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Find the *Control Technology 2208* at our website: ***Click HERE***

Model 2208 High-Speed Counter Module

Tracks Encoder Counts at Rates up to 1 MHz

Control Technology Corporation



The model 2208 High-Speed Counter Module accepts a quadrature signal from a range of industry-standard optical encoders, tracking the resultant count at rates up to 1 million "edges" (counts) per second. Useful for position checking and for velocity determination, the model 2208 may be configured for either single-ended or differential-output encoders.

Supports High Count Rate

The high count rate of this module allows its use in ultra-high-resolution applications, where slower counters would present substantial performance limitations. As an example, even a linear encoder providing 80,000 transitions per inch of travel could still be operated at speeds up to 12.5 inches/second with the model 2208.

Engineered for the Realities of Industrial Applications

The inputs of the model 2208 may be configured as differential inputs, for optimum noise immunity when used with encoders having differential outputs. When used in the single-ended mode, noise immunity is improved by the inherent hysteresis of the input circuit.

In addition to the above features, high-speed optoisolation techniques are used on the model 2208 to fully isolate its inputs from the controller's logic circuitry, reducing the possibility of false counts due to ground noise.

Convenient Interfacing to Most Encoders

Signals from TTL, CMOS or 24 volt encoders may all be accommodated by the inputs of the model 2208. In addition to the two quadrature phases, an input is provided for the encoders "index" signal, which may optionally be used to reset the counter.

For convenience of wiring, a duplicate input connector is provided on the module which is plug-compatible with the 10-conductor ribbon cable format used by several encoder manufacturers (please check with Control Tech. for compatibility information). And, the built-in power supply on the model 2208 provides 5 volts with a capacity of over 300 mA — capable of powering most 5 volt encoders made today. This means that, in many instances, no additional circuitry or wiring is required to interface an encoder to this module.

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The model 2208 High-Speed Counter Module may be used in any Control Tech. controller with a type 2200 bus.

On-board jumpers are provided to select differential or single-ended mode for each input, as well as for selecting input termination resistors and hysteresis. An additional jumper is provided to disable the reset function.

Note – a factory-configuration option is available to provide count-up/ count-down inputs instead of quadrature inputs. Please call for additional information.

For More Information

Further detailed connection and application information may be found in Control Tech. publication IG2208; this is the Installation Guide for the model 2208.

Selection and applications assistance may be obtained from our staff of Systems Specialists — call the number below for further information.

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See us on the World Wide Web:
http://www.control.com/

Absolute Maximum Ratings

	Min	Max	
Applied Input Voltage		24.0	VDC
Power Supply Capacity (+5 V)		500	mA
Ambient Temperature	0	50	°C

Specifications

	Min	Typ	Max	
Input Characteristics – single-ended mode				
High-going Threshold		1.75	2.2	VDC
Low-going Threshold	0.60	0.80		VDC
Input Characteristics – differential mode				
Common-mode Range	0.00		22.0	VDC
Offset Voltage Range		±2.0	±9.0	mV
Input Current (either mode)				
With termination resistor				
5 Volt Input Signal		1.1	1.2	mA
24 Volt Input Signal		5.10	5.38	mA
Without termination resistor		0.0	1.4	µA

Performance Specifications

Maximum Counting Rate (Note 1)	1.0		MHz
Counting Range	-2,147,483,648	+2,147,483,647	Counts

Power Requirements (from controller)

Logic Supply (5 V)	350	420	mA
Auxiliary Supply (24 V)	25	160	mA

Notes:

1. Assumes 90° phase relationship between quadrature phases.
2. Specifications shown above are at 25° C., unless otherwise noted.

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