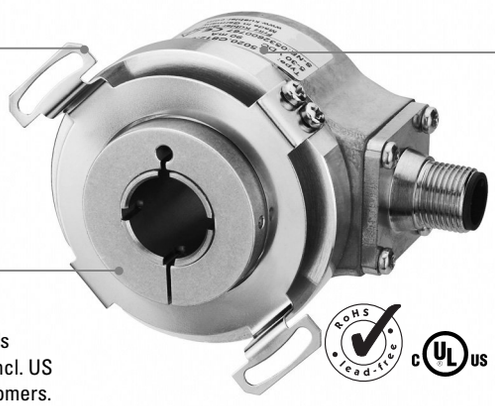
Rotary Measuring Technology
Incremental hollow shaft encoder

MICRONOR
automation components

Universal, compact Type ENIX 50

- **Universal industrial encoder family on a new technology platform Compatible with standard 58mm size encoders.**
- **Incremental, up to 3600 ppr., Short circuit proof outputs, High scanning rate**
- **Explosion-proof models also available for Zones 2 and 22**



Compact and cost-saving:
– Housing 50 mm dia., mounting depth only 37.5 mm
– up to 15.87 mm hollow shaft with stable bearings ensure a long service life (no thin ring bearings). Saves on costs where larger encoders would otherwise be necessary.

Flexible in use:
– Many connection options incl. M12 connector
– 5 ... 30 VDC power supply reduces number of models
– Compatible with many global industrial standards incl. US versions. Simplified usage for export-oriented customers. UL approval

Tough:
– New, particularly sturdy bearing construction (Safety lock ™ Design) protects the encoder from damage caused by too high an axial shaft loading during installation, by rough treatment from vibration and temperature changes during continuous operation.
– Temperature range -40 ... +85 °C, with IP 67 protection rating, permits use in all areas of industry.
– Solid, die-cast housing; metal disc with up to 1024 ppr.

Mechanical characteristics:

Speed IP 65[1]:	max. 12000 min^{-1}
Speed IP 67[2]:	max. 6000 min^{-1}
Rotor moment of inertia:	appr. 6 x 10^{-6} kgm^2
Starting torque	< 0.01 Nm, IP 65
Starting torque	< 0.05 Nm, IP 67
Weight:	appr. 0.4 kg
Protection acc. to EN 60 529 without shaft sealing:	IP 65
Protection acc. to EN 60 529 with shaft sealing:	IP 67
Working temperature:	–40° C[3] ... +85 °C
Hollow shaft:	stainless steel, H7
Shock resistance acc. to DIN-IEC 68-2-27:	2500 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. 6000 min^{-1}
[2] For continuous operation max. 3000 min^{-1}
[3] With connector: -40 °C, cable fixed: -30 °C, cable moved: -20 °C

Pulse rates available at short notice:
1, 5, 10, 12, 36, 50, 60, **100**, **200**, 250, 256, **360**, 400, **500**, 512,600, 800, **1000**, **1024**, 1200, 2000, **2048**, **2500**, **3600**

Other pulse rates on request

Electrical characteristics:

Output circuit:	RS 422 (TTL compatible)	RS 422 (TTL compatible)	Push-Pull	Push-Pull (7272)
Supply voltage:	5 ... 30 V DC	5 V ±5%	10 ... 30 V DC	5 ... 30 V DC
Power consumption (no load):	typ. 40 mA / max. 90 mA	typ. 40 mA max. 90 mA	typ. 50 mA max. 100 mA	typ. 50 mA max. 100 mA
Permissible load/channel:	max. ±20 mA	max. ±20 mA	max. ±30 mA	max. ±20 mA
Pulse frequency:	max. 300 kHz	max. 300 kHz	max. 300 kHz	max. 300 kHz[3]
Signal level high:	min. 2.5 V	min. 2.5 V	min. UB - 1V	min. UB-2.0 V
Signal level low:	max. 0.5 V	max. 0.5 V	max. 0.5 V	max. 0.5 V
Rise time t_r	max. 200 ns	max. 200 ns	max. 1 µs	max. 1 µs
Fall time t_f	max. 200 ns	max. 200 ns	max. 1 µs	max. 1 µs
Short circuit proof outputs[1]:	yes[2]	yes[2]	Yes	yes
Reverse connection protection at U_B:	yes	no	Yes	no
Conforms to CE requirements acc. to DIN-IEC 68-2-27, DIN-IEC 68-2-6, EN 60 529, EN 61 000-6-2, EN 61 000-6-3, EN 61000-6-4				

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

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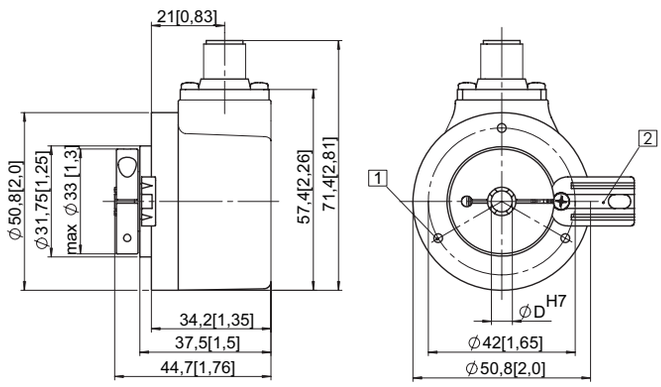
Dimensions:

Bracket with long torque stop

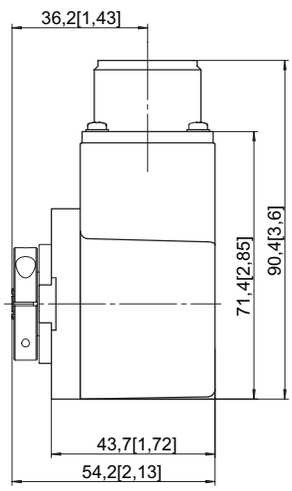
ø 50.8 mm [2 inch]
M12, M23 connectors and cable versions
(Bracket type 1 and 2)



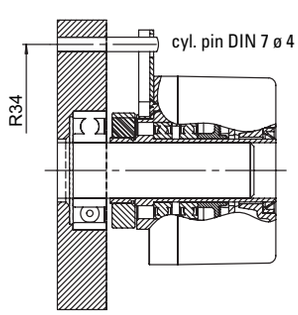
1 M3, 6 [0.24] deep
2 Torque stop slot
Recommendation: cyl. pin acc. DIN 7 ø 4

Bracket with long torque stop

ø 50.8 mm [2 inch]
MIL-connector version

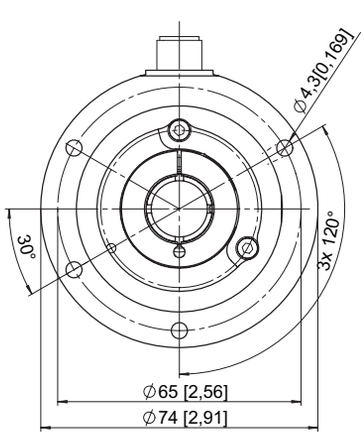


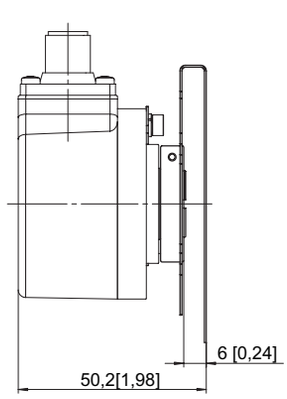
Mounting note:



Bracket with stator coupling

Pitch circle 65 mm
(Bracket type 7 and 8)





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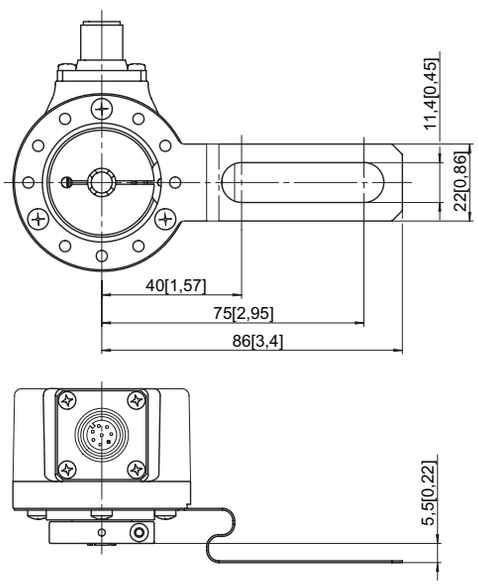
Dimensions:

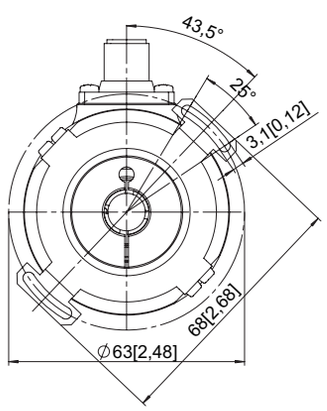
Bracket with tether arm

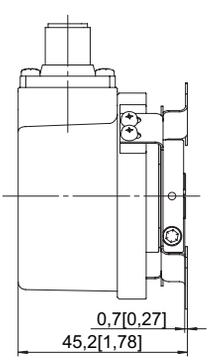
(Bracket type 3 and 4)



Bracket with stator coupling

pitch circle ø 63 mm
(Bracket type C and D)





Mounting advice:
The brackets and shafts of the encoder and drive should not both be rigidly coupled together at the same time!

We recommend the use of suitable couplings (see Accessories section).

Terminal assignment:

Signal:	0 V GND	+U_B	0 V Sens	+Ub Sens	A	$\overline{A}$	B	$\overline{B}$	Z	$\overline{Z}$	Shield
M23 , 12 pin connector, Pin:	10	12	11	2	5	6	8	1	3	4	–[1)]
M12, 8 pin connector, Pin:	1	2			3	4	5	6	7	8	–[1)]
MIL (MS styled), 10 pin con. Pin:	F	D		E	A	G	B	H	C	I	J[1)]
Cable colour:	WH	BN	GY PK	RD BU	GN	YE	GY	PK	BU	RD	Shield

1) Shield is attached to connector housing

Isolate unused outputs before initial startup

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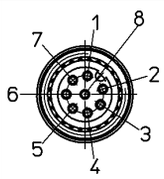
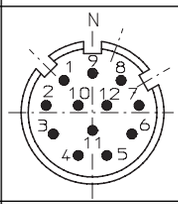
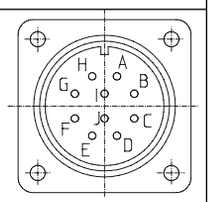
Top view of mating side, male contact base:

Type	8 pin M12 connector	12 pin M23 connector	MIL connector 10 pin
View			

Order code: ENIX 50.**XXXX**.**XXXX**

Range

Bracket
1 = Bracket with torque stop IP 67
2 = Bracket with torque stop IP 65
3 = Bracket with tether arm IP 67
4 = Bracket with tether arm IP 65
7 = Bracket with stator coupling ø 65 mm, IP67
8 = Bracket with stator coupling ø 65 mm, IP65
C = Bracket with stator coupling ø 63 mm, IP67
D = Bracket with stator coupling ø 63 mm, IP65

Shaft (end to end hollow shaft)
1 = ø 6 mm
2 = ø 1/4 inch
3 = ø 10 mm
4 = ø 3/8 inch
5 = ø 12 mm
6 = ø 1/2 inch
7 = ø 5/8 inch
8 = ø 15 mm
9 = ø 8 mm
A = ø 14 mm

Preferred types are indicated in ***bold***

Pulse rate
(e.g. 100 pulses => 0100)

Type of connection
1 = Cable radial (1 m PVC-cable)
2 = Connector radial 8 pin M12
4 = Connector radial 12 pin M23
7 = Connector 10 pin MIL.-specified radial
Note: all connector versions without mating connector

Output circuit and supply voltage
1 = RS 422 (with inverted signal) 5 ... 30 V supply voltage
2 = Push-pull (7272, with inverted signal) 5 ... 30 V supply voltage
4 = RS 422 (with inverted signal)
5 = Push-Pull; 10 ... 30 V with inverted signal