



Measurably better value

PowerFlex up to 42V /6A /105W

Two or three outputs

4.3" screen with simultaneous display of outputs

Control by touch, dual rotary or remote USB

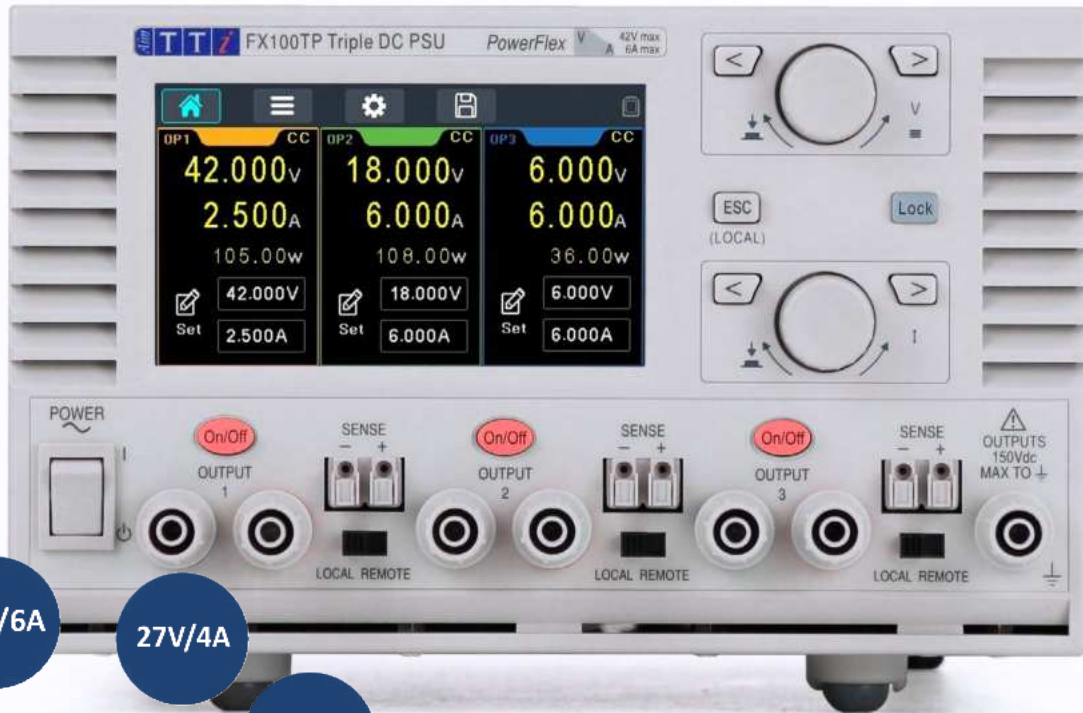


# FX100DP & FX100TP

105W PowerFlex

Multi Output DC Laboratory Power Supplies

[aimtti.com](http://aimtti.com)

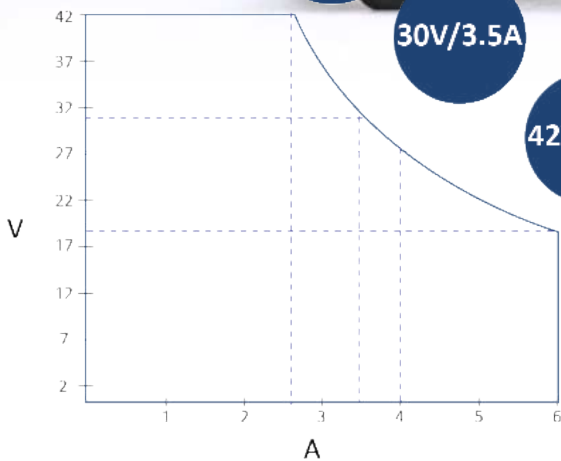


18V/6A

27V/4A

30V/3.5A

42V/2.5A



# FX SERIES

The all-new FX series of power supplies seamlessly combines versatility, and safety within a compact design. SELV compliant with the efficiency of PowerFlex, it's the ultimate choice for test and laboratory use.

| Model   | Output 1 | Output 2 | Output 3 | Total Power |
|---------|----------|----------|----------|-------------|
| FX100DP | 42V / 6A | 42V / 6A | -        | 210W        |
| FX100TP | 105W     | 105W     | 6V / 6A  | 246W        |

- ▶ Two or three outputs
- ▶ Up to 105W per output\*
- ▶ Control by rotary, touch or remote USB
- ▶ Simultaneous live control of voltage and current
- ▶ Instant access to voltage/current setting per output
- ▶ Voltage tracking  $V_2 = V_1$
- ▶ Individual output on/off control plus Multi-on/off
- ▶ Low output ripple and noise, typically <2mV
- ▶ High setting resolution of 1mV and 1mA

- ▶ Variable OVP and OCP trips on all outputs
- ▶ 25 setting memories
- ▶ Voltage tracking (isolated tracking)
- ▶ Selectable current meter averaging
- ▶ Switchable remote sense capability
- ▶ Intelligent fan, low noise
- ▶ Compact footprint (214 x 140 x 300mm (WxHxD))
- ▶ USB remote interface, SCPI compatible
- ▶ Free Test Bridge logging and control software

\*OP1&2 only

# FEATURES

## FLEXIBLE POWER

At the heart of the FX Series is Aim-TTi's advanced PowerFlex technology, offering an intelligent auto-ranging capability that dynamically adjusts the operating range within the 105W channel power envelope. This ensures optimal efficiency and performance, allowing users to precisely tailor the output to meet the demands of the application.

## HIGH SETTING RESOLUTION

For applications requiring the highest accuracy and resolution, up to 5 digit setting and metering is provided for voltage and current. Resolution is 1mV/1mA.

## COMPACT AND LIGHTWEIGHT DESIGN

The FX models are designed with your workspace in mind. Their compact footprint (200 x 140 x 300mm (WxHxD)) ensures they won't take up unnecessary space on your bench or shelf. The low-pressure fan-assisted cooling system keeps things cool without adding to the audible noise.



### ▶ VOLTAGE TRACKING

All outputs are completely independent and isolated. However, it is possible to configure the power supply so that the voltage on output 2 automatically tracks the voltage on output 1.

### ▶ MULTI-ON/OFF

Many circuits can be damaged if one voltage rail is present without the other. In addition to the individual output on/off buttons, a Multi-On/Off feature is provided to allow one output on/off key to switch one or more outputs on or off with a single press.

### ▶ CURRENT METER AVERAGING

When measuring rapidly varying loads it can become difficult to get useful readings from a digital current meter. By selecting meter averaging, the reading is stabilised by displaying the average of several readings to reduce the speed and extent of the variation.

### ▶ OVP AND OCP TRIPS

Variable trips for over-voltage and over-current are provided on each output. Unlike a limit setting, the trip setting turns the output off and provides a different level of protection.

## UNMATCHED VERSATILITY AND CONTROL

The FX Series redefines user interaction with its intuitive 4.3-inch colour touch screen, enabling precise adjustments with a simple tap. For those who prefer a tactile experience, the series also features live adjustment via rotary controls for a hands-on feel.

### DIRECT & LIVE Numeric entry & Adjustment



## REMOTE CONNECTIVITY

Free Test Bridge software enhances USB connectivity; it enables logging and sequencing for multiple products and is compatible with many instruments from the Aim-TTi range.



# TECHNICAL SPECIFICATIONS

Aim & 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.

## OUTPUT SPECIFICATIONS

|                   | FX100DP | FX100TP |
|-------------------|---------|---------|
| Number of outputs | 2       | 3       |

## VOLTAGE/CURRENT/POWER LEVELS

|                  |  |  |
|------------------|--|--|
| Voltage Range    | O/P 1&2: 0V to 42V                     | O/P 1&2: 0V to 42V<br>O/P 3: 0V to 6V                |
| Current Range    | 1mA to 6A                              |  |
| Power per output | O/P 1&2: 105W<br>(see PowerFlex curve) | O/P 1&2: 105W<br>(see PowerFlex curve)<br>O/P 3: 36W |
| Total Power      | Up to 210W                             | Up to 246W   |

## OUTPUT SETTING & CONTROL

|                    |  |
|--------------------|--|
| Output Setting     | Direct entry of output voltage or current via touch control with on screen numeric keypad.<br>Individual V & I rotary knobs for simultaneous adjustment of output voltage and current settings.            |
| Operating Mode     | Constant voltage (CV) or constant current (CC) or constant power (CP) with automatic crossover   |
| Output Switch      | Independent electronic switching with LED ON indication.<br>In addition, each output key actions Multi-On and Multi-Off (if enabled from instrument menu).<br>Output discharge by weak internal pull-down. |
| Output sense       | Selectable local or remote sensing.  |
| Setting Resolution | 1mV, 1mA   |
| Setting Accuracy   | Voltage: $\pm (0.1\% \text{ of setting} + 5\text{mV})$<br>Current: $\pm (0.1\% \text{ of setting} + 5\text{mA})$   |
| Instrument Control | Instrument settings can be set using touch or V rotary knob to navigate, and press knob to confirm.  |
| Status Indication  | Indicators for Output ON, constant voltage mode, constant current mode, remote operation, trip & error messages on display.  |

## OUTPUT CONNECTIONS

|                  |  |
|------------------|--|
| Output Terminals | Front panel: Universal 4mm safety binding posts on 19mm (0.75") spacing. |
|------------------|--|

## OUTPUT PERFORMANCE

|   |  |    |           |         |      |           |         |
|---|--|----|-----------|---------|------|-----------|---------|
| Ripple & Noise<br>(20MHz bandwidth)       | Typically <2mV rms, <10mV pk-pk. 22mV pk-pk max for maximum load CV mode<br>Typically <2mA rms, <10mA pk-pk. 15mA pk-pk max for maximum load CC mode                           |    |           |         |      |           |         |
| HF Common Mode Noise<br>(20MHz bandwidth) | Typically <4mV rms, <30mV pk-pk, 50mV pk-pk max (Into 560ohm)  |    |           |         |      |           |         |
| Load Regulation                           | For any load change within the PowerFlex envelope, using remote sense:<br>Constant voltage (CV): $<0.01\% \pm 5\text{mV}$<br>Constant current (CC): $<0.01\% \pm 0.5\text{mA}$ |    |           |         |      |           |         |
| Line Regulation                           | For a 10% line voltage change:<br>Constant voltage (CV): $<0.01\% \pm 5\text{mV}$<br>Constant current (CC): $<0.01\% \pm 0.5\text{mA}$   |    |           |         |      |           |         |
| Transient Response                        | To within 100mV of setting for a 5% to 95% load change:<br>Typically <350µsec. Maximum 375µsec.  |    |           |         |      |           |         |
| Voltage programming speeds                |  |    | 100% Load | No Load |      | 100% Load | No Load |
|   | 17.5V/6A   | UP | 1ms       | 0.7ms   | DOWN | 7ms       | 150ms   |
|   | 42V/2.5A   | UP | 4ms       | 3ms     | DOWN | 35ms      | 600ms   |
|   | 6V/6A<br>(O/P 3 only)  | UP | 1.5ms     | 1.5ms   | DOWN | 3.5ms     | 25ms    |

## OUTPUT PROTECTION

|                      |  |                                    |  |
|----------------------|--|------------------------------------|--|
| Protection Functions | Over voltage trip (OVP), Over current trip (OCP), Over temperature trip (OTP), sense miswiring trip. |                                    |  |
| OVP                  | Range  | O/P 1&2: 1V to 47V O/P 3: 1V to 8V |  |
|                      | Resolution   | 100mV                              |  |
|                      | Accuracy   | $0.5\% \pm 300\text{mV}$           |  |
|                      | Response time  | 10ms                               |  |

|                             |               |   |
|-----------------------------|---------------|---|
| OCP                         | Range         | 100mA to 6.6A   |
|                             | Resolution    | 100mA   |
|                             | Accuracy      | 0.5% ± 300mA  |
|                             | Response time | 25ms  |
| Sense trip                  |               | Monitors the voltage between the remote sense terminals and output terminals to protect against mis-wiring. Maximum drop allowed is +1.5V and -1.5V (total of 3V drop). |
| Over Temperature protection |               | Monitors internal temperature rise to protect against excess ambient temperature or blocked ventilation slots.  |
| Output Protection           |               | Output will withstand an applied forward voltage of up to 60V. Reverse protection by diode clamp for reverse currents up to 3A.   |
| Temp. Coefficient           |               | Typically <100 ppm + 0.3 (mV or mA)/°C. Maximum <200ppm/°C.   |

## METER SPECIFICATIONS

|                           |  |
|---------------------------|--|
| Display Type              | 4.3" colour touchscreen  |
| Voltage                   | Resolution: 1mV, 5 digits<br>Accuracy: 0.1% of reading ± 5 digits  |
| Current                   | Resolution: 1mA, 4 digits<br>Accuracy: 0.1% of reading ± 5 digits  |
| Power                     | Resolution: 10mW, 5 digits<br>Accuracy: 0.2% of reading ± 7 digits |
| Current averaging (I avg) | User settable, sets current meter damping ON or OFF                |

## SETTING MEMORY STORES

|               |   |
|---------------|---|
| Store/Recall: | Store and recall voltage, current and all other output parameters from non-volatile memory (up to 25 memories). |
|---------------|---|

## REMOTE INTERFACES

|                                |  |
|--------------------------------|--|
| Operational Functions          | Full digital remote control facilities are available through the USB interface. Setting and readback resolutions are the same as for the Output and Meter specifications respectively. |
| USB Interface                  | Standard USB 2.0 hardware connection. Implemented as a Virtual COM Port  |
| Remote Command Processing Time | Typically, <50ms between receiving the command terminator for a step voltage change at the instrument and the output voltage beginning to change.                                      |

## GENERAL

|                   |  |
|-------------------|--|
| AC Input          | 110V to 240V AC +/- 10%, 50/60Hz.<br>Installation Category II  |
| Power Consumption | 360VA maximum  |
| 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  |
| Safety & EMC      | Complies with EN61010-1 & EN61326-1. For details, request the EU Declaration of Conformity for this instrument via <a href="http://www.aimtti.com/support">http://www.aimtti.com/support</a> (serial number needed). |
| Output Isolation  | 150V pk to Ground  |
| Size              | 214 x 140 x 300mm (WxHxD)  |
| Weight            | <4 kg  |

## EXCELLENCE THROUGH EXPERIENCE

Aim-TTi is the trading name of Thurlby Thandar Instruments Ltd. (TTi), one of Europe's leading manufacturers of test and measurement instruments. The company has wide experience in the design and manufacture of advanced test instruments and power supplies built up over more than thirty years. The company is based in the United Kingdom, and all products are built at the main facility in Huntingdon, close to the famous university city of Cambridge.

## TRACEABLE QUALITY SYSTEMS

TTi is an ISO9001 registered company operating fully traceable quality systems for all processes from design through to final calibration.



ISO9001:2015

Certificate number FM 20695

## WHERE TO BUY AIM-TTI PRODUCTS

Aim-TTi products are widely available from a network of distributors and agents in more than sixty countries across the world.

To find your local distributor, please visit our website which provides full contact details.

[www.aimtti.com](http://www.aimtti.com)



Designed and built in Europe by:



**Thurlby Thandar Instruments Ltd.**

Glebe Road, Huntingdon, Cambridgeshire.

PE29 7DR United Kingdom

Tel: +44 (0)1480 412451 Fax: +44 (0)1480 450409

Email: [sales@aimtti.com](mailto:sales@aimtti.com) Web: [www.aimtti.com](http://www.aimtti.com)

**82100-1620 01**