VDS 200R SERIES
VOLTAGE DROP SIMULATOR - BATTERY SIMULATOR AND DC VOLTAGE SOURCE

The VDS 200R series is used to simulate the various battery supply waveforms recommended by international standards and by car manufacturer requirements. Especially the manufacturer requirements are an important area covered by the VDS 200R series as there is a large variety of requirements. Secondly, the VDS 200R series serve as powerful DC voltage supplies for the DUT during the tests with automotive transients. The VDS 200R series covers all three supply voltage categories (48 V, 24 V and 12 V). Their current capability ranges up to 100 A.

HIGHLIGHTS
- Voltage up to 60 V
- Current up to 100 A (200 A peak)
- Two quadrant
- Fast rise time
- Very Low Ri, < 10 mOhm
- High Bandwidth up to 150 kHz
- Temperature-controlled air cooling

APPLICATION AREAS

FOR TESTS ACCORDING TO ...
- ISO 16750-2
- ISO 7637-2:2011
- SAE J1113-11
- many other automotive standards
## TECHNICAL DETAILS

### MODEL OVERVIEW

#### AVAILABLE VDS 200R-MODELS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDS 200R25</td>
<td>Voltage Drop Simulator, 60 V / 25 A</td>
<td>60 V</td>
<td>25 A</td>
</tr>
<tr>
<td>VDS 200R50</td>
<td>Voltage Drop Simulator, 60 V / 50 A</td>
<td>60 V</td>
<td>50 A</td>
</tr>
<tr>
<td>VDS 200R100</td>
<td>Voltage Drop Simulator, 60 V / 100 A</td>
<td>60 V</td>
<td>100 A</td>
</tr>
</tbody>
</table>

#### VDS 200R25
- **Output Range**: 0 V to +60 V
- **Output Current**: 0 A - 25 A, continuous
- **Peak Current**: 50 A for 200 ms
- **Bandwidth**: DC - 150 kHz full signal
- **Supply Voltage**: 1-phase 100/120/230 V ±10%, L, N, PE
- **Dimensions**: 19”/25 HU*)
- **Weight**: 230 kg

#### VDS 200R50
- **Output Range**: 0 V to +60 V
- **Output Current**: 0 A - 50 A, continuous
- **Peak Current**: 100 A for 200 ms
- **Bandwidth**: DC - 150 kHz full signal
- **Supply Voltage**: 3-phase 200/400 V ±10%, L1, L2, L3, PE
- **Dimensions**: 19”/25 HU*)
- **Weight**: 275 kg

(*) 38 HU variants, with space available for a UCS 200N, LD 200N, PFM 200N or PFS 200N are also available.

#### VDS 200R100
- **Output Range**: 0 V to +60 V
- **Output Current**: 0 A - 100 A, continuous
- **Peak Current**: 200 A for 200 ms
- **Bandwidth**: DC - 150 kHz full signal
- **Supply Voltage**: 3-phase 200/400 V ±10%, L1, L2, L3, PE
- **Dimensions**: 19”/38 HU
- **Weight**: 450 kg

### COMMON DATA (ALL MODELS)

<table>
<thead>
<tr>
<th>Category</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source Impedance</strong></td>
<td>$Z_i = \langle 10 \text{ m}\Omega \rangle$</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Two quadrant operation</td>
</tr>
<tr>
<td><strong>Recovery</strong></td>
<td>&gt;90% of excursion within 25 us</td>
</tr>
<tr>
<td><strong>Output Rise Time</strong></td>
<td>typ. &lt; 3 \text{ us}</td>
</tr>
<tr>
<td><strong>Ripple Voltage</strong></td>
<td>Ur &lt;10 mV\text{p-p, frequency min. }400 \text{ Hz}</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Analog In, Internal</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Temperature-controlled air cooling</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Thermal-Magnetic Circuit Breakers Depending on VDS 200R model</td>
</tr>
</tbody>
</table>

### TRIGGER
- **Automatic**: Automatic release of the events
- **Manual**: Manual release of a single pulse
- **External**: External release of a single pulse

### OUTPUT
- **DUT Supply +/-**: Safety laboratory or high current connectors
- **Ext. trigger**: 5-15 V TTL, BNC connector
- **CRO Trigger**: 5 V TTL-signal for oscilloscope

### INTERFACE
- **Interfaces**: USB, Ethernet (for optional AutoWave), IEEE 488, addresses 1 - 30
- **Remote control**: To connect an external signal generator (100 kohm): 0 - +10 V / 0 - 150 kHz (Gain 8, 60 V max.)
## OPERATION

<table>
<thead>
<tr>
<th>TEST ROUTINES FOR ARBITRARY WAVES</th>
<th>GENERAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DC source</strong></td>
<td>OPERATING ENVIRONMENT</td>
</tr>
<tr>
<td>Depending on VDS 200R model</td>
<td>Temperature 10 - 40 °C</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td>Rel. humidity 10 - 90 %, non-condensing</td>
</tr>
<tr>
<td>Sine Wave Sweep</td>
<td>Atmospheric pressure 86 kPa (860 mbar) to 106 kPa (1,060 mbar)</td>
</tr>
<tr>
<td>Sine Wave (Cranking)</td>
<td></td>
</tr>
<tr>
<td>Clipped Load Dump</td>
<td></td>
</tr>
<tr>
<td>Jump Start</td>
<td></td>
</tr>
<tr>
<td>GM 9105P Pulse 4</td>
<td></td>
</tr>
<tr>
<td>Drop and Jump pulse</td>
<td></td>
</tr>
<tr>
<td>External</td>
<td></td>
</tr>
<tr>
<td><strong>Standard test routines</strong></td>
<td>OPTIONS</td>
</tr>
<tr>
<td>ISO 7637, Pulses 2b and 4</td>
<td>AutoWave 2 or 4-channel arbitrary generator for automotive test applications</td>
</tr>
<tr>
<td>ISO 16750-2</td>
<td></td>
</tr>
<tr>
<td><strong>Service</strong></td>
<td>iso.control Software to control the test, including standard library, test report facility and data conversion generator</td>
</tr>
<tr>
<td>Service, Setup, Self test</td>
<td></td>
</tr>
</tbody>
</table>
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.