

**SERIES
1662**

Revised March 1987

4-DECADE TRACKING SYNCHRO/RESOLVER TO BCD CONVERTER FOR EITHER 0-359.9° or ±179.9°

FEATURES:

- .1° resolution
- ±6 arc minutes accuracy
- Tracking rate: 1440°/sec. flicker-free
- Reference and signal inputs are transformer isolated
- No 180° hangup
- No -15 VDC supply required
- TTL/DTL compatible
- No calibration or adjustments required
- Available for either 0°C to +70°C or -55°C to +105°C
- Hermetically sealed units on request
- Meets Mil-STD-202D, Methods 101C, 105B, 106C, 107C, 202D, 204B, and 205D
- High reliability 883B or MIL-M-38510 units on request
- No special precautions required against static electricity



DESCRIPTION:

These miniaturized all solid state tracking converters, continuously transform synchro or resolver data into digital form that is error free at tracking rates up to 1440°/sec. Data is always fresh and continuously available except during "Converter Busy". The high resolution and accuracy, over the temperature range of -55°C to 105°C, offered by our modules qualifies them for industrial, commercial, military and avionics applications.

SPECIFICATIONS:

Resolution:

Accuracy**:

Tracking Rate (Full Accuracy):

Acceleration (1 LSB error):

Logic:

Fan Out:

Format:

Operating Temperature:

Storage Temperature:

Potting:

Weight:

Power Requirement:

0.1° (4 decade BCD)

±6 arc minutes ±.5LSB

400 Hz: 0-1400°/sec

60 Hz: 0-360°/sec

400 Hz: 4000°/sec²

60 Hz: 250°/sec²

Parallel positive logic, TTL levels, binary coded decimal.

4 TTL Loads

Either 0 to 359.9 or ±179.9

Model "C": 0°C to +75°C

Model "M": -55°C to +105°C

-55°C to +125°C

Potting is available for high shock or vibration environments.

See part number designation.

Approximately 7 Oz.

+5 VDC ±5% @ 2mA

+15 VDC ±5% @ 50mA □

**Accuracy applies over the operating temperature range, ±5% power supply, ±10% frequency and reference amplitude variation, and 10% harmonic distortion.

□ + 12VDC Operation available. See part number designation.

Input Code	Characteristics Input	Frequency (2) (Hz ±10%)	Ref. VRMS (2) ±10%	L-LVRMS	L-LIMPED. Min.	Ref. Current (mA)
01	Synchro	400	26	11.8	40K	2
02	Synchro	400	115	90	100K	2
03	Synchro	50/400	115	90	100K	2
06	Resolver	400	26	11.8	40K	2
07	Resolver	400	115	11.8	40K	2
11	Synchro	400	115	11.8	40K	2

ISOLATION:

Transformer inputs are isolated from each other and from DC power common. Insulation resistance from any AC input to output is greater than 200 megohms at 200 VDC. Not applicable on solid state input unit.

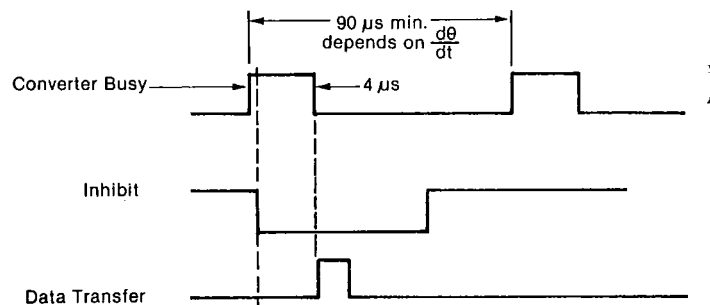
GROUNDING:

Logic and analog grounds are common internally. A separate logic ground is available. See part number designation. Analog ground is +15 VDC return; Logic ground is +5 VDC return.

DATA TRANSFER:

Converter Busy: The output is updated in 1 LSB steps whenever the input angle changes. Error free data can be transferred when "Converter Busy" is at logic "0". Logic "1" indicates that the output data is changing and that data should not be transferred. Fan out is 5 TTL loads.

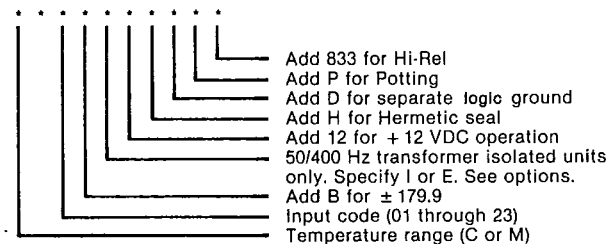
Inhibit: Before transferring data, apply logic "0" to prevent output data from changing during transfer. The converter will ignore an "Inhibit" command during the "Converter Busy" period. Fan in: 1 TTL load.

TIMING:

NOTE: Valid data is immediately available on the trailing edge of the CB pulse.

PART NUMBER DESIGNATION:

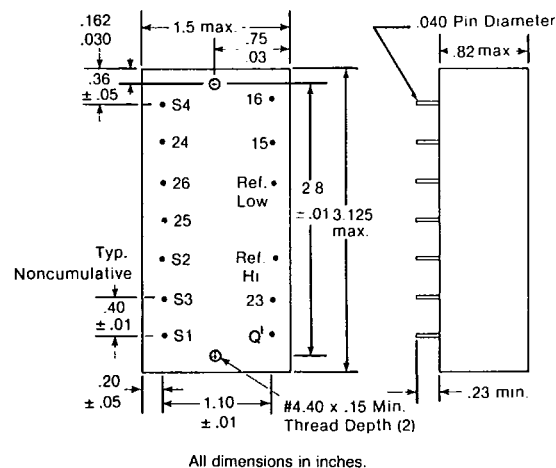
1662



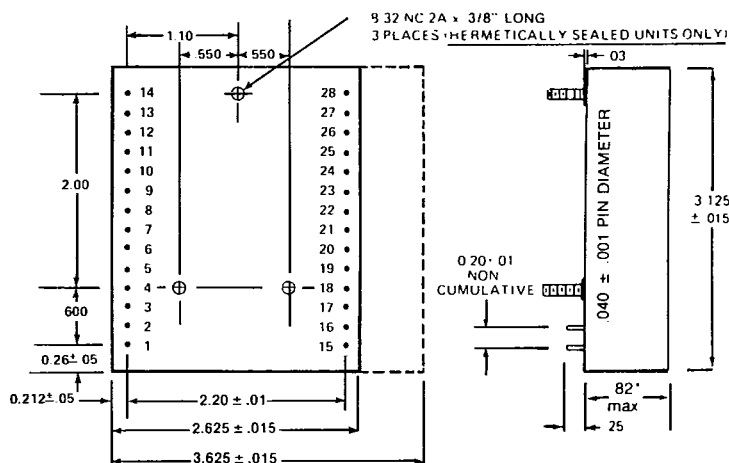
With 50/400 Hz transformer isolated modules, the customer has two options.

Option "1": Input and reference transformers are packaged within one module. Size 3.125" × 3.625" × .82" height. All connections remain as indicated.

Option "E": Input and reference transformer are packaged in separate module ST 1651.

ST 1651 Transformer Module (50/400Hz). For input code 03, Option "E"

Connect pins marked 15, 16, 23, 24, 25, and 26 to corresponding pins on module. Connect Q1 to pin 28 of module.

OUTLINE & CONNECTION

50/400 Hz Option "1"

*1" Max. for hermetically sealed units

All dimensions in inches.

PIN CONNECTIONS:

*1 200	15 RHi
2 100	16 RLo
3 80	17 +5VDC
4 40	18 N/A
5 20	19 Analog GND
6 10	20 +15VDC
7 8	21 Inhibit
8 4	22 Busy
9 2	23 S1
10 1	24 S2
11 .8	25 S3
12 .4	26 S4 (Resolver only)
13 .2	27 Logic GND
	(when specified)
14 .1	28 For 60 Hz external transformer only

*For ±179.9° models. Pin 1 becomes sign. Logic "0" is +



TRANSMAGNETICS, INC.

210 ADAMS BOULEVARD, FARMINGDALE, NEW YORK 11735 U.S.A.
PHONE NO: 516 293-3100 TWX510-224-6420