

incremental interface 5110

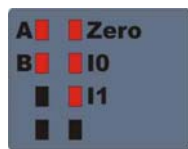


- Incremental interface
- Data input voltage 5V (RS485)
- Differential input

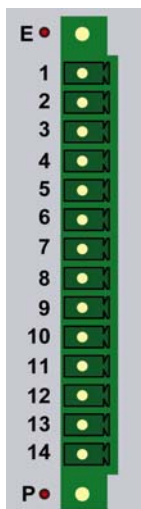
I/O

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Pinout



LED:	Pin	Signal
	0; (8)	A
	1; (9)	B
	4; (12)	Zero
	5; (13)	I 0
	6; (14)	I 1
E:		failure, red
P:		power supply, red



Pin	Signal	Description
1	A	Data input (RS485)
2	/A	Data input (RS485)
3	B	Data input (RS485)
4	/B	Data input (RS485)
5	zero	Data input (RS485)
6	/zero	Data input (RS485)
7	I 0 *)	Input (24V)
8	/I 0 *)	Input (0V)
9	I 1 *)	Input (24V)
10	/I 1 *)	Input (0V)
11	Power	VCC *)
12	Power	0V
13	Power	VCC *)
14	Power	0V

All Power VCC and Power 0V are internal connected

*) see notes

Attributes

Dataformat:
2 Byte Status
4 Byte Counter

Operating modes:
This print contains 2 programmable counters. According to the parametric representation the following operating modes *) are possible:

- 32-bit incremental counter with quadruple evaluation of incremental impulses (default)
- 2 independent 16-bit UP/DOWN impulse counters
- 32-bit UP/DOWN impulse counter with separate inputs for UP and DOWN

*) see user guide

Available prints :

- @P5110L: incremental interface, 5V data input
- @P5110R: incremental interface, 5V data input

Related Applications:

24V data input voltage

- @P5111: incremental interface, 24V data input

*) see notes

digital

interface

Electrical Data

Power supply external.....	GND required, VCC 4 - 28VDC, depends from encoder supply *)
Operating current	5mA at 24V
Operating current @ctiveBus	25mA at 3,3V / 25mA at 5V
Input protection	30V overvoltage; 5V overvoltage
Counter	16 / 32 bit
Limiting frequency	1 MHz
Data input.....	5V difference signal (RS485)

*) see notes

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System Information

System ID	0x0185
System address space	48 bit in, 48 bit out

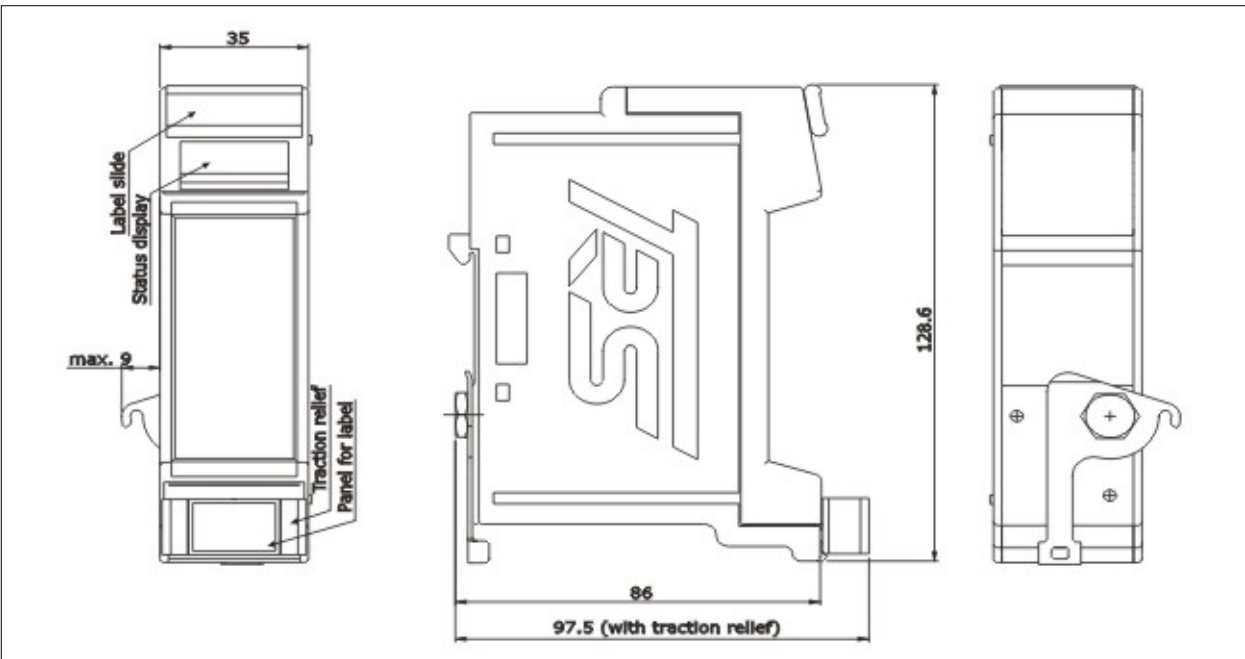
Environmental Conditions

Electromagnetic compatibility (EMC)	EN 61000-4-2 (IEC-801-2) / EN 61000-4-4 (IEC-801-4)
Operating temperature [°C]	0 .. +55
Storage temperature [°C]	-20 .. +70
Humidity (rel)	98 % (non condensing)
Protection class*	IP 20 (DIN 40 050)
*The protection class is valid only with housing and connector installed	

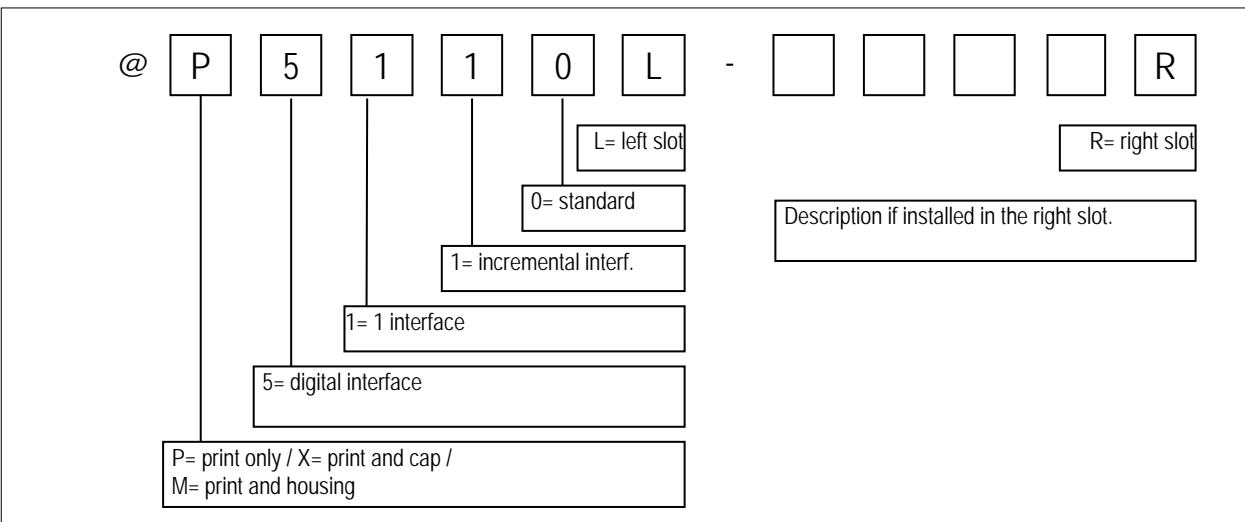
Mechanical Data PCB

Weight	approx. 0.05 kg including connector
Dimension	105mm x 80mm x 12mm

Drawing (effective if mounted in @M housing)



Ordering Key



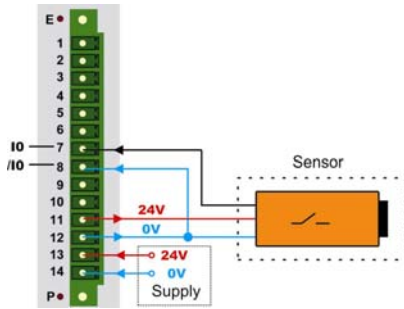
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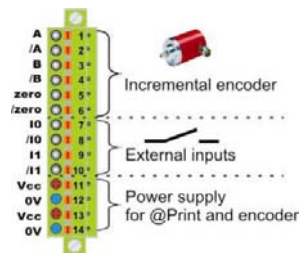
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notes:

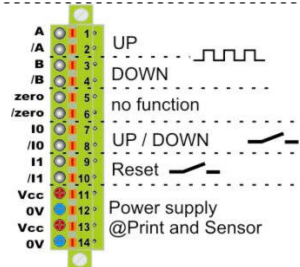
Example of application for the inputs (I0 +/-I0) with power supply of 24VDC for the sensor.



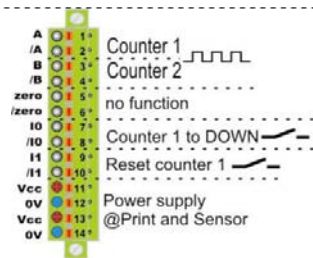
Connection at operating mode:



32-bit incremental counter



32-bit UP/DOWN impulse counter



2 independent 16-bit UP/DOWN

Power Supply for the @Print

The power supply can be chosen freely. Selection between 4 - 28V. This can be dependent from the supply for the encoder/sensor.
Caution! Never connect different voltage potential!

Definition differential input signal:

Input (RS485)..... Signal "Low" < - 0,2V
Signal "High" > +0,2V
Hysteresis..... 70mV

digital

interface

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notes:

System bus data:

Bit	Name	Description
0-15	Low Word 32bit Counter / Counter 1	Depending on operating mode this value is the 32bit-counter or the value of the independent 16bit-counters
16-31	High Word 32bit Counter / Counter 2	
32	I0 = REF_CAM	Value of input I0
33	I1 = Special	Value of input I1
34	ZERO	Value of Input zero
35	EN_ZERO	write 1: inputs 'I0' together with Input 'zero' set the counter to 0
		read: is set to 1 if the counter is set to 0
36	EN_LOAD_CNT	write 1: Copy bits 0-31 to counter
		read: is set to 1 if finished copying
37	not used	
38	not used	
39	WR_EN	must be set to one to use any function
40	STOP_Z1	stop counter1 or 32bit-counter
41	INV_Z1	change direction of counter 1 or 32bit-counter
42	OVER_Z1	write clear overflow-bit counter 1
		read read overflow-bit counter 1
43	STOP_Z2	stop counter 2
44	DOWN_Z2	set counter 2 countdirection to DOWN
45	OVER_Z2	write clear overflow-bit counter 2
		read read overflow-bit counter 2
46	not used	
47	not used	

Reset 32Bit Counter:

Using inputs **I0 /I0** and **zero /zero**

- Set **Bit 35** and **Bit 39** to "1"
- Signal **I0** together with signal **zero** set the counter to "0"

To check if the counter has been reset, read **Bit 35**. If **Bit 35** is "1" the counter has been reset. To reset the counter again first write "0" to **Bit 35** and then write "1" to **Bit 35**.

Set 32Bit Counter:

- Set **Bit 0 – 31** to the new counter value.
- Set **Bit 36** and **Bit 39** to "1"

To check if the counter has been set, read **Bit 36**. If **Bit 36** is "1" the counter has been set. To set the counter again first write "0" to **Bit 36** and then write "1" to **Bit 36**.

Caution:

Power 0V has to be directly connected with power 0V of the interface partner and power 0V of the controller-module.

Revision change:

Version	Description	Date (m/y)
00	serie 0	02/02
01	added: operating current in Electrical Data	09/03
02	Connection examples	03/05
03	Added: Definition differential input (RS485)	11/06

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