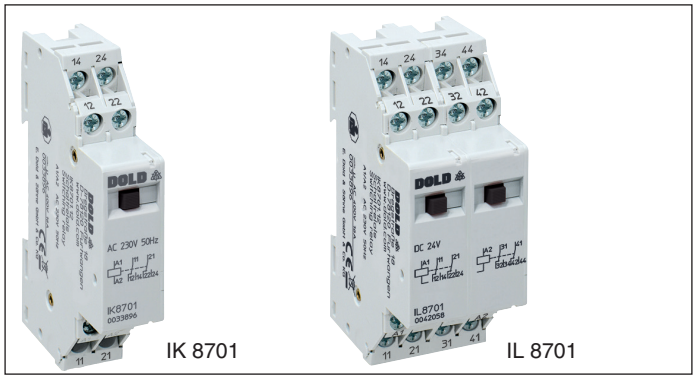
Switching Relay
Input-Output Interface Relay
IK 8701, IL 8701, IN 8701

Translation of the original instructions

DOLD

0222085



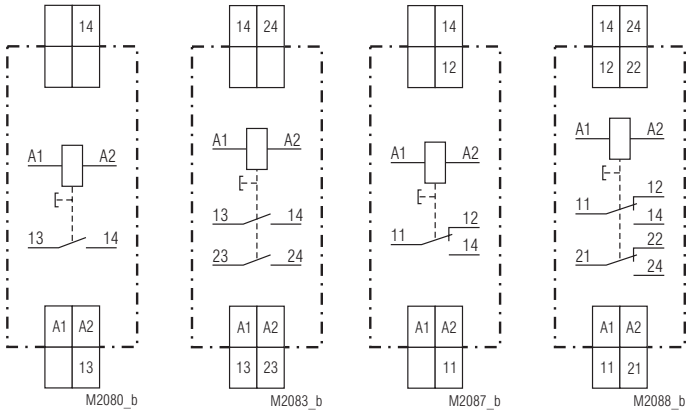
Your Advantages

- Optionally contacts with up to a maximum 4 changeover contacts
- Optionally for 2-wire initiator activation
- Optionally for switching low loads
- Optionally for switching lamps with parallel compensation (e.g. HQ lamps)
- Optionally for switching large inductive direct current loads
- Optionally with a recovery diode (only DC devices)
- Optionally with reliable release voltage of AC 120 V

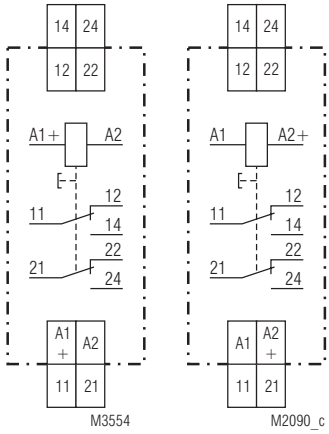
Features

- According to EN 60947-5-1
- Pushbutton for manual actuation of the contact
- Operating position display
- High thermal current I_{th}
- Width: 17.5 or 35 or 52.5 mm

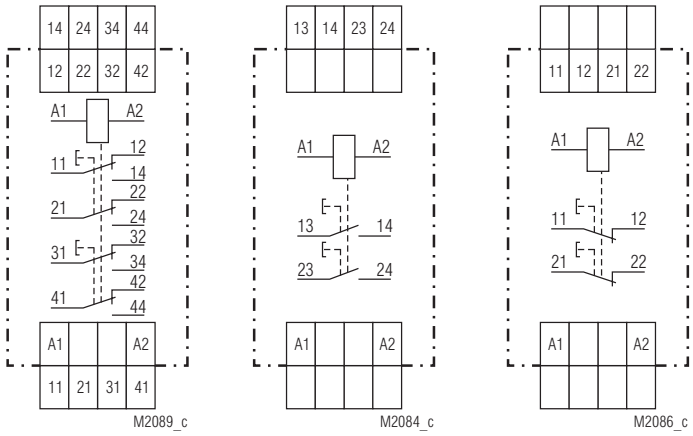
Circuit Diagrams



IK 8701.01 IK 8701.02 IK 8701.11 IK 8701.12



IK 8701.12/024 IK 8701.12/008
IK 8701.12/005



IL 8701.14 IL 8701.02/006 IL 8701.06/006

Approvals and Markings

CE

Applications

- For switching lamp loads
- Input interface relay, e.g. for activation of PLC
- Output interface relay, e.g. for PLC-controlled loads

Function

The contacts are actuated with an armature via a plunger. After the exciting voltage has dropped, a spring returns the armature (which is connected to the plunger) to its home position. The contacts can be actuated manually via a pushbutton on the front as well. The pushbutton acts at the same time as an operating position display. The contacts are closed when the pushbutton is pressed. The red pushbutton is flush with the front edge when there is no current.

Note: IL devices have 2, IN devices have 3 pushbuttons on the front. These are **not** linked together.
The pushbuttons only activate the contact shown on the front under the button.

Indicators

Pushbutton: Pressed, when the relay is supplied with current

Connection Terminals

Terminal Designation	Signal description
A1 / A2	Control signal AC
A1(+) / A2	Control signal AC/DC
A1+ / A2; A1 / A2+	Control signal DC polarized
11,12,14; 21,22,24; 31,32,34; 41,42,44	Changeover contact LOAD
13,14; 23,24; 33,34; 43,44	NO contacts LOAD
11,12; 21,22; 31,32; 41,42	NC contacts LOAD

Technical Data

Input

Nominal voltage:	AC 24, 42, 230, 400 V DC 12, 24, 48, 110 V	
Voltage range:	0.9 ... 1.1 U_N	
Nominal consumption		
IK 8701:	AC 1.8 W	DC 1.2 W
IL 8701:	AC 3.8 W	DC 2.6 W
IN 8701:	AC 5.8 W	DC 4.0 W
Nominal frequency:	50 or 60 Hz	

Output

Contacts		
IK 8701.01:	1 NO contact	
IK 8701.02:	2 NO contacts	
IK 8701.05:	1 NC contact	
IK 8701.06:	2 NC contacts	
IK 8701.11:	1 changeover contact	
IK 8701.12:	2 changeover contacts	
IL 8701.13:	3 changeover contacts	
IL 8701.14:	4 changeover contacts	
Operate time:	< 30 ms	
Release time:	< 30 ms	
Nominal output voltage:	AC 230 / 400 V	IEC/EN 60947-5-1
Thermal current I_{th}:	16 A	
Direct current load:	See arc limit curve	
Switching capacity		
Fluorescent lamp load:	20 lamps with 58 W / contact each	
Fluorescent lamp load with electronic series reactor:	58 lamps with 18 W / contact each 28 lamps with 40 W / contact each 20 lamps with 58 W / contact each	
Duo switching (series compensated):	2 x 20 lamps with 58 W / contact each 5 x 10^4 switching cycles	
Bulb load:	1200 W / contact 5 x 10^4 switching cycles	
Electrical life:	500 switching cycles / h	
With ohmic load AC 230 V:	6 A 150 x 10^4 switching cycles 10 A 75 x 10^4 switching cycles 16 A 12 x 10^4 switching cycles	
Inductive load cos φ 0,6:	10 A 10 x 10^4 switching cycles	
DC-load:	See arc limit curve	
Permissible switching frequency:	1000 switching cycles / h	
Short circuit strength max. fuse rating:	16 A gG / gL	IEC/EN 60947-5-1
Mechanical life:	> 10 x 10^6 switching cycles	

General Data

Operating mode:	Continuous operation	
Temperature range		
Operation:	- 20 ... + 45 °C	
Storage:	- 25 ... + 55 °C	
Altitude:	< 2000 m	
Clearance and creepage distances		
Rated impulse voltage / pollution degree:	4 kV / 2	IEC 60664-1
EMC		
Interference resistance:	Residential environments	EN 61000-6-1
Interference resistance:	Industrial environments	EN 61000-6-2
Interference emission:	Residential environments	EN 61000-6-3
Interference emission:	Industrial environments	EN 61000-6-4
Degree of protection		
Housing:	IP 30	IEC/EN 60529
Terminals:	IP 20	IEC/EN 60529
Housing:	Thermoplastic with V0 behaviour according to UL subject 94	
Vibration resistance:	Amplitude 0.35 mm frequency 10 ... 55 Hz	IEC/EN 60068-2-6
Climate resistance:	Humid heat	IEC/EN 60068-2-30
Terminal designation:	EN 50005	
Wire connection:	2 x 2.5 mm² solid or 2 x 1.5 mm² stranded ferruled or 2 x 1 mm² stranded ferruled DIN 46228-1/-2/-3/-4	
Wire fixing:	Flat terminals with self-lifting clamping piece	IEC/EN 60999-1
Fixing torque:	0.8 Nm	
Mounting:	DIN rail	IEC/EN 60715
Weight:		

Technical Data

IK 8701:	100 g
IL 8701:	200 g
IN 8701:	300 g

Dimensions

Width x height x depth:

IK 8701:	17,5 x 89 x 58 mm
IL 8701:	35 x 89 x 58 mm
IN 8701:	52.5 x 89 x 58 mm

Standard Type

IK 8701.12 AC 230 V 50 Hz
Article number: 0033896

- Pushbutton for manual actuation of the contacts and operating position display
- Output: 2 changeover contacts
- Nominal voltage U_N: AC 230 V
- Width: 17.5 mm

Variants

I_ 8701._ _/001: For switching low loads up to maximum of 6 VA/W at 0.3 ... 60 V / 1 ... 300 mA
The contacts also permit the maximum switching current.
However, since the gold plating is burnt off at this current level, the unit is no longer suitable for switching low loads again afterwards.

I_ 8701._ _/002: For U_N > 100 V DC or AC
Can be activated with 2-wire initiators, permissible residual current ≤ 3 mA. Max. 6 glow lamps (0.5 mA each) are possible parallel to the mains button.

I_ 8701. _ _ /033: NO contacts with manual interlocking.
This allows a mechanical locked actuation without electro magnetic continuous operation.

Only for devices with NC or NO contact:

I_ 8701._ _/003: 3 mm contact opening

I_ 8701._ _/006: 6 mm contact opening
For switching large inductive direct current voltage loads (DC 220 V, L/R = 30 ms)

IK 8701._ _/007: For switching lamps with parallel compensation, e.g. HQ lamps (only 1 or 2 NO contacts).
Maximum parallel compansation 100 µF

Only for DC devices:

I_ 8701. _ _ /005: Contacts with 5µm gold plating for switching small loads.
With protection diode to protect against wrong polarity and recovery diodes to reduce switching spikes, plus on **A2+**

I_ 8701. _ _ /008: With protection diode to protect against wrong polarity and recovery diodes to reduce switching spikes, plus on **A2+**

I_ 8701. _ _ /013: With recovery diodes to reduce switching spikes, plus on **A2+;** contact gab 6 mm

I_ 8701. _ _ /024: With protection diode to protect against wrong polarity and recovery diodes to reduce switching spikes, plus on **A1+**

I_ 8701. _ _ /027: With recovery diodes to reduce switching spikes, plus on **A1+**

I_ 8701. _ _ /032: With recovery diodes to reduce switching spikes, plus on **A1+;** 6 mm contact opening

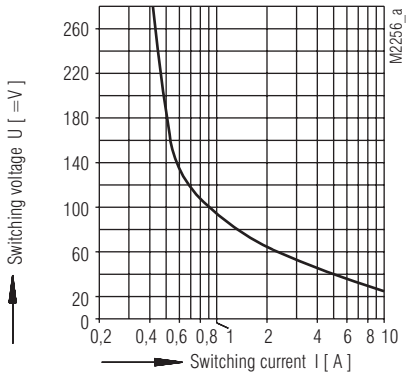
Other variants or combinations on request

Ordering example for variants

I_ 8701 ._ _ /_ _ _ AC 230 V 50 Hz

- 50 Hz — Nominal frequency
- AC 230 V — Nominal voltage
- /_ _ _ — Variant, if required
- ._ _ — Contacts
- I_ 8701 — K: Width: 17.5 mm; L: Width: 35 mm; N: Width: 52.5 mm

Characteristics



safe braking, no continuous arcing
max. 1000 switching cycles / h
contact spacing min. 0,6mm

Arc limit curve for direct current voltage-resistive load

Safety notes

Dangerous voltage.
Electric shock will result in death or serious injury.

Disconnect all power supplies before servicing equipment.

- Faults must only be removed when the relay is disconnected
- The device may only be installed and put into operation by experts who are familiar with this technical documentation and the applicable health and safety and accident prevention regulations.
- The user has to make sure that the device and corresponding components are installed and wired according to the local rules and law (TUEV, VDE, Health and safety).
- Installation work must only be done when power is disconnected