

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

Translation  
of the original instructions

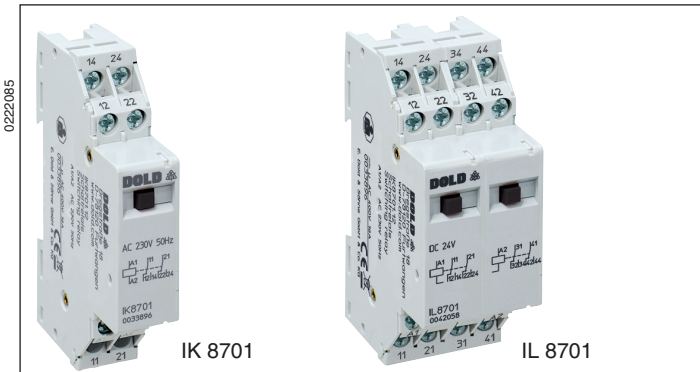


### Your Advantages

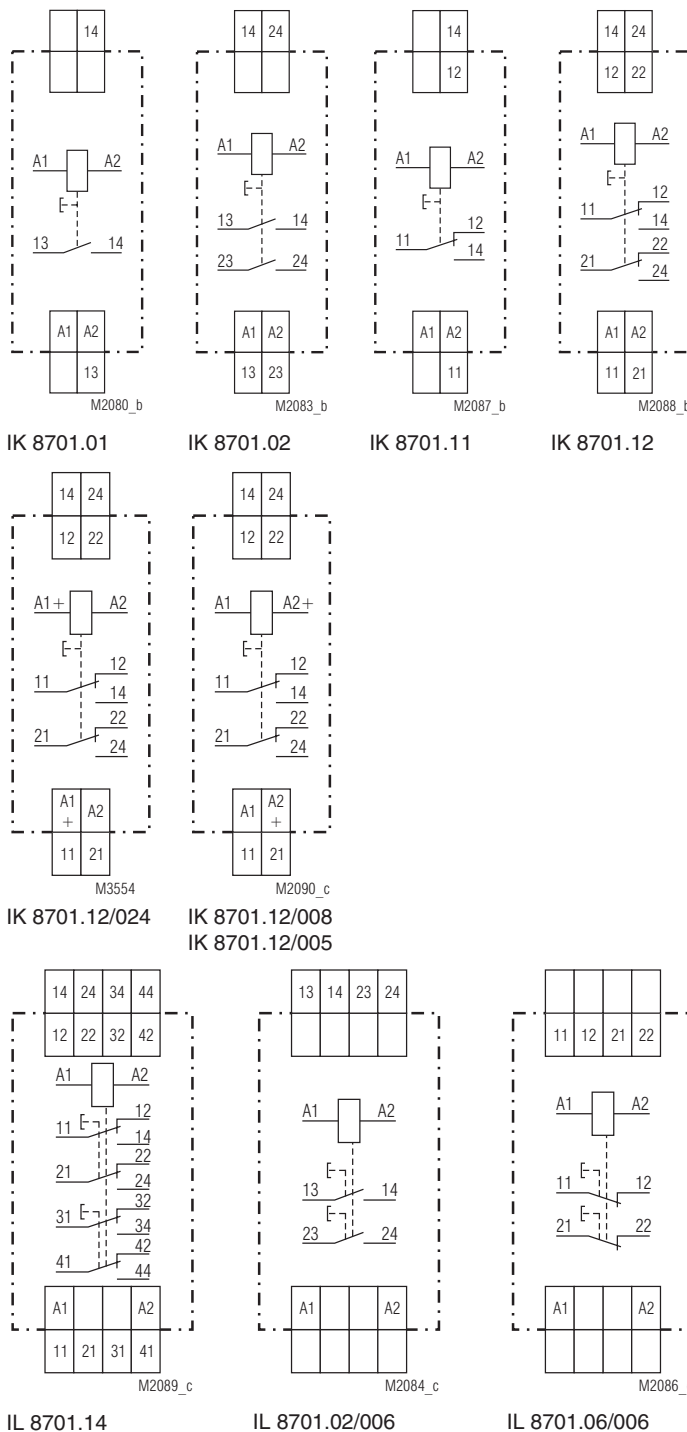
- Optionally contacts with up to a maximum 4 changeover contacts
- Optionally for 2-wire initiator activation
- Optionally for switching low loads
- Optionally for switching lamps with parallel compensation (e.g. HQ lamps)
- Optionally for switching large inductive direct current loads
- Optionally with 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



### Approvals and Markings



### 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 black 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

<b>Nominal voltage:</b>	AC 24, 42, 230, 400 V DC 12, 24, 48, 110 V
<b>Voltage range:</b>	0.9 ... 1.1 U <sub>N</sub>
<b>Nominal consumption</b>	
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
<b>Nominal frequency:</b>	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<sub>th</sub>:** 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<sup>4</sup> switching cycles

#### Bulb load:

1200 W / contact  
5 x 10<sup>4</sup> switching cycles

#### Electrical life:

500 switching cycles / h  
With ohmic load AC 230 V:  
6 A    150 x 10<sup>4</sup> switching cycles  
10 A    75 x 10<sup>4</sup> switching cycles  
16 A    12 x 10<sup>4</sup> switching cycles  
10 A    10 x 10<sup>4</sup> 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<sup>6</sup> 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 resistance: 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

Amplitude 0.35 mm

**Vibration resistance:** frequency 10 ... 55 Hz IEC/EN 60068-2-6

Humid heat    IEC/EN 60068-2-30

EN 50005

**Climate resistance:** 2 x 2.5 mm<sup>2</sup> solid or

2 x 1.5 mm<sup>2</sup> stranded ferruled or

2 x 1 mm<sup>2</sup> stranded ferruled

DIN 46228-1/-2/-3/-4

**Terminal designation:** Flat terminals with self-lifting

clamping piece    IEC/EN 60999-1

**Wire connection:** 0.8 Nm

**Fixing torque:** DIN rail    IEC/EN 60715

#### Mounting:

#### 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<sub>N</sub>: 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<sub>N</sub> > 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 compensation 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 gap 6 mm

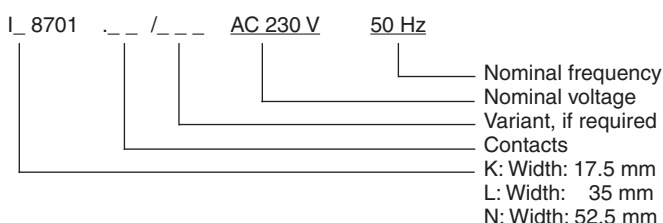
**I\_ 8701. \_\_ /024:** With protection diode to protect against wrong polarity and recovery diodes to reduce switching spikes, plus on **A1+**

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

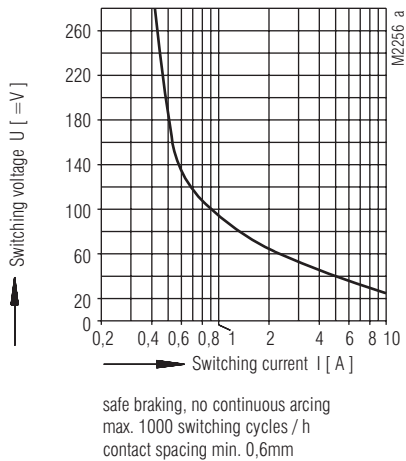
**I\_ 8701. \_\_ /032:** With recovery diodes to reduce switching spikes, plus on **A1+**; 6 mm contact opening

Other variants or combinations on request

#### Ordering example for variants



## Characteristics



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.

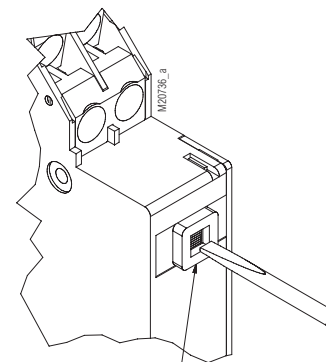
- Faults must only be removed when the relay is disconnected
- The device may only be installed and put into operation by experts who are familiar with this technical documentation and the applicable health and safety and accident prevention regulations.
- The user has to make sure that the device and 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

## Accessories

IK 8701-0-21:

Manual actuation protection  
Article number: 0050354

The mechanical operation of the switching relay can only be carried out with an aid (suitable screwdriver or similar).



Manual actuation protection

