PSI5-POD

Hardware version	Up to 1.0
Software version	2.5.2
Technical data sheet version:	1.0
Order number	1.3003
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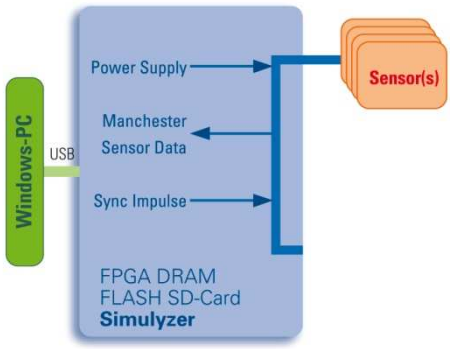
1. General

Sensors of automotive technique communicate via PSI5-Bus with the control unit. With the *PSI5-POD* data can be read quickly and easy and is able to react to the situation using simulated data.
The *PSI5-POD* is connected via USB cable with a Windows-based software. The *PSI5-POD* supplies the sensors with voltage.
The data communication between the ECU and the up to 4 sensors will be recorded and displayed.



1.1. Restriction facing PSI5 *Simulyzer*

- No measurement and presentation of PSI5 voltages and currents
- Only 1 PSI5 Interface
- Only ECU Mode
- Only 3 justablePSI5 voltages
- Sync-Puls always 4.8V higher than the adjusted PSI5 voltage
- No additonal analog in/outputs
- No additonal digital in/outputs

1.2. PSI5-BUS parameter

Data length	13 to 31 bits per data package (parity) 15 to 33 bits per data package (CRC)
Baud rate	Max. 189 kbit/s
Error detection	Parity/CRC
Supply voltage of the external sensors (ECU-Mode)	5.15V, 6.65V or 7.7V
Current supply (Permanent PSI5 current limited to 95 mA at maximum)	90 mA via power supply unit Supply via USB connector depends on the PC/Laptop
Shirt circuit current	Maximum PSI5 current 90mA. After that shirt circuit shutdown

2. Measurement recording

The PSI5 data are recorded as a FPGA decoded data in common with a time stamp.
The resolution is 1 µs. The data are stored in a file up to 4 gigabyte. The file is organized as a ring buffer (first in/last out)
During this time, the data are shown as permanently changing numbers or characteristics in the presentation window.

3. Presentation of the measurement data

3.1. Graphical presentation

The data of the ECU as well as the sensors are presented as an analog-signal and as a digital signal with seperate free selctable colors over a time axis.Trigger values and CRC resp. Parity error are marked up. The unit of the vertical axis is LSB, but can be changed in other units corresponding to the physical unit. The time section and the zoom of the presentation can be done individual.

3.2. Presentation in table form

The measurement data are addionally displayed as a textual table. Thereby each row represents a data frame of the SPI-Master resp. SPI-Slave. At the columns the time stamp, the number of transmitted bits, the hexadecimal value of the transmitted data frame of the ECU and the sensors as well as the extraced measurement data value are displayed. If an parity/CRC error occurs the corresponding line will be highlighted in red.

4. Stop of the measurement data recording

After starting the measurement data recording the measurement cycle can be stopped by following variations:

- Manual - by clicking on the stop button of the software
- After a defined time
- After a defined number of cycles.

5. Trigger of the measurement data - trigger events

By defining trigger values, specified events (trigger events) can be recorded and saved.
Definition of trigger values:

- Recognize a parity/CRC errors
- Data value levels: go below or beyond of a data value

After trigger a free defined number of data will be recorded. The according trigger events can be stored in defined time sections

6. Export of the measurement data

The recorded data are stored in binary form. They can be exported as a (*.txt) or (*.csv) file in different formats (TCDM, hexadecimal, decimal and as physical units. Thereby a selection of single measurement signals is possible.

7. Overview of the functions

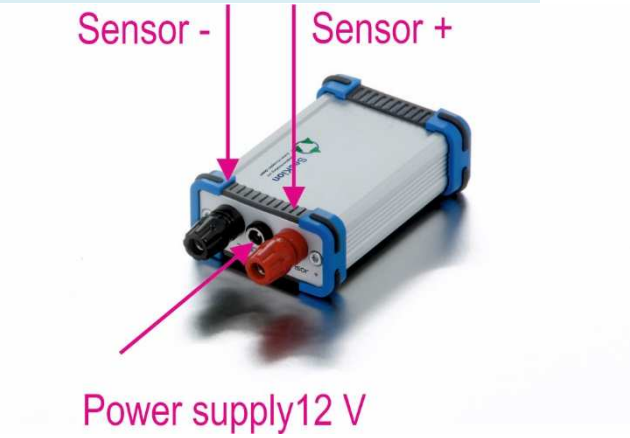
The following functions are available:

- Visualizing the PSI5-Bus communication
- Recording of the measurement data
- Stop of recording by defined values
- Simulation of the ECU
- Export/import of the sensor data
- PSI5-Bus parameter editor
- Table list of the measurement data
- Measurement data file inspector
- Definition of trigger values
- Analyze and saving trigger events
- Export of trigger events
- Definition of project files and their administration
- Diagnostic mode editor of the sensors.

8. Connections

Pin	Deescription
1	nc
2	CAN low
3	GND
4	nc
5	nc
6	GND
7	CAN high
8	nc
9	nc

Note: Terminating resistor between CAN-high and CAN-low is **not** implemented.



Note:
Supply voltage 12 V via external power supply (1 Ampére)
Ground of the supply voltage is connected with the case!
Ground of the cable signals have to be the same ground!

9. Technical data

Dimensions	95 x 63,6 x 33 mm
Case material	Alu
Wight	145 g
Operating temperature range	0°C … 40°C
Acceleration	Max. 3g
Rel. humidity	Max. 85% not condensed

10. Electrical data

Current consumption via USB	Typ. 100 mA
Supply voltage of the external sensors	4,6 …11 V
Dynam. RAM	128 MB
FPGA Soft µC Core	32 bit Soft-Core

Note:
The application of an external voltage over 6 V can disturb the *PSI5-POD*!

11. Environmental conditions

Usage sites are electronic engineering labours with corresponding ambient conditions.

12. Software system prerequisites

- Operating system: Windows 7 or 8, XP,10 (32 or 64 bit)
- Microsoft .Net 2.0 framework. Will be installed automatically.
- Memory: min. 1GB RAM
- Hard disk 100 MB to 4GB free capacity
  (limits of the data FIFO)
- Processor: min.1.5 GHz
- USB 2.0 High-speed interface
- Screen resolution: min.1024x768 Pixel, opt. 1280x720 Pixel

13. More information and tutorials

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