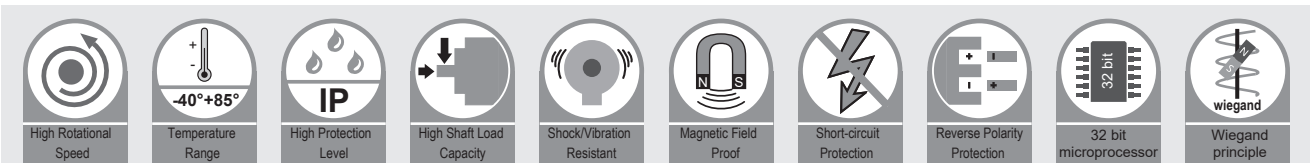# Absolute Encoders — Multiturn

| Miniature Magnetic SSI | W62-36SX / 36HX |

- Outer diameter 36 mm，ideal for use in tight space
- Magnetic sensor technology offer a resolution of up to 16 bits
- Revolution up tp 20 bits
- Total resolution up to 32 bits
- High protection up to IP 69K
- Cathodic corrosion protection (>720 hrs salt sprayresistance)
- Wide temperature range from -40°C up to +80°C

| High Rotational Speed | Temperature Range -40°+85° | High Protection Level IP | High Shaft Load Capacity | Shock/Vibration Resistant | Magnetic Field Proof | Short-circuit Protection | Reverse Polarity Protection | 32 bit microprocessor | Wiegand principle |

Highlight：

- High quality mechanical structure
- Magnetic sensor technology
- Free from the influence of magnetic field
- SSI interface, with SET and DIR functions

Mechanical characteristics

Max. Speed	Industrial type: 12000 rpm; Heavy-duty and stainless steel type: 6000 rpm
Starting torque	≤ 3 Ncm (at 20°C)
Moment of intertia	≤ 30 gcm²
Shaft load capacity　Industrial type	Axial 40 N；Radial 110 N
Heavy-duty type	Axial 180 N；Radial 180 N
Stainless steel type	Axial 300 N；Radial 300 N
Weight	approx. 0.105 kg
Protection acc. to EN 60 529	IP 65 optional IP 69K
Explosion protection Ex (optional)	Zone 2, 22
Working temperature range	-40°C ... 80°C
Materials	Shaft: Stainless steel(V2A)；Flange: Aluminum or stainless steel；
Shock resistance acc. to EN 60068-2-27	Housing: Steel or stainless steel
Vibration resistance acc. to EN 60068-2-6	Industrial type: ≤ 1000 m/s² (6 ms)；Heavy-duty and stainless steel type: ≤ 3000 m/s² (6 ms)
	Industrial type: ≤ 100 m/s² (10 Hz ... 1000Hz)；
Mechanical lifetime(10^8 revolutions with Fa/Fr)	Heavy-duty and stainless steel type: ≤ 300 m/s² (10 Hz ... 1000Hz)
	40/60　　40/80　　40/110
	224　　104　　40

Interface characteristics SSI

Power supply	5 ... 30 VDC
Current consumption	50 mA
Interface	SSI synchronous serial interface
Output driver	RS 422
Clock frequency	100 kHz ... 2 MHz
Monoflop time	> 25 µs
Start-up time	< 250 ms
Code	Gray/Binary
Singleturn resolution	Max.16 bits
Number of revolutions	≤ 20 bits
Function	Preset[1]；count direction[2]
Short circuit protection	yes
Reverse polarity protection	yes
UL approval	E468583
CE compliant acc. to	EN 61000-6-4; EN61000-6-2

Additional incremental output (A/B/Z)

Output	RS-422	RS-422
Resolution	1024,2048,4096,8192,16384 ppr	
Output channel	A,/A; B,/B; Z,/Z	
Type of output	90° ± 4.5° Square pulse	
Output frequency	Max. 200 kHz	
Signal level	high: Min. 2.5 V	Min. +U - 2 V
	Low：Max. 0.5 V	Max. 0.5 V
Short circuit protection	yes	yes

(1) The encoder can be set to zero at any position by means of a HIGH signal on the SET input.
    Once the SET function has been triggered, the encoder requires an internal processing time of typ. 300ms;
    during this time the power supply must not be switched off.

(2) The counter direction can be changed by means of a HIGH signal on the DIR input.
    If a LOW signal on the DIR input, output values are counted increase when the shaft is turning clockwise.
    And if a HIGH signal on the DIR input, output values are counted increase when the shaft is turning
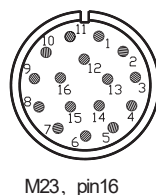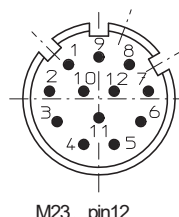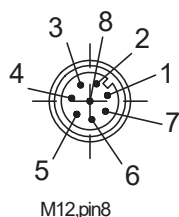   counter-clockwise.

Absolute Encoders — Multiturn

Miniature Magnetic SSI	W62-36SX / 36HX

Terminal assignment

Signal	Ub	GND	+C	-C	+D	-D	SET	DIR	A	/A	B	/B	Z	/Z	Shield
Cable (Colour)	BN	WH	GN	YE	GY	PK	BU	RD	BK	VT	GY/PK	RD/BU	WH/GN	BN/GN	Shield
M12 connector, 8-pin	2	1	3	4	5	6	7	8	-	-	-	-	-	-	
M23 connector, 12-pin	2	1	3	4	5	6	7	8	9	10	11	12	-	-	
M23 connector, 16-pin	11	12	2	1	3	4	9	8	5	6	7	10	13	14	

M12, pin8   M23, pin12   M23, pin16

Order Code Shaft version	W62-36SN-X X X X-G XX XX X
	Type ⓘ ⓐ ⓑ ⓒ ⓓ ⓔ ⓕ ⓖ ⓗ

ⓐ Flange
3 = 36mm Synchro flange,IP65*****
5 = 58mm Synchro flange,IP65
A = 42mm Synchro flange,IP65******
7 = 58mm Clamping flange,IP65

ⓑ Shaft
2 = Ø 6 x 11.5 mm
5 = Ø 10 x 20 mm

ⓒ Interface / Power supply *
2 = SSI / 5 ... 30 VDC
7 = SSI / 5 ... 30 VDC
    RS422 1024 ppr (with channel Z)
8 = SSI / 5 ... 30 VDC
    HTL 1024 ppr (with channel Z)
9 = SSI / 5 ... 30 VDC
    RS422 2048 ppr (with channel Z)
A = SSI / 5 ... 30 VDC
    HTL 2048 ppr (with channel Z)

ⓓ Type of connection
1 = Axial cable, 1 m
2 = Radial cable, 1 m
3 = M12 connector, axial
5 = M12 connector, radial
7 = M23, 12pin connector, radial
9 = M23, 16pin connector, radial**

ⓔ Code
G = Gray
B = Binary

ⓕ Singleturn resolution
12 = 12 bit
13 = 13 bit
16 = 16 bit

ⓖ Number of revolutions*
12 = 12 bit
14 = 14 bit
16 = 16 bit
20 = 02 bit

ⓗ Function
1 = No additional function
2 = SET button****

ⓘ Type
N = Industrial type
H = Heavy duty type*****
S = Stainless steel******

*Other resolution on demand.   **Only for industrial (type N) products with incremental output.   ***Singleturn resolution+Number of revolutions≤32bit

****Only used for industrial (type N) products with no incremental output and radial outlet direction

*****When the type is H, the flange mode can only be 3, the shaft diameter mode is 5, and the protection level is IP69K.

******When the type is S, the flange mode can only be A and 7, the shaft diameter mode is 5, and the protection class is IP69K.

Order Code Hollow Shaft	W62-36HN-X X X X-G XX XX X
	Type ⓐ ⓑ ⓒ ⓓ ⓔ ⓕ ⓖ ⓗ

ⓐ Flange
3 = With short single arm spring
4 = With long single arm spring
8 = With D-wing spring coupling

ⓑ Hollow shaft (blind hollow shaft)
2 = Ø 6 mm
4 = Ø 8 mm
5 = Ø 10 mm
6 = Ø 12 mm

ⓒ Interface / Power supply *
2 = SSI/ 5 ... 30 VDC
7 = SSI / 5 ... 30 VDC
    RS422 1024 ppr (with channel Z)
8 = SSI / 5 ... 30 VDC
    HTL 1024 ppr (with channel Z)
9 = SSI / 5 ... 30 VDC
    RS422 2048 ppr (with channel Z)
A = SSI / 5 ... 30 VDC
    HTL 2048 ppr (with channel Z)

ⓓ Type of connection
1 = Axial cable, 1 m
2 = Radial cable, 1 m
3 = M12 connector, axial
5 = M12 connector, radial
7 = M23, 12pin connector, radial
9 = M23, 16pin connector, radial**

ⓔ Code
G = Gray
B = Binary

ⓕ Singleturn resolution
12 = 12 bit
13 = 13 bit
16 = 16 bit

ⓖ Number of revolutions*
12 = 12 bit
14 = 14 bit
16 = 16 bit
20 = 02 bit

ⓗ Function
1 = No additional function
2 = SET button****

*Other resolution on demand.   **Only for products with increments   ***Singleturn resolution+Number of revolutions≤32bit

****Only used for products with no incremental output and radial outlet direction

Absolute Encoders — Multiturn

| Miniature Magnetic SSI	W62-36SX / 36HX

Technology Introduction

Absolute magnetoelectric single coil technology

After years of technological development, the performance of magneto-electric encoders has reached the same level as optical encoders.This technology leap is based on a new generation of sensor systems. Products use custom Hall sensors And a powerful 32-bit microprocessor that can perform complex signal processing in a matter of microseconds. The application of these two technologies greatlyimproves the resolution, accuracy and data response time of the product.

- Product resolution up to 16 bit
- Accuracy up to ±0.0878°
- Internal data refresh time <50 µs
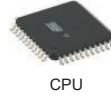
Hall-IC   CPU

Wiegand Multi-Circle Technology

The multi-turn part uses a multi-turn system based on the Wiegand effect, eliminating the need for a battery and mechanical transfer system,completely solving the problem of limited battery life, heavy weight, containing harmful substances and using the battery, which will have many adverse effects on the product; The shortcomings of the mechanical transmission system, such as large volume, complex structure, high cost,and resistance to shock and vibration. The multi-turn system is unaffected by the speed, and even under zero speed conditions, it produceshort, powerful voltage pulses that provide sufficient power for the counting electronics in the absolute encoder.
- strong and sturdy
- Simple mechanical construction - no gears
- No battery required - long working life, independent of ambient temperature
- Compact design for installation in tight spaces
- Non-contact detection system with protection class up to IP69K

Wiegand   Memory

Accessories

Connection technology

Connector, self-assembly	M12 self-assembly	E1-1208-0101

Mounting accessory for shaft version

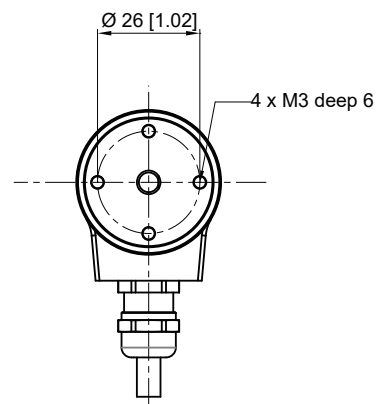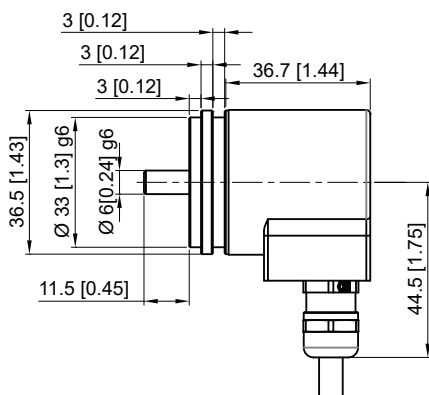| Coupling	Bellows coupling (aluminium alloy) ø 25mm for shaft 6 mm	T1-6000-2525-0606

Mounting accessory for hollow shaft version

Stator coupling	Further accessories and exact order code please refer to the accessories section.	

Dimensions

Shaft encoder：
type of flange3 , Ø 6 mm shaft, type of connection 2
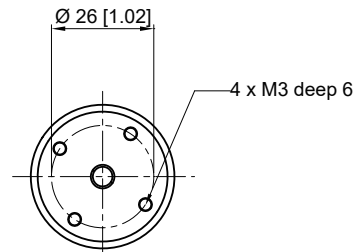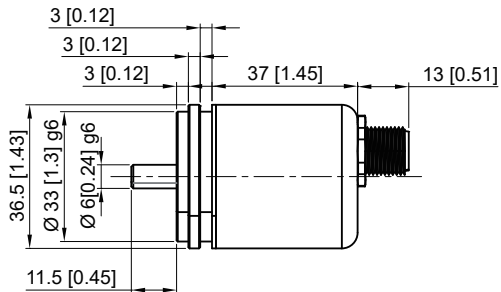
Absolute Encoders — Multiturn
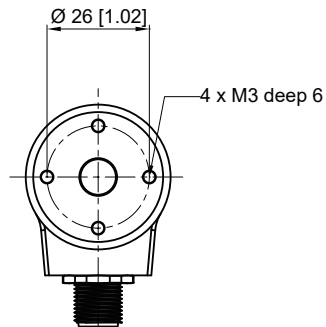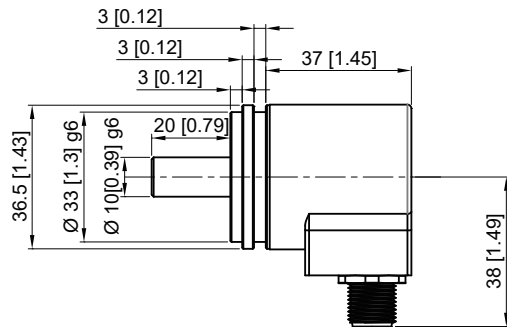
| Miniature Magnetic SSI | W62-36SX / 36HX |

Dimensions

Shaft encoder：
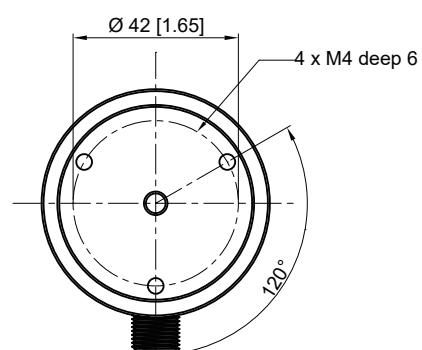type of flange3 , Ø 6 mm shaft, type of connection 3

3 [0.12]
3 [0.12]
3 [0.12]   37 [1.45]   13 [0.51]

36.5 [1.43]
Ø 33 [1.3] g6
Ø 6 [0.24] g6
11.5 [0.45]

Ø 26 [1.02]
4 x M3 deep 6

Shaft encoder：
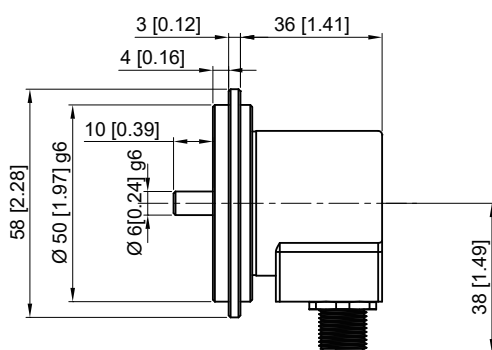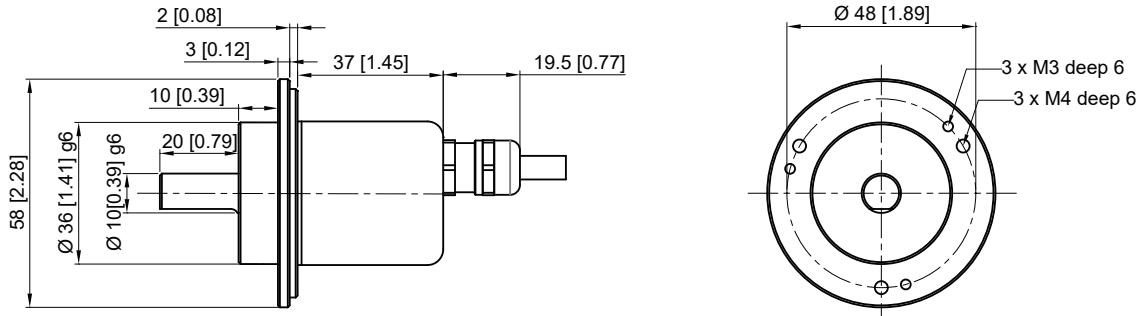type of flange3 , Ø 10 mm shaft, type of connection 5

3 [0.12]
3 [0.12]
3 [0.12]   37 [1.45]

36.5 [1.43]
Ø 33 [1.3] g6
Ø 10 [0.39] g6
20 [0.79]
38 [1.49]

Ø 26 [1.02]
4 x M3 deep 6

Shaft encoder：
type of flange 5 , Ø 6 mm shaft, type of connection 5

3 [0.12]   36 [1.41]
4 [0.16]
10 [0.39]

58 [2.28]
Ø 50 [1.97] g6
Ø 6 [0.24] g6
38 [1.49]

Ø 42 [1.65]
4 x M4 deep 6
120°

Abs. Encoder - MT

Absolute Encoders — Multiturn

Dimensions

Shaft encoder：
type of flange7 , Ø 10 mm shaft, type of connection 1

Ø 48 [1.89]

2 [0.08]
3 [0.12]
37 [1.45]
19.5 [0.77]
10 [0.39]
20 [0.79]
58 [2.28]
Ø 36 [1.41] g6
Ø 10[0.39] g6

3 x M3 deep 6
3 x M4 deep 6

Heavy-duty shaft encoder:
type of flange3, Ø 10 mm shaft, type of connection 3

4 [0.16]
4 [0.16]
44.1 [1.73]
12.9 [0.51]
4 [0.16]
20 [0.79]
36.5 [1.43]
Ø 30 [1.18] g6
Ø 10[0.39] g6

Ø 24 [0.94]

4 x M4 deep 6
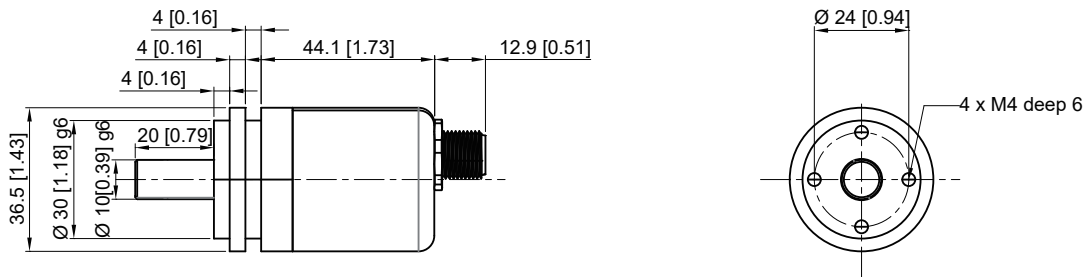
Sainless steel encoder IP68+IP96K:
type of flangeA, Ø 10 mm shaft, type of connection 2

33.1 [1.3]
55.9 [2.2]
20 [0.79]
42 [1.65] g6
Ø 10[0.39] g6
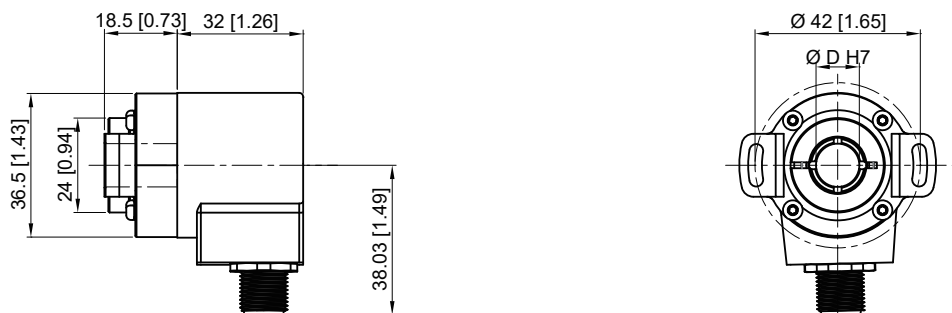38.93 [1.53]

Ø 35 [1.38]

4 x M4 deep 8
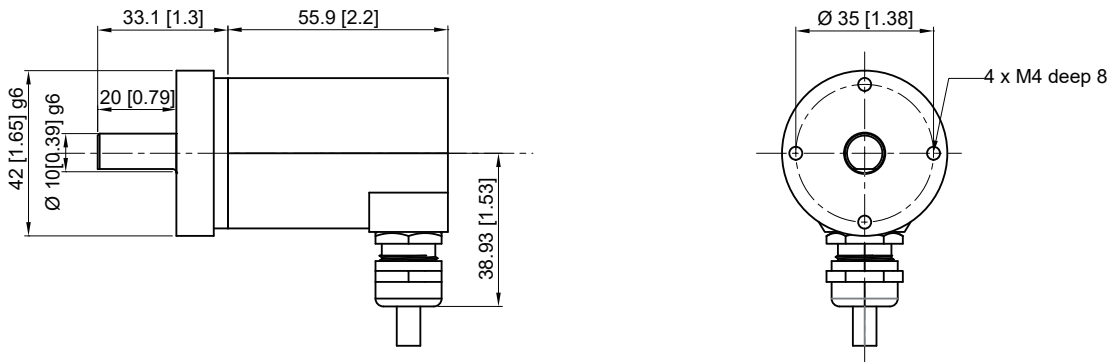
Absolute Encoders — Multiturn

Miniature Magnetic SSI	W62-36SX / 36HX

Dimensions

Hollow shaft encoder：
type of flange 8 , type of connection 5

18.5 [0.73] 32 [1.26]
36.5 [1.43] 24 [0.94] 38.03 [1.49]

Ø 42 [1.65]
Ø D H7

Blind hole depth：15-18 mm

Hollow shaft encoder：
type of flange 3 , type of connection 5

18.5 [0.73] 32 [1.26]
36.5 [1.43] 24 [0.94] 38 [1.49]
18 [0.71]

Ø 42 [1.65]
Ø D H7
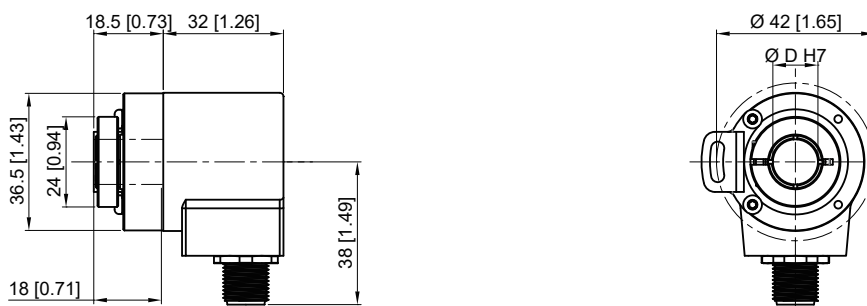
Blind hole depth：15-18 mm

Hollow shaft encoder：
type of flange 4 , type of connection 1

18 [0.71] 36 [1.41] 19.5 [0.77]
54.25 [2.13] 36.5 [1.43] 23.98 [0.94]

Ø D H7
21 [0.83]
10.5 [0.41]
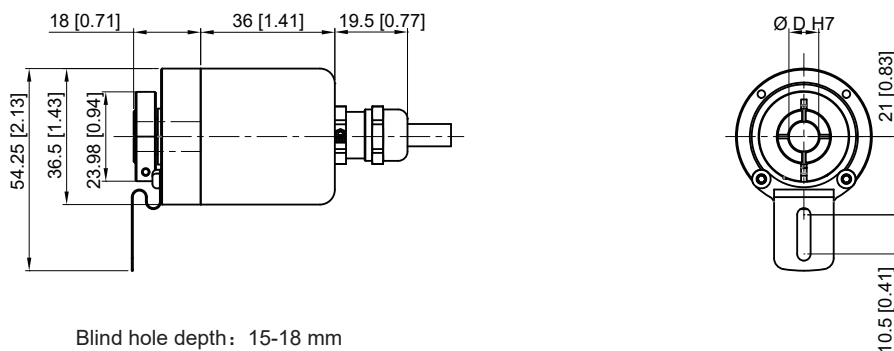
Blind hole depth：15-18 mm

Other mounting types and accessories on your request，
please send us an email: info @ heinlanz.com