

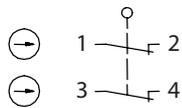
## Metal bodied limit switch Series MN78

Description **MN78-20 04**

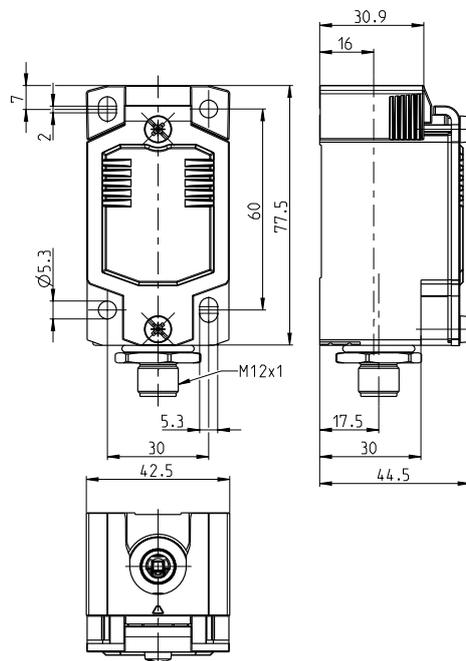
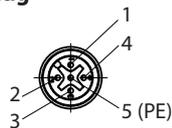
Article number **6087000117**

### Enclosure with built-in switches without actuating device

#### Operating symbol



#### Plug



#### Electrical Data

Rated insulation voltage	$U_i$	63 V
Rated impulse withstand voltage	$U_{imp}$	1,5 kV
Rated operational voltage	$U_e$	60 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	$I_{the}$	3 A
Minimum current		1 mA
Utilization category		AC 15, $U_e/I_e$ 60 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
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
Actuating force	$F_{bmin}$ 14 N + Force of the actuating device $F_{\ominus}$ 25 N + Force of the actuating device
Operating temperature	-30 °C ... +75 °C
Storage temperature	-40 °C ... +80 °C
Protection type	IP66 / IP67 acc. EN 60529, Type 4X only with mounted actuating device
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	2 N.C. (Form Zb)
Operating rate	V 0,06 m/min $\leq$ V $\leq$ 30 m/min
Bounce duration	The value depends on the operating rate
Switchover time	The value depends on the operating rate
Switching frequency	$\leq$ 60 / min.
Mechanical life	depending on the operating device up to $30 \times 10^6$ operating cycles
Mission time	$\leq$ 20 years
Connection	Plug M12x1, 5-pole, A-coded
Earth bolt	1 x M3,5
Weight	$\approx$ 0,18 kg
Installation position	operator definable

ID for safety engineering	
B10d N.C.	$20 \times 10^6$ 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 2014/35/EU (Low-Voltage-Directive)

Approvals	
	CCC
	cUL <sub>US</sub>

**Notes**

The degree of protection specified (IP code) applies only to a properly closed cover and the use of an equivalent connector.  
The connector and the cable (fix or flexible mounted) must at least be suitable for the described ambient air temperatures.  
The connector must not be connected or disconnected when voltage is applied.  
The mechanical life of the connector is 100 connection cycles.

The information on the switching travel can be found in the data sheets of the actuator, as these depend on the actuator used.

Approvals / properties applies only to the fully assembled device.