

BM - TB limit switch box series

Limit switches for hazardous areas with Exd or Exia protection methods. Designed for linear valves and general purpose applications.

Features

- AISI 316 stainless steel rugged BM series enclosure
- Standard 450 mm flying leads
- Stainless steel or aluminium materials for optional junction box with TB series
- Magnetic or ferrous sensing capabilities
- Subsea application on request, tested up to 300 bar
- Optional subsea cable and connector for underwater link

Approvals

ATEX, EAC:

Ex II 2GD Ex d IIC T6/T5/T4 Gb
Ex tb IIIC T80°C/T95°C/T115°C Db

ATEX, IECEx (only for BM switch):

Ex II 1GD Exia IIC T4 Ga Exia IIIC T135°C Da
Ta = -40 °C ≤ Ta ≤ 90 °C

UL: only available on BMC4

Class I, Division 1 and 2, Groups A, B, C and D
Class II, Division 1 Groups E, F and G
Class II Division 2, Groups F and G

SIL certificate: Up to SIL 3 approval on request

Protection rating: BM: IP66/68

TB: IP67

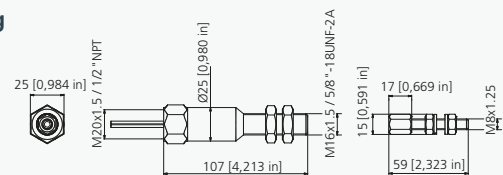
NEMA 4 4X on request



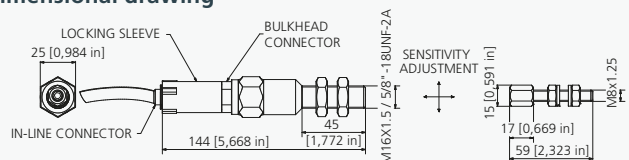
BM limit switch box



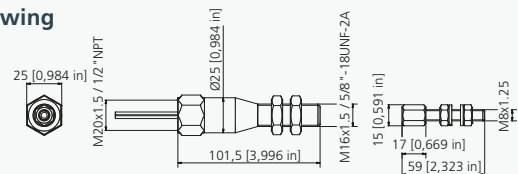
BM dimensional drawing



BM Subsea dimensional drawing



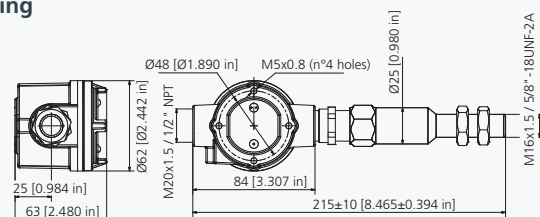
BM UL dimensional drawing



TB limit switch box



TB dimensional drawing



BM - TB limit switch box series

Nomenclature

BM N1 1 1 E - E 1 A 2 3 A 6

Box

BM = Proximity bolt switch
TB = Proximity bolt switch with integrated junction box

Switch

C4 = Magnetic SPDT hermetically sealed switch (suitable for Ex'ia')
N1 = Magnetic proximity SPDT hermetically sealed switch, silver plated snap acting contacts

Switch Quantity

1 = 1 switch or sensor

Terminals

A = Pre-wired terminals (For TB series)
1 = Flying leads (for BM series)

Coating

0 = Black polyester powder coating (for aluminium TB series)
E = Stainless steel finishing

Cable Entries

E = 1 x M20 x 1.5p cable entry
D = 1 x 1/2" NPT cable entry

Visual Position Indicator

1 = No visual position indicator
6 = LED Indicator (available for UL approval only)

Approval*

W = Weather proof limit switch box
A = ATEX certified box
G = EAC certified box for Russian market, with RTN permit
U = UL certified box (available on BMC4 option)
X = ATEX IECEx certification

See additional information and options on page 13

Marking

0 = Standard location
1 = Certification marking: Ex II 2 GD Exia IIC (available for C4 switch option)
2 = Certification marking: Ex II 2GD Exd IIC
7 = CULUS Class1/2 Div1 (available on BMC4 option)
8 = CULUS Class1/2 Div 1/2 (available on BMC4 option)

See additional information and options on page 13

IP Protection rating

2 = Weather Proof 67 (for TB series)
3 = Weather Proof IP66/68 (for BM series)
6 = Subsea application up to -40 meters (available on BM series)**
7 = Nema 4 4X (available on BMC4 option)

Temperature

L = Ambient temperature range: -40 to +80 °C (-40 to +176 °F)

Material

6 = 316 stainless steel heavy duty enclosure
8 = 316 stainless steel with aluminium junction box (only for TB series)
3 = Aluminium (available for UL approval only)

* SIL2 and SIL3 available on request

** Subsea cable with fast connector with standard length as follow: 5, 20, 40 mt

Sensing Distance Chart

Sensing Distance	Switch	Direction A [Values in mm]		Direction B [Values in mm]			
				Target distance: 2 mm		Target distance: 1 mm	
	BMN1	PI : Max 2	DO : 6	PI : 3	DO : 12	PI : 7	DO : 12
	BMC4	PI : 3,6	DO : 6	PI : 4	DO : 5	PI : 4,5	DO : 7
Frequency Range	BMN1	Max 30 Hz					
	BMC4	Max 100 Hz					
Response Time	BMN1	Single operation < 2ms		Operation in frequency (10÷30 Hz) < 1 ms			
	BMC4			2 ms			

Notes:

PI: Is the point where the switch first operates.
DO: Is the point where the switch is released.
PI & DO values refers to the distance between the Z axis of BOLT switch and target.
Target distance refers to the distance between the 2 opposite faces of BOLT switch and target.
For BMN1 switch the maximum operating distance is 2 mm using a properly size ferrous target.
This distance may be increased using a magnetic target (optional).
BMC4 switch is supplied with its standard magnetic target.
Optional magnetic target to increase the sensing range of the switch are available. For any kind of request please contact SOLDI.

