

# Incremental 38 mm Dia. Rotary Encoder

M38H/M38HB

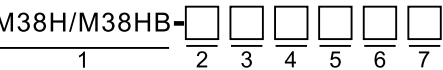
Hollow shaft type/Built-in type

General purpose Encoder with External Diameter of 38mm

- Incremental model
- External diameter of 38mm
- Resolution up to 3600 ppr.
- Various output type
- Hollow type and built-in type



## Ordering Information



### Section 1: Basic model name

- M38H:** 38mm Rotary Encoder(Hollow Shaft)
- M38HB:** 38mm Rotary Encoder(Semi-Hollow Shaft)
- Refer to drawings for the difference between M38H/M38HB

### Section 2: Inner shaft size

- 5:** 5mm
  - 6:** 6mm
  - 6.35:** 6.35mm
  - 8:** 8mm
  - 10:** 10mm
  - 12:** 12mm
- Standard bore size is 8mm

### Section 3: Resolution

- 10:** 10 ppr
- 20:** 20 ppr

- 40 50 60 80 100 120 125 150  
200 225 240 250 256 300 360 400 450  
480 500 512 600 625 720 750 800 900  
1000 1024 1080 1200...up to 3600

Not indicated resolution is customizable

### Section 4: Output phase

- 3:** A B Z
- 6:** A  $\bar{A}$  B  $\bar{B}$  Z  $\bar{Z}$

### Section 5: Output type

- C:** Complementary(also known as totem pole)
- N:** NPN Open collector
- P:** PNP Open collector
- V:** Voltage output
- L:** Line driver(**Power source 5VDC ONLY, Phase 6**)
- T:** Push-Pull(**With inverted signal, Phase 6**)

### Section 6: Power Supply

- 8:** 8-30 VDC(+/- 5%)
- 5:** 5 VDC(+/- 5%)

### Section 7: Cable outgoing type

- G:** Side entry cable
- ▲Standard cable length is 2M

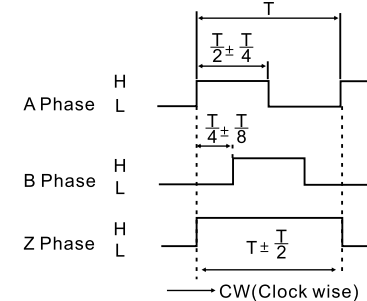
## Ratings and Specifications

- Power supply:** 5 VDC / 8-30 VDC
- Resolution:** 1-3600 ppr
- Current consumption:** 100mA(Load disconnected)
- Load current:** 50mA maximum per channel 20mA maximum per channel (Line driver output)
- Output type:** NPN/PNP open collector/Complementary/Voltage/Line Driver/Push-Pull(HTL with reverse signal)
- Frequency:** 100K HZ Frequency=RPM\*Resolution/60
- Maximum permissible speed:** 4000 rpm
- Shaft loading radial:** 10N
- Shaft loading thrust:** 20N
- Weight:** Approx 0.2KG
- Protection level:** IP50
- Temperature:** operation(-10°C~+70°C), storage(-30°C~+85°C)
- Vibration resistance:** 50m/s, 10-65 HZ, 1 mm double amplitude for 2 hours each in X, Y, and Z directions
- Shock resistance:** 980m/s, 6m/s 2 times each in X, Y, and Z directions
- Starting torque:**  $1.5 \times 10^{-3}$  N.m Maximum

## Output circuits and wave forms

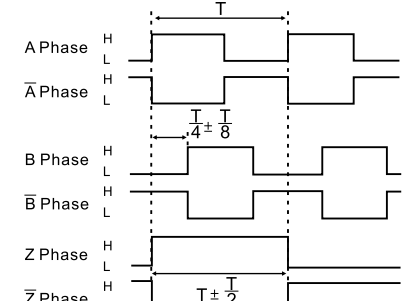
### Wave forms

Complementary/Open collector(NPN&PNP)/Voltage output



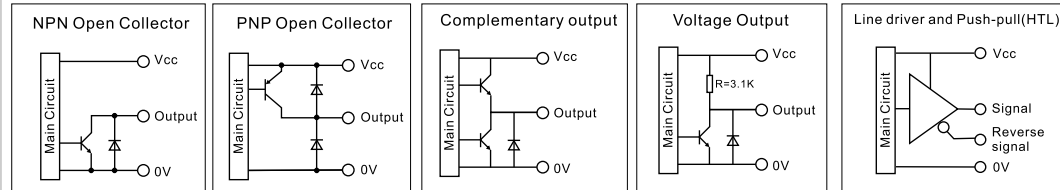
CW: As viewed from the shaft

Line Driver(RS422)/Push-pull(HTL with reverse signal)



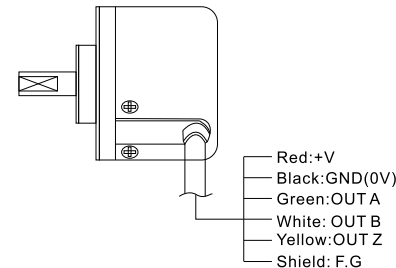
CW(Clock wise)

### Output circuits

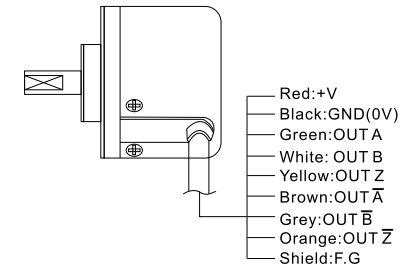


## Wiring Details

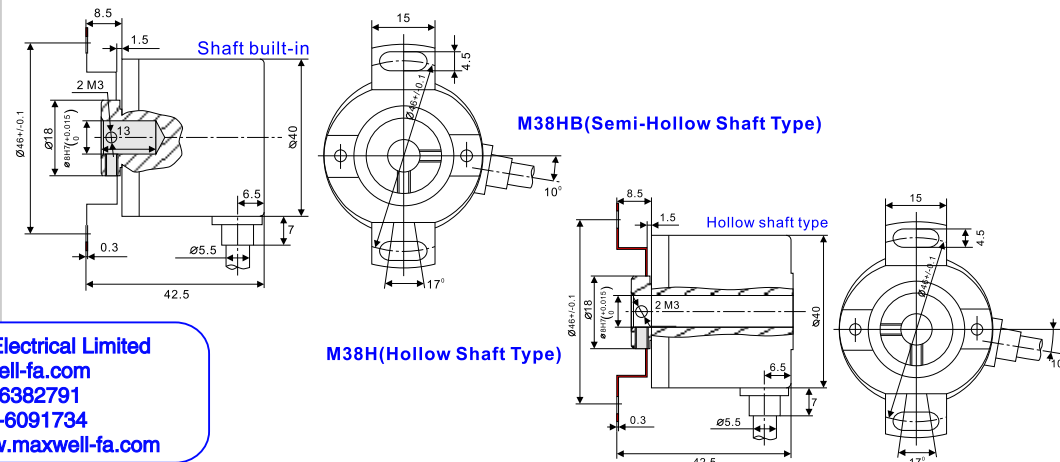
Complementary/Open collector(NPN/PNP)/Voltage output



Line Driver/Push-pull(HTL with reverse signal)



## Mounting and Dimensions



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