SPECIFICATIONS

Mechanical

Weight: 16.8 oz. (477 grams)

Maximum speed: 6,000 rpm

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

Bearing Life (L_{10}): 36 x 10^6/RPM = hours

Materials:
- — Case: ¼" Aluminum, anodized
- — Shaft: Aluminum

Connector:
- — Transistor output (5 pin): MS3102A-14S-5P
- — Line driver output (6 pin): MS3102A-14S-6P

Mating Connector:
- — 5 Pin: MS3106A-14S-5S
- — 6 Pin: MS3106A-14S-6S
- — Case Ground: The cable shield is connected via the connector shell to the encoder housing.

Note: *10′ (3m) cable supplied at no extra charge.* **CE** *marking requires a Photocraft cable, and the surge protection option if the cable exceeds 100′ (30m) or leaves the building.*

Electrical

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

Supply[1] (Vdc)	R Values[2,3] (Kohms)
5	1
12 or 15	2.2
24	3.3
7 to 20 ("5R" supply voltage)	2.2
12 to 27 ("12R" supply voltage)	3.3
8 to 30 ("8-30" supply voltage)	3.3

(1) Others available on special order
(2) See output circuit figure 1 below
(3) R is removed for open collector
- — **Current:** 50 ma max (no load) 100 ma max (line driver)
- — **Ripple:** 2% max
- — **Regulation:** ±5%
- — Reverse polarity protected (except for 5vdc)

Operating temperature: 0° to 70° C

Pulse Rate: 0 - 30 kHz

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

Output Circuit (figure 1, specify when ordering):
- — Current sinking NPN transistor with pull-up resistor (50 ma max)
- — Current sinking NPN open collector (50 ma, 30 vdc max)
- — Current sourcing PNP with pull-down resistor (50 ma max)
- — RS422 differential line driver (MC3487 device; must be ordered with 5, 5R or 8-30 Supply Voltage)

Output Waveshape: (See Figure 2)
Square wave; outputs A and B are 50/50 duty cycle nominal; output Z (index output) is approximately the width of one cycle on outputs A or B.
- — Pulse symmetry(A): 180°±30%
- — Pulse interval jitter(B): 30%max.
- — Quadrature(C): 90°±30% max.
- — Phase jitter(D): 30% max.
- — Index pulse(E)

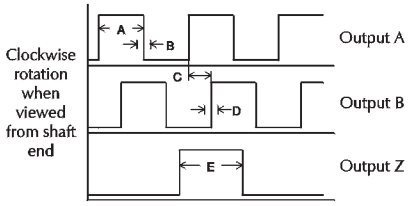


Figure 2

Electrical Connections

NPN or PNP Transistor Outputs:

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

** 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 $\overline{A}$	Blue[1]
E	Output B[2]	Green
F	Output $\overline{B}$[2]	Brown

[1] Output $\overline{A}$ is green if Output B is not used.
[2] These are Outputs Z/$\overline{Z}$ if B/$\overline{B}$ are not used.

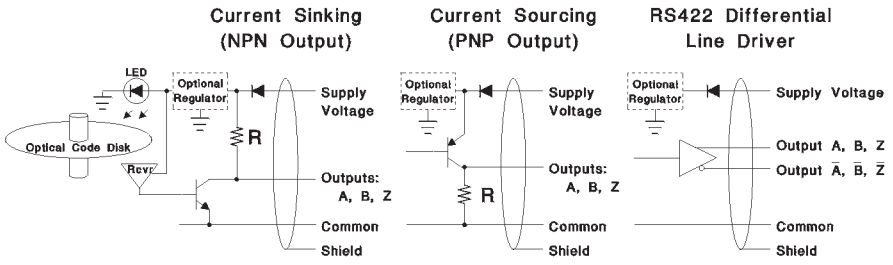
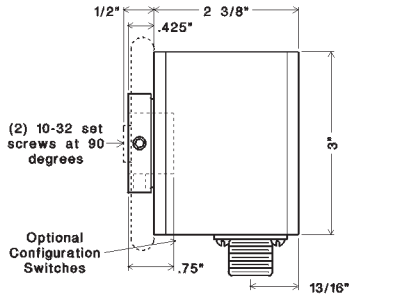
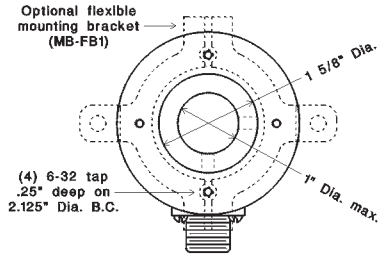


Figure 1 - Output Circuits

DIMENSIONS





ORDERING INFORMATION

HRL ___ ___ ___ - ___ ___ / ___ ___

Model

Shaft diameter:
1 = 1"
M25=25mm
(Others values available up to 1" maximum)

Single output on A is standard;
Q= quadrature with outputs A and B

No index is standard:
Z = Index output
NZ = inverted index

Pulses per revolution.
Enter dual and triple ppr separated by "/"

AJ = Anti-jitter option

Supply voltage: 5, 12, 15, or 24; or 8-30

Output circuit:
NPN is standard
C = Open collector
P = PNP
D = Differential Line Driver

Short lead time options are underlined

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