

Main features

- Technopolymer housing
- High reliability contacts
- Protection degree up to IP65
- 4 terminal types available
- 47 actuators available
- Versions with positive opening ⊕
- Versions with gold-plated silver contacts
- Terminal covers with wiretrap cable gland

Markings and quality marks:



IMQ approval:	CA02.05772
UL approval:	E131787
CCC approval:	2013010305604291
EAC approval:	RU C-IT ДМ94.В.01024

Technical data

Housing

Housing made of glass fiber reinforced technopolymer, self-extinguishing and shock-proof.

Protection degree acc. to EN 60529:	IP00 without terminal cover
	IP20 (with terminal cover VF C01, VF C03)
	IP40 (with terminal cover VF MKC•1•, VF C02)
	IP65 (with terminal cover VF MKC•22 + MK V•2••• or VF MKC•23 + MK H•2•••)

General data

Ambient temperature:	-25°C ... +85°C
Max. actuation frequency:	3600 operating cycles ¹ /hour
Mechanical endurance:	10 million operating cycles ¹
Safety parameters:	

B_{10d} : 20,000,000 for NC contacts

Tightening torques for installation: see pages 235-246

(1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1.

Cable cross section (flexible copper strands)

MK series:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, IEC 60529, EN 60529, EN 60947-1, IEC 60947-1.

Approvals:

UL 508, CSA 22.2 No.14, EN 60947-1, EN 60947-5-1.

In conformity with the requirements of:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

Installation for safety applications:

Use only microswitches marked with the symbol ⊕ aside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts) as stated in **standard EN 60947-5-1, encl. K, par. 2**. Actuate the switch **at least up to the positive opening travel (CAP)** stated aside the article code. Actuate the switch **at least with the positive opening force (FAP)** stated aside the article code.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 235 to page 246.**

Electrical data

Thermal current (I _{th}):	16 A
Rated insulation voltage (U _i):	250 Vac 300 Vdc
Rated impulse withstand voltage (U _{imp}):	4 kV
Conditional short circuit current:	1000 A acc. to EN 60947-5-1
Protection against short circuits:	type gG fuse 16 A 250 V
Pollution degree:	3
Dielectric strength	2000 Vac/min.

Utilization category

Alternating current: AC15 (50 ... 60 Hz)			
U _e (V)	250	120	
I _e (A)	6	6	
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	5	0.6	0.3

Characteristics approved by IMQ and CCC

Rated insulation voltage (Ui): 250 Vac
 Conventional free air thermal current (Ith): 16 A
 Protection against short circuits: type gG fuse 16 A 250 V
 Rated impulse withstand voltage (Uimp): 4 kV
 Conditional short circuit current: 1000 A
 Protection degree of the housing: IP00
 Terminals: screw terminals/faston
 Pollution degree: 3
 Utilization category: AC15
 Operating voltage (Ue): 250 Vac (50 Hz)
 Operating current (Ie): 5 A
 Forms of the contact element: X; Y; C
 Positive opening of contacts on contact blocks: 1, 3

In conformity with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/EC.

Please contact our technical service for the list of approved products.

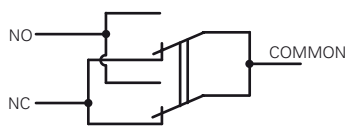
Characteristics approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)
 A300 (720 VA, 120 ... 300 Vac)

In conformity with standard: UL 508, CSA 22.2 No.14

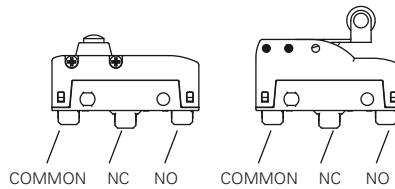
Please contact our technical service for the list of approved products.

Circuit diagram

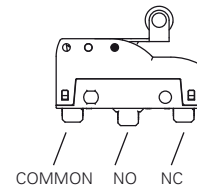


Contacts with single interruption and double contacts

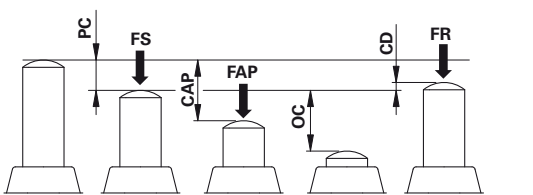
With direct and back direct action (F, D)



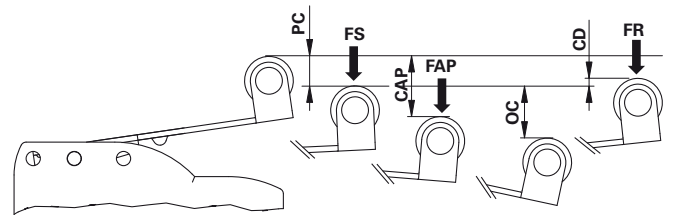
With inverted action (R)



Actuation forces and travels



PC pre-travel
 CAP positive opening travel
 OC over-travel
 CD differential travel



FS operating force
 FR releasing force
 FAP positive opening force

Microswitches with direct action

All measures in the drawings are in mm

<p>MK V11D01 1NO+1NC PC 0,5 mm OC 1,5 mm CD 0,05 mm FS 4 N FR 3 N</p>	<p>MK V11D02 1NO+1NC PC 0,5 mm OC 2 mm CD 0,05 mm FS 4 N FR 3 N</p>
<p>Maximum and Minimum speed page 245 - type 1</p>	<p>Maximum and Minimum speed page 245 - type 1</p>
<p>MK V11D03 1NO+1NC PC 0,5 mm OC 2 mm CD 0,05 mm FS 4 N FR 3 N</p>	<p>MK V11D04 1NO+1NC PC 0,5 mm OC 2 mm CD 0,05 mm FS 4 N FR 3 N</p>
<p>Maximum and Minimum speed page 245 - type 1</p>	<p>Maximum and Minimum speed page 245 - type 1</p>