

VERNITECH

Division of VERNITRON CORPORATION

SERIES
VSD/VRD
VSDH/VRDH

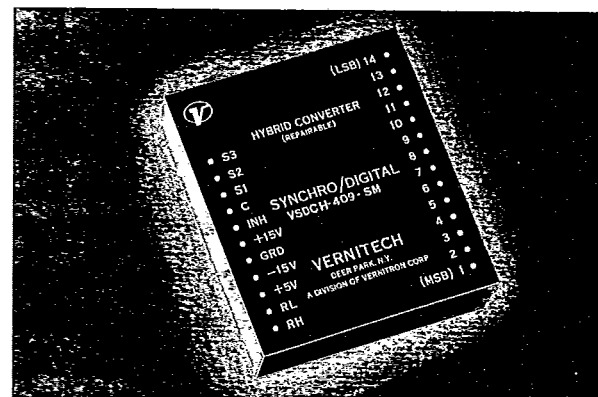
THE HOUSE OF CONTROL

TRACKING SYNCHRO-TO-DIGITAL AND RESOLVER-TO-DIGITAL CONVERTERS

These synchro-to-digital and resolver-to-digital converters are compact, solid state, high performance, tracking type converters packaged in industry standard modules. They employ type II servo loops for lag free tracking at rates to 3600°/sec. All provide for standard "converter busy" and "inhibit" interface, and are transformer isolated.

FEATURES:

- Binary or BCD outputs
- High tracking rates (VSDH/VRDH types)
- Standard 3.12" x 2.62" .82" Module Size
- DTL/TTL, LS, or CMOS compatibility (VSDH/VRDH Binary Types)
- Standard inhibit and converter busy interface
- Internal 60 Hz transformers (VSDH/VRDH Binary Types)
- Wideband operation
- No trims or adjustments



ECONOMY SERIES

Economy Series VSD/VRD converters are characterized for operation at temperatures from 0° to +70°C, rates to 720°/sec, from standard plus and minus 15 volt and plus 5 volt supplies. Reliability has not been sacrificed as hybrid circuitry is employed and is manufactured under strict quality control. Outputs are 14 or 12 bit binary and are DTL/TTL compatible.

PRECISION SERIES

Precision Series VSDH/VRDH converters are a newer design which provides significantly higher tracking rates (to 3600°/sec), wideband operation, and are available in 14 or 12 bit binary as well as 3 or 4 decade BCD. The binary types are available with low power schottky or CMOS logic (with variable logic level) for lower power consumption in addition to standard DTL/TTL logic, and they contain internal transformers for 60 Hz operation. The BCD types are DTL/TTL compatible. The 12 bit binary and BCD types do not require a minus 15 volt supply. BCD units are offsettable by application of from 0 to +15 volts at pin PA, by $\pm 0.5^\circ$ for 4 decade units and $\pm 2^\circ$ for 3 decade units.

**VERNITECH****ECONOMY VSD/VRD SERIES****SPECIFICATIONS**

	14 BIT BINARY	12 BIT BINARY
INPUT DATA:		
401 Code	11.8V rms L-L 360-440 Hz	—
409 Code	90V rms L-L 360-440 Hz	—
609 Code	90V rms L-L 54-66 Hz	—
REFERENCE:		
401 Code	26V rms 360-440 Hz	—
409 Code	115V rms 360-440 Hz	—
609 Code	115V rms 54-66 Hz	—
POWER:		
+15 VDC	±5% @ 55 ma. max.	—
—15 VDC	±5% @ 30 ma. max.	—
V Logic	+5 VDC ±5% @ 300 ma. max.	—
Dissipation	2.8 watts	2.8 watts
ACCURACY:²	±4 arc minutes	±6 arc minutes
179° STEP RESPONSE:	500 msec	—
TRACKING RATE:		
401, 409:	360°/second	720°/second
609:	180°/second	360°/second
OPERATING TEMP:		
Std.	0-70°C	0-70°C
—T	N/A	N/A

COMMON SPECIFICATIONS:

Signal Impedance: 401 Code — 15K Min.
(L-L Balanced) 409, 609 Code — 200K Min.
Reference Impedance: 401 Code — 20K Min.
409, 609 Code — 200K Min.
Converter Busy: Active High, 3 μ sec Pulse
Inhibit: Active Low
Storage Temp. Range: -65°C to +125°C

NOTES:

- External Transformer Module Required
- Accuracy applies over operating temperature range and for
 - Full input frequency range
 - ±10% L-L and reference amplitude change
 - ±10% Harmonic distortion
 - ±5% Power supply change
 - ±20% Phase shift between signal and reference
- Standard 0-359.9 output code.
Consult factory for other codes.
- Standard 0-359 output code.
Consult factory for other codes.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

VERNITECH PRECISION VSDH/VRDH SERIES

SPECIFICATIONS

14 BIT BINARY	12 BIT BINARY	4 DECADE BCD ³	3 DECADE BCD ⁴
11.8V rms L-L 360-1200 Hz 90V rms L-L 360-1200 Hz 90V rms L-L 54-440 Hz	— — —	— — —	— — —
26V rms 360-1200 Hz 115V rms 360-1200 Hz 115V rms 54-440 Hz	— — —	— — —	— — —
±5% @ 25 ma. max. ±5% @ 20 ma. max. SM: +5V ±5% @ 350 ma. max. LM: +5V ±5% @ 150 ma. max. CM: 4.75-15.75V @ 12 ma. SM: 2.5 watts LM: 1.5 watts CM: .7 watts	±5% @ 20 ma. max. N/A 270 ma. max. 110 ma. max. — 1.7 watts .9 watts .4 watts	— N/A 680 ma. max., 475 typ. N/A N/A 3.7 watts max., 2.7 typ. N/A N/A	— N/A 510 ma. max., 360 typ. N/A N/A 2.9 watts max., 2.1 typ. N/A N/A
±4 arc minutes	±5.3 arc minutes	±10 arc minutes	±1 degree
300 msec	—	—	—
3600°/second 2880°/second	— —	— —	— —
0-70°C —55°C to +105°C	0-70°C —55°C to +85°C	0-70°C —	0-70°C —

Example VSDH - 609 - SM - D - 002 - T

ORDERING
INFORMATION

VXD XXX XM

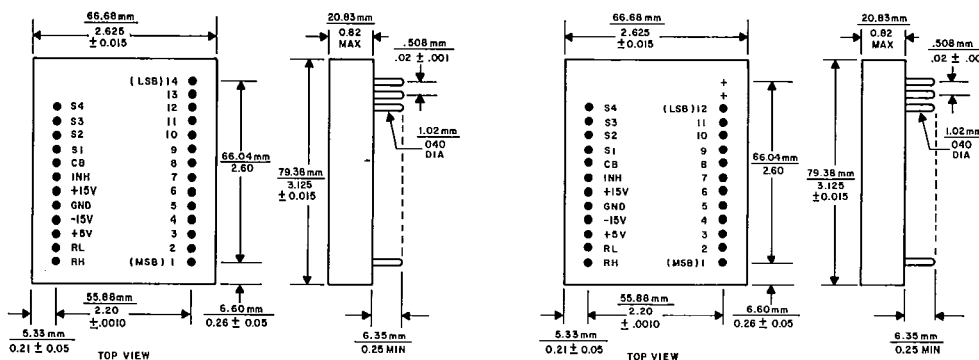
T: Extended Temp. Range
001: 359 (BCD Only)
002: 359.9 (BCD Only)
D: BCD Output
12: 12 Bit Binary
S: DTL/TTL
L: LS Logic (Precision Binary Only)
C: CMOS Logic (Precision Binary Only)
401: 11.8V L-L 400 Hz Nom.
409: 90V L-L 400 Hz Nom.
609: 90V L-L 60 Hz Nom.
H: Precision Series
S: Synchro Input
R: Resolver Input

SERIES **VSD/VRD • VSDH/VRDH**

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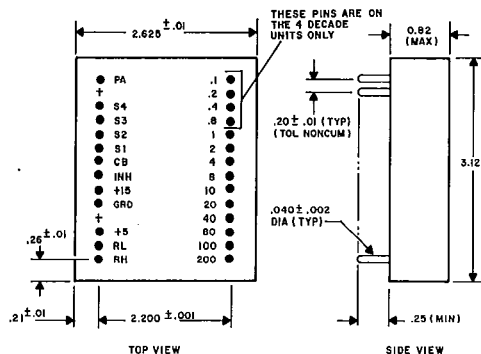
MECHANICAL AND
INTERCONNECT DATA

VSDH/VRDH BINARY TYPES

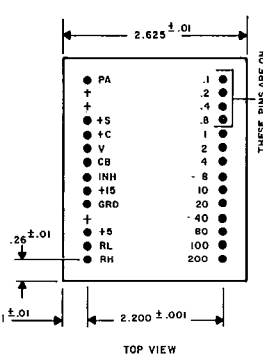


VSDH/VRDH BCD TYPES

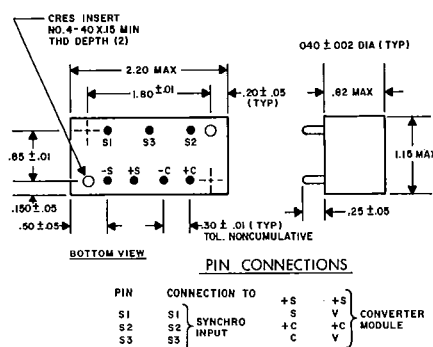
400 Hz Units



60 Hz Units

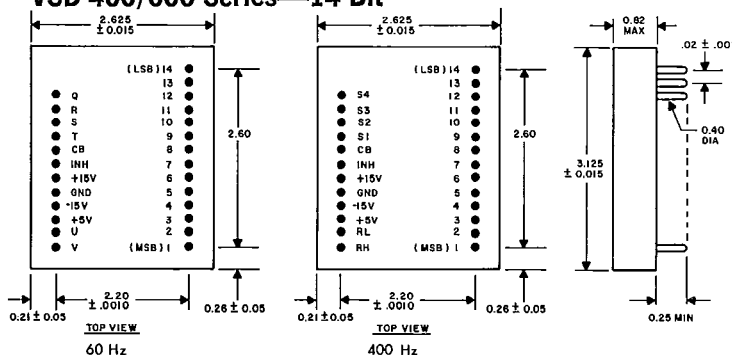


50/60 Hz TRANSFORMER

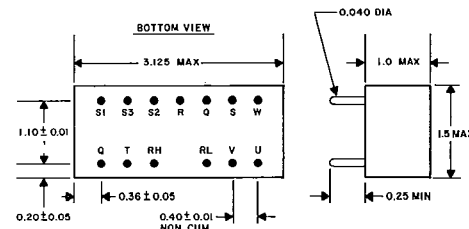


VSD/VRD ECONOMY TYPES

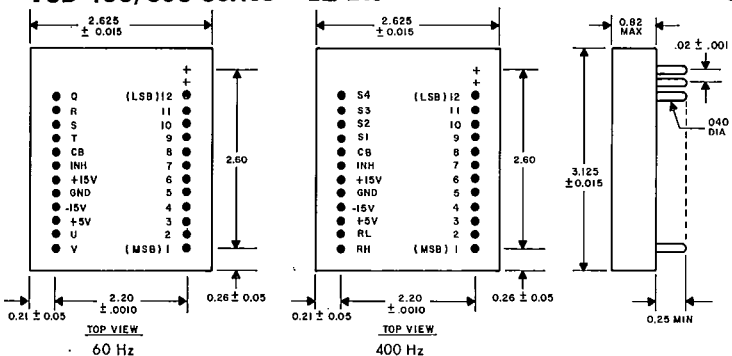
VSD 400/600 Series—14 Bit



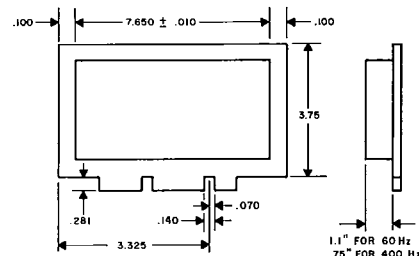
50/60 Hz TRANSFORMER



VSD 400/600 Series—12 Bit



SINGLE PC CARD FORMAT DIMENSIONS



VERNITECH

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