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# DATA-SHEET



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**WHY BUY**  
WHEN YOU CAN HIRE

## TS series Precision Laboratory DC Power Supplies



- Simultaneous metering of voltage & current via LCD meters
- True constant voltage or constant current operation
- Excellent stability, resolution and setting accuracy
- Remote sense facilities for high-current precision
- Precise control and monitoring of current limits
- Single, dual and triple output models available

### Model Range:

TS3021S - Single output, 0 to 30V at 0 to 2A.

TS3022S - Dual output, 2 x 0 to 30V at 0 to 2A.

The Thurlby Thandar TS series of laboratory bench power supplies has become highly regarded throughout the world for its performance and reliability. High resolution controls enable precise setting of voltage and current levels whilst high accuracy digital meters provide clear, unambiguous readings.

### Digital accuracy and convenience

TS series units incorporate digital meters with 3.5 digit LCD displays to provide greater accuracy and resolution than other PSUs.

Separate meters are used for voltage and current, eliminating the need for meter function switches.

### Greater resolution and control

The TS series sets the standard for simple and comprehensive control. Voltages are set with coarse and fine controls for speed with precision. Currents are set with a semi-logarithmic control for increased resolution at low currents.

With the output switch 'off' the current limit set point is displayed. With the output switch 'on' the actual output current flowing is displayed.

This invaluable feature allows delicate circuits to be protected by accurately setting the current limit level (down to a few milliamps if necessary) before connecting the circuit under test.

### Constant voltage or constant current

TS series units can operate in constant voltage or constant current mode

### Remote sense for high current precision

TS series units incorporate integrated band-gap reference diodes as the basis for stabilisation of both voltage and current.

Remote sense terminals enable the precision to be maintained at high currents by eliminating the effects of connection lead resistance.

Without remote sense, lead resistance of just a few tens of milliohms can seriously degrade regulation and produce misleading results. (Two cables of just 0.05  $\Omega$  each will drop a total of 0.3V at 3 Amps)

### Safety and protection

TS series PSUs are designed and built to meet the latest safety and EMC requirements. All outputs are fully protected against short circuits, external overvoltage and reverse voltage.

### MAIN OUTPUTS

Voltage Setting:	By coarse and fine controls; resolution better than 5mV across the range.
Current Setting:	By single logarithmic control.
Output Mode:	The outputs operate in constant current or constant voltage mode with automatic cross-over.
Output Switch:	Isolates the output and permits voltage and current limits to be set before connecting the load.
Output Terminals:	4mm terminals on 19mm (.75") spacing.
Output Impedance:	CV - typically <5m $\Omega$ at 1kHz. CI - typically >50k $\Omega$ .
Output Protection:	Up to max. output voltage +20 Volts forward; diode clamped for reverse voltages at up to 3A.
Load Regulation:	<0.01 % of max. output for 50% load change.
Line Regulation:	<0.01 % of max. output for 10% line change.
Remote Sense:	Eliminates up to 0.5V drop per lead.
Ripple and Noise:	Typically <1mV rms.
Transient Response:	<20usec to <50mV for 90% load change.
Temp. Coefficient:	Typically <100ppm/ $^{\circ}$ C.
Meter Type:	Independent autoranging 12.5mm 3.5-digit LCDs for voltage and current indication.
Meter Resolution:	Voltage - 10mV up to 20V, 100mV above 20V Current - 1mA up to 2A, 10mA above 2A.
Meter Accuracy:	Voltage - 0.2% of reading + 1 digit. Current - 0.5% of reading + 1 digit.

### GENERAL

Input Voltage:	Internally set for 110, 120, 220, 240V; 50/60Hz.
Input Voltage Range:	$\pm$ 10% of voltage setting.
Power Consumption:	150VA - single units, 300VA - dual/triple units.
Operating Range:	5 $^{\circ}$ C to 40 $^{\circ}$ C, 20% to 80% RH.
Storage Range:	-20 $^{\circ}$ C to +60 $^{\circ}$ C.
Electrical Safety:	Complies with EN61010-1.
EMC:	Complies with EN55011 and EN50082-1.
Size:	160(W) x 160(H) x 238mm(D), single unit 308(W) x 160(H) x 238mm(D), dual unit
Weight:	4.9kg single, 9.6kg dual.

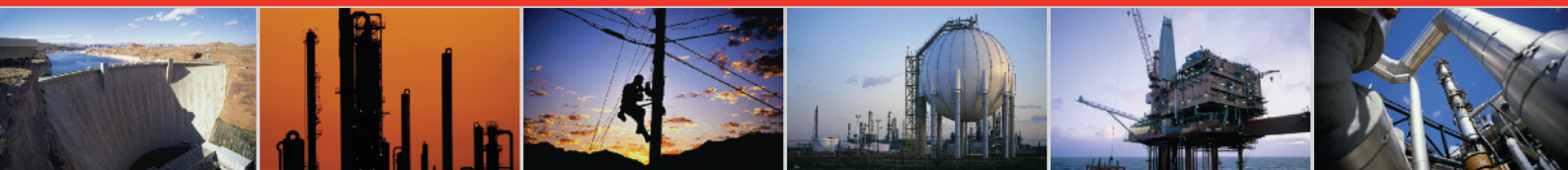
Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.

Note: This is a faxable data sheet, a colour brochure is also available.

Designed and built in the EEC by:



# INLEC, supporting you to deliver a world class service, every day, in every sector ...



## OUR COMMITMENT TO YOU

### A wealth of knowledge and experience.

You can take advantage of expert advice to ensure you get the best, most appropriate and cost effective equipment for the job. We supply a wide variety of industries, so if there is another way to do the job or save you time and money we'll pass on the benefit of our experience for free.

### Honest advice, just a phone call away.

If we don't have a particular item, rather than hiring you something that won't do the job, we would rather direct you to an alternative supplier. You will always be provided with full instructions and if you still need help, call our technical team on Nationwide Low Call 0333 6000 600. Our aim is to save you time, frustration and money.

### Top quality equipment from major manufacturers.

With Inlec you'll get the most accurate, reliable and well-maintained equipment available. Prices are regularly reviewed to ensure you always enjoy the best value for money. We have made a significant investment in test equipment so we ensure that it's well packed to minimise damage and delay.

### We really do listen to you.

You won't waste your time contacting Inlec. Every request for equipment is logged and carefully considered. Listening to our customers helps keep our product range up to date and relevant. If you are unhappy about any aspect of our service please let us know so we can put it right.

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### 3 TOP QUALITY GUARANTEED

All equipment is thoroughly checked prior to dispatch to ensure you receive it in full, safe working order. Your shipment will be securely packed and include manufacturer's instructions, accessories or consumables and a valid calibration certificate where appropriate. In addition, Inlec offer a 24 hour replacement service if you decide the equipment is not suitable for your application\*.

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### 5 YOUR GUARANTEE OF THE BEST CUSTOMER SERVICE

Throughout your hire we will work hard to ensure you enjoy the very best in support and service from Inlec. We guarantee you won't find better service anywhere in the industry.

\*subject to availability and conditions

## Europe's leading Test Equipment Hire Specialist



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