



Power, Monitor
Alarm, Report

Power Solutions

Power distribution providing facility-wide monitoring management and control.



Whether you are maintaining system visibility in broadcast or an IT infrastructure, TSL delivers a range of solutions that help you monitor and manage connected equipment to maximise up time and achieve energy savings.



Audio. Control. Power.

Why Choose TSL's Power Solutions?

TSL are world leaders in the broadcast market with class leading solutions for **audio monitoring, control, integrated display systems and power**. Our solutions are in operation twenty four hours a day throughout the world.

System managers are increasingly faced with guaranteed up-time targets across diversely located equipment facilities. In today's cost conscious and environmentally sensitive world, they may now also be required both to streamline maintenance and support teams, and to minimise energy consumption.

These challenges call for a comprehensive solution that – working remotely over wide or local area networks – can provide both monitoring and control of systems, and effective power management.

Intelligent Power Distribution Units from TSL provide just such system management and power distribution capabilities. Intelligent, intuitive and already well proven in the global market, TSL's PDU's enable system managers to monitor and control all rack-mounted equipment anywhere in the world and to manage power requirements while reducing overall costs.

TSL PDU's are the result of the long experience in the field, which over 30 years has established an enviable reputation with numerous prestigious installations worldwide.



Our Power management solutions are suitable for a range of applications and they help support:

- ▶ Powering equipment that is remote from the control center.
- ▶ Critical infrastructure where issues need to be identified and resolved quickly.
- ▶ Where the conservation of energy is important.
- ▶ When the delivery and control of power is a central part of the overall system.
- ▶ When programmable power-up needs to follow a set sequence.



BROADCAST



MEDICAL



DCIM

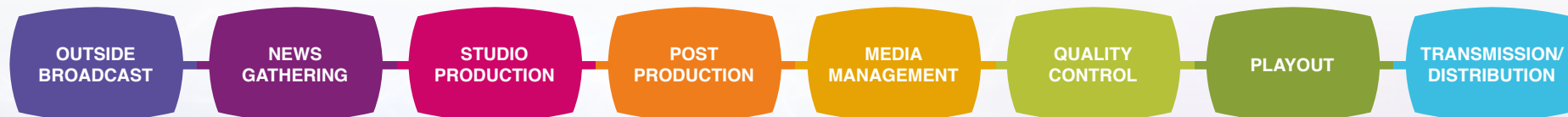


INDUSTRIAL

Did you know?

The under/over outlet current can identify early failure. The under voltage alarm can forecast power outages.

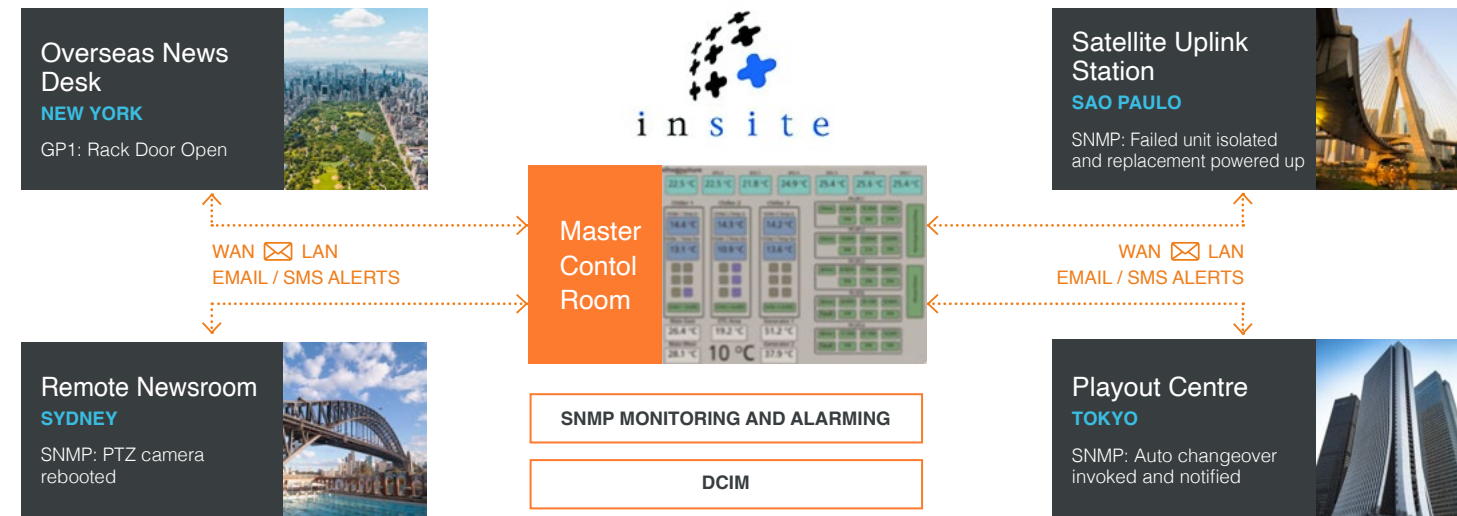
TSL support operations throughout the whole broadcast chain



Flexible solutions that address modern workflow challenges

Any facility that has rack-mounted equipment, be it a TV station, IT/data centre, hospital or oil rig, can benefit from implementing an effective power management system. In fact, the results of metering and monitoring can generate significant power savings and improve up-time.

Whilst systems have to keep up with the ever-increasing amount of data being created, searched, retrieved and archived, the hardware and software technology behind them is being developed constantly to improve reliability, increase automation and reduce power consumption, globally.



Our power management family has been designed to address the challenges faced by systems managers to effectively maintain system viability, control critical power infrastructures – over local or international networks – to meet targets and increase ROI.

Did you know?

All TSL PDU's feature individually fused outlets, meaning if one device fails, it can easily be identified and resolved without affecting any other unit in the rack, ensuring maximum uptime.

Control multiple remote actions

- ⦿ Auto changeover from main to backup power
- ⦿ Re-boot individual equipment, rack, or complete facility
- ⦿ Alert local maintenance, accurately describing fault and rack position
- ⦿ React to equipment failure by re-routing signals
- ⦿ Manage and track energy consumption
- ⦿ React to power outage
- ⦿ Centrally power down facility for out of hours working
- ⦿ Configure PMUs
- ⦿ Power up equipment in a programmable sequence

Conduct monitoring

- ⦿ Equipment fuse status
- ⦿ Power consumption by outlet
- ⦿ Rack equipment GPIs
- ⦿ Rack temperature
- ⦿ Rack input voltage
- ⦿ Total power consumption
- ⦿ Power source, main or backup
- ⦿ Residual current
- ⦿ Power factor
- ⦿ Connect to industry standard one wire sensors

Collect comprehensive information

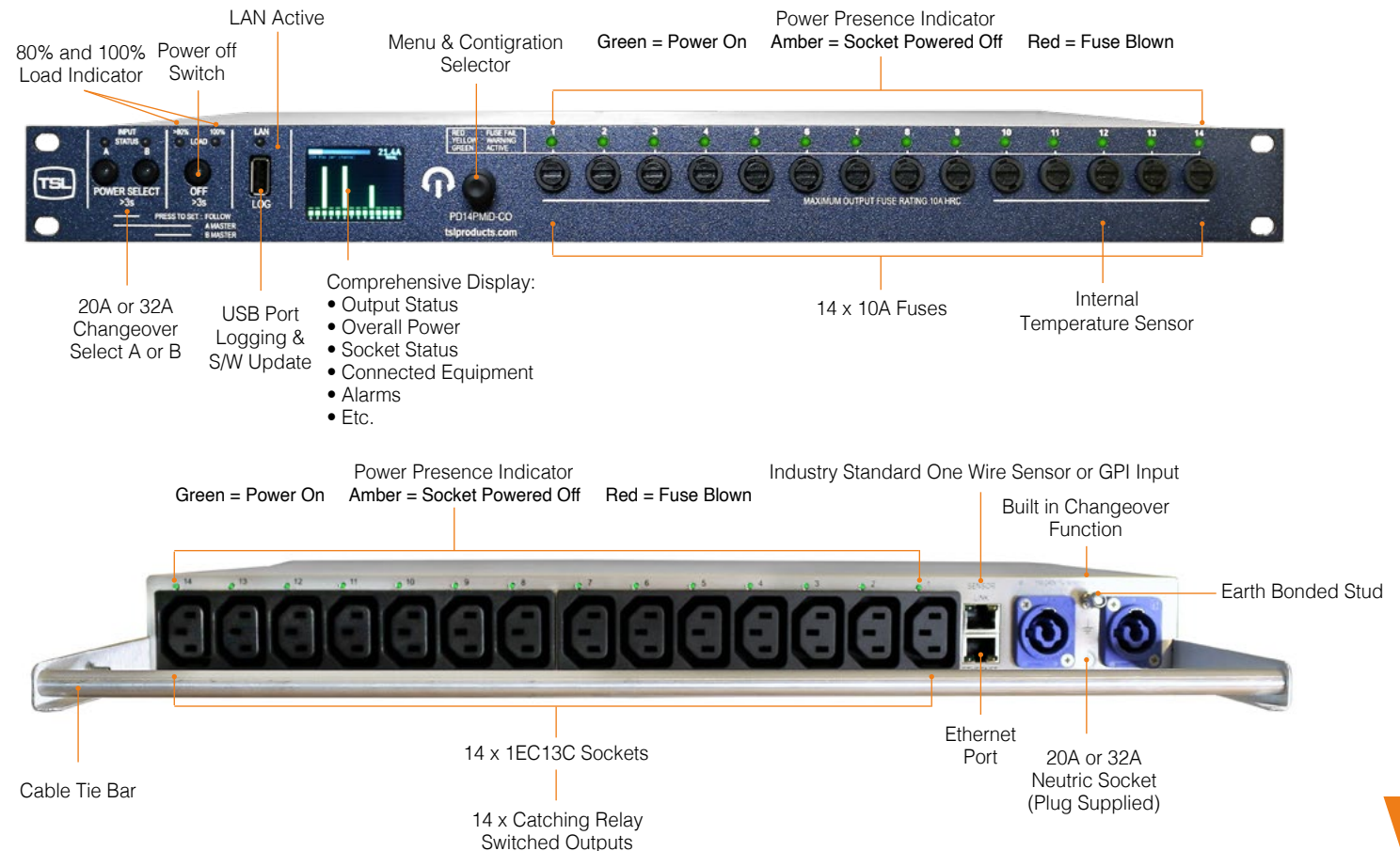
- ⦿ Email and SMS alerts for system failures or in case any pre-set variable is breached
- ⦿ Real-time status information
- ⦿ Industry standard SNMP alarm protocol
- ⦿ Output current & voltage waveform graphing and logging
- ⦿ Changeover time logging
- ⦿ Billing grade accuracy for energy invoicing

PDU Horizontal Product Range

		Inputs	Individually Fused Outlets	Rating	Over Current Protection	Front panel Output Status Indicators	Secure (HTTPS) Web Interface (Reporting & Config)	SNMP Alarms and Email Alerts	Front Panel LCD Control UI (always on, dimmable or timeout)	Current and Voltage Measurement & Graphing	Leakage Current measurement	Neutral-Earth voltage measurement	USB for Data Logging & Firmware updates	Switched Outputs	Programmed Power up Sequencing / delay	GPI Inputs	Environment Monitoring (Temperature/Humidity)	Input Power Fail Alarm	Controlled Supply Changeover and Automatic Failover	Master/Slave Operation (if we include this - we should use a different term as the industry is avoiding use of 'master/slave')
Intelligent Horizontal Distribution	PD14PMiD-20A	1x 16A/20A powerCON	14 Fused IEC C13	20A 100-240V (50/60Hz)	●	FRONT & REAR • Output active • Current level warning • Fuse fail	●	●	●	●	●	●	●	●	●	x3	option (1-wire)	SNMP 'Last Gasp'		FUTURE via FW Update
	PD14PMiD-32A	1x 32A powerCON	14 Fused IEC C13	32A 100-240V (50/60Hz)	●	FRONT & REAR • Output active • Current level warning • Fuse fail	●	●	●	●	●	●	●	●	●	x3	option (1-wire)	SNMP 'Last Gasp'		FUTURE via FW Update
Intelligent Horizontal Distribution with Auto-Changeover	PD14PMiD-CO-20A	2x 16A/20A powerCON	14 Fused IEC C13	20A 100-240V (50/60Hz)	●	FRONT & REAR • Output active • Current level warning • Fuse fail	●	●	●	●	●	●	●	●	●	x3	option (1-wire)	SNMP/EMAIL (+last gasp)	●	FUTURE via FW Update
	PD14PMiD-CO-32A	2x 32A powerCON	14 Fused IEC C13	32A 100-240V (50/60Hz)	●	FRONT & REAR • Output active • Current level warning • Fuse fail	●	●	●	●	●	●	●	●	●	x3	option (1-wire)	SNMP/EMAIL (+last gasp)	●	FUTURE via FW Update
Horizontal Distribution with Overcurrent Protection	PDU14C-20A	1x 20A powerCON	14 Fused IEC C13	20A 100-240V (50/60Hz)	●	FRONT • Output active • Fuse fail														
	PDU14C-32A	1x 32A powerCON	14 Fused IEC C13	32A 100-240V (50/60Hz)	●	FRONT • Output active • Fuse fail														
Vertical Distribution with Overcurrent Protection	FG-VPB-20+20C13	2x 32A powerCON	20 + 20 Fused IEC C13	32A 100-240V (50/60Hz)	Fused Outlets	• Output active • Fuse fail														

Intelligent Power Distribution

TSL's premium Power Distribution Unit (PDU), the PMD14PMiD-XXA, provides complete rack-health visibility whilst monitoring status and providing alerts if pre-set limits are exceeded.



Features

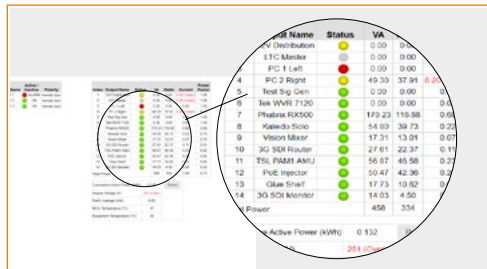
- Secure/Encrypted web browser (HTTPS)
- Front panel colour LCD UI for monitoring and control
- State control of each of the 14 individually fused outputs
- Current, voltage and power factor measurement

Intuitive User Interface

The intelligent power range has a built in web based configuration tool with intelligent GUI that enables full configuration and status reporting. User defined username and password offer secure web browser access.

Did you know?

The in-built web server can send email and SNMP alerts to your support team, and work with any third party monitoring software.



Status Page

Shows all internet and output alarm states, Current, VA, and Power Factor for each output and total shown for the whole unit.

SNMP Page

This is for setting the SNMP alarm trap IP address, email alert settings, and Temperature alarm settings.

Input Page

Naming the GPI alarms and determining if they are normally open or closed.

Systems Setup Page

Entering the IP addresses and details of the MDU.



Output & Control Configuration Page

View and control the system

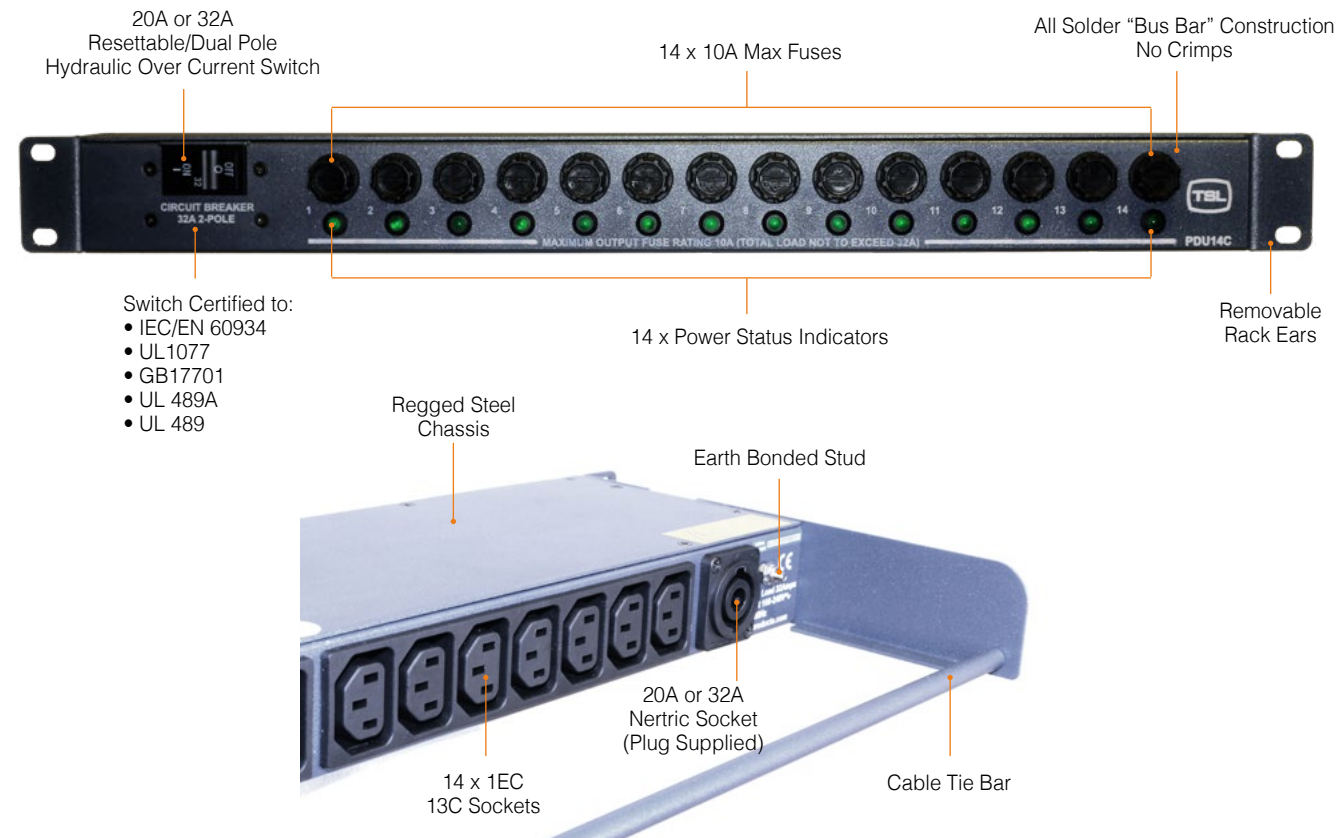


Waveform Logging & Monitoring Page

Enables you to see what's happening and what happened in the system.

Power Management for demanding applications

Our entry level power distribution units feature 20A and 32A versions suitable for compact power configurations where high reliability is required.



Vertical Power Distribution Units

Did you know?

You can use changeovers to power dual power equipment and save cost of the second power supply.

Building on the success of our horizontal PDUs, used by major broadcasters worldwide, TSL introduces a range of vertical power distribution units (VPDUs).

Save space and money

The new vertical design utilises a custom IEC socket that is unique to TSL, to provide the highest density available, allowing you to save valuable rack space. Designed to provide the highest levels of reliability, the units feature all soldered connections and a PCB backplane.

The new VPDU has dual 32A inlets, with each inlet powering twenty individually fused C13 outlets.



FEATURES

- ▶ The new VPDU has dual 32A, A+B inputs, with 20 + 20 IEC C13 outlets. Offering the opportunity to provide main and backup power through the same VPDU, saving the need for a second single supply power strip.
- ▶ Each C13 outlet has its own integrated status LED so that blown fuses can be quickly and easily identified and resolved, particularly important when searching for the problem in the dark recesses of a rack in time critical situations.
- ▶ Mounting kit (included), offering rear or side placement for extra flexibility and ease of installation.
- ▶ PCB Platform and crimp free design mean unprecedented levels of reliability.

InSite - Bringing the power of DCIM to broadcast



Our powerful InSite software suite easily manages the health of a system's infrastructure by monitoring, reporting and alarming on the performance of deployed devices, power consumption and environmental information.

Facilities are generating ever more data, and although this information is readily available from individual devices, it is cumbersome to access and report on when using numerous manufacturer specific portals. Real-time data is hugely beneficial in the daily running of any facility – minimising down-time and decreasing power consumption – as long as it is accessible from a single point where it can be analysed as a whole, rather than having to access and report from individual manufacturer-specific portals.

InSite is a vendor independent solution that brings all of this information together into a single system using industry standard protocols such as SNMP and Modbus.

It can be hosted on premise or in the cloud and will work with a broad range of third party sensors and data centre equipment – in fact any manufacturer who produces object identifier (OID) information.

Did you know?

InSite can be configured to provide a protected whole system view for central monitoring and individual subsystem viewer for local system monitoring.



InSite provides well-designed dashboards enabling you to represent data in a user friendly way. Fully configurable, they are accessible from any web browser anywhere in the world, providing an interactive live feed.

Title	1.1	1.2	1.3
Title	A1.1.0		
Version	A1.2.0		
Name	A1.3.0		
MAC	A1.4.0		
IP	A1.5.0		
Circuit 1	A2.1.0/10 A		
Circuit 2	A2.2.0/10 A		
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InSite's smart reporting tool, simplifies the creation of reports on an data range, making it easier for the user to provide detailed analysis on key operational variables. Reports can be visualised whilst selecting the data, in real-time and can be scheduled to appear in the relevant inbox automatically at set intervals.



InSite's scalable and configurable dashboard design allow businesses to manage their own system from start to finish. This minimises the cost traditionally associated with the initial configuration and on going maintenance and development.

Case Study – Grupo Imagen

Grupo Imagen are a major TV broadcaster headquartered in Mexico City, with an extensive transmission network across the country.

They needed to monitor and manage their network of 42 technical facilities, which are located across Mexico from their central control room in Mexico City. Their goal was to quickly identify the cause of any power failures so that they could restore their service in the shortest time possible.



Each remote rack was powered by 2 x MDU 12PMi-32A units, that provided probe information relating to:

- ▶ Power consumption
- ▶ Under and over input voltage
- ▶ Under and over current by outlet
- ▶ Rack temperature
- ▶ Fuse failure

Each PDU was programmed with the identity of the connected equipment so that any failure could be tracked back to the source equipment, speeding up fault finding when systems were down.

TSL's Insite DCIM product was used to monitor not only the power products but also other SNMP connected equipment including servers. Giving them a complete overview of the health of the system, with full logging capabilities.

Images of the individual racks were also integrated into the dashboard enabling them to quickly identify any problems.

The whole system was monitored on a master display with a map of Mexico visualising each facility. Green ticks represented systems that were fully functional and red crosses where failures had been identified. By clicking the red cross, users were directed to the dashboard of the affected rack and remedial action could be taken promptly, minimising down time and maximising revenues.

Case Study - Grupo Imagen

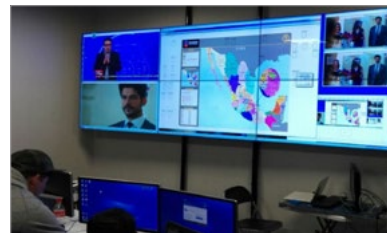
Remote Monitoring – Map Dashboard



Detailed Live Monitoring



Remote Monitoring – In Production



Detailed Monitoring – Rack Dashboard



Contact our international team

In addition to the **power management** range, TSL also specialise in **audio monitoring & processing** and **broadcast control systems** – thousands of which are in operation across the globe.



For further details about our product range and where to buy please visit:

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