

# VELOCITY MEASUREMENT



## VX SERIES

### Key-Features:

- Velocity measurement
- Optional wire installation
- Measurement range up to 42,5 m
- Linearity up to  $\pm 1\%$
- IP 65 and optional IP 67

### Inhalt

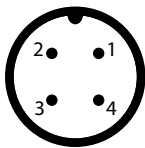
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## TECHNICAL DATA

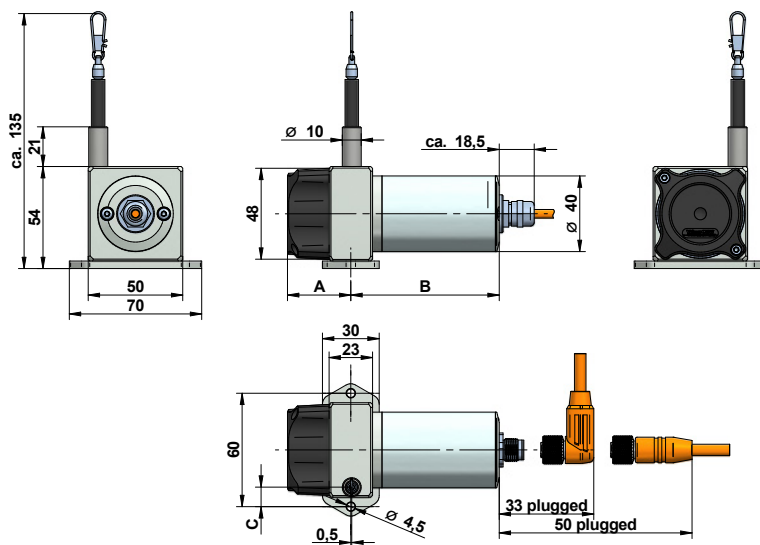
Product series		VX50	VX80	VX120	VX135-8	VX135			
Travel range	[mm]	1.250	3.000	5.000	8.000	12.000	20.000	30.000	42.500
Output	[V/m/s]	1,01	1,03	1,07	0,95	1,02			
Linearity	[%]	±1							
Commutation noise	V	±1 % of the output value							
Speed V <sub>min</sub>	[mm/s]	5	10						
Speed V <sub>max</sub>	[m/s]	10				5			
Extraction force F <sub>min</sub>	[N]	4,6	5	8	8,2	5,4			
Extraction force F <sub>max</sub>	[N]	5,6	6,4	11,6	15,2	9			
Acceleration a <sub>max</sub>	[m/s²]	300	140	140	140	60			
Tachometer	[min <sup>-1</sup> /V]	274		176					
Tachometer supply		self-sufficiency							
Temperature range	[°C]	-20 bis 85							
Protection class		IP 65 (optional IP 67)							
Weight	[g]	500	900	1600	ca. 1700	3200 bis 5000			
Housing		aluminium, anodised, spring case PA6							

## ELECTRICAL CONNECTION

Cable output cable colours	Connector out- put, M12 (male)	V/m/s
BN	Pin 1	Signal+
WH	Pin 2	n. c.
BU	Pin 3	Signal-
BK	Pin 4	n. c.

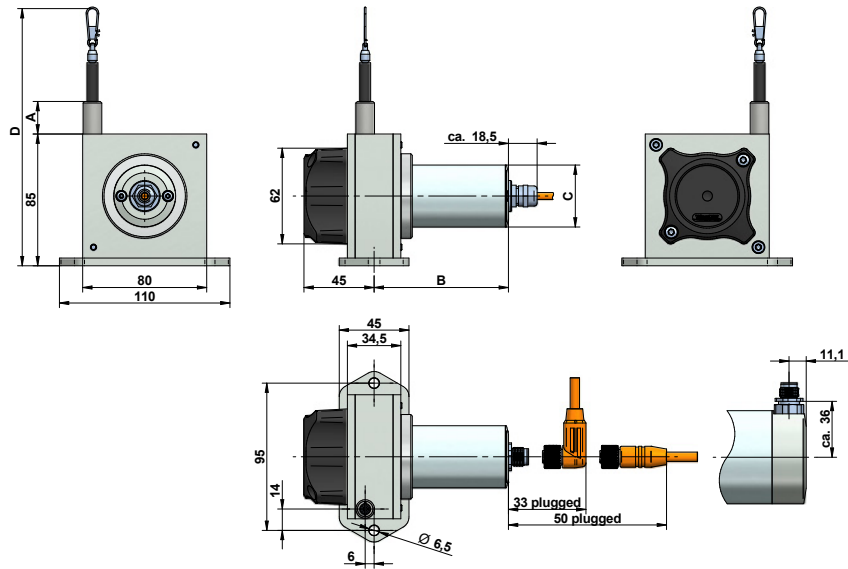


## TECHNICAL DRAWING VX50



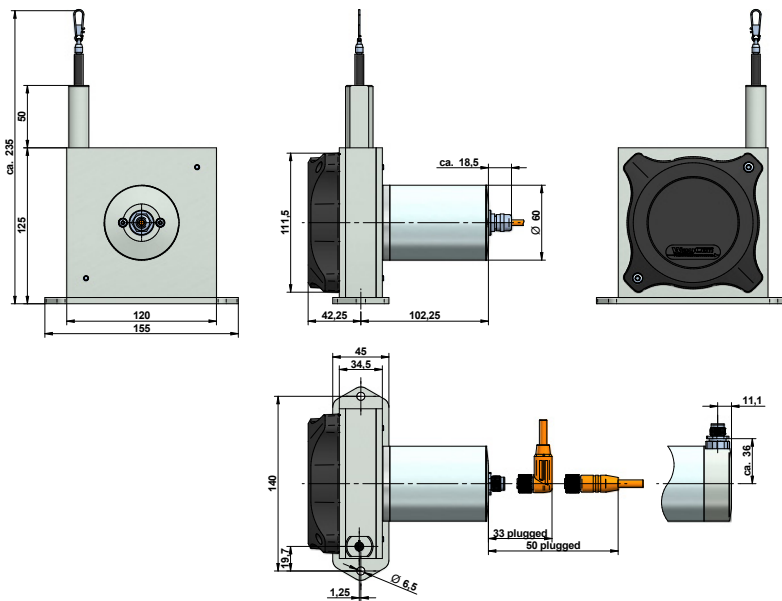
Option	A	B	C
Standard	33,5	78,5	10,3

## TECHNICAL DRAWING VX80

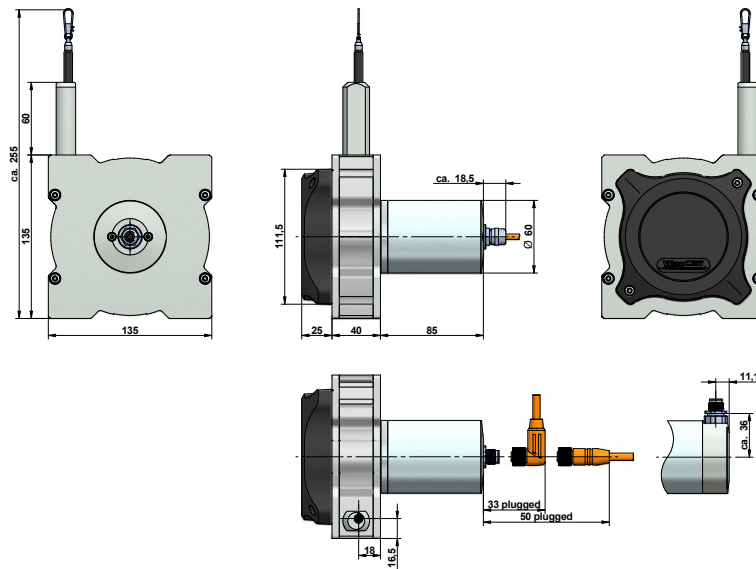


Option	A	B	C	D
Standard	35	102,5	Ø 60	≈ 180

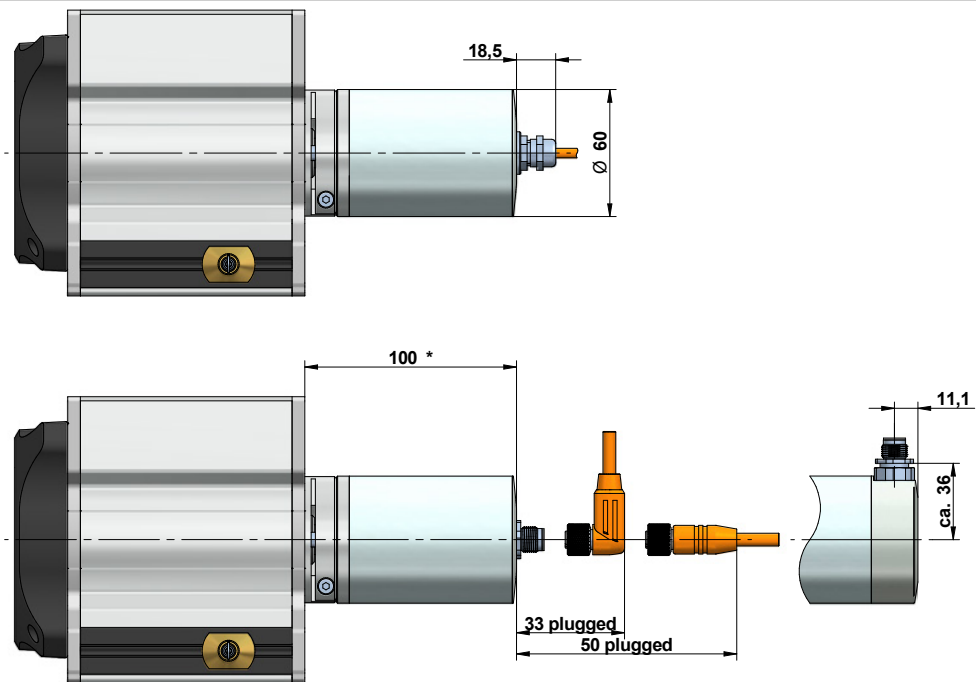
## TECHNICAL DRAWING VX120



## TECHNICAL DRAWING VX135-8



## TECHNICAL DRAWING VX135

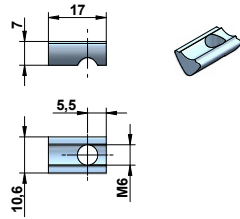


## TECHNICAL DRAWING MOUNTING OPTIONS VX135-8 UND VX135

### 1. by using the grooves in the sensor housing

The included slot nuts can be easily inserted into the grooves of the sensor housing. The slot nuts have a metric M6 thread.

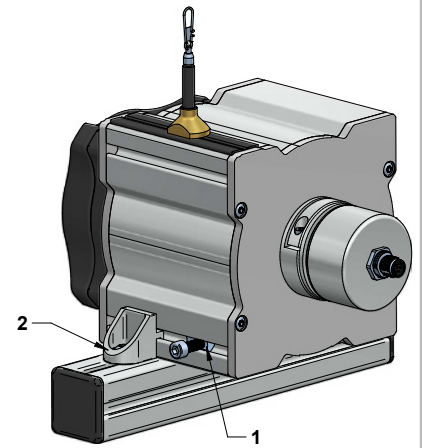
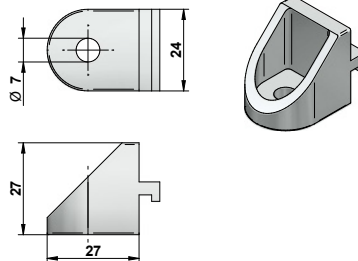
Each sensor with a measurement range of 20 m or lower is delivered with two slot nuts. Each sensor with a measurement range of 25 m or greater is delivered with four slot nuts.



### 2. by angle clamp brackets

The angle clamp brackets feature a bore for M6 screws to fix it on a plate / slab or a profile.

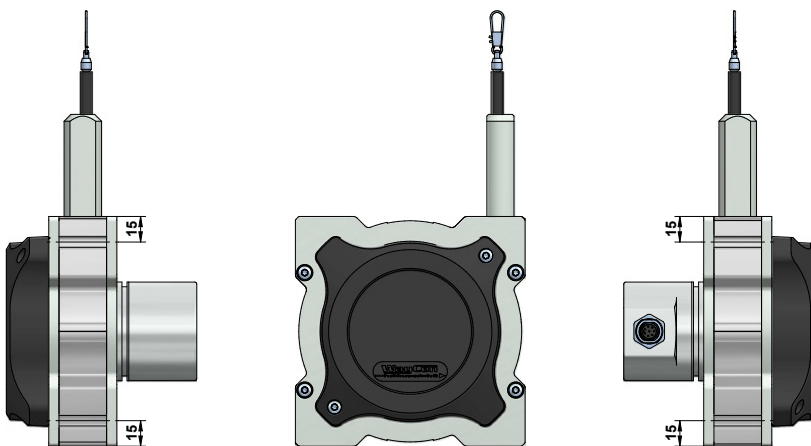
Each sensor with a measurement range of 20 m or lower is delivered with two brackets. Each sensor with a measurement range of 25 m or greater is delivered with four brackets.



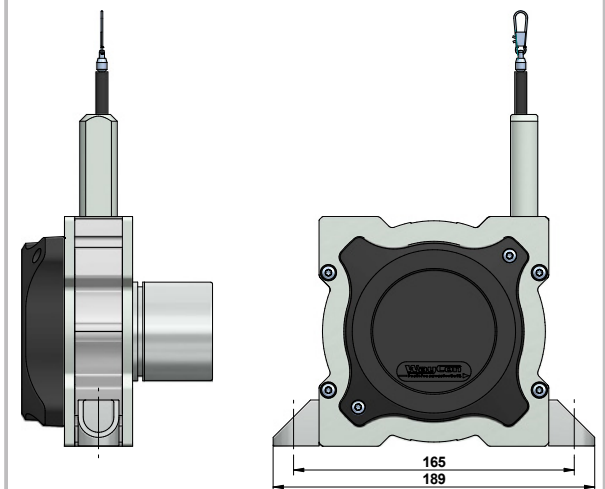
#### Note:

The grooves of the sensor housing, the slot nuts and brackets are compatible to the aluminium building kit system from item Industrietechnik GmbH.

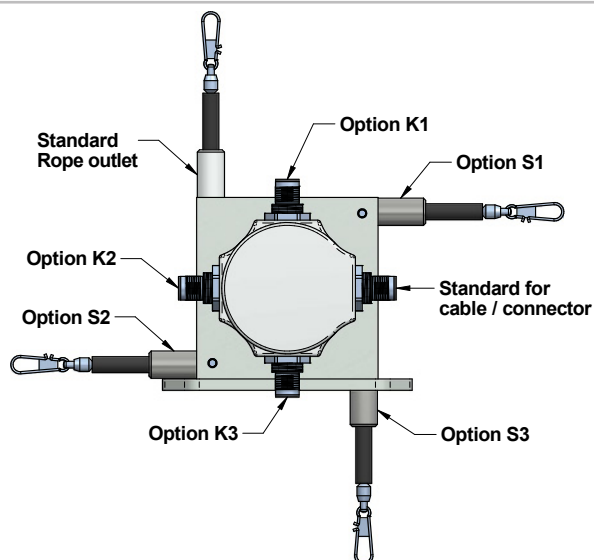
#### Position of the grooves



#### Mounting by using brackets



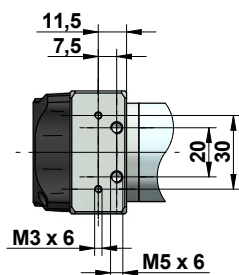
## TECHNICAL DRAWING VX50/80/120 CHANGED WIRE OUTPUT



## TECHNICAL DRAWING VX50/80/120 CHANGED WIRE OUTPUT

### VX50 mounting: standard rope outlet, rope outlet sideways top (S1)

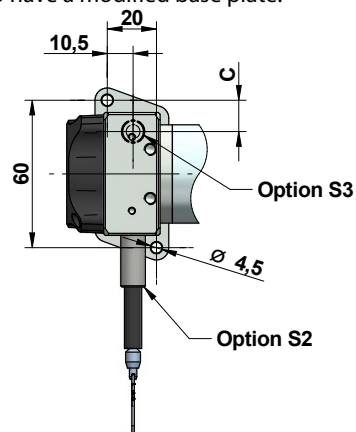
The sensor is usually installed by using the regular mounting plate (see technical drawing above). By disassembling the mounting plate, there are 4 threads (2 x M3, 2 x M5) in the sensor housing for alternative installation.



### VX50 mounting: rope outlet sideways bottom (S2), rope outlet bottom (S3)

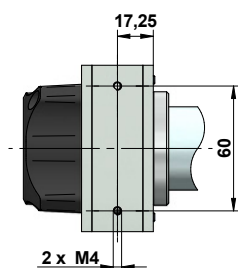
Sensors with option rope outlet S2 and S3 have a modified base plate:

Measurement range [mm]	Option	C
1250	Standard	10,3



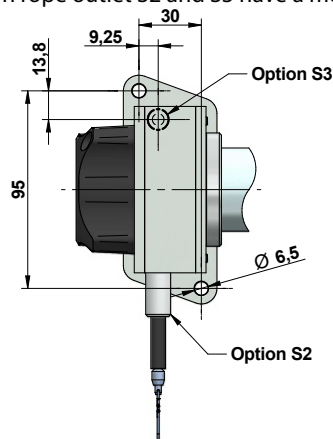
### VX80 mounting: standard rope outlet, rope outlet sideways top (S1)

The sensor is usually installed by using the regular mounting plate (see technical drawing above). By disassembling the mounting plate, there are 2 x M4 threads in the sensor housing for alternative installation.



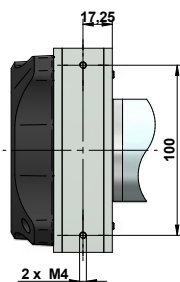
### VX80 mounting: rope outlet sideways bottom (S2), rope outlet bottom (S3)

Sensors with option rope outlet S2 and S3 have a modified base plate:



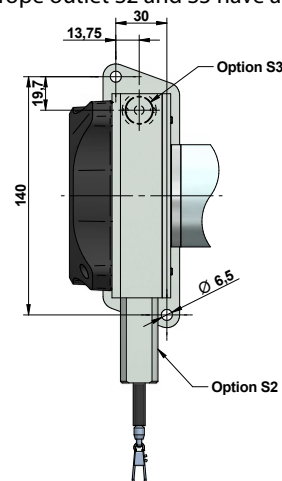
### VX120 mounting: standard rope outlet, rope outlet sideways top (S1)

The sensor is usually installed by using the regular mounting plate (see technical drawing above). By disassembling the mounting plate, there are 2 x M4 threads in the sensor housing for alternative installation.



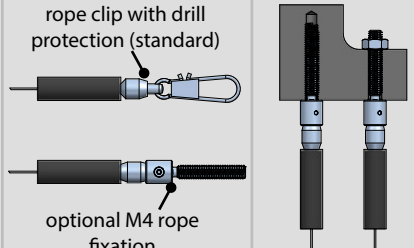
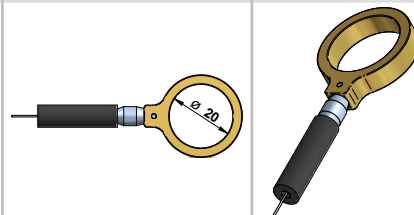
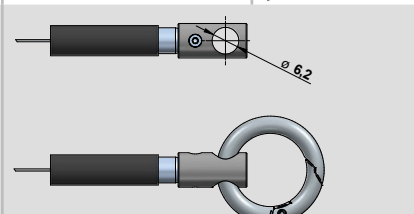
### VX120 Mounting: rope outlet sideways bottom (S2), rope outlet bottom (S3)

Sensors with option rope outlet S2 and S3 have a modified base plate:



## OPTIONS

The following table gives an overview of frequently used options, with which the standard sensors can be equipped. Please pay attention that not all options can be combined. Information on possible combinations can be found in the order codes.

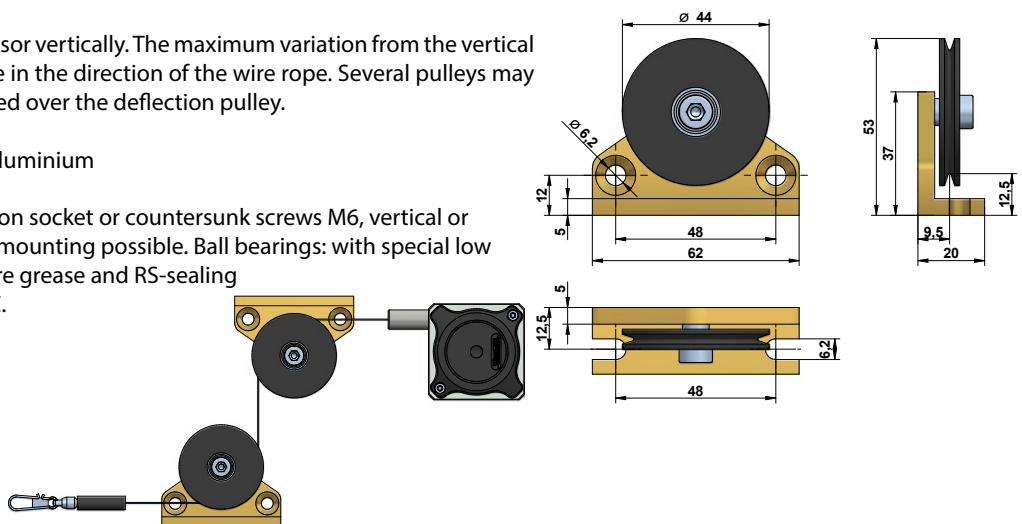
Option	Order code	Description
VX50 changed wire output (see drawing on page 6)	S1, S2, S3	S1: rope outlet sideways at the top S2: rope outlet sideways at the bottom (modified mounting plate, see page 6) S3: rope outlet on the bottom (modified mounting plate, see page 6)
VX80 changed wire output (see drawing on page 6)	S1, S2, S3	S1: rope outlet sideways at the top S2: rope outlet sideways at the bottom (modified mounting plate, see page 6) S3: rope outlet on the bottom (modified mounting plate, see page 6)
VX120 changed wire output (see drawing on page 6)	S1, S2, S3	S1: rope outlet sideways at the top S2: rope outlet sideways at the bottom (modified mounting plate, see page 6) S3: rope outlet on the bottom (modified mounting plate, see page 6)
Rope fixation by M4 thread	M4	Optional, pivoted rope fixation with screw thread M4, length 22 mm. Ideal for attachment to through holes or thread holes M4. 
Rope fixation by eyelet	RI	The end of the wire rope is equipped with a eyelet instead of a rope clip. Inside diameter 20 mm 
Rope fixation with cylindrical pin and M6 through bore	ZH, ZR	ZH: cylindrical pin with M6 through bore ZR: cylindrical pin with M6 through bore and carbine ring 
Protection class IP67	IP67	Use option IP67, if the sensor will operate in a humid environment. Note that with this option there may occur a light hysteresis in the output signal due to the special sealing. The max. acceleration and displacement speed are reduced to 60 % of the specified value.
Corrosion protection	CP	Includes a V4A wire rope, stainless steel bearings and option M4. The sensors rope drum gets HARTCOAT® coated. This coating is a hard-anodic oxidation that protects the sensor from corrosion by aggressive media (e. g. sea water) with a hard ceramics-like layer.
Increased corrosion protection	ICP	Components of the housing and the rope drum get HARTCOAT® coated. Includes the options CP, IP67 and M4.

## GENERAL ACCESSORIES

### Deflection pulley - UR2

The rope must be extracted from the sensor vertically. The maximum variation from the vertical is 3°. A deflection pulley allows a change in the direction of the wire rope. Several pulleys may be used. The rope clip must not be guided over the deflection pulley.

Material foot: anodised aluminium  
 Material rope wheel: POM-C  
 Mounting: by 2 hexagon socket or countersunk screws M6, vertical or horizontal mounting possible. Ball bearings: with special low temperature grease and RS-sealing  
 Temperature: -40...+80 °C.



### Rope extension - SV

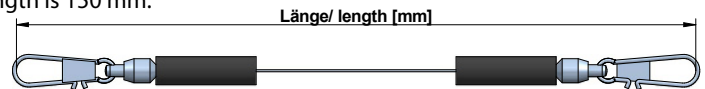
For bridging a greater distance between the measuring target and the sensor a rope extension can be applied. The rope clip must not be guided over the deflection pulley.

Please specify the length needed in your order (XXXX). The minimum length is 150 mm.

SV1-XXXX: rope extension (150...4995 mm)

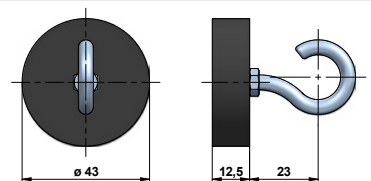
SV2-XXXX: rope extension (5000...19.995 mm)

SV3-XXXX: rope extension (20000...40.000 mm)



### Magnetic clamp - MGG1

Use the magnetic clamp to quickly attach the rope to metallic objects without any assembly time. A rubber coating provides gentle contact (e. g. on varnished surfaces) and prevents from slipping due to vibration. The magnet consists of a neodym core for an increased adhesive force of 260 N. The hook makes it easy to attach the rope clip.



## ORDER CODE

VX  -  -

Measurement range [mm]	
1250	50-1250
3000	80-3000
5000	120-5000
8000	135-8
12000	135-12
20000	135-20
30000	135-30
42500	135-42,5

Connection	
Connector output M12, axial, 4 pins	<b>SA12</b>
Cable output axial 2 m	KA02
Cable output, axial, 5 m	KA05
Cable output, axial, 10 m <sup>1)</sup>	KA10

Version	
Standard	-
Sensor with options	O

<sup>1)</sup> Larger length on request

**Bold text:** standard with shorter lead time

Option	Description
S1	rope outlet sideways top
S2	rope outlet sideways bottom
S3	rope outlet bottom
M4	rope fixation M4 thread
RI	rope fixation eyelet
ZH	cylindrical pin
ZR	cylindrical pin with carbine ring
IP67	protection class IP67
CP	corrosion protection
ICP	increased corrosion protection

Option	not combinable with
S1,S2,S3	VX135-8, VX135
M4	CP, ICP, RI, ZH, ZR
RI	CP, ICP, M4, ZH, ZR
ZH	M4, ZR, RI
ZR	M4, ZH, RI
IP67	ICP
CP	M4, RI, ZH, ZR
ICP	IP67, M4, RI, ZH, ZR



## GENERAL ACCESSORIES

UR2	deflection pulley	€
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MGG1	magnetic clamp
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SV1-XXXX	rope extension (150 mm bis 4995 mm)
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SV2-XXXX	rope extension (5000 mm bis 19995 mm)
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SV3-XXXX	rope extension (20000 mm bis 40000 mm)
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## ACCESSORIES CONNECTION

### Cable with mating connector M12, 4 poles, shielded

K4P2M-S-M12	2 m, straight connector
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K4P5M-S-M12	5 m, straight connector
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K4P10M-S-M12	10 m, straight connector
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K4P2M-SW-M12	2 m, angular connector
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K4P5M-SW-M12	5 m, angular connector
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K4P10M-SW-M12	10 m, angular connector
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### Mating connector M12, 4 poles, shielded

D4-G-M12-S	straight, M12 for self assembly
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D4-W-M12-S	angular, M12 for self assembly
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Subject to change without prior notice..

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