COMPUTER CONVERSIONS CORPORATION
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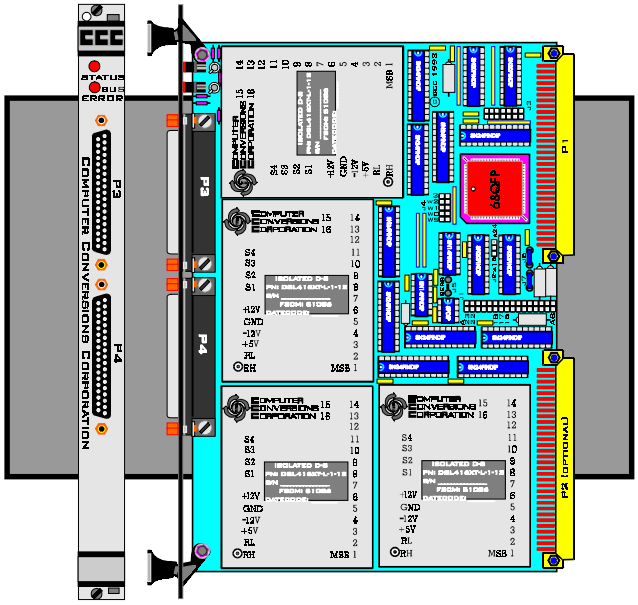
VBW SERIES
VME BUS TO SYNCHRO, RESOLVER OR DC SIN/COS OUTPUT CARDS

FEATURES

- ❑ *Simulates Synchros and Resolvers*
- ❑ *DC Sine Cosine Models Available*
- ❑ *Transformer Isolated I/O*
- ❑ *Choice of 12 to 18 Bit Resolution*
- ❑ *Up to 4 Channels Per VME Card*
- ❑ *No External Power Supplies Required*
- ❑ *Mil Temp. and 883ER/38510 Available*
- ❑ *Fast 5 USec. Throughout (With Settling)*
- ❑ *Inherent Readback Access*



DESCRIPTION

The ***VBW Series*** are complete VME Bus to Synchro and Resolver output converters used for ***self-test, simulation and control***, in military and industrial applications.

The VBW card is populated with digital to: synchro, resolver, or DC sine/cosine converters mixed as specified for the application.

The converters are ***continuously updating***, allowing the speed response to be dictated by the software, clock and the CPU.

All of these synchro and resolver converters feature virtually ***indestructible short-circuit proof outputs***, over-voltage and transient protection, ***internal heat sinks***, current limiting, and ***automatic thermal cutoff***.

Complete ***transformer isolation*** is offered for all reference inputs and signal outputs to ***eliminate ground loops***, differing potentials, and ***to keep any high voltage transients from affecting the VME bus backplane***.

Both ***low cost*** "DSL/DRL Series", and "DSP Series" ***reference powered converters*** are offered to ***drive on-board loads of up to 5VA***, and external "booster amplifiers" are available to drive **loads up to 300VA**.

VME BUS

The VBW series consists of up to ***4 channels*** digital of synchro or resolver converters in a ***single slot width***, 6U size, standard VME Bus module. Only the DSP Converters require a double width slot because of their .82" height modules.

Configured as a ***A24:D16 DTB Slave***, these cards will respond to address modifier codes "3D or 39" for standard addressing, and "2D or 29" when selected for short I/O type addressing. The D00 through D15 data lines are used for the command input, whereby D15 represents the most significant bit.

FUNCTIONS

- ❑ *Digital to Synchro/Resolver Converters*
- ❑ *Digital Vector Generators (DC Sine/Cos)*
- ❑ *Solid State Control Transformers*
- ❑ *Dual Channel Synchro Amplifiers*
- ❑ *Isolated Digital to Analog*
- ❑ *Mix/Match w/ S-D & R-D's On-Board*
- ❑ *Control Differential Transformers*
- ❑ *Reference Powered D-S Converters*

Applications

- ❑ *Fire Control Systems*
- ❑ *Aircraft Simulators & Trainers*
- ❑ *Naval Trainers*
- ❑ *Navigational Tools & GPS Systems*
- ❑ *Gyro & Wind Speed Simulation*
- ❑ *Test Stands & Instrumentation*
- ❑ *Automated Test Equipment*

VBW cards are provided with ***inherent Read-Back*** functionality, and *Loop-Back/Wrap-around testing* features can be provided as an option (see VBT Series, data sheet).

Because the DSL/DRL series converters are offered with ***VME Bus standard ±12V and +5VDC supplies***, and the DSP series are completely ***"Reference Powered" units***,
No external power supplies are required.

These features make the VBW VDSL Series the ***highest performance***, easiest to use and ***most accurate complete units available*** in the marketplace.

DSL/DRL TYPE

The DSL/DRL converters are ***highly reliable, very low cost***, digital to synchro/resolver converters that are powered from ±15VDC or ***Bus-powered ±12volt supplies***. The DC supply source may be field ***selected as sourced by an external input or, powered from the VME Bus backplane.***

Frequencies of 400Hz and higher require ***no external components***, and two different types of output transformers are offered for the 60Hz units.

The internal; reference and signal transformers, rugged power amplifiers, and ***large internal heat sinks***, provide complete output drive with the best density verses heat dissapation per square inch, available for DC powered converters in the marketplace.

DSP TYPE

The DSP converters ***derive the output power from the reference (RH, RL) input***, and require ***No ±15 or ±12VDC supplies***. This series features a ***very efficient, internal pulsating power supply,*** that converts the reference input into a high-power, angle-weighted synchro output format.

Because these units convert the AC reference input directly into AC modified outputs; they are more like a translator then amplifier, they effectively ***transfer the AC power rather then amplify*** DC sources. This allows the DSP series converters the inherent ability to provide ***superior efficiency and 2-3 times better thermal heat dissapation over DC powered units***, in addition to the ability to provide high voltage 60 Hz. signals direct, without any external transformers.

400Hz DSP units ***drive up to a full 4.5VA load***, and ***60Hz units*** drive a full 1.5VA load ***direct without requiring external output trans formers.***

Synchro/Resolver ***active Control Transformers***, active Control ***Differentials***, units with ***Isolated D-A*** (Digital to Analog), or ***LVDT/RVDT***, Multispeed Conversion, ***Demods' active Vector Generators*** etc. can be configured by requesting:"VBW Series Extended Model Selection guide".

DSL/DRL Units; Model Type, Drive/Load Verses Power Supply Load

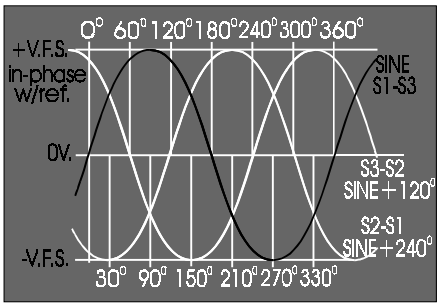
DC Power Supplies	+/-15VDC SUPPLIES .External +/-18VMax.						+/-12VDC SUPPLIES .Bus-Powered or Ext.					
Frequency	60 Hz. Units			400 Hz. Units			60 Hz. Units			400 Hz. Units		
Model Type	**N	Std.	-3L	Std.	-3L	*-5	**N	Std.	-3L	Std.	-3L	*-5
Drive (VA)	0.02	**1.5**	**2.2**	**1.5**	**2.9**	**5**	0.02	**1.2**	**1.7**	**1.2**	**2**	**3.4**
90V. Synchro in Kohms		4	2.7	4	2	1.2		5	3.5	5	3	1.78
11.8V. Syn in ohms				70	36					87	52	
11.8V. Res in ohms				93	48					116	70	
Avg. DC Current (ma.)	120	150		150			150	220		200		
Avg.Peak Current(ma.)	120	330		330			150	485		440		
Foldback (ma.)	120	600		600		2000	180	600		600		2000

Notes 1)** These units used to power external power amplifiers to upto 300VA., +/-15V units are 7V , . +/-12V. units are 6 V.L-L. . 2)* These units require a double slot assembly for module height and Thermal considerations, . 3) All units should have sufficient forced air cooling. Internal Thermal cut-off is at 125C and is . automatically restored. . 4) 60 Hz, units require an external transformer shown below, P/N DSC60-15 for +/-15V units, . . P/N DSC60-12 for +/- 12V. units . 5) The +/- 12 or +/-15VDC Power supplies should feature foldback/current limitting to enable . . . supplies to gradually increase the voltage with the load surge caused during power-on . (turn-on short circuit current).Most reasonable supplies (including switchers) feature this. . 6) Both the + and - supplies should power-up simultaneously to minimize turn-on surges (typical . of all Class B amp's.) Tracking supplies should be considered where practical.

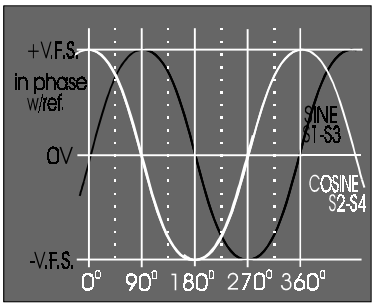
Standard Synchro Loads

MIL-STD Class MIL-S-20708	IMPEDENC ZSO	Load VA
26V 08 CT 4c	100 + j490	0.2784
26V 11 CT 4d	21.0 + j132	1.0417
11 CT 4e	838 + j4955	1.6118
15 CT 4b, & c	1600 + j9300	0.8584
15 CT 6b, & c	1170 + j6780	1.1773
18 CT 4b, & c	1420 + j13260	0.6074
18 CT 6b, & d	1730 + j510	4.491
23 CT 4, & a	1460 + j11050	0.7267
23 CT 4b, & c	1950 + j14000	0.573
23 CT 6, & a	1250 + j3980	1.9417
23 CT 6c & d	1350 + j4300	1.7972

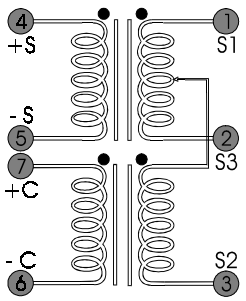
Notes: 1) 6 = 60 Hz., 4 = 400 Hz. units . 2) 26V = 26Vsystem,11.8VL-L signals . else; 115Vsystem, 90VL-L signals typ



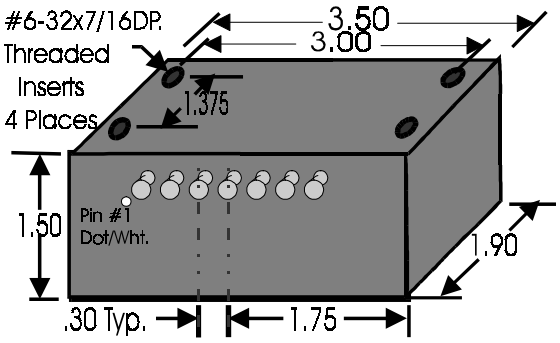
Synchro Format



Resolver Sin/Cos Format



DSC60N, 60 Hz. Transformer For DSL 50/60 Hz. units only



Accuracy:
12 bit Units ±15 arc minutes
14 bit Units ±4 arc minutes

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