NIETZ

NIETZ ELECTRIC CO.,LTD

No.988, Fulian Rd. Gucun
Industry, Baoshan District.
Shanghai, China

Follow Us

+86 21 336 346 49

info@nietz.cn

www.nietz.cn

DISTRIBUTORS

NIETZ

Heavy Duty Encoders

Cranes & Heavy Liftiing Solution

Since
2005

HDR series

Incremental Encoders

The HDR series exhibits excellent resistance to mechanical damage and can withstand high axial and radial loads, meeting the needs of various industrial field applications and different host computer applications.

High Light

- Die-cast metal casing, sturdy and not easily damaged.
- Polymer grating
- Pulse rate max up to 10 000 P/R

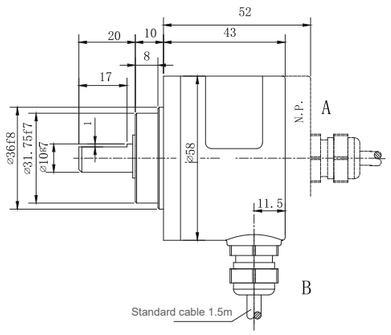
Elec. Specification

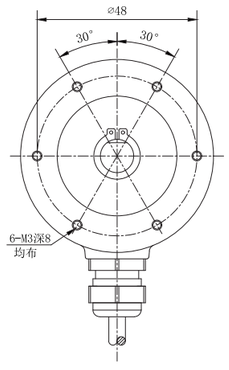
Resolution	10-10000P/R selectable	
Supply voltage	DC5V	DC10-30V
Current requirements	Max. 150mA	Max. 60mA
Frequency response	Max. 800KHz	Max. 800KHz
Rise/Fall time	100ns	1us
Load current	Max. 20mA	Max. 30mA
Output voltage (V_H)	Vcc*70%	Vcc*70%
Output voltage (V_L)	Max. 0.5V	Max. 0.5V F max. 1V

Mechanical Specification

Max.rotating speed		6000r/min
Shaft loading	Radial	20N
	Axial	10N
Weight		0.26kg(Without cable)
Protection		IP54/IP65
Starting torque(AT25℃)		5X10^{-2} N.m Max.
Operating temperature		-20℃……+85℃
Storage temperture		25℃……+100℃
Shock resistance		1000m/s^2, 6ms
Vibration resistance		100m/s^2, 10....200Hz

Dimension

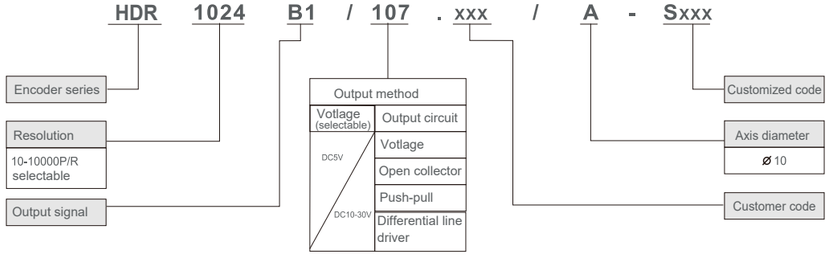




Wiring spec.

Color	White	Black	Red	Pink	Green	Blue	Yellow	Orange	Shielded
Line drive	Vcc	OV	A	A/	B	B/	Z	Z/	-
Complementary/Volt/Current	Vcc	OV	A	-	B	-	Z	-	-

How to Order



HD58N series

Incremental Encoders

The HD58N series products feature a dual-bearing structure design, and the metal housing provides excellent resistance to mechanical damage, making them suitable for a wide range of industry applications. The products utilize a stainless steel through-hole shaft design with a maximum shaft diameter of 15 mm, capable of withstanding high radial and axial loads to meet the needs of various industry applications. The products employ a wide voltage range power supply design, featuring reverse connection protection and short-circuit protection, effectively reducing the impact of incorrect wiring during installation on the encoder.

High Light

- ϕ 8...ϕ15mm Wide range of shaft diameters to suit various field application needs
- Equipped with reverse connection protection and short circuit protection to ensure safe use.
- Pulse rate max up to 10 000 P/R

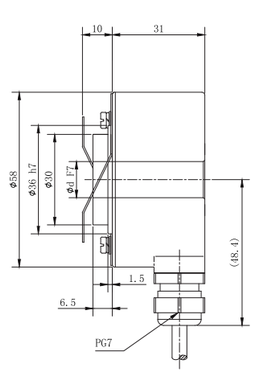
Elec. Specification

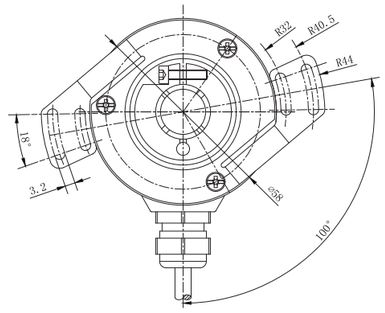
Resolution	10-10000P/R selectable	
Supply voltage	DC5V	DC10-30V
Current requirements	Max. 150mA	Max. 60mA
Frequency response	Max. 800KHz	Max. 800KHz
Rise/Fall time	100ns	1us
Load current	Max. 20mA	Max. 30mA
Output voltage (V_H)	Vcc*70%	Vcc*70%
Output voltage (V_L)	Max. 0.5V	Max. 0.5V F max. 1V

Mechanical Specification

Max.rotating speed		6000r/min
Shaft loading	Radial	20N
	Axial	10N
Weight		0.26kg(Without cable)
Protection		IP54
Starting torque(AT25℃)		5X10^{-2} N.m Max.
Operating temperature		-20℃……+85℃
Storage temperture		25℃……+100℃
Shock resistance		1000m/s^2, 6ms
Vibration resistance		100m/s^2, 10....200Hz

Dimension

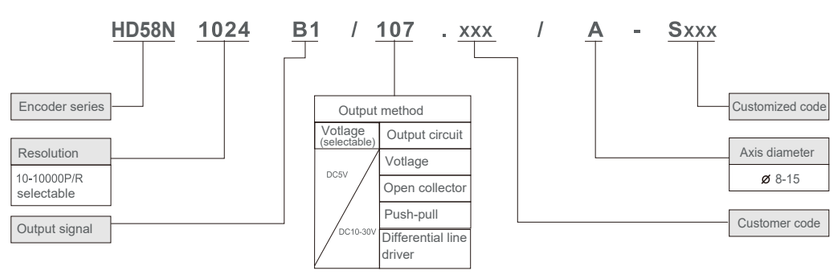




Wiring spec.

Color	White	Black	Red	Pink	Green	Blue	Yellow	Orange	Shielded
Line drive	Vcc	OV	A	A/	B	B/	Z	Z/	-
Complementary/Volt/Current	Vcc	OV	A	-	B	-	Z	-	-

How to Order



HDT90N series

Incremental Encoders

The HDT90N series is designed for various heavy industrial applications and applications involving heavy loads on shafts. It features excellent resistance to mechanical damage and can withstand high radial and axial loads on shafts. The product adopts a bushing-type structure design, allowing direct mounting on the drive shaft and flexible fixing connection via crank arms or spring plates.

High Light

- The metal casing is more robust, with a compact impact-resistant structure, making it suitable for installation and use in confined spaces.
- Various flexible connection methods, such as crank arms or spring plates, ensure greater flexibility in product installation.

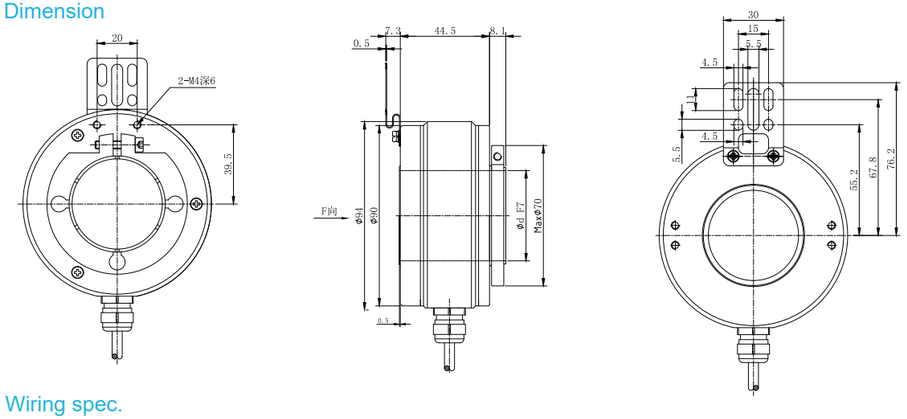
Elec. Specification

Resolution	10-20000P/R	
Supply voltage	DC5V	DC10-30V
Current requirements	Max. 150mA	Max. 60mA
Frequency response	Max. 800KHz	Max. 800KHz
Rise/Fall time	100ns	1us
Load current	Max. 20mA	Max. 30mA
Output voltage (V_{oH})	Vcc*70%	Vcc*70%
Output voltage (V_{oL})	Max. 0.5V	Max. 0.5V F max. 1V

Mechanical Specification

Max.rotating speed		6000r/min
Shaft loading	Radial	100N
	Axial	100N
Weight		0.5kg(Without cable)
Protection		IP54/IP65
Starting torque(AT25℃)		5X10^{2} N.m Max.
Operating temperature		-10℃……+70℃ /- 40℃……+120℃
Storage temperture		-20℃……+80℃
Shock resistance		1000m/s^{2}, 6ms
Vibration resistance		100m/s^{2}, 10....200Hz

Dimension



Wiring spec.

Color	White	Black	Red	Pink	Green	Blue	Yellow	Orange	Shielded
Line drive	Vcc	OV	A	A/	B	B/	Z	Z/	-
Complementary/Volt/Current	Vcc	OV	A	-	B	-	Z	-	-

How to Order

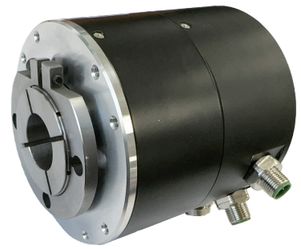
HDT90N 1024 B / 107 . xxx / H - Sxxx

- Encoder series: HDT90N
- Resolution: 1024 — 10-20000P/R selectable
- Output signal: B
- Output method: 107
  - Votlage (selectable)
    - DC5V: Output circuit — Votlage / Open collector / Push-pull
    - DC10-30V: Differential line driver
- Customer code: xxx
- Axis diameter: H — Ø 16-45
- Customized code: Sxxx

EV series

Overspeed switch Encoders

The EV series is specifically designed for various heavy industrial applications and applications with heavy-duty shaft loads. It features excellent resistance to mechanical damage and can withstand high radial and axial loads on the shaft. The bushing structure allows for direct mounting on the drive shaft, with flexible connections via crank arms or retaining pins. In addition to providing incremental encoder signal output, the product can also include an overspeed switch alarm output, catering to both precision control and safe production needs. protection, effectively reducing the impact of incorrect wiring during installation on the encoder.



High Light

- Multiple accessories, softer connections, and greater flexibility
- Integrated structural design saves installation space and costs.
- Overspeed switch alarm output ensures safe production.
- The electrical output has reverse connection protection and short circuit protection.

Elec. Specification

Contact parameters				Contact action time (S)	Disconnect speed accuracy(r/min)
Use category	Rated voltage(V)	Rated current(A)	Conventional heating current(A)		
AC-15/DC-13	~380-220	~0.8-0.27	6	⩽0.15	±3%
Preset speeds: 720, 780, 980, 1350, 1725, 1750, 1950, 2300 (Special specifications can be customized)					

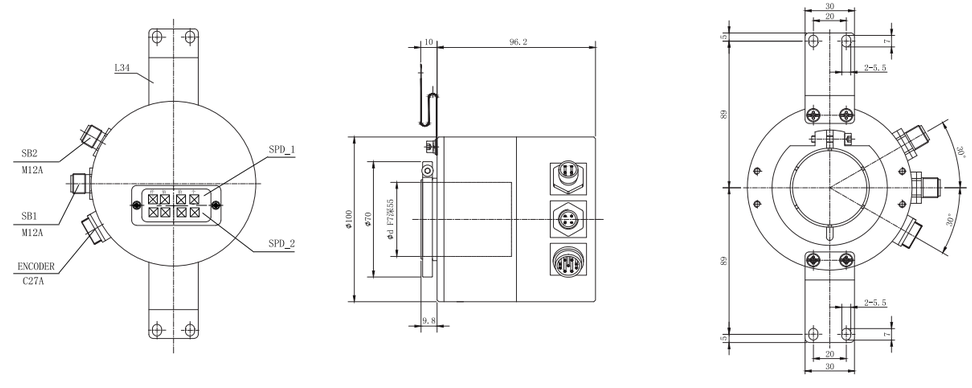
Elec. Specification

Resolution	360,512,600,1024,2048,2500 (Special specifications can be customized)	
Output circuit	TTL(RS-422)	HTL(Push-Pull)
Supply voltage	DC5V±5% o DC10-30V±10%	DC10-30V±10%
Current requirements	80mA	80mA
Frequency response	100KHz	100KHz
Rise/Fall time	100ns	100ns
Load current	20mA	40mA
Output voltage (V_{oH})	⩾2.5V	⩾Vcc*70%
Output voltage (V_{oL})	⩽0.5V	⩽0.5V

Mechanical Specification

Max.rotating speed		3600r/min
Shaft loading	Radial	200N
	Axial	100N
Weight		-
Protection		IP65
Starting torque(AT25℃)		0.1N.m
Operating temperature		-20℃……+85℃
Storage temperture		-25℃……+100℃
Shock resistance		1000m/s^{2}, 6ms
Vibration resistance		100m/s^{2}, 10....200Hz

Dimension



Wiring definition

ENCODE	White	Black	Red	Pink	Green	Blue
	DC10-30V	0V	A	/A	B	/B

RELAY SB1/SB2	Brown	Blue	White
	NC	COM	NO

Optional diameter

K	38
H	40
I	42
J	45
Serial Number	d

How to Order

EVB 1024 B / 208 . xxx / A - SB980

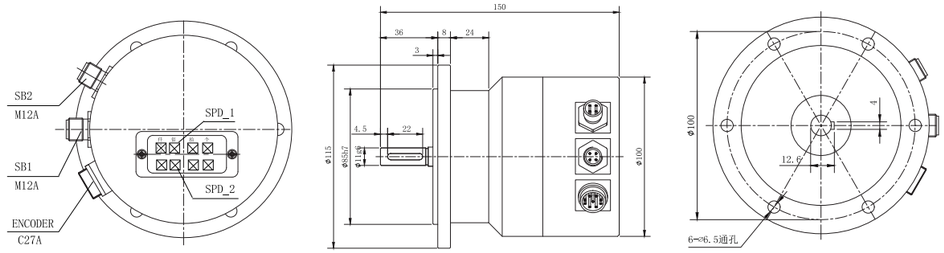
- Encoder series
- Resolution: Pulse selectable
- Output signal
- Output method

Code	Votlage	Output circuit
204	DC5V	TTL(RS-422)
208	DC10-30V	HTL(Push-Pull)
209	DC10-30V	TTL(RS-422)

Other customization options

- Axis diameter: ø 11
- Preset speed, Selectable speed
- Customer code

Dimension



Wiring spec.

ENCODE	White	Black	Red	Pink	Green	Blue
	DC10-30V	0V	A	/A	B	/B

RELAY SB1/SB2	Brown	Blue	White
	NC	COM	NO

How to Order

EVB 1024 B / 208 . xxx / J - L / SB980

- Encoder series
- Resolution: Pulse selectable
- Output signal
- Output method

Code	Votlage	Output circuit
204	DC5V	TTL(RS-422)
208	DC10-30V	HTL(Push-Pull)
209	DC10-30V	TTL(RS-422)

Other customization options

- Moment arm
- Axis diameter: ø 20-45
- Preset speed, Selectable speed
- Customer code

EX series
Absolute Encoders

Ethernet General Series

The magnetoelectric version is available in an economical 13×14-bit configuration, with a maximum of 18×12-bit.

The photoelectric version has a maximum of 18 bits per single turn and 16×14 bits per multi-turn.

Axial connector connection, compact structure, solid or hollow shaft (blind hole)

Parameters

Electrical parameters	
Resolution	EXM58: 8192 x 16384; 262144 x 4096 EXO58: 262144 x 1; 65536 x 16384
Accuracy	EXM58: ± 0,09°, EXO58: ± 0,01°
Counting frequency	150 kHz max.
Power	+5Vdc +30Vdc
Power consumption	3 W max.
Interface	Profinet EtherCAT Ethernet/IP CC-Link Ethernet_Powerlink Ethernet_Modbus TCP/IP
Programmable parameters	see user manual
Circuit protection	against inversion of polarity and short-circuit
EMC	electro-magnetic immunity,according to: EN 61000-4-2 EN 61000-4-4

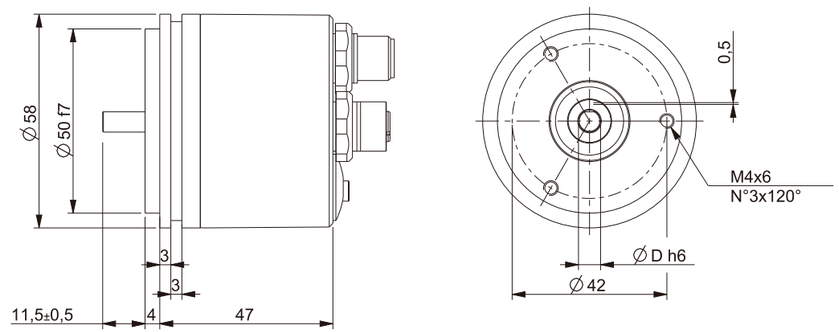
Appendix	
PAN/PGF:	flexible couplings
BR1:	reducing sleeves
LKM-532:	fixing clamps
EC-M12D-5M:	M12 bus in/out cordset 5 m
EC-M12D-10M:	M12 bus in/out cordset 10 m
EXC-M12D-5M-RJ45:	M12 + RJ bus in/out cordset 5 m
EXC-M12D-10M-RJ45:	M12 + RJ bus in/out cordset 10 m
EC-M12A-5M:	M12 Pwr cordset 5 m
EC-M12A-10M:	M12 Pwr cordset 10 m
EC-M12A:	M12 connector (power supply)
EC-M12D:	M12 connector (bus IN/OUT)

Environmental parameters	
Pound	250 g, 6 ms acc. to CEI EN 60068-2-27
Vibration	10 g, 5-2000 Hz acc. to CEI EN 60068-2-6
Protection level	IP65
Operating temperature range	-25°C +85°C (-13°F +185°F)
Storage temperature range	-40°C +100°C (-40°F +212°F) (98% R.H.without condensation)

Mechanical parameters	
Size	see drawing
Solid shaft	Ø 6, 8, 9.52, 10, 12 mm
Hollow shaft	Ø 14, 15 mm
Converter sleeve BR1-xx from Ø 15 to:	Ø 6, 8, 9.52, 10, 11, 12 mm
Shaft load (axial, radial)	40 N max.
Shaft rotation speed	6000 rpm max.
Bearing service life	400 x 10^6 rev. min. (10^9 rev. min. with shaft loading of 20 N max.)
Weight	~ 350 g (12,3 oz)

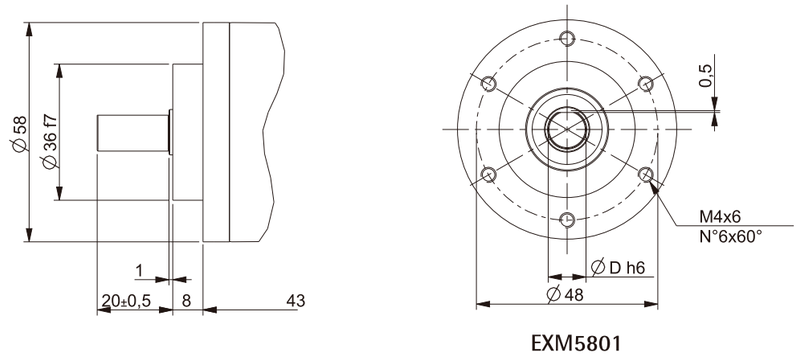
Material	
Flange	anticorodal, UNI EN AW-6082
Shell	anticorodal, UNI EN AW-6082
Bearings	ABEC 5
Axle	stainless steel, non magnetic, UNI EN 4305
Light source	GaAl diodes

Dimension

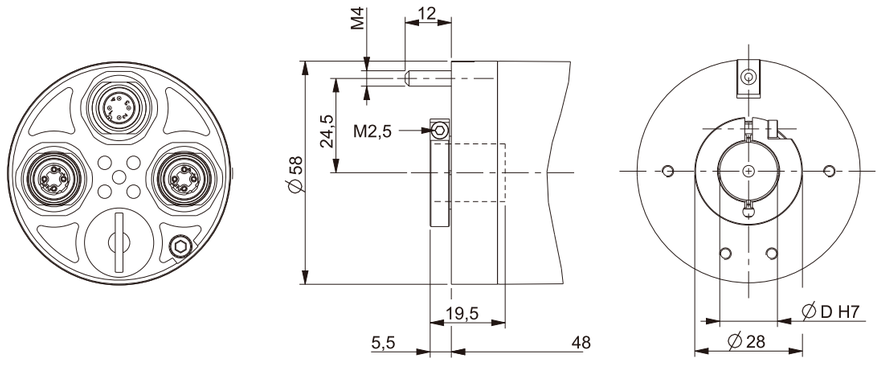


EXM5802

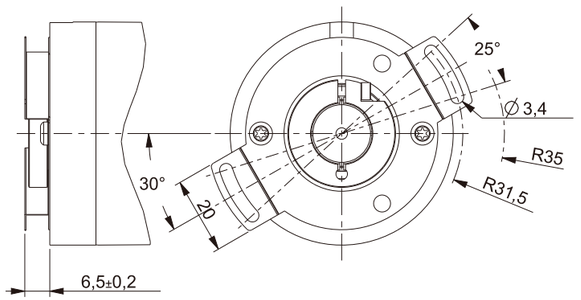
Dimension



EXM5801



EXM5803A



EXM5803B

Dimension

EXM58xxx	XX-XX ⓐ	/	XXX ⓑ	-	XX ⓒ	-	X ⓓ	X ⓔ	-	X ⓕ	/S818C ⓖ

ⓐ Resolution
13-14 = 13 x 14 bit 8192 cpr x 16384 turns)
18-12 = 18 x 12 bit (262144 cpr x 4096 turns)

ⓑ Interface/Power
EC4 = EtherCAT, +5Vdc +30Vdc
PL4 = Powerlink, +5Vdc +30Vdc
PT4 = Profinet IO, +5Vdc +30Vdc
EP4 = Ethernet/IP, +5Vdc +30Vdc
MT4 = Modbus TCP/IP, +5Vdc +30Vdc
CC4 = CC-Link IE Field basic, +5Vdc +30Vdc

ⓒ Shaft dimensions
06 = 6 mm
08 = 8 mm
P9 = 9.52 mm, 3/8"
10 = 10 mm
12 = 12 mm
14 = 14 mm (EXM5803x)
15 = 15 mm (EXM5803x)

ⓓ Protection level
P = IP65

ⓔ Operating temperature range
T = -25°C +85°C (-13°F +185°F)

ⓕ Connection location
A = axial

ⓖ Customer version

Absolute / Incremental / Overspeed switch 3-in-1 Encoders

High Light

- Multiple accessories, softer connections, and greater flexibility
- Integrated structural design saves installation space and costs.
- Overspeed switch alarm output ensures safe production.
- The electrical output has reverse connection protection and short circuit protection.

Absolute Encoders Optional

ETHERNET POWERLINK · EtherNet/IP · EtherCAT · UKCA · RoHS · IP65 · cULus · PROFINET · CC-Link IE Field Basic · Modbus · CE

Elec. Specification

Output circuit	Drive TTL(L)	Drive HTL(FL)
Power voltage	5V±0.25	DC10-30V
Consume current	80mA	80mA
Response frequency	100kHz	100kHz
Allowed load	20mA	40mA
High level signal	2.5V	Vcc*70%
Low signal level	0.5V	0.5V
Rise/fall time	100ns	100
Pulse count	600,1000,1024,	
	Special specifications can be customized.	
■ Overspeed switch ±3%:1950 1300,980 780r/min		
■ Absolute encoder: 12×12-bit, CANopen interface, bus box PG		

Mechanical Specification

Maximum speed	3600r/min
Radial load	200N
Axial load	100N
Weight	About –
Protection level	IP65
Operating temperature	-20°C....+85°C
Storage temperature	-25°C....+100°C
Impact resistance	1000m/s2，6ms
Vibration resistance	100m/s²， 10....200Hz
Starting torque (25°C)	0.1 N.m
Service life of bearings	10^9circle
Appendix	Connecting piece：L52，connecting rod ：M55

Dimension