



**DESCRIPTION:**

**Analog absolute positioning**

utilizing a precision potentiometer, this position transducer provides basic absolute positioning with an analog output. With a steady state input voltage and with the potentiometer connected as a voltage divider, the ratiometric output voltage is directly proportional to wire rope extension. The unit will function with any input voltage up to 25 volts max.

To obtain best output linearity, the input voltage should be well regulated.

**SPECIFICATIONS:**

Linearity

- 2", 3", 4" & 5" ranges:  $\pm 0,25\%FS$
- 10", 15", 20" & 25" ranges:  $\pm 0,15\%FS$
- All other ranges:  $\pm 0,10\%FS$

Repeatability:  $\pm 0,015\%FS$

Resolution: essentially infinite

Construction: Aluminum cover & baseplate

Sensing device: precision potentiometer

Connector: MS3102A-14S-6P

Wire rope:  $\varnothing 016$  stainless steel

Wire rope tension: see table 7

Wire rope inbound acceleration: see table 7

Weight

- Up to 50": 0.45Kg
- 60" & 80": 0.63Kg

Dimensional info: Fig1 & Fig.2

**Electrical**

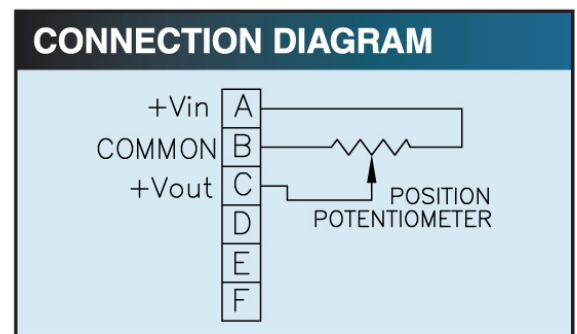
Input impedance:  $1000\Omega \pm 10\%$

Output impedance: 0-1000 $\Omega$

Excitation voltage: 30V Max. AC or DC

Output voltage change over

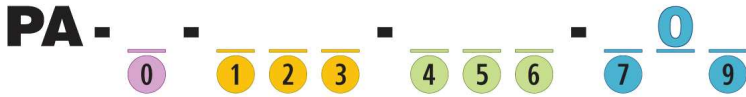
Full range of transducer: 92% to 98% of excitation voltage



**Environmental**

Thermal coefficient of sensing element: ±100PPM/°C max.  
 Operating Temp.: -40°C ~ +95°C  
 Operating humidity: 95%RH max. non-condensing  
 Vibration: 15G's 0.1 ms max.  
 Shock: 50G's 0.1 ms max.  
 Ingress protection: NEMA1, IP40

**MODEL NUMBER CONFIGURATION:**



**BASIC CONFIGURATION (FOR ALL RANGES)**

**PA-50-S10-N1S-10C**

**0 RANGE**

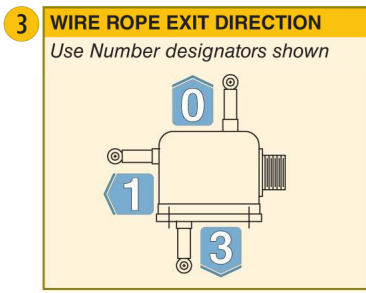
2	2" (50 mm)
3	3" (75 mm)
4	4" (100 mm)
5	5" (125 mm)
10	10" (250 mm)
15	15" (390 mm)
20	20" (500 mm)
25	25" (640 mm)
30	30" (750 mm)
40	40" (1000 mm)
50	50" (1250 mm)
60	60" (1500 mm)
80	80" (2000 mm)

**1 WIRE ROPE**

S	∅.016 (0,4 mm) Stainless Steel
N	∅.018 (0,45 mm) Nylon Jacketed Stainless Steel

**2 WIRE ROPE TENSION**

1	Standard (50 G Units to 50")
2	Reduced (See Table 7 for Value)
3	Increased (100G on Units With Ranges From 2" to 50")



**4 DUST WIPER OPTION**

N	No dust wiper
D	Dust Wiper Included

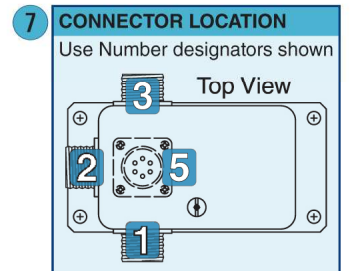
**5 POTENTIOMETER VALUE**

1	1K ohm
2	2K ohm
3	5K ohm
4	10K ohm

*See Supplemental Data for Linearity Option*

**6 ELECTRICAL OUTPUT POLARITY**

S	Standard (increasing output as wire rope is extended)
R	Reversed (decreasing output as wire rope is extended)



**9 ELECTRICAL INTERFACE**

C	Mating Connector Included
K	Mating Connector Omitted*
T	Terminal Strip

\*Electrical cable with mating connector may be ordered separately as part number 10028-xM where 'x' is the length required in meters.

**LIFE:**

- Ranges 2" to 5": 5,000,000 full stroke cycles
- Ranges 10" to 25": 500,000 full stroke cycles
- Ranges 30" to 80": 250,000 full stroke cycles

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**OPTIONS:**

Option	Option designator	Description
<b>WIRE ROPE</b>	<b>N</b>	Replaces standard stainless steel wire rope with Ø18 nylon jacketed wire rope. Increase wire rope life dramatically but may increase non-linearity by as much as $\pm 0.05\%FS$
Nylon jacketed wire rope		
<b>WIRE ROPE TENSION</b>	<b>2</b>	Reduces the overall tension in the wire rope and increases wire rope life. Dynamic response of the transducer is reduced due to the reduced inbound acceleration capability.
Reduced wire rope tension		
<b>I</b> Increased wire rope tension	<b>3</b>	Increases tension in the wire rope which increases the dynamic response of the transducer. On selected units with range of 50" (1250mm) or less, inbound acceleration capability is 100G's. wire rope life may be adversely affected by the HG option
<b>DUST WIPER</b>	<b>D</b>	Lubricated wiper strips dust and debris from wire rope as it retracts into case. Adds 0.36" (9mm) height to wire rope exit location
<b>POTENTIOMETER VALUE</b>	<b>2,3,4</b>	Non-standard potentiometer linearity is as follow: 5" and below = $\pm 1.00\%FS$ 10" to 25" = $\pm 0.050\%FS$ 30" and above = $\pm 0.25\%FS$
Non-standard potentiometer		
<b>ELECTRICAL OUTPUT POLARITY</b>	<b>R</b>	Output is at maximum when wire rope is fully retracted. Output decreases as wire rope is extended. Does not apply to velocity or encoder signal
Reversed output		
<b>ELECTRICAL INTERFACE</b>	<b>T</b>	Replaces connector with a terminal strip
Terminal strip		

**ADDITIONAL OPTIONS:**

TABLE 7								
PA, PB, P420 & P510 SERIES								
Range designator	Range		Wire rope standard tension		Wire rope standard accelerator	Wire rope reduced tension		Wire rope reduce accelerator
	In	mm	Oz	N	G's	Oz	N	G'S
2"	2	50	34	9.5	>50	16	4.4	28
3"	3	75	24	6.7	>50	14	3.9	16
4"	4	100	24	6.7	>50	11	3.1	12
5"	5	125	34	9.5	>50	8	2.2	7
10"	10	250	34	9.5	>50	16	4.4	28
15"	15	390	24	6.7	>50	14	3.9	16
20"	20	500	24	6.7	>50	11	3.1	12
25"	25	640	34	9.5	>50	8	2.2	7
30"	30	750	24	6.7	>50	14	3.9	16
40"	40	1000	24	6.7	>50	11	3.1	12
50"	50	1250	34	9.5	>50	8	2.2	7
60"	60	1500	24	6.7	27	7	1.8	2
80"	80	2000	19	5.3	16	5	1.4	2

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## DIMENSIONS:

### RANGES TO 50" (1250 mm)

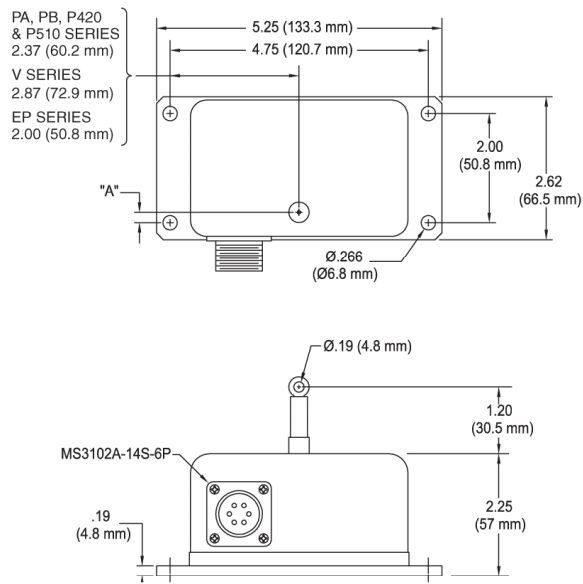


FIG. 1

### RANGES TO 60" (1500 mm) and 80" (2000 mm)

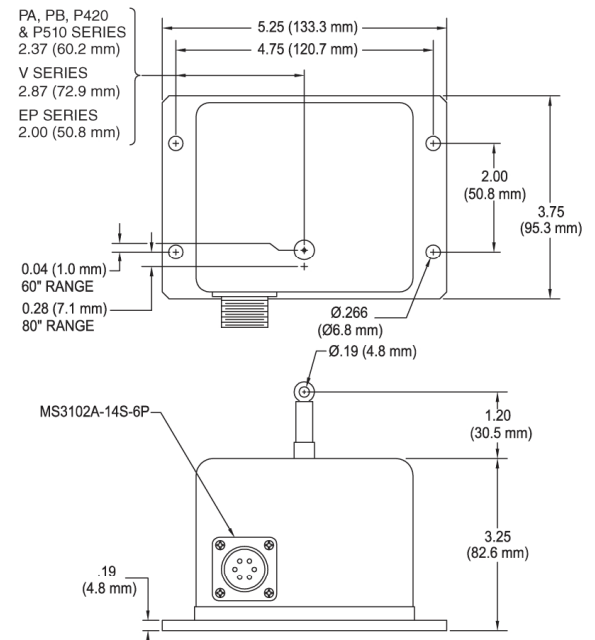


FIG. 2

#### PA, PB, P420, P510, V Series

RANGE	DIM "A" (inch) (mm)
2", 10"	0.66 (16.8)
3", 15", 30"	0.51 (12.9)
4", 20", 40"	0.35 (8.8)
5", 25", 50"	0.19 (4.8)
60"	See Figure 2
80"	See Figure 2

#### EP Series

RANGE	DIM "A" (inch) (mm)
EP-10	0.68 (17.4)
EP-25, EP-50	0.21 (5.3)
EP-60	See Figure 2
EP-80	See Figure 2
EPM-250	0.68 (17.4)
EPM-1250	0.21 (5.3)

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