

## 5410C-42 Seven Digital to Synchro/Resolver Channels

Programmable for either seven individual or for one single and three two-speed channels



- 16 bit Resolution
- 30 arc seconds Accuracy
- Programmable Speed Ratio
- Programmable Rotation or Ramp function
- High-speed Data Transfer
- Common or Separate Reference Inputs
- Trigger: Internal or External
- Self-Test
- Message Based
- No adjustment or trimming required

## GENERAL

The Model 5410C-42 provides Seven single-speed or One single-speed and three dual-speed Synchro/Resolver output channels with wrap-around self-test and the ability to rotate or to produce a ramp function within a VXI compatible size "C" IAC per IEEE-STD-1014.

The speed ratio for each two-speed channel is programmable from 1:1 to 128:1. Speed of rotation can be varied from 0.5°/sec to 1000°/sec with a resolution of 0.1°/sec.

**Rotation or Ramp function:** Any or all of the channels can be triggered, through the front panel connector or trigger bus, to turn CW or CCW after being armed. Arming includes the setting of any channel to a particular Start Angle and Stop Angle. The programmable rotational rate for any channel will be from  $0.5^{\circ}$ /sec to  $1000^{\circ}$ /sec. with a resolution of  $0.1^{\circ}$ /sec. Stepping rate, however, will be in  $0.02^{\circ}$  increments. In the two-speed mode, the FINE channels can only be driven by the COARSE channels and the FINE output will rotate x times the rate of the COARSE outputs (x = speed ratio). Start is for all practical purposes instantaneous because the speed is controlled by hardware. If no Stop Angle is programmed, rotation will continue until a fixed angle is entered.

**Confidence Test:** A CNF command will cause relays to disconnect the D/R outputs from the outside world and to connect them, through a switching matrix, to the internal R/D. The microprocessor will then program a series of D/R angles that will be verified by the R/D converter. This test will be completed within 1 minute and will provide 95% fault detection to the module level.

Self-Test: This test is initiated via the IST command and is otherwise identical to the Confidence Test.

## **SPECIFICATIONS**

**Number of Channels:** Programmable for either seven individual channels or for three two-speed and one single-speed. **Resolution:** 

(Coarse) 16 bits (Fine) 16 bits

Accuracy:

single channel mode 0.011° coarse output of two-speed 0.011° fine output ot two-speed 0.02°

**Output Voltage:** See part number designation. Transformer isolated. Output voltage varies directly with changes in reference voltage. All outputs are short circuit protected.

Output Load: See part number designation. Speed Ratio: Programmable for each two- speed channel from 1:1 to 128:1 Phase Shift: A different phase shift can be specified for each channel. Reference Voltage: See part number designation. Transformer isolated. Standard model has one reference com- mon to all channels. "B" model has separate reference inputs for each channel. Reference Frequency: See part number designation. Reference Current: 1 mA max per channel Trigger: Rotation can be initiated exter- nally through the front panel connector or via the trigger bus. Differential input. **Conversion Rate:** 5 ms per basic string message VXIbus Data Rate: 500 kbyte/sec. Interface: VXIbus Native (MATE/CIIL) Meets IEEE-488.2 Temperature, operating: -10°C to +65°C Temperature, storage: -40°C to +85°C Relative humidity: to 90% RH Shock: Designed to meet 15G. 11 ms Vibration: Designed to meet MIL-T-28800C for class V equipment. Altitude, operating: 10,000 feet Altitude, non operating: 40,000 feet Power Requirements:

+12 Vdc at 400 mA -12 Vdc at 200 mA +5 Vdc at 1.2 A

Size: VXIbus C-size standard, single slot
Weight: 4 lbs.
Calibration intervals: 1 year
Acoustic noise: None
Max. corrective time: 0.5 hours. No preventive maintenance is required.
Connectors: All connections are via front panel "D" connectors. Mating connectors not supplied.
Cooling: External air flow is required

## PART NUMBER DESIGNATION

PART NUMBER	OUTPUT FORMAT	CH.0 (VL-L)	CH.1 (VL-L)	CH.2 (VL-L)	CH.3 (VL-L)	CH.4 (VL-L)	CH.5 (VL-L)	CH.6 (VL-L)	LOAD (ohm)	REF (Vrms)	FREQ (Hz)
5410C- 42-2	Resolver	3.2	3.2	3.2	3.2	3.2	3.2	3.2	20k	7.1	400/900
5410C- 42-3	Synchro	11.8	11.8	11.8	11.8	11.8	11.8	11.8	20k	26	400
5410C- 42-7	Syn/Res	11.8/11.8	11.8/11.8	11.8/11.8	11.8/11.8	11.8/11.8	11.8/11.8	11.8/11.8	20k	26	400
5410C- 42-8	Resolver	11.8	11.8	11.8	11.8	N/A	N/A	N/A	20k	26	400
5410C- 42-11	Resolver	11.8	11.8	11.8	11.8	11.8	11.8	11.8	20k	26	400
5410C- 42-15	Resolver	2.0	2.0	2.0	2.0	2.0	2.0	2.0	20k	2.0	10k
5410C- 42-17	Synchro	90	90	90	90	90	90	90	100k	115	400

Other output voltages and frequencies up to 10 kHz can be supplied. Contact the factory.

NOTE: Syn/Res format indicates that one or more outputs are programmable for either synchro or resolver. Standard configuration uses a single reference input that is common to all channels. To specify a separate transformer isolated reference input for each channel, add prefix "B" to the part number.