

## BM / TB proximity switches

The SOLDO BM and TB Series Proximity Switches, provides a compact design and a cost saving solution for remote valve position feedback in both linear and rotary applications, as well as general purpose feedback in explosive atmosphere or subsea environments.

The rugged design and ease installation system, provide maximum application versatility.

TB series is the conjunction of a BM bolt switch with an aluminum or stainless steel junction box, to allow a direct local wire connection.

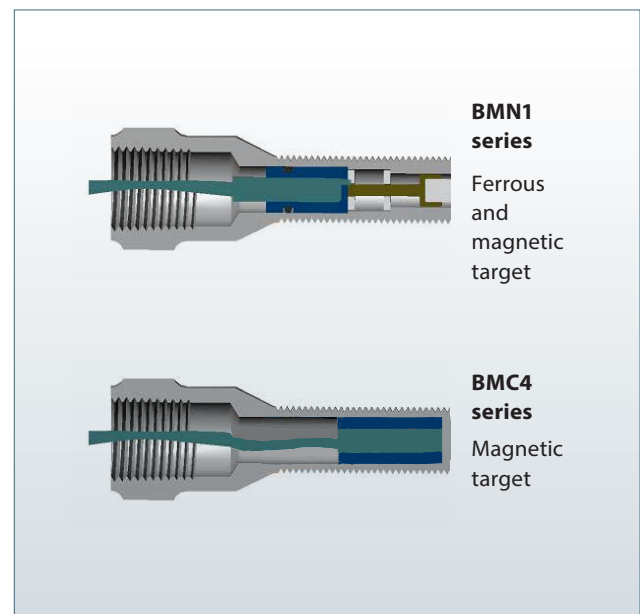
BM switch utilize industrial standard 5/8-18 UNF or M16x1.5 threads and each switch is provided with two heavy-duty jam nuts. BM switches can be mounted with standard brackets or customized ones to suit specific applications.

TB series uses the same BM head mounting pattern with the availability of a junction box screw bottom mounting system.



### Unique Design Features

- Compact position indication on linear valve
- Adaptable solution to multiple applications
- 316 stainless steel rugged BM enclosure
- 450 mm of flying leads on the BM series for wiring purposes
- Junction box feature on the TB series
- 316 stainless steel or aluminum junction box on the TB series
- Magnetic or ferrous sensing target capabilities (see the switch options for more info)



# Product Specification

## Certifications

ATEX, IECEX, EAC, INMETRO

Ex II 2GD  
 Ex d IIC T6/T5/T4 Gb  
 Ex tb IIIC T80°C/T95°C/T115°C Db  
 Ta = -40 °C ≤ Ta ≤ 105 °C

**SIL rating:**  
 up to SIL 3 approval on request

**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

### Protection rating

BM: IP66 / 68  
 TB: IP67 / 68

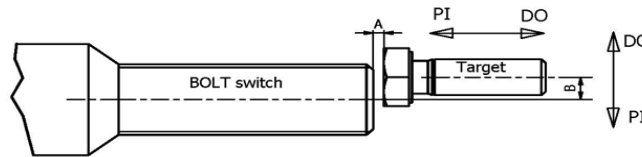
### Cable Entry Options

Standard – Single cable entry  
 - M20 x 1,5  
 - 1/2" NPT

<b>Switch Selection:</b>		
<b>NOVA V3 N1</b>	To be chosen with following requirements:	<b>Ferrous and Magnetic target</b>
<ul style="list-style-type: none"> <li>Hermetically sealed proximity switch</li> <li>High power loop: Rating up to 5A @ 250 VAC - 5A @ 28 VDC</li> <li>Temperature range: -50 to +105 °C</li> </ul>		
<b>REED C4</b>	<ul style="list-style-type: none"> <li>Hermetically sealed proximity reed switch</li> <li>Inert gas contact chamber</li> <li>Rating up to 1A @ 24 VDC</li> <li>Temperature range: -60 to +105 °C</li> </ul>	

## Dimensional Data

### SENSING DISTANCE CHART



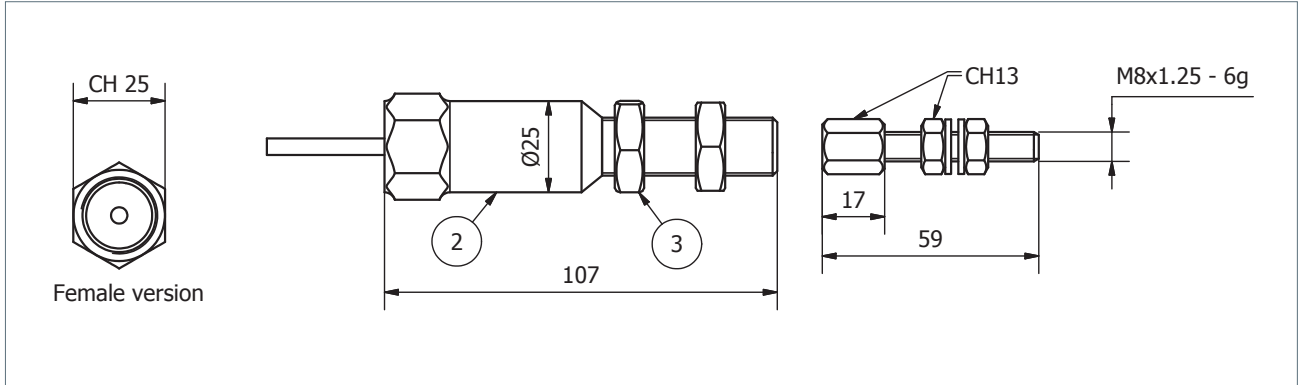
SPECIFICATIONS							
SENSING DISTANCE	Switch	Direction A [Values in mm]		Direction B [Values in mm]			
				Target distance: 2 mm		Target distance: 1 mm	
		BMN1	PI : Max 2	DO : 6	PI : 3	DO : 12	PI : 7
BMC4	PI : 3,6	DO : 6	PI : 4	DO : 5	PI : 4,5	DO : 7	
FREQUENCY RANGE	BMN1	Max 30 Hz					
	BMC4	Max 100 Hz					
RESPONSE TIME	BMN1	Single operation < 2ms		Operation in frequency (10÷30 Hz) < 1 ms			
	BMC4	2 ms					

#### Notes:

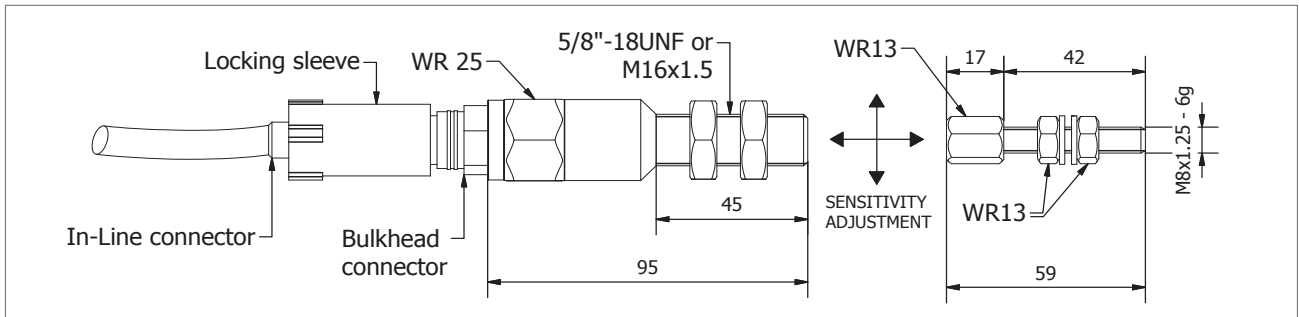
- PI: Is the point where the switch first operates.
- DO: Is the point where the switch is released.
- PI & DO values refers to the distance between the 2 axis of BOLT switch and target.
- Target distance refers to the distance between the 2 opposite faces of BOLT switch and target.
- For BMN1 switch 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 SOLD0.

# Dimensional Data

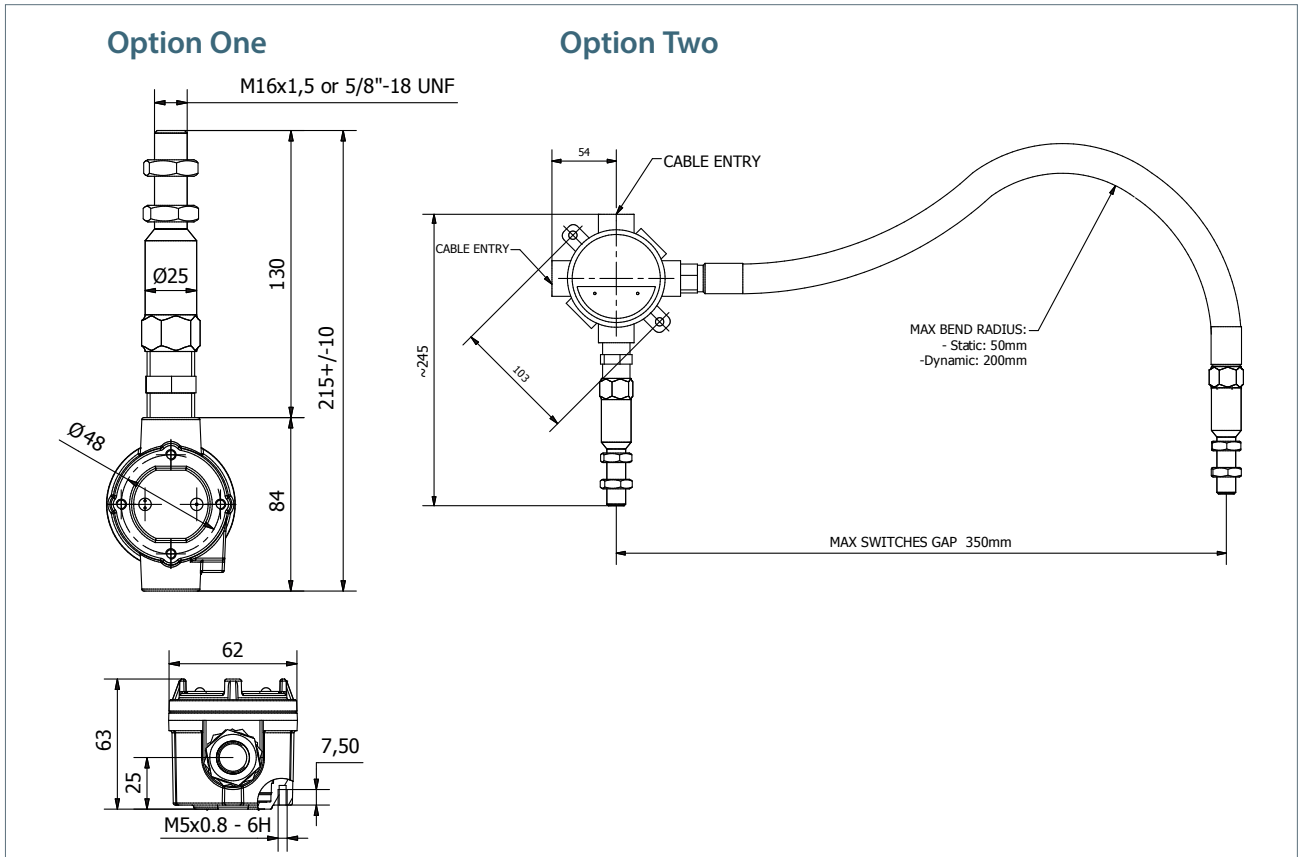
## BM DIMENSIONAL DRAWING



## BM SUBSEA DIMENSIONAL DRAWING



## TB DIMENSIONAL DRAWING



# Product Ordering Matrix

## Nomenclature

		BM	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>BM</b>	Proximity bolt switch	Series	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>TB</b>	Proximity bolt switch with integrated junction box																									
<b>C4</b>	Magnetic SPDT hermetically sealed switch, max. 1A@24VDC (usable in Exia loops)	Switch Type	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>N1</b>	Magnetic proximity SPDT hermetically sealed switch, silver plated snap acting contacts																									
<b>1</b>	Nr. 1 switch or sensor	Switch Quantity	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>2</b>	N° 2 switches (only for TB series)																									
<b>A</b>	Circuit board with extra pass-through terminals (standard)	Terminals	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>1</b>	Flying leads (for BM series)																									
<b>0</b>	Black polyester powder coating (for aluminium TB series)	Coating	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>E</b>	Electropolished finishing (for stainless steel TB series)																									
<b>1</b>	N° 2 1/2" NPT cable entries (only for TB series with 2 switches)	Cable Entries	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>2</b>	N° 2 M20x1.5 cable entries (only for TB series with 2 switches)																									
<b>E</b>	N° 1 M20x1,5 cable entry																									
<b>D</b>	N° 1 1/2" npt cable entry																									
<b>1</b>	No visual position indicator	Visual Position Indicator	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>W</b>	Weather proof limit switch box	Approval*	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>A</b>	ATEX certified box																									
<b>G</b>	EAC certified box for Russian market, with RTN permit																									
<b>U</b>	UL certified box (available on BMC4 option)																									
<b>0</b>	Ordinary location	Marking	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>2</b>	Certification marking: Ex II 2GD Exd IIC																									
<b>7</b>	CULUS class1/2 Div1 (available on BMC4 option)																									
<b>8</b>	CULUS class1/2 Div2 (available on BMC4 option)																									
<b>2</b>	Weather Proof 67 (available on TB series)	IP Protection rating	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>3</b>	Weather Proof IP66/68 (available on BM series)																									
<b>6</b>	Subsea application up to -40 meters (available on BM series)**																									
<b>7</b>	Nema 4 4X (available on BMC4 option)																									
<b>A</b>	Ambient temperature range: -20 +80	Temperature	N1	1	1	E	-	E	1	A	2	3	A	6												
<b>L</b>	Ambient temperature range: -40 +80																									
<b>6</b>	316 stainless steel heavy duty enclosure	Material													N1	1	1	E	-	E	1	A	2	3	A	6
<b>8</b>	316 stainless steel with aluminum junction box (only for TB series)																									

\* SIL2 and SIL3 available on request

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



www.soldo.net

### Europe

Soldo SRL  
60, Via Monte Baldo 25015  
Desenzano Del Garda  
Brescia, Italy

Tel: +39 030 9991309  
Fax: +39 030 91419779  
Email: sales@soldo.net

### USA

Soldo USA LLC  
3920 Westpoint Blvd.  
Winston-Salem  
NC 27103

Tel: +1 (336) 659 3400  
Fax: +1 (336) 659 9323  
Email: sales@soldousa.com

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