emtest / AMETEK

LD 200N series
Load Dump Generator

Load Dump pulses simulate a sudden battery disconnection (e.g. by corrosion) from the alternator. Due to the loss of the battery load the alternator generates an overvoltage impulse. Such Load Dump pulses are high energy pulses with a high potential of destruction.
The LD 200N simulates these high energy pulses having a duration time in the range of hundreds of milliseconds.
The LD 200N generates the Load Dump pulses as per ISO 7637, ISO 16750-2, SAE J1113, SAE J1455, JASO and many more manufacturer specification, e.g. Ford, Chrysler, PSA, etc.
By using the built-in clipping circuit, the LD 200N also generates clipped load dump pulses as per international standards as well as manufacturer requirements.

MAIN FEATURES

- **Load Dump generator according to ISO 7637-2, ISO 16750-2, SAE J1113, SAE J1455, JASO and most car manufacturer requirements**
- **Generates clipped Load Dump pulses**
- **Built-in 0.5 - 38 Ω source impedance, selectable in 0.1 Ω steps**
- **Pulse duration up to 1200 ms**
- **Built-in coupler 80 V / 30 ADC, extendable to 100 ADC**
- **Front panel operation**
- **Freestyle mode**
- **USB and GPIB remote interfaces**

Models

LD 200N	Built-in coupler 80 VDC / 30 A
LD 200N100	Built-in coupler 80 VDC / 100 A Buit in DC-switch, standalone device

Technical Specifications

Pulse Parameter	
Amplitude	20 ... 200 V +/- 10 %
Rise time	5 ... 10 ms
Pulse width	40 ... 400 ms +/- 20%
Internal resistor Ri	0.5 ... 38 Ω, step size 0.1 Ω
Clipping voltage range	15 ... 99.5 V (referred to 0V line)
Polarity	pos / neg *
Pulse repetition time	15 ... 999 s
FreeStyle	
Pulse rise time	1 ... 10'000 µs
Pulse width	10 ... 1200 ms +/- 20%
Pulse repetition time	3 ... 999 s

Remark:
Not all above listed parameters are available for all the different pulses.

* Negative polarity only for LD 200N100 model possible.
LD 200N needs the coupling inside the UCS 200Nx series to perform pulses with negative polarity.

General Specifications

Parameter	LD 200N	LD 200N100
DUT supply voltage	80 VDC	
DUT supply current	30 A	100 A
Inrush current	No	
DC battery switch built-in	No. Only when using a UCS 200Nx	Yes
Over current protection	No. Only when using a UCS 200Nx	Yes
Inputs	+/- Test supply IN	
Outputs	+/- Test supply OUT	
	+/- Pulse OUT	
Remote interface	GPIB / USB	
Other interfaces	D-sub connector, to UCS 200Nx series	No
Triggers	1 x Trigger IN / 1 x Trigger OUT	
External impedance Ri	Yes, 10 Ω min. setting at the generator + external impedance value	
Safety	Safety circuit, Warning lamp	
Dimensions	19" / 6 HU (500 x 450 x 287 mm)	19" / 9 HU (500 x 450 x 420 mm)
Weight	30 kg	40.1 kg
Power mains supply	115 / 230 VAC +10/-15% ; 50 - 60Hz	
Fusage	2 x 2 AT (230 VAC) / 2 x 4 AT (115 VAC)	
Temperature	10 ... 35 °C	
Humidity	30 ... 75 %, non condensing	
Athmospheric pressure	860 ... 1060 mbar	

Accessories

iso.control	remote control software tool
CA ISO	Calibration adapter, reistors for pulse verification acc. to ISO 7637-2 and ISO 16750-2

More automotive emc test generators

AMP 200N2	Audio Amplifier Module for magnetic field and AC ripple testing
AutoWave	ArbWave generator and much more
PFM 200N series	Power Fail Module for fast drop-out testing, rise < 200 ns
PFS 200N series	Power Fail Simulator for dip and drop testing, rise / fall time < 1us
UCS 200N series	Ultra Compact Simulator, containing ISO pulses 1, 2a, 3a/3b and others, coupling 50 ... 200 ADC
VDS 200Qx.2 series	4-quadrant amplifier, -20 ... +80 VDC, up to 200 A

Pulses (extract)

ISO 7637-2 / 16750 -2	Pulse 5	Pulse 5b
Amplitude	+ 65 ... 174 V +/- 10 %	+ 65 ... 174 V +/- 10 %
U clipped	-	35 V
Rise time	10 ms +0/-5 ms	10 ms +0/-5 ms
Pulse width	40 ... 400 ms +/- 20 %	40 ... 400 ms +/- 20 %
Ri	0.5 ... 8 Ω +/- 10 %	0.5 ... 8 Ω +/- 10 %

SAE J1455	12 V applications	24 V applications
Amplitude	+ 86 V +/- 10 %	+ 122 V +/- 10 %
Rise time	< 100 µs	< 100 µs
Pulse width	400 ms +/- 10 %	400 ms +/- 10 %
Ri	0.4 Ω +/- 10 %	0.8 Ω +/- 10 %

Jaso	Pulse A1	Pulse B1	Pulse D1
Amplitude	+ 70 V +/- 10 %	- 80 V +/- 10 %	+110 +/- 10 %
Rise time	< 1 µs	< 1 µs	< 1 µs
Pulse width	200 ms @ tau +/- 20 %	60 ms @ tau +/-20%	400 ms @ tau +/-20%
Int. restistor	0.8 Ω	8 Ω	1.5 Ω
Capacitor	110 mF	3 mF	73 mF

Ford FMC 1278	Pulse 5A (open)	Pulse 5A (loaded)	Pulse 5B (loaded)
Amplitude	+ 60 V +/- 10 %	+ 30 V +/- 10 %	+ 30 V +/- 10 %
U clipped	-	-	21.5 V +0/-1 V
Rise time	10 ms +0/-5 ms	10 ms +0/-5 ms	10 ms +0/-5 ms
Pulse width	300 ms +/- 20 %	150 ms +/- 20 %	150 ms +/- 20 %
Ri	0.5 Ω +/- 10 %	0.5 Ω +/- 10 %	0.5 Ω +/- 10 %

MBN 10284 Part 2	Pulse 5a (12 V)	Pulse 5a (24 V)	Pulse 5a (42 V)
Amplitude	+ 100 V +/- 10 %	+ 200 V +/- 10 %	+ 100 V +/- 10 %
Rise time	< 0.1 ms	< 0.1 ms	< 0.1 ms
Pulse width	400 ms +/- 10 %	400 ms +/- 10 %	400 ms +/- 10 %
Ri	2 Ω +/- 10 %	2 Ω +/- 10 %	2 Ω +/- 10 %

Scania	TB 1400	TB 1700
Amplitude	+ 90 ... 125 V +/- 10 %	+ 125 V +/- 10 %
Rise time	1 ... 10 ms	1 ... 10 ms
Pulse width	300 ... 480 ms +/- 20 %	480 ms +/- 20 %
Ri	1.5 Ω +/- 10 %	1.5 Ω +/- 10 %