

Universal Type 5820



- Only 42 mm clearance needed
- Very easy mounting. The encoder is mounted directly on the drive shaft without couplings. This saves up to 30 % cost and 60 % clearance compared to shaft versions.
- Many variations
- Temperature and ageing compensation
- Short-circuit proof outputs
- Reverse connection protection for voltage supply
- RS 422 or push-pull output
- Resolution up to 5000 ppr
- Protection up to IP 66
- available as explosion proof zone 2 and 22

Mechanical characteristics:

Speed without sealing:	max. 12000 min ⁻¹
Speed with sealing ¹⁾ :	max. 6000 min ⁻¹
Rotor moment of inertia:	approx. 6 x 10 ⁻⁶ kgm ²
Starting torque without sealing:	< 0.01 Nm
Starting torque with sealing:	< 0.05 Nm
Weight:	approx. 0.4 kg
Protection acc. to EN 60 529 without sealing:	IP 40
Protection acc. to EN 60 529 sealing:	IP 66
Working temperature without sealing:	-20° C up to +85 °C ²⁾³⁾
Working temperature with sealing:	-20° C up to +80 °C ²⁾³⁾
Operating temperature without sealing:	-20° C up to +90 °C ²⁾⁴⁾
Operating temperature with sealing:	-20° C up to +85 °C ²⁾⁴⁾
Shaft:	stainless steel H7
Shock resistance acc. to DIN-IEC 68-2-27	2000 m/s ² , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s ² , 10...2000 Hz

¹⁾ For continuous operation max. 3000 min⁻¹ ventilated

²⁾ Non-condensing

³⁾ 70 °C with Cable

⁴⁾ 80 °C with Cable

Pulse rates available at short notice:

10, 20, 25, 30, 50, 60, 100, 120, 125, 127, 150, 180, 200, 216, 240, 250, 254, 256, 300, 314, 360, 375, 400, 500, 512, 600, 625, 720, 745, 750, 762, 800, 900, 927, 1000, 1024, 1250, 1270, 1400, 1500, 1800, 2000, 2048, 2250, 2400, 2500, 3000, 3600, 4000, 4096, 5000

Other pulse rates on request

Electrical characteristics:

Output circuit:	RS 422 (TTL-compatible)	RS 422 (TTL-compatible)	Push-pull	Push-pull	Push-Pull (7272) ³⁾
Supply voltage:	5 V (±5%) or 10 ... 30 V DC	5 ... 30 V DC	10 ... 30 V DC	5 ... 30 V DC	5 ... 30 V DC
Power consumption (no load) without inverted signal:	–	–	typ. 55 mA / max. 125 mA	typ. 55 mA / max. 125 mA	–
Power consumption (no load) with inverted signals:	typ. 70 mA / max. 90 mA	typ. 70 mA / max. 90 mA	typ. 80 mA/ max. 150 mA	typ. 80 mA/ max. 150 mA	50 100
Permissible load/channel:	max. ±20 mA	max. ±20 mA	max. ±30 mA	max. ±30 mA	max. ±20 mA
Pulse frequency:	max. 300 kHz	max. 300 kHz	max. 300 kHz	max. 300 kHz	max. 300 kHz
Signal level high:	min. 2.5 V	min. 2.5 V	min. UB-2.5 V	min. UB-1.5 V	min. UB - 2.5 V
Signal level low:	max. 0.5 V	max. 0.5 V	max. 2.0 V	max. 2.0 V	max. 0.5 V
Rise time t _r	max. 200 ns	max. 200 ns	max. 1 μs	max. 1 μs	max. 1 μs
Fall time t _f	max. 200 ns	max. 200 ns	max. 1 μs	max. 1 μs	max. 1 μs
Short circuit proof outputs ¹⁾ :	yes ²⁾	yes ²⁾	yes	yes	yes
Reverse connection protection at U _B :	5 V: no, 1 0 ... 30 V: yes	yes	yes	no	no

Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3

¹⁾ If supply voltage correctly applied

²⁾ Only one channel allowed to be shorted-out:

(If UB=5 V, short-circuit to channel, 0 V, or +UB is permitted)

(If UB=5-30 V, short-circuit to channel or 0 V is permitted)

³⁾ Max. recommended cable length 30 m

Rotary Measuring Technology Incremental hollow shaft encoder

Universal Type 5820

Terminal assignment

Sig.:	0 V	0 V	+U _B	+U _B	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	\perp
		Sens ²⁾		Sens ²⁾							
12 pin plug, Pin:	10	11	12	2	5	6	8	1	3	4	PH ¹⁾
Col.:	WH	GY PK	BN	BU RD	GN	YE	GY	PK	BU	RD	

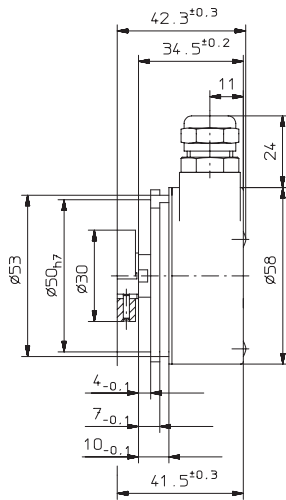
1) PH = Shield is attached to connector housing

2) Sensor cables are connected to the supply voltage internally if long feeder cables are involved they can be used to adjust or control the voltage at the encoder

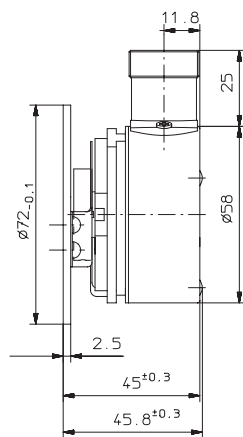
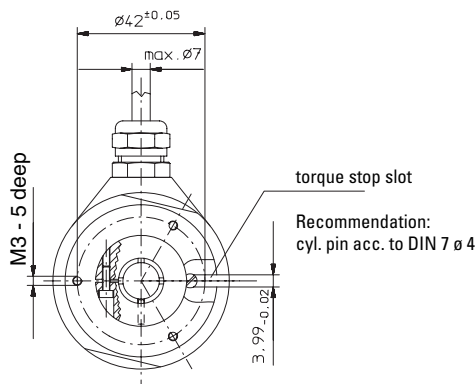
- If sensor cables are not in use, they have to be insulated or 0 V_{Sensor} has to be connected to 0 V and U_BSensor has to be connected to U_B

- Using RS 422 outputs and long cable distances, a wave impedance has to be applied at each cable end.
Insulate unused outputs before initial startup.

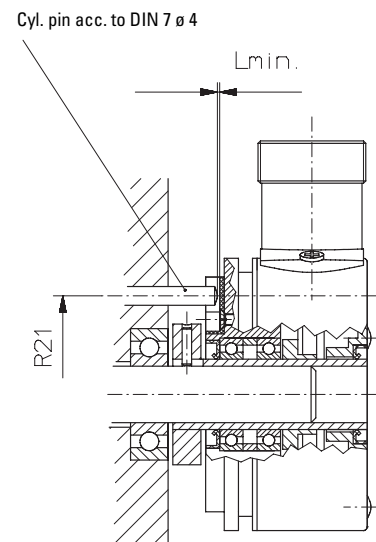
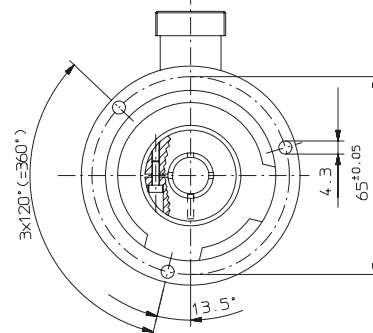
Dimensions



Bracket Type 1



Bracket Type 3 with stator coupling



Note: minimum insertion depth 1.5 x D_{hollow shaft}

Mounting advice:

- 1) The brackets and shafts of the encoder and drive should not both be rigidly coupled together at the same time.
- 2) When mounting a hollow shaft encoder, we recommend using a torque stop pin that fits into the torque stop slot or a stator coupling.
- 3) When mounting the encoder ensure the dimension L_{min.} is greater than the axial maximum play of the drive. Otherwise there is a danger that the device could mechanically seize up.

Rotary Measuring Technology

Incremental hollow shaft encoder



Universal Type 5820

Order code:

8.5820.XXXX.XXXX

Range

Bracket

- 1 = Bracket for through shaft
- 2 = Bracket for blind hole shaft*
- 3 = Bracket for through shaft and stator coupling**
- 4 = Bracket for blind hole shaft* and stator coupling

*length of drive shaft ≤ 30 mm

Shaft

- 1 = ø 6 mm without seal
- 2 = ø 6 mm with seal**
- 3 = ø 8 mm without seal
- 4 = ø 8 mm with seal
- 5 = ø 10 mm without seal
- 6 = ø 10 mm with seal**
- 7 = ø 12 mm without seal
- 8 = ø 12 mm with seal**

further on request

Preferred types are indicated in bold

Pulse rate

(e.g. 250 pulses=> 0250)

Type of connection

- 1 = Cable radial (1 m PVC-cable)
- 2 = radial 12pin plug without mating connector**

Type of connection and supply voltage

- 1 = RS 422 (with inverted signal) 5 V supply voltage**
- 2 = Push-pull (without inverted signal) 10 ... 30V supply voltage
- 3 = Push-pull (with inverted signal) 10 ... 30V supply voltage**
- 4 = RS 422 (with inverted signal) 10 ... 30 V supply voltage
- 5 = Push-pull (without inverted signal) 5 ... 30 V supply voltage
- 6 = Push-pull (with inverted signal) 5 ... 30 V supply voltage
- 7 = RS 422 (with inverted signal) 5 ... 30 V supply voltage**
- C = Push-pull (7272 with inverted signal) 5 ... 30 V supply voltage

Express types

8.5820.X1XX.XXXX	8.5820.X2XX.XXXX
8.5820.X3XX.XXXX	8.5820.X4XX.XXXX
8.5820.X5XX.XXXX	8.5820.X6XX.XXXX
8.5820.X7XX.XXXX	8.5820.X8XX.XXXX
8.5820.XPXX.XXXX	

Accessories

Corresponding mating connector to Type of connection 2,

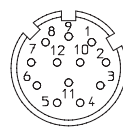
12 pin: Art.-No. 8.0000.5012.0000 pin assignment cw

Corresponding mating connector with cable pre-assembled: Art.- No. 8.0000.6101.XXXX (XXXX = length [m])

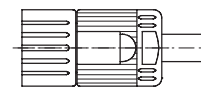
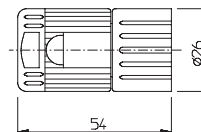
Set includes Connector type 8.0000.5012.0000 and cable type 8.0000.6100.XXXX

(Cable PUR 10 x 0.14 mm² + 2 x 0.5 mm²)

PIN allocation:



Dimensions:



Mounting kit for hollow shaft encoder ø 58 mm:

Various mounting variations can be supplied

Delivery includes:

- 1 x parallel pin with thread
Ord.-No. 8.0010.4700.0000
- 1 x mounting bracket
Art.-no. T.035.009
- Screw M3x5
Ord.-No. N.630.305
- 1 x long torque support slot
Ord.-No. T.051.672

Complete set:

Ord.-No. 8.0010.4600.0000

Stator coupling two wings

– For highly dynamic applications
Includes:

- 1x coupling two wings
- 2x 2 screws

Complete set:

Order-No.: 8.0010.4D00.0000
(see page 315)

Tether arm short

Order-No.: 8.0010.4R00.0000
(see page 316)