

Metal bodied limit switch

Series MN78

Description MN78-S11 RM	Article number 6087000013
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Operating symbol

Operating diagram
Values valid in arrow direction X

[mm]	21-22	13-14	13-14	21-22	[N]
0	ON	OFF	OFF	ON	1,5
1,5	ON	OFF	OFF	ON	10
3	ON	OFF	OFF	ON	11
5,1	ON	OFF	OFF	ON	15
6	ON	OFF	OFF	ON	

ON
 OFF

Tolerance:
 Operating point $\pm 0,35$ mm
 Direct opening action $+ 0,35$ mm
 Operating force ± 15 %

Dimensions: 42.5, $\varnothing 18$, 40.8, 7, 2, 120.3, 60, 77.5, 30, 5.3, M20x1.5, 17.5, 30, 44.5, 30.9, 16, 3.9

	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	400 V
Rated impulse withstand voltage	U_{imp}	4 kV
Rated operational voltage	U_e	240 V AC / 24 V DC
Rated supply frequency AC		50 / 60 Hz
Overvoltage category		II acc. EN 60947-1 annex H table H1
Conv. thermal current	I_{the}	5 A
Minimum current		1 mA
Utilization category		AC 15, U_e/I_e 240 V / 3 A; DC 13, U_e/I_e 24 V / 1,5 A
Direct opening action	\ominus	acc. IEC/EN 60947-5-1, annex K; direct opening force: 24 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
Pollution degree (built-in switch)	3
Contact material	silver
Device Class (built-in switch)	Category E (MC3+CC2+SC1) acc. EN 60947-1 annex Q
Contact type	1 N.C. (Form Zb), 1 N.O.
Bounce duration	ms < 3 ms
Switchover time	ms < 8 ms
Switching frequency	≤ 60 / min.
Mechanical life	10 x 10 ⁶ operating cycles
Mission time	≤20 years
Connection	4 screw connections (M3)
Earth bolt	1 x M3,5
Conductor cross-sections	Solid or Litz wire with ferrules 0,34 mm ² - 1,5 mm ² ; AWG 22-16
Cable entrance	1 x M20 x1,5
Weight	≈ 0,23 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 ⁶ cycles
B10d N.O.	1 x 10 ⁶ 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 2006/42/EC (Safety-of-Machinery-Directive)

Approvals		
	DGUV	(in preparation)
	CCC	(in preparation)
	cUL _{US}	(in preparation)

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.