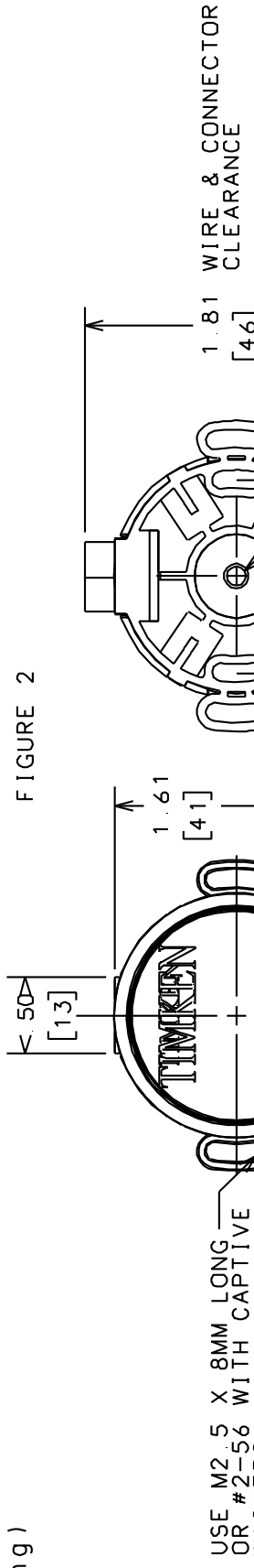
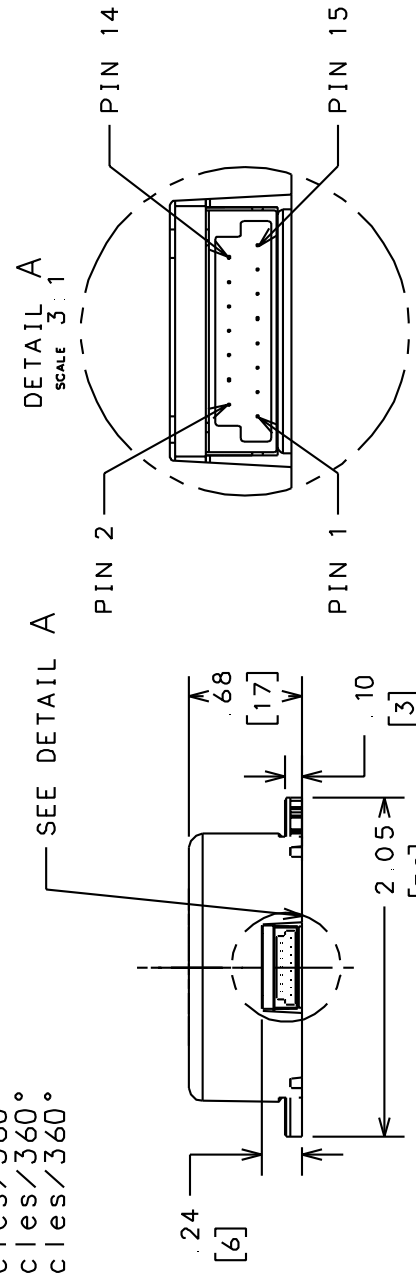
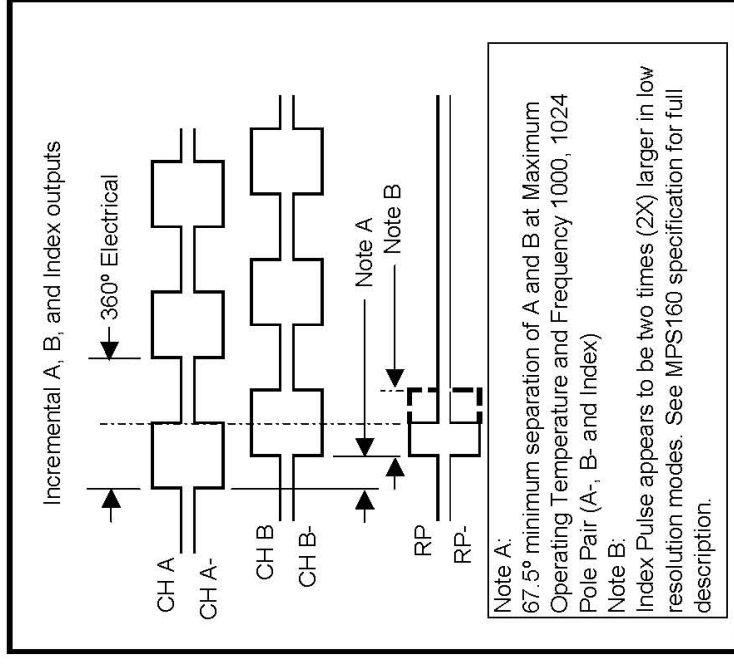


1. Scope
 - 1.1 This specification describes the requirements for an incremental modular encoder with the optional once around index pulse, commutation signals, and open collector differential line drivers.
2. Mechanical Specifications
 - 2.1 See Figure 1
 - 2.2 Mounting requirements see Figure 2
 - 2.3 Mounting screw (Thread locker Recommended)
 - 2.3.1 M2.5 Mounting Screw Torque 18-20 ozf-in
 - 2.3.2 M3 Set Screw Torque 55-60 ozf-in
 - 2.3.3 #2-56 Mounting Screw Torque 18-20 ozf-in
 - 2.4 Termination See Table 1
 - 2.5 Hub Bore sizing See Table 2
 - 2.6 Allowable shaft end play ± 0.10
 - 2.7 Shipping Weight 1.0 ozs (28 g)
 - 2.8 Hub Material: Steel with Flash Nickel, (ROHS Compliant)
 - 2.9 Magnet Material: Nitrile Bonded Ferrite
 - 2.10 Moment of Inertia See Table 2
 - 2.11 Vibration Specification: 3G 20-2000Hz
 - 2.12 Rotational adjustment of Alignment: $\pm 8^\circ$
3. Electrical Specifications
 - 3.1 Code: Incremental with Commutation and once around Index Pulse Marker
 - 3.2 Counts Per Revolution See Table 3
 - 3.3 Supply Voltage
 - 3.3.1 Single 5.0V $\pm 0.25V$
 - 3.4 Current See Table 1
 - 3.5 Output Formats: See Figure 1
 - 3.5.1 Output Format: Logic Levels:
 - 3.5.1.1 Logic "1" 2.5 VDC Min.
 - 3.5.1.2 Logic "0" 0.5 VDC Max.
 - 3.5.2 Output Type:
 - 3.5.2.1 Line Driver: 20mA Sink/Source
 - 3.5.2.2 Open Collector 10mA Sink Max
 - 3.5.3 Output Format Commutation: See Figure 1
 - 3.5.3.1 /2 = 4 Pole Motor = 2 Commutation Cycles/360°
 - 3.5.3.2 /3 = 6 Pole Motor = 3 Commutation Cycles/360°
 - 3.5.3.3 /4 = 8 Pole Motor = 4 Commutation Cycles/360°
 - 3.5.4 Output Logic Levels:
 - 3.5.4.1 Logic "1" 2.5 VDC Min.
 - 3.5.4.2 Logic "0" 0.5 VDC Max.
 - 3.5.5 Output Type:
 - 3.5.5.1 Line Driver 20mA Sink/Source
 - 3.5.5.2 Open Collector 10mA Sink Max
- 3.6 Operating RPM
 - 3.6.1 10,000 RPM MAX
4. Environmental Specifications
 - 4.1 Operation Temperature
 - 4.1.1 -40°C - 85°C
 - 4.2 Storage Temperature
 - 4.2.1 -55°C - 125°C
 - 4.3 Humidity: 85% Relative (Non-Condensing)
 - 4.4 IP Rating: IP40 with Cover

Pin #	Function	Color	A,B,Index,OC	A,B,Index,LD	A,B,Index,CP,OC	A,B,Index,CP,LD
TP 1	A+	YEL	A+	A+	A+	A+
TP 2	A-	YEL/WHT	A-	A-	A-	A-
TP 3	B+	BLU	B+	B+	B+	B+
TP 4	B-	BLU/WHT	B-	B-	B-	B-
TP 5	Index+	ORN	Index+	Index+	Index+	Index+
TP 6	Index-	ORN/WHT	Index-	Index-	Index-	Index-
TP 7	U+	GRN	U+	U+	U+	U+
TP 8	U-	GRN/WHT	U-	U-	U-	U-
TP 9	V+	BRN	V+	V+	V+	V+
TP 10	V-	BRN/WHT	V-	V-	V-	V-
TP 11	W+	WHT	W+	W+	W+	W+
TP 12	W-	WHT/GRY	W-	W-	W-	W-
TP 13	+5V	RED	+5V	+5V	+5V	+5V
TP 14	Ground	BLK	Ground	Ground	Ground	Ground
Current (mA)			39	65	63	105

CCW VIEWING ENCODER TOP
FIGURE 1



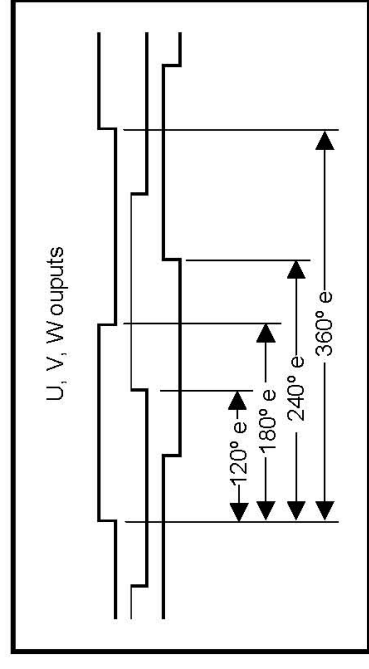
USE M2.5 X 8MM LONG OR #2-56 WITH CAPTIVE WASHERS

HUB SIZE	HUB ID TOLERANCE	SHAFT SIZE WITH TOLERANCE	MOMENT OF INERTIA oz-in sec ²
1/8	0.1250 / 0.1254	0.1250 / 0.1245	0.1173
3/16	0.1875 / 0.1879	0.1875 / 0.1870	0.1183
5 mm	0.1968 / 0.1972	0.1968 / 0.1963	0.1185
6 mm	0.2362 / 0.2366	0.2362 / 0.2357	0.1194
1/4	0.2500 / 0.2504	0.2500 / 0.2495	0.1197
5/16	0.3125 / 0.3129	0.3125 / 0.3120	0.1216
8 mm	0.3149 / 0.3153	0.3149 / 0.3144	0.1217
3/8	0.3750 / 0.3754	0.3750 / 0.3645	0.1248
*10 mm	0.3937 / 0.3941	0.3937 / 0.3932	0.1339

20080627

Initial release

Resolutions
125
128
250
256
500
512
1000
1024



SUPPRESSED PROJECTION ORIGINAL SCALE

MODULAR ENCODER SPECIFICATIONS SHEET
MODEL TME15

TIMKEN

THE TIMKEN COMPANY
CANTON, OHIO, U.S.A.

FORM RDS
CHECKED RDS
APPROVED
DATE 200.80.10.8
C-74351

A

3D SOLID MODEL