Compact electronic multiturn, magnetic | **Sendix M3668 / M3688 (shaft / hollow shaft)** | **IO-Link**



INDUSTRIE 4.0 IIoT READY – Connectivity, Identification, Diagnostics, Adaptability

The Sendix M36 with Energy Harvesting Technology is an electronic multiturn encoder in compact design, without gear and without battery. It is characterized by robustness, reliability and cost-efficiency.

With Smart Sensor Profile for easy and fast integration into the application.

c UL us – RoHS – IO-Link



Safety-Lock™ | High rotational speed | Temperature range | High protection level | High shaft load capacity | Shock / vibration resistant | Reverse polarity protection | Surface protection salt spray-tested optional | Energy Harvesting

Reliable and insensitive

- Sturdy bearing construction in Safety-Lock™ design for resistance against vibration and installation errors.
- Reduced number of components ensures magnetic insensitivity.
- IP67 protection and wide temperature range -40 °C ... +85 °C.
- Without gear and without battery, thanks to the Energy Harvesting technology.

Up-to-the-minute performance

- Operation possible with any IO-Link master.
- Point-to-point communication in automation networks.
- Use of cost-effective unshielded cables possible.
- Automatic saving of device parameters.
- Firmware update via IO-Link.

Order code Shaft version

8.M3668	.	X	X	4	X	.	41	X	2
Type		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*
1 = clamping flange, IP67, ø 36 mm [1.42"]
3 = clamping flange, IP65, ø 36 mm [1.42"]
2 = synchro flange, IP67, ø 36 mm [1.42"]
4 = synchro flange, IP65, ø 36 mm [1.42"]

b *Shaft (ø x L), with flat*
1 = ø 6 x 12.5 mm [0.24 x 0.49"]
3 = ø 8 x 15 mm [0.32 x 0.59"]
5 = ø 10 x 20 mm [0.39 x 0.79"]
2 = ø 1/4" x 12.5 mm [0.49"]

c *Interface / supply voltage*
4 = IO-Link / 18 ... 30 V DC

d *Type of connection*
3 = axial M12 connector, 4-pin
4 = radial M12 connector, 4-pin

e *Fieldbus profile*
41 = IO-Link

f *Profile*
2 = Standard Profile [1]
3 = Smart Sensor Profile [2]

Optional on request
- Ex 2/22
- surface protection salt spray tested

Order code Hollow shaft

8.M3688	.	X	X	4	X	.	41	X	2
Type		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*
2 = with stator coupling, IP65, ø 46 mm [1.81"]
3 = with spring element, long, IP65
5 = with stator coupling, IP67, ø 46 mm [1.81"]
6 = with spring element, long, IP67

b *Blind hollow shaft (insertion depth max. 18.5 mm [0.73"])*
1 = ø 6 mm [0.24"]
3 = ø 8 mm [0.32"]
4 = ø 10 mm [0.39"]
2 = ø 1/4"

c *Interface / supply voltage*
4 = IO-Link / 18 ... 30 V DC

d *Type of connection*
3 = axial M12 connector, 4-pin
4 = radial M12 connector, 4-pin

e *Fieldbus profile*
41 = IO-Link

f *Profile*
2 = Standard Profile [1]
3 = Smart Sensor Profile [2]

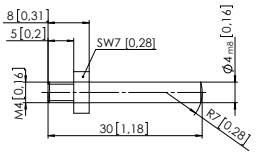
Optional on request
- Ex 2/22
- surface protection salt spray tested

1) Delivered with default setting for Standard Profile (switchable to Smart Sensor Profile).
2) Delivered with default setting for Smart Sensor Profile (switchable to Standard Profile).

© Fritz Kübler GmbH, subject to errors and changes. 05/2023

Compact electronic multiturn, magnetic	Sendix M3668 / M3688 (shaft / hollow shaft)	IO-Link

Mounting accessory for shaft encoders		Order no.
Coupling	Bellows coupling ø 19 mm [0.75“] for shaft 8 mm [0.32“]	**8.0000.1102.0808**

Mounting accessory for hollow shaft encoders Dimensions in mm [inch]		Order no.
Torque pin, ø 4 mm for flange with spring element (flange type 3 + 6)	with fixing thread 	**8.0010.4700.0000**

Cables and connectors		Order no.
Preassembled cables	M12 female connector with coupling nut, 4-pin, A coded, straight single-ended 2 m [6.56’] PUR cable	**05.00.6061.6211.002M**
Connectors	M12 female connector with coupling nut, 4-pin, A coded, straight	**05.B8141-0**

Further Kübler accessories can be found at: kuebler.com/accessories
Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

Technical data

Mechanical characteristics

Maximum speed shaft or blind hollow shaft version without shaft seal (IP65)	6000 min^{-1} 3000 min^{-1} (continuous)
shaft or blind hollow shaft version with shaft seal (IP67)	4000 min^{-1} 2000 min^{-1} (continuous)
Starting torque at 20 °C [68 °F] without shaft seal with shaft seal (IP67	 < 0.007 Nm < 0.01 Nm
Shaft load capacity radial axial	40 N 20 N
Weight	approx. 210 g [7.41 oz]
Protection acc. to EN 60529	IP65 or IP67
Working temperature range	-40 °C ... +85 °C [-40 °F ... +185 °F]
Materials shaft / hollow shaft flange housing	stainless steel aluminum zinc die-cast
Shock resistance acc. to EN 60068-2-27	2500 m/s^2, 6 ms
Vibration resistance acc. to EN 60068-2-6	300 m/s^2, 10 ... 2000 Hz

Electrical characteristics

Supply voltage	18 ... 30 V DC
Current consumption (no load)	max. 40 mA
Reverse polarity protection of the supply voltage	yes

Interface characteristics IO-Link

Resolution singleturn	1 ... 16.384 (14 bit), scalable default: 16.384 (14 bit)
Angular measurement deviation 1)	±0,5°
Repeat accuracy	±0,2°
Number of revolutions (multiturn)	1 ... 262.144 (18 bit), scalable only via the total resolution default: 262.144 (18 bit)
Total resolution	4 ... 4.294.967.296 (32 bit), scalable default: 4.294.967.296 (32 bit)
Interface	IO-Link version 1.1 acc. to IEC 61131-9
Profile (details see manual)	Kübler Standard Profile or Smart Sensor Profile
Port classe	Type A

Approvals

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

1) Over the whole temperature range.

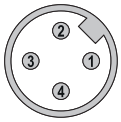
© Fritz Kübler GmbH, subject to errors and changes. 05/2023

Compact
electronic multiturn, magnetic | **Sendix M3668 / M3688 (shaft / hollow shaft)** | **IO-Link**

Terminal assignment

Interface	Type of connection	M12 connector, 4-pin				
4	3, 4	Signal:	Supply voltage +V DC	Reserved (no function)	Supply voltage 0 V (GND)	IO-Link communication (Data line)
		Abbreviation:	L+	res.	L-	C/Q
		Pin:	1	2	3	4

Top view of mating side, male contact base



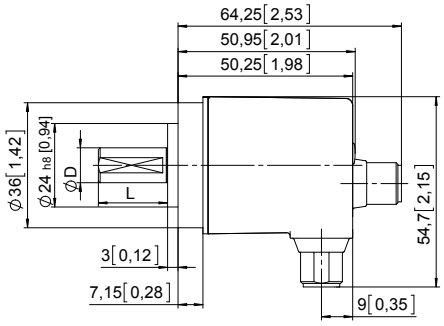
M12 connector, 4-pin

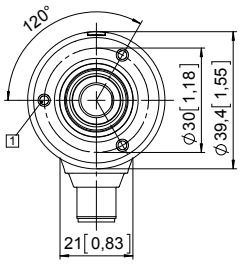
Dimensions shaft version

Dimensions in mm [inch]

Clamping flange, ø 36 [1.42]
Flange type 1 and 3

1 3 x M3, 6 [0.24] deep

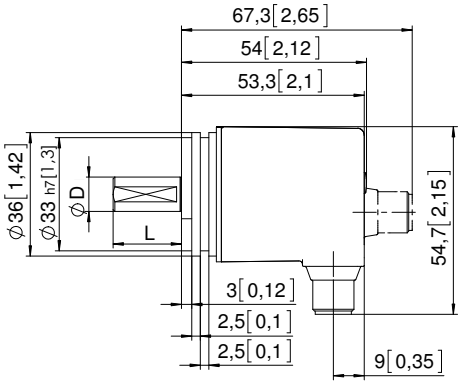


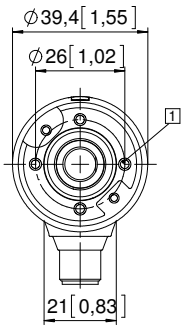


D	Fit	L
6 [0.24]	h7	12,5 [0.49]
8 [0.32]	h7	15 [0.59]
10 [0.39]	f7	20 [0.79]
1/4"	h7	12,5 [0.49]

Synchro flange, ø 36 [1.42]
Flange type 2 and 4

1 4 x M3, 6 [0.24] deep





D	Fit	L
6 [0.24]	h7	12,5 [0.49]
8 [0.32]	h7	15 [0.59]
10 [0.39]	f7	20 [0.79]
1/4"	h7	12,5 [0.49]

© Fritz Kübler GmbH, subject to errors and changes. 05/2023

Compact
electronic multiturn, magnetic | **Sendix M3668 / M3688 (shaft / hollow shaft)** | **IO-Link**

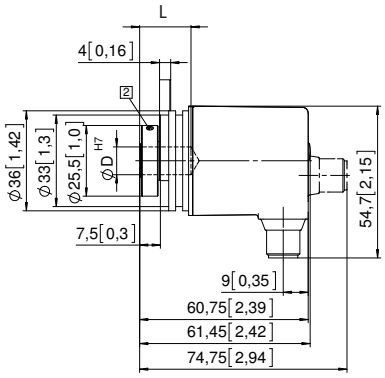
Dimensions hollow shaft version

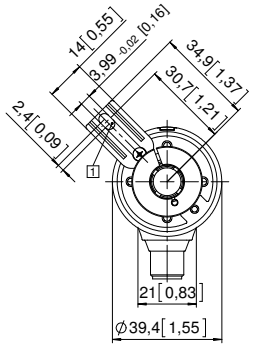
Dimensions in mm [inch]

Flange with spring element, long
Flange type 3 and 6

1 Slot spring element, recommendation: torque pin DIN 7, ø 4 [0.16]

2 Recommended torque for the clamping ring 0.7 Nm

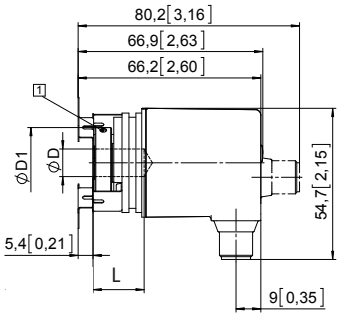


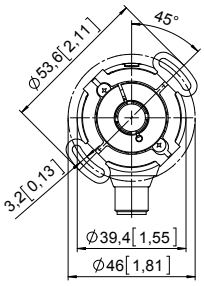


D	Fit	L	D1
6 [0.24]	H7	18,5 [0.73]	24 [0.94]
8 [0.32]	H7	18,5 [0.73]	25,5 [1.00]
10 [0.39]	H7	18,5 [0.73]	25,5 [1.00]
1/4"	H7	18,5 [0.73]	24 [0.94]
L = insertion depth max. blind hollow shaft			

Flange with stator coupling, ø 46 [1.81]
Flange type 2 and 5

1 Recommended torque for the clamping ring 0.7 Nm





D	Passung	L	D1
6 [0.24]	H7	18,5 [0.73]	24 [0.94]
8 [0.32]	H7	18,5 [0.73]	25,5 [1.00]
10 [0.39]	H7	18,5 [0.73]	25,5 [1.00]
1/4"	H7	18,5 [0.73]	24 [0.94]
L = insertion depth max. blind hollow shaft			

© Fritz Kübler GmbH, subject to errors and changes. 05/2023