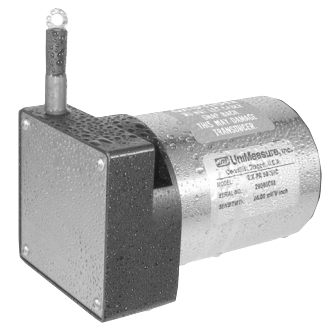
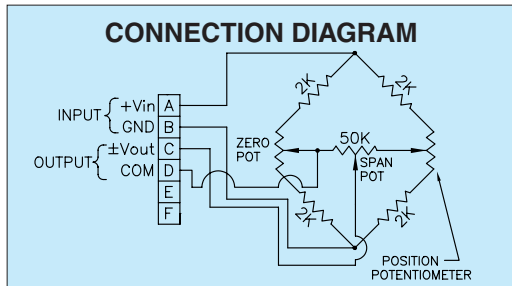


# HX-PB SERIES

## BRIDGE CIRCUIT VOLTAGE OUTPUT



The UniMeasure HX-PB series transducer includes the sensing potentiometer in a bridge circuit with adjustable zero and span controls. The completely passive circuit gives a maximum output voltage at maximum span setting of approximately 18% of the input voltage. The span adjustment allows for easy interface to a bridge amplifier. With zero position adjustable to anywhere within the total range of the transducer, voltage output is positive when extending the wire rope from the selected zero position and is negative when retracting from zero.



### SPECIFICATIONS

#### General

Available Measurement Ranges.....	See Table 12, Page 34
Sensing Device .....	Precision Potentiometer
Connector .....	MS3102E-14S-6P
Mating Connector (included) .....	MS3106E-14S-6S

#### Performance

Linearity	
2", 3", 4", 5" & 6" Ranges .....	±0.25% Full Scale
10", 15", 20" & 25" .....	±0.15% Full Scale
All other ranges .....	±0.10% Full Scale
Repeatability.....	±0.015% Full Scale
Resolution .....	Essentially Infinite

#### Electrical

Input Impedance.....	1.25KΩ
Output Impedance.....	1.25KΩ at max span setting
	14.4KΩ @ 51% max. span setting
Excitation Voltage .....	25 Volts Max. AC or DC
Output Voltage .....	User adjustable to a maximum of 18% of Input Voltage

#### Environmental

Thermal Coefficient of	
Sensing Element .....	±100 PPM/°C Max.
Operating Temperature .....	-25°C to 95°C
Operating Humidity.....	100%
Shock .....	50 G @ 0.1 ms Max.
Vibration .....	10 Hz to 2000 Hz, 15 G peak
Ingress Protection	
Exclusive of Wire Rope Area.....	NEMA 4 (IP-65)
Optional Ingress Protection.....	NEMA 6 (IP-68)

See Page 36 for Dimensional Information

#### Range

Select measurement range from Table 12, Page 34  
Insert corresponding Measurement Range Designator

#### Wire Rope

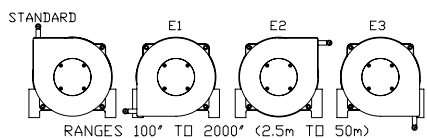
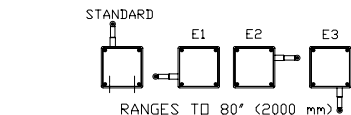
- \* ..... Stainless Steel (See Table 12, Page 3)
- NJC** ..... Ø.018 (0,45 mm) Nylon Jacketed Stainless Steel (Ranges to 80" only)
- NJC037** . Ø.037 (0,94 mm) Nylon Jacketed Stainless Steel (Ranges 100" and greater only)

#### Wire Rope Tension

- \* ..... Standard
- 004** ..... Reduced (Ranges to 50" only)

#### Wire Rope Exit Direction

- \* ..... Top Exit
- E1** ..... Side Exit (Left)
- E2** ..... Side Exit (Right)
- E3** ..... Bottom Exit



## Model Number Configuration

HX-PB- - - - -

#### Electrical Interface

- \* ..... Mating Connector Included (See note 1 below)
  - L3M** ..... 3 m (10') electrical cable (See note 2 below)
  - L4M** ..... 4 m (13.5') electrical cable (See note 2 below)
  - L5M** ..... 5 m (16.5') electrical cable (See note 2 below)
  - L6M** ..... 6 m (20') electrical cable (See note 2 below)
  - L7M** ..... 7 m (23') electrical cable (See note 2 below)
1. Applies to NEMA 4 Housing option only. Does not apply to N6 or SS Housing options.  
2. Select one of options L3M through L7M when electrical cable is required with mating connector when Housing option NEMA 4 is also selected. Select one of options L3M through L7M when Housing option N6 or SS is selected. Connector is **not** available with Housing option N6 or SS.

#### Housing

- \* ..... NEMA 4 (IP-65) Aluminum
- N6** ..... NEMA 6 (IP-68) Aluminum
- SS** ..... NEMA 6 (IP-68) Corrosion Resistant Stainless Steel and Non-Metallic Construction

#### Electrical Output Polarity

- \* ..... Standard (increasing output as wire rope is extended)
- R** ..... Reversed (decreasing output as wire rope is extended)

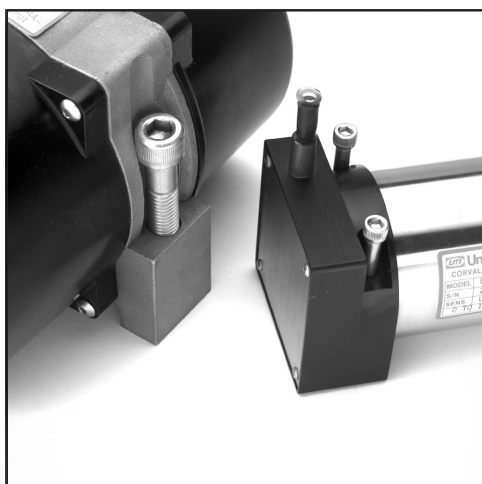
#### NOTE

- 1) \*—Asterisk items are standard configuration. No option designator is required.
- 2) Shaded options available at additional cost.
- 3) See Page 35 for a description of options

Example  
**HX-PB-50-N6-R**

# HX

## MECHANICAL SPECIFICATIONS



Typical HX mounting bolts.

### SPECIFICATIONS

#### Mechanical Specifications

- Available Measurement Ranges..... See Table 12
- Construction
  - Ranges 80" (2 m) and under ..... Anodized Aluminum Mounting Base, Stainless Steel & Anodized Aluminum Housing
  - Ranges 100" (2.5 m) and greater ..... Stainless Steel Mounting Base High Impact, Corrosion Resistant Polyurethane Housings
- Wire Rope Tension ..... See Table 12
- Wire Rope Diameter..... See Table 12
- Weight ..... See Table 12
- Connector..... MS3102A-14S-6P
- Mating Connector (included) ..... MS3106E-14S-6S
- Optional NEMA 6 Capability ..... Bulkhead fitting with shielded, twisted pair cable

# TABLE 12

Use value from this column to indicate overall measurement range

Check mark indicates available measurement range



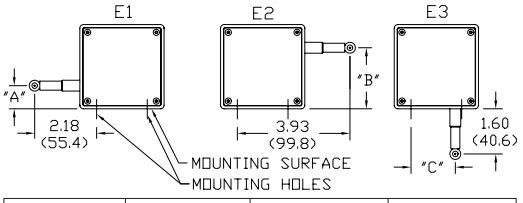
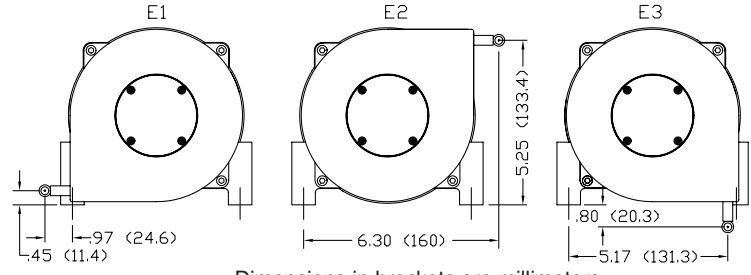
MEASUREMENT RANGE DESIGNATOR	STANDARD MEASUREMENT RANGES		APPLICABLE SERIES			WIRE ROPE TENSION (NOMINAL)		WIRE ROPE DIAMETER		WEIGHT	
	(in)	(mm)	HX-PA HX-PB HX-P420 HX-P510 HX-P1010	HX-EP	HX-V HX-VP	(oz)	(N)	(in)	(mm)	(lb)	(Kg)
2	2	50	✓	-	✓	34	9.4	.016	0.4	2	0.9
3	3	75	✓	-	✓	24	6.7	.016	0.4	2	0.9
4	4	100	✓	-	✓	24	6.7	.016	0.4	2	0.9
5	5	125	✓	-	✓	19	5.3	.016	0.4	2	0.9
6	6	150	✓	-	✓	24	6.7	.016	0.4	2	0.9
10	10	250	✓	✓	✓	34	9.4	.016	0.4	2	0.9
15	15	390	✓	-	✓	24	6.7	.016	0.4	2	0.9
20	20	500	✓	-	✓	24	6.7	.016	0.4	2	0.9
25	25	640	✓	✓	✓	19	5.3	.016	0.4	2	0.9
30	30	750	✓	-	✓	24	6.7	.016	0.4	2	0.9
40	40	1000	✓	-	✓	24	6.7	.016	0.4	2	0.9
50	50	1250	✓	✓	✓	19	5.3	.016	0.4	2	0.9
60	60	1500	✓	✓	✓	24	6.7	.016	0.4	2	0.9
80	80	2.0m	✓	✓	✓	21	5.8	.016	0.4	2	0.9
100	100	2.5m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
120	120	3.0m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
150	150	3.8m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
200	200	5.0m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
250	250	6.3m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
300	300	7.5m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
350	350	8.8m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
400	400	10.0m	✓	✓	✓	36	10.0	.024	0.6	6.8	3.1
500	500	12.5m	✓	✓	✓	36	10.0	.024	0.6	8.6	3.9
600	600	15.2m	✓	✓	✓	36	10.0	.024	0.6	8.6	3.9
800	800	20.3m	✓	✓	✓	36	10.0	.024	0.6	8.6	3.9
1000	1000	25.4m	✓	✓	-	36	10.0	.024	0.6	12.0	5.4
1200	1200	30.4m	✓	✓	-	36	10.0	.024	0.6	12.3	5.6
1600	1600	40.6m	✓	✓	-	36	10.0	.024	0.6	14.1	6.4
1800	1800	45.7m	✓	✓	-	36	10.0	.021	0.6	15.9	7.2
2000	2000	50.8m	✓	✓	-	36	10.0	.021	0.5	16.3	7.4



Specifications subject to change without notice.

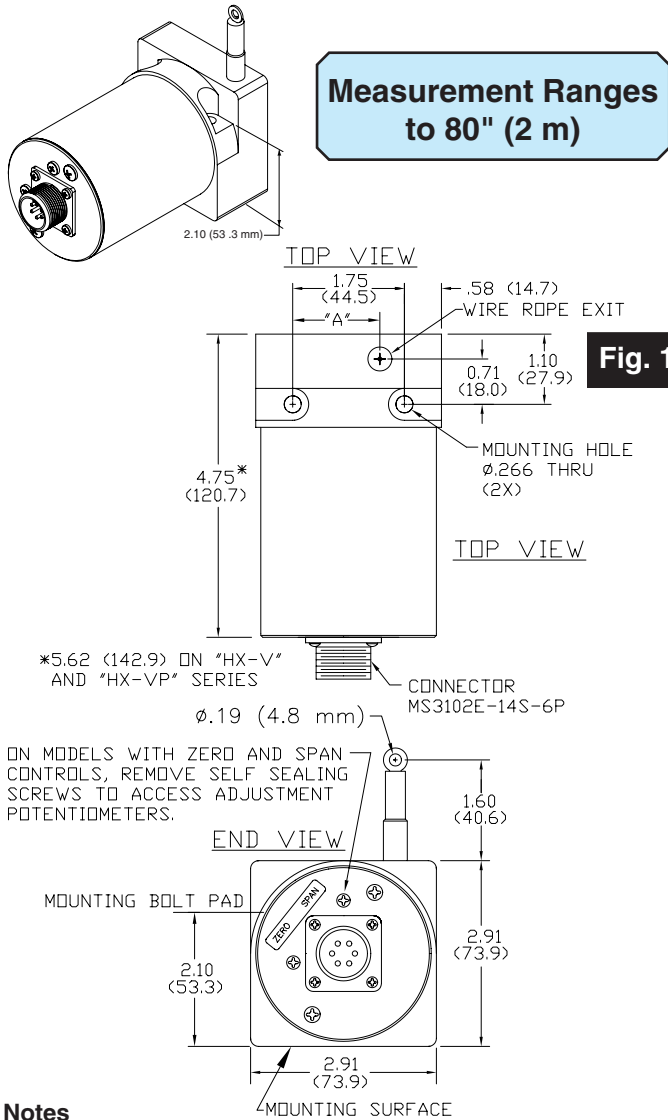
# HX

## OPTION DESCRIPTION

OPTION	OPTION DESIGNATOR	DESCRIPTION																												
Nylon jacketed wire rope (Ranges to 80" only)	<b>NJC</b>	Replaces standard stainless steel wire rope with Ø.018 nylon jacketed wire rope. This option increases wire rope life dramatically but may increase non-linearity by as much as ±.05% of full scale.																												
Nylon jacketed wire rope (Ranges 100" to 500" only)	<b>NJC037</b>	Replaces standard stainless steel wire rope with Ø.037 nylon jacketed wire rope.																												
Reversed output	<b>R</b>	Output is at a maximum when wire rope is fully retracted. Output decreases as wire rope is extended. Does not apply to velocity signal.																												
NEMA 6, IP-68 capability	<b>N6</b>	 Connector is replaced with a bulkhead fitting and a designated length of urethane jacketed, shielded, twisted pair cable. Retraction mechanism and electrical components are sealed to NEMA 6, IP-68 capability. No connector.																												
Stainless steel construction (Ranges to 80" only)	<b>SS</b>	All external anodized aluminum parts of transducer are replaced with stainless steel and corrosion resistant plastic. Transducer is sealed to NEMA 6, IP-68 capability. Urethane jacketed, shielded, twisted pair cable exits unit. No connector. 																												
Non-standard potentiometer (Applies to HX-PA only)	<b>PXK</b>	Replace "X" in option designator with required potentiometer value in K ohms. Non-standard potentiometer linearity is as follows: Ranges 0 to 2" to 0 to 5" ..... ±1.00% of full scale Ranges 0 to 10" to 0 to 25" ..... ±0.50% of full scale Ranges 30" and above ..... ±0.25% of full scale Note: This option is subject to potentiometer availability.																												
Alternate wire rope exit Measurement ranges to 80" (2.0 m)	<b>E1, E2, E3</b>	 <table border="1" data-bbox="654 1476 1174 1696"> <thead> <tr> <th>RANGE</th> <th>"A"</th> <th>"B"</th> <th>"C"</th> </tr> </thead> <tbody> <tr> <td>2", 10"</td> <td>1.12 (28.4)</td> <td>1.79 (45.5)</td> <td>1.21 (30.7)</td> </tr> <tr> <td>3", 15", 30"</td> <td>.96(24.4)</td> <td>1.95 (49.5)</td> <td>1.37 (34.8)</td> </tr> <tr> <td>4", 20", 40"</td> <td>.80 (20.3)</td> <td>2.11 (53.6)</td> <td>1.53 (38.9)</td> </tr> <tr> <td>5", 25", 50"</td> <td>.64 (16.3)</td> <td>2.27 (57.7)</td> <td>1.69 (42.9)</td> </tr> <tr> <td>60"</td> <td>.49 (12.4)</td> <td>2.42 (61.5)</td> <td>1.84 (46.7)</td> </tr> <tr> <td>80"</td> <td>.25 (6.4)</td> <td>2.66 (67.6)</td> <td>2.08 (52.8)</td> </tr> </tbody> </table> <p style="text-align: right;">Dimensions in brackets are millimeters.</p>	RANGE	"A"	"B"	"C"	2", 10"	1.12 (28.4)	1.79 (45.5)	1.21 (30.7)	3", 15", 30"	.96(24.4)	1.95 (49.5)	1.37 (34.8)	4", 20", 40"	.80 (20.3)	2.11 (53.6)	1.53 (38.9)	5", 25", 50"	.64 (16.3)	2.27 (57.7)	1.69 (42.9)	60"	.49 (12.4)	2.42 (61.5)	1.84 (46.7)	80"	.25 (6.4)	2.66 (67.6)	2.08 (52.8)
RANGE	"A"	"B"	"C"																											
2", 10"	1.12 (28.4)	1.79 (45.5)	1.21 (30.7)																											
3", 15", 30"	.96(24.4)	1.95 (49.5)	1.37 (34.8)																											
4", 20", 40"	.80 (20.3)	2.11 (53.6)	1.53 (38.9)																											
5", 25", 50"	.64 (16.3)	2.27 (57.7)	1.69 (42.9)																											
60"	.49 (12.4)	2.42 (61.5)	1.84 (46.7)																											
80"	.25 (6.4)	2.66 (67.6)	2.08 (52.8)																											
Alternate wire rope exit Measurement ranges 100" (2.5 m) and greater.	<b>E1, E2, E3</b>	 <p style="text-align: center;">Dimensions in brackets are millimeters.</p>																												

# HX

## DIMENSIONAL INFORMATION



### Notes

1. Transducer mounts with Ø.25 or M6 socket head cap bolts.

**Table 13**

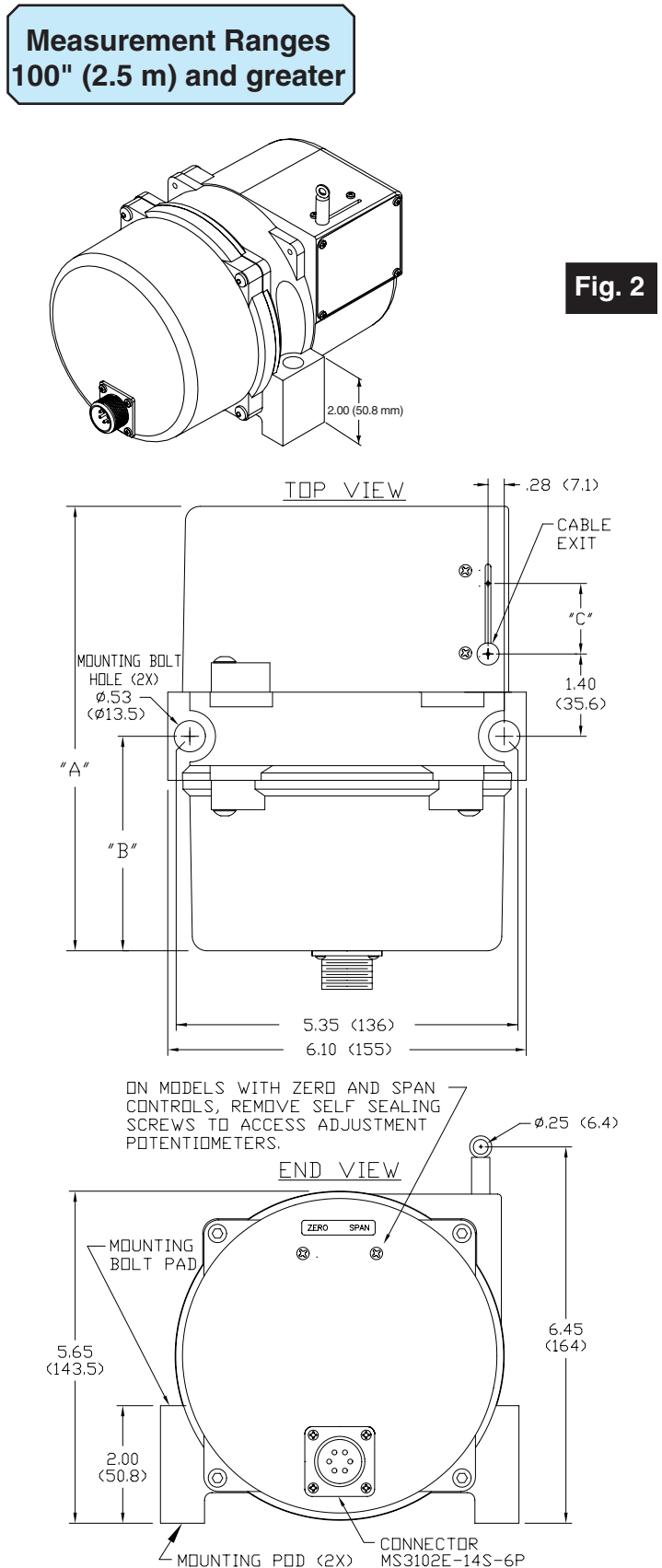
RANGE	"A"
2", 10"	1.21 (30.7)
3", 15", 30"	1.37 (34.8)
4", 20", 40"	1.53 (38.9)
5", 25", 50"	1.69 (42.9)
60"	1.84 (46.7)
80"	2.08 (52.8)

**Table 14**

RANGE	DIM "A"	DIM "B"
Ranges to 800"	7.70 (19.6)	3.80 (96.5)
1000" to 2000"	11.0 (280.0)	5.60 (142.0)

### Notes

1. Transducer mounts with Ø.50 or M12 socket head cap bolts.
  2. Dimension "C" is the cable offset that occurs as the cable is extended from the transducer.
- For "C" in inches,  $C = .0016 \times E$  where E = extension in inches.
- For "C" in millimeters,  $C = .0016 \times E$  where E = extension in mm.



**Dimensions in brackets are millimeters.**

Specifications subject to change without notice.