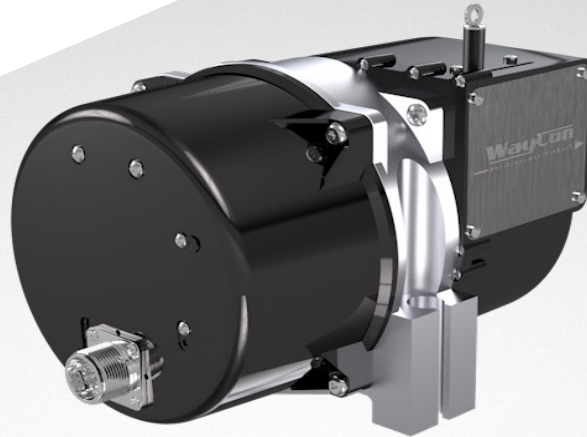


Velocity Sensor

Links to further documents for this series:
[Product catalog](#)



HX-V/VP SERIES

Key-Features:

- Travel range up to 20.3 m
- Tachometer and Distance measurement
- Linearity up to ± 0.1 %
- Easy installation
- Stainless steel wire
- Operating temperature max. $-40...+95$ °C
- Protection class IP68

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TECHNICAL DATA

		HX-V	HX-VP
Measurement range (MR)		50 mm bis 50,8 m (siehe Mechanische Daten)	
Linearity	[%]	within ± 0.1 % of the output signal	MB ≤ 150 : ± 0.25 MB 250...640: ± 0.15 MB ≥ 750 : ± 0.1
Repeatability	[%]	-	± 0.015
Resolution		-	theoretically infinite ¹⁾
Output signal		speed ²⁾	speed ²⁾ + analog
Power supply		-	max. 25 V (AC, DC)
Protection class		IP65 / optional: IP68	
Humidity	[%]	100	
Operating temperature	[°C]	-40...+95	
Shock resistance		50 g, 0.1 ms max.	
Vibration resistance		15 g, 0.1 ms max.	

¹⁾ depending on the quality of the power supply

²⁾ see „Description HX-V and HX-VP“

MECHANICAL DATA

Order code	Measurement range	Draw wire tension [N]	Draw wire diameter [mm]	Sensor Weight [kg]	Housing	Lifespan (full cycles)
2	50 mm	9,4	0,4	0,9	stainless steel and anodised aluminium	5.000.000
3	75 mm	6,7	0,4	0,9		5.000.000
4	100 mm	6,7	0,4	0,9		5.000.000
5	125 mm	5,3	0,4	0,9		5.000.000
6	150 mm	6,7	0,4	0,9		5.000.000
10	250 mm	9,4	0,4	0,9		500.000
15	390 mm	6,7	0,4	0,9		500.000
20	500 mm	6,7	0,4	0,9		500.000
25	640 mm	5,3	0,4	0,9		500.000
30	750 mm	6,7	0,4	0,9		250.000
40	1000 mm	6,7	0,4	0,9		250.000
50	1250 mm	5,3	0,4	0,9		250.000
60	1500 mm	6,7	0,4	0,9		250.000
80	2000 mm	5,8	0,4	0,9		250.000
100	2,5 m	10	0,6	3,1	stainless steel mounting base and corrosion-free thermoplastic housing	250.000
120	3 m	10	0,6	3,1		250.000
150	3,8 m	10	0,6	3,1		250.000
200	5 m	10	0,6	3,1		250.000
250	6,3 m	10	0,6	3,1		250.000
300	7,5 m	10	0,6	3,1		250.000
350	8,8 m	10	0,6	3,1		250.000
400	10 m	10	0,6	3,1		250.000
500	12,7 m	10	0,6	3,9		5.000.000 m
600	15,2 m	10	0,6	3,9		5.000.000 m
800	20,3 m	10	0,6	3,9	5.000.000 m	

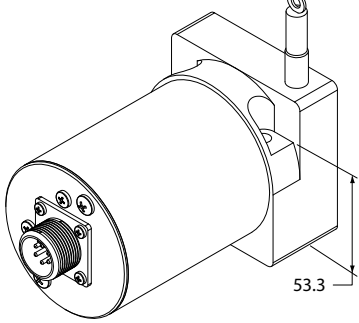
DESCRIPTION HX-V AND HX-VP

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.

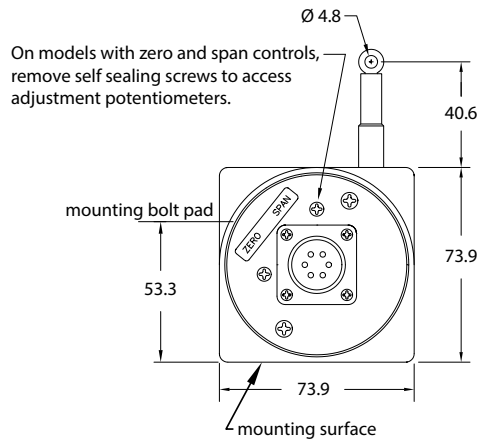
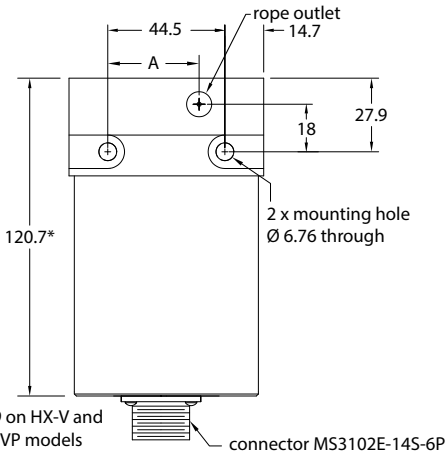
Measurement range	[mm]	50 / 250	75 / 390 / 750	100 / 500 / 1000	125 / 640 / 1250	150 / 1500	2000	≥ 2500
Speed output	[mV/cm/s]	78	53	40	32	27	20	71

TECHNICAL DRAWING

Measurement ranges up to 2 m



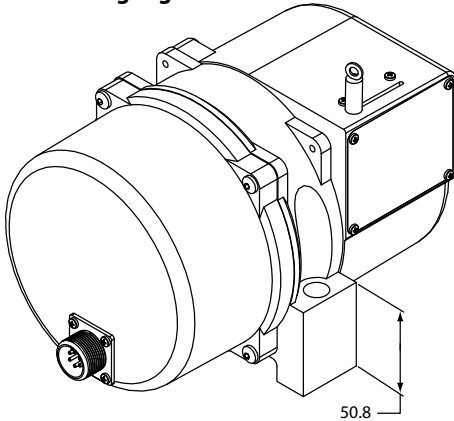
Measurement range [mm]	A [mm]
50 / 250	30,7
75 / 390 / 750	34,8
100 / 500 / 1000	38,9
125 / 640 / 1250	42,9
1500	46,7
2000	52,8



On models with zero and span controls, remove self sealing screws to access adjustment potentiometers.

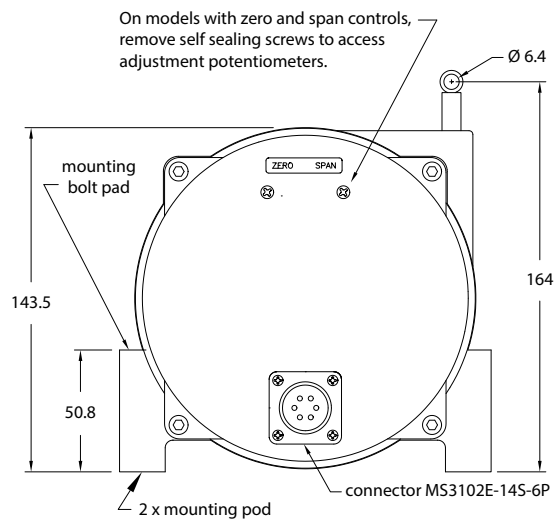
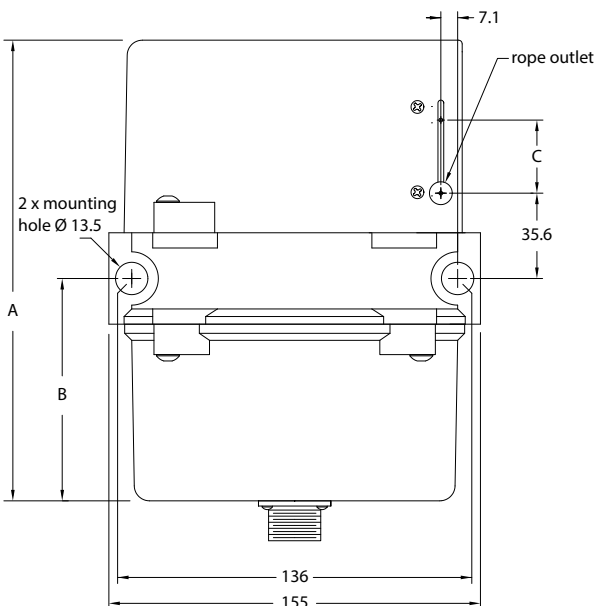
Note: Sensor mounts with M6 cylinder head screws.

Measurement ranges greater than 2.5 m



Measurement range [m]	A [mm]	B [mm]
≤20,3	196	97
≥25,4	280	142

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



On models with zero and span controls, remove self sealing screws to access adjustment potentiometers.

Note: Sensor mounts with M12 cylinder head screws.

ELECTRICAL CONNECTION

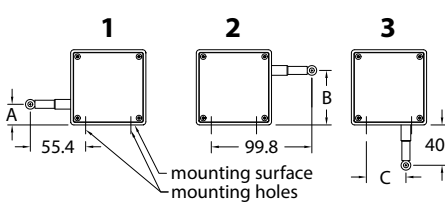
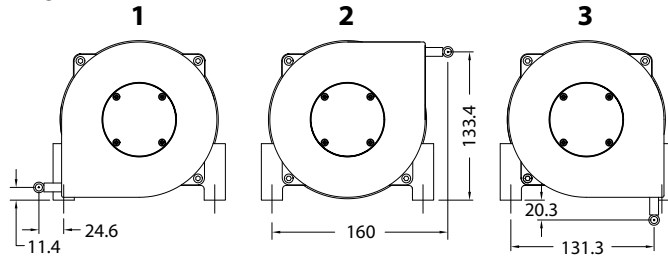


WARNING NOTICES

- 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.

OPTIONS

Option	Order code	Description
Nylon jacketed draw wire (measurement ranges ≤ 2 m)	N	Replaces standard stainless steel wire rope with $\varnothing 0.46$ mm nylon jacketed wire rope. This option increases wire life dramatically but may increase non-linearity by as much as $\pm 0.05\%$ of full scale.
Nylon jacketed draw wire (measurement ranges 2.5...12.7 m)	J	Replaces standard stainless steel wire rope with $\varnothing 0.94$ mm nylon jacketed wire rope. This option increases wire life dramatically but may increase non-linearity by as much as $\pm 0.05\%$ of full scale.
Inverted 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 (only cable output)	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.
Increased corrosion protection + IP68 (only cable output)	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.
Different potentiometer resistance (MR ≥ 250 mm, HX-VPA only)	3, 4	3 = 5 k Ω 4 = 10 k Ω This option changes linearity as followed: Measurement ranges ≤ 640 mm = $\pm 0.5\%$ Measurement ranges ≥ 750 mm = $\pm 0.25\%$

<p>Changed rope outlet</p>	<p>1, 2, 3</p>	<p>Measurement ranges ≤ 2 m:</p> <div style="display: flex; align-items: center;">  <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr style="background-color: #f2f2f2;"> <th>Measurement range [mm]</th> <th>A [mm]</th> <th>B [mm]</th> <th>C [mm]</th> </tr> </thead> <tbody> <tr> <td>50 / 250</td> <td>28.4</td> <td>45.5</td> <td>30.7</td> </tr> <tr> <td>75 / 390 / 750</td> <td>24.4</td> <td>49.5</td> <td>34.8</td> </tr> <tr> <td>100 / 500 / 1000</td> <td>20.3</td> <td>53.6</td> <td>38.9</td> </tr> <tr> <td>125 / 640 / 1250</td> <td>16.3</td> <td>57.7</td> <td>42.9</td> </tr> <tr> <td>150 / 1500</td> <td>12.4</td> <td>61.5</td> <td>46.7</td> </tr> <tr style="background-color: #f2f2f2;"> <td>2000</td> <td>6.4</td> <td>67.6</td> <td>52.8</td> </tr> </tbody> </table> </div> <p style="margin-top: 20px;">Measurement ranges ≥ 2.5 m:</p> <div style="display: flex; justify-content: space-around; align-items: center;">  </div>	Measurement range [mm]	A [mm]	B [mm]	C [mm]	50 / 250	28.4	45.5	30.7	75 / 390 / 750	24.4	49.5	34.8	100 / 500 / 1000	20.3	53.6	38.9	125 / 640 / 1250	16.3	57.7	42.9	150 / 1500	12.4	61.5	46.7	2000	6.4	67.6	52.8
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ORDER CODE HX-V

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

Measurement range MR see „Mechanical Data“	
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Draw wire Standard stainless steel	S
Nylon jacketed (MR ≤ 2 m)	N
Nylon jacketed (MR 2.5...12.7 m)	J

Draw wire tension Standard	1
Reduced (MR ≤ 2 m)	2

Rope outlet Standard top	0
Left side	1
Right side	2
Bottom	3

C	Connector type IP65 Connector with mating connector Con. without mating connector
K	
N	Connector type IP68 Cable with open ends Cable with connector at cable end
K	

B	Connection type IP65 Connector output, 6-polig
P	Connection type IP68 Cable output (0.3 m) Cable output (3 m) Cable output (4 m) Cable output (5 m) Cable output (6 m) Cable output (7 m)
3	
4	
5	
6	
7	

	Housing option Standard IP65 IP68 Corrosion protection + IP68
1	
2	
3	

ORDER CODE HX-VP

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

Ausgangssignal Potentiometer	A
Brückenschaltung	B
Analogausgang 4...20 mA	420
Analogausgang 0...10 V	510

Measurement range MR see „Mechanical Data“	
--	--

Draw wire Standard stainless steel	S
Nylon jacketed (MR ≤ 2 m)	N
Nylon jacketed (MR 2.5...12.7 m)	J

Draw wire tension Standard	1
Reduced (MR ≤ 2 m)	2

Rope outlet Standard top	0
Left side	1
Right side	2
Bottom	3

Potentiometer resistance Output signals B, 420 or 510	0
Standard 1 kΩ	1
5 kΩ (MR ≥ 250 mm)	3
10 kΩ (MR ≥ 250 mm)	4

C	Connector type IP65 Connector with mating connector Con. without mating connector
K	
N	Connector type IP68 Cable with open ends Cable with connector at cable end
K	

B	Connection type IP65 Connector output, 6-polig
P	Connection type IP68 Cable output (0.3 m) Cable output (3 m) Cable output (4 m) Cable output (5 m) Cable output (6 m) Cable output (7 m)
3	
4	
5	
6	
7	

	Housing option Standard IP65 IP68 Corrosion protection + IP68
1	
2	
3	

	Output signal Standard Inverted
S	
R	

ACCESSORIES

Connection cable for HX with IP65

10119-3M	3 m, with mating connector
10119-4M	4 m, with mating connector
10119-5M	5 m, with mating connector
10119-6M	6 m, with mating connector
10119-7M	7 m, with mating connector



Connection cable for HX with IP68 and connector type K

10424-3M	3 m, with mating connector
10424-4M	4 m, with mating connector
10424-5M	5 m, with mating connector
10424-6M	6 m, with mating connector
10424-7M	7 m, with mating connector



Diese Daten können jederzeit ohne Vorankündigung geändert werden.

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