

## Hybrid Relay IK 3070/200



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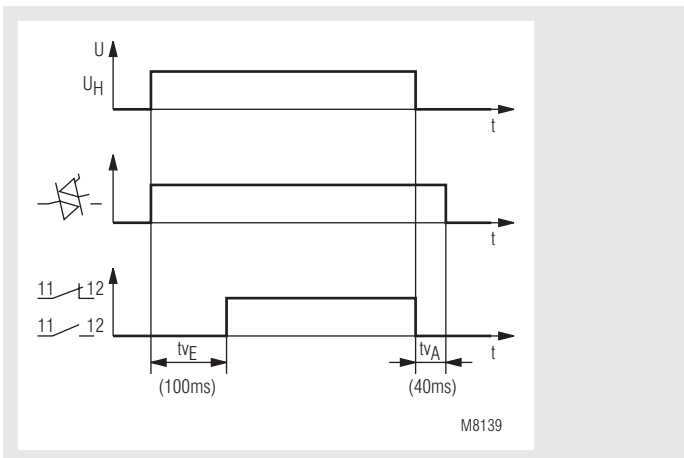
### Your Advantages

- For loads with high inrush current
- Reliable switching of energysaving- and LED lamps
- High electrical life due to hybrid technology

### Features

- According to IEC/EN 60 947-4-3
- Measured nominal current 20 A
- High electric life of  $>10^6$  switching cycles at AC 15 10 A inductive
- Silent switching
- To switch resistive, inductive and capacitive loads
- Switching at zero-crossing
- 1 NO contact
- 17.5 mm width

### Function Diagram



### Approvals and Markings



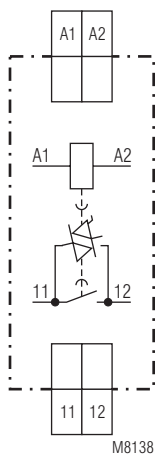
### Applications

The hybrid power relay is designed to switch high inductive or capacitive loads, e.g. energy saving and LED lamps. Other applications are in heating, air conditioning and lighting systems.

### Function

The hybrid switching relay contains an output relay with parallel connected triac, when switching the triac takes the load. The continuous current is then lead over the relay contact due to the higher losses on the triac. As the triac only switches off at zero-crossing, the device can only switch AC-loads.

### Circuit Diagram



### Indication

LED on, when power supply connected

### Connection Terminals

Terminal Designation	Signal Description
A1 / A2	Operating voltage
11 / 12	Contact

## Technical Data

### Input

<b>Nominal voltage <math>U_N</math>:</b>	AC/DC 24 V AC 110 ... 127 V, 220 ... 240 V
<b>Frequency range:</b>	50 / 60 Hz
<b>Voltage range</b>	
at AC:	± 10 %
at DC:	- 10 %; + 25 %
<b>Nominal consumption</b>	
<b>A1 / A2</b>	
at AC 230 V:	0.8 W 3.4 VA
at DC 24 V:	0.7 W

### Output

<b>Type of output:</b>	relay with parallel connected triac
<b>Contact:</b>	1 NO contact
<b>Load voltage range:</b>	AC 24 ... 265 V
<b>Frequency range:</b>	50 / 60 Hz
<b>Leakage current in off-state:</b>	≤ 0.5 mA
<b>Measured nominal current 20 A:</b>	AC-51 1.25 x $I_e$ - 60 s : 50-30 (at 45 °C ambient temperature)
<b>Thermal current <math>I_{th}</math>:</b>	16 A (also at 60 °C ambient temperature)
<b>Power loss at 16 A:</b>	3 W
<b>Switching capacity</b>	
to AC 15, 10 A inductive switch on:	100 A, cos φ 0.3
switch off:	10 A, cos φ 0.3
fluorescent lamp load with electronic ballast unit (EVG):	60 x 58 W 1 row, with 10 μF compensation 30 x 58 W 2 rows, with 22 μF compensation
parallel compensation:	48 x 58 W 1 row, with 7 μF compensation
<b>Switching current:</b>	190 A 20 ms
<b>Semiconductor fuse:</b>	180 A <sup>2</sup> s 10 ms (protection for triac)
<b>Varistor voltage:</b>	AC 275 V
<b>Electrical life</b>	
to AC 15 at 10 A, AC 230 V:	≥ 10 <sup>6</sup> switching cycles IEC/EN 60 947-5-1
<b>Short circuit strength</b>	
max. short circuit current:	300 A IEC/EN 60 947-5-1
max. automatic fuse:	B 16 A
<b>Permissible switching frequency:</b>	max. 3600 switching cycles / h
<b>Mechanical life:</b>	≥ 30 x 10 <sup>6</sup> switching cycles

### General Data

<b>Nominal operating mode:</b>	Continuous operation
<b>Temperature range:</b>	- 20 ... +60 °C
<b>Clearance and creepage distances</b>	
rated impulse voltage / pollution degree:	4 kV / 2 IEC 60 664-1
<b>EMC</b>	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF-irradiation:	10 V / m IEC/EN 61 000-4-3
Fast transients:	4 kV IEC/EN 61 000-4-4
Surge voltages	
between wires for power supply:	2 kV IEC/EN 61 000-4-5
between wire and ground:	4 kV IEC/EN 61 000-4-5
HF-wire guided:	10 V IEC/EN 61 000-4-6
Interference suppression:	Limit value class B EN 55011
<b>Degree of protection</b>	
Housing:	IP 40 IEC/EN 60 529
Terminals:	IP 20 IEC/EN 60 529
<b>Housing:</b>	Thermoplastic with V0-behaviour according to UL subject 94
<b>Vibration resistance:</b>	Amplitude 0.35 mm frequency 10 ... 55 Hz IEC/EN 60 068-2-6
<b>Climate resistance:</b>	20 / 60 / 03 IEC/EN 60 068-1

## Technical Data

<b>Terminal designation:</b>	EN 50 005
<b>Wire connection:</b>	2 x 2.5 mm <sup>2</sup> solid or 2 x 1.5 mm <sup>2</sup> stranded ferruled DIN 46 228-1/-2/-3
<b>Wire fixing:</b>	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1 DIN rail IEC/EN 60 715
<b>Mounting:</b>	
<b>Weight:</b>	
IK 3070/200:	70 g
SK 3070/200:	90 g

### Dimensions

<b>Width x height x depth:</b>	
IK 3070/200:	17.5 x 90 x 58 mm
SK 3070/200:	17.5 x 90 x 98 mm

### Standard Type

IK 3070.01/200 AC 220 ... 240 V 50 / 60 Hz	
Article number:	0054593
• Output:	1 NO contact
• Nominal voltage $U_N$ :	AC 220 ... 240 V
• Width:	17.5 mm

### Ordering Example

IK 3070 .01 /200 AC/DC 24 V 50 / 60 Hz	
	Nominal frequency
	Nominal voltage
	Contact
	Type