Sorensen XDL Series II

Digitally Controlled DC Linear Power Supplies

- Very high precision, very low noise, excellent dynamics

- Advanced user interface with direct numericentry and incremental rotary control

- Fifty store/recall setup locations

- Fully isolated outputs for maximum flexibility

- Constant voltage or constant current operation with automatic crossover and mode indication

- GPIB, RS-232, USB and LXI Compliant LAN Ethernet are provided interfaces

	~	115	230

CERTIFIED USB · GPIB · RS232 · LXI

Exceptional precision

The XDL Series II offers an unparalleled level of precision. Voltage and current are controlled using instrumentation quality 16 bit DACs enabling voltages to be set to 1mV resolution even at full output voltage. Indeed, the accuracy is sufficient for the XDL to be used as a calibration source for some hand-held DMMs.

Multiple ranges for greater flexibility

The XDL Series II provides multiple ranges for increased current capability at lower voltages. The XDL564, for example, is a 112W PSU with three ranges. The main range offers 0 to 56 volts at up to 2 amps. The higher current range provides up to 4 amps for voltages up to 25V. A further low current range provides an enhanced current setting and measurement resolution of 0.1mA.

Unrivalled performance

The XDL Series II uses pure linear technology and offers unrivalled performance in terms of regulation, output noise and dynamics. Line and load regulation are close to the limit of measurement. Recovery time from transient current pulses is better than 50µs. Differential output noise is less than 350µV rms in CV mode and down to 20µA rms in CI mode. Of equal importance for critical applications in areas such as telecoms is common mode noise current (the noise current flowing between the output terminals and ground). This is less than 4µA rms on the XDL Series II - dramatically better than most other PSUs.

Direct numeric entry

Settings can be made by direct numeric entry using the 0 to 9 keypad. Each new setting is previewed on the display and must be confirmed with the OK key. Settings recalled from memory are similarly previewed and confirmed. Numeric setting is very fast requiring only three key presses to set to 5 volts, for example, (V, 5, OK). To set a more precise level such as 12.725 volts requires more key presses, but can still be done in seconds.

Incremental rotary control

For those preferring quasi-analogue control, or for applications where the voltage or current must be gradually changed, the Jog wheel is available. The wheel has a positive stepped action but can be spun rapidly when required. Output voltage can be incremented or decremented in steps of 0.1V, 10mV or 1mV. Current steps can be selected from 0.1A down to 0.1mA.

The Jog function can be left permanently engaged or can be disabled at the touch of a button.

Setting memories for added convenience

The XDL Series II II provided storage of up to 50 power supply sets-up in non-volatile memory (160 set-ups for a triple). Voltage, current, OVP and OCP are all saved. An further power-down memory is also incorporated. Upon mains switch-off, the set-up of the PSU is saved and is automatically restored at switch-on. On the triple output models, independent memories are provided for each output, plus an additional set for 'linked' mode where the user may wish to recall settings for both outputs simultaneously.

Remote or local sense

The XDL Series II provides full remote sense capability via dedicated sense terminals. Remote sense is essential to maintain regulation at the load (two 0.01 Ohm connection leads will drop 100mV at 5 amps).When remote sense is not required, internal local sensing can be selected at the touch of a button.

AMETEK®
PROGRAMMABLE POWER

XDL Series II : Product Specifications[1]

Output : Voltage and Current

Models	35-5	35-5T	35-5P	35-5TP	56-4	56-4P
Output Range	1 0-35 V, 0-3 A	0-35 V, 0-3 A	0-35 V, 0-3 A	0-35 V, 0-3 A	0-56 V, 0-2 A	0-56 V, 0-2 A
Output Range 2	0-15 V, 0-5 A	0-15 V, 0-5 A	0-15 V, 0-5 A	0-15 V, 0-5 A	0-25 V, 0-4 A	0-25 V, 0-4 A
Output Range 3	0-35 V, 0-500.0 mA	0-35 V, 0-500.0 mA	0-35 V, 0-500.0 mA	0-35 V, 0-500.0 mA	0-56 V, 0-500.0 mA	0-56 V, 0-500.0 mA
Outputs	1	2 + 1 Aux	1	2 + 1 Aux	1	1
Output Power	105 W	215 W	105 W	215 W	112 W	112 W
Interface (GPIB/RS-232/USB/LXI LAN)	No	No	Yes	Yes	No	Yes
Voltage Setting	By floating point numeric entry or rotary jog wheel; resolution 1mV					
Current Setting	By floating point numeric entry or rotary jog wheel; resolution 1mA or 0.1mA depending on range					
Voltage Setting	Resolution 1mV Accuracy ± (0·03% + 5mV)					
Current Setting	Resolution 1mA; 0·1mA on 500mA range Accuracy ± (0·2% + 5mA); ± (0·2% + 0·5mA) on 500mA range.					
Output Mode	Operation in constant voltage or constant current modes with automatic cross-over and mode indication by LEDs.					
DC Output Switch	Illuminated when output is on. Preset voltage and current limit displayed when output is off.					
Output Terminals	4 mm terminals on 19 mm (0.75") spacing. Duplicate rear panel sense terminals on remote control models (XDL35-TP)					
Load Regulation	Voltage: < 0.01% + 2 mV Current: < 0.01% + 250 µA; < 0.01% + 50 µA on 500 mA range (measured at output terminals using remote sense)					
Line Regulation	Voltage: < 0.01% + 2 mV for 10% line change Current: < 0.01% + 250 µA; < 0.01% + 50 µA on 500 mA range					
Ripple and Noise	Typically < 0.35% 1mVrms 2 mVp-p CV mode, and < 0.2 mArms, < 20 µArms (500 mA range) CI mode					
Transient Response	50 µs to within 15 mV of set level for a change in load current from full load to half load or vice versa					
Temperature Coefficient	<± (50 ppm + 0.5 mV) / °C, < (100ppm + 1 mA) °C, < (100ppm + 0.1 mA) 500 mA range typical					
Remote Sense	Eliminates up to 0.5 V drop per lead. Remote sense operation selected from front panel and indicated by LED					
Sense Terminals	Recessed sprung sockets for direct insertion of wires. Duplicated on rear terminal block (P versions only)					
Auxiliary Logic Output	Voltage	2-7V or 5V, selectable by front panel switch				
	Voltage Accuracy	± 5%				
	Current Limit	1A minimum				
	Output Protection	Output will withstand up to 16V forward voltage. Diode clamp reverse protection for currents up to 3A.				
	Ripple & Noise (20MHz Bandwidth)	Typically <1m Vrms				
	Load Regulation	<1-0% for 90% load change				
	Line Regulation	<0-1% for a 10% line voltage change				
	Status Indication	Current limit lamp.				
Digital Bus Interfaces (P suffix models only)	All interfaces are at ground potential and opto-isolated from the output terminals. RS-232: Standard 9-pin D connector. Baud rate variable 600 to 19,200. USB: USB 2.0 connection operates as a virtual COM port. GPIB (IEEE-488): The interface conforms with IEEE-488.1 and IEEE-488.2. Ethernet (LAN): Standard 10/100 base-T hardware connection. ICMP and TCP/IP Protocol for connection to Local Area Network or direct connection to a single PC. LAN interface is compliant with LXI class C.					

General Specifications

Operational AC Input Voltage	115 V or 230 V ± 10% (adjustable internally, option HV for factory set 230 Vac input), 50/60 Hz. Installation Category II
Operating Temperature Range	5 to 40°C, 20% to 80% RH
Storage Temperature Range	- 40 to 70°C
Dimensions (H x W x D)	6.3 x 5.5 x 11.4" (160 x 140 x 290 mm) (XDL 35-5, XDL 35-5P, XDL 56-4, XDL 56-4P), 6.3 x 11.0 x 11.4" (160 x 280 x 290 mm) (XDL 35-5T, XDL 35-5TP)
Weight	11.9 lb (5.4 kg) (XDL 35-5, XDL 56-4) 12.1 lb (5.5 kg) (XDL 35-5P, XDL 56-4P) 23.1 lb (10.5 kg) (XDL 35-5T) 23.3 lb (10.6 kg) (XDL 35-5TP)
Benchtop Operation	Folding legs are incorporated that can be used to angle the front panel upwards when required
Rack Mount Operation	19-inch 4U mount for up to three single output units or one triple, plus one single Blanking plates available for unused sections
Approvals	CE-marked units meet: EN61010-1 and EN61326

Specifications subject to change without notice.

Model Number Description

XDL 35 - 5 ___ ___ (XXX)

Series ⎯

Voltage ⎯

Current ⎯

Blank - Single Output
T - Triple Output

P - Remote control Option

Options

Notes

AMETEK