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# LAB-DR Dual Range Programmable DC Sources

## Description

The LAB-DR has single and dual output models rated between 100W and 210W. Each unit has two ranges giving the flexibility of different voltage and current combinations. Output terminals on the rear and front panels make these units ideal for benchtop use and rackmounted ATE systems. Along with the standard USB an additional 1 or 2 analogue or computer interfaces can be specified or retro fitted. The units feature a front panel memory that enables up to 150 set ups to be stored. Voltage, current and slew rates can be saved and recalled. The user can therefore produce DC waveforms to simulate automotive cranking curves, voltage drops and interruptions and test loads with a pulsing source. The time period can be adjusted from 10ms to 20,000 seconds. The transient response to a load step change is as quick as <50us for some models. A special mode aimed at LED testing minimises the inrush current further increasing the LAB-DRs flexibility. The front panel LCD is highly accurate and features excellent resolution in to the mV and uA ranges. To help protect sensitive loads the user can adjust the OVP and OCP levels in addition to the normal voltage and current limits. Remote sense capability is provided to compensate for voltage losses in the load lines. A front panel key lock function and simple user calibration round off a rich feature set ensuring the LAB-DR is suitable for the widest range of applications.



- Single and dual output versions with high/low ranges
- USB as standard, GPIB, LAN, RS232, RS485 options
- Soft panel, LabVIEW drivers and C support
- Built in waveform generator
- Low ripple and noise
- Front panel memory

## Selection Table

	Part Number	Range I High Voltage	Output Power	Range II High Current	Dimensions (Width x Height x Depth)	Weight
<b>Single Output Models</b>	LAB-DR 1001	0 - 20Vdc/0 - 5A	100W	0 - 10Vdc/0 - 10A	210 x 87 x 414mm	7kgs
	LAB-DR 1002	0 - 70Vdc/0 - 1.5A	105W	0 - 35Vdc/0 - 3A	210 x 87 x 414mm	7kgs
	LAB-DR 2001	0 - 36Vdc/0 - 4A	144W	0 - 18Vdc/0 - 8A	210 x 87 x 414mm	7.7kgs
	LAB-DR 2002	0 - 20Vdc/0 - 10A	200W	0 - 10Vdc/0 - 20A	210 x 131 x 415mm	12kgs
	LAB-DR 2003	0 - 70Vdc/0 - 3A	210W	0 - 35Vdc/0 - 6A	210 x 131 x 415mm	11kgs
	LAB-DR 2004	0 - 200Vdc/0 - 1A	200W	0 - 100Vdc/0 - 2A	210 x 131 x 415mm	12kgs
	LAB-DR 2005	0 - 600Vdc/0-350mA	210W	0 - 400Vdc/0-500mA	210 x 131 x 415mm	12kgs
<b>Dual Output</b>	LAB-DR 1201	0 - 20Vdc/0 - 5A	200W	0 - 10Vdc/0 - 10A	210 x 131 x 415mm	10½kgs
	LAB-DR 1202	0 - 70Vdc/0 - 1.5A	210W	0 - 35Vdc/0 - 3A	210 x 131 x 415mm	10½kgs



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## Technical Data

	20/36Vdc Models	70Vdc Models	200V Models	600V Models
<b>Ripple &amp; Noise</b> (20Hz - 20MHz)				
Normal Mode Voltage	≤0.35mVrms / 3mVpp	≤0.5mVrms/5mVpp	≤1.5mVrms/15mVpp	≤4.5mVrms/45mVpp
Normal Mode Current	≤2mA			
Common Mode Current	≤1.5uArms			
<b>Stability</b>				
Voltage	± (≤0.02% FS + 2mV)	± (≤0.02% FS + 2mV)	± (≤0.02% FS + 10mV)	± (≤0.02% FS + 20mV)
Current	± (≤0.1% FS + 1mA)			
<b>Temp Coefficient</b>				
Voltage	± (≤0.005% FS + 2mV)	± (≤0.005% FS + 2mV)	± (≤0.005% FS + 10mV)	± (≤0.005% FS + 20mV)
Current	± (≤0.01% FS + 3mA)			
<b>Resolution</b> (setting & readback)				
Voltage	<1mV	<2mV	<10mV	<20mV
Current	<1mA	<200uA	<100uA	<10uA
<b>Accuracy</b> (setting & readback)				
Voltage	± (≤0.05% FS + 10mV)	± (≤0.05% FS + 10mV)	± (≤0.05% FS + 50mV)	± (≤0.05% FS + 100mV)
Current	± (≤0.1% FS + 5mA)	± (≤0.1% FS + 5mA)	± (≤0.1% FS + 1mA)	± (≤0.1% FS + 100uA)
Overvoltage Protection (OVP)	± (≤0.5% FS + 100mV)	± (≤0.5% FS + 100mV)	± (≤0.5% FS + 1V)	± (≤0.5% FS + 1V)
Overcurrent Protection (OCP)	± (≤0.5% FS + 100mA)			
<b>Line &amp; Load Regulation</b>				
Voltage	± (≤0.01% FS + 1mV)			
Current	± (≤0.01% FS + 250uA)			
<b>Rise &amp; Fall Times</b>				
Rise time (Full Load)	<10ms	<10ms	<40ms	<40ms
Rise time (No Load)	<10ms	<10ms	<40ms	<40ms
Fall time (Full Load)	<10ms	<10ms	<40ms	<40ms
Fall time (No Load)	<250ms			
Transient Response <sup>1)</sup>	≤50us	≤50us	≤100us	≤100us
<b>Other</b>				
Mains Input	115/230VAC ±10%, 47 - 63Hz			
Remote Sense Compensation	1Vmax			
OCP/OVP Activation Time	typ ≤1ms for output to start dropping once OCP/OVP level breached			
Operating Temperature	0 to 40 °C (Storage -10 to +70 °C)			
Cooling	Variable speed, load controlled fan			
Remote Control Interfaces	Standard: USB (Virtual COM Port)		Optional: GPIB/LAN, RS232, RS485, Analogue	

<sup>1)</sup> Time for voltage to recover to within 15mV (≤70V models) or 50mV (200V models) or 120mV (600V models) following a change in output current from half load to full load or vice versa.

## Options Table

Code	Description
/LT+LAN.....	IEEE 488.2 (GPIB) & LAN interface
/LTRS485.....	RS485 Interface
/LTRS232.....	RS 232 Interface, listener and talker
/1DIO.....	Analogue interface for single output models
/2DIO.....	Analogue interface for dual output models
/RM2U1.....	Rack mount kit for a single 2U high model
/RM2U2.....	Rack mount kit for a 2 * 2U high models side by side
/RM3U1.....	Rack mount kit for a single 3U high model
/RM3U2.....	Rack mount kit for a 2 * 3U high models side by side

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ET must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. Please note that your actual unit may differ from that shown.