

Absolute rotary magnescale  
Rotary exposed type

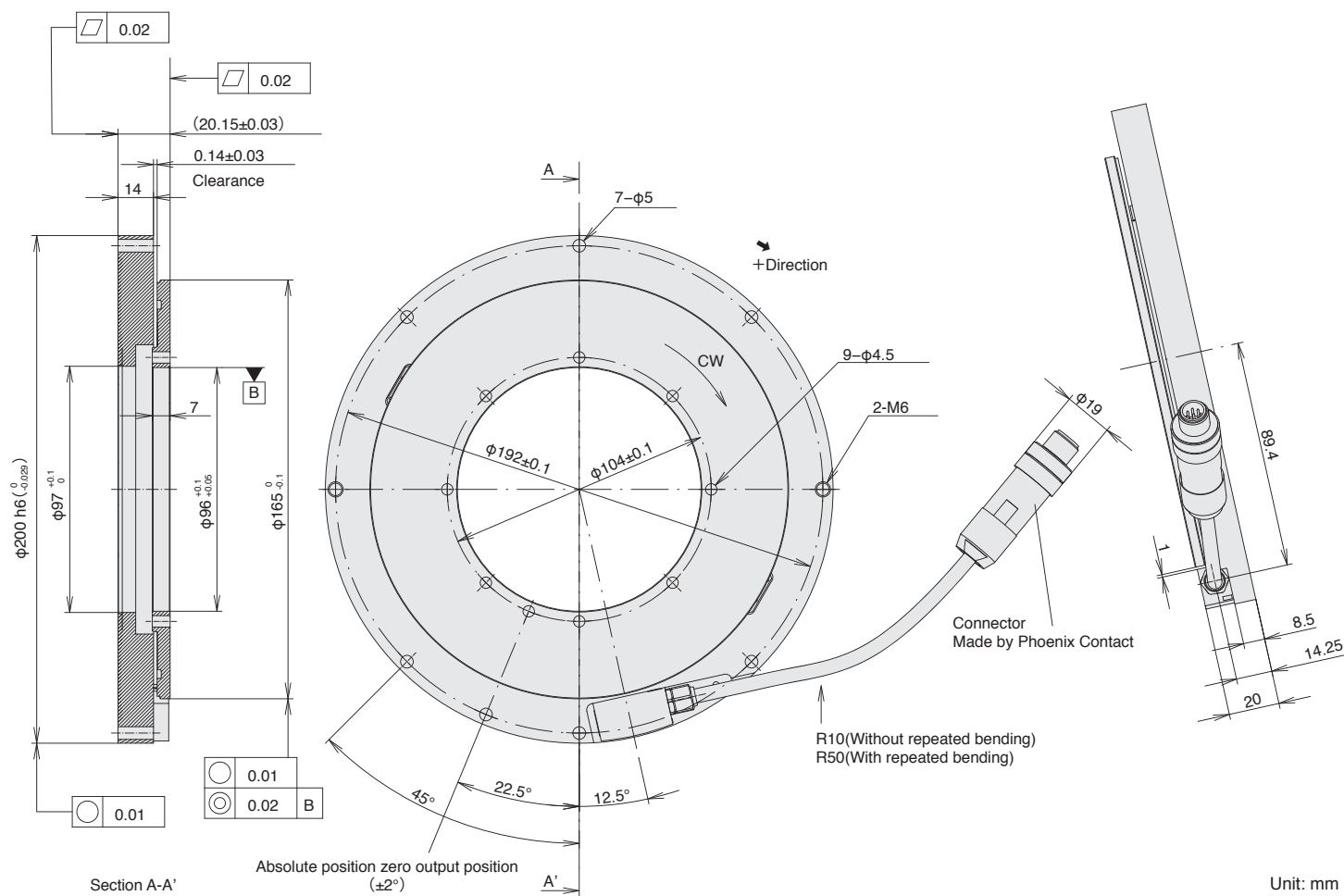
# RS97-1024E



- Amp-less design enables direct communication using the protocol of each supporting manufacturer
- Magnetic system enables use even in environments with condensation and oil and other adverse conditions
- 96mm diameter through-hole allows for design and mounting flexibility
- Use of two heads provides resistance to axial runout



## Dimensions



## Specifications

Model name	RS97-1024EGA	RS97-1024EGD	RS97-1024EGZ
Output wave number	1,024 waves/revolution		
Through hole diameter	φ96 mm		
Accuracy(at 20°C)	±2.5"		
Output signal	Absolute serial bidirectional signal, compliant with EIA-485		Compliant with DRIVE-CLiQ
Compatible controllers	FANUC	Mitsubishi Electric	SIEMENS AG
Resolution	23 bits (8,388,608 pulses/revolution)		
Maximum response revolutions	5,000 min <sup>-1</sup>		
Functional safety	Please consult with each controller manufacturer regarding support for functional safety.		
Legal compliance	FCC Part15 Subpart B Class A ICES-003 Class A Digital Device EN55011 Gp1 Class A, EN61000-6-2		
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 power consumption	1.25W or less (4.75V) 1.2W or less (5.25V)		2.3W or less (17V) 3.1W or less (30.8V)
Power consumption	240mA (5V) (when the controller is connected)		120mA (24V) (when the controller is connected)
Moment of inertia	9×10 <sup>-4</sup> kgm <sup>2</sup> or less		
Starting torque (at 20°C)	-		
Mass	Approx. 2kg (rotor: 0.2kg/ stator: 1.7kg) or less		
Compatible cables (types without relay connectors) Maximum cable length	CH23-***NPFA 30 m	CH23-***NPMA 30 m	CH22-***NSFY 30 m
Compatible cables (types with relay connectors) Maximum cable length	CH23-***NPKA + CH23-***NPFA 30 m	CH23-***NPKA + CH23-***NPMA 30 m	CH22-***NSFF + CH22-***NSFY 30 m

## Details of model designation

### Scale

RS97-1024EG△■

Type	Head cable length
01	1 m
02	2 m

Type	NC manufacturer	Remarks
A	FANUC	ai series
D	Mitsubishi Electric	4-wire
Z	SIEMENS AG	DRIVE-CLiQ

Resolution 23 bit  
Rotor inner diameter 96 mm

### Cables

CH22 - x x x ○ □ △ #

Type	Control side connector
Y	RJ45 connector made by Yamaichi Electric
Z	RJ45 connector (water-proof) made by Yamaichi Electric
F	M12 connector (male) made by Phoenix Contact

Type	Scale side connector
M	Scale head connector
F	M12 connector (male) made by Phoenix Contact
E	M12 connector (female) with panel mount relay made by Phoenix Contact

Type	Cable specification
S	SIEMENS Motion Connect 800Plus (green)

Type	Conduit specification
C	With conduit
N	Without conduit

Cable length (Example)  
Type Cable length  
010 1.0 m  
105 10.5 m

CH23 - x x x ○ □ △ #

Type	Scale side connector
None	Original of Magnescale
A	10P JN2 (female) made by Japan Aviation Electronics Industry
C	12P R04-9125J12F8.5 (flange, female) made by Tajimi Electronics

Type	Control side connector
None	Unterminated end
K	10P JN1 (male) made by Japan Aviation Electronics Industry
M	10P made by Sumitomo 3M
N	12P R04 (male) made by Tajimi Electronics

Type	Cable specification
E	Urethane φ8 made by Yoshinogawa Electric Wire & Cable
P	PVC φ8 made by Hirakawa Hewtech
Z	PVC φ6.8 made by Hirakawa Hewtech

Type	Conduit specification
C	With conduit
N	Without conduit
R	With plastic tube

Cable length (Example)  
Type Cable length  
010 1.0 m  
105 10.5 m

Unit: mm