



# THURLBY THANDAR INSTRUMENTS

## New PL & PL-P Series



### Advanced DC Laboratory Power Supplies - 75 watts to 180 watts

- ▶ Linear regulation for optimum output noise and transient response
- ▶ Ultra compact dimensions for minimum bench or rack space
- ▶ True analog controls for simplicity of operation
- ▶ Advanced digitally based feature set including V-Span and S-Lock
- ▶ Remote control using Analog, RS-232, USB, and LAN/LXI (PL-P series)

# New PL Series

## Analog control for a digital world

### Building on the success of a winning formula

In the 1980s the original PL series transformed customer expectations of the bench power supply and set a format that has been extensively copied by other manufacturers.

Over the years, the PL series has been steadily revised and extended. Hundreds of thousands of PL series units are currently in use across the world and it remains the laboratory power supply of choice for many organisations.



TTi has been at the forefront of laboratory power supply design for around thirty years during which it has re-defined the state-of-the-art for switch mode products with its innovative Mixed-mode and PowerFlex regulator designs.

Continuing development of linear models has generated the lower cost EL series, and the advanced QL series. However, demand for the PL series has remained strong - demonstrating how well it has met the needs of its many customers.

Now TTI has engineered an all-new design which retains all the key features of the original PL series, but combines them with new and important features.

### Analog controls with digital stability

As technology has changed, many products have moved from analog controls to digital ones. Although digital controls suit many instruments, they do not necessarily suit a bench power supply.

Customer research shows that many users prefer the speed and simplicity of conventional analog controls for setting voltage and current. Digital controls may offer greater precision, but often at the expense of ease-of-use.

With this in mind, the New PL series has retained the true analog controls of its predecessor.

The main disadvantage of analog controls is stability and security. The settings of analog potentiometers can drift over time. More importantly, the settings can be changed accidentally with potentially serious consequences.

The New PL series introduces **S-Lock**. One press of the Lock button transfers control of voltage and current from the analog controls to internal digital circuitry.

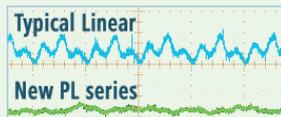
This offers not just complete security, but exceptional stability as well with each setting controlled by an instrumentation quality DAC.

### Linear regulation for ultra-low noise

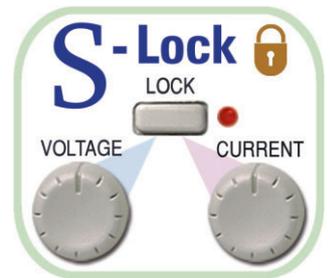
Linear regulation still offers the lowest output noise and the best transient response (recovery time from a sudden current step).

Most linear regulated power supplies offer low output noise with figures below 2mV rms being typical.

The New PL series goes a stage further and an rms noise figure of 0.4mV with tightly specified pk-pk noise and common-mode current figures.



*Lock your settings at the touch of a button!*



### Choose a voltage range that suits your task

When working with any particular piece of equipment, engineers often require a voltage source variable over only a narrow range. Set the voltage too high and damage might occur, set it too low and the circuit may reset.

That's where the **V-Span** function of the New PL series comes in. It allows the user to re-define the end-stop values of the voltage control to define a specific voltage range.



For example:

An engineer is working on a circuit that will eventually operate from four NiMh cells.

They use V-Span to set a Vmax of 5.8 volts (to prevent over-voltage damage) and a Vmin of 3.6 volts (to ensure that the circuit doesn't reset).

They now have a power supply which provides high-resolution analog control over the exact voltage range they need.

*Vmin and Vmax can be set anywhere between zero and maximum output voltage subject only to  $V_{max} \geq (V_{min} + 0.1V)$ .*

*The fine control gives additional adjustment of  $\pm 1\%$ .*

Once set, the voltage span function can be turned on or off at the press of a button\*.



# New PL series - ultra compact using minimum bench or rack space

## Ultra-compact design with higher power efficiency and near-silent cooling

The New PL series achieves an exceptional power density for a linear regulated power supply by offering up to 90 watts from a ¼ rack 3U sized casing.

This gives it an unusually small bench footprint taking up less space on a crowded bench.

For rack-mount application, up to four units can be mounted into a single 3U slot.

Despite its small size and linear regulation, the New PL series generates relatively little heat through the use of an advanced phase controlled pre-regulator.

This gives it significantly higher energy efficiency than conventional linear regulated designs, particularly when supplying lower voltages.

The internal heat-sinks use fan-assisted convection cooling in order to remove the heat with minimal fan noise.

### Actual size

High accuracy four digit meters have a fixed resolution for consistent readings at-a-glance.

View and adjust setting limits at any time.

**S-Lock** digitally locks voltage and current settings at the touch of a button.

**True** analog controls make adjustment quick and simple.

**V-Span** enables the full 300° rotation of the voltage control to cover any voltage range.

Safety binding post terminals can accept fixed-shroud 4mm plugs\*\* as well as normal plugs, bare wires, and fork connectors.



Low current range gives 0.1mA meter resolution and finer low-end setting.

Meter averaging reduces the jitter from rapidly varying load currents.

DC output switch enables voltage and current to be set up before connecting the load.

Voltage sensing can be changed between local and remote at the flick of a switch.

### Better performance ....

- ▶ **Linear regulation:** ultra-low output noise and fast transient recovery
- ▶ **High power density:** 90 watts per output from an ultra-compact case size
- ▶ **Higher precision:** exceptional line and load regulation; easy-switch remote sense
- ▶ **Better metering:** high accuracy four digit fixed-resolution meters; low current range; current meter averaging

### .... with real ease of use

- ▶ **True analog controls:** quick and intuitive adjustment of voltage and current
- ▶ **With digital convenience:** unique S-Lock and V-Span functions (see opposite)
- ▶ **See exactly what's happening:** dc output switch - check your settings before applying them; 'view settings' button - check and adjust limits at any time
- ▶ **Safe and secure to use:** lockable voltage and current settings (using S-Lock); connect via safety binding-post terminals

# Dual Output model & Remote Control models

## PL303QMD quad-mode dual



### Compact Dimensions

The PL303QMD is a dual output power supply with the same high power density as the single output models - 180 watts from a half rack 3U sized casing.

### Four modes of operation

The PL303QMD is more than just two PL303 single power supplies in one box. It has four modes of operation: Independent, Isolated Tracking, Isolated Ratio Tracking, and True Parallel.

### Simultaneous output control

The Both On/Both Off buttons are in addition to the individual switches for each output, and allow both outputs to be turned on or off synchronously by a single button press.

Synchronous switching of the outputs is of increasing importance for circuitry which can be damaged if one voltage rail is present without the other.

**Independent Mode:** The two outputs are completely independent and electrically isolated from each other.

**Isolated Tracking Mode:** The two outputs remain electrically isolated, but the voltage control of the Master output sets an identical voltage on the Slave output.

Note: Isolated Tracking enables the user to create two rails of either polarity and to reference them to different grounds if necessary (e.g. digital ground and analog ground)..

**Isolated Ratio Tracking Mode:** As normal tracking, but the Slave voltage can be set to any percentage of the Master voltage and retains that ratio as the Master voltage is varied.

**True Parallel Mode:** All of the power is channelled to the Master output which can then supply up to 6 amps.

Note: In Parallel mode the Master side becomes a single 180 watt power supply, with the current meter operating to 6 amps. The slave output is disabled and its displays are turned off.

### \* Safety interlocks

A key requirement in a power supply is to prevent a the wrong voltage or current being accidentally applied to the circuit-under-test.

Consequently all operations that could result in an unexpected change in voltage or current settings are interlocked with the output switch to prevent this.

### \*\* Safety terminals

The use of fixed-shroud 4mm plugs is becoming mandatory within an increasing number of laboratories for safety reasons.

Standard binding post terminals can not accept these fixed-shroud plugs.

## New PL-P Series - analog and digital remote control

Each model in the New PL Series will also be available with full analog and digital remote control. These models will have a P suffix (e.g. PL155P).

### Important Note:

At the time of printing of this brochure, specifications for P suffix models (New PL-P Series) were not finalised. The following descriptions could therefore be subject to change. Please contact TTI or visit the web site for up to date information concerning product availability and detailed specifications.

### General

From the front, PL-P models are identical to standard PL models and retain all of their manual control features.

The rear panel carries RS-232, USB and LAN (Ethernet) connectors, along with analog in and out, remote on/off control, and duplicate output and sense terminals.

### Digital Remote Control

Each of the digital bus interfaces provides full control of voltage, current, and output on/off, plus read-back of voltage, current and status.

### RS-232 and USB

The RS232 interface operates at up to 19,200 baud and is provided for use with legacy systems.

USB provides a simple means of connection to a PC and is particularly appropriate for small system use.

### 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.

### LXI Compliance

LAN interface is compliant with LXI-C. LXI is the next-generation, LAN-based modular architecture standard for automated test systems managed by the LXI Consortium, and is the effective successor to GPIB.

### Analog

Non-isolated analog voltage control of voltage and current. Analog control outputs are also provided to enable easy parallel connection of multiple units in a master-slave configuration. Terminals for remote on/off control.

# New PL series - technical specifications

## MODEL RANGE:

### Manual Control

PL155	0 to 15V at 0 to 5A
PL303	0 to 30V at 0 to 3A
PL601	0 to 60V at 0 to 1.5A
PL303QMD	2 x (0 to 30V at 0 to 3A)

*Note: Further models will be added, please check our website for fully up to date information.*

### Remote and Manual Control

PL155P	0 to 15V at 0 to 5A
PL303P	0 to 30V at 0 to 3A
PL601P	0 to 60V at 0 to 1.5A
PL303QMDP	2 x (0 to 30V at 0 to 3A)

## OUTPUT SPECIFICATIONS

### Voltage/Current Levels

PL155	0V to 15V/0.1mA to 5A (75W max.)
PL303	0V to 30V/0.1mA to 3A (90W max.)
PL601	0V to 60V/0.1mA to 1.5A (90W max.)
PL303QMD	Dual outputs of 0V to 30V/0.1mA to 3A or single output of 0V to 30V/0.1mA to 6A (180W max.)

*Note: Actual maxima for voltage and current are typically 1% greater than the figures given above.*

### Output Setting & Control

Voltage Setting:	By coarse and fine controls.
Current Setting:	By single logarithmic control.
Output Mode:	Constant voltage or constant current with automatic cross-over. CC indicator lit in constant current mode.
Output Switch:	Electronic, non isolating. Preset voltage and current limit displayed when Output off. Output rise time no load <15ms.

### V-Span

(Voltage Span Control)

The voltage adjustment range can be controlled by digital setting of the end-stop values of the coarse voltage control to any desired values. The range for Vmax is 0.1V to 15V/30V/60V depending on model. The range for Vmin is 0 to (Vmax - 0.1V).

### S-Lock

(Settings Lock)

Voltage and current settings can be locked by a single button press. Lock accuracy is equal to the meter accuracy (see Meter Specification).

### Output Performance

Ripple & Noise:	Normal mode voltage: <0.4mV rms and 2mV p-p Normal mode current: <0.2mArms; <40uA on 500mA range. Common mode current: <5mA rms
Load Regulation:	Voltage - <0.01% + 2mV. Current - typically 0.01% + 500uA. (>50kΩ output impedance)
<i>Voltage specification applies for any load change, measured at the output terminals. When using remote sense add 0.5mV per 0.1V drop in the +ve output lead (max. sense lead resistance 0.5 Ω).</i>	
Line Regulation:	Voltage <0.01% + 2mV for 10% line change. Current <0.01% + 250uA. for 10% line change.
Transient Response:	<50μs to within 50mV of setting for a 90% load change.
Temp. Coefficient:	Voltage: typically <(50ppm + 0.5mV)/°C Current: typically <(100ppm + 1mA)/°C; (+ 0.1mA)/°C on 500mA range.

### Output Protection

Output Protection:	Output will withstand forward voltages of up to 20V above rated output voltage. Reverse protection by diode clamp for currents up to 3A.
Over-temperature:	Output trips off for over-temperature.
Safety Interlocks:	Operations that could cause an unexpected change in voltage or current settings are interlocked with the output switch.

### Output Connections

Output Terminals: Universal 4mm safety binding posts on 19mm (0.75") spacing.  
*Terminals can accept fixed shroud 4mm plugs, standard 4mm plugs, fork terminals and bare wires.*

### Remote Sense

Sense Selection:	Voltage sensing is selected as Local or Remote by front panel switch.
Sense Terminals:	Sprung loaded screw-less terminals.

## METER SPECIFICATIONS

Display Type: Dual 4-digit meters, 10mm (0.39") LED.

### Voltage Meter

Resolution:	10mV
Accuracy:	± (0.1% of reading + 10mV)

### Current Meter

Resolution:	1mA (0.1mA on 500mA range)
Accuracy:	± (0.3% + 3mA) to 3A; ± (0.5% + 3mA) to 6A; ± (0.3% + 0.3mA) on 500mA range
Meter Damping:	Normally 20ms, switchable to 2 sec for averaging rapidly varying loads.

## ADDITIONAL SPECIFICATIONS - QUAD-MODE DUAL (PL303QMD)

The PL303QMD has four modes of operation:

### Independent Mode

Each output is fully independent and isolated. Operation is equivalent to two single output power supplies.

### Tracking Mode

The two outputs remains isolated, but the Slave voltage controls are disabled and the Slave voltage is set equal to the Master voltage. This can be used to generate tracking bipolar voltages, or tracking unipolar voltages relative to different grounds. When voltages greater than 30V are required, the outputs can be wired in series to generate 0 to 60V using only the Master voltage controls.

Track Accuracy: Slave voltage = ± (0.1% of Master voltage setting + 10mV)

### Ratio (%) Tracking Mode

As Tracking, but the Slave voltage controls set an output voltage between 0% and 100% of the Master voltage. Once the Slave voltage has been set, varying the Master voltage will create the same percentage change in the Slave voltage setting.

Track Accuracy: % change in Slave voltage = % change of Master voltage ± 0.1% ± 10mV

### Parallel Mode

In this mode, the Master operates as a single output power supply with double the current capability (0.1mA to 6A). The Slave is disabled and its displays are turned off.

### Both On / Both Off

Each output has an independent DC On/Off control, however, additional control buttons are provided which turn both outputs on or off simultaneously. These buttons operate in all four modes.

## ADDITIONAL SPECIFICATIONS - PL-P SERIES

### Important Note:

At the time of printing of this brochure, specifications for P suffix models (New PL-P Series) were not finalised. The following descriptions could therefore be subject to change, and detailed specifications have been omitted.

Please contact TTI or visit the web site for up to date information concerning product availability and detailed specifications.

### Rear Terminals

Power and sense connections are duplicated on the rear panel on a screwless connector block.

### Analog Remote Control

Non-isolated analog voltage control of voltage and current. Analog control outputs are also provided to enable easy parallel connection of multiple units in a master-slave configuration.

### Remote On/Off Control

Non-isolated terminal which sets output to Off when pulled low by gate signal or relay closure.

### Digital Bus Interfaces

Full remote control and read-back using RS-232, USB or LAN (LXI-C).

*Note: Remote/Local Sense, and Operational Mode (PL303QMDP) are manually selectable only.*

### RS-232

Standard 9-pin D connector. Variable baud rate 19,200 max.

### USB

Standard USB hardware connection. Supplied with device driver for Win98 or above. Operates as a virtual COM port.

### 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.

### LXI Compliance

LAN interface is compliant with LXI-C.

## GENERAL SPECIFICATIONS

### Input

AC Input:	230V AC or 115V AC ± 10%, 50/60Hz. Installation Category II
Input Power:	Single output models - 280VA max.; Dual output models - 560VA max.

### Temperature & Environmental

Operating Range:	+5°C to +40°C, 20% to 80% RH
Storage Range:	-40°C to +70°C
Environmental:	Indoor use at altitudes up to 2000m, Pollution Degree 2.
Cooling:	Intelligent variable-speed low noise fan assists convection.

### Safety & EMC

Safety:	Complies with EN61010-1
EMC:	Complies with EN61326

### Physical

Size:	Single output models - 107mm x 131mm (¼ rack 3U) x 288mm, Dual output models - 214mm x 131mm (½ rack 3U) x 288mm (sizes exclude feet, knobs and terminals).
Weight:	Single output models - 4.5kg (9.9lb); Dual output models - 9kg (19.8lb)

*Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.  
Accuracy specifications apply for the temperature range 18°C to 28°C after 1 hour warm-up.*

# Power Supply Selector Table

MANUAL CONTROL MODELS												
Model No	Type	Regulation	O/Ps	Main Output(s)	Aux. Output	Power	Fan	OVP	Controls	Meters	Size mm	Weight
EB2025T	Basic	Linear	Triple	0.3 - 20V / 0 - 0.25A	5V @ 1A	15W	No	No	Analogue	Analogue	220x82x230	1.8kg
EL301	Compact	Linear	Single	0 - 30V / 0 - 1A		30W	No	No	Analogue	LED	140x160x195	3.4kg
EL183	Compact	Linear	Single	0 - 18V / 0 - 3.3A		60W	No	No	Analogue	LED	140x160x195	4.4kg
EL302	Compact	Linear	Single	0 - 30V / 0 - 2A		60W	No	No	Analogue	LED	140x160x195	4.4kg
EL561	Compact	Linear	Single	0 - 56V / 0 - 1.1A		60W	No	No	Analogue	LED	140x160x195	4.4kg
EL155	Compact	Linear	Single	0 - 15V / 0 - 5A		75W	No	No	Analogue	LED	140x160x195	5.0kg
EL303	Compact	Linear	Single	0 - 30V / 0 - 3A		90W	No	No	Analogue	LED	140x160x195	5.0kg
EL302D	Compact	Linear	Dual	0 - 30V / 0 - 2A		120W	No	No	Analogue	LED	260x160x195	7.5kg
EL302T	Compact	Linear	Triple	0 - 30V / 0 - 2A	3.3V/5V @ 1A	125W	No	No	Analogue	LED	260x160x195	7.5kg
EX1810R	Precision	Mixed Mode	Single	0 - 18V / 0 - 10A		180W	No	No	Analogue	LED	140x160x195	3.0kg
EX355	Compact	Mixed Mode	Single	0 - 35V / 0 - 5A		175W	No	No	Analogue	LED	140x160x195	3.0kg
EX2020R	Precision	Mixed Mode	Single	0 - 20V / 0 - 20A		400W	Yes	No	Analogue	LED	140x160x195	3.5kg
EX4210R	Precision	Mixed Mode	Single	0 - 42V / 0 - 10A		420W	Yes	No	Analogue	LED	140x160x195	3.5kg
EX354D	Compact	Mixed Mode	Dual	0 - 35V / 0 - 4A		280W	No	No	Analogue	LED	260x160x195	4.3kg
EX354T	Compact	Mixed Mode	Triple	0 - 35V / 0 - 4A	3.3V/5V @ 5A	305W	No	No	Analogue	LED	260x160x195	4.3kg
EX752M	Compact	Mixed Mode	Dual **	0 - 75V / 0 - 2A		300W	No	No	Analogue	LED	260x160x195	4.4kg
PL155	Precision	Linear	Single	0 - 15V / 0 - 5A		75W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL303	Precision	Linear	Single	0 - 30V / 0 - 3A		90W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL601	Precision	Linear	Single	0 - 60V / 0 - 1.5A		90W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL303QMD	Precision	Linear	Dual *	0 - 30V / 0 - 3A		180W	Yes	No	Analogue	LED	210x130x295	10.0kg
PL154	Precision	Linear	Single	0 - 15V / 0 - 4A		60W	No	No	Analogue	LED	155x170x265	5.0kg
PL320	Precision	Linear	Single	0 - 32V / 0 - 2.1A		65W	No	No	Analogue	LED	155x170x265	5.0kg
PL330	Precision	Linear	Single	0 - 32V / 0 - 3.1A		95W	No	No	Analogue	LED	155x170x300	6.0kg
PL320QMD	Precision	Linear	Dual *	0 - 32V / 0 - 2.1A		130W	No	No	Analogue	LED	350x170x265	9.5kg
PL330QMD	Precision	Linear	Dual *	0 - 32V / 0 - 3.1A		190W	No	No	Analogue	LED	350x170x300	12.0kg
PL320QMT	Precision	Linear	Triple *	0 - 32V / 0 - 2.1A	4 - 6V / 0 - 4A	155W	No	No	Analogue	LED	425x170x265	13.5kg
PL330QMT	Precision	Linear	Triple *	0 - 32V / 0 - 3.1A	4 - 6V / 0 - 7A	230W	No	No	Analogue	LED	425x170x300	15.5kg
TS3021S	Precision	Linear	Single	0 - 30V / 0 - 2A		60W	No	No	Analogue	LCD	160x160x238	4.9kg
TS3022S	Precision	Linear	Dual	0 - 30V / 0 - 2A		120W	No	No	Analogue	LCD	308x160x238	9.6kg
QL355	High Precision	Linear	Single	0 - 35V / 0 - 5A #		105W	Yes	Yes	Digital	LED	141x171x300	5.0kg
QL564	High Precision	Linear	Single	0 - 56V / 0 - 4A #		112W	Yes	Yes	Digital	LED	141x171x300	5.0kg
QL355T	High Precision	Linear	Triple	0 - 35V / 0 - 5A #	2.7V-5V @ 1A	215W	Yes	Yes	Digital	LED	282x171x300	10.0kg
TSX1820	Precision	Mixed Mode	Single	0 - 18V / 0 - 20A		360W	No	Yes	Analogue	LED	210x130x350	5.0kg
TSX3510	Precision	Mixed Mode	Single	0 - 35V / 0 - 10A		350W	No	Yes	Analogue	LED	210x130x350	5.0kg
CPX200	Precision	PowerFlex	Dual	0 - 35V / 0 - 10A †		350W	No	Yes	Analogue	LED	210x130x350	6.0kg
CPX400A	Precision	PowerFlex	Dual	0 - 60V / 0 - 20A †		840W	Yes	Yes	Analogue	LED	210x130x350	7.5kg
BUS PROGRAMMABLE MODELS												
Model No	Interfaces	Regulation	O/Ps	Main Output(s)	Aux. Output	Power	Fan	OVP	Local Cntrl	Meters	Size mm	Weight
EL302-P	RS-232	Linear	Single	0 - 30V / 0 - 2A		60W	No	No	Digital	LED	140x160x195	4.4kg
EX355-P	RS-232	Mixed Mode	Single	0 - 35V / 0 - 5A		175W	No	No	Digital	LED	140x160x195	3.0kg
PL155-P	RS-232/USB/LAN	Linear	Single	0 - 15V / 0 - 5A		75W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL303-P	RS-232/USB/LAN	Linear	Single	0 - 30V / 0 - 3A		90W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL601-P	RS-232/USB/LAN	Linear	Single	0 - 60V / 0 - 1.5A		90W	Yes	No	Analogue	LED	105x130x295	5.2kg
PL303QMD-P	RS-232/USB/LAN	Linear	Dual *	0 - 30V / 0 - 3A		180W	Yes	No	Analogue	LED	210x130x295	10.0kg
PL330-P	RS-232 & GPIB	Linear	Single	0 - 32V / 0 - 3.1A		95W	No	No	Analogue	LED	207x170x300	6.5kg
PL330D-P	RS-232 & GPIB	Linear	Dual	0 - 32V / 0 - 3.1A		190W	No	No	Analogue	LED	350x170x300	12.5kg
PL330T-P	RS-232 & GPIB	Linear	Triple	0 - 32V / 0 - 3.1A	4 - 6V / 1 - 7A	230W	No	No	Analogue	LED	425x170x300	16.0kg
QL355-P	USB/RS232/GPIB	Linear	Single	0 - 35V / 0 - 5A #		105W	Yes	Yes	Digital	LED	141x171x300	5.0kg
QL564-P	USB/RS232/GPIB	Linear	Single	0 - 56V / 0 - 4A #		112W	Yes	Yes	Digital	LED	141x171x300	5.0kg
QL355T-P	USB/RS232/GPIB	Linear	Triple	0 - 35V / 0 - 5A #	2.7V-5V @ 1A	215W	Yes	Yes	Digital	LED	282x171x300	10.0kg
TSX1820-P	RS-232 & GPIB	Mixed Mode	Single	0 - 18V / 0 - 20A		360W	No	Yes	Digital	LED	210x130x350	5.5kg
TSX3510-P	RS-232 & GPIB	Mixed Mode	Single	0 - 35V / 0 - 10A		350W	No	Yes	Digital	LED	210x130x350	5.5kg
QPX1200	Analog/RS232/USB	PowerFlex	Single	0 - 60V / 0 - 50A †		1200W	Yes	Yes	Digital	LCD	350x130x 415	9.2kg

#### \* Quad-mode switching (PL Series)

Selection of four modes of operation including independent, two types of tracking, and true parallel.

#### \*\* Multi-mode switching (EX752M)

The EX752M incorporates switching that enables it to operate as a dual power supply with two independent and isolated outputs, or as a single power supply of double the power.

As a dual, each output provides 0 to 75V at 0 to 2A (mode A). As a single the output can be selected as either 0 to 75V at 0 to 4A (mode B) or 0 to 150V at 0 to 2A (mode C).

#### † PowerFlex (CPX and QPX Series)

The PowerFlex system enables a power supply to provide higher currents at lower voltages. Each output of the CPX400A, for example, can provide 7 amps at 60 volts. As the voltage is reduced, the maximum current available increases up to a maximum of 20 amps at 20 volts or below.

#### # Multi-range (QL Series)

The QL series uses all linear regulation and incorporates range switching to provide higher currents at lower voltages. The maximum voltage and current shown in the table are not available simultaneously.

Designed and built in Europe by:



**Thurlby Thandar Instruments Ltd.**

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