

# Data sheet

## S0 pulse counter with S-bus interface

Controls Division

Saia® SBus  
PCD7.H104

The S0-S-Bus coupler module is a device for the collection of S0 pulses. With this module the consumption data of any measurement device with a S0 output becomes bus capable and can be accessed by every Saia PCD® or Energy Manager through the S-Bus.

### Main features:

- Up to 100 Saia® S0-S-Bus Modules on the same bus
- 4 S0 pulse inputs (S01+... S04+) per Saia® S0-S-Bus Module
- Up to 400 S0 devices on the same S-Bus
- The inputs comply with the S0 standard 62053-31
- Integrated RS-485 termination resistor
- LED for bus activity indication

### Order number

PCD7.H104SE



saia-burgess  
Control Systems and Components

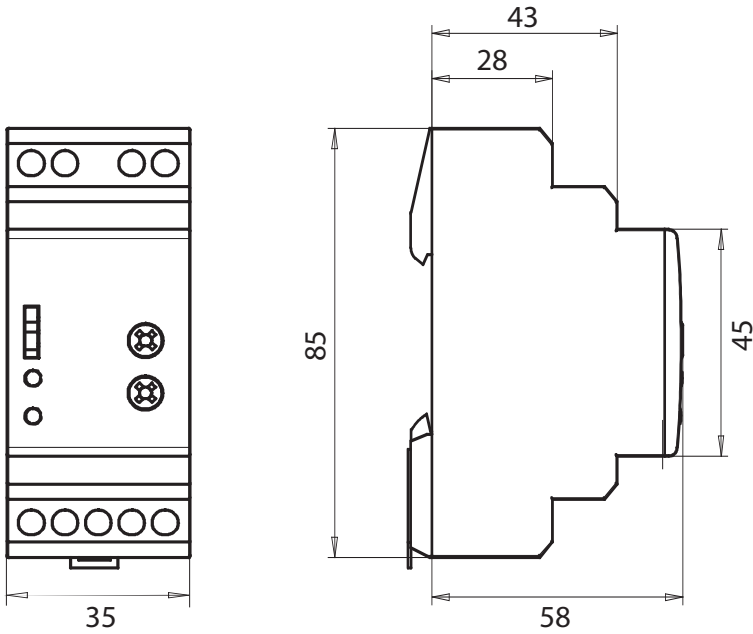
### Technical Data

Protection type as DIN40050	IP 40   connections IP 20
Operating voltage Un	230 VAC (-20/+15%)
Current draw	< 12 mA
Power draw	< 3 W
Temperature	<ul style="list-style-type: none"><li>■ Operation -25°C ... +55°C</li><li>■ Storage -25°C ... +70°C</li></ul>
EMC / noise immunity	<ul style="list-style-type: none"><li>■ Surge voltage according to IEC61000-4-5 on main electric circuit, 4 kV 1.2 / 50 µs</li><li>■ Surge voltage according to IEC61000-4-5 at S0 inputs, 1 kV 1.2 / 50 µs</li><li>■ Burst voltage according to IEC61000-4-4,<ul style="list-style-type: none"><li>■ Main electric circuit 4 kV direct</li><li>■ S0 inputs 2 kV capacitive</li><li>■ S-Bus connections 1 kV capacitive</li></ul></li><li>■ ESD according to IEC61000-4-2,<ul style="list-style-type: none"><li>■ Contact 8 kV, air 8 kV</li></ul></li></ul>
Insulation characteristics	<ul style="list-style-type: none"><li>■ 4 kV/50 Hz test according to VDE0435</li><li>■ 6 kV 1.2/50 µs surge voltage according to IEC61000-4-5</li><li>■ Device protection class II</li></ul>
LEDs	<ul style="list-style-type: none"><li>■ Run indication by green LED (On)</li><li>■ Function indication by red LED when bus active</li></ul>

### Mounting

Mounting	On 35 mm DIN top-hat rail (EN50022) any mounting position
Connections	For Pozidrive, Philips or slot-head screwdriver N°1 S0x, S-Bus, 230 VAC 0.5 ... 2.5 mm <sup>2</sup>

## Dimensioned drawings



## Display elements / settings

Switch for RS-485 bus termination resistor

Comm LED: indicates bus activity  
On LED: power indicator



Rotary switches for S-Bus address selection

### S0 inputs:

- Comply with S0 standard 62053-31
- Counts pulses as 0 when  $R < 800 \Omega$
- Counts pulses as 1 when  $R > 1 M\Omega$
- Voltage max. (GND-S0) 13 VDC
- Current max. (with 0  $\Omega$ ) 6 mA
- Pulses low min. 30 ms
- Pulses high min. 30 ms
- Frequency max. 17 Hz

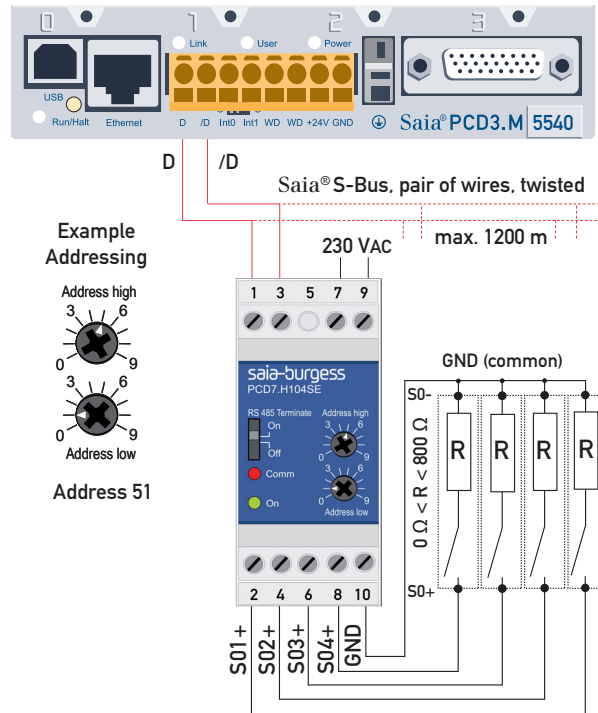
### Changing the S-Bus-Address:

- Switch off 230 VAC
- Set new address
- Switch on 230 VAC

#### Note:

The address setting will only be read when the module supply (230 VAC) is switched on.

## Wirings Diagram



**Note:** If the S0-S-Bus module is used in the S-Bus as last device, then the sliding switch «RS485 Terminate» need to be in the position «On».

## Technical data S-Bus

Bus system	Saia® S-Bus
Transmission rate	2'400-4'800-9'600-19'200-38'400-57'600-115'200. The transmission Baud rate is automatically detected
Transmission mode	Data
Bus length (max.)	1200 m (without repeater)
Response time: (to system response)	Write: 30 ms Read: 20 ms

- The communication is ready 30 s after the Power On
- For a description of the used Registers please look at the Register Page

### Data transmission:

- Only «read/write» register instructions are recognized.
- Only one register can be written at a time.
- The device will respond «NAK» if more than 1 register is written.
- Up to 20 Registers could be read at a time.
- The device will respond «NAK» if more than 20 registers are read.
- The device will not respond to any unknown query.
- The device has a voltage monitoring system. In case of voltage loss, registers are stored in EEPROM (transmission rate» etc.)



## Register

R	Read	Write	Description	Unit or Value
0	X		Firmware-Version	Ex: «10»= FW 1.0
1	X		S-Bus com. number of supported registers	will give «38»
2	X		S-Bus com. number of supported flags	will give «0»
3	X		Baudrate	BPS
4	X		Not used	will give a «0»
5	X		Type/ASN Funktion	will give «PCD7»
6	X		Type/ASN Funktion	will give «H104»
7	X		Type/ASN Funktion	will give «SE»
8	X		Type/ASN Funktion	will give «0»
9	X		HW Vers. Modif	Ex: «10»= HW 1.0
10	X		Not used	will give a «0»
11	X		Not used	will give a «0»
12	X		serial number	will give the serial number
13	X		Not used	will give a «0»
14	X		Status/Protect	«0» = no Problem «1» = Problem with last communication request
15	X		S-Bus Timeout	ms
16	X		S-Bus Address	0-99
17	X		Not used	will give a «0»
18	X		Not used	will give a «0»
19	X		Not used	will give a «0»
20	X	X	Counter S01	Ex: 912351 = 912351/2000 = 456.2 kWh
21	X	X	Counter S02	Ex: 912351 = 912351/2000 = 456.2 kWh
22	X	X	Counter S03	Ex: 912351 = 912351/2000 = 456.2 kWh
23	X	X	Counter S04	Ex: 912351 = 912351/2000 = 456.2 kWh
24	X	X	Impulses per unit for S01	Ex: 2000 = 2000 Imp/kWh
25	X	X	Impulses per unit for S02	Ex: 2000 = 2000 Imp/kWh
26	X	X	Impulses per unit for S03	Ex: 2000 = 2000 Imp/kWh
27	X	X	Impulses per unit for S04	Ex: 2000 = 2000 Imp/kWh
28	X	X	ID for S01	User defined identification number
29	X	X	ID for S02	User defined identification number
30	X	X	ID for S03	User defined identification number
31	X	X	ID for S04	User defined identification number
32	X		Not used	will give a «0»
33	X		Not used	will give a «0»
34	X		Not used	will give a «0»
35	X		Not used	will give a «0»
36	X	X	Transmission speed	1: 115200                      2: 57600 3: 38400                        4: 19200 5: 9600                         6: 4800 7: 2400
37	X	X	Auto-Baud ON	0: Auto-Baud detect OFF 1: Auto-Baud detect ON

## Contact

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Switzerland and international

Saia-Burgess Controls AG  
Bahnhofstrasse 18  
CH-3280 Murten / Switzerland  
T +41 (0)26 672 72 72  
F +41 (0)26 672 74 99  
pcdsupport@saia-burgess.com  
www.saia-pcd.com

Supplied by:

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Product Support.  
Technical reference website:

[www.saia-support.com](http://www.saia-support.com)