HR-2007

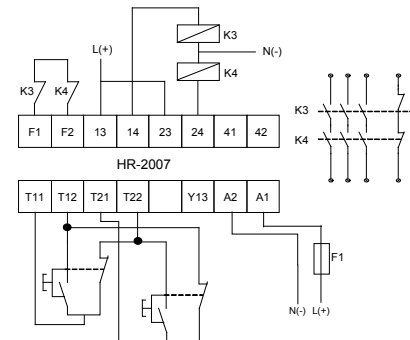
Electrical data	
Supply voltage (NB! Common Power Supply)	24V AC/DC, 230V AC
Voltage range	0,85 ... 1,1 U <sub>B</sub>
Frequency (AC-type)	50 ... 60 Hz
Power consumption	2 VA
Conductor data	
Max. cross section of conductor, Solid thread:	2 x 1,5 mm <sup>2</sup>
Multewire with ferrule:	2 x 1,5 mm <sup>2</sup>
Cable type	60/75°C copper wire only
Max cable lengths (input circuit)	4 x 0,15 km
Capacity	150 nF/km
Temperature	+55° C
Contact data	
Contact-allocation	2 NO / 1 NC
Contact type	Positive guided relay
Contact material	AgSnO <sub>2</sub> or comparable material
Switching voltage	250V AC, 24V DC
Switching current	6 A AC, 6 A DC
Max. switching capacity	1500 VA (ohms load)
Mechanical lifetime	10 <sup>7</sup> activations
Electrical lifetime	10 <sup>5</sup> activations (DC 24V/2A)
Creeping distance and clearance DIN VDE 0160	Pollution grade 2: Basis insulation: Over voltage category 3 Protective separation: Over voltage category 2
Reactivation time by emergency stop	0,5 s
Cut-out time by emergency stop, K1	< 30 ms
Lifetime characteristic	AC 15: 230 V / 6 A ; DC 13: 24 V / 1,5 A
PLC output	
Voltage	> 18 VDC
External load	R <sub>ext</sub> ≥ 2,4 kOhm
Mechanical data + various	
Housing material	Polyamid PA 6.6
Dimensions (WxHxD)	22,5 x 114,5 x 99 mm
Mounting	Click-fastening for DIN-Rail
Humidity	Alternating climate, 95% 0-50°C
Max tightening torque	0,4 Nm
Weight	180 g
Storage temperature	In dry areas
Operating temperature	-25 - +55° C
Enclosure rating, Terminals, Housing	IP 20 (DIN VDE 0470); IP 40 (DIN VDE 0470)
Shock resistance, NO/NC contacts	5g, 33 Hz (VDE 0160)
Certification	
Tested in acc. with PL / Category	EN ISO 13849-1 e / 4
MTTFd (years)	36,45 high
DC	99% high
CCF	achieved

## Connection examples:

HR-2007, general application



HR-2007 connected to external contactors



## Order information:

Description	Article no.
HR-2007F 24V AC/DC	42080030
HR-2007F 230V AC	42080031

Duelco A/S - Aalborg  
Systemvej 8  
DK-9200 Aalborg SV

Duelco A/S - Sønderborg  
Mommarkvej 5  
DK-6400 Sønderborg

Tel. +45 7010 1007  
Fax: +45 7010 1008  
www.duelco-safety.com  
info@duelco.dk