

Absolute angle encoder  
Exposed type

# RS97-1024N

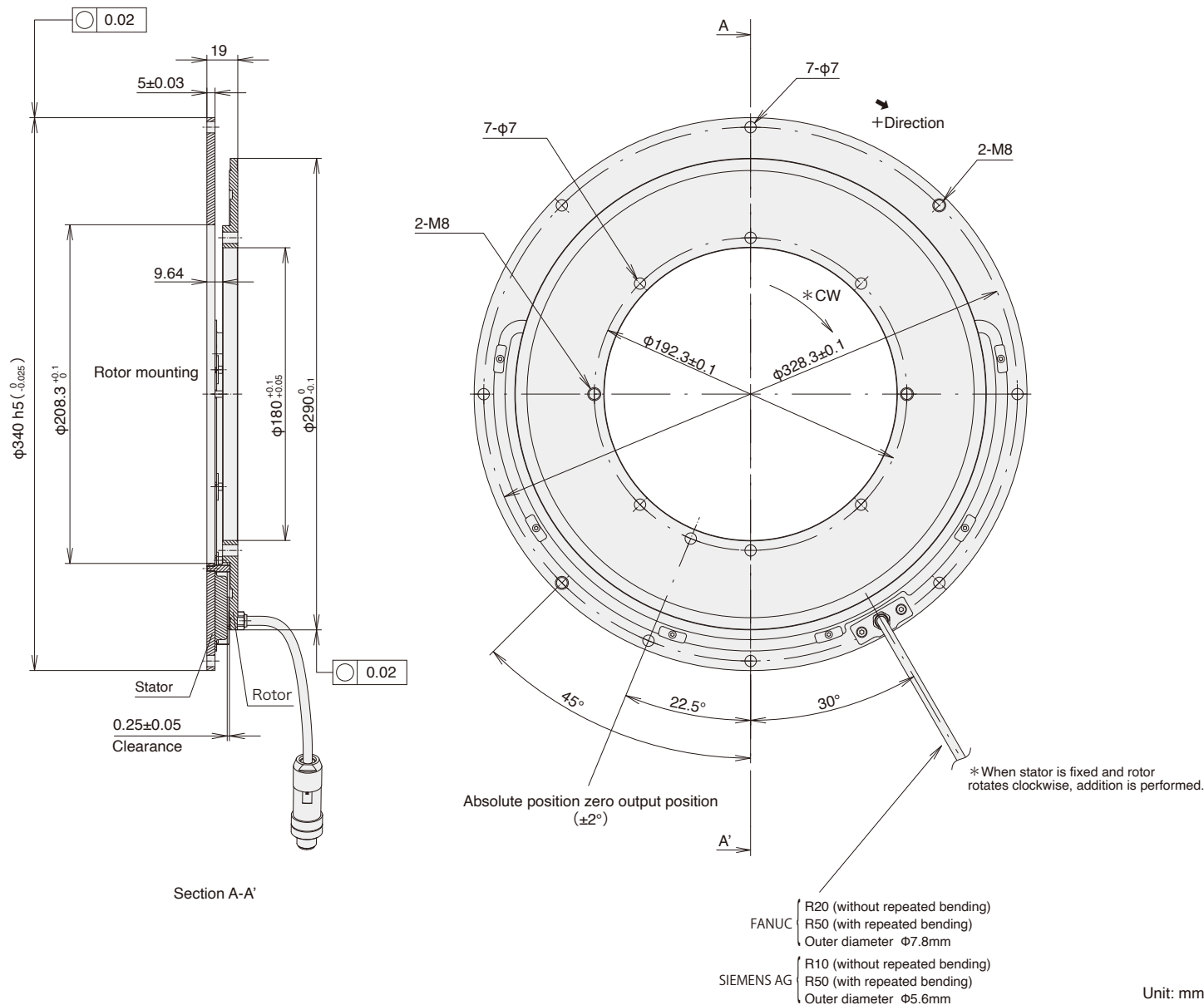
- Enables direct communication using the protocol of each supporting manufacturer without the requirement of an amplifier
- Magnetic system enables use even in environments with condensation, oil, and other adverse conditions
- 180mm diameter through-hole allows for design and mounting flexibility
- Dual head configuration reduces the effect of axial runout



FANUC

SIEMENS

## Dimensions



## Specifications

Model name	RS97-1024NGA	RS97-1024NGZ
Output wave number	1,024 waves/revolution	
Through hole diameter	φ180 mm	
Accuracy(at 20°C)	±2.5"	
Output signal	Absolute serial bidirectional signal, compliant with EIA-485	Compliant with DRIVE-CLiQ
Compatible controllers	FANUC	SIEMENS AG
Resolution	23 bits (8,388,608 pulses/revolution)	
Maximum response revolutions	5,000 min <sup>-1</sup>	
Functional Safety	IEC 61508, EN/BS 62061 SIL 2 EN/BS/ISO 13849-1 Cat. 3 / PL d EN/BS 61800-5-2	
Product Safety	FCC Part15 Subpart B Class A ICES-003 Class A Digital Device EN/BS 61000-6-2, EN/BS 61000-6-4	
Product Environment	EN/BS 63000	
Operating temperature range	0 to +60°C	
Storage temperature range	-10 to +60°C	
Vibration resistance	150 m/s <sup>2</sup> (50 Hz to 2,000 Hz)	
Impact resistance	1,000 m/s <sup>2</sup> (11 ms)	
Protective design grade	IP65	
Power supply voltage range	DC+4.75 to +5.25 V	DC+17 to +30.8 V
Maximum consumption current	1.35W or less (4.75V) 1.3W or less (5.25V)	2.5W or less (17V) 3.2W or less (30.8V)
Consumption current	300mA (5V) (when the controller is connected)	150mA (24V) (when the controller is connected)
Output connector	JN1HS10PL2 made by Japan Aviation Electronics Industry	SACC-M12MS-8Q H made by Phoenix Contact
Moment of inertia	8.8× 10 <sup>-3</sup> kgm <sup>2</sup> or less	
Mass	Approx. 3.4kg (rotor: 0.6kg/ stator: 2.8kg) or less	
Compatible cables (types without relay connectors) Maximum cable length	CH23A-***NPFA 30 m	CH22-***NSFY 30 m
Compatible cables (types with relay connectors) Maximum cable length	CH23A-***NPKA + CH23A-***NPFA 30 m	CH22-***NSFF + CH22-***NSFY 30 m

\*Magnescale reserves the right to change product specifications without prior notice.

## Details of model designation

Scale

RS97-1024NG△■

[N]Rotor inner diameter  
180 mm

[G]Resolution  
23 bit

Type	NC manufacturer	Remarks
A	FANUC	α interface
Z	SIEMENS AG	DRIVE-CLiQ

[■]Head cable length

Type	Head cable length
01	1 m
02	2 m
03	3 m

Cables

CH22 - □□□○▽※#

[□□□]Cable length

Written by flush right, indication in "m" units, up to 30 m, 0.5 m pitch (Example)

Type	Cable length
015	1.5m
070	7m
260	26m

Type	Conduit specification
C	With conduit
N	Without conduit (standard)

[▽]Cable sheath (covering)

Type	Cable specification
S	PU (Polyurethane, Siemens Motion connect 800+)

[※]Scale side connector

Type	Specification	Remarks
M	Scale head connector	Standard
F	M12 connector (Female) made by Phoenix Contact	Relay/ Waterproofing
E	M12 connector (Female) made by Phoenix Contact	Relay/ Waterproofing/ Attached connector

[#]Controller side connector

Type	Specification	Remarks
None	Open-end	Standard
Y	RJ45 connector made by YAMAICHI ELECTRONICS	Adopts NC machine tool
Z	RJ45 connector (water proof) made by YAMAICHI ELECTRONICS	Relay
F	M12 connector (Male) made by Phoenix Contact	Relay/ Waterproofing

CH23A - □□□○▽※#

[□□□]Cable length

Written by flush right, indication in "m" units, up to 30 m, 0.5 m pitch (Example)

Type	Cable length
010	1m
005	0.5m
065	6.5m
100	10m

Type	Conduit specification
C	With conduit (standard)
N	Without conduit

[▽]Cable sheath

Type	Cable specification
P	PVC(φ8)(Controller side)
E	PU(φ8)(Controller side)

[※]Controller side connector

Type	Specification	Remarks
Z	-	Scale side connector should be 10P JN2 (Female) made by Japan Aviation Electronics Industry or 2P made by TAJIMI ELECTRONICS
None	-	Standard
F	20P straight case made by Honda Tsushin Kogyo	FANUC (ABS)
J	Horizontal drawing case made by HIROSE Electric	FANUC (ABS)
K	10P JN1 (Male) made by Japan Aviation Electronics Industry	Relay
N	12P R04 (Male) made by TAJIMI ELECTRONICS	Relay (fixed)

[#]Scale side connector

Type	Specification	Remarks
A	10P JN2 (Female) made by Japan Aviation Electronics Industry	Relay

