

Rotary Transducer

Analogue Rotary Transducer - Industry Type



Series WP
WP-M

- **High precision potentiometer**
- **Rotation angle 180° / 320°
and Multiturn 3 / 5 / 10 / ... / up to 120 turns**
- **Case diameter: 40 / 60 mm**
- **Protection class: IP60 to IP67**
- **Output: voltage divider, 0...10 VDC, 4...20 mA**
- **Linearity up to 0,05 %**
- **Rotation speed: 200 rpm**
- **Torque: 0,8 Ncm**
- **Life expectancy: 2 mio. turns**
- **Housing: anodised aluminium**

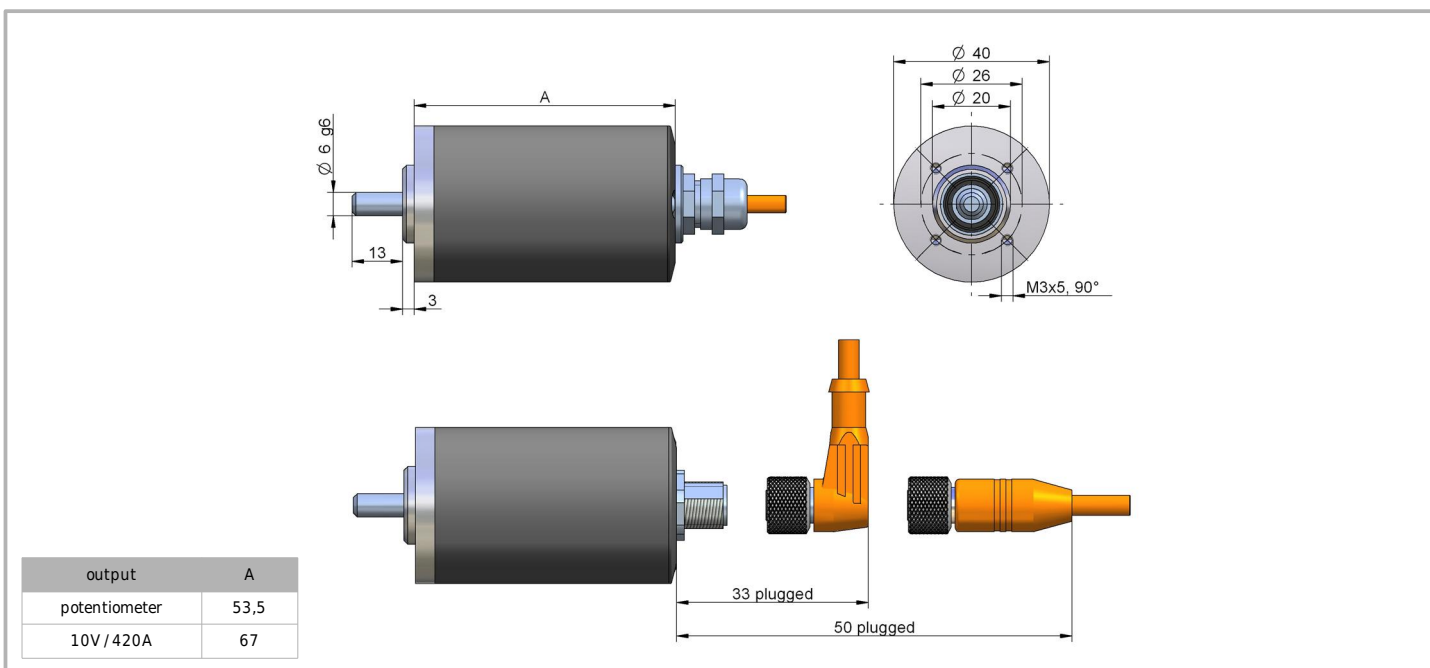
TECHNICAL DATA - SERIES WP-M

WP-M	measurement range [°]	linearity [%]	continuous rotation
1 Turn	320	0,5 (0,25)	yes
3 Turn	1000	0,15 (0,10)	-
5 Turn	1800	0,15 (0,10)	-
10 Turn	3600	0,10 (0,05)	-

Linearity values in brackets are optional and available on request.

signal direction	signal increasing counter clock wise (view on shaft)
housing	aluminium, titanium grey anodised; stainless steel
storage temperature	-30...+85 °C
connection	M12-connector or cable outlet with TPE-cable (2m)
rotation speed max.	200 rpm
torque	0,8 Ncm
shaft material	stainless steel
shaft bearing	2 sealed bearings, type 2RS
shaft load	40 N radial, 25 N axial
protection class (housing)	IP65 or IP67
protection class (shaft input)	IP60 or IP65
life time	> 2 mio. shaft turns
weight	approx. 130 g

TECHNICAL DRAWING - SERIES WP-M



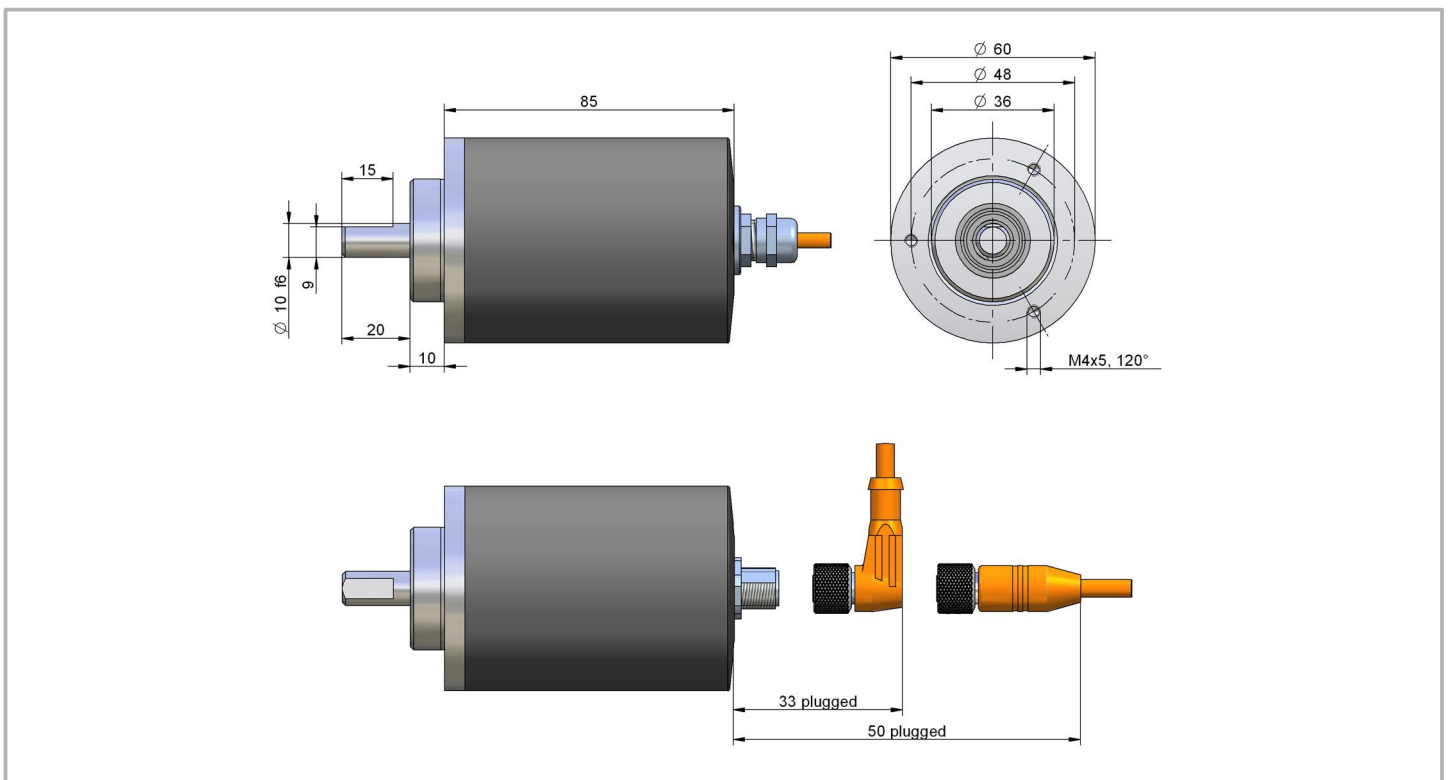
TECHNICAL DATA - SERIES WP

WP	measurement range [°]	linearity [%]	continuous rotation
180	180	0,50 (0,25)	yes
1 Turn	320	0,50 (0,10)	yes
3 Turn	1000	0,15 (0,10)	-
5 Turn	1800	0,15 (0,10)	-
10 Turn	3600	0,10 (0,05)	-
20 Turn	7200	0,10 (0,05)	-
30 Turn	10800	0,10 (0,05)	-
45 Turn	16200	0,10 (0,05)	-
60 Turn	21600	0,10 (0,05)	-
75 Turn	25200	0,10 (0,05)	-
90 Turn	32400	0,10 (0,05)	-
100 Turn	36000	0,10 (0,05)	-
120 Turn	43200	0,10 (0,05)	-

Additional measurement ranges are available on request. Linearity values in brackets are optional and available on request.

signal direction	signal increasing counter clock wise (view on shaft)
housing	aluminium, titanium grey anodised; stainless steel
storage temperature	-30...+85 °C
connection	M12-connector or cable outlet with TPE-cable (2m)
rotation speed max.	200 rpm
torque	0,8 Ncm
shaft material	stainless steel
shaft bearing	2 sealed bearings, type 2RS
shaft load	50 N radial, 30 N axial
protection class (housing)	IP65 or IP67
protection class (shaft input)	IP60, IP65 or IP67
life time	> 2 mio. shaft turns
weight	approx. 260 g

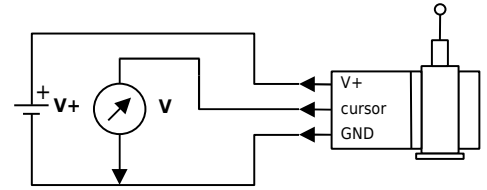
TECHNICAL DRAWING - SERIES WP



ANALOGUE OUTPUT

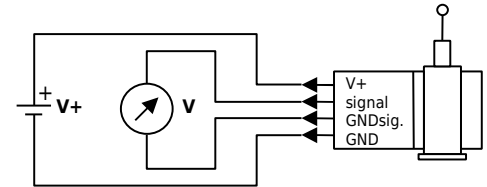
Potentiometer (voltage divider)

output	1 kOhm
supply voltage	max. 30 V
recommended cursor current	< 1 μ A
noise	depending on supply
working temperature	-20...+85 °C
temperature coefficient	\pm 0,0025 %/K



0...10 V voltage output

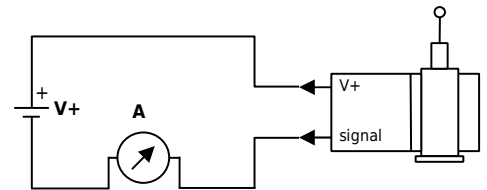
output	0...10 V, galvanically isolated, 4 conductors
supply voltage	12...30 VDC
max. current consumption	22,5 mA (unloaded)
output current	max. 10 mA, min. load 1 kOhm
dynamics	< 3 ms from 0...100 % and 100...0 %
noise	3 mV _{pp} typically, max. 37 mV _{pp}
inverse-polarity protection	yes, infinite
short-circuit proof	yes, permanent
working temperature	-20...+60 °C
temperature coefficient	0,0037 %/K



note: GNDsig. and GND may be connected in 3-wire system.

4...20 mA current output

output	4...20 mA, 2 conductors
voltage supply	12...30 VDC
output current	max. 50 mA in case of error*
dynamics	< 1 ms from 0...100 % and 100...0 %
noise	0,03 mA _{pp} = 6 mV _{pp} at 200 Ohm
inverse-polarity protection	yes, infinite
working temperature	-20...+60 °C
temperature coefficient	0,0079 %/K



* e. g. exceeding specified measurement range at sensors with continuous rotation

CONNECTION

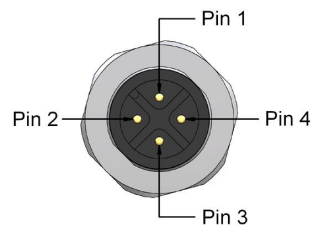
cable output:

axial 2,0 metre standard, other cable length optional
 type: TPE, flexible
 diameter: approx. 4,5 mm
 stranded wire: 0,25 mm²
 temperature range: fixed installation -30...+80 °C, flexible installation -20...+80 °C

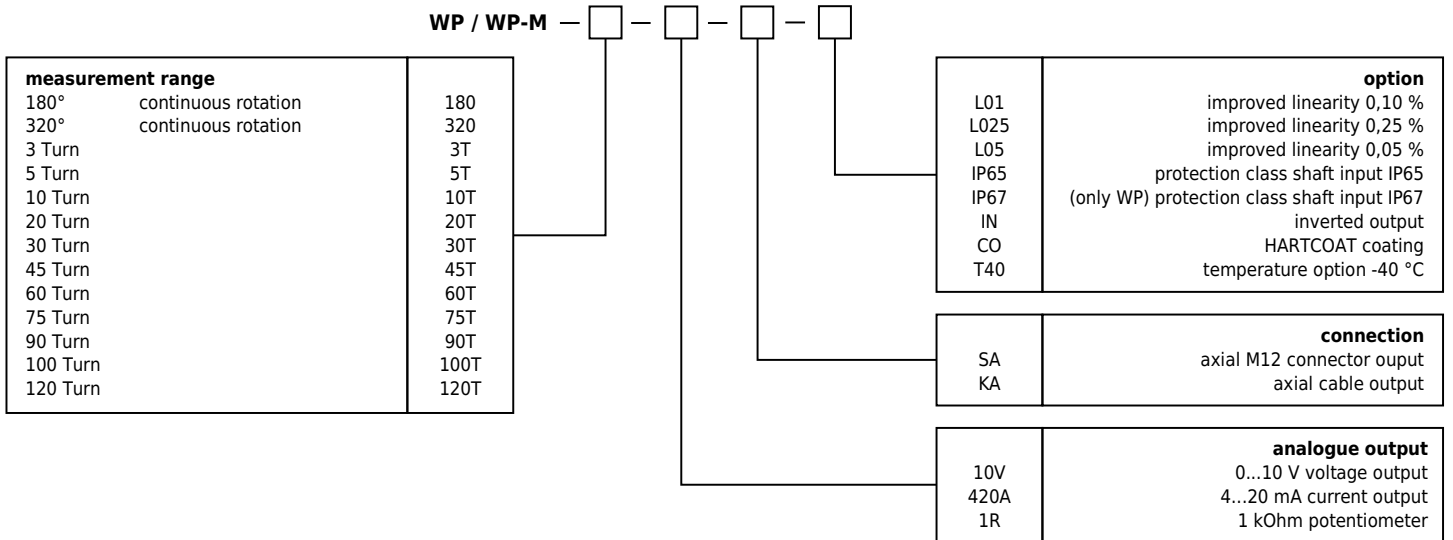
pin	wire colour	10 V	420 mA	1 kOhm
1	brown	V +	V +	V +
2	white	signal	n. c.	cursor
3	blue	GND	signal	GND
4	black	GND signal	n. c.	n. c.

4-pin M12 connector output (socket):

profile/ view on solder side of mating connector



ORDER CODE



ACCESSORIES

cable with mating connector M12		mating connector M12	
K4P2M-S-M12	2m, straight connector	D4-G-M12-S	straight
K4P5M-S-M12	5m, straight connector	D4-W-M12-S	angular
K4P10M-S-M12	10m, straight connector		
K4P2M-SW-M12	2m, angular connector	extended cable for transducers with cable output	
K4P5M-SW-M12	5m, angular connector	KAB-1M-S-4L	additional metre of TPE-cable
K4P10M-SW-M12	10m, angular connector		

We reserve the right to alter the specification without prior notice.

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