SSI input 5100

- **SSI interface**
- **Output voltage +5V RS485**
- **Input voltage +5V**
- **Galvanicaly isolated data channel**

Pinout

LED:	
0; (8)	data transfer channel 1
1; (9)	CRC error channel 1
E:	failure, red
P:	powers supply, red
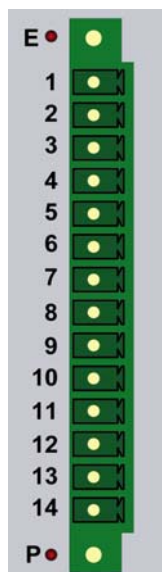
Pin	Signal	
1	C1+	Output
2	C1-	Output
3	D1+	Input
4	D1-	Input
5	reserved	
6	reserved	
7	reserved	
8	reserved	
9	Power	+24V
10	Power	0V
11	Power	+24V
12	Power	0V
13	Power	+24V
14	Power	0V

*see notes

Attributes

Dataformat:
32 bit format

Applications:
The P5100 allows two SSI sensors to be connected directly. Diverse data transfer frequencies and bit widths can be adjusted. The sensor is powered by the SSI interface.

Available prints:
- @P5100L: 1 SSI sensor interfaces
- @P5100R: 1 SSI sensor interfaces

Related Applications:
2 SSI sensor interface
- @P5200: 2 SSI sensor interface

2 SSI output interfaces
- @P5220: 2 SSI slave intefaces

Electrical Data

Power supply external	GND required see notes, VCC max. +24V ±20%, optional
Operating current	5mA at +24V
Operating current @ctiveBus	25mA at +3.3V / 35mA at +5V
Input protection	30V overvoltage
SSI-frequency	1.25MHz / 625kHz / 312.5kHz / 156.25kHz
Signal output (clock)	difference signal (RS485)
	"Low" < -1.5 to -5V
	"High" > 1.5 to 5V
Signal input (data)	difference signal (RS485 compatible)
	"Low" < 0,8V
	"High" = > +2.1V to +5V at 4mA to 20mA,
	(recommended min. +2.8V or 7mA input current)

*see notes

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System Information

System ID 0x0184
System address space...32 bit in, 32 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* ....IP20 (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)
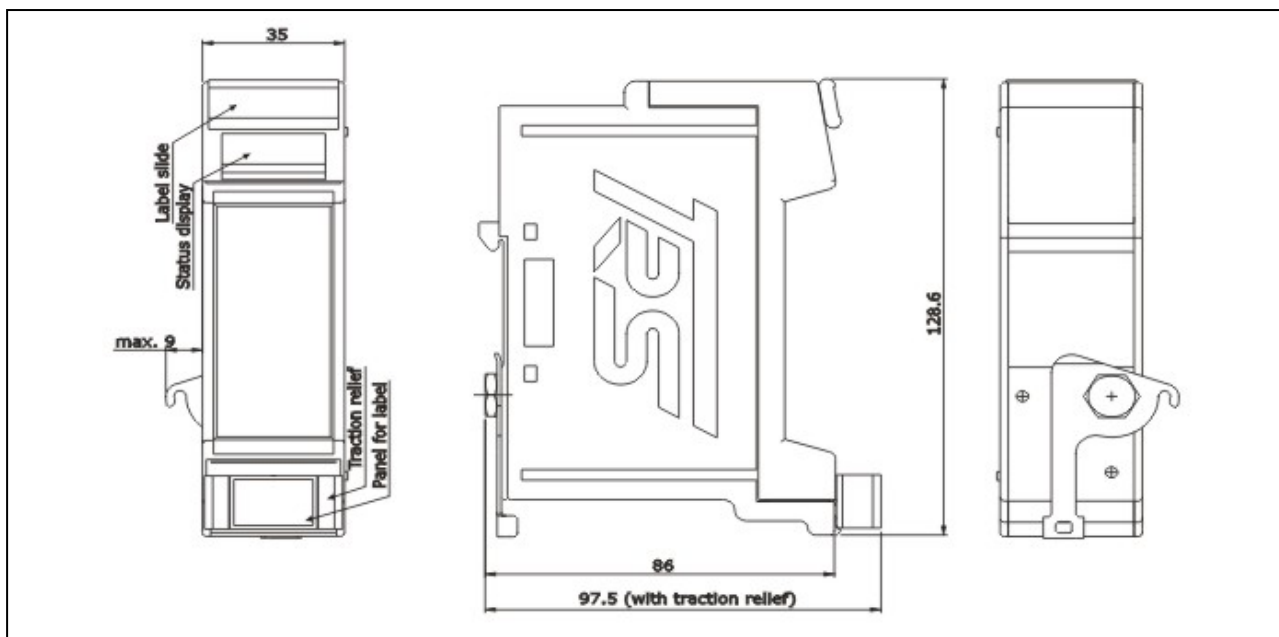
Ordering Key
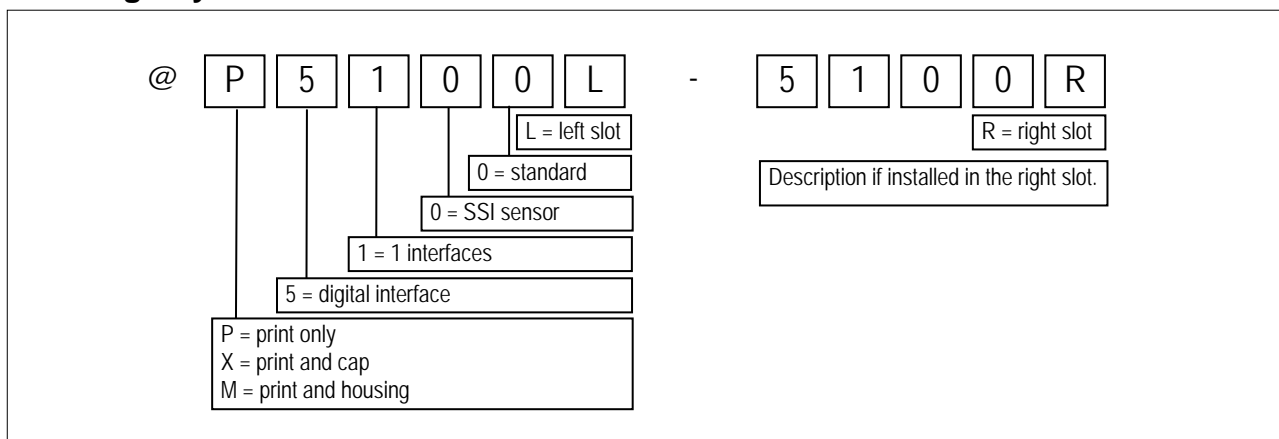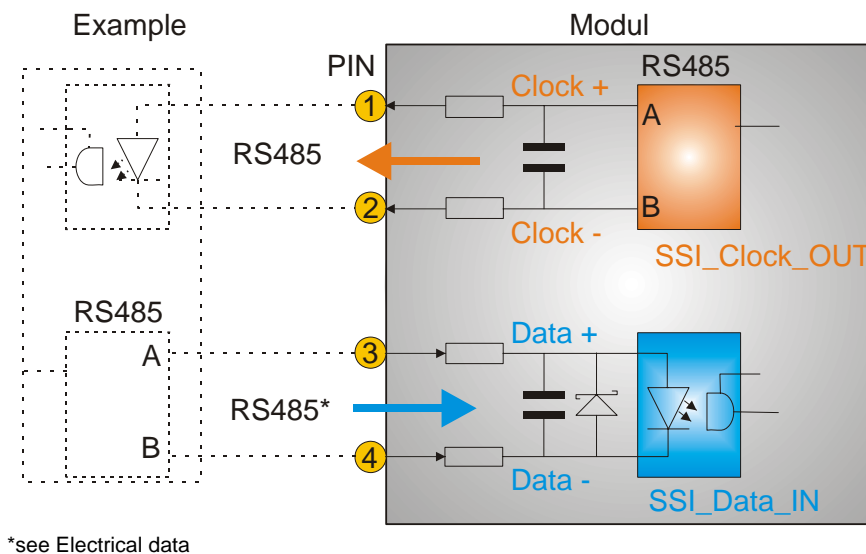
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notes:

Caution:
Power 0V has to be directly connected with power 0V of the interface partner and power 0V of the controller-module.
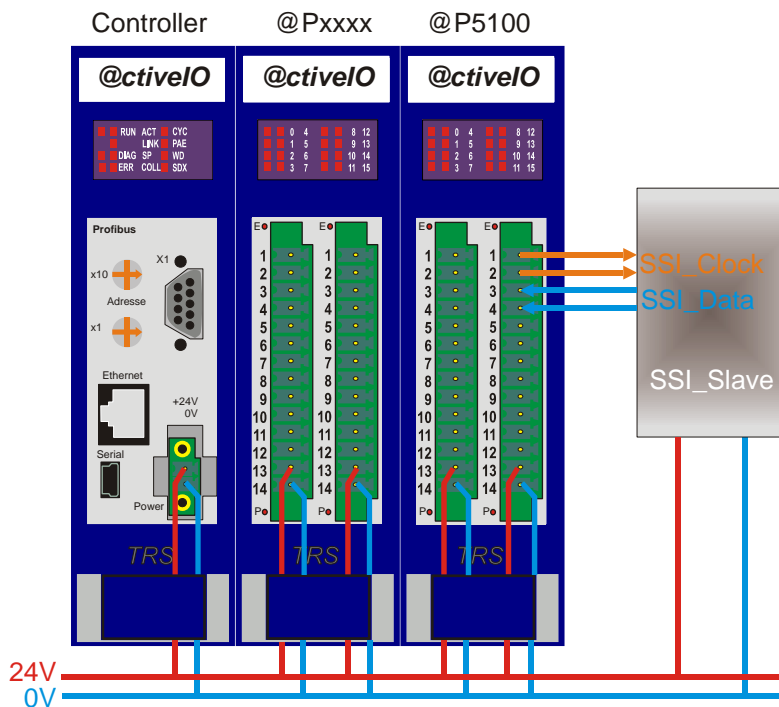
Input / output signal schematic:

On the left side is an recommendation for circuit from the input / output signal of the module.

*see Electrical data

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notes:

Bit	Name	Description			
0	Parameter enable	must be set high to change any function			
1	not defined				
2	not defined				
3	not defined	a read access of parameter bit 3 to 0 deliver the firmware version			
4 (LSB) - **9** (MSB)	amount of SSI clock´s	amount SSI clock`s= amount data bits + 1 min. 5, max. 33 with checksum (bit 14) max. 29			
10 **11**	SSI clock	Bit			
		11	10		
		0	0	1.25 MHz	
		0	1	625 kHz	
		1	0	312.5 kHz (default)	
		1	1	156.25 kHz	
12	EN_MONO_PAUSE	**1** = SSI clock start after mono pause **0** = (default) SSI clock start after data high and mono pause (mono pause = **28.8µs**, independent from SSI clock)			
13	EN_GRAY	SSI data gray coded			
14	EN_CRC	SSI data with 15 bit checksum, only if checksum valid the data will be accepted. If EN_CRC = 1 data bit 30 contains checksum fail			
15	EN_CLOCKSLAVE	SSI will be switched in clockslave mode, data and clock will be looped through the print.			
16	EN_DTRANS_INFO	data bit 31 will be used for information datatransfer			
17	SBUS_SYNC	SSI clocks will generated synchron to the system bus **(Version 9 and later)**			

System bus data:
Bit 31-0 SSI1 Data, Bit 0 = LSB

If parameter bit 14 = 1 .... then data bit 30 = CRC_ERROR
.... CRC_ERROR = 1 -> Checksum failed, no valid data

If parameter bit 16 = 1 .... then data bit 31 = data transfer
data transfer = 1 .... data signal from SSI is changing, normally connected
data transfer = 0 .... no changing data signal from SSI, probably wire not
                                                              connected or no supply voltage

Revision change

Version	Description	Date (m/y)
01	Changed: operating current at 24V, 5V and 3,3V	09/04
02	Added: Parameter Bit 17	12/04
03	Added: Time value for "mono pause"	11/06
04	Added: input / output signal notes	01/08