HX-P510 SERIES

0 to 5, 0 to 10, \pm 5, \pm 10 VDC ANALOG OUTPUT

The UniMeasure HX-P510 Series transducer offers a voltage output with wide adjustability to give a 0 to 5, 0 to 10, ±5 or ±10 VDC output. The device may be powered with an unregulated voltage in the range of 4.9 to 30 VDC. Zero and span adjustment potentiometers are readily accessible. With the zero position set anywhere within the first 30% of total travel, the span may be adjusted to give a full 0 to 5 or 0 to 10 VDC output with the span set anywhere within the last 20% of travel. Alternatively, the zero position may be set anywhere between 10% and 90% of full travel to give an output of ±5 or ±10 VDC with the span set between 50% to 100% of the longest travel from the zero position.



SPECIFICATIONS

GENERAL

Available Measurement Ranges See Supplemental Data^[1], Table 12 Sensing Device.....Precision Potentiometer Connector......MS3102E-14S-6P Mating Connector (included)MS3106E-14S-6S

PERFORMANCE

Linearity

2", 3", 4", 5" & 6"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

ENVIRONMENTAL

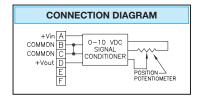
Operating temperature-40°C to +85°C Storage Temperature-55° to +100°C Operating humidity100% Vibration15 G's 0.1 ms max. **INGRESS PROTECTION (**Exclusive of Wire Rope Area) Standard.....IP-65 (NEMA 4) OptionalIP-68 (NEMA 6)

FOOTNOTES TO SPECIFICATIONS

1. Supplemental Data section located at end of HX Series pages.

ELECTRICAL

Output	0 to 5 or 10 VDC, ±5 or ±10 VDC				
Excitation Voltage					
Excitation Current	25 mA max.				
Output Impedance	10Ω max.				
Output Load	5KΩ min.				
ADJUSTMENT RANGE-0 to 5 or 0 to 10 VDC					
Zero	0 to 30% of Range				
Span	80% to 100% of Range				
ADJUSTMENT RANGE-±5 or ±10 VDC					
Zero	10% to 90% of Range				
Span	50% to 100% of Longest Possible				
Travel from Zero Position					
Protection	Reversed Polarity				
Temperature Stability	0.02%/°C of Span				



MODEL NUMBER CONFIGURATION

HX-P510-















BASIC CONFIGURATION

(FOR ALL RANGES)

HX-P510-50-S10-N0S-1BC

0 RANGE Select Measurement Range From

Supplemental Da**Table 12e 12** (next page), Insert Corresponding Measurement Range Designator

WIRE ROPE

S..... Stainless Steel (See Supplemental Data, Table 12) N Ø.018 (0,45 mm) Nylon Jacketed Stainless Steel Ranges to 80" (2m) only. (formerly NJC) Ø.037 (0.94 mm) Nylon Jacketed Stainless Steel Ranges 100" (2.5m) to 500" (12.7m) only.

2 WIRE ROPE TENSION 1..... Standard

2...... Reduced (Ranges to 80" only)

3 WIRE ROPE EXIT DIRECTION Use Number designators shown RANGES TO 80* (2000 mm)

..Required Designator .Required Designator **ELECTRICAL OUTPUT POLARITY**

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

NOTES FOR OPTION BOXES 7,8, and 9

IP-65(NEMA 4): Transducer equipped with body mounted connector and with or without mating connector. Mating connector with electrical cable available separately as part number 10119-xM where 'x' is length of electrical cable in meters.

IP-68(NEMA 6): Transducer equipped with bulkhead fitting and length of electrical cable. Remote end of electrical cable may be outfitted with water proof connector. Mating connector with electrical cable available separately as part number 10424-xM where 'x' is length of electrical cable in meters.

7 INGRESS PROTECTION

. IP-65 (NEMA 4) .IP-68 (NEMA 6)

. IP-68 (NEMA 6) Corrosion Resistant Construction

IP-65-NEMA 4 CONNECTOR

.... 6 Pin 3102E Body Mounted Connector **IP-68-NEMA 6 ELECTRICAL CABLE**

.. Bulkhead Fitting w/ 0.3m (12") Electrical Cable

. Bulkhead Fitting w/ 3m (10') Electrical Cable

..... Bulkhead Fitting w/ 4m (13.5') Electrical Cable

. Bulkhead Fitting w/ 5m (16.5') Electrical Cable

...... Bulkhead Fitting w/ 6m (20') Electrical Cable

... Bulkhead Fitting w/ 7m (23') Electrical Cable

IP-65-NEMA 4 MATING CONNECTOR

C.....IP-65 Mating Connector Included

... IP-65 Mating Connector Omitted* *Electrical cable with mating connector may be ordered

separately as part number 10119-xM where 'x' is the length required in meters.

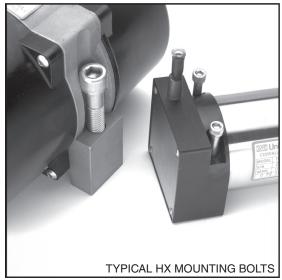
IP-68-NEMA 6 CABLE MOUNTED CONNECTOR

....No connector on end of electrical cable

IP-68 Cable to cable connector with **NO** mating connector**

**Electrical cable with mating connector may be ordered separately as part number 10424-xM where 'x' is the length required in meters. Mating connector alone unavailable

MECHANICAL SPECIFICATIONS



AVAILABLE MEASUREMENT RANGES See Table 12 CONSTRUCTION

Ranges 100" (2.5 m) and greater Stainless Steel Mounting Base

High Impact, Corrosion Resistant

Thermoplastic Housings

 Connector
 MS3102A-14S-6P

 Mating Connector
 MS3106E-14S-6S

Optional NEMA 6 Capability...... Bulkhead fitting with shielded twisted pair cable

Life[1]

 Ranges 2" to 6"
 5,000,000 full stroke cycles

 Ranges 10" to 25"
 500,000 full stroke cycles

 Ranges 30" to 400"
 250,000 full stroke cycles

 Ranges 500" to 2000"
 200x10⁶ lineal inches

NOTES

With 1K ohm potentiometer, wire rope misalignment 2° maximum at full stroke, relatively dust free environment, nylon jacketed wire rope on units with ranges 80° and less.

Use value from this column to indicate overall measurement range

Check mark indicates available measurement range

TABLE 12

Product Photo

	STANDARD		APPLICABLE SERIES		WIDE DODE		WIDE DODE		TRANSPUSER		
MEASUREMENT RANGE DESIGNATOR	MEASU RAN	REMENT NGES	HX-PA HX-PB HX-P420 HX-P510	нх-ер	HX-V HX-VP	WIRE ROPE TENSION (NOMINAL)		WIRE ROPE DIAMETER		TRANSDUCER WEIGHT	
	(in)	(mm)				(oz)	(N)	(in)	(mm)	(lb)	(Kg)
2	2	50	V	-	V	34	9.4	.016	0.4	2	0.9
3	3	75	~	-	V	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	~	V	~	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	~	1	~	36	10.0	.024	0.6	6.8	3.1
400	400	10.0m	~	1	~	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	~	~	1	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	V	1	-	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



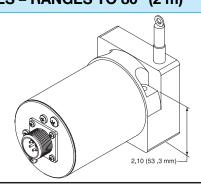
OPTION DESCRIPTIONS

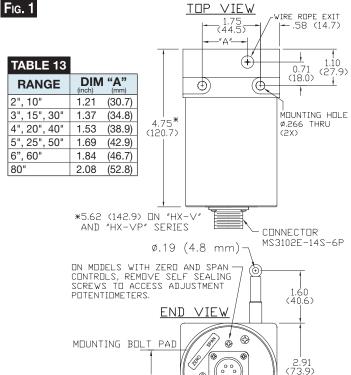
OPTION	OPTION DESIGNATOR	DESCRIPTION
NYLON JACKETED WIRE ROPE RANGES TO 80" ONLY	N	Replaces standard stainless steel wire rope with Ø.018 nylon jacketed wire rope. This option increases wire rope life dramatically but may increase non-linearity by as much as ±.05% of full scale.
NYLON JACKETED WIRE ROPE RANGES 100" TO 500" ONLY	J	Replaces standard stainless steel wire rope with Ø.037 nylon jacketed wire rope.
ALTERNATE WIRE ROPE EXIT [RANGES TO 80" (2.0 m)	1, 2, 3	1 2 3 Control Control
ALTERNATE WIRE ROPE EXIT RANGES 100" (2.5 m) and GREATER	1, 2, 3	1 2 3
NON-STANDARD POTENTIOMETER APPLIES TO HX-PA & HX-VPA ONLY	3, 4	Non-standard potentiometer linearity is as follows: RANGE LINEARITY 5" and Below ±1.00% of full scale 10" to 25" ±0.50% of full scale 30" and above ±0.25% of full scale Note: This option is subject to potentiometer availability.
REVERSED OUTPUT	R	Output is at a maximum when wire rope is fully retracted. Output decreases as wire rope is extended. Does not apply to velocity signal.
IP-68, (NEMA 6) CAPABILITY	2	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 IP-68, (NEMA 6) capability.
CORROSION RESISTANT CONSTRUCTION	3	All external anodized aluminum parts of transducer are replaced with stainless steel and corrosion resistant plastic. Transducer is sealed to IP-68 (NEMA 6) capability. Urethane jacketed, shielded, twisted pair cable exits unit. No connector on unit.



DIMENSIONAL INFORMATION

HX SERIES - RANGES TO 80" (2 m)





Transducer mounts with Ø.25 or M6 Socket head cap bolts.

Dimensions in brackets are millimeters

(73.9) MOUNTING SURFACE

TABLE 14

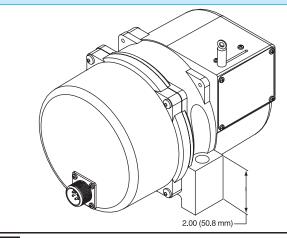
RANGE	DIM (inch)	" A" (mm)	DIM (inch)	"B" (mm)
Ranges to 800"	7.70	(196)	3.80	(97)
1000" to 2000"	11.0	(280)	5.60	(142)

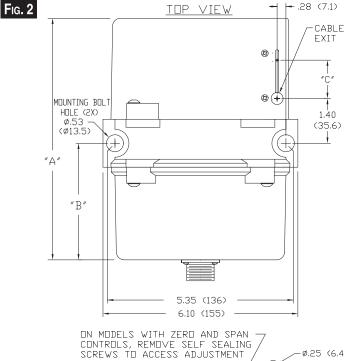
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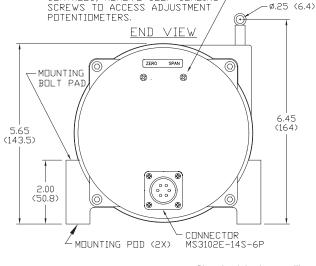
- 1. Transducer mounts with Ø.50 or M12 socket head cap bolts.
- 2. Dimension "C" is the cable offset that occurs as the cable is extended from the transducer. For "C" in inches, C = .0016 x E where E = extension in inches. For "C" in millimeters, C = .0016 x E where E = extension in mm.

2.10 (53.3)

HX SERIES - RANGES GREATER THAN 80" (2 m)







Dimensions in brackets are millimeter