

### MAIN FEATURES

Absolute linear system based on magnetic principle without wear thanks to no-contact technology. Thanks to high IP rating TMAA is suitable for harsh environment applications such as marble and glass working machines or washing systems machines.

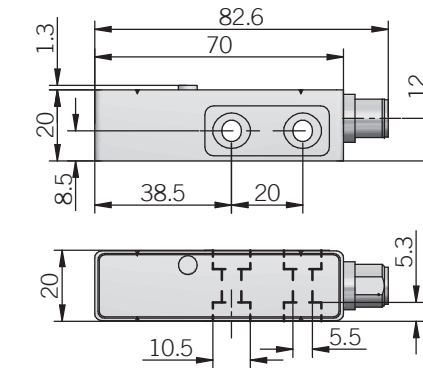
- 5 µm max absolute resolution / 1 µm incremental resolution
- Power supply up to +30 V DC with SSI electrical interface
- Up to 5 m/s travel speed
- IP 67 as protection grade
- M12 radial connector
- To be used with BMAA magnetic tape



### ORDERING CODE

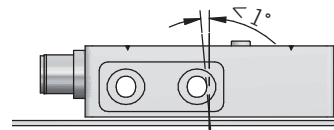
TMAA	5	G	5/30	S	1	L	G	S	M12R	.162
<p><b>SERIES</b> magnetic absolute linear sensor <b>TMAA</b></p> <p><b>ABSOLUTE RESOLUTION</b> 5 µm <b>5</b> 10 µm <b>10</b></p> <p><b>CODE TYPE</b> gray <b>G</b></p> <p><b>POWER SUPPLY</b> 5 ... 30V DC <b>5/30</b></p> <p><b>ELECTRICAL ABSOLUTE INTERFACE</b> Serial Synchronous Interface - SSI <b>S</b></p> <p><b>INCREMENTAL RESOLUTION</b> without incremental signals <b>X</b> 1 µm <b>1</b> 5 µm <b>5</b> 10 µm <b>10</b></p> <p><b>ELECTRICAL INCREMENTAL INTERFACE</b> to be reported if not used <b>X</b> RS-422 <b>L</b></p> <p><b>MAX INCREMENTAL SIGNALS FREQUENCY</b> to be reported if not used <b>X</b> 1250 kHz <b>A</b> 100 kHz <b>D</b> 15 kHz <b>G</b> refer to the table for travel speed limits</p> <p><b>ENCLOSURE RATING</b> IP 67 <b>S</b></p> <p><b>OUTPUT TYPE</b> 12 pin M12 radial male connector <b>M12R</b></p> <p><b>MATING CONNECTOR</b> mating connector not included <b>.162</b> for mating connector see Accessories</p>										

### TMAA

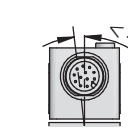


### Mounting tolerances

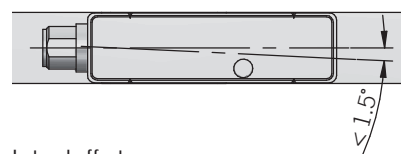
Longitudinal tilt



Lateral tilt



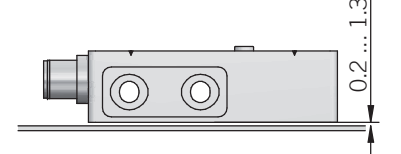
Alignment error



Lateral offset



Airgap



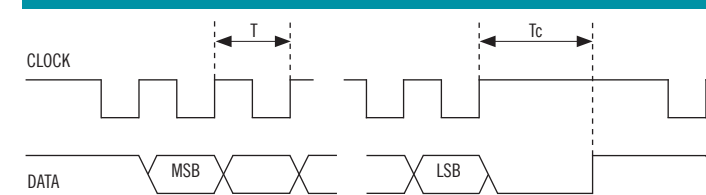
dimensions in mm

for connector please refer to Accessories

### INCREMENTAL FREQUENCY - TRAVEL SPEED

Resolution (µm)	Travel speed (m/s)		
	4	0,32	0,05
1	4	0,32	0,05
5	20	1,60	0,25
10	25	3,20	0,50
<b>Max frequency (Khz)</b>	<b>1250</b>	<b>100</b>	<b>15,63</b>

### SSI INTERFACE



CLOCK Input from controller  
T Clock signal period  
Tc Pause time

### ELECTRICAL SPECIFICATIONS

<b>Absolute resolution</b>	5 - 10 µm
<b>Incremental resolution</b>	1 - 5 µm
<b>Stroke</b>	≤ 10240 mm
<b>Power supply<sup>1</sup></b>	4,5 ... 30 V DC (reverse polarity protection)
<b>Power draw without load</b>	< 1,5 W
<b>Electrical interface for absolute signals<sup>2</sup></b>	RS-422
<b>Electrical interface for incremental signals<sup>2</sup></b>	RS-422
<b>Clock frequency</b>	50 ... 750 kHz
<b>Pause time (Tc)</b>	> 25 µs
<b>SSI frame</b>	(MSB ... LSB) 27 bit data length 24 bit data + 3 bit status
<b>Code type</b>	gray
<b>Accuracy (sensor+tape)</b>	± (0,02 + 0,03 x length) mm length in meter
<b>Repeatability</b>	± 5 µm, ± 1 increment
<b>Max travel speed</b>	≤ 5 m/s for absolute output refer to the table for incremental output
<b>Electromagnetic compatibility</b>	according to 2014/30/EU directive
<b>RoHS</b>	according to 2011/65/EU (01/09/2020) directive

### MECHANICAL SPECIFICATIONS

<b>Enclosure rating</b>	IP 67 (IEC 60529)
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibration</b>	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Housing material</b>	zinc die-cast
<b>Operating temperature<sup>3,4</sup></b>	-30° ... +85°C (-22° ... +185°F)
<b>Storage temperature<sup>4</sup></b>	-40° ... +85°C (-40° ... +185°F)
<b>Working distance from magnetic tape without steel cover tape</b>	0,2 ... 1,3 mm
<b>Weight</b>	80 g (2,82 oz)

<sup>1</sup> as measured at the transducer without cable influences

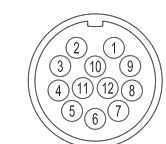
<sup>2</sup> for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

<sup>3</sup> measured on transducer housing

<sup>4</sup> condensation allowed

### CONNECTIONS

Function	M12 connector 12 pin
+ V DC	5
0 V	12
A+	7
A-	6
B+	9
B-	8
DATA +	2
DATA -	3
CLOCK +	11
CLOCK -	4
PROG	10



M12 connector (12 pin)  
M12 A coded  
solder side view FV