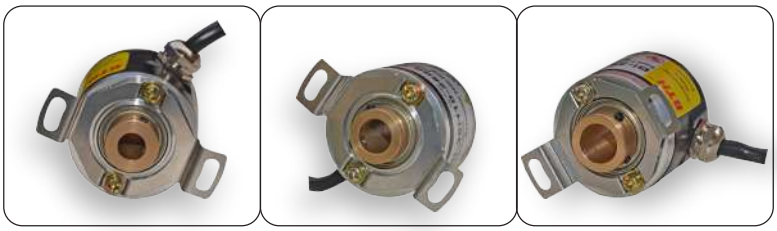
BTH Incremental Rotary Encoder

CE

38mm dia Hollow Type 8mm, 10mm, 12mm

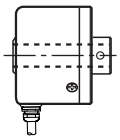
- Thin design with an external diameter of Ø38 mm / depth of 32 mm
- Easy installation in narrow spaces
- Small diameter lineup with resolution up to 3600 P/R
- Low price contributes to cost reduction of system
- IP50 protective structure
- Wide range of power sources : 5~24VDC, 5VDC ±5%
- Various output types

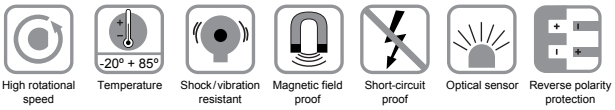


Order Code Hollow Shaft

Series	Incremental	Outer Dia	Hollow inside Dia	Pulse Per Revolution (PPR)	Output	Power Supply
B	**I**	**38**	**H8**-8mm **H10**-10mm **H12**-12mm	**30, 50, 60, 100, 200, 360, 400, 500, 600, 1000, 1024, 2000, 2048, 2500, 3600** (other PPR are available on request)	**P** Push Pull **N** Open Collector NPN **L** Line Driver	**U** 5~24VDC **5** 5VDC

A simple way of sensing rotary movements





Electrical Characteristics

Output Circuit	Push Pull	NPN Open Collector	Line Driver
Supply Voltage	5-30VDC		5 V ±5%
Power Consumption (no load)	≤125mA	≤80mA	≤100mA
Permissible Load / Channel	±80mA	±50mA	±80mA
Pulse Frequency	Max. 250 kHz		
Signal Level High	Min. VCC 1.5V	Min. Ub*70%*	Min. 3.4V
Signal Level Low	Max. 0.8V	Max. 0.4V*	Max. 0.4V
Rising Edge Time	Max. 1µs	Max. 1µs**	<200ns
Falling Edge Time	Max. 1µs	Max. 1µs**	<200ns
Short Circuit Proof Outputs	Yes		
Reverse Polarity Protection of the Power Supply	Yes		No
Over Current Protection	Yes		
	* NPN Open collector depends on pull-up resistor **NPN Open collector depends on pull-up resistor and cable length		

Mechanical Characteristics

Max. Speed	6000RPM
Max. Speed Continuous	Max. Response Frequency / Resolution
Rotor Moment of Inertia	approx. 4 x 10^6 kgm^2
Shock Resistance	50 m/s^2, 6ms
Vibration Resistance	20 m/s^2, 10-200Hz
Starting Torque	<0.3 Nm
Hollow Material	Copper
Body Material	Aluminum alloy 2A12
Outer Case Material	Iron
Disk Material	Glass
Cable	2 Mtr. Black shield cable, side entry
Degree of Protection	IP 50
Weight	150g
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

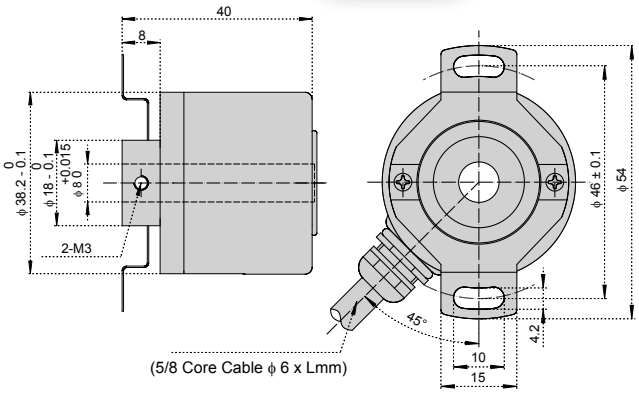
Wire Colour	Black	Red	Green	White	Yellow	Brown	Grey	Orange	Shield
Push Pull / NPN Open Collector	0 V	+V	A	B	Z				Ground
Line Driver	0 V	+V	A	B	Z	$\bar{A}$	$\bar{B}$	$\bar{Z}$	Ground

38mm dia Hollow Type 8mm, 10mm, 12mm

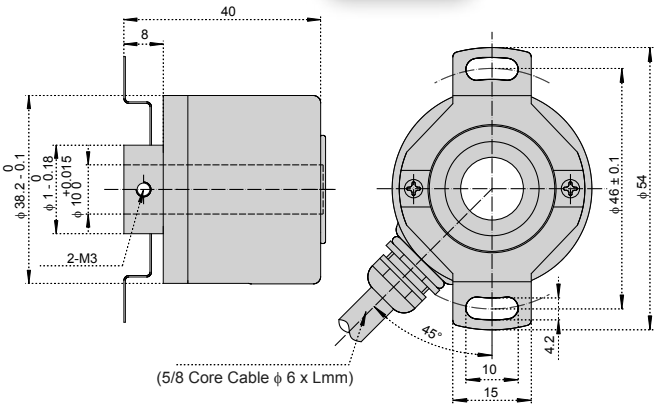
BTH™ Incremental Rotary Encoder

Dimension Drawing

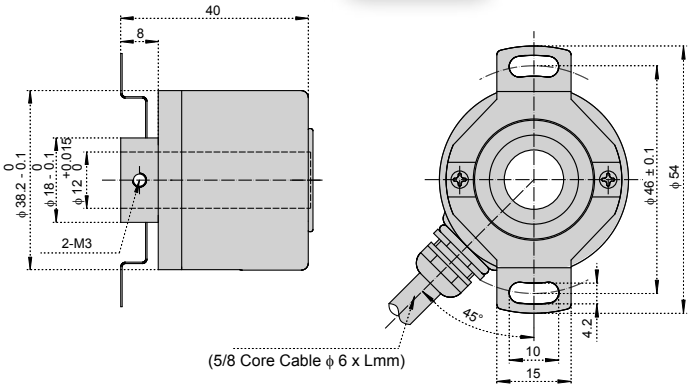
BI-38-H8



BI-38-H10



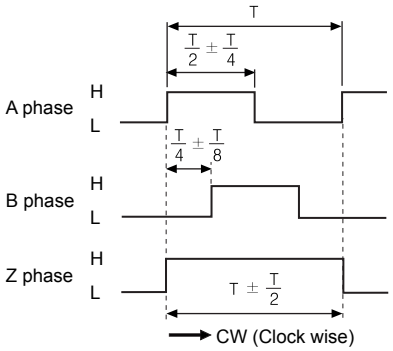
BI-38-H12



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 8, 10 & 12mm through Hollow incremental Encoders

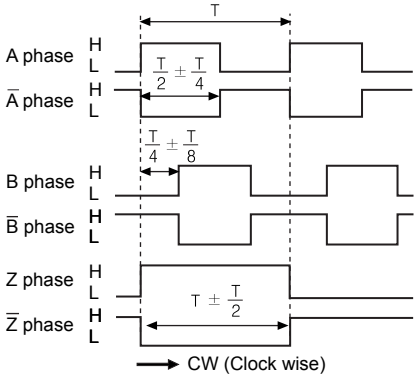
Output Waveform

● 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