

Draw Wire Sensor



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Series HX


Key-Features:

- Measurement ranges up to 50.8 m
- Distance measurement and Tachometer
- Intrinsically safe model (UL, CSA certified)
- Linearity up to ± 0.1 % of full scale
- Analog, TTL or speed output
- 2 designs, depending on the full scale
- Easy installation
- Stainless steel wire
- Working temperature max. $-20^{\circ}\text{C} \dots +95^{\circ}\text{C}$
- Protection class IP68

OVERVIEW TECHNICAL DATA

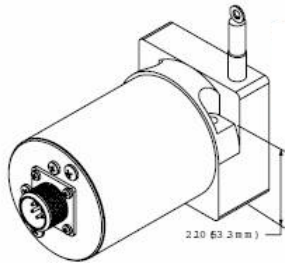
Model	HX-PA	HX-P420	HX-P510	HX-EP	HX-V	HX-VP
Measurement Range	50 mm to 50.8 m (see table below)					
Output signal	Potentiometer 1 k Ω ($\pm 10\%$)	4...20 mA	0...5V, 0...10 V	TTL signal see page 5	speed see page 5	speed + Potentiometer
Linearity	up to 150 mm MR: $\pm 0.3\%$ 250...640 mm: $\pm 0.2\%$ FS > 640mm: $\pm 0.15\%$	up to 150 mm MR: $\pm 0.3\%$ 250...640 mm: $\pm 0.2\%$ FS > 640mm: $\pm 0.15\%$	up to 150 mm MR: $\pm 0.3\%$ 250...640 mm: $\pm 0.2\%$ FS > 640mm: $\pm 0.15\%$	independent of measurement range $\pm 0.03\%$	within $\pm 0.1\%$ of the output signal	up to 125 mm MR: $\pm 0.25\%$ 250...640 mm: $\pm 0.15\%$ FS > 640mm: $\pm 0.1\%$
Repeatability	$\pm 0.015\%$	$\pm 0.015\%$	$\pm 0.015\%$	$\pm 0.015\%$	-	$\pm 0.015\%$
Resolution	depending on the quality of the power supply, theoretically infinite *			see page 5	-	see *
Working temperature	-20°C...95°C	-20°C...95°C	-20°C...85°C	-20°C...80°C	-20°C...95°C	-20°C...95°C
Protection class	IP65, (opt. IP68)	IP65, (opt. IP68)	IP65, (opt. IP68)	IP65, (opt. IP68)	IP65, (opt. IP68)	IP65, (opt. IP68)
Shock	50 G at 0.1 ms max.			50 G, 11 ms max.	50 G at 0.1 ms max.	
Vibration	10...2000 Hz, 15 G max.		15 G, 0.1 ms max	20...2000 Hz, 5 G	10 G up to 2 kHz	15 G, 0.1 ms max
Humidity	100%					
Power supply	up to 30 V (AC, DC)	9...35 VDC	4,9...30 VDC	5 VDC, 8...28 VDC	-	up to 25 V (AC, DC)

OVERVIEW TECHNICAL DATA

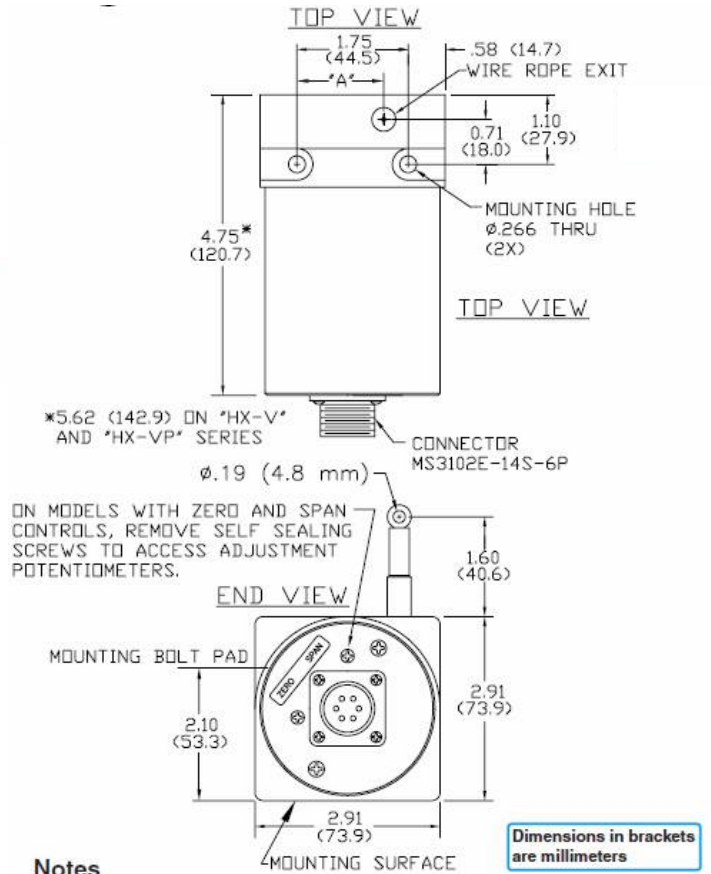
Order Code	Measurement Range FS	Available for series			Wire rope tension	Wire rope diameter	Sensor weight	Housing	Lifespan (full cycles)
		-PA, -P420, -P510	-EP	-V, -VP					
2	50 mm	X		X	9.4 N	0.4 mm	0.9 kg		5 million
3	75 mm	X		X	6.7 N	0.4 mm	0.9 kg		5 million
4	100 mm	X		X	6.7 N	0.4 mm	0.9 kg		5 million
5	125 mm	X		X	5.3 N	0.4 mm	0.9 kg		5 million
6	150 mm	X		X	6.7 N	0.4 mm	0.9 kg		5 million
10	250 mm	X	X	X	9.4 N	0.4 mm	0.9 kg		500000
15	390 mm	X		X	6.7 N	0.4 mm	0.9 kg		500000
20	500 mm	X		X	6.7 N	0.4 mm	0.9 kg		500000
25	640 mm	X	X	X	5.3 N	0.4 mm	0.9 kg		500000
30	750 mm	X		X	6.7 N	0.4 mm	0.9 kg		250000
40	1000 mm	X		X	6.7 N	0.4 mm	0.9 kg		250000
50	1250 mm	X	X	X	5.3 N	0.4 mm	0.9 kg		250000
60	1500 mm	X	X	X	6.7 N	0.4 mm	0.9 kg		250000
80	2000 mm	X	X	X	5.8 N	0.4 mm	0.9 kg		250000
100	2.5 m	X	X	X	10.0 N	0.6 mm	3.1 kg		250000
120	3.0 m	X	X	X	10.0 N	0.6 mm	3.1 kg		250000
150	3.8 m	X	X	X	10.0 N	0.6 mm	3.1 kg		250000
200	5.0 m	X	X	X	10.0 N	0.6 mm	3.1 kg	250000	
250	6.3 m	X	X	X	10.0 N	0.6 mm	3.1 kg	250000	
300	7.5 m	X	X	X	10.0 N	0.6 mm	3.1 kg	250000	
350	8.8 m	X	X	X	10.0 N	0.6 mm	3.1 kg	250000	
400	10.0 m	X	X	X	10.0 N	0.6 mm	3.1 kg	250000	
500	12.7 m	X	X	X	10.0 N	0.6 mm	3.9 kg	5 million meter	
600	15.2 m	X	X	X	10.0 N	0.6 mm	3.9 kg	5 million meter	
800	20.3 m	X	X	X	10.0 N	0.6 mm	3.9 kg	5 million meter	
1000	25.4 m	X	X		10.0 N	0.6 mm	5.4 kg	5 million meter	
1200	30.4 m	X	X		10.0 N	0.6 mm	5.6 kg	5 million meter	
1600	40.6 m	X	X		10.0 N	0.6 mm	6.4 kg	5 million meter	
1800	45.7 m	X	X		10.0 N	0.6 mm	7.2 kg	5 million meter	
2000	50.8 m	X	X		10.0 N	0.5 mm	7.4 kg	5 million meter	

TECHNICAL DRAWING HX SERIES

HX up to 2 m measurement range

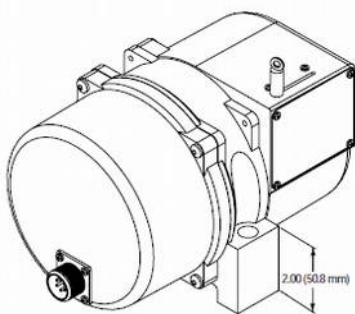


Measurement range [mm]	A [mm]
50 / 205	30.7
75 / 390 / 750	34.8
100 / 500 / 1000	38.9
125 / 640 / 1250	42.9
1500	46.7
2000	52.8

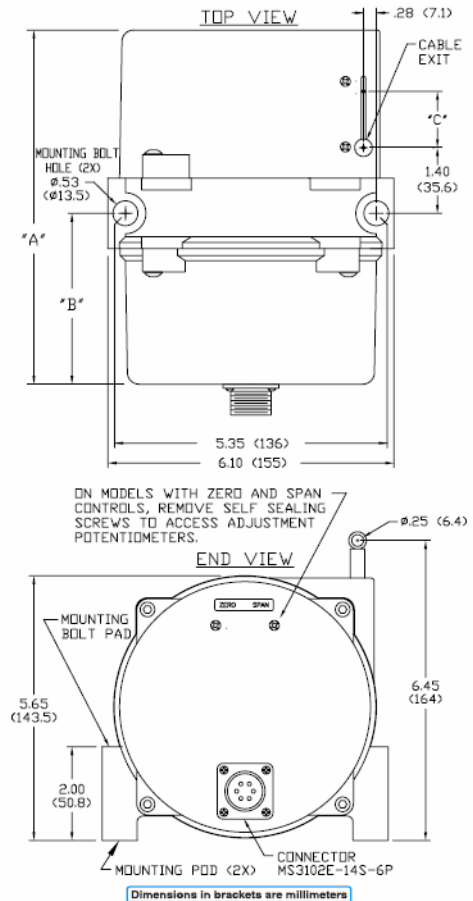


Notes
1. Transducer mounts with Ø.25 or M6 socket head cap bolts.

HX measurement range greater than 2 m

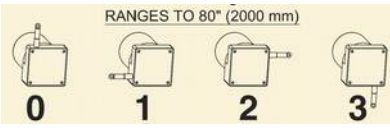
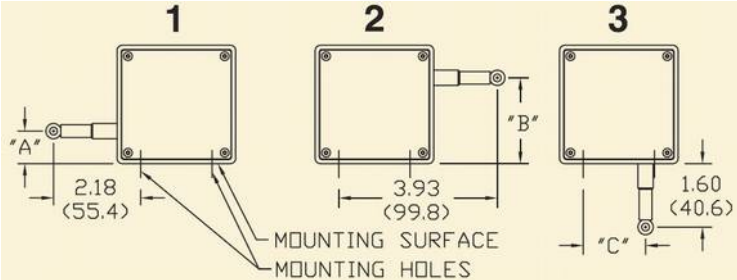
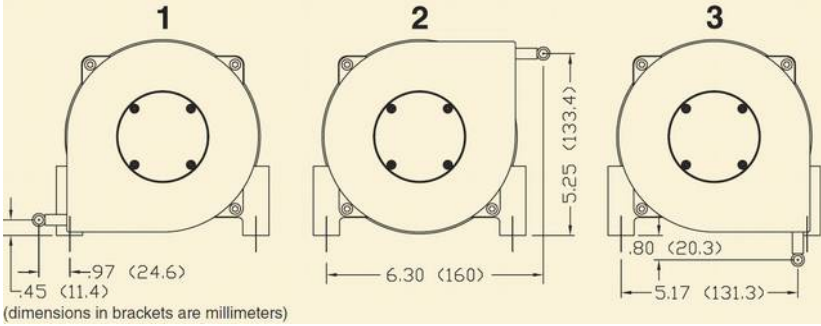


Measurement range [m]	A [mm]	B [mm]
bis 20.3	196.0	97.0
25.4 bis 50.8	280.0	142.0



Dimension "C" is the cable offset that occurs as the cable is extended from the transducer. For "C" in mm, $C = 0.0016 \times E$ where E = extension in mm.

OPTIONS HX SERIES

Option	Order Code	Description																												
Nylon jacketed wire rope (for ranges ≤2.0 m only)	N	Replaces standard stainless steel wire rope with Ø 0.46 mm nylon jacketed wire rope. This option increases wire life dramatically but may increase non-linearity by as much as ±0.05% of full scale.																												
Nylon jacketed wire rope (for ranges 2.5...12.7 m only)	J	Replaces standard stainless steel wire rope with Ø 0.94 mm nylon jacketed wire rope. This option increases wire life dramatically but may increase non-linearity by as much as ±0.05% of full scale.																												
Reversed output signal	R	Output is at maximum when wire rope is fully retracted. Output decreases as wire rope is extended. Does not apply to speed signal																												
Protection class IP68 (available cable lengths see below)	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 according to IP68. No connector!																												
Corrosion resistant construction + IP68 (available cable lengths see below)	3	All external anodised aluminium parts of sensor are replaced with stainless steel and corrosion resistant plastic. Sensor is sealed according to IP68. Urethane jacketed, shielded twisted pair cable exits unit. No connector!																												
Potentiometer with different resistance (for Series HX-PA only)	2, 3, 4	2: 2 kΩ, 3: 5 kΩ, 4: 10 kΩ (Standard resistance 1 kΩ). Non-standard potentiometer linearity: Range up to 125 mm: ±1.0 % / range up to 640 mm: ±0.5 % / range greater than 640 mm: ±0.25 %																												
Alternative wire rope exit (for ranges ≤2.0 m only)	1, 2, 3	<table border="1"> <thead> <tr> <th>Range</th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>50, 250 mm</td> <td>28.4 mm</td> <td>45.5 mm</td> <td>30.7 mm</td> </tr> <tr> <td>75, 390, 750 mm</td> <td>24.4 mm</td> <td>49.5 mm</td> <td>34.8 mm</td> </tr> <tr> <td>100, 500, 1000 mm</td> <td>20.3 mm</td> <td>53.6 mm</td> <td>38.9 mm</td> </tr> <tr> <td>125, 640, 1250 mm</td> <td>16.3 mm</td> <td>57.7 mm</td> <td>42.9 mm</td> </tr> <tr> <td>150, 1500 mm</td> <td>12.4 mm</td> <td>61.5 mm</td> <td>46.7 mm</td> </tr> <tr> <td>2000 mm</td> <td>6.4 mm</td> <td>67.6 mm</td> <td>52.8 mm</td> </tr> </tbody> </table>	Range	A	B	C	50, 250 mm	28.4 mm	45.5 mm	30.7 mm	75, 390, 750 mm	24.4 mm	49.5 mm	34.8 mm	100, 500, 1000 mm	20.3 mm	53.6 mm	38.9 mm	125, 640, 1250 mm	16.3 mm	57.7 mm	42.9 mm	150, 1500 mm	12.4 mm	61.5 mm	46.7 mm	2000 mm	6.4 mm	67.6 mm	52.8 mm
Range	A	B	C																											
50, 250 mm	28.4 mm	45.5 mm	30.7 mm																											
75, 390, 750 mm	24.4 mm	49.5 mm	34.8 mm																											
100, 500, 1000 mm	20.3 mm	53.6 mm	38.9 mm																											
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150, 1500 mm	12.4 mm	61.5 mm	46.7 mm																											
2000 mm	6.4 mm	67.6 mm	52.8 mm																											
																														
Alternative wire rope exit (for ranges 2.5 and greater only)	1, 2, 3																													
Cable output mandatory for IP68 protection class	P, 3, 4, 5, 6, 7	Standard: cable output, 0.3 m cable length, open ends 3 cable output, 3 m cable length, open ends 4 cable output, 4 m cable length, open ends 5 cable output, 5 m cable length, open ends 6 cable output, 6 m cable length, open ends 7 cable output, 7 m cable length, open ends																												
Reduced wire rope tension	2	for ranges ≤2.0 m only																												

DESCRIPTION HX-EP

Model	Range [mm]	Resolution [Pulses/mm]	Resolution * Tolerance
HX-EP-10	250	19.69	±0.30%
HX-EP-25	640	9.84	±0.20%
HX-EP-50	1250	9.84	±0.20%
HX-EP-60	1500	8.10	±0.20%
HX-EP-80	2000	6.11	±0.20%
HX-EP-100	2500	3.26	±0.20%
HX-EP-....	>2500	3.26	±0.20%

Utilising an incremental encoder as the sensor, the HX-EP series provides a two channel square wave current sinking output signal in quadrature. The standard output is a single-ended TTL compatible square. 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 A channel. With interface electronics capable of times 2 or times 4 counting mode, a true resolutional increase of 2 or 4 may be obtained.

The actual resolution of a HX-EP sensor 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 will have the effect of slightly reducing the resolution. Linearity and repeatability remain independent of resolution.

* The resolution shown is a calculated number based on the capstan diameter, the rope wire diameter and the line count of the encoding device.

OPTION	OUTPUT DESCRIPTION	OUTPUT STAGE	WAVEFORM	CONNECTOR WIRING																
10	5 VDC Current Sinking 5 VDC TTL compatible open collector current sinking output. Two channels with optional index channel available. 11 is same as Option 10 but adds the index (Z) channel.			<table border="1"> <tr><td>A</td><td>+Vin</td></tr> <tr><td>B</td><td>COMMON</td></tr> <tr><td>C</td><td>CHANNEL A</td></tr> <tr><td>D</td><td>CHANNEL B</td></tr> <tr><td>E</td><td>CHANNEL Z</td></tr> </table> Z information applies to 11 and 51 options only.	A	+Vin	B	COMMON	C	CHANNEL A	D	CHANNEL B	E	CHANNEL Z						
A	+Vin																			
B	COMMON																			
C	CHANNEL A																			
D	CHANNEL B																			
E	CHANNEL Z																			
50	8 to 28 VDC Current Sinking Current sinking output with 10KΩ internal pullup resistors 8 to 28 VDC input voltage. 51 is same as Option 50 but adds the index (Z) channel.		Z information applies to Options 11 and 51 only.																	
51																				
30	5 VDC Push-Pull Differential Line Drive Push-Pull, current sourcing and current sinking output. 5 VDC input voltage. Output is compliant with requirements of TIA/EIA-422-B. 31 is same as Option 30 but adds the index (Z) channel			<table border="1"> <tr><td>A</td><td>+Vin</td></tr> <tr><td>B</td><td>COMMON</td></tr> <tr><td>C</td><td>CHANNEL A</td></tr> <tr><td>D</td><td>CHANNEL A</td></tr> <tr><td>E</td><td>CHANNEL B</td></tr> <tr><td>F</td><td>CHANNEL B</td></tr> <tr><td>G</td><td>CHANNEL Z</td></tr> <tr><td>H</td><td>CHANNEL Z</td></tr> </table> Z & Z information applies to 31 and 71 options only.	A	+Vin	B	COMMON	C	CHANNEL A	D	CHANNEL A	E	CHANNEL B	F	CHANNEL B	G	CHANNEL Z	H	CHANNEL Z
A	+Vin																			
B	COMMON																			
C	CHANNEL A																			
D	CHANNEL A																			
E	CHANNEL B																			
F	CHANNEL B																			
G	CHANNEL Z																			
H	CHANNEL Z																			
31																				
70	8 to 28 VDC Push-Pull Differential Line Drive Push-Pull, current sourcing and current sinking output. 8 to 28 VDC input voltage. 71 is same as Option 70 but adds the index (Z) channel.		Z & Z information applies to Options 31 and 71 only.																	
71																				

DESCRIPTION HX-V

Range [mm]	Speed output [mV/cm/s]
50, 250	78.0
75, 390, 750	53.0
100, 500, 1000	40.0
125, 640, 1250	32.0
150, 1500	27.0
2000	20.0
2500 and greater	71.0

The HX-V series linear speed (velocity) sensor 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 sensors highly reliable for long time service.

CONNECTION CABLES FOR HX SENSORS

HX with IP65 (connector output)



Order code	Cable length	Mating connector
10119-3M	3 Meter	included
10119-4M	4 Meter	included
10119-5M	5 Meter	included
10119-6M	6 Meter	included
10119-7M	7 Meter	included

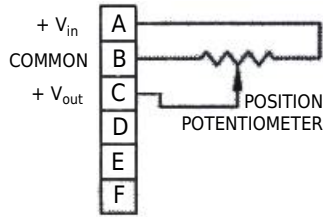
HX with IP68 and output type K



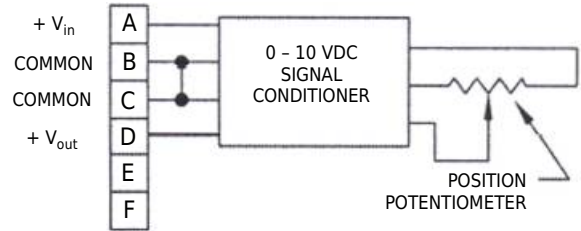
Order code	Cable length	Mating connector
10424-3M	3 Meter	included
10424-4M	4 Meter	included
10424-5M	5 Meter	included
10424-6M	6 Meter	included
10424-7M	7 Meter	included

ELECTRICAL CONNECTION HX SERIES

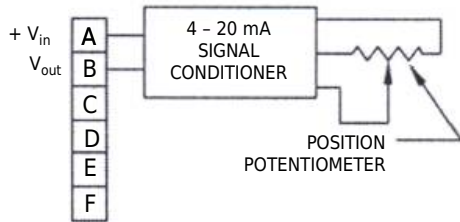
HX-PA



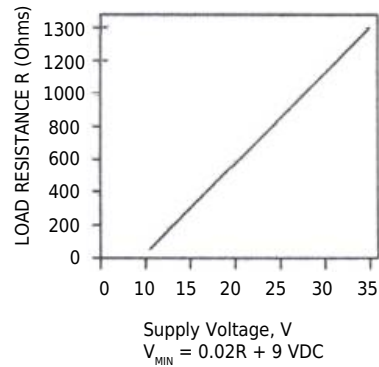
HX-P510



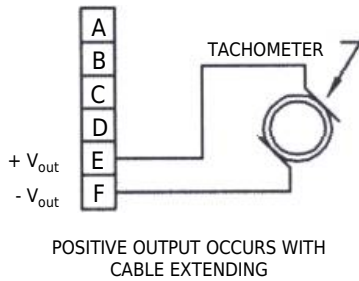
HX-P420



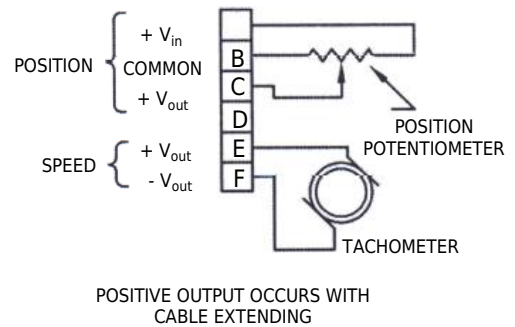
LOAD RESISTANCE VS INPUT VOLTAGE



HX-V



HX-VP



WARNING NOTICES

- Don't let the rope snap back. If the rope is retracted freely, this may lead to injuries (whiplash effect) and the device may be damaged. Caution when unhooking and retracting the rope into the sensor.
- Never exceed the specified measurement range when extracting the rope!
- Do not try to open the device. The stored energy of the spring drive may lead to injuries when being mishandled.
- Do not touch the rope when operating the sensor.
- Avoid guiding the rope over edges or corners. Use a deflection pulley instead.
- Do not operate the sensor if the rope is buckled or damaged. A ripping of the rope may lead to injuries or a damaging of the sensor.



ORDER CODE HX-PA

HX-PA - [] - [] - [] - [] - N [] - [] - [] - [] - []

Measurement Range see table on page 2 bottom, 1. column	
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Wire rope material	
Standard stainless steel	S
Nylon jacketed up to 2.0 m range	N
Nylon jacketed, only 2.5 to 12.7 m range	J

Wire rope tension	
Standard	1
Reduced (ranges to 2.0 m only)	2

Wire rope exit direction	
Standard (top exit)	0
Side exit (left)	1
Side exit (right)	2
Bottom exit	3

	Mating connector
C	IP65: connector output with mating connector
K*	IP65: connector output, no mating connector
N	IP68: cable output with open ends
K	IP68: cable output with mating connector

* connection cables see page 5

	Output
B	IP65: 6 pin connector output
P	IP68: bulkhead fitting with cable (0,3 m)
3	IP68: bulkhead fitting with cable (3,0 m)
4	IP68: bulkhead fitting with cable (4,0 m)
5	IP68: bulkhead fitting with cable (5,0 m)
6	IP68: bulkhead fitting with cable (6,0 m)
7	IP68: bulkhead fitting with cable (7,0 m)

	Housing material, protection class
1	Standard: anodised aluminium, IP65
2	anodised aluminium, IP68
3	corrosion free stainless steel + plastics, IP68

	Output signal
S	Standard not reversed
R	Reversed

	Potentiometer resistance
1	Standard 1 kΩ
2	2 kΩ
3	5 kΩ
4	10 kΩ

ORDER CODE HX-P420

HX-P420 - [] - [] - [] - [] - 0 [] - [] - [] - []

Measurement Range see table on page 2 bottom, 1. column	
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Wire rope material	
Standard stainless steel	S
Nylon jacketed up to 2.0 m range	N
Nylon jacketed, only 2.5 to 12.7 m range	J

Wire rope tension	
Standard	1
Reduced (ranges to 2.0 m only)	2

Wire rope exit direction	
Standard (top exit)	0
Side exit (left)	1
Side exit (right)	2
Bottom exit	3

Hazardous area protection	
Without	N
UL, CSA intrinsically safe Class 1, Division 1, Groups A, B, C, D Class 2, Groups E,F,G Class III hazardous locations	X

	Mating connector
C	IP65: connector output with mating connector
K*	IP65: connector output, no mating connector
N	IP68: cable output with open ends
K	IP68: cable output with mating connector

* connection cables see page 5

	Output
B	IP65: 6 pin connector output
P	IP68: bulkhead fitting with cable (0,3 m)
3	IP68: bulkhead fitting with cable (3,0 m)
4	IP68: bulkhead fitting with cable (4,0 m)
5	IP68: bulkhead fitting with cable (5,0 m)
6	IP68: bulkhead fitting with cable (6,0 m)
7	IP68: bulkhead fitting with cable (7,0 m)

	Housing material, protection class
1	Standard: anodised aluminium, IP65
2	anodised aluminium, IP68
3	corrosion free stainless steel + plastics, IP68

	Output signal
S	Standard not reversed
R	Reversed

ORDER CODE HX-P510

HX-P510 - [] - [] - [] - [] - N O [] - [] - [] - []

Measurement Range see table on page 2 bottom, 1. column	
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Wire rope material Standard stainless steel Nylon jacketed up to 2.0 m range Nylon jacketed, only 2.5 to 12.7 m range	S N J
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Wire rope tension Standard Reduced (ranges to 2.0 m only)	1 2
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Wire rope exit direction Standard (top exit) Side exit (left) Side exit (right) Bottom exit	0 1 2 3
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C K* N K	Mating connector IP65: connector output with mating connector IP65: connector output, no mating connector IP68: cable output with open ends IP68: cable output with mating connector
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* connection cables see page 5

B P 3 4 5 6 7	Output IP65: 6 pin connector output IP68: bulkhead fitting with cable (0,3 m) IP68: bulkhead fitting with cable (3,0 m) IP68: bulkhead fitting with cable (4,0 m) IP68: bulkhead fitting with cable (5,0 m) IP68: bulkhead fitting with cable (6,0 m) IP68: bulkhead fitting with cable (7,0 m)
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1 2 3	Housing material, protection class Standard: anodised aluminium, IP65 anodised aluminium, IP68 corrosion free stainless steel + plastics, IP68
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S R	Output signal Standard not reversed Reversed
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ORDER CODE HX-EP

HX-EP - [] - [] - [] - [] - N [] - [] - [] - []

Measurement Range see table on page 2 bottom, 1. column	
---	--

Wire rope material Standard stainless steel Nylon jacketed up to 2.0 m range Nylon jacketed, only 2.5 to 12.7 m range	S N J
---	-------------

Wire rope tension Standard Reduced (ranges to 2.0 m only)	1 2
--	--------

Wire rope exit direction Standard (top exit) Side exit (left) Side exit (right) Bottom exit	0 1 2 3
--	------------------

C K* N K	Mating connector IP65: connector output with mating connector IP65: connector output, no mating connector IP68: cable output with open ends IP68: cable output with mating connector
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* connection cables see page 5

B P 3 4 5 6 7	Output IP65: 6 pin connector output IP68: bulkhead fitting with cable (0,3 m) IP68: bulkhead fitting with cable (3,0 m) IP68: bulkhead fitting with cable (4,0 m) IP68: bulkhead fitting with cable (5,0 m) IP68: bulkhead fitting with cable (6,0 m) IP68: bulkhead fitting with cable (7,0 m)
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1 2 3	Housing material, protection class Standard: anodised aluminium, IP65 anodised aluminium, IP68 corrosion free stainless steel + plastics, IP68
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10 11 50 51 70 71* 30 31*	Output signal Standard: 2 channel (A/B) 5 VDC TTL signal 2 channel (A/B/Z) 5 VDC TTL signal with index 8...28 VDC, current sinking 2 channel 8...28 VDC, Push-Pull, differential Linedriver 8...28 VDC, Push-Pull, diff. Linedriver with index 5 VDC, Push-Pull, differential Linedriver 5 VDC, Push-Pull, diff. Linedriver with index
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* 31 and 71 only in combination with IP65

ORDER CODE HX-V

HX-V - [] - [] - [] - [] - N O S - [] - [] - []

Measurement Range see table on page 2 bottom, 1. column	
Wire rope material Standard stainless steel Nylon jacketed up to 2.0 m range Nylon jacketed, only 2.5 to 12.7 m range	S N J
Wire rope tension Standard Reduced (ranges to 2.0 m only)	1 2
Wire rope exit direction Standard (top exit) Side exit (left) Side exit (right) Bottom exit	0 1 2 3

	Mating connector C IP65: connector output with mating connector K* IP65: connector output, no mating connector N IP68: cable output with open ends K IP68: cable output with mating connector
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* connection cables see page 5

	Output B IP65: 6 pin connector output P IP68: bulkhead fitting with cable (0,3 m) 3 IP68: bulkhead fitting with cable (3,0 m) 4 IP68: bulkhead fitting with cable (4,0 m) 5 IP68: bulkhead fitting with cable (5,0 m) 6 IP68: bulkhead fitting with cable (6,0 m) 7 IP68: bulkhead fitting with cable (7,0 m)
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	Housing material, protection class 1 Standard: anodised aluminium, IP65 2 anodised aluminium, IP68 3 corrosion free stainless steel + plastics, IP68
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ORDER CODE HX-VP

HX-VP [] - [] - [] - [] - [] - N [] - [] - [] - []

Output signal position Potentiometer Bridge circuit Analog output 4...20 mA Analog output 0...10 VDC	A B 420 510
Measurement Range see table on page 2 bottom, 1. column	
Wire rope material Standard stainless steel Nylon jacketed up to 2.0 m range Nylon jacketed, only 2.5 to 12.7 m range	S N J
Wire rope tension Standard Reduced (ranges to 2.0 m only)	1 2
Wire rope exit direction Standard (top exit) Side exit (left) Side exit (right) Bottom exit	0 1 2 3

	Mating connector C IP65: connector output with mating connector K* IP65: connector output, no mating connector N IP68: cable output with open ends K IP68: cable output with mating connector
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* connection cables see page 5

	Output B IP65: 6 pin connector output P IP68: bulkhead fitting with cable (0,3 m) 3 IP68: bulkhead fitting with cable (3,0 m) 4 IP68: bulkhead fitting with cable (4,0 m) 5 IP68: bulkhead fitting with cable (5,0 m) 6 IP68: bulkhead fitting with cable (6,0 m) 7 IP68: bulkhead fitting with cable (7,0 m)
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	Housing material, protection class 1 Standard: anodised aluminium, IP65 2 anodised aluminium, IP68 3 corrosion free stainless steel + plastics, IP68
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	Output signal S Standard not reversed R Reversed
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	Potentiometer resistance 0 Required designator (B,420,510) 1 Standard 1 kΩ (for VPA only) 3 5 kΩ (for VPA only)* 4 10 kΩ (for VPA only)* * Not available ranges 50 up to 150 mm
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Subject to change without prior notice.

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