

Absolute angle encoder
Exposed type

RS97-1024E



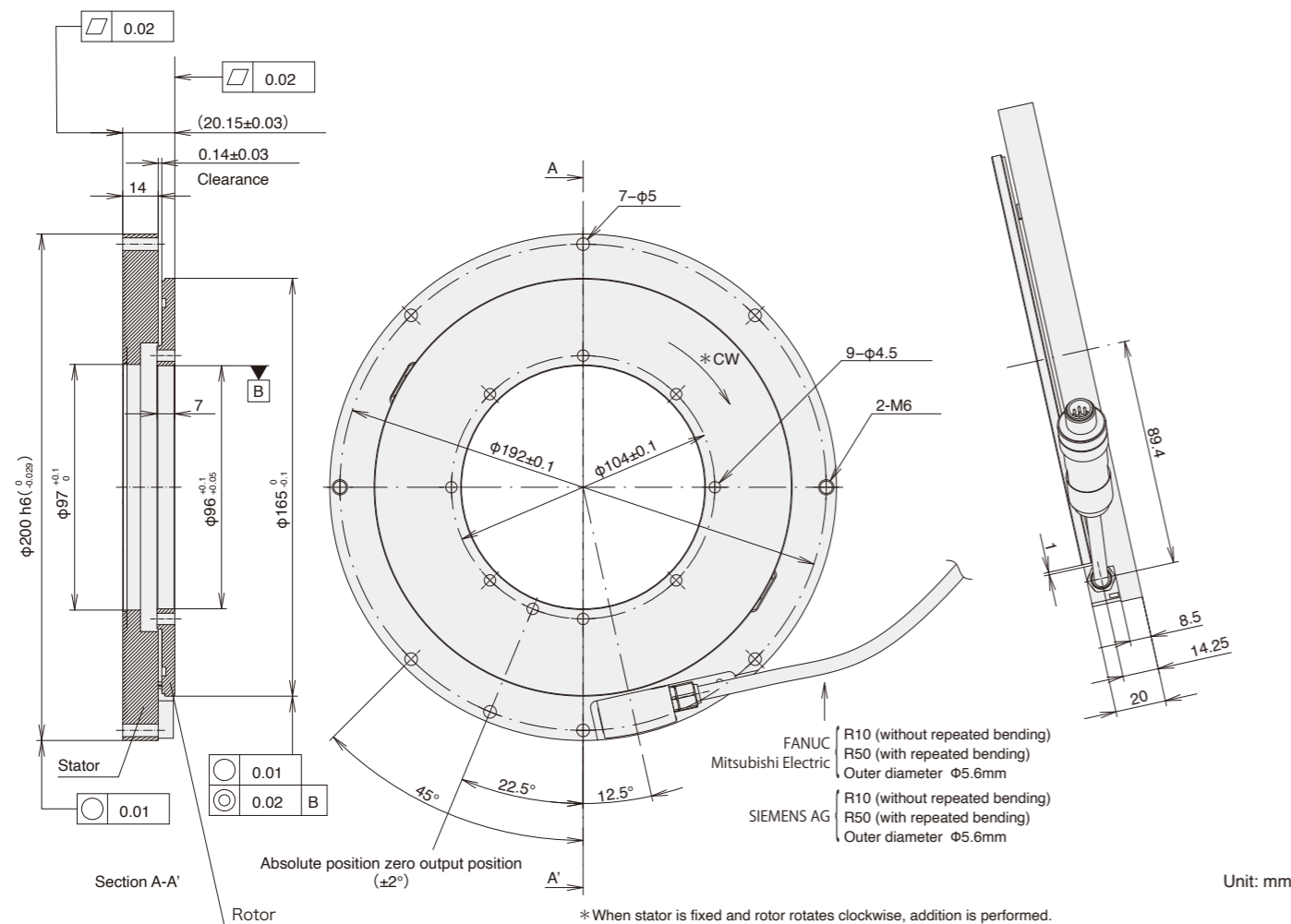
- Enables direct communication using the protocol of each supporting manufacturer without the requirement of an amplifier
- Magnetic system allows use even in environments with condensation, oil, and other adverse conditions
- 96mm diameter through-hole allows for design and mounting flexibility
- Dual head configuration reduces the effect of axial runout

FANUC

Mitsubishi Electric

SIEMENS

Dimensions



Unit: mm

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 ⁻¹		
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 ² (50 Hz to 2,000 Hz)		
Impact resistance	1,000 m/s ² (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	1.25W or less (4.75V) 1.2W or less (5.25V)		2.3W or less (17V) 3.1W or less (30.8V)
Consumption current	330mA (5V) (when the controller is connected)		150mA (24V) (when the controller is connected)
Output connector	JN1HS10PL4S made by Japan Aviation Electronics Industry		SACC-M12MS-8QH made by Phoenix Contact
Moment of inertia	9×10 ⁻⁴ kgm ² or less		
Mass	Approx. 2kg (rotor: 0.2kg/ stator: 1.7kg) or less		
Compatible cables (types without relay connectors) Maximum cable length	CH23A-***NPFA 30 m	CH23-***NPMA 30 m	CH22-***NSFY 30 m
Compatible cables (types with relay connectors) Maximum cable length	CH23A-***NPKA + CH23A-***NPFA 30 m	CH23-***NPKA + CH23-***NPMA 30 m	CH22-***NSFF + CH22-***NSFY 30 m

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

Details of model designation

Scale

RS97-1024EG△■

[E]Rotor inner diameter

96 mm

[G]Resolution

23 bit

[△]Communication protocol

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

[■]Head cable length

Type	Head cable length
01	1 m
02	2 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

[○]Conduit specification

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

[▽]Cable sheath (covering)

Type	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	
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

CH23 - □□□□○▽※#

CH23A - □□□□○▽※#
(CH23A: FANUC model only)

[□□□]Cable length

(Example)

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

[○]Conduit specification

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

[▽]Cable sheath

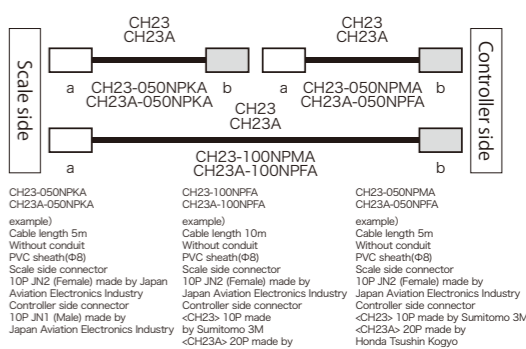
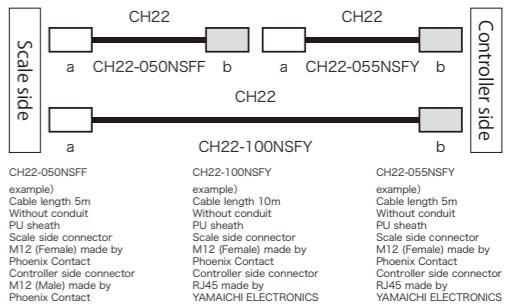
Type	Cable specification
P	PVC (Φ8) [Controller side]
E	PU (Φ8) [Controller side]

[※]Controller side connector

Type	Specification	Remarks
Without	Earth wire	
Z	Open-end	Scale side connector should be 10P JN2 (Female) made by Japan Aviation Electronics Industry or 2P made by TAJIMI ELECTRONICS
None	-	Standard
M	10P made by Sumitomo 3M	Mitsubishi NC, J3 (ABS)
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 RD4 (Male) made by TAJIMI ELECTRONICS	Relay (fixed)

[#]Scale side connector

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



SR67A
SR7A
SR84
RS97-1024E
RS97-1024AN
RU97-2048
RU77-4098