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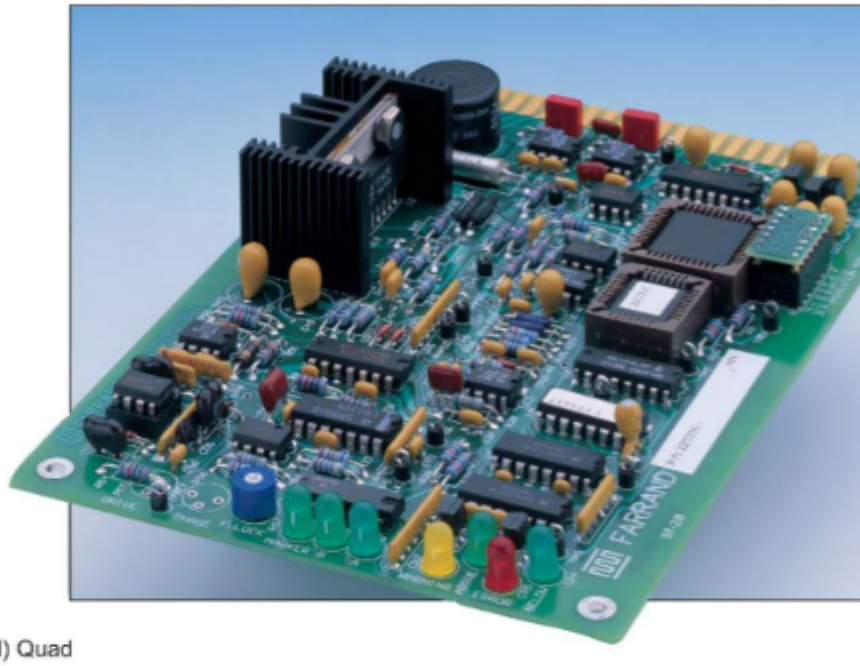
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INDUCTOSYN® Analog to Digital I/D Quad Converter Board

Achieve high resolution position data...

- **Interfaces to all standard machine tool controls.**
- **Standard resolution to 0.18 arc sec. or 5 µinches. Higher resolutions available.**
- **Field tested noise immunity, mounts in standard card rack.**
- **Many standard cycle divisions available.**



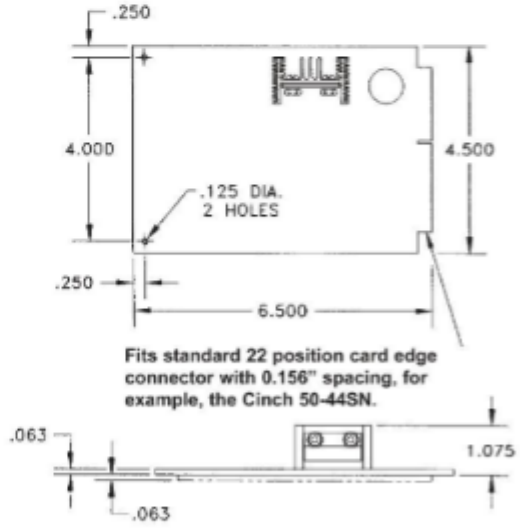
Farrand's latest I/D (INDUCTOSYN to Digital) Quad Converter Board converts INDUCTOSYN or resolver format analog signals to high resolution digital signals in A quad B and other serial data formats. The unit provides digital position information to control systems that do not have built-in INDUCTOSYN or resolver conversion capabilities.

There are two models available—the 220100 is designed as a direct replacement for the earlier 219100 card. The 220300 adds a loss of signal output and has automatic gain and phase correction. The two models are identical in all other respects.

Many cycle divisions are available as listed on the reverse side. Typical resolutions are 10 µinches with a 0.1 inch pitch linear INDUCTOSYN transducer or 0.0001 degrees with a 720 pole rotary INDUCTOSYN transducer. Special cycle divisions can also be supplied upon request.

The board can be mounted in a standard card rack or plugged into a Farrand Connector Board to provide labeled screw terminations for easy hook-up. Features include field tested noise immunity, LED operation indicators and test points.

Quad converter input signals are in sine/cosine format from an INDUCTOSYN transducer with suitable preamplifier. The Quad Converter outputs are from TTL compatible, RS422 compliant differential drivers.



Fits standard 22 position card edge connector with 0.156" spacing, for example, the Cinch 50-44SN.

All dimensions in inches.

FARRAND CONTROLS
INDUCTOSYN INTERNATIONAL
DIVISIONS OF RUHLE COMPANIES, INC.

Specifications



Model 220300
With Automatic Gain & Phase Correction



Model 220100
Without Automatic Gain & Phase Correction

ID/QUAD BOARD

Standard Models & Typical Applications

Dash Number for Standard 10 kHz Model 220100 or 220300	Cycle Division*	Transducer	Overall Resolution	Speed At 10 kHz
-F100	1,024	256 pole	2^{-17} rev	280 rpm
-F110	256	256 pole	2^{-15} rev	280 rpm
-F120	32	256 pole	2^{-12} rev	280 rpm
-F130	360	720 pole	10 arc sec	100 rpm
-F140	500	0.1 inch	200 µin	3600 ipm
		360 pole	0.004°	200 rpm
-F200	4,096	512 pole	2^{-20} rev	56 rpm
-F210	1,000	0.2 in	200 µin	3000 in/min
		0.1 in	100 µin	1500 in/min
		2mm	2 µm	30 m/min
		720 pole	0.001°	40 rpm
-F220	2,000	0.2 in	100 µin	3000 in/min
		0.1 in	50 µin	1500 in/min
		2mm	1 µm	30 m/min
		360 pole	0.001°	80 rpm
-F230	3,600	720 pole	1 arc sec	40 rpm
-F240	128	256 pole	2^{-14} rev	112 rpm
-F250	2,540	0.1 in	1 µm	1500 in/min
-F290	720	720 pole	5 arc sec	40 rpm
-F300	16,384	256 pole	2^{-21} rev	28 rpm
-F310	10,000	0.2 in	20 µin	750 in/min
		0.1 in	10 µin	375 in/min
		2 mm	0.2 µm	7.5 m/min
		720 pole	0.0001°	10 rpm
-F320	4,000	0.2 in	50 µin	720 in/min
		0.1 in	25 µin	375 in/min
		2 mm	0.5 µm	7.5 m/min
-F330	3,600	720 pole	1 arc sec	10 rpm
-F340	7,200	360 pole	1 arc sec	20 rpm
-F510	20,000	0.2 in	10 µin	187 in/min
		0.1 in	5 µin	93 in/min
		2 mm	0.1 µm	1.9 m/min
		720 pole	0.00005°	2.5 rpm

***NOTE:** Cycle Division is specified for a count at every transition of the A and B outputs (x4 mode).

INPUT: Use with an INDUCTOSYN® transducer and Farrand preamplifier. Can also be used with a suitable resolver.

OUTPUT: Outputs are from RS422 compliant, differential drivers. Output levels are also TTL compatible.

A. Count Pulses in any one of the following three formats:

1. Quadrature. (A and $\overline{A}$; B and $\overline{B}$)
2. Count pulse and up/down level: pulse width, 300 nsec ± 100 nsec separation; 200 nsec min; setup of U/D: 75 nsec min.
3. Count up and count down pulse (width and separation same as in 2 above).

B. Marker Pulse: M and $\overline{M}$. Marker is high once per INDUCTOSYN® transducer cycle. In quadrature mode, marker occurs when A and B are both high.

C. Resolution: Other output pulse resolutions are available upon request.

D. Excitation Frequency: 10 kHz is standard. Other frequencies available upon request for the 220100 model.

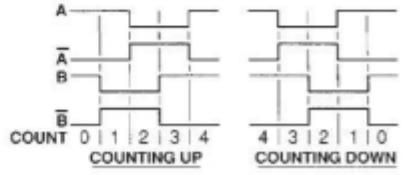
POWER REQUIRED:
(outputs loaded with 75 ohm each.)
+5V ± 0.25 Vdc, 0.5A
+15 ± 0.25 Vdc, 250 mA
−15 ± 0.25 Vdc, 250 mA

The Quad Converter Board provides ±12 Vdc, 50 mA to power the preamp.

OPTIONAL EQUIPMENT:

220400	Connector Board
220400B	Connector Board w/Input Buffer
220400V	Connector Board w/Input Buffer & Velocity Output
219208-1	Connector
219200	Preamplifier

QUADRATURE OUTPUT FORMAT:



Outside United States of America:

FARRAND CONTROLS® INDUCTOSYN INTERNATIONAL®

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