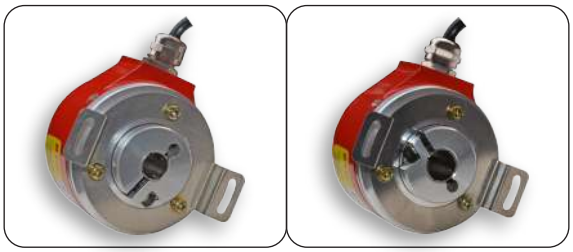
BTH Incremental Rotary Encoder

CE

58mm dia Hollow Type 10mm, 12mm

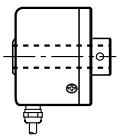


- Ø58 mm European Industrial standard encoder
- Robustness and excellent resistance to shocks / vibrations
- High resolutions available : up to 5000 PPR
- Low price contributes to cost reduction of system
- High protection level IP64
- Wide range of power sources : 5~24VDC, 5VDC ±5%
- Various output types

Order Code Hollow Shaft

Series	Incremental	Outer Dia	Hollow inside Dia	Pulse Per Revolution (PPR)	Output	Power Supply
B	**I**	**58**	**H10**-10mm **H12**-12mm	**30, 50, 60, 100, 200, 250, 360, 400, 500, 600, 720, 1000, 1024, 1800, 2000, 2048, 2500, 3600, 4096, 5000** (other PPR are available on request)	**PPDG** Push Pull Differential	5~24VDC
					L Line Driver	**5** 5VDC

A simple way of sensing rotary movements



High rotational speed | Temperature | Shock/vibration resistant | Magnetic field proof | Short-circuit proof | Optical sensor

Electrical Characteristics

Output Circuit	Push Pull Differential	Line Driver
Supply Voltage	5-30 VDC	5 V ±5%
Power Consumption with Inverted Signal (no load)	typ. 50mA / max. 100mA	typ. 40 mA / max. 90mA
Permissible Load / Channel	±20mA	
Pulse Frequency	Max. 300 kHz	
Signal Level High	Min. U_B - 1V	Min. 2.5V
Signal Level Low	Max. 0.5V	Max. 0.5V
Rising Edge Time	Max. 1µs	Max. 200ns
Falling Edge Time	Max. 1µs	Max. 200ns
Short Circuit Proof Outputs	Yes	
Reverse Polarity Protection of the Power Supply	Yes	No
Over Current Protection	Yes	

Mechanical Characteristics

Max. Speed	8000RPM
Max. Speed Continuous	Max. Response Frequency / Resolution
Rotor moment of Inertia	approx. 6 x 10^6 kgm^2
Shock Resistance	50 m/s^2, 6ms
Vibration Resistance	100 m/s^2 , 10...2000Hz
Starting Torque	<0.05 Nm
Hollow Material	SS
Body Material	Aluminum alloy 2A12
Outer Case Material	Al-alloy
Disk Material	Glass
Cable	2 Mtr. Black shield cable, side entry
Degree of Protection	IP 64
Weight	350g
Position Deflection of Allowable Shaft	Radial : Less than 0.05mm, Axial : Less than 0.2mm
Allowable Shaft Load	Radial : 2.5kg Max. Axial : 1.3kg Max.
Operating Temperature Range	-20ºC ~ +75ºC (No freezing) at 30% ~ 85% RH

Connection Table

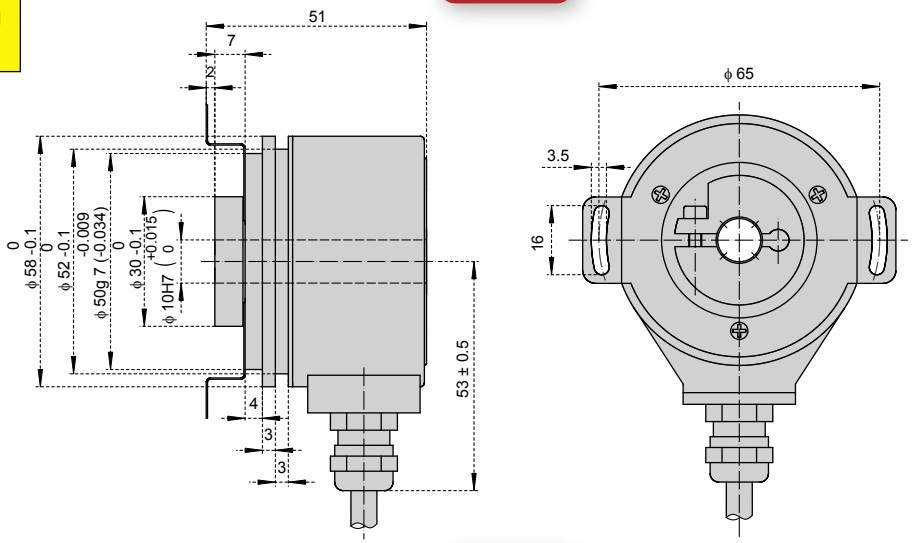
Wire Colour	Black	Red	Green	White	Yellow	Brown	Grey	Orange	Shield
Push Pull / NPN Open Collector	0 V	+V	A	B	Z	$\bar{A}$	$\bar{B}$	$\bar{Z}$	Ground
Line Driver	0 V	+V	A	B	Z	$\bar{A}$	$\bar{B}$	$\bar{Z}$	Ground

BTH™ Incremental Rotary Encoder

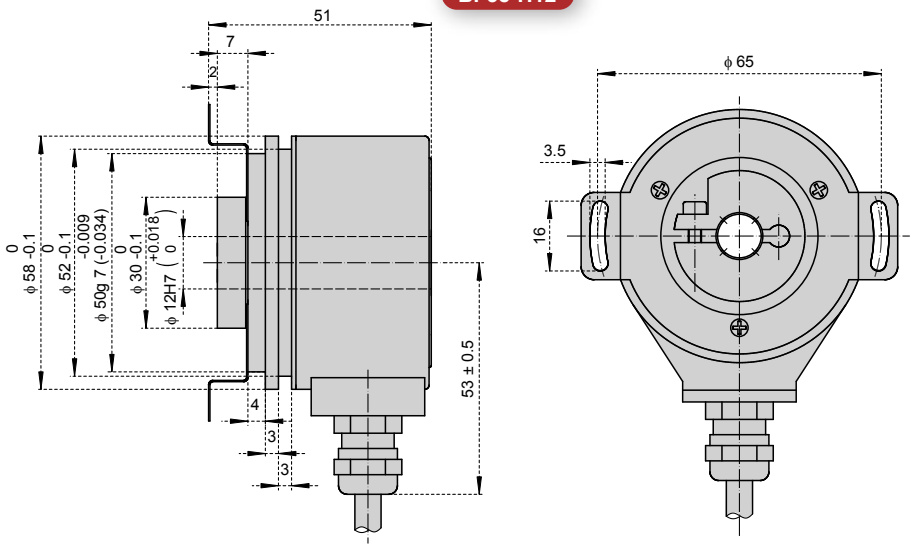
58mm dia Hollow Type 10mm, 12mm

Dimension Drawing

BI-58-H10



BI-58-H12



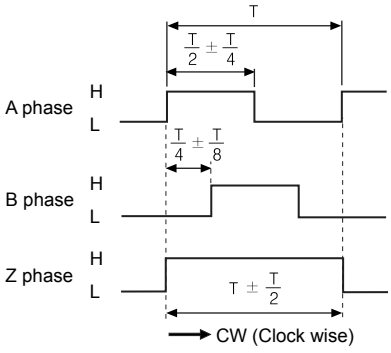
Incremental Encoder is the direct use of the principle of photoelectric conversion output. Incremental output phases are A phase, B phase which have phase difference at 90° and Z phase one pulse per revolution for benchmarking point positioning. The advantage is that the principle of simple structure, the average life span of the machine can be in the tens of thousands of hours, anti-interference ability, high reliability, suitable for long distance transmission. Hollow shaft Encoders are useful because they can be mounted directly on the shaft. **BTH** is offering 10 & 12mm through Hollow incremental Encoders

Mounting advice

The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time. When mounting a hollow shaft encoder, we recommend using a torque stop pin that fits into the torque stop slot or a stator coupling.

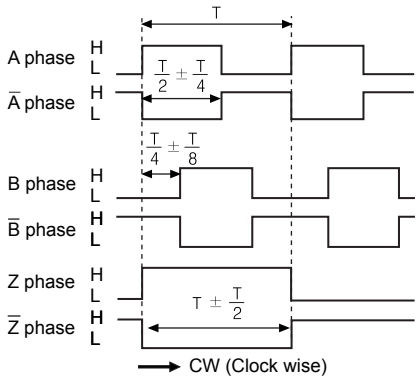
Output Waveform

● Push Pull output / NPN open collector output



※ Inverse type of Z phase is optional.

● Line driver output



※ CW : In a view of shaft

Industries

- Automotive Assembly
- Chemical, Petrochemical
- Drive Technology
- Electronic Production
- Food, Beverage, Semi-luxury Goods
- Graphical Machinery
- Handling and Robotics
- Injection Molding, Die Casting
- Machine Tools
- Medical Industry
- Pharmaceutical, Bio Technology
- Semiconductor Industry
- Textile Machinery
- Transportation
- Water, Energy, Mining
- Warehouse and Logistics
- Wood Machinery

Applications

- Drive and conveyor technology
- Lift construction
- Processing machines
- Handling Control
- Robotics
- Metal sheet processing
- Profile milling machines
- Machinery for plastics and semiconductor industry
- Wood processing machines
- Spindle positioning at profile milling machines
- Graphical machinery (printing machines)
- Environment plant engineering and textile machinery
- Conveying systems in day-mining
- Ship construction
- Gear test stands
- Packaging machines
- Blister and carton box packaging
- Labelling machines
- Foil-winding machines
- High racks
- Chipboard production plants
- Warehouse and logistics
- Metal sheet processing machines