

ENC-4 for imc CRONOS-SL (CRSL/ENC-4)

4 Channels for Acquisition of Counter Inputs, Rotation Encoders etc.

The configuration module **ENC-4** for imc CRONOS-SL serves to measure signals representing time or frequency data. In contrast to analog channels, the actual measurement does not consist of sampling by a fixed time structure. Instead, either the number of impulses occurring or the times between selected signal edges are counted by digital counters.



imc CRONOS-SL-2 (back panel)



imc CRONOS-SL-2 (front panel)

Overview of available variants

Order code	article no.	remarks
CRSL/ENC-4-D	11800034	with DSUB-15 sockets
CRSL/ENC-4-L	11800035	with LEMO sockets

Included accessory

Documents
Getting started with imc CRONOScompact & imc CRONOS-SL (one copy per delivery / system)
Device certificate

Optional accessories

DSUB-15 plug		
ACC/DSUBM-ENC4	15-pin DSUB clamp terminal for each 2-channel pair for acquisition of incremental quantities such as RPM, frequency, displacement etc.	13500171
ACC/DSUBM-ENC4-IP65	sealed version of the ACC/DSUBM-ENC4	13500219
ACC/DSUBM-ENC4-IU	15-pin DSUB clamp terminal for each 2-channel pair for acquisition of incremental quantities such as RPM, frequency, displacement etc. Requires modifications of the incremental interfaces to a higher voltage 5 V / 300 mA	13500053

Technical Specs - CRSL/ENC-4

Parameter	Value	Remarks
Inputs	4 + 1 (9 tracks)	4 channels with 2 tracks each (A, B) 1 index-channel, all fully conditioned
Measurement modes	Displacement (abs), Displacement (diff), Angle (abs), Angle (diff), Event, Frequency, Speed, Velocity, Time and Puls Time Measurement	only if the sampling rate is ≤ 1 ms
Terminal connection	2x DSUB-15 / 2 channels or 4x LEMO/ 1 channel	ACC/DSUBM-ENC-4(-IP65) ACC/DSUBM-ENC-4-IU for each group of 2 channels per plug INDEX only occupied on second socket
Sampling rate	≤ 50 kHz	
Time resolution of measurement	33 ns	counter frequency 32 MHz (primary sampling rate)
Resolution of data	16 bit	
Frequency stability	<100 ppm deterioration $< \pm 5$ ppm / year	
Input configuration	differential	
Input impedance	100 k Ω	
Input voltage range (differential)	± 10 V ± 30 V	linear range maximum, outside of the linear range: max. non-linearity error: 300 ns
Common mode input voltage	max. ± 30 V	
Switching threshold	-10 V to +10 V	globally selectable in 0.1 V steps
Hysteresis	0 % to 40 % of threshold , min. 100 mV	globally selectable in 0.1 V steps
Analog bandwidth	500 kHz	-3 dB (full power)
Analog filter	bypass (without filter), 20 kHz, 2 kHz, 200 Hz	selectable per channel Butterworth, 2nd order per channel
CMRR	70 dB (typ.), 50 dB (min.) 60 dB (typ.), 50 dB (min.)	DC, 50 Hz 10 kHz
Switching delay	500 ns	level: 100 mV square wave
Gain uncertainty	<1 %	of the measured value, at 25 °C
Offset	<1 %	of the range, at 25 °C
Safe voltage (max.)	± 50 V	long-term
Sensor supply	+5 V, 100 mA 300 mA (optional)	reference: GND