

### Rod style series



#### Rugged Rod Style Housings:

Transducers designed to survive in harsh industrial environments to reduce downtime on the plant floor.

The **R10** housing, sensing rod and components are designed and constructed to withstand heavy duty applications, such as those found in lumber mills, steel mills and stamping plants. They have been lab tested and field proven to withstand 2000 g's of shock and 30 g's of random vibration without false signals or mechanical damage. In addition, the **R10's** electronics are enclosed in

an aluminum housing with O-ring seals for an IP67 environmental rating.

Although **R10** sensors can be ordered with any of the above outputs, the units can easily be changed in the field to reverse the output signal. Thus, one model can be used for two applications by programming the "zero" and "span" appropriately. The differential feature allows the gap distance between two magnets to be measured. The magnets must remain within the active span at all times and cannot be any closer than 2.5 inches to each other.

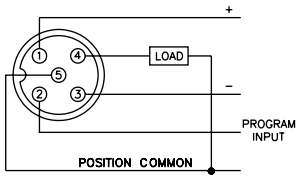
#### Rod Style Series (R10) Specifications:

	Analog	Digital	SSI
Output:	4-20 mA, 20-4 mA, 0-10 VDC, 10-0 VDC	RS422 Start/Stop, Variable Pulse: Internal or External interrogation	24, 25 or 26 Bit, Binary or Gray Code
Span:	2-168 in.	1-300 in.	1-300 in.
Repeatability:	+/-0.006% of full span or +/- 0.002 in., whichever is greater	Equal to resolution of controller	Equal to output resolution
Resolution:	0.001 in. / 16 Bit	Controller dependent	English: 0.00005 in., 0.0001 in., 0.0005 in., 0.001 in. Metric: 1, 5, 10, 20 micron
Operating Temperature:	Head(Electronics): -40 to 158°F (-40 to 70°C) Guide Tube: -40 to 221°F (-40 to 105°C)	Head(Electronics): -40 to 185°F (-40 to 85°C) Guide Tube: -40 to 221°F (-40 to 105°C)	Head(Electronics): -40 to 185°F (-40 to 85°C) Guide Tube: -40 to 221°F (-40 to 105°C)
Storage Temperature:	-40 to 185°F (-40° to 85°C)	-40 to 221°F (-40 to 105°C)	-40 to 221°F (-40 to 105°C)
Null Zone:	2.00 in.	2.00 in.	2.00 in.
Dead Zone:	2.50 in.	2.50 in.	2.50 in.
Operating Pressure:	5,000 PSI operating, 10,000 PSI spike	5,000 PSI operating, 10,000 PSI spike	5,000 PSI operating, 1 0,000 PSI spike
Operating Voltage:	13.5-30 VDC	7-30 VDC	7-30 VDC
Current Consumption:	3 watts maximum, 200 mA at 15 VDC	1 watt at 1ms interrogation time with no recirculations. Power consumption increases as interrogation times and recirculations increase. 40 mA at 24 VDC typical	1.3 watt typical at 1ms interrogation time. Power consumption increases as interrogation times increase. 40 mA at 24 VDC typical
Response Time:	1 ms (span length 1-50 in.) 2 ms (span length 51-100 in.) 3 ms (span length 101-150 in.) 4 ms (span length 151-168 in.)	Controller Dependent	4.0 K measurements/sec. (span length 1-12 in.) 2.4 K measurements/sec. (span length 13-30 in.) 2.0 K measurements/sec. (span length 31-40 in.) 1.1 K measurements/sec. (span length 41-80 in.) 0.5 K measurements/sec. (span length 81-197 in.)
Shock:	2000 G	1000 G	1000 G
Vibration:	30 G	30 G	30 G
Hysteresis:	+/- 0.02% of full span	0.001 in.	0.001 in.
Non-Linearity	+/- 0.05% of full span	< 0.01% or +/-0.005 in., whichever is greater	< 0.01% or +/-0.005 in., whichever is greater
Rod End / Mounting Hex:	316 stainless steel, 0.405 in. (10.29 mm) outer diameter	316 stainless steel, 0.405 in. (10.29 mm) outer diameter	316 stainless steel, 0.405 in. (10.29 mm) outer diameter
LED:	N/A	Tri-color diagnostic	Tri-color diagnostic
Protection Rating:	IP67	IP68	IP68
Agency Approval:	CE	CE	CE

### Rod style series

#### Wiring Diagrams: R10 Analog

5-pin M12 *eurofast*® connection

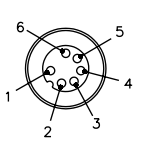


Mating Cordset: RK 4.5T-\*/S618

\* Length in meters.

#### R10 Digital

6-pin M12 *eurofast* connection

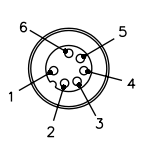


- Pinouts**
1. PWR+
  2. OUT+
  3. COMMON
  4. OUT-
  5. INT-
  6. INT+

Mating Cordset: RKC 6T-\*/S618

#### R10 SSI

6-pin M12 *eurofast* connection



- Pinouts**
1. PWR+
  2. DATA+
  3. COMMON
  4. DATA-
  5. CLOCK-
  6. CLOCK+

Mating Cordset: RKC 6T-\*/S618

#### Part number key: Analog R10 rod style series

LT 12 E - E R 10 - LU 0 - H1151

##### Sensor family

LT = linear transducer

##### Measurement span

##### Units of measurement

E = inches

##### Housing material

(blank) = aluminum  
E = stainless steel

##### Housing style

R = rod

##### Rod diameter

Diameter in millimeters

##### Connection type

H1151 = M12 *eurofast*® 5-pin connector

##### Output type

Voltage	Current	Differential
0 = 0-10 VDC	0 = 4-20 mA	0 = 0-10 VDC
1 = 10-0 VDC	1 = 20-4 mA	1 = 4-20 mA
4 = 0-5 VDC		
5 = 5-0 VDC		

##### Output configuration

LU = voltage  
LI = current  
LD = differential

#### Part number key: Digital R10 rod style series

LTX 12 E - E R 10 - RS - 001 - X3 - H1161

##### Sensor family

LTX = linear transducer

##### Measurement span

##### Units of measurement

E = inches  
M = metrics  
(Consult factory for metric orders)

##### Housing material

(blank) = aluminum  
E = stainless steel cover and connector

##### Housing style

R = rod

##### Connection type

H1161 = M12 *eurofast*® 6-pin receptacle

##### Number of LEDs

X3 = 3-way LED

##### Number of recirculations

001 = standard  
225 = max  
(Only valid with VPE or VPI, otherwise leave blank)

##### Digital output mode

RS = RS422 Start/Stop  
VPE = external interrogation  
VPI = internal interrogation

##### Rod diameter

Diameter in millimeters

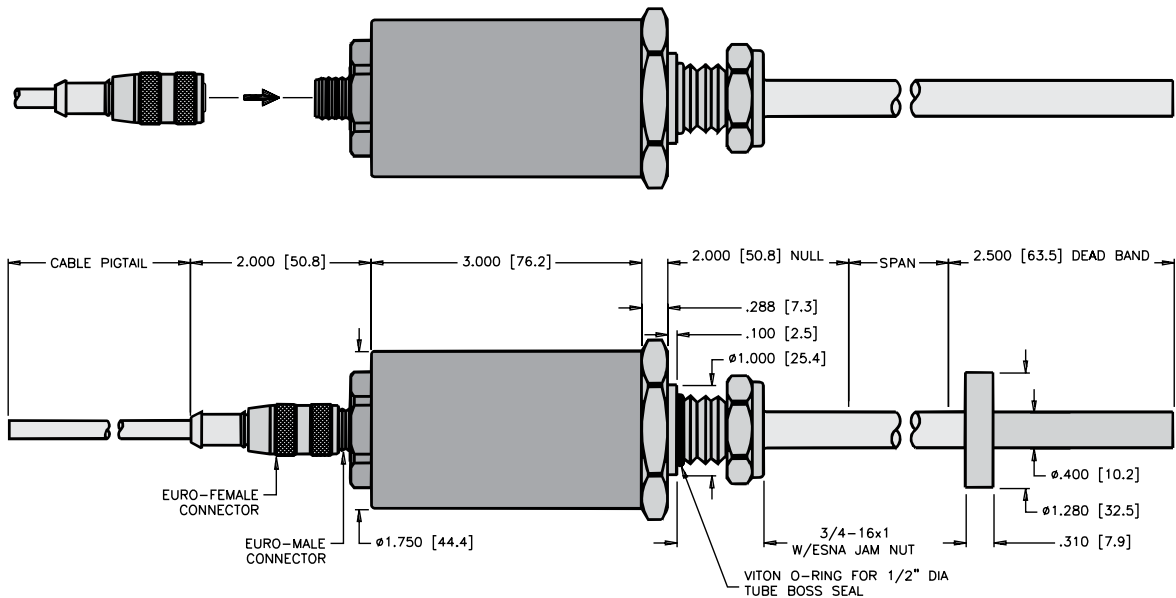
### Rod style series

Part number key: SSI R10 rod style series

LTX 12 E - E R 10 - SSI - 1 - B S F B - X3 - A - H1161

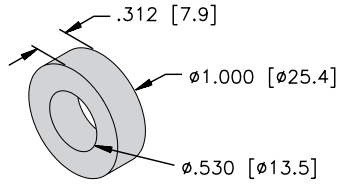
<p><b>Sensor family</b> LTX = linear transducer</p> <p><b>Measurement span</b></p> <p><b>Units of measurement</b> E = inches M = metrics (Consult factory for metric orders)</p> <p><b>Housing material</b> (blank) = aluminum E = stainless steel cover and connector</p> <p><b>Housing style</b> R = rod</p> <p><b>Rod diameter</b> Diameter in millimeters</p> <p><b>Data mode</b> SSI = synchronous serial interface</p> <p><b>Data length</b> 1 = 24 bit 2 = 25 bit 3 = 26 bit</p>	<p><b>Connection type</b> H1161 = M12 <i>euromast</i>® 6-pin connector</p> <p><b>Option</b> (blank) = none A = alarm</p> <p><b>Number of LEDs</b> X3 = 3-way LED</p> <p><b>Resolution</b></p> <table border="0"> <tr> <td>1 = 0.005 mm</td> <td>5 = 0.02 mm</td> <td>9 = 0.0001"</td> </tr> <tr> <td>2 = 0.01 mm</td> <td>6 = 0.002 mm</td> <td>A = 0.0005"</td> </tr> <tr> <td>3 = 0.05 mm</td> <td>7 = 0.001 mm</td> <td>B = 0.001"</td> </tr> <tr> <td>4 = 0.1 mm</td> <td>8 = 0.00005"</td> <td></td> </tr> </table> <p><b>Direction</b> F = forward R = reverse V = velocity</p> <p><b>Data type</b> S = synchronous A = asynchronous</p> <p><b>Data format</b> B = binary G = grey</p>	1 = 0.005 mm	5 = 0.02 mm	9 = 0.0001"	2 = 0.01 mm	6 = 0.002 mm	A = 0.0005"	3 = 0.05 mm	7 = 0.001 mm	B = 0.001"	4 = 0.1 mm	8 = 0.00005"	
1 = 0.005 mm	5 = 0.02 mm	9 = 0.0001"											
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3 = 0.05 mm	7 = 0.001 mm	B = 0.001"											
4 = 0.1 mm	8 = 0.00005"												

### Dimensions: Rod style series

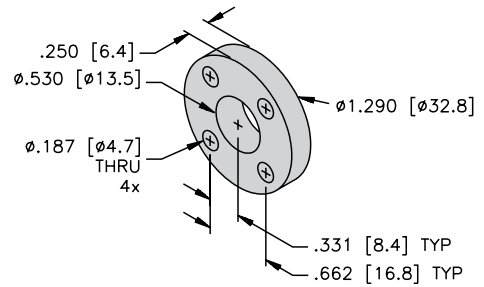


**Rod style series accessories**

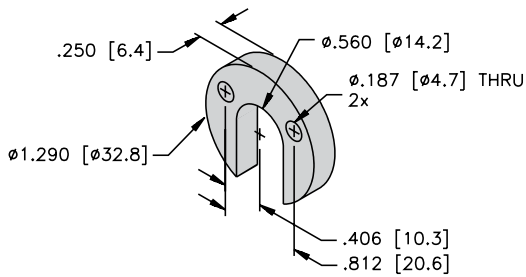
**1" diameter cylinder magnet**  
**CM-R10 [A0587]**



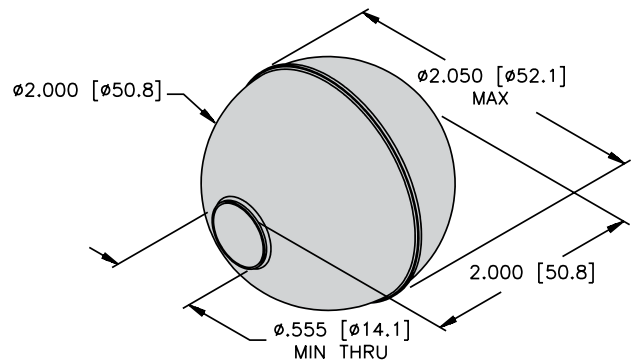
**Standard magnet spacer**  
**STS-R10 [A0852]**



**Split magnet spacer**  
**SPS-R10 [A0854]**

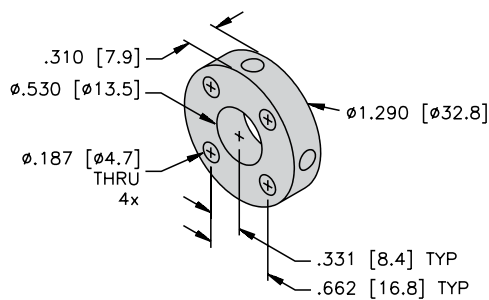


**Egg shape float**  
**EF-R10 [A0858]**



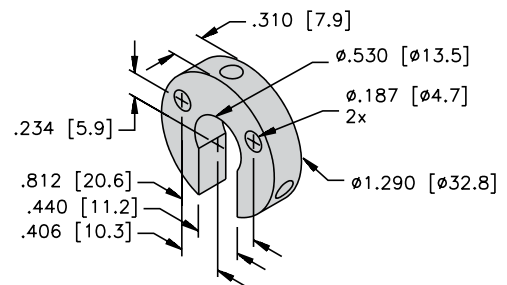
**Standard 4-hole magnet**

**STM-AL-R10 [A0850] (aluminum)**  
**STM-SS-R10 [A0851] (stainless steel)**



**Split magnet**

**SPM-AL-R10 [A0853]**

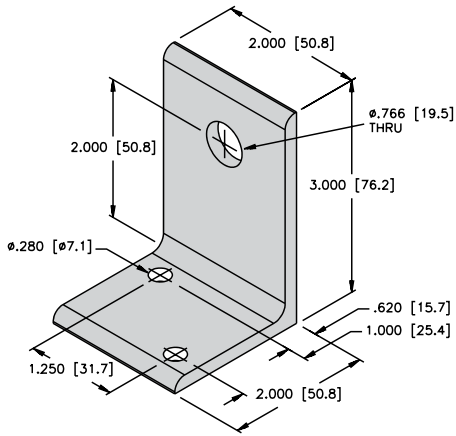


All dimensions shown as: inches [mm]

**Rod style series accessories**

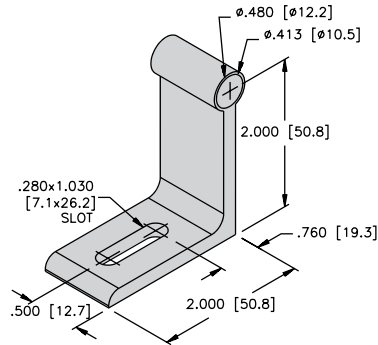
**Mounting bracket**

**LB-R10 [A5900]**



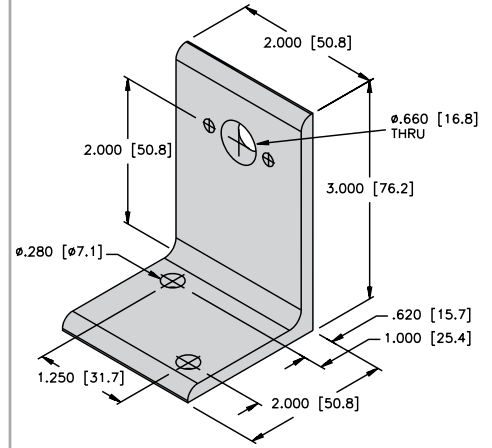
**Rod support bracket**

**RB-R10 [A0861]**



**Magnet mounting bracket**

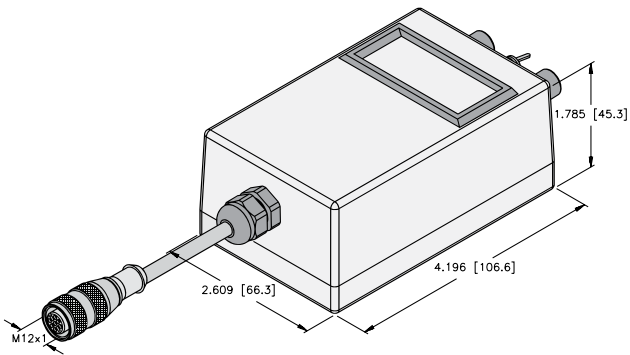
**MMB-R10 [A0862]**



**MB-R10 [A0860]:** Part number includes mounting bracket **LB-R10** and rod support bracket **RB-R10**.

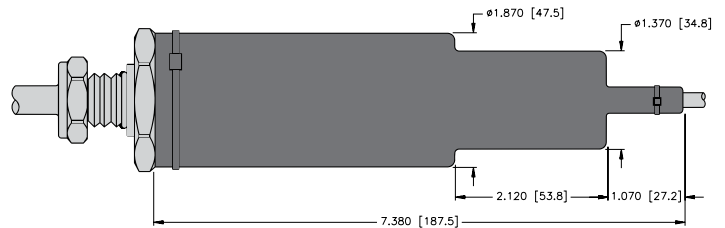
**Test and programming device**

**TB2-LDT [M6900298]**  
**TB2-LDT-LI [A58002]**



**Rubber boot**

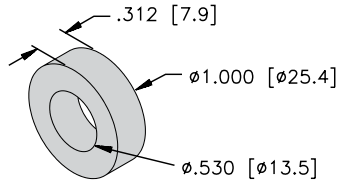
**BT-R10 [LT0494]**



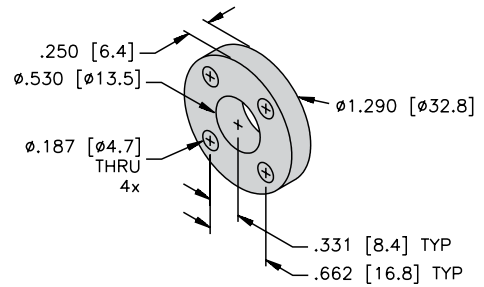
All dimensions shown as: inches [mm]

**Rod style series accessories**

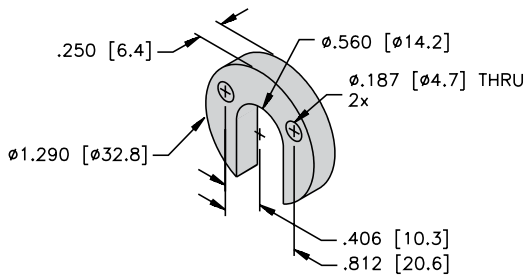
**1" diameter cylinder magnet**  
**CM-R10 [A0587]**



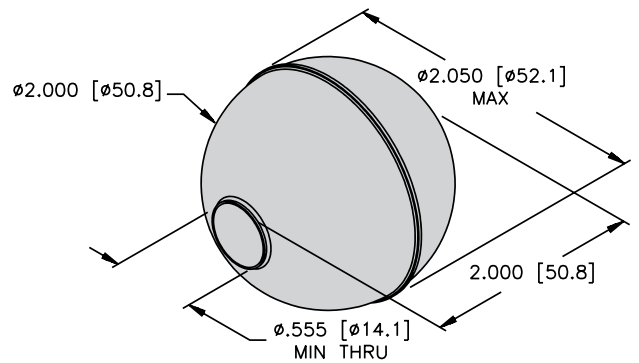
**Standard magnet spacer**  
**STS-R10 [A0852]**



**Split magnet spacer**  
**SPS-R10 [A0854]**

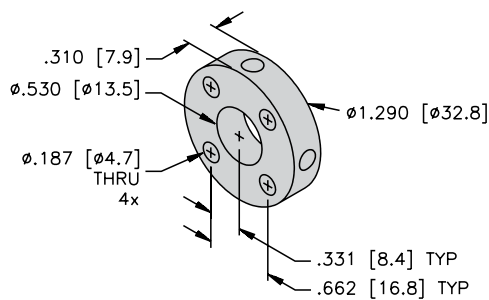


**Egg shape float**  
**EF-R10 [A0858]**



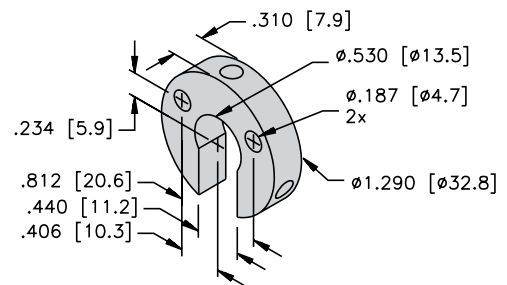
**Standard 4-hole magnet**

**STM-AL-R10 [A0850] (aluminum)**  
**STM-SS-R10 [A0851] (stainless steel)**



**Split magnet**

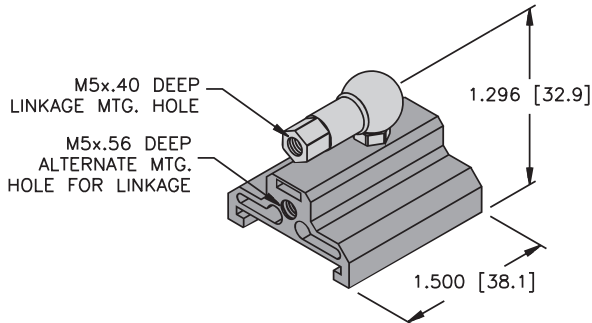
**SPM-AL-R10 [A0853]**



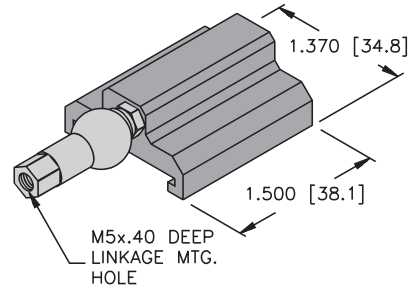
All dimensions shown as: inches [mm]

**Profile series accessories**

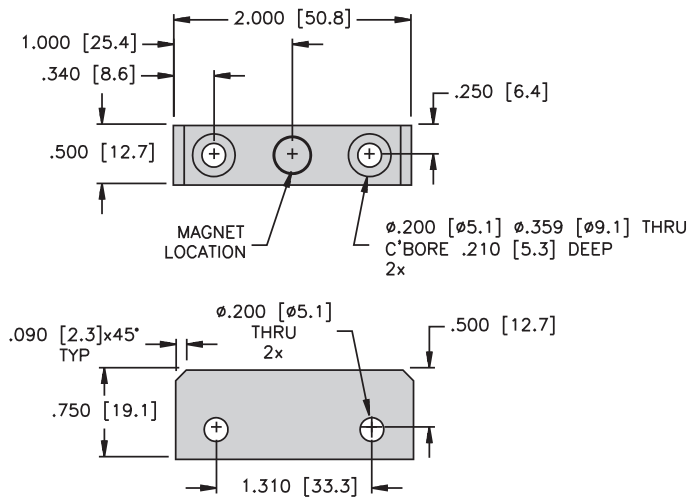
**Slide magnet**  
**SM-Q21 [A5600]**



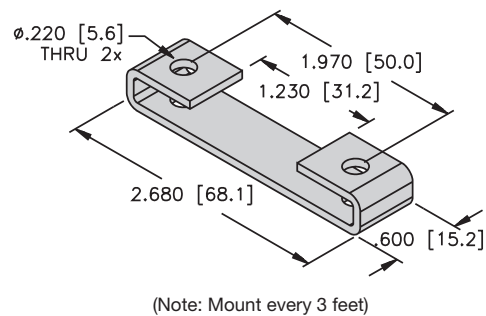
**Slide magnet with slide adapter**  
**SA-Q21 [A0864]**



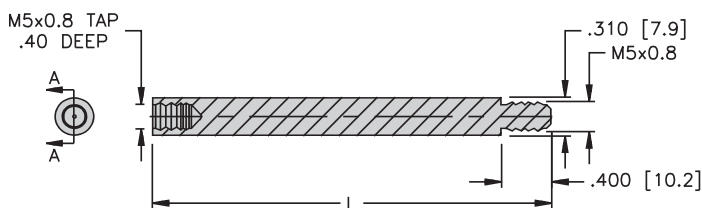
**Floating magnet**  
**FM-Q21 [A5500]**



**Q21 mounting brackets**  
**MB-Q21 [A5700]**

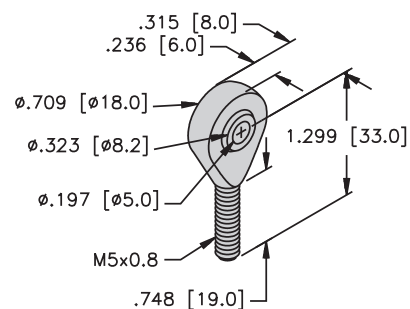


**Control arms**  
**CA\*E-Q21**



**Rod ends**

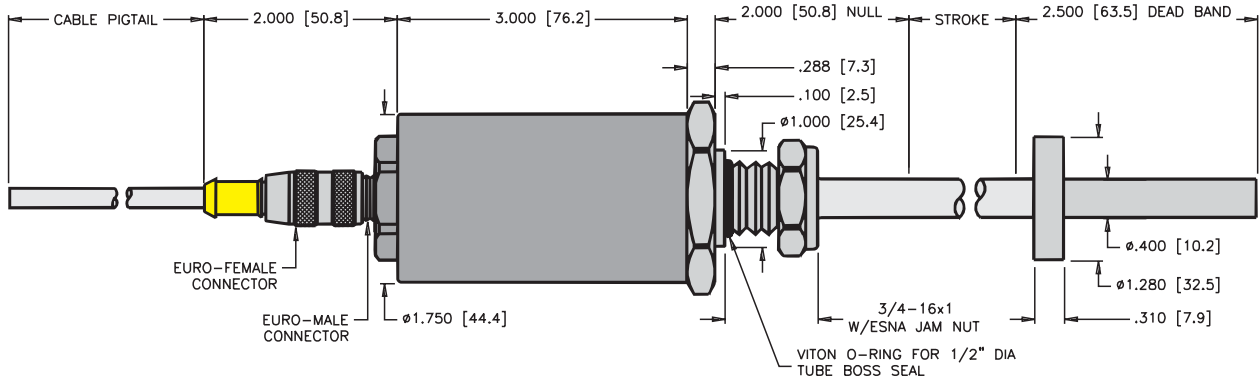
**RE-Q21 [A0865]**



\* Length in inches.

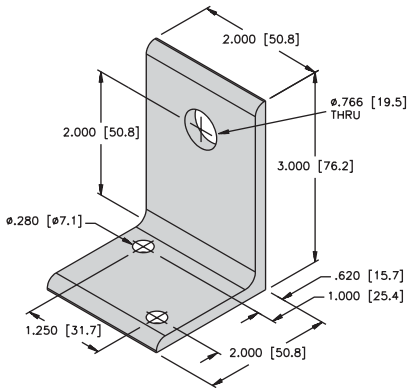
**Rod Style Drawing**

**Rod Style - R10**



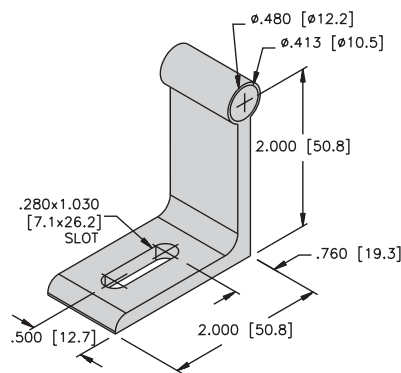
**Rod Style Accessories**

**Mounting Bracket**



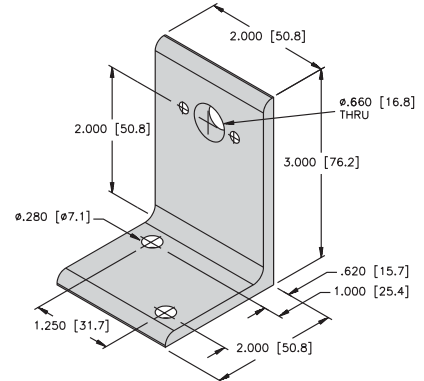
**MB-R10**

**Rod Support Bracket**



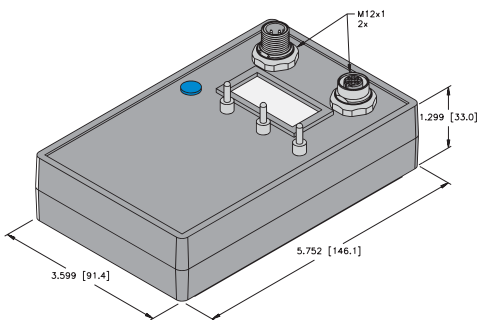
**RB-R10**

**Magnet Mounting Bracket**



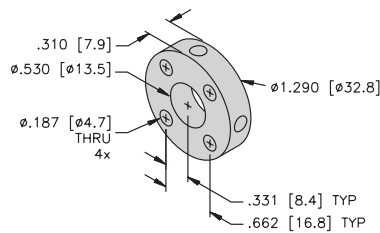
**MMB-R10**

**Test and Programming Device**



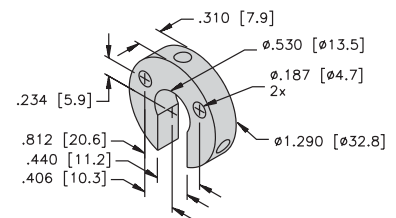
**TB3-LIU**

**Standard 4-hole Magnet**



**STM-AL-R10 (aluminum)**  
**STM-SS-R10 (stainless steel)**

**Split Magnet**

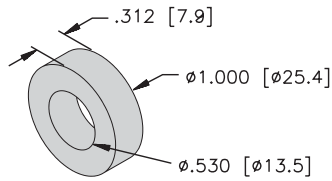


**SPM-AL-R10**

All dimensions shown as: Inches [mm]

## Rod Style Accessories (cont.)

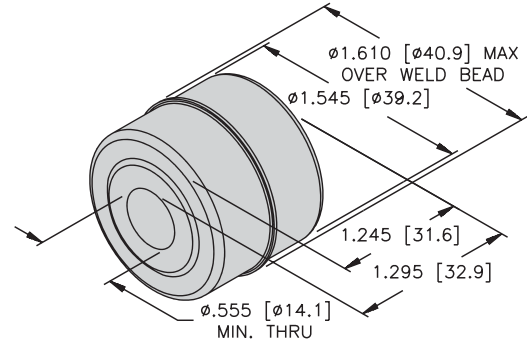
**1" Diameter Cylinder Magnet**



**CM-R10**

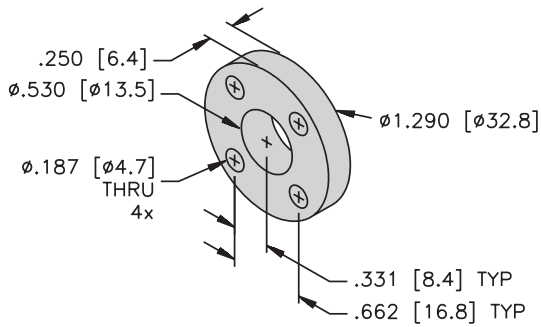
**Miniature Float**

Specific Gravity = 0.66



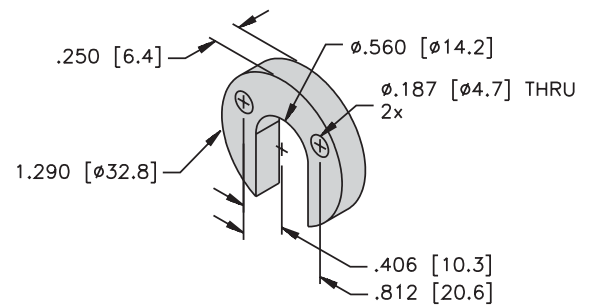
**MF-R10**

**Standard Magnet Spacer**



**STS-R10**

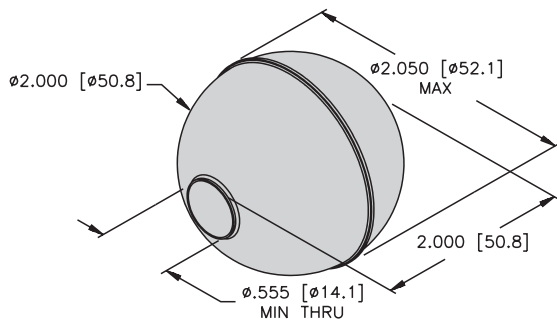
**Split Magnet Spacer**



**SPS-R10**

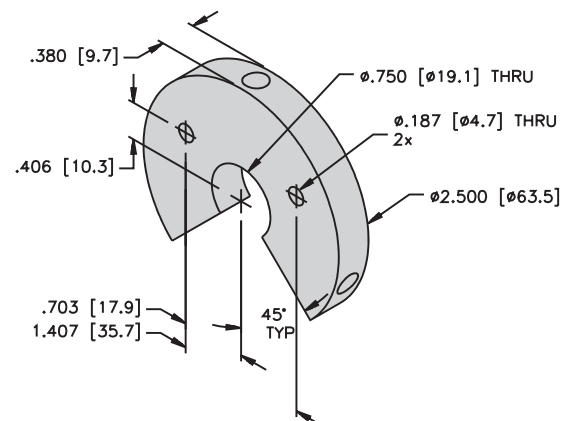
**Egg Shaped Float**

Specific Gravity = 0.62



**EF-R10**

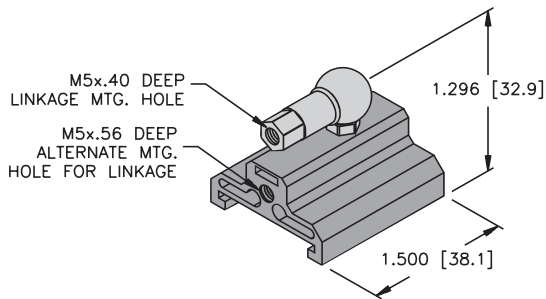
**Large Split Magnet**



**LSPM-AL-R10 (aluminum)  
LSPM-SS-R10 (stainless steel)**

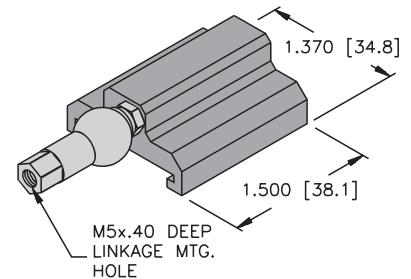
## Profile Style Accessories

### Slide Magnet



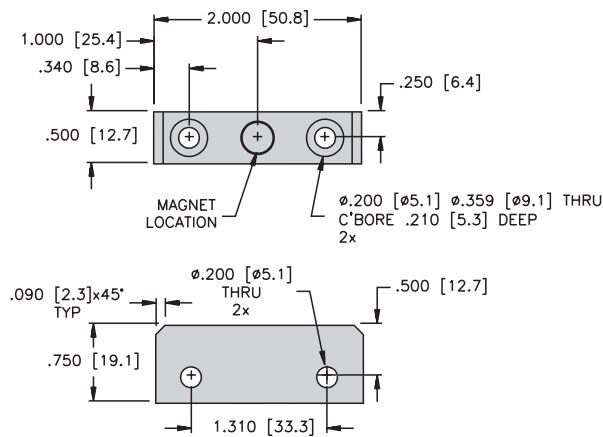
**SM-Q21**

### Slide Magnet with Slide Adapter



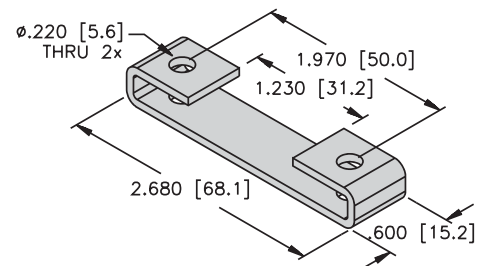
**SA-Q21**

### Floating Magnet



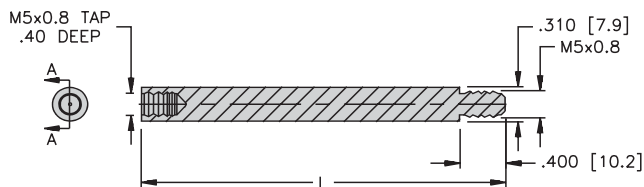
**FM-Q21**

### Q21 Mounting Brackets



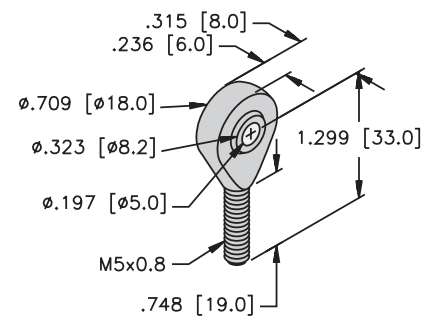
**MB-Q21**

### Control Arms



**CA\*\*E-Q21**

### Rod Ends



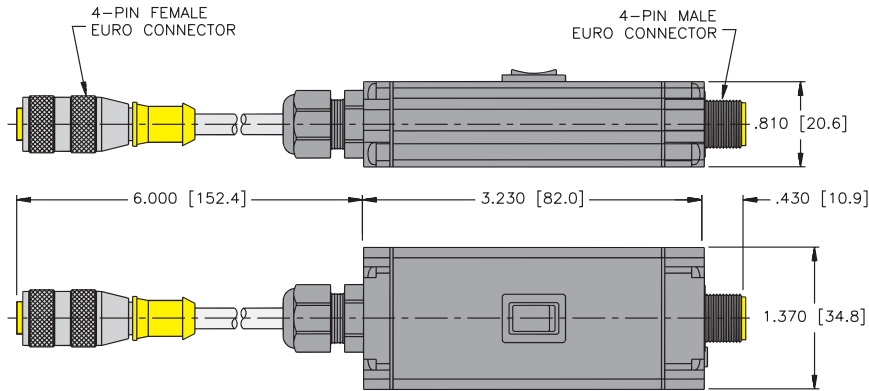
**RE-Q21**

\*\* = length in inches, consult factory for stocked lengths.

All dimensions shown as: Inches [mm]

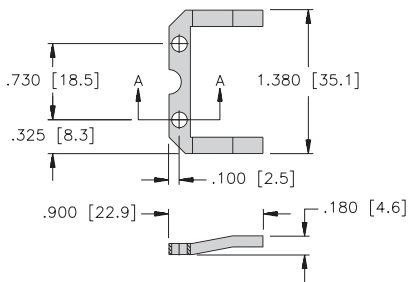
**Profile Style Accessories (cont.)**

**Rocker Programmer**



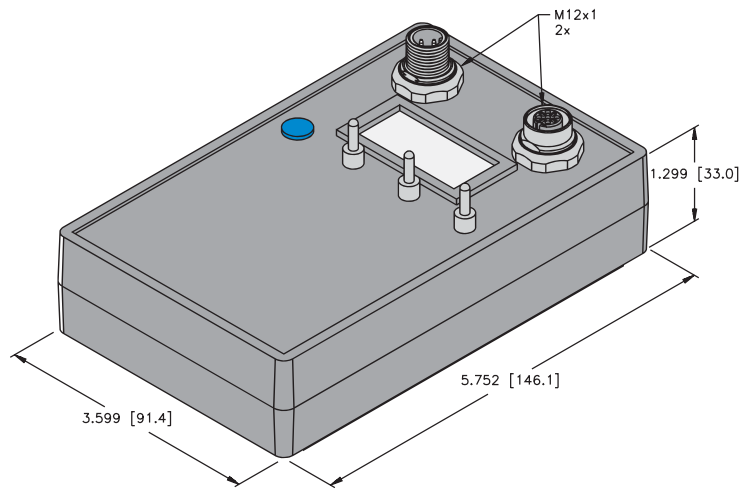
**RP-Q21**

**Q21 Upside Down Brackets**



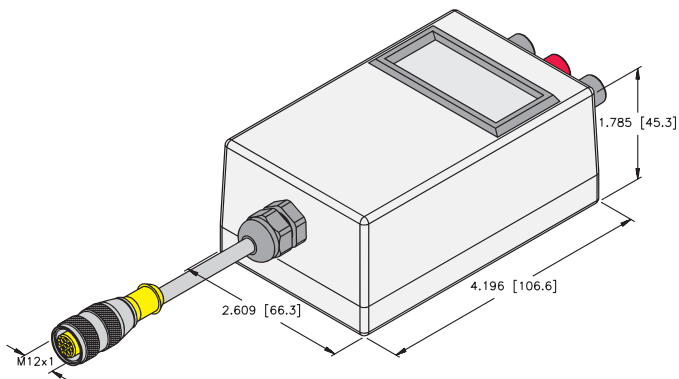
**UB-Q21**

**Test and Programming Device**



**TB 3-LIU**

**Test and Programming Device**



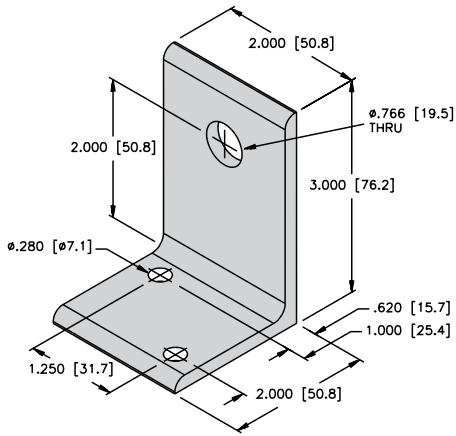
**TB-LDT (voltage)**  
**TB-LDT-LI (current)**

All dimensions shown as: Inches [mm]

**Rod style series accessories**

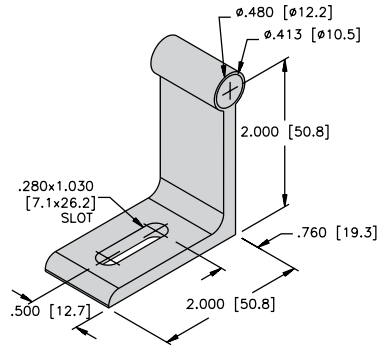
**Mounting bracket**

**LB-R10 [A5900]**



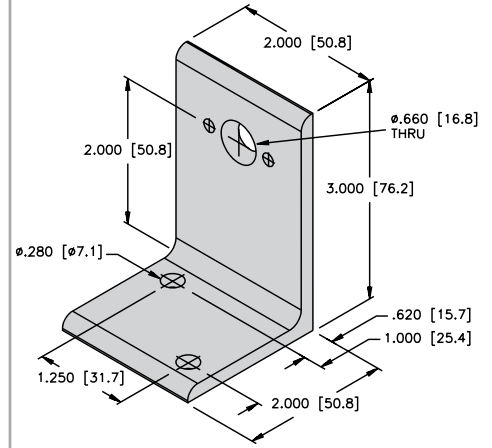
**Rod support bracket**

**RB-R10 [A0861]**



**Magnet mounting bracket**

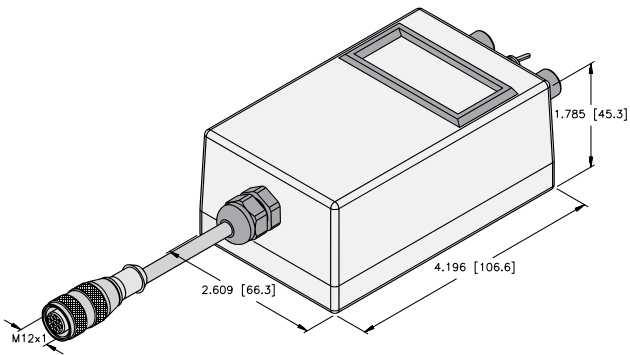
**MMB-R10 [A0862]**



**MB-R10 [A0860]**: Part number includes mounting bracket **LB-R10** and rod support bracket **RB-R10**.

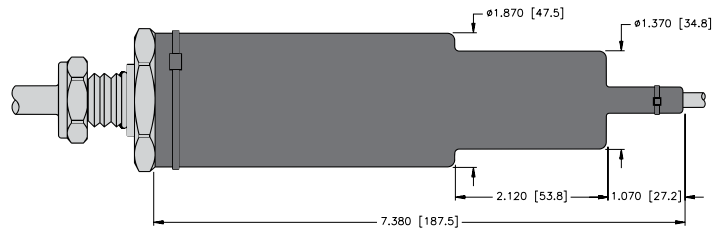
**Test and programming device**

**TB2-LDT [M6900298]**  
**TB2-LDT-LI [A58002]**



**Rubber boot**

**BT-R10 [LT0494]**



All dimensions shown as: inches [mm]