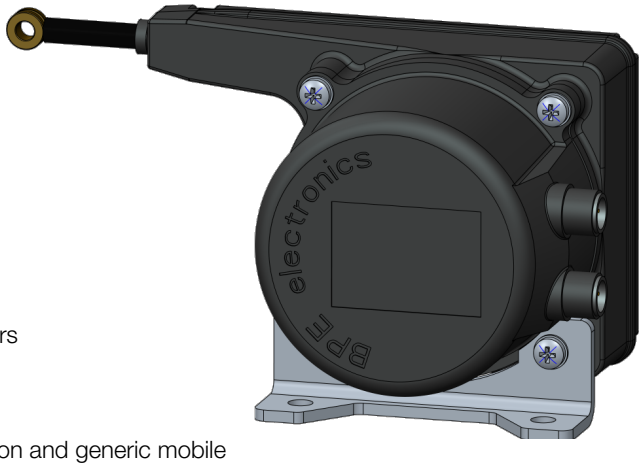
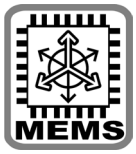
General features



- Compact angle length transducer
- MEMS technology angular sensor
- Single channel. Possible to have it with double channel for PL d (EN13849-1) systems
- Voltage, current, ratiometric or CAN bus output
- Waterproof, plastic, compact body
- Easy to install
- PA12-coated 7x7 AISI 316 stainless steel rope
- Ninety degrees orientable fixing bracket
- Ninety degrees orientable electrical connection with M12x1 connectors
- Rope fixing ring for easy and quick installation

Typical fields of application:
truck mounted cranes, mobile cranes, aerial platforms, industrial automation and generic mobile machines.
Note:
The user/installer is responsable for evaluating the values and, thus, the safety of the application



MEMS rensor technology



Full angle range



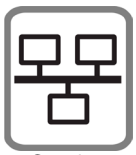
5 m max length



84.5 mm only tickness



Protection grade IP66


Can bus connection



Wide temperature range


Double crossed channel


Single or double channel

Technical Data

Power supply	5±0.2 VDC	from 9 to 33 VDC		
Outputs	10% to 90% VIN ratiometric	0.5 ÷ 4.5 VDC	CAN bus	from 4 to 20 mA
Maximum output current	10 mA	10 mA	-	-
Current consumption (1) [double]	10 [20] mA	30 [60] mA		30+20 [60+40] mA

(1) Device supply current (and max output load for 4 to 20 mA version) for single and double channel version

Measurable length	up to 4.0m	5.5m
Length transducer (linearity, hysteresis, repetibility) accuracy	± 0.50% FS	± 0.75% FS
Length transducer resolution	0.03% FS	
Length transducer temperature drift	< 100 ppm / °C	
Angular range	from 0 to 360 degrees	
Angular transducer accuracy	± 0.5 degrees	
Angular transducer resolution	0.1 degrees	
Angular transducer temperature drift	± 0.01 degrees /°C	
Rope diameter (with coating)	0.63 (0.80) mm	
Rope breaking force	320 N	
Min/max force to pull out the rope	3.0/6.0 N	
Max wire speed	3 m/s	
Max wire acceleration	5 m/s^2	
Operating temperature	from -40 to +70 °C	
Maximum weight	0.60 kg	
Electric insulation	6500 VAC	
Housing material	PA 6.6 + 35% glass reinforced and mineral filled	
Standard protection grade (electronics and spring box)	IP66	
EMC: Immunity | Emission	EN 61000-6-2 | EN61000-6-3	
Vibration resistance: Sinus	EN 60068-2-6: 5 g, 10 to 150 Hz	
Shock resistance: Shock	EN 60068-2-27: 30 g, 6 ms	
MTTFd (electronic board)	EN 13849-1: ≥ 100 years	
Maximum number of mechanical cycles	$1x10^5$ ($5x10^5$ on request)	

Ordering Code

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Transducer type	Length	Channel	Rotation direction	Rotation angles	Rope output	Steel rope	Ring type	Output type	Electrical connection	Electrical outlet	Mounting bracket	CAN termination	Potentiometer
ASu	5.5	D	W	090.090	UL	1	R	99	M26	3	S6	N	P1

1

Transducer type	
ASu	Micro angle/Length transducer

2

Length	
2.0	length = 2.0 m
4.0	length = 4.0 m
5.5	length = 5.5 m

3

Channels	
S	single channel
D	double channel
R	double channel with crossed signals

4

Rotation direction	
W	CW - Clockwise rotation direction (see drawing on the right for available configurations)
C	CCW - Counterclockwise rotation direction (see drawing on the right for available configurations)

5

Rotation angles		
Available angle configuration angle 1 (AN1)	angle 2 (AN2)	(see drawing for available configurations)
045	**135**	total range 180°
090	**090**	total range 180°
135	**135**	total range 270°
180	**180**	total range 360°

6

Rope output		
UL	Steel rope outlet on upper left side (see drawing for available configurations)	UL
LR	Steel rope outlet on lower right side (see drawing for available configurations)	LR

7

Steel rope	
1	AISI 316 stainless steel polyamide coated rope PA12 0.63/0.80 mm 7x7

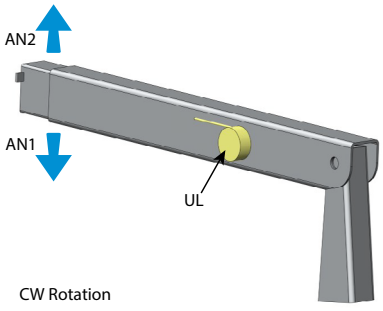
8

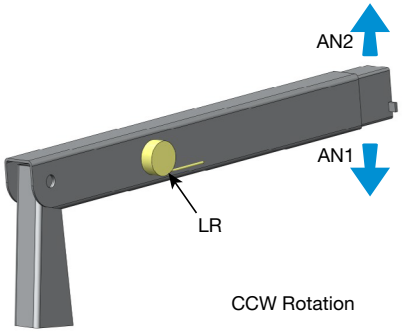
Ring type	
R	With metallic ring at the end of the steel rope (IN/ OUT: 5/10 mm)

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Output type		
4_	Current output: 4 to 20 mA	(single)
5_	Ratiometric output: 10% to 90% VIN. (+5 VDC)	(single)
7_	CAN output: CAN bus	(single)
9_	Voltage output: 0.5÷4.5 VDC. VIN=9÷33 VDC	(single)
44	Current output: 4 to 20 mA	(double)
55	Ratiometric output: 10% to 90% VIN. (+5 VDC)	(double)
77	CAN output: CAN bus	(double)
99	Voltage output: 0.5÷4.5 VDC. VIN=9÷33 VDC	(double)

Available configurations





Custom configuration are available on request

Ordering Code

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Transducer type	Length	Channel	Rotation direction	Rotation angles	Rope output	Steel rope	Ring type	Output type	Electrical connection	Electrical outlet	Mounting bracket	CAN termination	Potentiometer
ASu	5.5	D	W	090.090	UL	1	R	99	M26	3	S6	N	P1

10

Electrical connection			
M65	single channel	**Current output** (4 to 20 mA) M12 plug 1: VIN = 9 to 33 VDC 2: Negative power supply 3: Angle signal 4: Length signal	
M66	double channel		
M25	single channel	**Voltage output** (0.5 to 4.5 VDC) M12 plug 1: VIN = 9 to 33 VDC 2: Negative power supply 3: Angle signal 4: Length signal	
M26	double channel		
M45	single channel	**Ratiometric output** (10% to 90%) M12 plug 1: VIN = 5 VDC 2: Negative power supply 3: Angle signal 4: Length signal	
M46	double channel		
M06	single or double channel	**CAN bus output** 1: Cable shield 2: VIN = 9 to 33 VDC 3: Negative power supply 4: CH 5: CL	 M12 plug

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Electrical outlet	
0	Electrical outlet to hours “0” or “12” 
3	Electrical outlet to hours “3” 
6	Electrical outlet to hours “6” 
9	Electrical outlet to hours “9” 

12

Mounting bracket	
S0	Electrical outlet to hours “0” or “12” 
S3	Electrical outlet to hours “3” 
S6	Electrical outlet to hours “6” 
S9	Electrical outlet to hours “9” 

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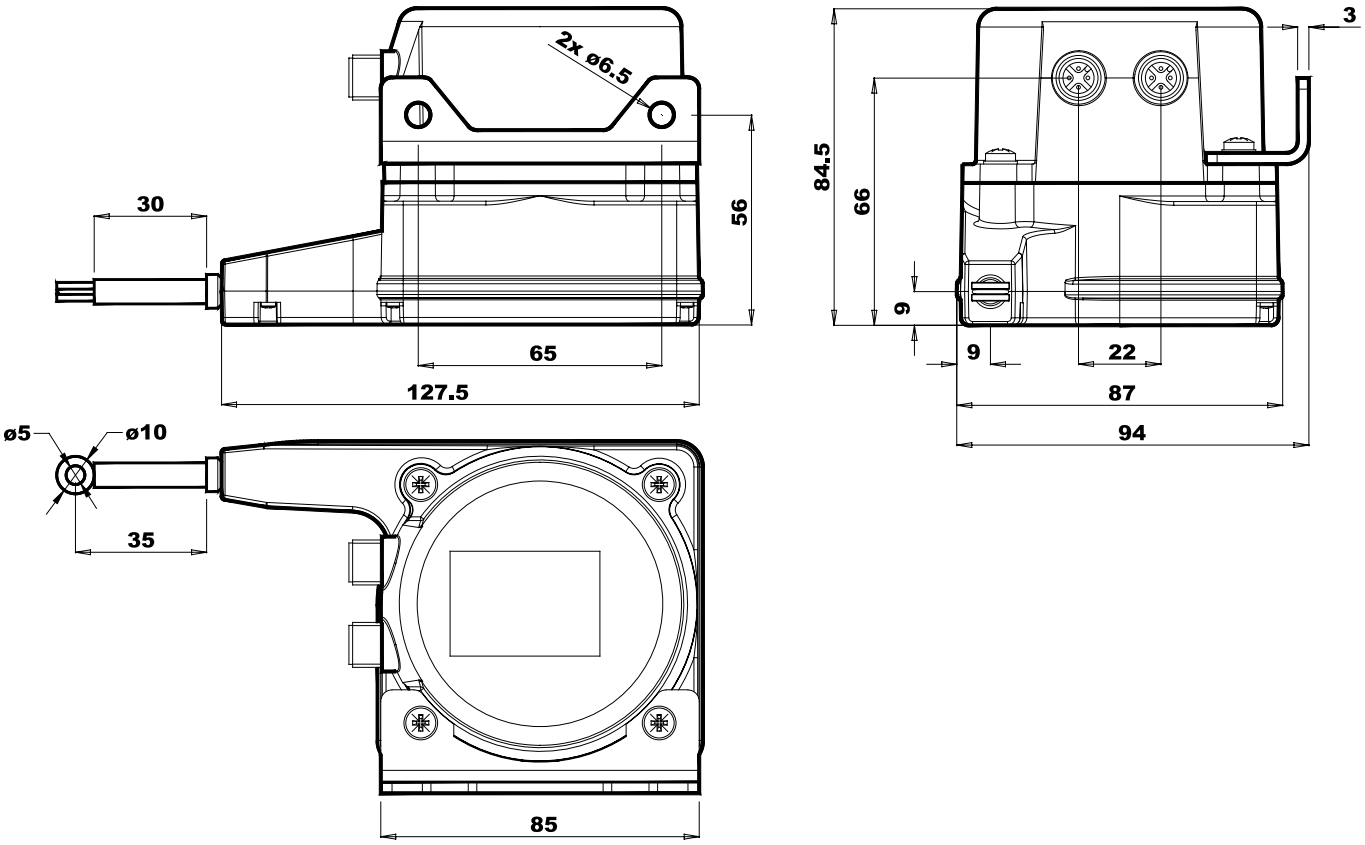
CAN termination	
N	Without embedded CAN bus termination

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Potentiometer	
P1	Potentiometer type: 10 KΩ, 10 rounds, 1 x 10^5 cycles
P3	Potentiometer type: 10 KΩ, 5 rounds, 1 x 10^5 Cycles. For 2.0 meters only
P4	Potentiometer type: 10 KΩ, 10 rounds, 5 x 10^5 cycles

Custom configuration are available on request

Dimensions [mm]



Accessories

Type	Description
Counterpart Connector	Cable mount M12 receptacle connector: loose connector with 4pin, screw terminals.
Cable 5m female / Stripped wires	Length 5m, multipolar cable for dynamic installations, 4 conductors (brown, grey, black, yellow/green) sections 0.5mm², external grey jacket with excellent resistance to abrasive action, ordinary industrial oils and chemical agents. M12 4pin receptacle connector.
Cable 10m female / Stripped wires	Length 10m, multipolar cable for dynamic installations, 4 conductors (brown, grey, black, yellow/green) sections 0.5mm², external grey jacket with excellent resistance to abrasive action, ordinary industrial oils and chemical agents. M12 4pin receptacle connector.
CAN Counterpart Connector	M12 receptacle connector: loose connector with 5pin, screw terminals.
Cable 5m female / Stripped wires	Length 5m, multipolar cable for dynamic installations, 2x2xAWG22 conductors (brown, white, yellow, green) , external purple jacket with excellent resistance to abrasive action, ordinary industrial oils, chemical agents and UV. M12 5pin receptacle connector.
Cable 10m female / Stripped wires	Length 10m, multipolar cable for dynamic installations, 2x2xAWG22 conductors (brown, white, yellow, green) , external purple jacket with excellent resistance to abrasive action, ordinary industrial oils, chemical agents and UV. M12 5pin receptacle connector.
CAN Network female ermination	M12 5 pin receptacle connector cap with CAN network termination.
Adapter	Ring to threaded rod adapter