

# UCS 200N SERIES

## ULTRA COMPACT SIMULATORS FOR AUTOMOTIVE TRANSIENTS



### FOR TESTS ACCORDING TO ...

- › Audi (Reference vehicles)
- › BMW - (Airbag ECU)
- › BMW 600 13.0 (Part 2)
- › BMW GS 95002 (1999)
- › BMW GS 95002 (2001)
- › BMW GS 95024-2-1
- › Case New Holland ENS0310
- › Chrysler CS-11809 (2009)
- › Chrysler CS-11979
- › Chrysler DC-11224 Rev.A
- › Chrysler PF-9326
- › Claas CN 05 0215
- › Cummins 14269 (982022-026)
- › DaimlerChrysler DC-10614
- › DaimlerChrysler PF-10540
- › EN 300329
- › EN 300340
- › EN 300342-1
- › EN 301489-1
- › EN 301489-17
- › EN 301489-24
- › ...



### ULTRA-COMPACT SIMULATORS FOR AUTOMOTIVE TRANSIENTS FOR PULSES 1, 2 AND 3A/3B

The UCS 200N Ultra-Compact Simulator series for Automotive Transients unifies the capabilities of an EFT/Burst simulator, a Micropulse simulator and the required coupling network into one box. The UCS 200N series is equipped to meet all international and car manufacturer specifications from around the globe. The built-in coupling network ranges up to 200A depending on the model. The built-in coupling network can be used and controlled by any unit of the LD 200N series, VDS 200N series and PFS 200N series. For tests beyond standard's requirements the waveform parameters of the Micropulse generator can be varied in a wide range by means of the FreeStyle mode.

### HIGHLIGHTS

- › Built-in EFT/Burst generator module
- › Built-in Micropulse generator module (ISO 7637, JASO, SAE and NISSAN)
- › Built-in coupling network 80V, up to 200A
- › Built-in battery switch
- › Overcurrent protection
- › USB and GPIB-Bus

### APPLICATION AREAS

-  AUTOMOTIVE
-  TELECOM

## TECHNICAL DETAILS

### BENEFITS

#### SMARTEST SOLUTION FOR AUTOMOTIVE TRANSIENT TESTING

Never before an Ultra-Compact Simulator for automotive transient testing like the UCS 200N series was available. All international standards and most car manufacturer requirements have been put into one box. All pulses are fully compliant to the specifications. Even more, the waveform parameters for micropulses can be varied in order to test with pulses beyond any standard specification.

The UCS 200N series is the heart of the redesigned EM TEST Automotive test set-up having the ability to control any external EM TEST Load Dump and Battery Supply simulator. The built-in coupling network for nominal DC currents of up to 200A forms the single-port DUT connection for fully automated tests.

The software iso.control with its extensive standards library put this test equipment to the top with almost unlimited test capabilities.

### SOFTWARE

#### ISO.CONTROL SOFTWARE FOR CONTROL AND DOCUMENTATION

Outstanding user convenience, clearly structured windows and operation features and the EM TEST standards library along with the flexibility to generate user specific test sequences very easily are the main features of iso.control software. The software is automatically configured according to the connected EM TEST generators. iso.control software covers international/national standards and most of the manufacturer standards and is continuously updated. Extensive reporting capabilities help the user to create test reports that meet international requirements. iso.control is supported by Windows 7, Windows 8 and Windows 10. Remote control is achieved either via USB or GPIB and additional via Ethernet for external measuring instruments.

iso.control supports a wide range of GPIB cards of National Instruments.

### OPERATION

#### EASY TO OPERATE

Front panel menu and function keys enable the user to program his test routines quickly and accurately. The cursor allows fast control of all test parameters of the programmed routine, thus test procedures are simplified and confidence is generated that every step is carried out correctly.



### ACCESSORIES

#### ACC - CAPACITIVE COUPLING CLAMP

All lines other than supply lines are subjected to electrical fast transient pulses by means of the ACC complying to ISO 7637-3:2007

#### CA EFT KIT - VERIFICATION KIT FOR EFT/BURST PULSES

As per ISO 7637-2:2011 the characteristic of the burst generator needs to be verified with two different loads 50 ohm and 1,000 ohm. EM TEST offers a calibration kit consisting of the two loads and an adapter to verify the pulses.

#### CA ISO - LOAD RESISTORS FOR PULSE VERIFICATION

A set of highly-accurate load resistors is unified in a single box for the verification of micropulses and Load Dump pulses as specified in ISO 7637-2:2011, Annex C and a wide range of manufacturer specifications.

## TECHNICAL DETAILS

## UCS 200N SERIES

## UCS 200N MODELS

UCS 200N50	Built-in coupling/decoupling network, 80V/50A, 100A@500ms
UCS 200N100	Built-in coupling/decoupling network, 80V/100A, 150A@500ms
UCS 200N150	Built-in coupling/decoupling network, 80V/150A
UCS 200N200	Built-in coupling/decoupling network, 80V/200A

## INPUT

DUT supply +/-	DC voltage from VDS 200N or any other DC supply
Pulse 5, 7	From one LD 200N

## OUTPUT

DUT supply +/-	Central DUT output
Coaxial output port	To connect the capacitive coupling clamp as per ISO 7637-3:2007

## ELECTRICAL FAST TRANSIENTS

## EFT/BURST MODULE FOR TEST PULSES 3A/3B

	As per ISO 7637-2
Test voltage	25V - 1,000V ± 10%
Rise time	5ns ± 1.5ns
Pulse duration	150ns ± 45ns
Verification	As per Annex C of ISO 7637-2:2011 into 50ohm and 1,000ohm load
Source impedance	Z <sub>q</sub> = 50ohm
Polarity	Positive/negative (Pulse 3b/3a)

## TRIGGER CIRCUIT

Trigger of bursts	Automatic, manual, external
Burst duration	T <sub>4</sub> = 0.1ms - 999.9ms
Repetition rate	T <sub>5</sub> = 10ms - 9,999ms
Spike frequency	f = 0.1kHz - 200kHz
Test duration	T = 0:01min - 999:59min T > 999:59min --> endless

## OUTPUTS

Direct	Via 50ohm-coaxial connector (for tests using e.g. a capacitive coupling clamp)
Coupling mode	To the + battery line (supply lines)
CRO trigger	5V trigger signal for oscilloscope

## TEST ROUTINES

Quick Start	On-line adjustable parameters, easy-to-use
Standard Test routines	As per ISO 7637-2:2011, Levels 1 - 4
User Test routines	Random burst release Change voltage after T Change frequency after T

**TECHNICAL DETAILS**

**MICROPULSES**

MICROPULSE MODULE FOR TEST PULSES 1, 2A AND 6	
	As per ISO 7637-2:2011
Test voltage	U = 20V - 600V ± 10% (peak voltage and polarity as per selected standard)
Repetition rate	0.2s - 99.0s

ISO PULSE 1 (12V)	
Rise time	1us +0%/-50% (10% - 90%)
Pulse duration	2ms ± 10% (10% - 10%)
Int. resistor	10ohm ± 10%

ISO PULSE 1 (24V)	
Rise time	3us +0%/-50% (10% - 90%)
Pulse duration	1ms ± 10% (10% - 10%)
Int. resistor	50ohm ± 10%

ISO PULSE 2 (12V/24V)	
Rise time	1us +0%/-50% (10% - 90%)
Pulse duration	50us ± 10% (10% - 10%)
Int. resistor	2ohm ± 10%

ISO PULSE 6 (12V) AS PER ISO 7637-1:1990	
Rise time	60us +0%/-50% (10% - 90%)
Pulse duration	300us ± 10% (10% - 10%)
Int. resistor	30ohm ± 10%

AS PER ISO 7637-2 THE FOLLOWING STANDARDS CAN BE COVERED	
SAE J1113	GM 3097
BMW	Volkswagen
PSA	Chrysler PF 9326
DC 10614	Renault
FIAT	Mitsubishi
Honda	Ford ES-XW7T

**MICROPULSES**

TRIGGER	
Automatic	Automatic release of the pulses
Manual	Manual release of a single pulse
External	External release of a single pulse
Battery switch	Off time, selectable; 0 - 10,000ms

OUTPUT	
DUT supply +/-	Central DUT output
Coupling	To the battery +line
Decoupling	Via diode and battery supply switch

TEST ROUTINES	
Quick Start	Immediate start; easy to use and fast
User Test routines	1. Custom made test routines 2. Change voltage after n pulses
Standard Test routines	As per ISO 7637, SAE J1113, JASO and manufacturer specifications
Service	Service, setup, self test

## TECHNICAL DETAILS

## MICROPULSES AS PER MANUFACTURER STANDARDS

## JASO D-001, PULSE A2

Test voltage	+110V
Capacitor	C = 4.7uF
Pulse duration	2.5us ± 30% at tau(36.8%)
R1	0.6ohm ± 10%
R2	0.4ohm ± 10%
Polarity	Positive

## JASO D-001, PULSE B2

Test voltage	-260V
Capacitor	C = 33uF
Pulse duration	2.0ms ± 20% at tau(36,8%)
R1	60ohm ± 10%
R2	80ohm ± 10%
Polarity	Negative

## JASO D-001, PULSE D2

Test voltage	+170V
Capacitor	C = 2.2uF
Pulse duration	2.5us ± 30% at tau(36,8%)
R1	1.2ohm ± 10%
R2	0.9ohm ± 10%
Polarity	Positive

## NISSAN 28400 NDS 03, PULSE B2

Test voltage	-300V ± 10%
Capacitor	C = 33uF
R1	100ohm ± 10%
R2	75ohm ± 10%
Polarity	Negative

## NISSAN 28400 NDS 07, PULSE C8

Test voltage	±300V ± 10%
Capacitor	C = 1uF
R1	500ohm ± 10%
R2	450ohm ± 10%
Polarity	Positive and negative

## MICROPULSES AS PER MANUFACTURER STANDARDS

## NISSAN 28400 NDS 07, PULSE C50

Test voltage	±300V ± 10%
Capacitor	C = 33uF
R1	30ohm ± 10%
R2	200ohm ± 10%
Polarity	Positive and negative

## NISSAN 28400 NDS 07, PULSE C300

Test voltage	-300V ± 10%
Capacitor	C = 33uF
R1	100ohm ± 10%
R2	75ohm ± 10%
Polarity	Negative

## SAE J1455 | MUTUAL PULSE

Rise time	1us ± 20% (10% - 90%)
Pulse duration	15µs ± 20% at tau(36.8%)
Int. resistor	50ohm ± 10%

## SAE J1455 | INDUCTIVE PULSE

Rise time	1us ± 20% (10 - 90%)
Pulse duration	1,000us ± 20% at tau(36.8%)
Int. resistor	20ohm ± 10%

## FREESTYLE MODE MICROPULSES

## PULSE PROGRAMMING MODE

Rise time	1us - 10us in steps of 1us
Pulse duration	50us - 10,000us
Int. resistor	2ohm - 100ohm in steps of 5ohm; 200ohm, 400ohm and 450ohm

## TECHNICAL DETAILS

## GENERAL DATA

## DIMENSIONS AND WEIGHT

UCS 200N50	19"/3HU, approx. 20kg
UCS 200N100	19"/6HU, approx. 30kg
UCS 200N150	19"/9HU, approx. 35kg
UCS 200N200	19"/9HU, approx. 35kg
Supply voltage	115/230V +10/-15%
Fuses	2 x T 2AT (230V) or 2 x T 4AT (115V)

## INTERFACE

Serial interface	USB
Parallel interface	IEEE 488, addresses 1 - 30
CN interface	To control the internal CN and battery switch

## ENVIRONMENT

Temperature	10 °C to 35 °C
Humidity	30 % to 75 %, non condensing
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)

## OPTIONS

## OPTIONS

ACC	Capacitive coupling clamp
KW 50	100:1 divider, 50ohm
KW 1000	500:1 divider, 1,000ohm
CA EFT kit	EFT/Burst verification kit
A6dB	6dB attenuator, 50ohm
CA ISO	Load resistors for the verification of micropulses and Load Dump pulses
iso.control	Software to control the test, including standard library, test report facility and data conversion generator.

# COMPETENCE WHEREVER YOU ARE



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