

Absolute encoders - singleturn

Standard optical	Sendix 5858 / 5878 (shaft / hollow shaft)	PROFIBUS DP
-------------------------	--	--------------------



The singleturn encoders 5858 and 5878 with Profibus interface and optical sensor technology are the ideal solution for all Profibus applications.

They offer a maximum resolution of 16 bits, divided over 360°. These encoders are available with blind hollow shaft up to 15 mm.



Absolute encoders singleturn

Safety-Lock™	High rotational speed	Temperature range -40°... +80°C	High protection level IP	High shaft load capacity	Shock / vibration resistant	Magnetic field proof	Short-circuit proof	Reverse polarity protection	Optical sensor	Surface protection salt spray-tested optional

Reliable

- Tried-and-tested in applications with the highest demands, such as in wind energy or mobile automation.
- Ideal for use outdoors thanks to IP67 protection and wide temperature range from -40°C up to +80°C.

Flexible

- Fast, simple, error-free connection using versions with M12 connector.
- Wide-ranging programming options thanks to latest encoder profile.

Order code Shaft version	8.5858 Type	. X X 3 X . 31 1 X a b c d e f	If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.	10 by 10
a Flange	b Shaft (ø x L), with flat	d Type of connection <i>removable bus terminal cover</i>	f Options (Service)	
1 = <u>clamping flange, IP65 ø 58 mm [2.28"]</u> 3 = clamping flange, IP67 ø 58 mm [2.28"] 2 = <u>synchro flange, IP65 ø 58 mm [2.28"]</u> 4 = synchro flange, IP67 ø 58 mm [2.28"] 5 = square flange, IP65 □ 63.5 mm [2.5"] 7 = square flange, IP67 □ 63.5 mm [2.5"]	1 = <u>6 x 10 mm [0.24 x 0.39"]</u> ¹⁾ 2 = <u>10 x 20 mm [0.39 x 0.79"]</u> ²⁾ 3 = 1/4" x 7/8" 4 = 3/8" x 7/8"	1 = with radial cable gland fitting 2 = <u>with 3 x radial M12 connectors</u>	2 = no option 3 = <u>SET button</u>	
c Interface / power supply	e Fieldbus profile	<i>Optional on request</i> - Ex 2/22 - surface protection salt spray tested		
3 = <u>PROFIBUS DP V0</u> <u>encoder profile V 1.1, 10 ... 30 V DC</u>	31 = <u>PROFIBUS DP V0</u> <u>encoder profile class 2</u>			

Order code Hollow shaft	8.5878 Type	. X X 3 X . 31 1 X a b c d e f	If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.	10 by 10
a Flange	b Blind hollow shaft	d Type of connection <i>removable bus terminal cover</i>	f Options (Service)	
1 = with spring element, long, IP65 2 = with spring element, long, IP67 3 = with stator coupling, IP65 ø 65 mm [2.56"] 4 = with stator coupling, IP67 ø 65 mm [2.56"] 5 = <u>with stator coupling, IP65 ø 63 mm [2.48"]</u> 6 = with stator coupling, IP67 ø 63 mm [2.48"]	3 = ø 10 mm [0.39"] 4 = <u>ø 12 mm [0.47"]</u> 5 = ø 14 mm [0.55"] 6 = ø 15 mm [0.59"] 8 = ø 3/8" 9 = ø 1/2"	1 = with radial cable gland fitting 2 = <u>with 3 x radial M12 connectors</u>	2 = no option 3 = <u>SET button</u>	
c Interface / power supply	e Fieldbus profile	<i>Optional on request</i> - Ex 2/22 - surface protection salt spray tested		
3 = <u>PROFIBUS DP V0</u> <u>encoder profile V 1.1, 10 ... 30 V DC</u>	31 = <u>PROFIBUS DP V0</u> <u>encoder profile class 2</u>			

1) Preferred type only in conjunction with flange type 2
2) Preferred type only in conjunction with flange type 1

Absolute encoders - singleturn

Standard optical		Sendix 5858 / 5878 (shaft / hollow shaft)	PROFIBUS DP
Mounting accessory for shaft encoders			Order no.
Coupling	bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"]		8.0000.1102.0606
	bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]		8.0000.1102.1010
Mounting accessory for hollow shaft encoders			Order no.
Cylindrical pin, long for torque stops		with fixing thread	8.0010.4700.0000
Connection technology			Order no.
Connector, self-assembly (straight)	coupling M12 for bus in		05.BMWS 8151-8.5
	connector M12 for bus out		05.BMSWS 8151-8.5
	connector M12 for power supply		05.B8141-0
Cordset, pre-assembled	M12 cordset for bus in , 6 m [19.68'] PUR cable		05.00.6011.3211.006M
	M12 cordset for bus out, 6 m [19.68'] PUR cable		05.00.6011.3411.006M
	M12 cordset for power supply, 2 m [6.56'] PUR cable		05.00.6061.6211.002M

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
 Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

Technical data	
Mechanical characteristics	
Maximum speed	
IP65 up to 70°C [158°F]	9000 min ⁻¹ , 7000 min ⁻¹ (continuous)
IP65 up to T _{max}	7000 min ⁻¹ , 4000 min ⁻¹ (continuous)
IP67 up to 70°C [158°F]	8000 min ⁻¹ , 6000 min ⁻¹ (continuous)
IP67 up to T _{max}	6000 min ⁻¹ , 3000 min ⁻¹ (continuous)
Starting torque - at 20°C [68°F]	IP65 < 0.01 Nm
	IP67 < 0.05 Nm
Mass moment of inertia	
shaft version	3.0 x 10 ⁻⁶ kgm ²
hollow shaft version	6.0 x 10 ⁻⁶ kgm ²
Load capacity of shaft	
radial	80 N
axial	40 N
Weight	
with bus terminal cover	approx. 0.53 kg [18.69 oz]
with fixed connection	approx. 0.50 kg [17.64 oz]
Protection acc. to EN 60529	
housing side	IP67
shaft side	IP65, opt. IP67
Working temperature range	-40°C ... +80°C [-40°F ... +176°F]
Material	
shaft/hollow shaft	stainless steel
flange	aluminium
housing	zinc die-cast
cable	PVC
Shock resistance acc. to EN 60068-2-27	2500 m/s ² , 6 ms
Vibration resistance acc. to EN 60068-2-6	100 m/s ² , 55 ... 2000 Hz
Electrical characteristics	
Power supply	10 ... 30 V DC
Power consumption (no load)	max. 110 mA
Reverse polarity protection of the power supply	yes
UL approval	file 224618
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU
SET button (zero or defined value, option)	
Protection against accidental activation. Button can only be operated with a ball-pen or pencil.	
Diagnostic LED (yellow)	
LED is ON with following errors	sensor error (Profibus error)

Absolute encoders - singleturn

Standard optical	Sendix 5858 / 5878 (shaft / hollow shaft)	PROFIBUS DP
-------------------------	--	--------------------

Interface characteristics PROFIBUS DP	
Resolution	1 ... 65536 (16 bit), scaleable default: 8192 (13 bit)
Code	binary
Interface	interface specification acc. to PROFIBUS DP 2.0 / standard (DIN 19245 part 3) / RS485 driver galvanically isolated
Protocol	Profibus encoder profile V1.1 class 1 and class 2 with manufacturer-specific add-ons
Baud rate	max. 12 Mbit/s
Device address	1 ... 127 set by rotary switches
Termination switchable	set by DIP switches

Profibus encoder profile V1.1

The PROFIBUS DP device profile describes the functionality of the communication and the user-specific component within the Profibus field bus system. For encoders, the encoder profile is definitive. Here the individual objects are defined independent of the manufacturer. Furthermore, the profiles offer space for additional manufacturer-specific functions; this means that Profibus-compliant device systems can be used now with the guarantee that they are ready for the future too.

The following parameters can be programmed

- Direction of rotation.
- Scaling (Number of steps per revolution).
- Preset value.
- Diagnostics mode.

The following functionality is integrated

- Galvanic isolation of the bus stage with DC/DC converter .
- Line driver acc. to RS485 max. 12 MB.
- Address programmable via DIP switches.
- Diagnostics LED.
- Full Class 1 and Class 2 functionality.

Absolute encoders singleturn

Terminal assignment terminal box

Interface	Type of connection	Signal:	BUS IN				BUS OUT				The shield of the connection cable must be connected over a large area via the cable gland.
			B	A	0 V	+ V	0 V	+ V	B	A	
3	1 (terminal box)	Terminal:	1	2	3	4	5	6	7	8	

Interface	Type of connection	Function	Signal / Pin							Diagram
			Signal:	Pin:						
3	2 (3 x M12 connector)	Bus in	Signal:	–	PB_A	–	PB_B	Shield		
			Pin:	1	2	3	4	5		
		Power supply	Signal:	+V	–	0 V	–			
			Pin:	1	2	3	4			
		Bus out	Signal:	BUS_VDC ¹⁾	PB_A	BUS_GND ¹⁾	PB_B	Shield		
			Pin:	1	2	3	4	5		

1) For supplying an external Profibus termination resistor.

Absolute encoders - singleturn

Standard optical

Sendix 5858 / 5878 (shaft / hollow shaft)

PROFIBUS DP

Dimensions shaft version, with removable bus terminal cover

Dimensions in mm [inch]

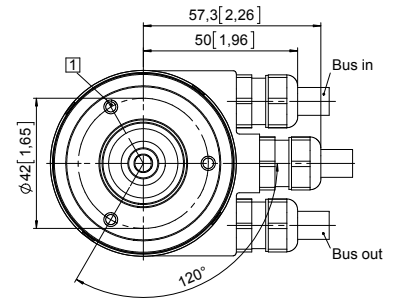
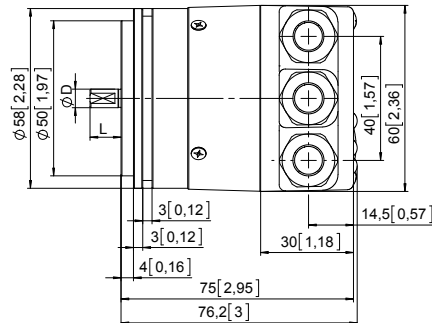
Synchro flange, \varnothing 58 [2.28]

Flange type 2 and 4

(drawing with cable)

- 1 3 x M4, 6 [0.24] deep

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



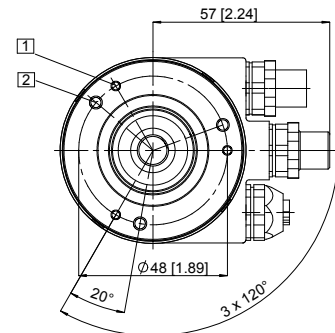
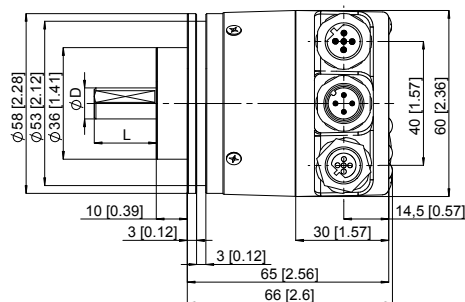
Clamping flange, \varnothing 58 [2.28]

Flange type 1 and 3

(drawing with 3 x M12 connector)

- 1 3 x M3, 6 [0.24] deep
- 2 3 x M4, 8 [0.32] deep

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7

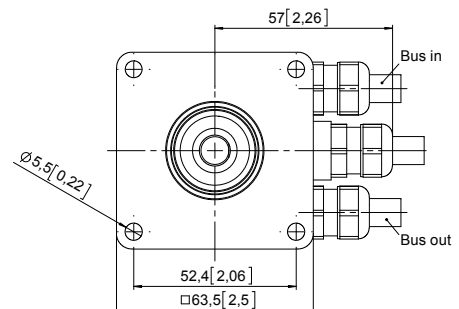
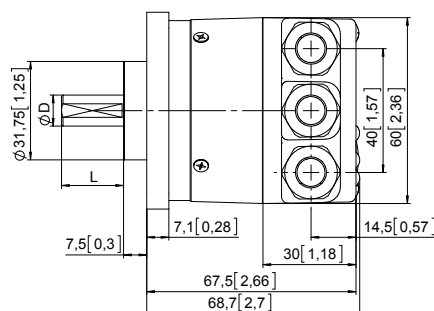


Square flange, \square 63.5 [2.5]

Flange type 5 and 7

(drawing with cable)

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



Absolute encoders - singleturn

Standard optical	Sendix 5858 / 5878 (shaft / hollow shaft)	PROFIBUS DP
-------------------------	--	--------------------

Dimensions hollow shaft version (blind hollow shaft), with removable bus terminal cover

Dimensions in mm [inch]

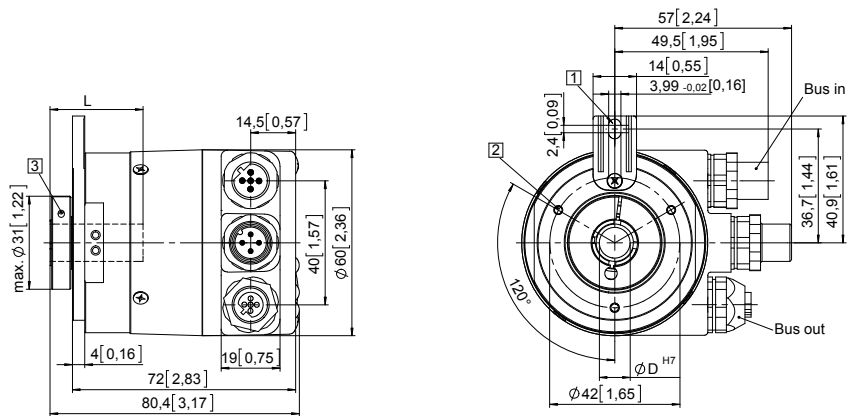
Flange with spring element, long

Flange type 1 and 2

(drawing with 3 x M12 connector)

- 1 Torque stop slot, recommendation: cylindrical pin DIN 7, $\varnothing 4$ [0.16]
- 2 3 x M3, 5.5 [0.21] deep
- 3 Recommended torque for the clamping ring 0.6 Nm

L: Insertion depth for blind hollow shaft: 30 [1.18]



Flange with stator coupling, $\varnothing 63$ [2.48]

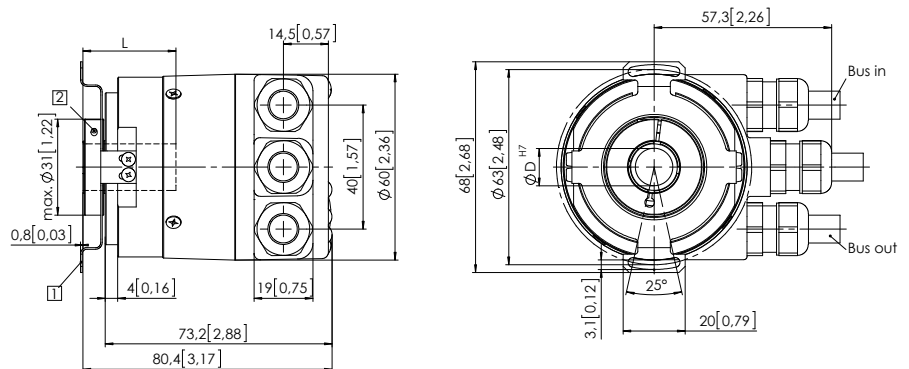
Flange type 5 and 6

Pitch circle diameter for fixing screws 63 [2.48]

(drawing with cable)

- 1 Fixing screws DIN 912 M3 x 8 (washer included in delivery)
- 2 Recommended torque for the clamping ring 0.6 Nm

L: Insertion depth for blind hollow shaft: 30 [1.18]



Flange with stator coupling, $\varnothing 65$ [2.56]

Flange type 3 and 4

Pitch circle diameter for fixing screws, 65 [2.56]

(drawing with cable)

- 1 Recommended torque for the clamping ring 0.6 Nm

L: Insertion depth for blind hollow shaft: 30 [1.18]

