

# Metal bodied limit switch

## Series MN78

Description **MN78-31 RM**

Article number **6087000023**

**Operating symbol**

**Operating diagram**  
Values valid in arrow direction X

[mm]	11-12	21-22	31-32	43-44	[N]
0	ON	OFF	OFF	OFF	1,5
1,2	ON	OFF	OFF	OFF	9,5
2,4	ON	OFF	OFF	ON	12
6	ON	OFF	ON	ON	19

ON     OFF    Tolerance:  
 Operating point  $\pm 0,6$  mm  
 Direct opening action  $+ 0,6$  mm  
 Operating force  $\pm 20$  %

	m/s	0,1	0,5	1	2	5
A		20°	20°	10°	5°	-
B		20°	20°	10°	5°	-

Electrical Data		
Rated insulation voltage	$U_i$	250 V
Rated impulse withstand voltage	$U_{imp}$	2,5 kV
Rated operational voltage	$U_e$	240 V AC / 24 V DC
Rated supply frequency AC		50 / 60 Hz
Conv. thermal current	$I_{the}$	5 A
Minimum current		1 mA
Utilization category		AC 15, $U_e/I_e$ 240 V / 1,5 A; DC 13, $U_e/I_e$ 24 V / 1,5 A
Direct opening action	$\rightarrow$	acc. IEC/EN 60947-5-1, annex K; direct opening force: 46 N
Short-circuit protective device		Fuse 4 A gG
Rated conditional short-circuit current		400 A
Protection class		I

Mechanical data	
Enclosure	Die-cast aluminium
Cover	Sheet aluminium
Actuator	Roller (stainless steel 1.4104)
Operating temperature	-30 °C ... +75 °C
Storage temperature	-40 °C ... +80 °C
Protection type	IP66 / IP67 acc. EN 60529, Type 4X
Pollution degree (built-in switch)	3
Contact material	silver
Contact type	3 N.C. (Form Zb), 1 N.O.
Switching frequency	≤ 60 / min.
Mechanical life	10 x 10 <sup>6</sup> operating cycles
Mission time	≤20 years
Connection	8 screw connections (M3,5)
Earth bolt	1 x M3,5
Conductor cross-sections	Solid or Litz wire with ferrules 0,34 mm <sup>2</sup> - 1,5 mm <sup>2</sup> ; AWG 22-16
Cable entrance	1 x M20 x1,5
Weight	≈ 0,24 kg
Installation position	operator definable

Actuation
The actuating device is preferably started from 2 sides. The actuation assembly can be rotated in 45° increments such that 8 actuation directions are possible.

ID for safety engineering	
B10d N.C.	20 x 10 <sup>6</sup> cycles
B10d N.O.	1 x 10 <sup>6</sup> cycles

Standards	
	DIN EN 60947-5-1
	UL 508 / CSA C22.2 No.14
	DIN EN ISO 13849-1
	DIN EN ISO 13849-2

EU Conformity
acc. to directive 2014/35/EU (Low-Voltage-Directive)

Approvals
CCC
cUL <sub>US</sub>

Notes
The degree of protection (IP code) specified applies solely to a property closed cover and the use of an equivalent cable gland with adequate cable.