



# Absolute encoders – multiturn

<b>Standard electronic multiturn, magnetic</b>	<b>Sendix M5861 (shaft)</b>	<b>Analog</b>
<b>Mounting accessory for shaft encoders</b>		Order no.
<b>Coupling</b>	Bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	<b>8.0000.1102.1010</b>
<b>Cables and connectors</b>		Order no.
<b>Preassembled cables</b>	M12 female connector with coupling nut, 5-pin, A coded, straight single ended 2 m [6.56'] PVR cable	<b>05.00.6081.2211.002M</b>
<b>Connectors</b>	M12 female connector with coupling nut, 5-pin, A coded, straight (metal)	<b>8.0000.5116.0000</b>

Further Kübler accessories can be found at: [kuebler.com/accessories](http://kuebler.com/accessories)  
 Further Kübler cables and connectors can be found at: [kuebler.com/connection-technology](http://kuebler.com/connection-technology)

## Technical data

Electrical characteristics current interface 4 ... 20 mA	
<b>Supply voltage</b>	10 ... 30 V DC
<b>Current consumption (no load)</b>	max. 30 mA
<b>Reverse polarity protection of the supply voltage</b>	yes
<b>Short-circuit proof outputs</b>	yes <sup>1)</sup>
<b>Measuring range</b>	factory setting 2 <sup>4</sup> revolutions optionally scalable up to 2 <sup>16</sup> revolutions
<b>DA converter resolution</b>	12 bit
<b>Angular measurement deviation <sup>2)</sup></b>	±0,5°
<b>Temperature coefficient</b>	< 100 ppm/K
<b>Repeat accuracy, at 25 °C [77 °F]</b>	±0.2°
<b>Output load</b>	at 10 V DC max. 200 Ohm at 24 V DC max. 900 Ohm at 30 V DC max. 1200 Ohm
<b>Setting time</b>	< 1 ms, R <sub>Burden</sub> = 900 Ohm, 25°C [77°F]
<b>LEDs (green/red)</b>	- system status - current loop interruption – input load too high - reference point display (only with factory settings) at cw: betw. 0° and 1° at ccw: betw. 0° and -1° - status in teach mode
<b>Options</b>	- output signal scalable via the teach inputs - output signal scalable via the teach inputs + limit switch function
<b>Teach inputs</b>	level = +V for 1 s minimum
<b>PowerON Time</b>	< 1 s
<b>Update rate</b>	1 ms

Electrical characteristics voltage interface 0 ... 10 V / 0 ... 5 V	
<b>Supply voltage</b>	output 0 ... 5 V 10 ... 30 V DC output 0 ... 10 V 15 ... 30 V DC
<b>Current consumption (no load)</b>	max. 30 mA
<b>Reverse polarity protection of the supply voltage</b>	yes
<b>Short-circuit proof outputs</b>	yes <sup>1)</sup>
<b>Measuring range</b>	factory setting 2 <sup>4</sup> revolutions optionally scalable up to 2 <sup>16</sup> revolutions
<b>DA converter resolution</b>	0 ... 10 V 12 bit 0 ... 5 V 11 bit
<b>Angular measurement deviation <sup>2)</sup></b>	±0,5°
<b>Temperature coefficient</b>	< 100 ppm/K
<b>Repeat accuracy, at 25°C [77°F]</b>	±0.2°
<b>Current output</b>	max. 10 mA
<b>Setting time</b>	< 1 ms, R <sub>Load</sub> = 1000 Ohm, 25°C [77°F]
<b>LEDs (green/red)</b>	- system status - reference point display (only with factory settings) at cw: betw. 0° and 1° at ccw: betw. 0° and -1° - status in teach mode
<b>Options</b>	- output signal scalable via the teach inputs - output signal scalable via the teach inputs + limit switch function
<b>Teach inputs</b>	level = +V for 1 s minimum
<b>PowerON Time</b>	< 1 s
<b>Update rate</b>	1 ms

1) When the supply voltage is correctly applied.  
But not output to +V. Supply voltage and sensor output signal are not galvanically isolated.  
2) Over the whole temperature range.

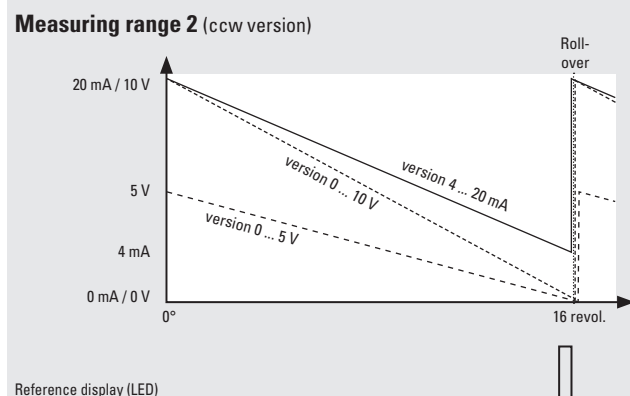
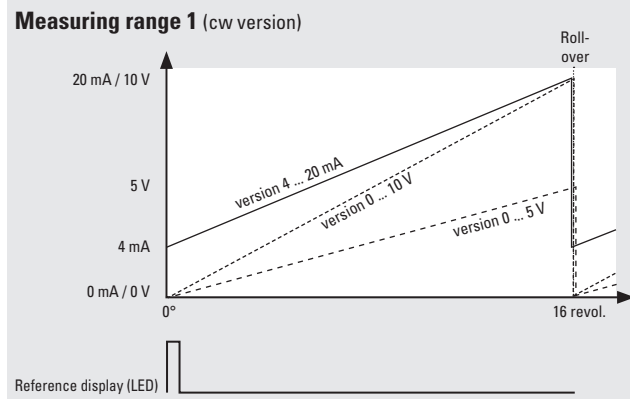
# Absolute encoders – multiturn

<b>Standard electronic multiturn, magnetic</b>	<b>Sendix M5861 (shaft)</b>	<b>Analog</b>
--	-----------------------------	---------------

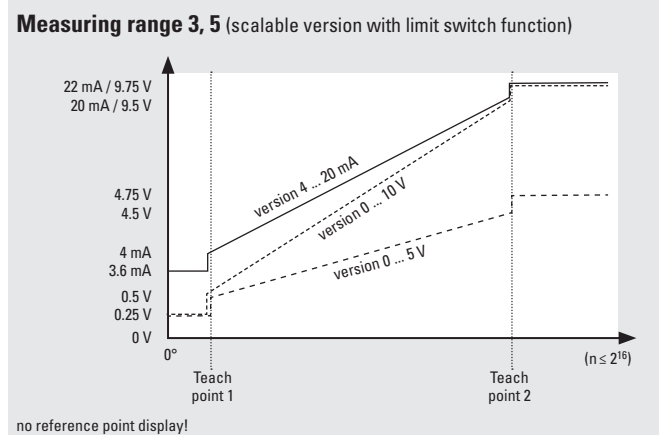
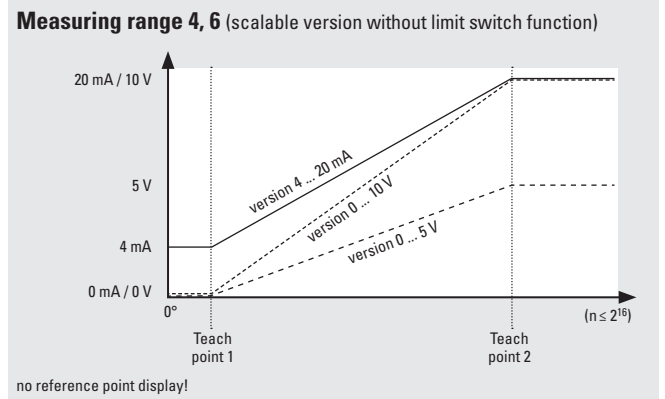
Mechanical characteristics	
<b>Maximum speed</b>	4000 min <sup>-1</sup> 2000 min <sup>-1</sup> (continuous)
<b>Starting torque at 20 °C [68 °F]</b>	< 0.01 Nm
<b>Shaft load capacity</b>	radial 80 N axial 40 N
<b>Weight</b>	approx. 280 g [9.88 oz]
<b>Protection acc. to EN 60529/DIN 40050-9</b>	IP65
<b>Working temperature range</b>	-40 °C ... +85 °C [-40 °F ... +185 °F]
<b>Materials</b>	shaft V2A flange aluminum housing zinc die-cast cable PVC
<b>Shock resistance acc. to EN 60068-2-27</b>	5000 m/s <sup>2</sup> , 4 ms
<b>Vibration resistance acc. to EN 60068-2-6</b>	300 m/s <sup>2</sup> , 10 ... 2000 Hz

Approvals	
<b>E1 compliant</b> in accordance with	ECE guideline
<b>UL compliant</b> in accordance with	File no. E224618
<b>CE compliant</b> in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
ATEX Directive	2014/34/EU (for Ex 2/22 variants)
<b>UKCA compliant</b> in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032
UKEX Regulations	S.I. 2016/1107 (for Ex 2/22 variants)

## Example (output signal evolution) – factory setting



## Example (output signal evolution) – option: scalable



<b>Factory-set measuring range</b>	2 <sup>4</sup> revolutions with roll-over			
<b>Limit switch function</b>	version	<b>0 ... 10 V</b>	<b>0 ... 5 V</b>	<b>4 ... 20 mA</b>
limit switch low		0.25 V	0.25 V	3.6 mA
limit switch high		9.75 V	4.75 V	22.0 mA

1) For scalable version.

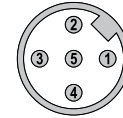
# Absolute encoders – multiturn

<b>Standard electronic multiturn, magnetic</b>	<b>Sendix M5861 (shaft)</b>	<b>Analog</b>
--	-----------------------------	---------------

## Terminal assignment

Interface	Type of connection	Cable (isolate unused cores individually before initial start-up)					
3 (current)	2, B	Signal:	0 V	+V	+I	SET 1 <sup>1)</sup>	SET 2 <sup>1)</sup>
		Core color:	WH	BN	GN	GY	PK
3 (current)	4	M12 connector, 5 pin					
		Signal:	0 V	+V	+I	SET 1 <sup>1)</sup>	SET 2 <sup>1)</sup>
		Pin:	3	2	1	5	4
4, 5 (voltage)	2, B	Cable (isolate unused cores individually before initial start-up)					
		Signal:	0 V	+V	+U	SET 1 <sup>1)</sup>	SET 2 <sup>1)</sup>
		Core color:	WH	BN	GN	GY	PK
4, 5 (voltage)	4	M12 connector, 5 pin					
		Signal:	0 V	+V	+U	SET 1 <sup>1)</sup>	SET 2 <sup>1)</sup>
		Pin:	3	2	1	5	4

Top view of mating side, male contact base



M12 connector, 5-pin

- +V: Supply voltage encoder +V DC
- 0 V: Supply voltage encoder ground GND (0 V)
- +U: Voltage
- +I: Current
- SET 1: Set input for teachpoint 1
- SET 2: Set input for teachpoint 2

# Absolute encoders – multiturn

<b>Standard electronic multiturn, magnetic</b>	<b>Sendix M5861 (shaft)</b>	<b>Analog</b>
--	-----------------------------	---------------

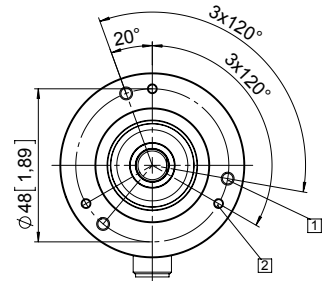
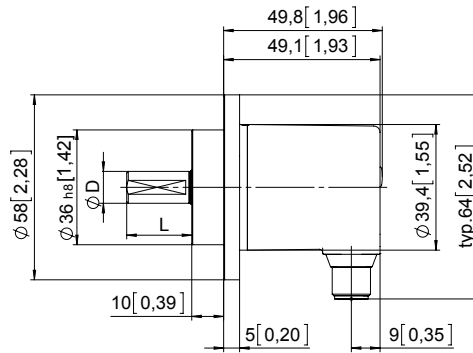
## Dimensions

Dimensions in mm [inch]

### Clamping flange, ø 58 [2.28] Flange type 3

- 1 3 x M4
- 2 3 x M3

D	Fit	L
6 [0.24]	h7	12.5 [0.49]
10 [0.39]	h7	20 [0.79]



### Synchro flange, ø 58 [2.28] Flange type 4

- 1 3 x M4, 10 [0.39] deep

D	Fit	L
6 [0.24]	h7	12.5 [0.49]
10 [0.39]	h7	20 [0.79]

