

# User's Guide

# **EXTECH**<sup>®</sup>

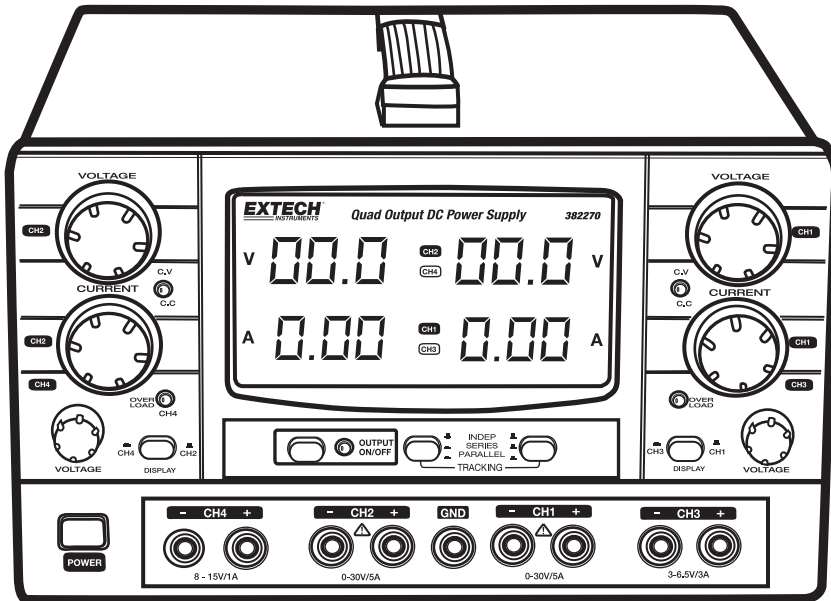
**INSTRUMENTS**

A FLIR COMPANY

## Model 382270

## High Precision Quad Output

## DC Power Supply



## ***Introduction***

---

Congratulations on your purchase of the Extech 382270 DC Power Supply. The Model 382270 can be used for many applications including bench testing, field service, hobby, educational, maintenance, and telecommunication equipment use.

The Model 382270 is a high-precision DC regulated power supply with four outputs. Of which, two are completely adjustable and two are semi-adjustable. The two adjustable outputs can be configured for constant voltage or constant current. The two adjustable outputs can be connected in parallel or in series. The 3 digit LED display indicates each of the two adjustable outputs.

The two semi-adjustable outputs (one is 3~6.5V/3A and the other is 8~15V/1A) have good stability and ripple factor, and reliable overload protection to protect the unit against overloads or short circuits.

This power supply is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## ***Safety Information***

---

### **Safety Precautions**

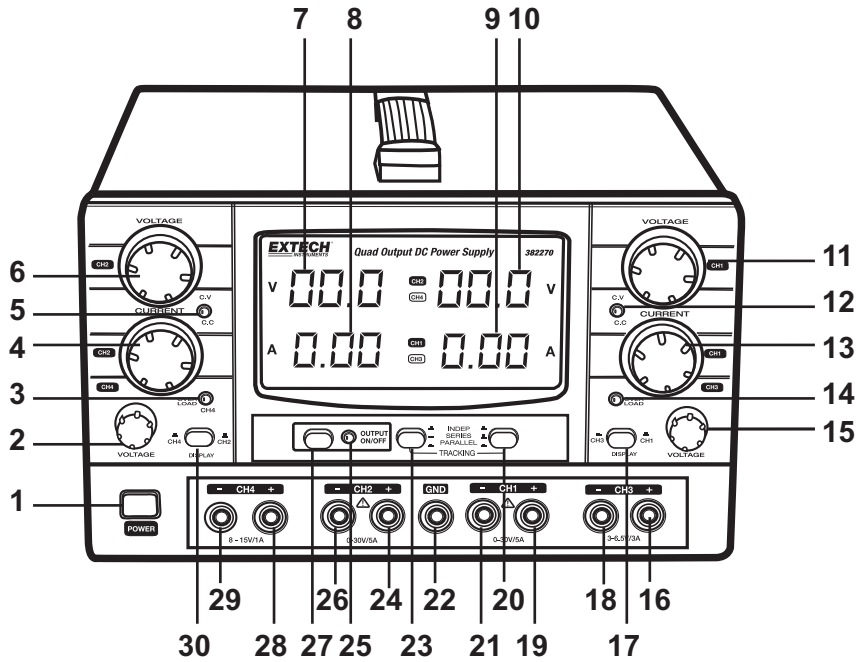
To ensure safe operation of the equipment and eliminate the danger of serious injury due to short-circuit (arcing), the following safety precautions must be observed.

- Prior to connection of the equipment to the mains outlet, check that the available mains voltage corresponds to the voltage setting of the equipment.
- Connect the mains plug of the equipment only to a mains outlet with an earth ground connection.
- Do not place the equipment on damp or wet surfaces.
- Do not subject the equipment to direct sunlight or extreme temperatures.
- Do not subject the equipment to extreme humidity or dampness
- Replace a defective fuse only with a fuse of the original rating. Never short circuit the fuse or the fuse housing
- Do not exceed the maximum permissible input rating.
- Comply with the warning labels and other info on the equipment.
- Do not insert metal objects into the equipment by way of the ventilation slots
- Do not place water-filled containers on the equipment
- Do not operate the equipment near strong magnetic fields (motors, transformer etc.)
- Do not subject the equipment to shocks or strong vibrations
- Keep hot soldering irons away from the equipment
- Allow the equipment to stabilize at room temperature before use
- Do not modify the equipment in any way
- Do not place the equipment face-down on any surface, table or work bench
- All service and repair must be performed by qualified service personal.

### **Cleaning the meter housing**

Prior to cleaning the meter housing, disconnect the mains plug from the power outlet. Clean only with a damp, soft cloth and a commercially available mild household cleaner. Ensure that no water gets inside the equipment to prevent possible shorts and damage to the equipment.

# Power Supply Description



- |   |  |
|---|--|
| 1. POWER button   | 16. Positive terminal CH 3                                 |
| 2. Channel 4 Voltage adjustment                         | 17. CH1 / CH 3 display select button                       |
| 3. Channel 4 overload status LED                        | 18. Negative terminal CH 3                                 |
| 4. Channel 2 Current adjust knob                        | 19. Positive terminal CH 1                                 |
| 5. Constant Current / Voltage status LED for CH 4       | 20. SERIES / PARALLEL / INDEPENDENT tracking select button |
| 6. Channel 2 Voltage adjust knob                        | 21. Negative terminal CH 1                                 |
| 7. Voltage output display (CH 2/4)                      | 22. GND terminal   |
| 8. Current output display (CH 2/4)                      | 23. SERIES / PARALLEL / INDEPENDENT tracking select button |
| 9. Current output display (CH 1/3)                      | 24. Positive terminal CH 2                                 |
| 10. Voltage output display (CH 1/3)                     | 25. Output ON-OFF status LED                               |
| 11. Channel 1 voltage output adjust knob                | 26. Negative terminal CH 2                                 |
| 12. Constant Voltage / Current status LED for Channel 1 | 27. Output ON-OFF button                                   |
| 13. Current output adjust knob for Channel 1            | 28. Positive terminal CH 4                                 |
| 14. Channel 4 overload status LED                       | 29. Negative terminal CH 4                                 |
| 15. Voltage output adjust knob for Channel 3            | 30. CH2 / CH 4 display select button                       |

## ***Operation***

---

### **Independent Connections (Channels 1 and 2, adjustable outputs)**

Set the tracking switches (19) and (22) to the spring out position (INDEP). Set the Output On/Off switch (27) to the On position.

#### **Constant Voltage (CV) Mode**

1. Rotate the CC knob (4) for CH 2 or (13) for CH 1 to maximum and then turn on the power supply.
2. Adjust CV knob (6) or (11) for the desired output.
3. The color of the CV/CC status LED (5) or (12) will turn green.
4. Current Limiting Note: For CV outputs in general, the CC adjustment should be set to maximum, but, for this unit, the current limiting protection point can also be set arbitrarily. To do so:
  - a) Turn on power
  - b) Rotate CC adjustment counter-clockwise to minimum
  - c) Short the positive and negative terminals
  - d) Rotate the CC adjustment clockwise to the desired current-limiting protection point.

#### **Constant Current (CC) Mode**

1. Turn on the power supply.
2. Rotate the CV knob (6) or (11) to maximum.
3. Rotate the CC adjustment (4) or (13) to minimum
4. Connect the required load.
5. Rotate CC adjust knob clockwise to reach the desired current value.
6. The color of the CV/CC status LED (5) or (12) will turn red.

### **Series Connection (Channels 1 and 2, adjustable outputs)**

1. Set the tracking switch (20) to the spring out position. Press in tracking switch (23).
2. In Series mode, the slave output will strictly track the master output voltage when the user turns the master voltage adjust knob (11). The output voltage in Series mode can be set up to double the maximum voltage available in Independent mode (voltage between terminals 19 & 26).
3. Ensure that both channels' negative terminals are NOT connected to case ground. If they are, a short circuit will occur.
4. When the two outputs are configured in Series, the voltage is controlled by the master output knob, but the current adjustment for the two outputs is still independent. Therefore, ensure that the CC adjust knob is rotated fully clockwise to maximum for the Series circuit to work correctly.
5. The user must physically short the negative terminal of the Master output with the positive terminal of the Slaved output.

### **Parallel Connection (Channels 1 and 2 adjustable outputs)**

1. Press in both tracking switch (19) and tracking switch (23).
2. In Parallel mode, the two outputs will always be the same for any setting of the master voltage knob (11). The slave CC indicator (5) will switch on.
3. In Parallel mode the CC adjustment (4) for the slave is not active. The user must adjust the CC for the master output. The current available in parallel mode is up to twice the amount available in other modes.
4. The user must short the two positive terminals.
5. The user must also short the two negative terminals.

## Specifications

---

### Range Specifications

Output1 (CH1)	Output2 (CH2)	Output3 (CH3)	Output4 (CH4)
0~30V/0~5A	0~30V/0~5A	3~6.5V/3A	8~15V/1A

### Electrical Specifications

**Input voltage:** 110~127VAC±10%; 220~240VAC±10% (switchable)

**Output voltage and current:** See table above

#### Line regulation:

For Two adjustable outputs:

CV:  $1 \times 10^{-4} + 3\text{mV}$

CC:  $2 \times 10^{-3} + 3\text{mA}$

Two semi-adjustable outputs: 5mV

#### Load regulation:

Two adjustable outputs:

CV:  $5 \times 10^{-4} + 5\text{mV}$

CC:  $2 \times 10^{-3} + 5\text{mA}$

CH3: 30mV

CH4: 15mV

#### Ripple and noise:

Two adjustable outputs:

CV: 1mV rms

CC: 3mA rms

Fixed output: 2mV rms

#### Protection: current-limit

#### Display accuracy:

Volt-indication: LED ± (0.5%rdg+2 digits)

Amp-indication: LED ± (0.5%rdg+2 digits)

### General Specifications

**Display:** Four 3-digit color-coded LED displays and four status LED lights

**Dimensions:** 10.2 x 6.3 x 14.6" (260 x 160 x 370mm) (W x H x D)

**Weight:** 26.4lbs. (12 kg)

## Warranty

---

**EXTECH INSTRUMENTS CORPORATION** warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

## Calibration and Repair Services

---

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



**Support line (781) 890-7440**

Technical support: Extension 200; E-mail: [support@extech.com](mailto:support@extech.com)

Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)

**Product specifications subject to change without notice**

For the latest version of this User Guide, Software updates, and other Up-to-the-minute product information, visit our website: [www.extech.com](http://www.extech.com)  
Extech Instruments Corporation, 285 Bear Hill Road, Waltham, MA 02451

**Copyright © 2009 Extech Instruments Corporation (a FLIR company)**

All rights reserved including the right of reproduction in whole or in part in any form.

**airconcern**

more info for Extech 382270

Phone: 01235 838 555

Email: [cs@airconcern.co.uk](mailto:cs@airconcern.co.uk)

Web: [www.airconcern.co.uk](http://www.airconcern.co.uk)

Air Concern Ltd, Building 173 Curie Avenue Harvell Didcot, Oxfordshire