

# Encoder

## Incremental Angle Transducer



**Series A36  
and A58**

- *Incremental output A/B-Pulse*
- *Housing diameter 36 mm or 58 mm*
- *Protection class IP64, max. IP67*
- *Output frequency up to 300kHz*
- *Max. rotation speed 12.000 rpm*
- *Torque: 0,05-0,5 Nm*
- *Aluminium housing*
- *Customised versions available*

A36

# A36



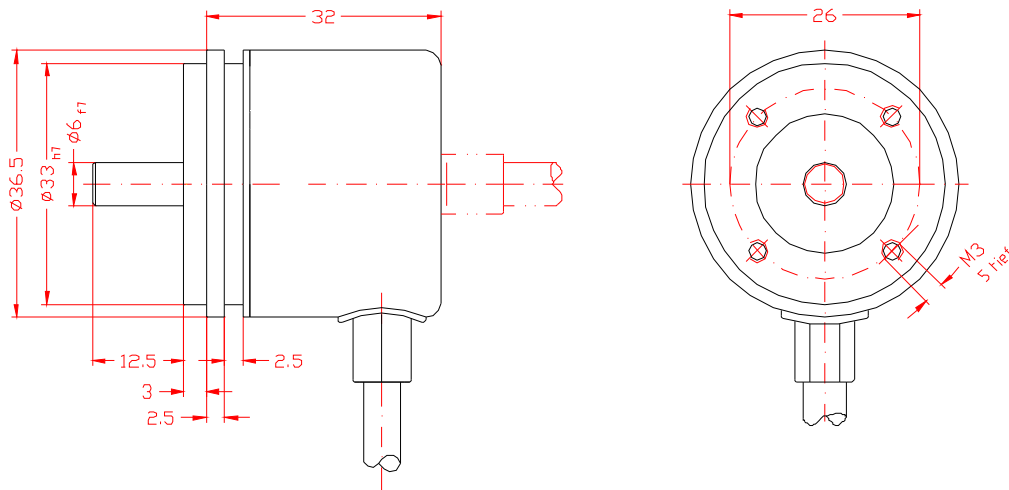
	<b>Solid shaft</b>	<b>Through hollow shaft / Hollow shaft</b>
Shaft diameter	6 mm	6 / 6,35 / 8 mm (depth=2xD for holl. sh.)
Max. rotation speed	12.000 rpm	12.000 rpm
Shaft load	40 N radial, 25 N axial	45 N radial, 30 N axial
Moment of inertia	approx. $0,2 \times 10^{-6}$ kgm <sup>2</sup>	approx. $0,3 \times 10^{-6}$ kgm <sup>2</sup>
Starting torque (20°C)	<0,05 Nm	<0,5 Nm
Ball bearing	626ZZ	6800ZZ
Shaft material	stainless steel	brass
Working temperature	-30...+85°C	
Protection class	IP64	
Shock resistance	1000 m/s <sup>2</sup> ; 6 ms	
Vibration resistance	100 m/s <sup>2</sup> ; 55-2000 Hz	
Mass	approx. 80 g	
Housing material	aluminium	
Available resolution	25 / 100 / 125 / 200 / 360 / 500 / 1000 / 1024 / 1500 / 2000 / 2048 / 2500 / 3600 counts/rev. (more on request)	

See page 5  
for electr. data

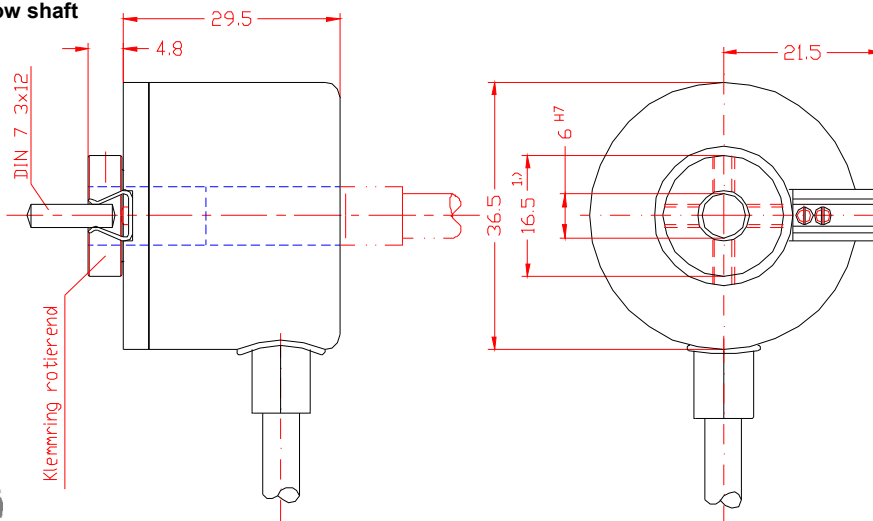
## Technical drawing

## A36

### Solid shaft



### Through hollow shaft / Hollow shaft



Note:  
Through hollow shafts are not  
available with axial cable  
output



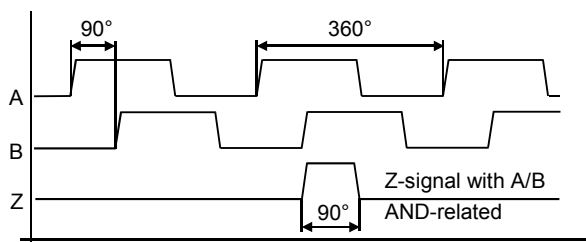
## Technical data

Data Electronics	Line driver L RS 422 (TTL-compatible)	Push-Pull G
Power supply:	5 VDC $\pm$ 5%	8 up to 30 VDC
Current consumption without load:	typ. 70 mA, max. 100 mA	typ. 80 mA, max. 150 mA
Max. load/canal A36:	$\pm$ 10 mA	$\pm$ 30 mA
Max. load/canal A58:	$\pm$ 20 mA	$\pm$ 30 mA
Max. pulse frequency A36 :	125 kHz	100 kHz
Max. pulse frequency A58:	300 kHz	300 kHz
Min. signal level high:	2,5 V	$U_B - 3$ V
Max. signal level low:	0,5 V	2,5 V
Working temperature	-30...+85°C	-30...+85°C
Protection class	IP64 (IP67 on request)	IP64 (IP67 on request)
Max. line length	1000 m	250 m
Recommended circuit		

### Output signal

Pulses A and B are 90° phase-delayed (detection of direction). The Z-signal recurs with pulse distance Z and may be used as point of reference.

Display of signal without inverted signals.



Clockwise rotation - view onto shaft

Values for impulse and resolution in the according manuals

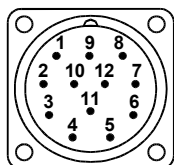
## Connection

Signal	0V	+UB	0Vsens*	+UBsens*	A	A-	B	B-	Z	Z-	Screen
12pin connector	10	12	11	2	5	6	8	1	3	4	Housing
Wire colour	w hite	brown	black	violet	green	yellow	grey	pink	blue	red	Housing

\* For line driver L only (RS422 TTL-compatible). For long line lengths it may occur that the operating voltage at the sensor does not suffice due to the output resistance. With the sensor lines 0Vsens and +UBsens the operating voltage can be checked and, if necessary, be readjusted at the input connection.

### 12pin connector output (socket) for A58 only

Profile/view on solder side of mating connector



### Cable:

radial/axial 1,5 m standard

other lengths optional

Type: UL2464/1061, LIYY, flexible

Diameter: approx. 6,5 mm

Core: 0,25 mm<sup>2</sup>

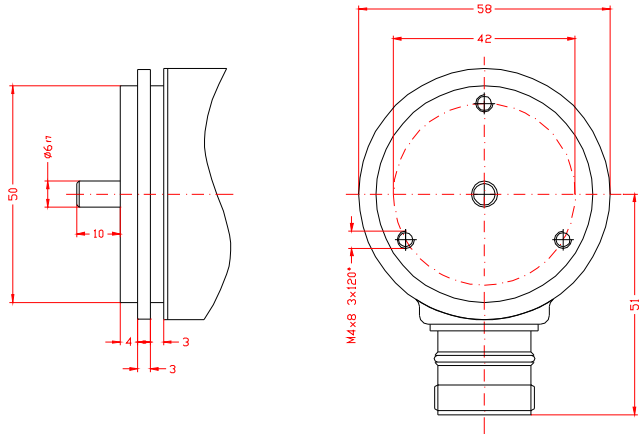
Temperature range: fixed in installation -30...+80°C

flexible -20...+80°C

## Options

### Synchro flange (for A58)

Encoder A58 can also be conducted with a synchro flange. The shaft diameter is 6 mm (see sketch). To mount the sensor the excentrics BX58 may be used.



### IP67 (for A58)

Option IP67 applies when the sensor is completely immersed in water (temporarily). Please bear in mind that this option implicates a higher starting torque due to the specific sealing. The max. torque is reduced to 50% of the specified value. This option is available for series A58 only.

### Extended connector cable for cable output

The cable length for sensors with cable output is 1,5 m standard. The cable can be ordered in any length as needed. Please specify your request in your order.

## Accessories

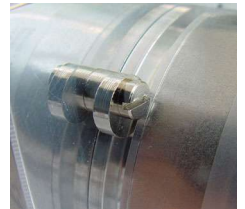
### Mounting excentric kit - BX36 and BX58

The encoder can be mounted with the excentrics. The kit includes 3 excentrics and 3 screws.

Required drill holes:

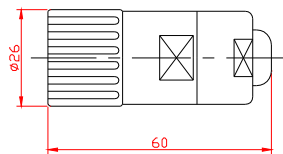
BX36: M2,5-screw thread, depth 5 mm,  $\varnothing$  screw-hole circle 42 mm

BX58: M3-screw thread, depth 6 mm,  $\varnothing$  screw-hole circle 65 mm



### Mating connector M23 for A58 - CON012-S

M23, straight  
12pin connector clockwise  
(fits in anticlockwise encoder sockets)  
Metal housing



### Coupling

We offer a range of fixed or pluggable (disk) couplings (bellows coupling) for all current shaft diameters.

Application for shaft unsymmetries, angle errors, axial play, as adapter for various shaft diameters or as disk couplings to disconnect or disassemble.



### Digital angle and rotation speed measurement - PAX

Use PAX to visualise the angle of rotation or the rotation speed (Tacho sensor) of the encoder. It enables a transmission of the measurement data on the computer via interface. The comparator allows a Good-Bad-evaluation (limiting values function).

Inputs: Incremental/Analogue, 2 independent counter, 1 Tacho sensor

2 or 4 limiting values (plug in card)

Analogue output (0)4...20 mA, 0...10 V (plug in card)

Serial interfaces: RS 485, RS232, DeviceNet (plug in card)

Protection class (front panel) IP 65

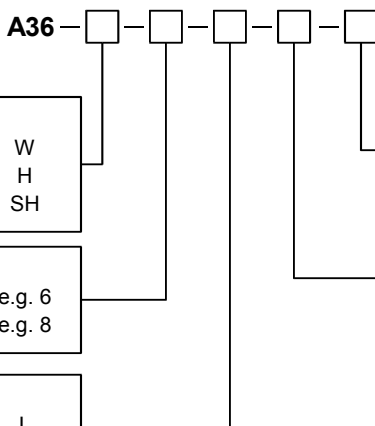
6-digit display and power supply 11...36 VDC or 85...250 VAC

For further information please ask for the data sheet for the PAX display series.



**Order code**

**A36**



<b>Shaft type</b> Solid shaft Through hollow shaft Hollow shaft	W H SH
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<b>Shaft diameter</b> Solid shaft: 6 mm Through hollow shaft: 6/6,35/8 mm	e.g. 6 e.g. 8
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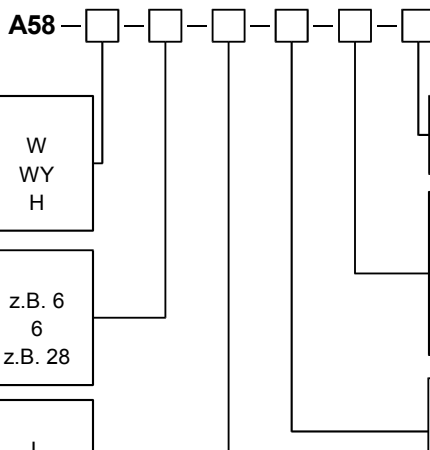
<b>Output</b> Line driver RS422 (5V) Push-Pull (8..30V)	L G
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KA KR	<b>Connection</b> Cable output axial (not thr. hollow sh.) cable output radial
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e.g. 3600	<b>Resolution</b> 25/100/125/200/360/500/1000/1024/ 1500/2000/2048/2500/3600
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**Order code**

**A58**



<b>Shaft type/flange</b> Solid shaft with clamp flange Solid shaft with synchro flange Through hollow shaft	W WY H
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<b>Shaft diameter</b> Solid sh. with clamp fl.: 6/10/12 mm Solid sh. with synchro flange: 6 mm Thr. hollow sh.: 12/20/25/28 mm	z.B. 6 6 z.B. 28
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<b>Output</b> Line driver RS422 (5V) Push-pull antivalent (8..30V)	L G
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IP67	<b>Options</b> water-proof IP67 (not thr. hollow sh.)
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SA SR KA KR	<b>Connection</b> Connector output axial Connector output radial Cable output axial (not thr. hollow sh.) Cable output radial
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z.B. 5000	<b>Resolution</b> 60/100/250/400/500/960/ 1000/1024/2000/5000
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**Price list**

<b>A36-W</b>	<b>Solid shaft</b>	<b>135 €</b>
<b>A36-H/SH</b>	<b>Through hollow shaft or hollow shaft</b>	<b>140 €</b>
<b>A58-W/WY</b>	<b>Solid shaft</b>	<b>155 €</b>
<b>A58-H-12/20</b>	<b>Through hollow shaft ø 12 or 20 mm</b>	<b>199 €</b>
<b>A58-H-25/28</b>	<b>Through hollow shaft ø 25 or 28 mm</b>	<b>219 €</b>

**Options:**

<b>IP67</b>	water-proof IP67	15 €
<b>Extended connector cable for axial/radial cable output KA/KR</b>		
	each additional metre of PVC cable	6 €

**Accessories:**

<b>BX36</b>	Mounting excentric kit for A36	7 €
<b>BX58</b>	Mounting excentric kit for A58	9 €
<b>mating connector M23, SA/SR</b>		19 €
CON012-S	mating connector M23 straight	
<b>PAX</b>	Digital display of angle and rotation speed	ab 324 €
	(see separate data sheet for the PAX display series)	

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

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