BaSyTec GmbH
Öllinger Weg 17
89176 Asselfingen, Germany
Tel. +49-7345-238-500
Fax +49-7345-238-500

www.BaSyTec.com
info@BaSyTec.com

Battery Test Systems
BaSyTec
Battery System Technology

BaSyTec SSMS Interface

Superior safety monitoring system interface

This document describes the SSMS interface between the BaSyTec battery test system and superior safety devices like climate chambers.

The functionality of this interface includes:

- Test active
  Locking the door of the test chamber if a test is active
- Chamber state
  Starting tests is only possible if the chamber is ready, including close-door-signal, inertisation, … If there is a problem with the chamber (including fire detection) tests will be stopped
- Tester state
  The chamber can see whether the test system is ready and maybe send a message if not.
- SSMS error
  The tester signals to the chamber that there is a problem with the outputs of the SSMS interface
- PC state
  The chamber can see whether the PC is still working and maybe send a message if not (as the test system is running independent from the PC it will usually not

Signal specification

Outputs from Tester to chamber:

Type:	safety relais outputs, monitored
Contact spec:	max. 500mA, max. 70V

Inputs at the tester:

Type:	Voltage inputs with internal 10k pullup against 5V Both the input and the responding GND have internal 2k2 in series TTL compatible (U_{in} < 0.5V is detected as active) 24V compatible (U_{in} > 20V is detected as active) (not at the BSD!) Max. U_{in} = 30V against earth (BSD: 5V) Not isolated – GND equals earth

SSMS Splitter

There is a SSMS splitter box availiable in order to connect one chamber to up to six battery tester outputs. They can be cascaded in order to have more.

All connections are by 1:1 DSUB25 cables (one side pins, one side sockets)

BaSyTec GmbH
Öllinger Weg 17
89176 Asselfingen, Germany
Tel. +49-7345-238-500
Fax +49-7345-238-500

www.BaSyTec.com
info@BaSyTec.com

Battery Test Systems
BaSyTec
Battery System Technology

BaSyTec SSMS Interface

Superior safety monitoring system interface

SSMS Interface connector
Once per channel, D-SUB 25, pins at the tester

Signal	Direction	Description	Pins
Tester state	Tester ▼ chamber	Tester signals that he has booted and got vaild firmware from the PC. Kept close until the system is switched off.	13 – 25 contact pair 1 12 – 24 contact pair 2
Test active	Tester ▼ chamber	Tester signals that a test is active by closing the contacts. Will be opened after the test is finished.	1 - 14 contact pair 1 2 - 15 contact pair 2
SSMS error	Tester ▼ chamber	Usually close after the tester has booted and the PC software is up, will be opened if one of the other outputs has a problem with its contacts. Will also open if the testers firmware cannot communicate to the interface any more.	11 - 23 contact pair 1 10 - 22 contact pair 2
PC up	Tester ▼ chamber	Closed if the PC and the BaSyTec software are up and have connection to the tester. Not implemented yet.	3 - 16 contact pair 1 4 - 17 contact pair 2
Chamber state	Tester ▲ chamber	Chamber signals by a close contact that everything is ok and the tester is cleared to run tests.	5 input signal 18 input GND
ResIn1	Tester ▲ chamber	Reserve input, should be closed for future use	6 input signal 19 input GND
ResIn2	Tester ▲ chamber	Reserve input, should be closed for future use	7 input signal 20 input GND
ResIn3	Tester ▲ chamber	Reserve input, should be closed for future use	8 input signal 21 input GND

BaSyTec GmbH
Öllinger Weg 17
89176 Asselfingen, Germany
Tel. +49-7345-238-500
Fax +49-7345-238-500

www.BaSyTec.com
info@BaSyTec.com

Battery Test Systems
BaSyTec
Battery System Technology

BaSyTec SSMS Interface

Superior safety monitoring system interface

SSMS Splitter

There is a SSMS splitter box availiable in order to connect one chamber to up to six battery tester outputs. They can be cascaded in order to have more.

All connections are by 1:1 DSUB25 cables (one side pins, one side sockets)

Signal	Direction	Connection in splitter	Pins
Tester state	Tester ▼ chamber	Serial. If one tester channels does not signal ready the chamber won't read "ready"	13 – 25 contact pair 1 12 – 24 contact pair 2
Test active	Tester ▼ chamber	Parallel. If one tester channel is active the chamber will read "active" (and keep the door locked).	1 - 14 contact pair 1 2 - 15 contact pair 2
SSMS error	Tester ▼ chamber	Serial. If one tester channel has a problem the chamber will detect it.	11 - 23 contact pair 1 10 - 22 contact pair 2
PC up	Tester ▼ chamber	Serial.	3 - 16 contact pair 1 4 - 17 contact pair 2
Chamber state	Tester ▲ chamber	Parallel. All tester channels read the same.	5 input signal 18 input GND
ResIn1	Tester ▲ chamber	Parallel. All tester channels read the same.	6 input signal 19 input GND
ResIn2	Tester ▲ chamber	Parallel. All tester channels read the same.	7 input signal 20 input GND
ResIn3	Tester ▲ chamber	Parallel. All tester channels read the same.	8 input signal 21 input GND

BaSyTec GmbH
Öllinger Weg 17
89176 Asselfingen, Germany
Tel. +49-7345-238-500
Fax +49-7345-238-500

www.BaSyTec.com
info@BaSyTec.com

Battery Test Systems
BaSyTec
Battery System Technology

BaSyTec SSMS Interface

Superior safety monitoring system interface

BSD

The BSD is another option of a BaSyTec battery tester, independent from the SSMS. But, as also related with safety, it is mentioned in this document.

The BSD is a redundant monitoring system for one channel of the battery tester. The BSD has direct access to the main output relais of the channel, so if the BSD detects a problem the output is forced switched off. As there is another option to check the contacts of the output relais this is safe.

The BSD has a digital input which has to be closed in order to clear the main output relais. So, if this contact is opened this can be used as a second way (additionally to the SSMS chamber state signal) in order to switch off the outputs of the tester.

This input has neither the voltage tolerance nor the 24V input feature of the SSMS inputs. So, a closing contact has to be used in order to interface to it.

BSD AUX interface connector, once per channel
D-SUB 9, Socket at the tester

Signal	Direction	Description	Pins
BSD ok	Tester ▼ chamber	Closed if the BSD signals “ok”	8 - 9 NO contact pair 1 3 – 5 NC contact pair 2
BSD ext in	Tester ▲ chamber	Chamber signals by a close contact that everything is ok and the tester is cleared to run tests. Both contact pairs have to be closed.	6 input signal AUX1 1 input GND AUX1 7 input signal AUX2 2 input GND AUX2