

TRANSIENT EMISSION SET

AUTOMOTIVE TRANSIENT EMISSION MEASUREMENTS AS PER ISO 7637-2



FOR TESTS ACCORDING TO ...

- > ISO 7637-2:2004
- > ISO 7637-2:2011
- > ISO 7637-2.2 (Draft Ed.3)

TEST SET FOR THE MEASUREMENT OF AUTOMOTIVE TRANSIENT EMISSIONS AS PER ISO 7637

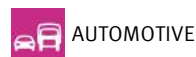
The measurement of automotive transient emissions as per ISO 7637-2 requires an electronic switch, a mechanical switch and an artificial network. The electronic switch is a repeatable, calibrated 300 ns semiconductor switch, which is used in most applications, both fast and slow. While, the BS 200N100.1 can be used up to 1300 V, the standard recommends a mechanical switch for transient emissions over 400 V.

The artificial network represents the typical impedance of the wiring harness. The AN 200N100 is designed to meet the requirements of ISO 7637-2, CISPR 25 / ISO 11452-4 and CISPR 16-1-2 and can be switched accordingly.

HIGHLIGHTS

- > **BS 200N100.1 - Electronic switch, 60V DC/100A:**
- > - Volt.Drop <1.2V@100A, <0.2V@25A
- > - Voltage suppression typ. 1,300V
- > - Reverse-polarity/short-circuit protected
- > **BSM 200N40 - Mechanical switch, 12/24V DC/40A**
- > **AN 200N100 - ISO 7637-2, CISPR 25, CISPR 16-1-2**
- > - Frequency range 100 kHz - 125 MHz

APPLICATION AREAS



TECHNICAL DETAILS

TRANSIENT EMISSION SET - THE BENEFITS

The EM TEST Transient Emission Set consisting of the BS 200N100.1 electronic switch, the artificial network AN 200N100 and the BSM 200N40 mechanical switch is an easy-to-use, economic and compact solution, fully compliant to ISO 7637-2.

Small size of the equipment and short interconnections allow to meet the distances specified by the standard. An optional resistor box RS-Box with shunt resistor is available for transient emission measurements as per ISO 7637-2:2004 and ISO 7637-2:2011.

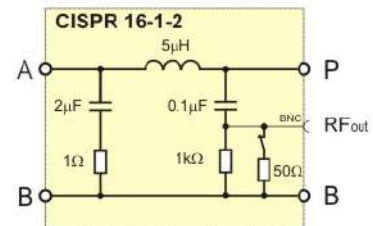
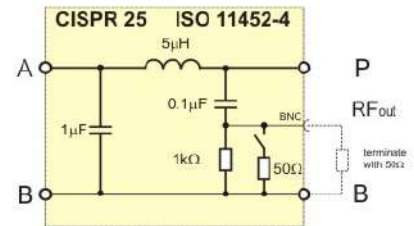
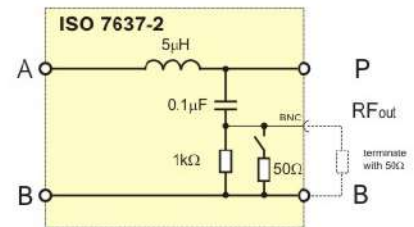
The RS-Box offers the required 40ohm shunt resistor and other demanding shunt resistors values of e.g. 10ohm, 20ohm and 120ohm.



MULTI-PURPOSE AN 200N100

THREE-IN-ONE ARTIFICIAL NETWORK

The AN 200N100 is the multi-purpose artificial network designed to cover four different test requirements. The various configurations are selected by two switches. One switch is used to configure the AN 200N100 mains input (no capacitor as per ISO 7637-2, 1uF capacitor across the mains input as per CISPR 25 and ISO 11452-4 or 2uF capacitors in series with a 1ohm resistor as per CISPR 16-1-2). A second switch is used to switch in the internal 50ohm termination resistor as required. The AN 200N100 is fully adapted to the various test requirements and shows the typical impedance characteristics according to the different standards.



TECHNICAL DETAILS

BS 200N100.1 - ELECTRONIC SWITCH

SPECIFICATION	
Operation voltage	Max. 60 V DC
Operation current	Max. 100 A continuous
Suppression voltage	Typ. 1,300 V
Inrush current	Max. 400 A for 200 ms
Voltage drop	< 1.2V at 100 A < 0.2V at 25 A
Overvoltage protection	By varistors
Overload protection	Short-circuit protected Reverse-polarity protected

SWITCH CHARACTERISTICS

Switching time	300ns +/- 20% into test load 50 uH/0.6 ohm
On/Off time	10ms to 500ms, continuously selectable via potentiometer
Operation mode	Indicated by LED

TRIGGER

Manual	Manual trigger of a single event
Auto	Automatic trigger with min. 0.1Hz to max. 1Hz repetition, continuously selectable by potentiometer
External In	External trigger, negative going edge 0 V, BNC input 10 V

MEASUREMENT

Voltage monitor	BNC output; divider 1:200 +/-5 %
Trigger Out	BNC output; negative going edge 0 V

GENERAL DATA

Dimensions, weight	90 mm x 125 mm x 120 mm (LxWxH) (without connecting sockets) approx. 1.3 kg
Supply voltage	24 VDC via mains supply adapter

AN 200N100 - ARTIFICIAL NETWORK

TECHNICAL DATA

as per	ISO 7637-2, CISPR 25, ISO 11452-4 and CISPR 16-1-2, switchable
Frequency range	0.1 to 125 MHz
Operation voltage	1,000 V DC/250 V AC up to 1 kHz
Operation current	Max. 100 A AC/DC continuous
Inrush current	Max. 400 A for 200 ms
Impedance	5 uH // 50 ohm for details see diagrams on page 2
Insertion loss	less than 3 dB DUT to receiver output
Inductance	5uH +/-10 % air-core coil
Coupling capacitor	0.1 uF

CONNECTIONS

Power supply/DUT connection	High-current connectors up to 100 A 4mm safety lab connectors up to 32 A
Test output	BNC-connection

GENERAL DATA

Dimensions	318 x 126 x 122 mm (L x W x H) (without connecting sockets)
Weight	approx. 2.8 kg

TECHNICAL DETAILS

BSM 200N40 - MECHANICAL SWITCH

SPECIFICATIONS

Operation voltage DUT supply	12 V/24 V
Operation current	Max. 40 A DC continuous, resistive load
Maximum current I _{max}	40 A @13.5 V 20 A @27.0 V
Contact	high purity silver contacts, no suppression across relay contact, insulated from the coil circuit

SWITCH CHARACTERISTICS

Pulse duration	> 50 ms up to 500 ms
Pulse repetition	1 s to > 10 s
Operating mode	Indicated by LED

TRIGGER

Manual	Manual trigger of a single event
Auto	Automatic trigger with min. 0.1 Hz to max. 1Hz repetition, continuously selectable by potentiometer
External	External trigger negative going edge 0V, BNC input
Operation	Indicated by LED

MEASUREMENT

Voltage monitor	BNC output; divider 1:200 +/-5 %
CRO trigger	BNC output, negative going edge 0 V

GENERAL DATA

Dimensions, weight	90 mm x 105 mm x 104 mm (LxWxH) (without connecting sockets) approx. 0.8 kg
Supply voltage	24 V DC via mains supply adapter

OPTIONS

OPTIONAL ACCESSORIES

CA BS 200N	Calibration load 0.6 ohm and 50 uH for the verification of the electronic switch characteristic
RS-BOX	Shunt resistor box with R _s = 10 ohm, 20 ohm, 40 ohm and 120 ohm

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