

## Technical Software Specifications - SPS TestManager

### Automotive software package 48V v1.1

The software package includes tests for electrical and electronic components in motor vehicles.

TestManager version SPS TestManager v2.17 or higher is required.

The required hardware can also be seen in the [hardware matrix](#).

(Not all tests from each standard are supported)

### List of standards and tests supported by the SPS TestManager software:

#### BMW GS 95026

2013-10

- E48-01a Long-term overvoltage
- E48-02 Transient overvoltage
- E48-03 Transient process in the lower operating range with limited function
- E48-04 Recuperation
- E48-05 Superimposed AC voltage
- E48-06 Slow decrease and increase of the supply voltage
- E48-07 Slow decrease, quick increase of the supply voltage
- E48-08 Reset behavior
- E48-09 Short interruptions
- E48-10 Start pulses
- E48-11 Loss of ground BN48
- E48-12 Ground offset
- E48-13 Internal dielectric strength
- E48-14 Closed-circuit current
- E48-15 Operation in the range without functional limitation
- E48-16 Operation in the upper range with functional limitation
- E48-17 Operation in the lower range with functional limitation
- E48-18 Overvoltage range
- E48-19 Undervoltage range
- E48-20 Fault current
- E48-21 Short circuit in signal circuit and load circuits

**ISO 21780**

2020-08

- Test-01: Nominal voltage range
- Test-02: Transitory voltage ranges
- Test-03: Short term overvoltage
- Test-05: Starting profile
- Test-06: Long term overvoltage
- Test-08: Decrease and increase of supply voltage
- Test-09: Voltage ripples
- Test-10: Reinitialisation
- Test-11: Discontinuities in supply voltage
- Test-12: Ground loss
- Test-13: Fault current
- Test-14: Ground offset
- Test-15: Short circuit in signal line and load circuit
- Test-16: Quiescent current

**ISO 21848**

2005-04

- 4.1 Direct current
- 4.2 Overvoltage
- 4.3 Superimposed alternating voltage
- 4.4 Slow decrease and increase supply voltage
- 4.5 Discontinuities in supply voltage
- 4.6 Reversed voltage
- 4.7 Open circuit test
- 4.8 Short circuit protection

**LV 148**

2013-09

- E48-01a Long-term overvoltage
- E48-02 Transient overvoltage
- E48-03 Transient process in the lower operating range with limited function
- E48-04 Recuperation
- E48-05 Superimposed AC voltage
- E48-06 Slow decrease and increase of the supply voltage
- E48-07 Slow decrease, quick increase of the supply voltage
- E48-08 Reset behavior
- E48-09 Brief interruptions
- E48-10 Start pulses
- E48-11 Mass loss
- E48-12 Ground offset
- E48-13 Internal dielectric strength
- E48-14 Closed-circuit current
- E48-15 Operation in the range without functional limitation
- E48-16 Operation in the upper range with functional limitation
- E48-17 Operation in the lower range with functional limitation
- E48-18 Overvoltage range
- E48-19 Undervoltage range
- E48-20 Fault current, part 1
- E48-20 Fault current, part 2
- E48-21 Short circuit in signal circuit and load circuits

**VDA 320**

2015-01

- E48-01a Long-term overvoltage
- E48-02 Transient overvoltage
- E48-03 Transient event in lower limited operation range
- E48-04 Recuperation
- E48-05 Superimposed alternating voltage
- E48-06 Slow decrease and increase of the supply voltage
- E48-07 Slow decrease, quick increase of the supply voltage
- E48-08 Reset behavior
- E48-09 Brief interruptions
- E48-10 Start pulses
- E48-11 Mass loss
- E48-12 Ground offset
- E48-13 Internal dielectric strength
- E48-14 Closed-circuit current
- E48-15 Operation in the range without functional limitation
- E48-16 Operation in the upper range with functional limitation
- E48-17 Operation in the lower range with functional limitation
- E48-18 Overvoltage range
- E48-19 Undervoltage range
- E48-20a Fault current, part 1
- E48-20b Fault current, part 2
- E48-21 Short circuit in signal line and load circuits

**VW 82148**

2013-09

- E48-01a Long-term overvoltage
- E48-02 Transient overvoltage
- E48-03 Transient process in the lower operating range with limited function
- E48-04 Recuperation
- E48-05 Superimposed AC voltage
- E48-06 Slow decrease and increase of the supply voltage
- E48-07 Slow decrease, quick increase of the supply voltage
- E48-08 Reset behavior
- E48-09 Brief interruptions
- E48-10 Start pulses
- E48-11 Mass loss
- E48-12 Ground offset
- E48-13 Internal dielectric strength
- E48-14 Closed-circuit current
- E48-15 Operation in the range without functional limitation
- E48-16 Operation in the upper range with functional limitation
- E48-17 Operation in the lower range with functional limitation
- E48-18 Overvoltage range
- E48-19 Undervoltage range
- E48-20 Fault current, part 1
- E48-20 Fault current, part 2
- E48-21 Short circuit in signal circuit and load circuits