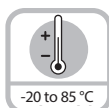


Compact Type RI-04 (Shaft) / RI-05 (Hollow Shaft)



High rotational speed



Temperature



Shock/vibration resistant



Magnetic field proof



Short-circuit protected



Reverse polarity protection

Rugged

- Chromated housing resistant to cooling lubricants and other environmental influences
- IP65 from housing side
- Robust strain relief on cable outlet.
- Highly flexible cable (withstands constant flexing at 32 to 158 °F (0 to 70 °C))
- Short-circuit proof
- Wide temperature range -4 to +185 °F (-20 to +85 °C)
- Temperature and aging compensation



Compact

- **Can be used where space is tight**
Overall diameter of only 36.5 mm
Shaft diameter min. 4 mm

Versatile

- Hollow shaft version: Fits directly onto drive shaft - no couplings needed
- saves up to 30% on cost and 60% on installation space and time
- Universal application in mechanical engineering, vehicles, conveyors and elevators
- Low current consumption despite high scanning rate
- Broad input voltage range (5-18 V or 8-30 V)

Mechanical Characteristics:

Speed:	Shaft version: max. 12,000 RPM Hollow shaft version: max. 6,000 RPM	Working temperature:	-4 to +185 °F (-20 to +85 °C)
Rotor moment of inertia:	approx. 1.1 x 10 ⁻² oz-in ² (0.2 x 10 ⁻⁶ kgm ²)	Materials:	Shaft: stainless steel; Hollow shaft: brass Housing: chromated Aluminium Cable: PVC
Starting torque:	< 7 oz-in (< 0.05 Nm)	Shock resistance acc. to EN 60068-2-27:	approx. 100 g (1,000 m/s ²), 6 ms
Radial load capacity of the shaft:	9 lbs (40 N)	Vibration resistance acc. to EN 60068-2-6:	approx. 10 g (100 m/s ²), 55-2,000 Hz
Axial load capacity of the shaft:	4.5 lbs (20 N)		
Weight:	approx. 0.175 lbs (0.08 kg)		
Protection acc. to EN 60 529:	IP65, housing side, IP50 shaft side (IP64 on request)		

Electrical Characteristics:

Output circuit [Key Code]:	Push-Pull [2I] (7272 compatible) ²⁾	Push-Pull [1H/2H] (7272 compatible) ²⁾	RS422 [4A/4D]
Supply voltage:	5-18 VDC	8-30 VDC	5 VDC(+/-5%) 8-30 VDC
Power consumption (no load) with inverted signal:	max. 40 mA	max. 40 mA	typ. 40 mA/max. 90 mA
Permissible load/channel:	max. ±20 mA	max. ±20 mA	max. ±20 mA
Pulse frequency:	max. 200 kHz	max. 200 kHz	max. 300 kHz
Signal level high:	min. +V -2.5 V	min. +V -3 V	min. 2.5 V
Signal level low:	max. 0.5 V	max. 0.5 V	max. 0.5 V
Rise time t _r :	max. 1 µs	max. 1 µs	max. 200 µs
Fall time t _f :	max. 1 µs	max. 1 µs	max. 200 µs
Short-circuit protected ¹⁾ :	yes	yes	yes
Reverse polarity protection:	yes	yes	yes
UL approval:	file E356899		
RoHS compliant acc. to EU guideline 2011/65/EU			

¹⁾ If supply voltage correctly applied

²⁾ Max. recommended cable length 30 m

Rotary Position Technology

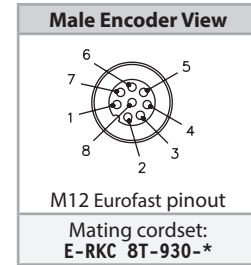
Incremental Encoders

Compact Type RI-04 (Shaft) / RI-05 (Hollow Shaft)

Standard Wiring:

Connection Type	Case Ground	Common (0 V)	+V	A	$\bar{A}$	B	$\bar{B}$	Z	$\bar{Z}$
M12 Eurofast	Coupling Nut	1	2	3	4	5	6	7	8
Cable w/ Inverted Signals	Shield/Drain	WH	BN	GN	YE	GY	PK	BU	RD
Cable w/o Inverted Signals	Shield/Drain	WH	BN	GN	-	YE	-	GY	-

Wiring Diagram:



* Length in meters.

Part Number Key: RI-04 Shaft Version

A	B	C		D	E		F
RI-04Q	6	C	-	1H	25	-	H1181

A	Type
RI-04Q	Ø 36 mm, Shaft w/ Flat, IP50 Shaft Seal
RI-04T	Ø 36 mm, Shaft, IP50 Shaft Seal

B	Shaft (Ø x L)
4	Ø 4 mm x 10 mm ¹⁾
5	Ø 5 mm x 10 mm ¹⁾
6	Ø 6 mm x 12.5 mm ²⁾
A0	Ø 1/4" x 12.5 mm ²⁾

¹⁾ Available only with Type RI-04T

²⁾ Available only with Type RI-04Q

C	Flange
C	Clamping Flange
S	Servo Flange

D	Voltage Supply and Output Type
1H	8-30 VDC, Push-Pull
2H	8-30 VDC, Push-Pull (w/ Inverted Signals)
2I	5-18 VDC, Push-Pull (w/ Inverted Signals)
4A	5 VDC, RS422 (w/ Inverted Signals)
4D	8-30 VDC, RS422 (w/ Inverted Signals)

E	Pulse Rate
	25, 100, 200, 360, 500, 512, 600, 1000, 1024, 1250, 1500, 2000, 2048, 2500, 3600 (e.g. 500 Pulses => 500)
	Other Pulse Rates Available on Request

F	Type of Connection
H1181	Radial 8-pin M12 Eurofast Connector
H1481	Axial 8-pin M12 Eurofast Connector
C	Radial Cable (2 m PVC)
CA	Axial Cable (2 m PVC)

Part Number Key: RI-05 Hollow Shaft Version

A	B	C		D	E		F
RI-05I	6	E	-	1H	25	-	H1181

A	Type
RI-05I	Ø 36 mm, Hollow Shaft, IP50 Shaft Seal

B	Shaft (Ø x L)
6	Ø 6 mm
8	Ø 8 mm
A0	Ø 1/4"

C	Flange
E	Ø 19 mm Flange w/ Slotted Flex Mount
T	Ø 19 mm Flange w/ Long Torque Stop
T1	Ø 19 mm Flange w/ Short Torque Stop

D	Voltage Supply and Output Type
1H	8-30 VDC, Push-Pull
2H	8-30 VDC, Push-Pull (w/ Inverted Signals)
2I	5-18 VDC, Push-Pull (w/ Inverted Signals)
4A	5 VDC, RS422 (w/ Inverted Signals)
4D	8-30 VDC, RS422 (w/ Inverted Signals)

E	Pulse Rate
	25, 100, 200, 360, 500, 512, 600, 1000, 1024, 1250, 1500, 2000, 2048, 2500, 3600 (e.g. 500 Pulses => 500)
	Other Pulse Rates Available on Request

F	Type of Connection
H1181	Radial 8-pin M12 Eurofast Connector
C	Radial Cable (2 m PVC)

Accessories:

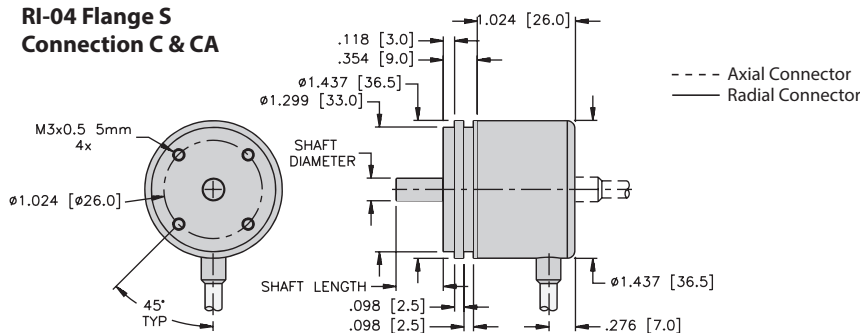
- See page H1, Connectivity, for cables and connectors
- See page G1, Accessories, for mounting attachments and couplings

Compact Type RI-04 (Shaft) / RI-05 (Hollow Shaft)

Dimensions: RI-04 Shaft Version

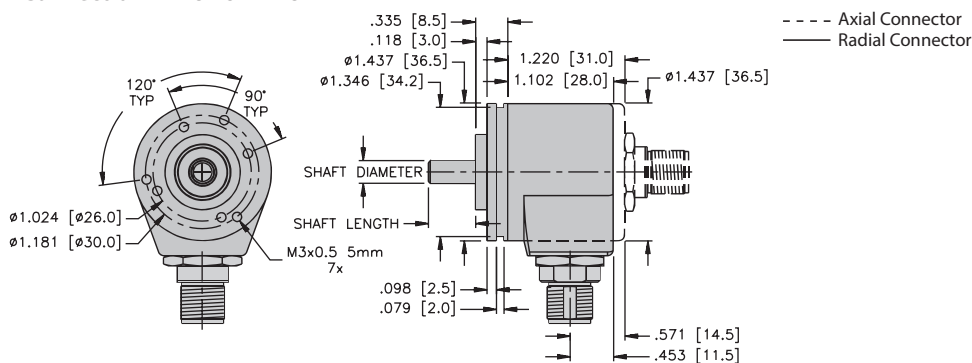
RI-04 Flange S

Connection C & CA



RI-04 Flange C

Connection H1181 & H1481



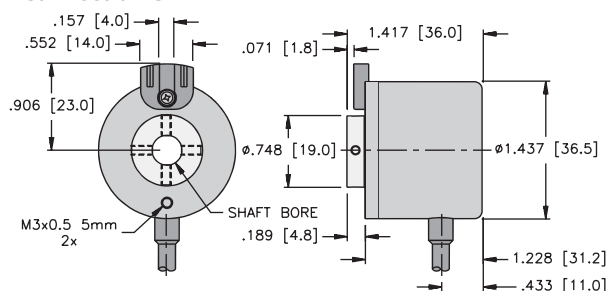
Mounting Advice:

The flanges and shafts of the encoder and drive should not be rigidly coupled together at the same time. We recommend the use of suitable couplings (see page G1, Accessories).

Dimensions: RI-05 Hollow Shaft Version

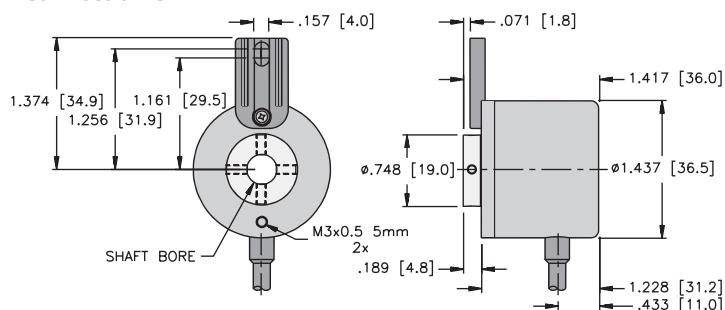
RI-05 Flange T1

Connection C



RI-05 Flange T

Connection C



RI-05 Flange E

Connection H1181

