Interface Relay
ML 3059

Translation of the original instructions

0232907

Your Advantages

- 1 or 2 changeover contacts
- Optionally safe separation according to IEC/EN 61 140, IEC/EN 60 947-1, 6 kV/2
  - Between coil and contacts
  - Between the two contacts
- Optionally for switching of low loads

Features

- According to IEC/EN 60 255, IEC/EN 61 810-1
- For AC/DC 12 ... 240 V
- For 2-wire proximity sensors
- LED indicator
- As option with reduced power consumption
- Width 22.5 mm

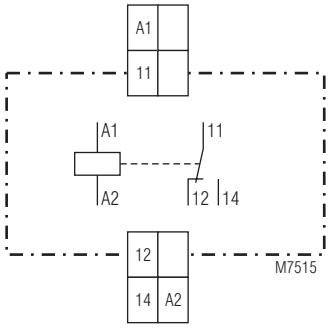
Product Description

The interface relay ML 3059 is a reliable and versatile solution for isolating and amplifying control signals in demanding industrial applications. It serves as an interface between control devies and loads. The interface relay is the ideal solution for users looking for a reliable and flexible interface solution in a compact format.

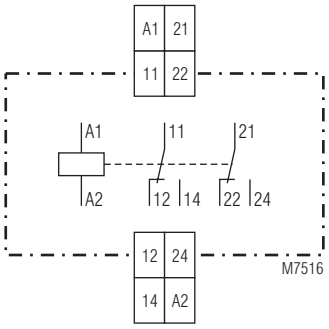
Approvals and Markings

CE

Circuit Diagrams



ML 3059.11



ML 3059.12
ML 3059.12/100
ML 3059.12/200

Applications

- Link between control and power levels
- For separating potentials

Connection Terminals

Terminal designation	Signal description
A1(+), A2	Supply voltage
11, 12, 14; 21, 22, 24	Changeover contacts

Indicators

LED: On, when the relay is active

Technical Data

Input

Nominal voltage U_N:	AC/DC 12 ... 240 V
Voltage range:	AC 0.85 ... 1.1 U_N
	DC 0.9 ... 1.15 U_N
Permissible residual current:	≤ 5 mA
Nominal consumption:	DC 12 24 60 240 V
	0.5 0.55 0.6 1.4 W
Nominal frequency:	50 ... 400 Hz
Frequency range:	± 5 %

Output

Contacts		
ML 3059.11:	1 changeover contact	
ML 3059.12:	2 changeover contacts	
Operating time of contacts:	≤ 10 ms	
Release time of contacts:	≤ 10 ms	
Thermal current I_{th}:	5 A	
Switching capacity		
to AC 15		
NO contact:	3 A / AC 230 V	IEC/EN 60947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60947-5-1
Electrical life		IEC/EN 60947-5-1
to AC 15 at 3 A, AC 230 V:	5 x 10^5 switching cycles	
Permissible switching frequency:	6000 switching cycles / h	
Short circuit strength max. fuse rating:	6 A gG / gL	IEC/EN 60947-5-1
Mechanical life:	> 30 x 10^6 switching cycles	

Technical Data

General Data

Operating mode:	Continuous operation	
Temperature range		
Operation:	- 20 ... + 60 °C	
Strorage:	- 20 ... + 60 °C	
Relative air humidity:	93 % at 40 °C	
Altitude:	≤ 2000 m	
Clearance and creepage distances		
Variant without safe separation (ML 3059.12)		
Rated impulse voltage / Pollution degree:	4 kV / 2	IEC 60664-1
Variants with safe separation (ML 3059.11, ML 3059.12/100, MK 3059.12/200) acc. IEC/EN 61140 and IEC/EN 60947-1		
Rated impulse voltage / Pollution degree:	6 kV / 2	
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:	2 kV	IEC/EN 61000-4-5
between wire and ground:	4 kV	IEC/EN 61000-4-5
HF wire guided:	10 V	IEC/EN 61000-4-6
Interference suppression:	Limit value class B	EN 55011
Degree of protection		
Housing:	IP 40	IEC/EN 60529
Terminals:	IP 20	IEC/EN 60529
Housing:	Thermoplast 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 mm² solid or 2 x 1.5 mm² stranded wire with sleeve DIN 46228-1/-2/-3/-4	
Insulation of wires or sleeve length:	8 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:	110 g	

Dimensions

Width x heigth x depth:	22.5 x 81 x 98.5 mm

Standard Type

ML 3059 .12/100 AC/DC 12 ... 240 V
Article number: 0037230

- Also for switching of low loads
- Output: 2 changeover contacts
- Nominal voltage U_N: AC/DC 12 ... 240 V
- Width: 22.5 mm

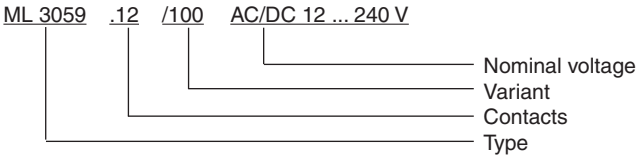
For switching of low loads with 2 ... 60V, 2 ... 300mA, 10 mW ... 12 W / 10 mVA ... 12 VA. The output contacts have the same switching capacity as the standard version. As the gold plating of the contacts will burn off with this switching performance, the device is not longer suitable for switching of low loads.

Safe separation according to IEC/EN 61140, IEC/EN 60947-1, 6 kV/2
- Between coil and contacts
- Between the two contacts

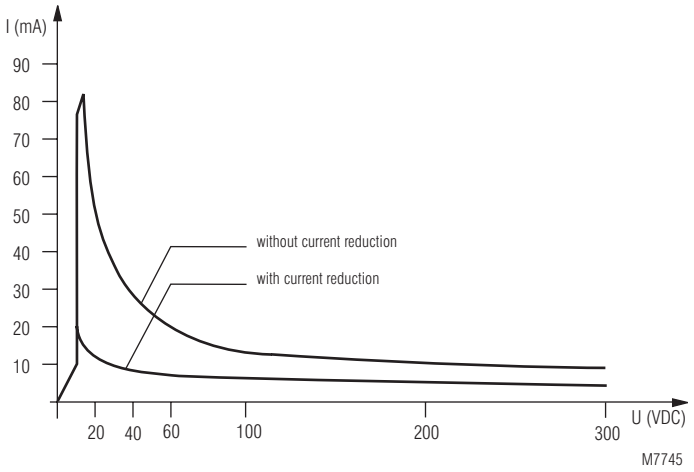
Variants

ML 3059.11:	Without gold plated contacts, with safe separation
ML 3059.12:	Without gold plated contacts, without safe separation
ML 3059.12/100:	With gold plated contacts 5 µm, with safe separation
ML 3059.12/200:	Version like ML 3059.12/100 with reduced nominal consumption DC 12 V / 0.25 W; DC 24 V / 0.25 W; DC 60 V / 0.45 W; DC 240 V / 1 W Recovery time: < 50 ms

Ordering example for variants



Characteristic



Permissible contact current of ML 3059.12/200 in relation to the auxiliary voltage.