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Find the *North Atlantic / Transmagnetics EK5410-93C* at our website: *Click HERE*

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MODEL EK5410C-93

Three (5 VA) Digital-to-Synchro Outputs

Kick-circuit; drives torque receivers; Self-test

FEATURES:

- 6 arc minute (.1°) accuracy
- 14 bit resolution
- Transformer isolated
- Wrap-around Self Test
- Short circuit protected
- Reference loss detection
- Single Slot (.8")
- Only +5 VDC and ±12 VDC via P1
- No adjustments or trimming required

DESCRIPTION:

This unique, single slot, high density VME card, incorporates **three separate transformer isolated Digital-to-Synchro converters with wrap-around self-test and 5.0 VA output capability that will drive torque receivers.** TR's are particularly difficult loads because they require large current drive capability upon turn-on or with 180° step input changes and have a tendency to latch-up with 180° step inputs. Each channel will sense a 180° latch condition and will kick the TR into normal operation. The converters will not latch up or be damaged by loss of any DC power, reference, or signal input. The transformer isolated outputs enable the user to ground one of the outputs (usually S2) without effecting performance. In the test mode, solid state switches connect an on-board R/D converter across the selected output to verify system performance and to monitor the reference input. Reference loss sets a flag in the status register.

NOTE: +5 VDC and ±12 VDC power via P1. No other power input is required.
Analog outputs via P2.

SPECIFICATIONS	Applies to each channel
Resolution:	14 bits
Accuracy:	±6 arc minutes (.1°) No load to full load
Output format:	Synchro, transformer isolated
Output voltage:	11.8 V_{L-L}
Output load:	5.0 VA at 75° max per channel. Short circuit protected
Regulation:	5% max. No load to Full load
Reference voltage:	26 Vrms, transformer isolated.
Reference frequency:	400 Hz ±5 %
Reference current:	1 mA max.
Phase shift:	5° ±2 ° between output and reference.

North Atlantic Instruments, Inc.
110 Wilbur Place
Bohemia, NY 11716
CODE 0VGU1

Drawn By: CB 10/05/94
Checked By:
App'd By: FH 10/26/94

TITLE **SPECIFICATIONS**
MODEL EK5410C-93

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Settling time:	Less than 100 micro seconds
Power:	+ 5 VDC ±5% at 0.4 A ±12 VDC ±5% 700 mA nominal; 1.2 A max. Power supplies must be able to supply the peak power with no current limiting.
Self test:	The R/D has its own self-test. When addressed, it should read 30° ±0.1°. Reference power must be supplied. When connected across the selected output channel, the R/D will read that output angle. Allow 400 ms. after switching before reading the R/D.
Temperature, operating:	0°C to +70°C
Temperature, storage:	-55°C to +85°C
Size:	6U (9.2") height, 4HP (0.8") width 233.4 mm x 20.3 mm x 160 mm deep

I/O CONFIGURATION

The VMEbus interface is configured as a DTB basic A24:D16 slave with a jumper for short I/O addressing. The base address can be set with switches anywhere in the 16 Megabyte address space on 256 byte boundaries.
In the A24 mode, unit responds to address modifier 3D (Standard Supervisory Data Access) or 39 (Standard Non-Privileged Data Access).
In the short I/O mode, the base address can be set with switches anywhere in the 64 K byte address space on 256 byte boundaries.
In the Short I/O mode, unit responds to address modifier 2D (Short Supervisory Access) or 29 (Short Non-Privileged Access)
The interface does not implement interrupt functions but will only transfer data if IACK* is HIGH. The interrupt daisy chain is jumpered on board. After DS0 or DS1 goes LOW, DTACK* will be driven LOW within 12 cycles of SYSCLK.

ADDRESS = BASE + OFFSET

OFFSET
HEX

00	Ch. 1:	Angle Data	WRITE only
02	Ch. 2:	Angle Data	WRITE only
04	Ch. 3:	Angle Data	WRITE only

0A	Wrap-around angle:	Angle Data	READ only
0C	Reference Status:	Status Word	READ only
0E	R/D Test Mode:	Test Word	WRITE only

	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
ANGLE DATA	180°	90°	45°	22.5°	etc	etc	etc	etc	etc	etc	etc	etc	etc	.022	.011	.0055
TEST CH. 1	X	X	X	X	X	X	X	X	X	X	X	X	1	0	0	1
TEST CH. 2	X	X	X	X	X	X	X	X	X	X	X	X	1	0	1	0
TEST CH. 3	X	X	X	X	X	X	X	X	X	X	X	X	1	0	1	1
TEST R/D	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0
STATUS	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

STATUS: "1" = Reference ON "0" = Reference OFF
NOTE: Reference loss detection is keyed to a specific channel. Test Word connects R/D across the output channel to be tested. Therefore, select the desired channel and read status.

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Programming Examples:

To write an angle: Write 16 bit data to address 00 Hex for (Ch. 1); to 02 Hex for (Ch. 2) etc.

To read Wraparound Angle: Write 09 Hex to address 0E Hex to read Ch. 1. Read wrap-around data at address 0A Hex.

To check R /D Test Mode: Write 00 Hex to address 0E Hex; then read data at address 0A Hex

To read status: Read address 0C Hex.

Code	# of outputs	Format	Output (VL-L)	Ref (Vrms)	Freq (Hz)
17	3	Synchro	11.8	26	400

Code	# of outputs	Format	Output (VL-L)	Ref (Vrms)	Freq (Hz)
7	2	Synchro	11.8	26	400

Other combinations can be specified.

P2 CONNECTOR:

Pin	Designation	Pin	Designation
18 C	S1 CH 1	25 C	S1 CH 3
22 C	S3 CH 1	32 C	S3 CH 3
20 C	S2 CH 1	26 C	S2 CH 3
10 C	S1 CH 2	29 C	R HI
14 C	S3 CH 2	27 C	R LO
12 C	S2 CH 2		

DO NOT CONNECT TO ANY UNDESIGNATED PIN

PART NUMBER

EK5410C–93– *

Code

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TITLE **SPECIFICATIONS**
MODEL EK5410C-93

K5410-93A001 REV. F
SHEET 3 OF 3

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