

# ***Вытяжной тросовый датчик***



## ***Серия HX***

- ***Диапазоны измерений 0-50...50000 мм***
- ***Выход: положение и скорость-положение***
- ***Нелинейность  $\pm 0,1$  % диапазона измерений***
- ***Аналоговый, TTL, HTL, счётчик числа оборотов***
- ***Измерительный трос из нержавеющей стали или заключённый в полиамидный кожух***
- ***Рабочая температура -25...+95 °C***
- ***Оptionная защита входа NEMA 6 (IP68)***

**HX**

**UniMeasure**

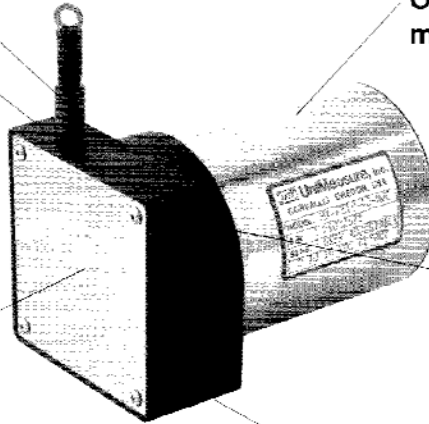
**GENERAL CONSTRUCTION FEATURES**

**MEASUREMENT RANGES TO 80" (2 m)**

Integral wire rope dust wiper

Anodized aluminum/  
stainless steel Housing  
(All stainless optional)

Low friction shaft seal



O-ring sealed sensor/  
mechanism chamber

Extremely rigid  
2 point mount

Small footprint mounting base

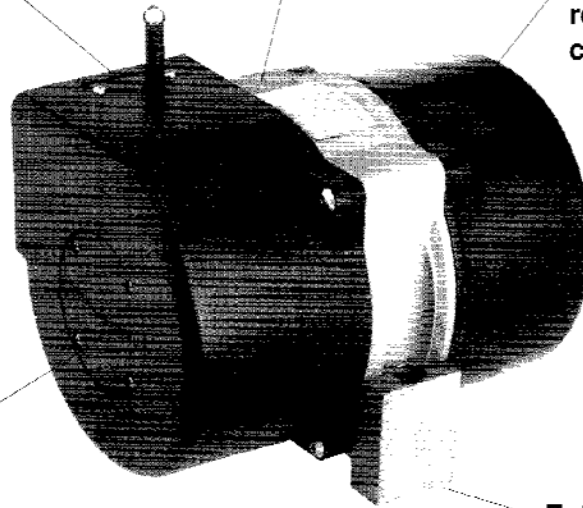
**Fig. 1**

**ENVIRONMENTALLY SEALED**

**MEASUREMENT RANGES FROM 100" (2.5 m) TO 2000" (50 m)**

Integral wire rope dust wiper

Low friction  
shaft seal



316 Stainless Steel  
mounting base

High impact, chemical  
resistant polyurethane  
cover (both ends)

O-ring sealed sensor/  
mechanism chamber

Extremely rigid  
2 point mount

**Fig. 2**

**ENVIRONMENTALLY SEALED**

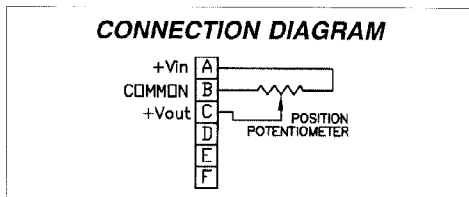
See Table 4 (page 8) for additional mechanical specifications

# HX-PA SERIES



## RATIOMETRIC VOLTAGE OUTPUT

Utilizing a precision potentiometer, the UniMeasure HX-PA series 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 maximum. To obtain best output linearity, the input voltage should be well regulated.



### MODEL NUMBER CONFIGURATION

**HX-PA-** - - -

Measurement Range Designator from standard ranges shown in Table 4, page 8

Option designators from **OPTIONS** list (page 9) in order of appearance on **OPTIONS** list

#### General

Available Measurement Ranges	..... See Table 4, Page 8
Sensing Device	..... Precision Potentiometer
Connector	..... MS3102E-14S-6P
Mating Connector (included)	..... MS3106E-14S-6S

#### SPECIFICATIONS

#### Performance

Linearity	
2", 3", 4" & 5" 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	..... 1000 Ω ±10%
Output Impedance	..... 0 to 1000 Ω
Excitation Voltage	..... 25 Volts Max. AC or DC
Nominal Output Voltage	..... $\frac{990}{\text{Range in Inches}}$ mV/inch
(Use total measurement range in calculation)	..... $\frac{990}{\text{Range in mm}}$ mV/mm

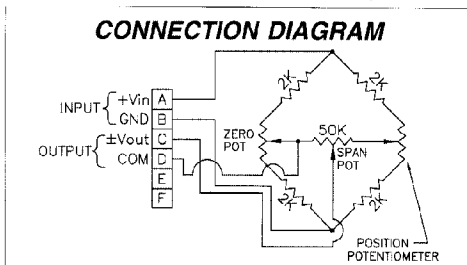
#### Environmental

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)

# 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 cable from the selected zero position and is negative when retracting from zero.



### MODEL NUMBER CONFIGURATION

**HX-PB-** - - -

Measurement Range Designator from standard ranges shown in Table 4, page 8

Option designators from **OPTIONS** list (page 9) in order of appearance on **OPTIONS** list

#### General

Available Measurement Ranges	..... See Table 4, Page 8
Sensing Device	..... Precision Potentiometer
Connector	..... MS3102E-14S-6P
Mating Connector (included)	..... MS3106E-14S-6S

#### SPECIFICATIONS

#### Performance

Linearity	
2", 3", 4", & 5" 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

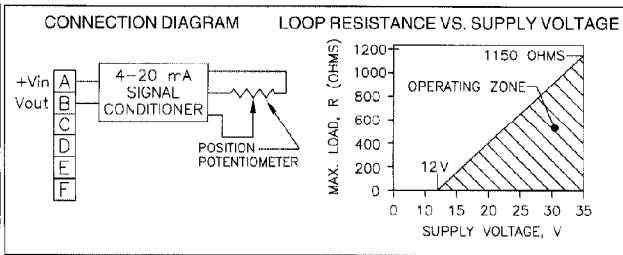
#### Environmental

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)

# HX-P420 SERIES

## 4 to 20 mA OUTPUT

The HX-P420 position transducer provides a 4 to 20 mA output signal with a potentiometric sensor. The HX-P420 is particularly advantageous in electrically noisy environments. Since the transmitter is loop powered, an assembled system consists of a power supply, current monitor, and transmitter all connected in series. Zero and span adjustments allow setting the 4 mA position within the first 30% of total travel and setting the 20 mA position within 80% to 100% of total travel. The HX-P420 may be powered with a supply voltage in the range of 12 to 35 VDC subject to the total loop resistance.



### MODEL NUMBER CONFIGURATION

**HX-P420-** - - -

Measurement Range Designator  
from standard ranges shown in  
Table 4, page 8

Option designators from  
**OPTIONS** list (page 9) in order of  
appearance on **OPTIONS** list

### SPECIFICATIONS

#### General

Available Measurement Ranges .....	See Table 4, Page 8
Connector .....	MS3102E-14S-6P
Mating Connector (included) .....	MS3106E-14S-6S

#### Performance

Linearity	
2", 3", 4" & 5" Ranges .....	±0.30% Full Scale
10", 15", 20" & 25" Ranges .....	±0.20% Full Scale
All other ranges .....	±0.15% Full Scale
Repeatability .....	±0.015% Full Scale
Resolution .....	Essentially Infinite

#### Electrical

Output .....	User Adjustable 4 to 20 mA
Excitation Voltage .....	12 to 35 VDC
Min. Supply Voltage .....	(.02 x Load Res.) + 12 VDC
Insulation Resistance .....	100 Megohms min. at 100 VDC
Adjustment Range	
4 mA .....	0 to 30% of Range
20 mA .....	80% to 100% of Range
Protection .....	Reversed Polarity

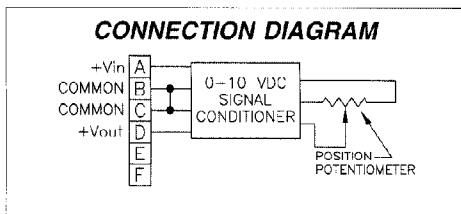
#### Environmental

Thermal Coefficient of sensing element .....	±100 PPM/°C max.
Operating temperature .....	-25°C to 80°C
Operating humidity .....	100%
Vibration .....	15 G's 0.1 ms max.
Shock .....	50 G's 0.1 ms max.
Ingress Protection	
Exclusive of Wire Rope Area .....	NEMA 4 (IP-65)
Optional Ingress Protection .....	NEMA 6 (IP-68)

# HX-P510 SERIES

## 0 to 5 VDC or 0 to 10 VDC OUTPUT

The HX-P510 position transducer provides a 0 to 5 or 0 to 10 VDC output utilizing a potentiometric sensor. Pins B and C of the connector are both COMMON and are connected together internally at the transducer enabling a three or four wire connection. With adjustable zero and span, zero position may be set within the first 30% of the total measurement range. The span allows maximum output voltage to be adjusted to 5 VDC or 10 VDC for displacements between 80% and 100% of total range. The HX-P510 may be powered by an unregulated supply voltage in the range of 11 to 35 VDC.



### MODEL NUMBER CONFIGURATION

**HX-P510-** - - -

Measurement Range Designator  
from standard ranges shown in  
Table 4, page 8

Option designators from  
**OPTIONS** list (page 9) in order of  
appearance on **OPTIONS** list

### SPECIFICATIONS

#### General

Available Measurement Ranges .....	See Table 4, Page 8
Sensing Device .....	Precision Potentiometer
Connector .....	MS3102E-14S-6P
Mating Connector (included) .....	MS3106E-14S-6S

#### Performance

Linearity	
2", 3", 4" & 5" Ranges .....	±0.30% Full Scale
10", 15", 20" & 25" Ranges .....	±0.20% Full Scale
All other ranges .....	±0.15% Full Scale
Repeatability .....	±0.015% Full Scale
Resolution .....	Essentially Infinite

#### Electrical

Output .....	0 to 5 VDC adjustable to 10 VDC
Excitation Voltage .....	11 to 35 VDC
Excitation Current .....	40 mA max.
Output Impedance .....	10Ω max.
Output Load .....	5KΩ min.
Insulation resistance .....	100 megohms min. at 100 VDC
Zero Adjustment Range .....	0 to 30% of Range
Span <sup>2</sup> Adjustment Range .....	80% to 100% of Range
Protection .....	Reversed Polarity

#### Environmental

Operating temperature .....	0°C to 55°C
Storage Temperature .....	-40° to 70°C
Operating humidity .....	100%
Vibration .....	15 G's 0.1 ms max.
Shock .....	50 G's 0.1 ms max.
Ingress Protection	
Exclusive of Wire Rope Area .....	NEMA 4 (IP-65)
Optional Ingress Protection .....	NEMA 6 (IP-68)

# HX-P1010 SERIES

**UniMeasure**

## ±10VDC OUTPUT (Adjustable to ±5 VDC)

The UniMeasure HX-P1010 series position transducer provides an output voltage from -10 VDC to +10 VDC with adjustability to -5 VDC to +5 VDC. The zero position may be set within 10% to 90% of the total range of the transducer. The output voltage will be positive when the cable is extending from the zero position and negative when retracting from the zero position. The span may be adjusted to the maximum output voltage within 50% to 100% of the longest possible travel from the zero position, whether positive or negative.

A dual voltage input (+15 VDC, -15 VDC and COMMON) is required but optional single excitation voltages of +5, +12, +15, or +24 VDC are available. With optional single input voltages, the power supply ground is isolated from the output common.

**(SPECIFICATIONS)**

**General**

- Available Measurement Ranges ..... See Table 4, Page 8
- Connector ..... MS3102E-14S-6P
- Mating Connector (included) ..... MS3106E-14S-6S

**Performance**

- Linearity
  - 2", 3", 4" & 5" Ranges ..... ±0.30% Full Scale
  - 10", 15", 20" & 25" Ranges ..... ±0.20% Full Scale
  - All other ranges ..... ±0.15% Full Scale
- Repeatability ..... ±0.015% Full Scale
- Resolution ..... Essentially Infinite

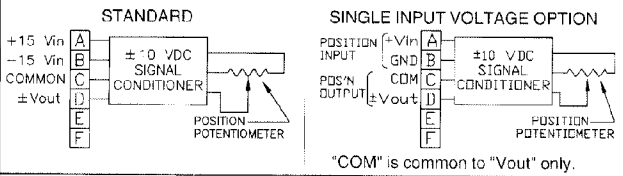
**Electrical**

- Output ..... -10 VDC to +10 VDC
- Excitation Voltage ..... +15 VDC ±10%, -15 VDC ±10%
- Input Current ..... 25 mA max.
- Output Impedance ..... 1.0Ω max.
- Output Load ..... 5KΩ min.
- Capacitive Load ..... 1000 pF
- Zero Adjustment Range ..... 10% to 90% of Range
- Span Adjustment Range ..... 50% to 100% of Longest Possible Travel from Zero Position
- Protection ..... Reversed Polarity
- Temperature Stability ..... 0.02%/°C of Span

**Environmental**

- Operating temperature ..... 0°C to +70°C
- Storage Temperature ..... -40°C to +85°C
- Operating humidity ..... 100%
- Vibration ..... 15 G's 0.1 ms max.
- Shock ..... 50 G's 0.1 ms max.
- Ingress Protection
  - Exclusive of Wire Rope Area ..... NEMA 4 (IP-65)
  - Optional Ingress Protection ..... NEMA 6 (IP-68)

**CONNECTION DIAGRAM**



**MODEL NUMBER CONFIGURATION**  
**HX-P1010- - -**

**Measurement Range Designator**  
from standard ranges shown in Table 4, page 8

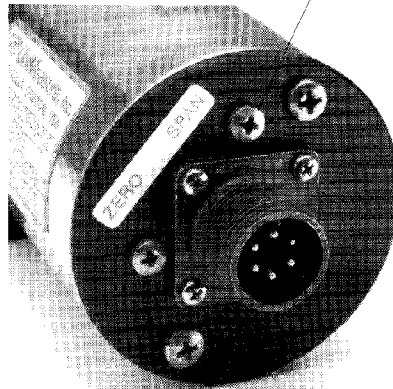
Optional Single Input Voltage from Table 1  
(Omit for standard input configuration)

Option designators from **OPTIONS** list (page 9) in order of appearance on **OPTIONS** list

**TABLE 1 ----- OPTIONAL SINGLE INPUT VOLTAGES**

Option Designator	Input Voltage	Input Current (mA max.)
SI5	+5	150
SI12	+12	65
SI15	+15	50
SI24	+24	32

SELF-SEALING SCREW



On models with zero and span controls (HX-PB, IIX-P420, HX-P510, HX-P1010), access to zero and span adjustments is accomplished by removing o-ring sealing screws.

# HX-EP SERIES



## DIGITAL OUTPUT

Utilizing an incremental encoder as the sensor, the UniMeasure HX-EP series position transducer provides a two channel square wave current sinking output signal in quadrature. The standard output is a single-ended TTL compatible square wave with 2KΩ pullup resistors provided internally. The resolution values shown in the specifications table indicate resolution for times 1 counting mode where a count is registered for one up transition in channel A. With interface electronics capable of times 2 or times 4 counting mode, a true resolutional increase of 2 or 4 may be obtained. For example, the HX-EP-50 has a resolution of approximately .004" per count in times 1 counting mode whereas the resolution is approximately .001" per count in times 4 counting mode.

The actual resolution of a HX-EP transducer differs from unit to unit because of tolerances associated with the wire rope diameter and the capstan upon which the wire rope winds. The nylon jacketed wire rope option will have the effect of slightly reducing the resolution. Linearity and repeatability remain independent of resolution. In applications where the output count is interpreted as a percentage of total travel, resolutional differences from unit to unit are not critical. However, in applications where the digital output is to be interfaced to a digital display to give an output in engineering units, the calibration constant supplied with the transducer may be used to calculate a suitable scale multiplier to produce the correct engineering units.

Alternative outputs shown in the "Optional Outputs" table below are available to facilitate interfacing to a variety of different types of equipment.

**SPECIFICATIONS**

**General**

Available Measurement Ranges ..... See Table 4, Page 8  
 Connector ..... MS3102E-14S-6P  
 Mating Connector (included) ..... MS3106E-14S-6S

**Performance**

Linearity ..... ±0.03% Full Scale  
 Repeatability ..... ±0.015% Full Scale  
 Resolution ..... See Table Below

**Electrical**

Input Voltage ..... +5 VDC ±5%  
 Input Current ..... 125 mA Maximum  
 Output ..... Current sinking (20 mA max.) two channel single-ended TTL square wave from LM339 open collector output stage. 2 KΩ internal pullup resistors provided.  
 Phase Quadrature ..... 90°±20°

**Environmental**

Operating temperature ..... 0°C to 70°C  
 Storage temperature ..... -25°C to 90°C  
 Shock ..... 50 G's for 11 ms Duration  
 Vibration ..... 20 Hz to 2000 Hz @ 5G's  
 Humidity ..... 100%  
 Ingress Protection  
 Exclusive of Wire Rope Area ..... NEMA 4 (IP-65)  
 Optional Ingress Protection ..... NEMA 6 (IP-68)

**TABLE 2 RESOLUTION**

MODEL	RANGE		RESOLUTION <sup>1</sup>		TOLERANCE <sup>1</sup> ON RESOLUTION
	(inch)	(mm)	(counts/inch)	(counts/mm)	
HX-EP-10	10	250	500.0	19.69	±0.30%
HX-EP-25	25	640	250.0	9.84	±0.20%
HX-EP-50	50	1250	250.0	9.84	±0.20%
HX-EP-60	60	1.5 m	205.8	8.10	±0.20%
HX-EP-80	80	2.0 m	155.2	6.11	±0.20%
HX-EP-100	100	2.5 m	82.9	3.26	±0.20%
ALL RANGES GREATER THAN 100 <sup>1</sup>	100	2.5 m	82.9	3.26	+0.20%

1. The resolution shown is a calculated number based upon the capstan diameter, wire rope diameter and line count of the encoding device. The tolerance on the resolution accounts for resolutional differences from unit to unit due to manufacturing tolerances on the capstan and wire rope. In practice, the output count in a given unit of travel is an integer.

**MODEL NUMBER CONFIGURATION**  
**HX-EP- - -**

Measurement Range Designator from standard ranges shown in Table 4, page 8  
 Output Option (Omit for standard output) Use option designator from column A in "Optional Outputs" table below  
 Option designators from OPTIONS list (page 9) in order of appearance on OPTIONS list

**A Optional Outputs**

"I"	<b>Index Channel</b> Adds index (Z) channel. Index is triggered within the first 0.25" (6 mm) of extension of the wire rope. Triggers repeatedly for each complete rotation of the internal capstan. See STANDARD OUTPUT box for output stage, waveform and connector wiring.
"H1"	<b>8 to 28 VDC Current Sinking</b> 35 mA current sinking output with 10KΩ internal pullup resistors 8 to 28 VDC input voltage
"H2"	<b>5 VDC TTL Differential Line Drive Current Sinking</b> Line driver output. 35 mA current sinking capability with 2KΩ internal pullup resistors. 5 VDC input voltage
"H3"	<b>8 to 28 VDC Differential Line Drive Current Sinking</b> Line driver output. 35 mA current sinking with 10KΩ internal pullup resistors. 8 to 28 VDC input voltage
"H5"	<b>5 VDC Push-Pull</b> Push-Pull circuit with 20 mA current sourcing and 20 mA current sinking capability. +5 VDC input voltage

**STANDARD OUTPUT**

**WAVEFORM**  
 A, B, Z channels showing square wave signals in quadrature.

**CONNECTOR WIRING**  
 A +Vin  
 B COMMON  
 C CHANNEL A  
 D CHANNEL B  
 E CHANNEL Z  
 F N.C.

With "I" option only  
 Quadrature ..... 90°±20°  
 Symmetry ..... 180°±10°

**WAVEFORM**  
 A, B channels showing square wave signals.

**CONNECTOR WIRING**  
 A +Vin  
 B COMMON  
 C CHANNEL A  
 D CHANNEL B  
 E N.C.  
 F N.C.

# HX-V SERIES



## VELOCITY OUTPUT

The UniMeasure HX-V series linear velocity transducer incorporates a self-generating tachometer which eliminates the need for any external power supply. Extra long brush life, excellent stability and a wide operating temperature range make the V series transducer highly reliable for long term service.

**TABLE 3 ----- VELOCITY OUTPUT**

MEASUREMENT RANGE DESIGNATOR	RANGE		VELOCITY OUTPUT	
	(in)	(mm)	(mV per 100 in/min)	(mV per rev/min)
2, 10	10	250	333	131
3, 15, 30	15	390	227	89
4, 20, 40	20	500	171	67
5, 25, 50	25	640	137	54
60	60	1500	115	45
80	80	2000	87	34
100	100	2500	300	118
ALL RANGES GREATER THAN 100*	100	2500	300	118

**SPECIFICATIONS**

**General**

- Available Measurement Ranges ..... See Table 4, Page 8
- Connector ..... MS3102E-14S-6P
- Mating Connector (included) ..... MS3106E-14S-6S

**Electrical**

- Output ..... See Table
- Linearity ..... ±0.10% F.S. within 25 Volt output
- Ripple ..... 3% Max.
- Input ..... None Required; Self Generating
- Output Impedance ..... 350Ω
- Thermal Effects ..... 0.01% Max. per Degree C through Range -20°C to 75°C

**Environmental**

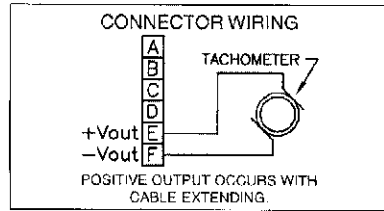
- Operating temperature ..... -20°C to 95°C
- Storage Temperature ..... -55° to 100°C
- Operating humidity ..... 100%
- Vibration ..... 10G's to 2KHz
- Shock ..... 50 G's 0.1 ms Max.
- Ingress Protection
  - Exclusive of Wire Rope Area .... NEMA 4 (IP-65)
  - Optional Ingress Protection ..... NEMA 6 (IP-68)

**MODEL NUMBER CONFIGURATION**

**HX-V- - - -**

Measurement Range Designator  
From standard ranges shown in  
Table 4, page 8

Option designators from  
**OPTIONS** list (page 9) in order of  
appearance on **OPTIONS** list



# HX-VPA SERIES

## VELOCITY-POSITION OUTPUT

The UniMeasure HX-VPA series combines a self-generating tachometer and a precision potentiometer to give an output of both velocity and analog position. Standard position output is ratiometric voltage. Optionally available position outputs include ratiometric voltage from a bridge circuit, 4 to 20 mA, 0 to 10 VDC, and ±10 VDC. See HX-PB, HX-P420, HX-P510 and HX-P1010 data sheets for electrical specifications.

**SPECIFICATIONS**

**General**

- Available Measurement Ranges ..... See Table 4, Page 8
- Connector ..... MS3102A-14S-6P
- Mating Connector (included) ..... MS3106E-14S-6S

**Performance**

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

**Electrical (Position)**

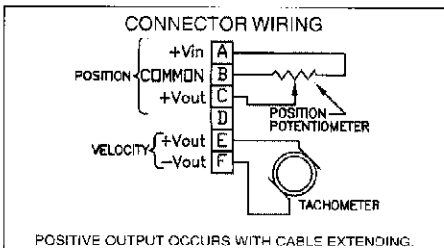
- Input Impedance ("A" Circuit) ..... 1000Ω ±10%
- Output Impedance ("A" Circuit) ..... 0 to 1000Ω
- Excitation Voltage ..... 25 Volts Max. AC or DC
- Nominal Output Voltage .....  $\frac{990}{\text{Range in Inches}}$  mV/V/inch  
(Use total measurement range in calculation)  $\frac{990}{\text{Range in mm}}$  mV/V/mm

**Electrical (Velocity)**

- Output ..... See Table 3, above
- Linearity ..... ±0.10% F.S. within 25 Volt Output
- Ripple ..... 3% Max.
- Output Impedance ..... 350Ω

**Environmental**

- Thermal Coeff't of potentiometer .... ±100 PPM/°C max.
- Operating temperature ..... -20°C to 95°C
- Operating humidity ..... 100%
- Vibration ..... 15 G's 0.1 ms max.
- Shock ..... 50 G's 0.1 ms max.
- Ingress Protection
  - Exclusive of Wire Rope Area .... NEMA 4 (IP-65)
  - Optional Ingress Protection ..... NEMA 6 (IP-68)



**MODEL NUMBER CONFIGURATION**

**HX-VPA- - - -**

For optional output, replace  
VPA with: VPB  
VP420  
VP510  
VP1010

Option designators from  
**OPTIONS** list (page 9) in order of  
appearance on **OPTIONS** list

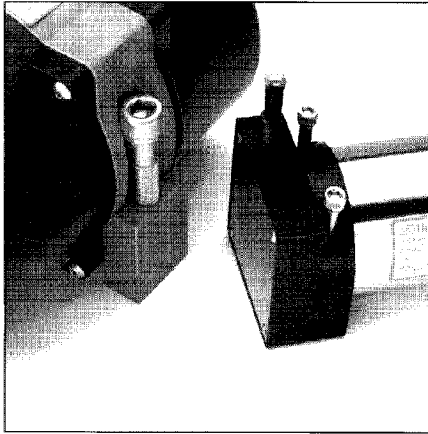
Measurement Range Designator  
from standard ranges shown in  
Table 4, page 8

**HX**

**UniMeasure**

**MECHANICAL SPECIFICATIONS**

**SPECIFICATIONS**



Typical HX mounting bolts.

**Mechanical Specifications**

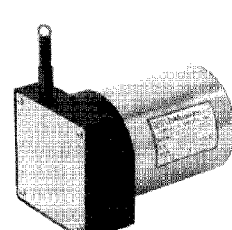
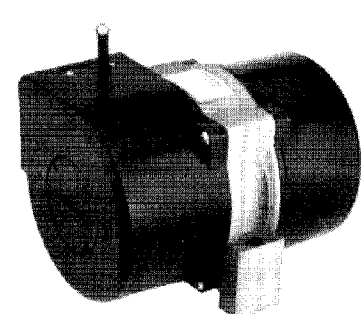
- Available Measurement Ranges ..... See Table 4
- Construction
  - Ranges 80" (2 m) and under ..... Anodized Aluminum Mounting Base, Stainless Steel & Anodized Aluminum Housing
  - Ranges 100" (2.5 m) and greater ..... Stainless Steel Mounting Base High Impact, Corrosion Resistant Polyurethane Housings
- Wire Rope Tension ..... See Table 4
- Wire Rope Diameter ..... See Table 4
- Weight ..... See Table 4
- Connector ..... MS3102A-14S-6P
- Mating Connector (included) ..... MS3106E-14S-6S
- Optional NEMA 6 Capability ..... Bulkhead fitting with 8' (2.5 m) of shielded, twisted pair cable

**When configuring model number:**

Use value from this column to indicate overall measurement range

Check mark indicates available measurement range

**TABLE 4**

MEASUREMENT RANGE DESIGNATOR	STANDARD MEASUREMENT RANGES		APPLICABLE SERIES			WIRE ROPE TENSION (NOMINAL)		WIRE ROPE DIAMETER		WEIGHT		DIMENSIONAL INFORMATION
	(in)	(mm)	HX-PA HX-PB HX-P420 HX-PS10 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	 See Fig. 1, Page 10 for Dimensional Information
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	 See Fig. 2, Page 10 for Dimensional Information
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	

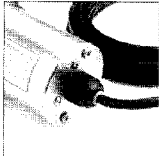
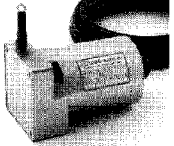
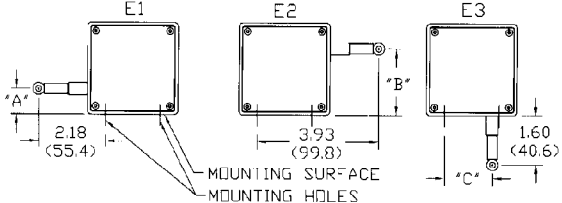
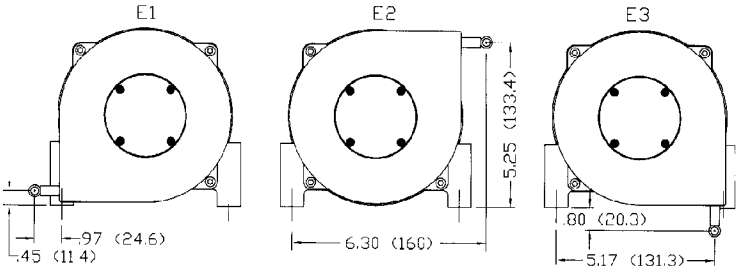
Specifications subject to change without notice.



**HX**

**UniMeasure**

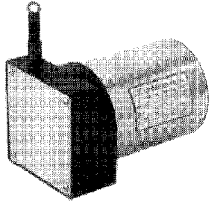
**OPTIONS**

OPTION	OPTION DESIGNATOR	DESCRIPTION																												
Nylon jacketed wire rope (Ranges to 80")	<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 400" 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>	 <p>Connector is replaced with a bulkhead fitting and 8' (2.4 m) of urethane jacketed, shielded, twisted pair cable. Retraction mechanism and electrical components are sealed to NEMA 6, IP-68 capability.</p>																												
Stainless steel construction (Ranges to 80" only)	<b>SS</b>	<p>All anodized aluminum parts on transducer housing are replaced with stainless steel. Transducer is sealed to NEMA 6, IP-68 capability. Eight feet (2.4 m) of urethane jacketed, shielded, twisted pair cable exits unit. No connector.</p> 																												
Non-standard potentiometer (Applies to HX-PA only)	<b>PXK</b>	<p>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.</p>																												
Alternate wire rope exit Measurement ranges to 80" (2.0 m)	<b>E1, E2, E3</b> Specify from orientation shown.	 <table border="1" data-bbox="601 1431 1061 1638"> <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>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)
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Alternate wire rope exit Measurement ranges 100" (2.5 m) and greater.	<b>E1, E2, E3</b> Specify from orientation shown.	 <p>Dimensions in brackets are millimeters.</p>																												

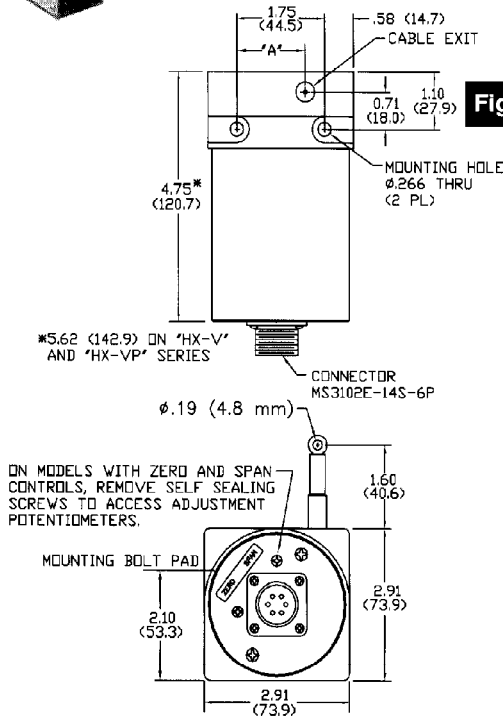
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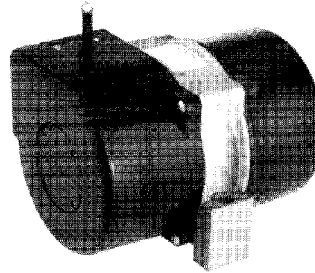
**DIMENSIONAL INFORMATION**



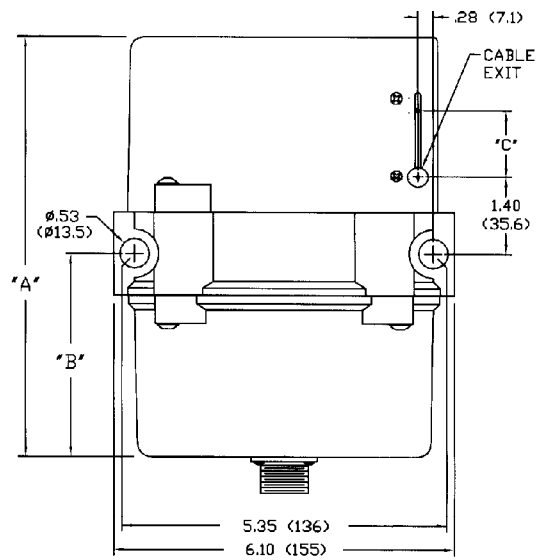
**Measurement Ranges to 80" (2 m)**



**Fig. 1**



**Measurement Ranges 100" (2.5 m) and greater**



**Fig. 2**

**Notes**

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

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)

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)

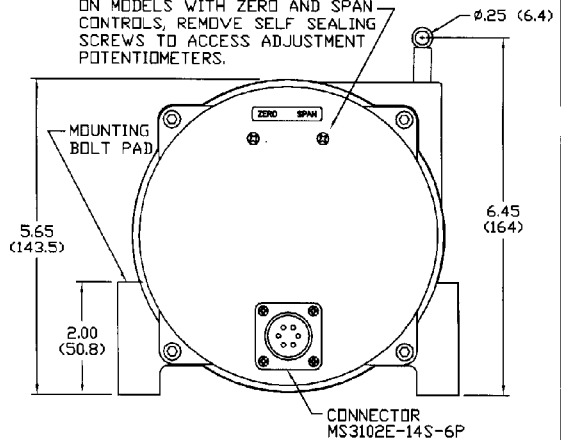
**Notes**

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 x E where E = extension in inches.

For "C" in millimeters, C = .0016 x E where E = extension in mm.

ON MODELS WITH ZERO AND SPAN CONTROLS, REMOVE SELF SEALING SCREWS TO ACCESS ADJUSTMENT POTENTIOMETERS.



**Dimensions in brackets are millimeters.**

Specifications subject to change without notice.