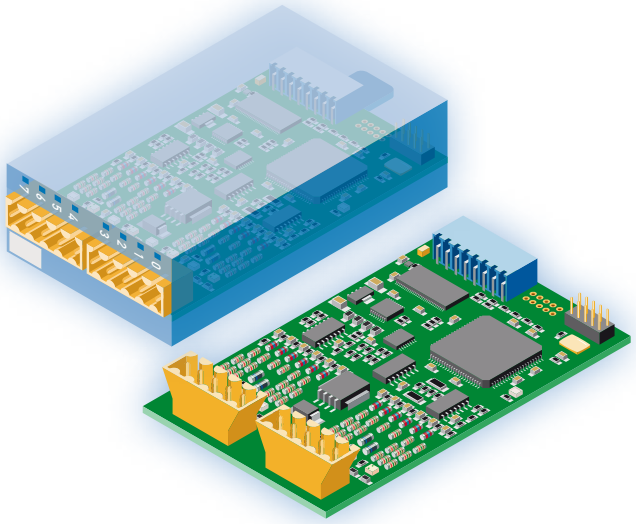
Fast Counter Module
for Saia PCD2 and Saia PCD3



This universal module enables counting functions up to 150 kHz for controller PCD2 and PCD3. The communication between PCD and Fast Counter Module happens over the IO-bus.

The module is suitable for counting revolutions, distances, volumes, etc. and for measuring by counting the pulses. It has two inputs, A and B, and in count modes ×1, ×2 or ×4 recognizes the direction in which incremental shaft encoder's turn. Input A and B are suitable for connection of encoders used to automatic up/down count. The counter is loaded with a start value. The counter flag can be used to select counting direction (up or down). A software enable serves to start/stop the counter. The trigger signal can be used to record and read an intermediate value. With a Preset signal a count value can be cited and be loaded on any event into the counter. At the end of a count, the counter's directly controlled output (CCO) can be used, for example, to trigger precise external switch operations or to release an interrupt. The CCO output is set/reset via the CCO flag.

Features

- 2 (H112) or 4 (H114) counter module
- 1 Counter Controlled Output (CCO) per counter
- 2 inputs A and B per counter
- 1 configurable input C per counter
- Counting range 0…16 777 215 (24 bit)
- Selectable digital filter for all inputs (10 kHz…150 kHz)

Inputs

The inputs A and B are the inputs used to count.
Input C define different functions like:

- Trigger (edge sensitive)
- Counter Enable (state sensitive)
- Counter Preset (edge sensitive)
- Counter Reset (edge sensitive)

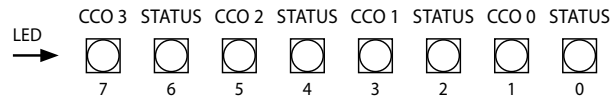
Technical data

Counting frequency	up to 150 kHz config. frequency 10, 20, 50, 100, 150 kHz impulse/pause ratio 50%
Counting range	0…16 777 215 (24 bit), series connection possible with CPU counters in the standard base units
Count modes	selectable ×1, ×2 or ×4
Digital inputs	A und B, with recognition of rotational direction, configurable Input C
Input signals	24 VDC (Low = 0…5 V , High = +15…30 V)
Input current	5…6 mA
Digital output	CCO (Counter Controlled Output), switches when count 0 or 16 777 215 or Compare Value
Switching capacity	5…500 mA at 10…30 VDC
Circuit type	galvanically connected, short-circuit protected, positive switching
Voltage drop	typ. 2 V at 500 mA
Data	All module data is stored non-permanently, but can at any time be down loaded into the CPU's permanent registers.

General technical data

Number of modules	max. 64
Power supply	10…30 VDC for output CCO
Current draw	~50 mA internally from 5 V-Bus 4 mA internally from V+
Ambient temperature	operation: 0…+55 °C without forced ventilation storage: –20…+85 °C

Connection



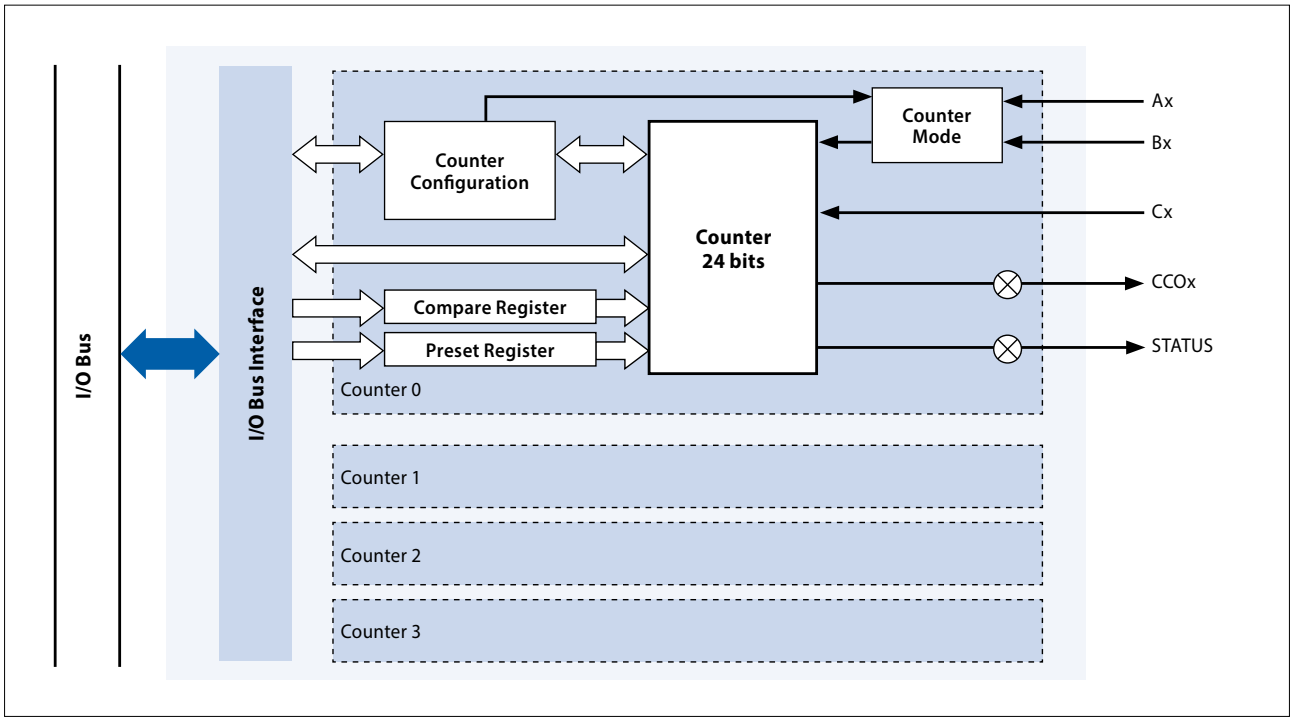
Connector 1				
8	6	4	2	0
GND	C3	A3	C2	A2
N.C.	CCO3	B3	CCO2	B2
9	7	5	3	1

Connector 0				
8	6	4	2	0
GND	C1	A1	C0	A0
+24V	CCO1	B1	CCO0	B0
9	7	5	3	1

Signal description

Signal Name	IO	Description
Ax	I	Counter input
Bx	I	Direction input
Cx	I	Control input
CCOx	O	Command output

Block diagram



Ordering Information

Type	Description	Weight
PCD2.H112	Intelligent fast counting module, 150 kHz, 2 counting channels with incremental encoders	24 g
PCD2.H114	Intelligent fast counting module, 150 kHz, 2 counting channels for incremental sensor inputs (2 connectors type K included)	27 g
PCD3.H112	Intelligent fast counting module, 150 kHz, 2 counting channels with incremental encoders	66 g
PCD3.H114	Intelligent fast counting module, 150 kHz, 4 counting channels for incremental sensor inputs (2 connectors type K included)	70 g

Accessories

Type	Description	Weight
4 405 5048 0	Plug-in spring terminal block, 2 × 5-pole up to 1.0 mm² (orange block), labelled 0 to 9, connector type "K"	6 g

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