

UCS 200NX.3 SERIES

ULTRA COMPACT SIMULATORS FOR AUTOMOTIVE TRANSIENTS



FOR TESTS ACCORDING TO ...

- › Case New Holland ENS0310
- › Chrysler CS-11979
- › Cummins 14269 (982022-026)
- › DaimlerChrysler DC-10614
- › DaimlerChrysler PF-10540
- › EN 301489-24
- › EN 301489-7
- › FAW Diesel ECU MY06.0 (Rev.7)
- › Fiat 9.90110
- › Ford EMC-CS-2009.1
- › Ford ES-XW7T-1A278-AB
- › Ford ES-XW7T-1A278-AC
- › Ford WDR 00.00EA
- › Freightliner 49-00085
- › GM 9105P
- › GMW 3097
- › GOST 28751-90
- › ISO 7637-1:1990
- › ISO 7637-2:1990
- › ISO 7637-2:2004

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

The UCS 200Nx.3 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 200Nx.3 series is equipped to meet the VW TL 82066 pulse 1 and pulse 2 and the most 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 200Q 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, VW TL 82066, SAE and NISSAN)
- › Built-in coupling network 80V, up to 200A
- › Built-in battery switch
- › Overcurrent protection

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 200Nx.3 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 200Nx.3 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 200 A 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 XP, Windows Vista, Windows 7 and Windows 8 (32/64 Bit). Remote control is achieved either via USB or GPIB. 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 200NX.3 SERIES

UCS 200NX.3 MODELS

UCS 200N50.3	Built-in coupling/decoupling network, 80 V/50 A, 100 A@500 ms
UCS 200N100.3	Built-in coupling/decoupling network, 80 V/100 A, 150 A@500 ms
UCS 200N150.3	Built-in coupling/decoupling network, 80 V/150 A
UCS 200N200.3	Built-in coupling/decoupling network, 80 V/200 A

INPUT

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

OUTPUT

DUT supply +/-	Central DUT output
Coaxial output port	To connect the capacitive coupling clamp as per ISO 7637-3:2016

ELECTRICAL FAST TRANSIENTS

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

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

TRIGGER CIRCUIT

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

OUTPUTS

Direct	Via 50 ohm-coaxial connector (for tests using e.g. a capacitive coupling clamp)
Coupling mode	To the + battery line (supply lines)
CRO trigger	5 V 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 and VW TL 82066
Test voltage	U = 20 V - 600 V $\pm$ 10% (peak voltage and polarity as per selected standard)
Repetition rate	0.2 s - 99.0 s

ISO PULSE 1 (12 V)

Rise time	1 μ s +0 %/-50 % (10 % - 90 %)
Pulse duration	2 ms $\pm$ 10 % (10 % - 10 %)
Int. resistor	10 ohm $\pm$ 10 %

ISO PULSE 1 (24 V)

Rise time	3 μ s +0 %/-50 % (10 % - 90 %)
Pulse duration	1 ms $\pm$ 10 % (10 % - 10 %)
Int. resistor	50 ohm $\pm$ 10 %

ISO PULSE 2 (12 V/24 V)

Rise time	1 μ s +0 %/-50 % (10 % - 90 %)
Pulse duration	50 μ s $\pm$ 10 % (10 % - 10 %)
Int. resistor	2 ohm $\pm$ 10 %

ISO PULSE 6 (12 V) AS PER ISO 7637-1:1990

Rise time	60 μ s +0 %/-50 % (10 % - 90 %)
Pulse duration	300 μ s $\pm$ 10 % (10 % - 10 %)
Int. resistor	30 ohm $\pm$ 10 %

AS PER ISO 7637-2 THE FOLLOWING STANDARDS CAN BE COVERED

SAE J1113	VW TL 82066
BMW	Ford ES-XW7T
PSA	Chrysler PF 9326
DC 10614	Renault
FIAT	Mitsubishi
Honda	

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 - 10,000 ms

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, VW TL 82066 and manufacturer specifications
Service	Service, setup, self test

TECHNICAL DETAILS

MICROPULSES AS PER
MANUFACTURER STANDARDS

VOLKSWAGEN TL 82066, PULSE 1, (12 V SYSTEM)

Test voltage	-100 V ($\pm 10\%$)
Rise time	0.5 μ s to 1.0 μ s (no load)
Pulse duration	2,000 μ s $\pm$ 400 μ s, (no load)
Pulse duration	1,500 μ s $\pm$ 300 μ s, (load 4 ohm)
Ri	4.0 ohm $\pm 10\%$
Polarity	Negative

VOLKSWAGEN TL 82066, PULSE 2, (12 V, 24 V SYSTEM)

Test voltage	75 V ($\pm 10\%$)
Rise time	0.5 μ s to 1.0 μ s (no load)
Pulse duration	50 μ s $\pm$ 10 μ s, (no load)
Pulse duration	12.0 μ s $\pm$ 2.4 μ s, (load 4 ohm)
Ri	4.0 ohm $\pm 10\%$
Polarity	Positive

NISSAN 28400 NDS 03, PULSE B2

Test voltage	-300 V $\pm 10\%$
Capacitor	C = 33 μ F
R1	100 ohm $\pm 10\%$
R2	75 ohm $\pm 10\%$
Polarity	Negative

NISSAN 28400 NDS 07, PULSE C8

Test voltage	± 300 V $\pm 10\%$
Capacitor	C = 1 μ F
R1	500 ohm $\pm 10\%$
R2	450 ohm $\pm 10\%$
Polarity	Positive and negative

MICROPULSES AS PER
MANUFACTURER STANDARDS

NISSAN 28400 NDS 07, PULSE C50

Test voltage	± 300 V $\pm 10\%$
Capacitor	C = 33 μ F
R1	30 ohm $\pm 10\%$
R2	200 ohm $\pm 10\%$
Polarity	Positive and negative

SAE J1455 | MUTUAL PULSE

Rise time	1 μ s $\pm 20\%$ (10% - 90%)
Pulse duration	15 μ s $\pm 20\%$ at tau(36.8%)
Int. resistor	50 ohm $\pm 10\%$

SAE J1455 | INDUCTIVE PULSE

Rise time	1 μ s $\pm 20\%$ (10% - 90%)
Pulse duration	1,000 μ s $\pm 20\%$ at tau(36.8%)
Int. resistor	20 ohm $\pm 10\%$

FREESTYLE MODE MICROPULSES

PULSE PROGRAMMING MODE

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

TECHNICAL DETAILS

GENERAL DATA

DIMENSIONS AND WEIGHT

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

INTERFACE

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

ENVIRONMENT

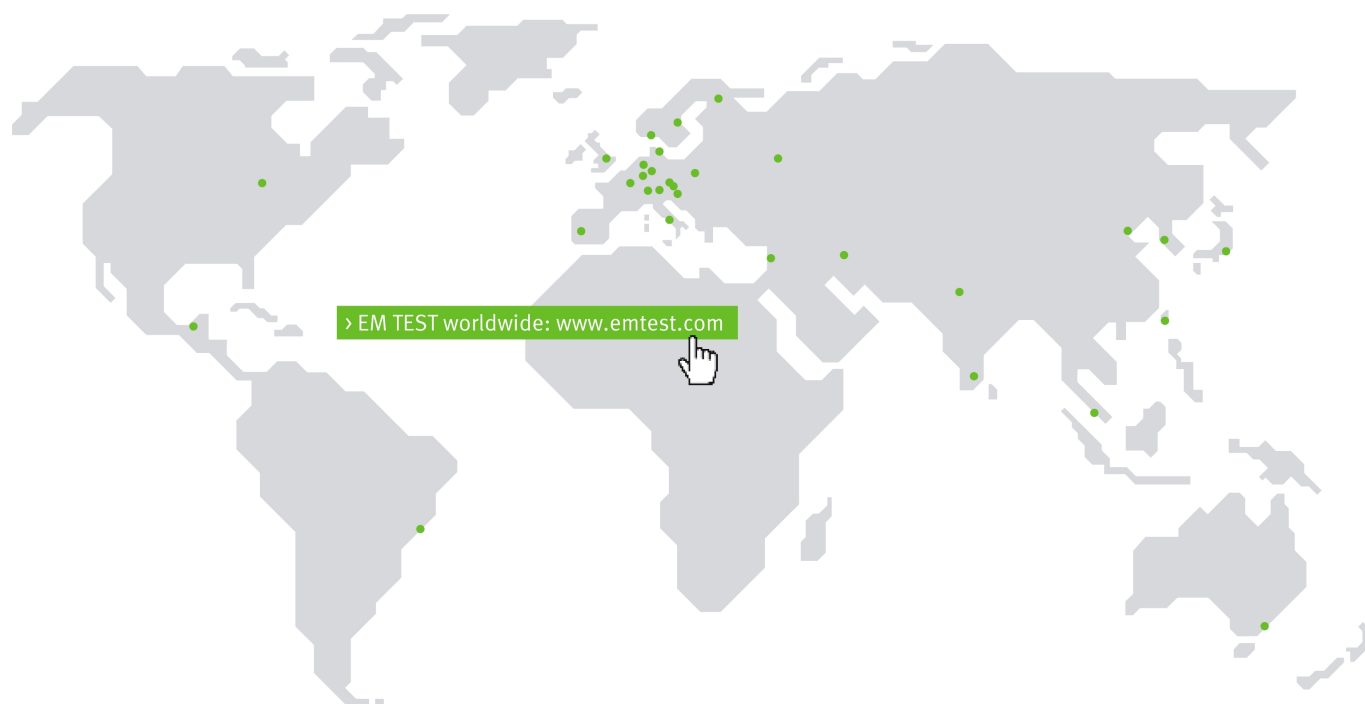
Temperature	10 °C to 35 °C
Humidity	30 % to 75 %, non condensing
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)

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	6 dB attenuator, 50 ohm
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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Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.