

SPECIFICATIONS

Mechanical

Shaft dia.: (specify when ordering)

5/16" - .3120" diameter with flat
3/8" - .3745" diameter with flat

Weight (without connector): 7 oz. (198 grams)

Maximum speed: 6,000 rpm

Shaft Loading: Radial: 25 lb. (11.3 kg.) max.
Axial: 10 lb. (4.5 kg.) max.

Bearing Life (L₁₀): 36 x 10⁶/RPM = hours

Note: to allow for axial and angular misalignment, a flexible shaft coupling is recommended.

Materials: Case: Aluminum, anodized
Shaft: 303 Stainless steel

Cable: Pre-wired 10' (3m) shielded cable, or optional connector with cable. (other lengths are available)

Optional Connector¹ (Specify when ordering):

No. of Pins	Encoder Connector	Mating Connector
6	MS3102E-14S-6P	MS3106A-14S-6S
10 ²	MS3102E-18-1P	MS3106A-18-1P

1. Only available with 3/8" shaft, and must be purchased separately.
2. Not available as a side connector.

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

Operating temperature: 0° to 70°C

Pulse rate: 0 to 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)

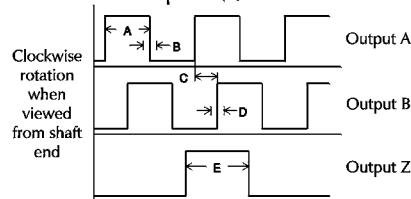


Figure 2

Electrical Connections

NPN or PNP transistor outputs:

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

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

Line Driver outputs:

6-Pin	10-Pin ¹	Function	Wire Color
A	F	Common	Black
B	D	+vdc	Red
C	A	Output A	White
D	H	Output A	Blue ²
E	B	Output B ⁴	Green
F	I	Output B ⁴	Brown
-	C	Output Z	Yellow ³
-	J	Output Z	Orange ³

¹ Only used if A, B, and Z are required.

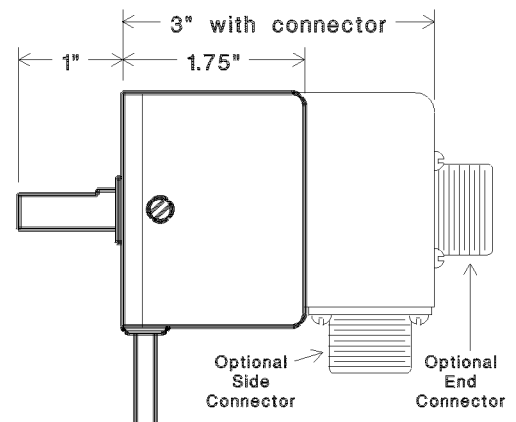
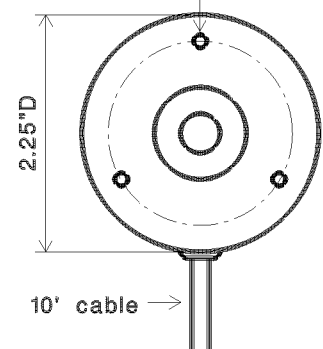
² Output A is green if Output B is not used.

³ Output Z is green and Z is brown if outputs B and B are not used.

⁴ These are Outputs Z/Z if B/B are not used.

DIMENSIONS

6-32 x .25" deep
1.75"D bolt circle



ORDERING INFORMATION

RG - /

Model	Pulses per revolution
Shaft Diameter: A=5/16" B=3/8"	DC supply voltage: 5, 12, 15, or 24; or 5R (7-20); or 12R (12-27); or 8-30
Single output on A is standard; Q = Quadrature outputs on A and B	Output circuit: NPN is standard C = NPN open collector P = PNP D = Differential line driver
No index is standard; Z = Index output NZ = inverted index	
No connector is standard; E=End connector*, S=Side connector*	

* Only available with 3/8" shaft dia.

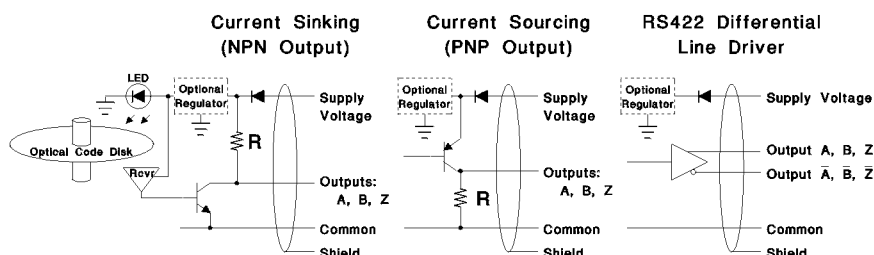


Figure 1 - Output Circuits

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