Hybrid Relay
IK 3070/200

Translation of the original instructions

DOLD

0242054



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

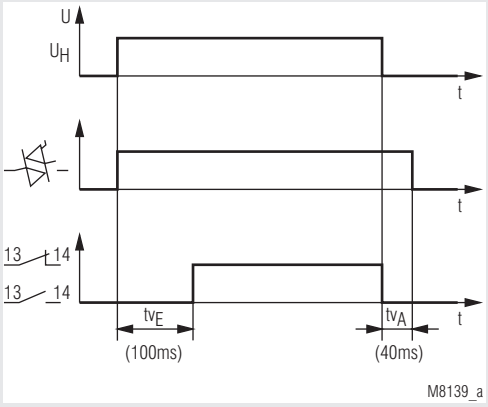
Product Descritption

The IK 3070/200 hybrid relay is designed to switch high inductive or capacitive loads, e.g. energy saving and LED lamps.
In addition to the output relay, it has a triac connected in parallel.
This combination enables high inrush currents to be switched and high power dissipation during continuous current to be avoided.

Approvals and Markings

CE

Function Diagram



Applications

Heating, air conditioning and lighting systems

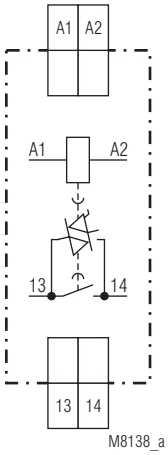
Function

The hybrid relay contains an output relay with parallel connected triac, when switching the triac takes the load. The continous 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.

Indication

LED on, when power supply connected

Circuit Diagram



Connection Terminals

Terminal Designation	Signal Description
A1 / A2	Operating voltage
13 / 14	Contact

Technical Data

Input

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

Output

Type of output:	relay with parallel connected triac
Contact:	1 NO contact
Load voltage range:	AC 24 ... 265 V
Frequency range:	50 / 60 Hz
Leakage current in off-state:	≤ 0.5 mA
Measured nominal current 20 A:	AC-51 1.25 x I_e - 60 s : 50-30 (at 45 °C ambient temperature)
Thermal current I_{th}:	16 A (also at 60 °C ambient temperature)
Power loss at 16 A:	3 W
Switching capacity	
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
Switching current:	190 A 20 ms
Semiconductor fuse:	180 A^2s 10 ms (protection for triac)
Varistor voltage:	AC 275 V
Electrical life	
to AC 15 at 10 A, AC 230 V:	≥ 10^6 switching cycles IEC/EN 60947-5-1
Short circuit strength	
max. short circuit current:	300 A IEC/EN 60947-5-1
max. automatic fuse:	B 16 A
Permissible switching frequency:	Max. 3600 switching cycles / h
Mechanical life:	≥ 30 x 10^6 switching cycles

General Data

Nominal operating mode:	Continuous operation
Temperature range	
Operation:	- 20 ... + 60 °C
Storage:	- 20 ... + 60 °C
Relative air humidity:	93 % at 40 °C
Altitude:	< 2000 m
Clearance and creepage distances	
Rated impulse voltage / pollution degree:	4 kV / 2 IEC 60664-1
EMC	
Electrostatic discharge:	8 kV (air) IEC/EN 61000-4-2
HF-irradiation	
80 MHz ... 1.0 GHz:	10 V / m IEC/EN 61000-4-3
1.0 GHz ... 2.5 GHz:	3 V / m IEC/EN 61000-4-3
2.5 GHz ... 2.7 GHz:	1 V / m IEC/EN 61000-4-3
Fast transients:	4 kV IEC/EN 61000-4-4
Surge voltages between	
wires for power supply:	1 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

Technical Data

Degree of protection	
Housing:	IP 40 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:	20 / 60 / 04 IEC/EN 60068-1
Terminal designation:	EN 50005
Wire connection:	2 x 2.5 mm^2 solid or 2 x 1.5 mm^2 stranded ferruled DIN 46228-1/-2/-3
Insulation of wires or sleeve length:	10 mm
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:	70 g

Dimensions

Width x height x depth:	17.5 x 90 x 58 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

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