

## SPECIFICATIONS

### Mechanical

**Weight:** 11 oz. (312 grams)

**Maximum speed:** 3,000 rpm

**Shaft Loading:** Radial: 25 lb. (11.3 kg.) max.  
Axial: 15 lb. (6.8 kg.) max.

**Bearing Life ( $L_{10}$ ):**  $36 \times 10^6 / \text{RPM} = \text{hours}$

### Materials:

- Case and Shaft: Aluminum
- Switch Access Door: Plastic

**Connector:** 6-pin, MS3102A-14S-6P

### Electrical

**Power Input** (specify voltage when ordering):

Supply Voltage	R Values (see fig. 1)
5 ± 5% vdc	1K ohms
12 or 15 ± 5% vdc	2.2K ohms
24 ± 5% vdc	3.3K ohms
8 to 30 vdc	3.3K ohms

**Supply Current:** 50ma maximum (no load)

**Output Current ( $I_O$ ):** 50ma max source/sink

**Output Circuits:** (specify when ordering)

- Push/Pull (Combined sourcing/sinking)
- Current sinking NPN transistor
- NPN open collector ( $V_{CC} = 30$  vdc maximum)
- Current sourcing PNP transistor
- RS422 differential line driver (MC3487 device; must be ordered with 5, 5R or 8-30 supply voltage)

### Output Protection:

- **Short Circuit** (all Programmable and AJ models; inquire for others)
- **ESD** to 8KV direct and 25KV air

**Output Waveform:** 50/50 squarewave

- **Pulse On-Off Ratio:** 50% ± 10%
- **Pulse Interval Jitter:** ±10%
- **Quadrature Deviation:** 30° (max)
- **Pulse rise time:** 2 μsec (max)
- **Pulse fall time:** 5 μsec (max)
- **Voltage (high):**  $V_{in} - 2.5$  vdc (min)
- **Voltage (low):** 1.5 vdc (max)
- **Index Pulse:** approximately the width of 1 pulse on output A

(600 rpm,  $V_{IN} = 24$  vdc,  $10\text{ma} < I_O < 50\text{ma}$ , 25°C)

**Operating temperature:** 0° to 70° C

**Pulse Rate:** 0 - 30 kHz

**Pulses per Revolution:** (specify when ordering)  
1 to 1200.

### Programs (for programmable versions)

The HRS-P is preconfigured with one of the following programs. Others are available.

**64AJ** - Single pulse output on A with selectable ppr from 1 through 64, and the anti-jitter feature.

### Electrical Connections

#### NPN or PNP transistor outputs:

6-Pin Connector	Function	Wire Color
A	Common	Black
B	+vdc	Red
C	Output Z or C	Brown*
D	Output A	White
E	Output B	Green

\* Output Z is green if Output B is not used.

#### Line Driver outputs:

6-Pin Connector	Function	Wire Color
A	Common	Black
B	+vdc	Red
C	Output A	White
D	Output A	Blue <sup>1</sup>
E	Output B <sup>2</sup>	Green
F	Output B <sup>2</sup>	Brown

<sup>1</sup> Output A is green if Output B is not used.

<sup>2</sup> These are Outputs Z / Z if B / B are not used.

### Accessories

**Cable Assembly (C6-x-10):** 10 ft. (3m), x conductor shielded cable & connector  
Other lengths are available.

**CE mark requires Photocraft cable, and surge protection if cable exceeds 100' (30m) or leaves the building.**

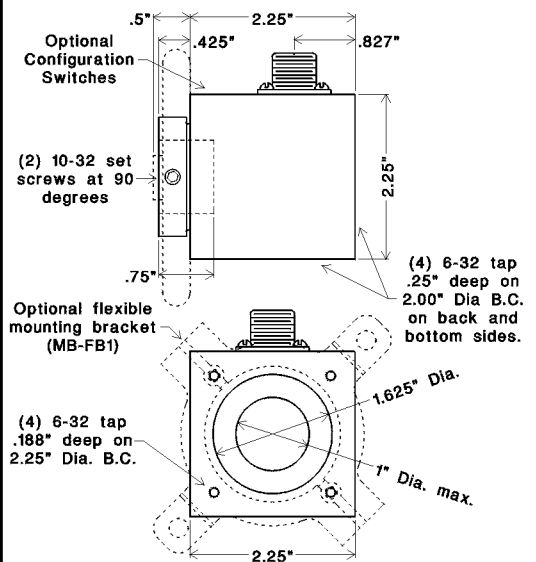
#### Flexible Mounting Bracket (MB-FB1):

flexible stainless steel that allows for axial and angular shaft misalignment.

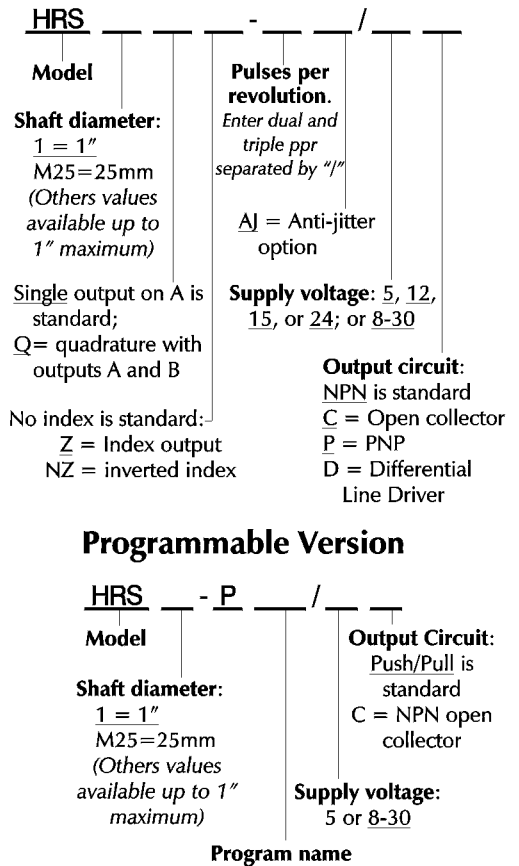
### Mounting Instructions

1. Slide HRS onto shaft, fasten flexible mounting bracket or tether to frame, and then tighten shaft set screws.
2. Attach the cable leads to the control device (e.g. PLC) ensuring that the power supply meets specifications.
3. If programmable then set the switches.  
*Switches can be changed at any time.*
4. Attach the cable to the encoder.

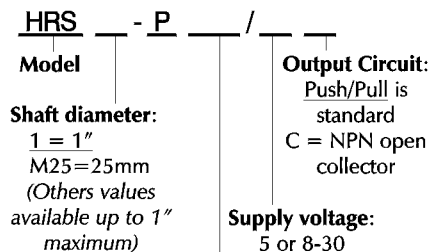
## DIMENSIONS



## ORDERING INFORMATION

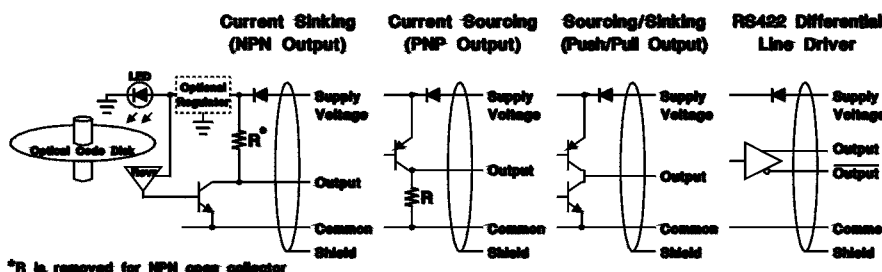


### Programmable Version



Program name

Short lead time options are underlined



\*R is removed for NPN open collector

Figure 1 - Output Circuits

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