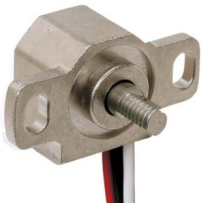
Contactless Hall-IC Angle Sensor

# *QP-3HB Series*

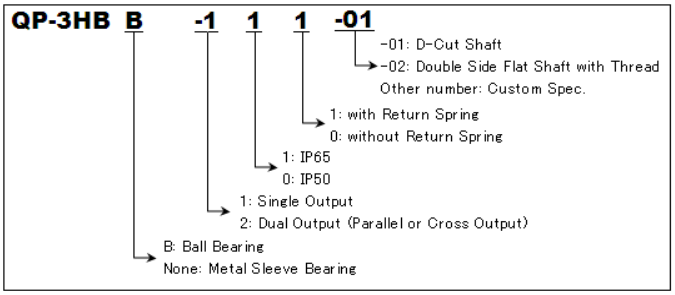


・Contactless Hall-IC Angle Sensor
・Effective Electrical Angle：±45° (Option: ±10° ,±30° ,±60° )
・Independent Linearity ：±2%FS
・with / without Return Spring

・QP-3HB ：Metal Sleeve Bearing
・QP-3HBB ：Ball Bearing

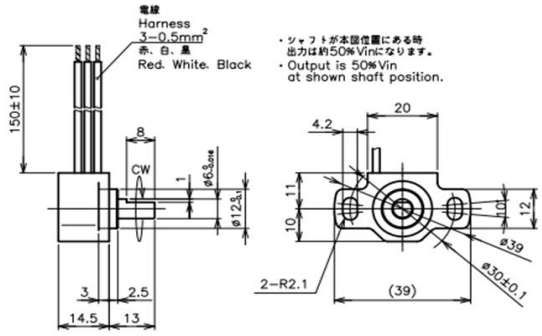
【Material】
●Housing :Zinc Alloy
●Shaft :Stainless Steel
●Bearing QP-3HB (Metal Sleeve Bearing) ： Copper Alloy
QP-3HBB (Ball Bearing)： Stainless Steel

**QP-3HB Model Number Designation**

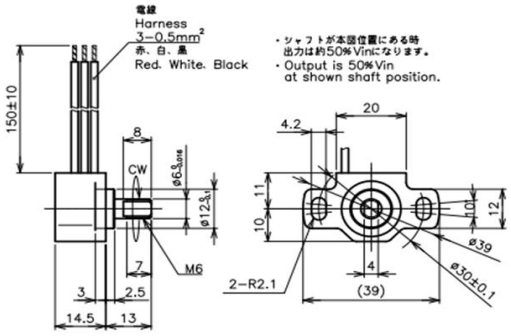



**■Dimension** [mm]

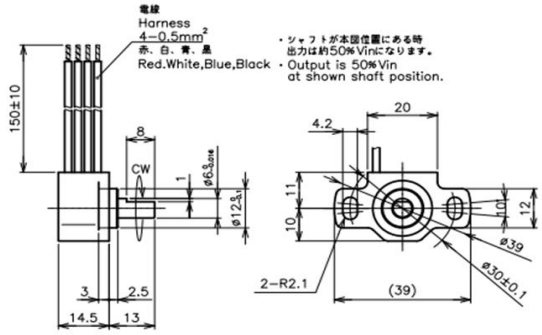
QP−3HB−1xx−01



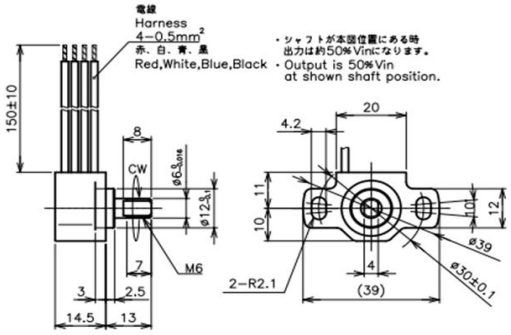

QP−3HB−1xx−02




QP−3HB−2xx−01




QP−3HB−2xx−02

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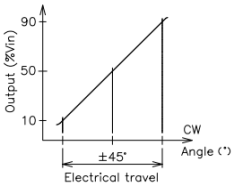
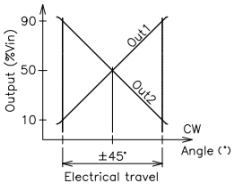
## ■Output Characteristics

Single Output



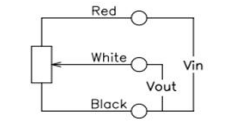

Dual Output




* Parallel Output is also available

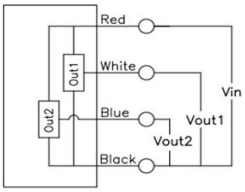
## ■Schematic

Single Output



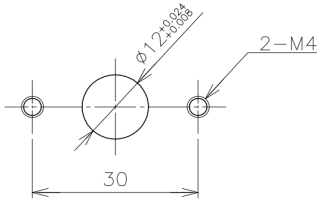

・Red,White,Black,Yellow,Blue,Green indicate harness colors.

Dual Output




・Red,White,Blue,Black indicate lead colors.

## ■Mounting




| 【Model No.】 | | | | | (Ball Bearing) | (Ball Bearing) |
|---|---|---|---|---|---|---|
| Single Output | QP-3HB-100-01 | QP-3HB-101-02 | QP-3HB-110-01 | QP-3HB-111-02 | QP-3HBB-100-01 | QP-3HBB-110-01 |
| Dual Output | QP-3HB-200-01 | QP-3HB-201-02 | QP-3HB-210-01 | QP-3HB-211-02 | - | - |
| Return Spring | × | ○ | × | ○ | × | × |
| Shaft | D-Cut | Double Side Flat Threaded | D-Cut | Double Side Flat Threaded | D-Cut | D-Cut |

| 【Electrical Data】 | | |
|---|---|---|
| Electrical Angle | ±45 (Option:±10°、±30°、±60°) | ° |
| Output Range | 10～90 | %Vin |
| Independent Linearity | ±2(FS=90°) | %FS |
| Input Voltage | DC5±0.5 | V |
| Load Resistance | MIN. 10 | kΩ |
| Supply Current | MAX. 10 (Single Output) MAX. 20 (Dual Output) | mA |
| Insulation Resistance | MIN. 100/DC50V | MΩ |
| Temp. Characteristics -40～125℃(Reference Temp.25℃) | At 0°:±1.5° At ±45°:±3° | |

| 【Mechanical Data】 | | | | | | |
|---|---|---|---|---|---|---|
| Total Mechanical Travel | 360°Endless | 120°±5° | 360°Endless | 120°±5° | 360°Endless | 360°Endless |
| Stopper Strength | - | 1N·m MIN. | - | 1N·m MIN. | - | - |
| Torque | MAX. 3mN·m | 5～30mN·m | MAX. 5mN·m | 5～30mN·m | MAX. 0.5mN·m | MAX. 5mN·m |
| Mass | Approx. 50g | | | | | |

| 【Environmental Data】 | | | | | |
|---|---|---|---|---|---|
| Life Cycles | 50 Million | | | | Cycle |
| Category Temperature Range | -40～+125 | | | | ℃ |
| Storage Temperature Range | -40～+125 | | | | ℃ |
| Vibration | 200m/s$^2$ 5～400Hz/10min. 3axis | | | | |
| Shock | 500m/s$^2$ 11ms 3axis 3times | | | | |
| EMS | 100V/m 10k ～1GHz | | | | |
| ESD(Case-Each Terminal) | ±2.5kV | | | | |
| ESD(Each Terminal) | ±4kV | | | | |
| IP Level | IP50 | IP65 | IP50 | IP65 | |

## ■Handling Instruction

・Do not use Hall-IC sensor as a variable resistor.
・This product may be influenced from external magnetic field.
・Use this sensor in the place where is protected from ESD.

MIDORI PRECISIONS
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Experts on Design-In
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