

DC VOLTAGE UP TO 16KV
CHARGING POWER UP TO 1KJ/S



CCR series are designed to offer optimal performance in a compact design for capacitor chargers. Dry isolated, CCR Power Supply from 700V to 16kV provides high reliability without any special maintenance.

APPLICATIONS

- Pulsed applications
- Capacitors
- Research and Développement
- Test Equipment
- Accelerators
- Flash lamps

MAIN SPECIFICATION

- Output Voltage : Up to 16kV
- Charging power: 150J/s to 1kJ/s
- Polarity: Positive-Negative-Reversible-Floating
- Operation frequency : <10Hz, up to 3kHz
- Reproducibility: <0.1%
- Voltage holding: <0.1% p-p of full voltage
- Remote interface : 0-10V analogue

TECHNICAL SPECIFICATIONS

| | |
|----------------------------------|---|
| FORMAT | 2U or 3U 19" Rack |
| EFFICIENCY | > 90% at full load |
| MAINS INPUT | 170 to 255 VAC, 47-63 Hz Single Phases + Earth |
| INPUT POWER FACTOR | ≥ 0.98 |
| INRUSH CURRENT | Limited to operating current at full power |
| REMOTE CONTROL MODE | External 0 to 10V analog interface |
| REGULATION MODES | Constant Voltage (CV) and Constant Current (CC) regulations, automatic crossover. Power regulation on demand. |
| STATIC LOAD REGULATION | ±0.05% of full voltage or current, from no load to full load (lower on demand) |
| STATIC LINE REGULATION | ±0.05% of full voltage or current for ±10% mains voltage (lower on demand) |
| STABILITY (AFTER 1-HOUR WARM-UP) | 100 ppm/hour, operating at constant load and temperature |
| PROTECTIONS | Short circuit, Arc quench, External interlock, Over temperature, Overload, Over voltage, Over current |
| STORED ENERGY | 0.2J/kJ |
| ACCESSORIES | 3m removable coaxial HV cable, interlock terminator, safety key |

CONTROL

| | |
|------------------------------------|--|
| LOCAL CONTROLS | Mains power switch, safety lock, HV on, HV off, Over current mode, Preset, Limitation of voltage setting |
| OUTPUT VOLTAGE AND CURRENT SETTING | 10 turn potentiometer (0.05% resolution) Continuously adjustable from 0 to 100% |
| VOLTAGE AND CURRENT DISPLAY | 4.5 Digit |
| DISPLAY INDICATORS | HV on, HV off, Line, Fault, Interlock, Remote, Over current limitation/protection, Regulation mode |
| REMOTE CONTROL INTERFACE | Standard: 0-10V Analogue On demand: RS-232, Ethernet, 0-10V Isolated Analogue, 0-10V Analogue with 24V relay, Optical fiber |
| REMOTE CONTROL SOFTWARE | Labview |



OPERATING ENVIRONMENT

| | |
|-------------------------|--|
| AMBIENT TEMPERATURE | From 0 to 50 °C |
| AMBIENT HUMIDITY | 0 to 80% at 25°C, 50% at 40°C (non-condensing) |
| TEMPERATURE COEFFICIENT | 100 ppm/°C |
| COOLING | Air forced Inlet through front panel (dust filters) Outlet at rear panel |

STANDARDS AND REGULATIONS

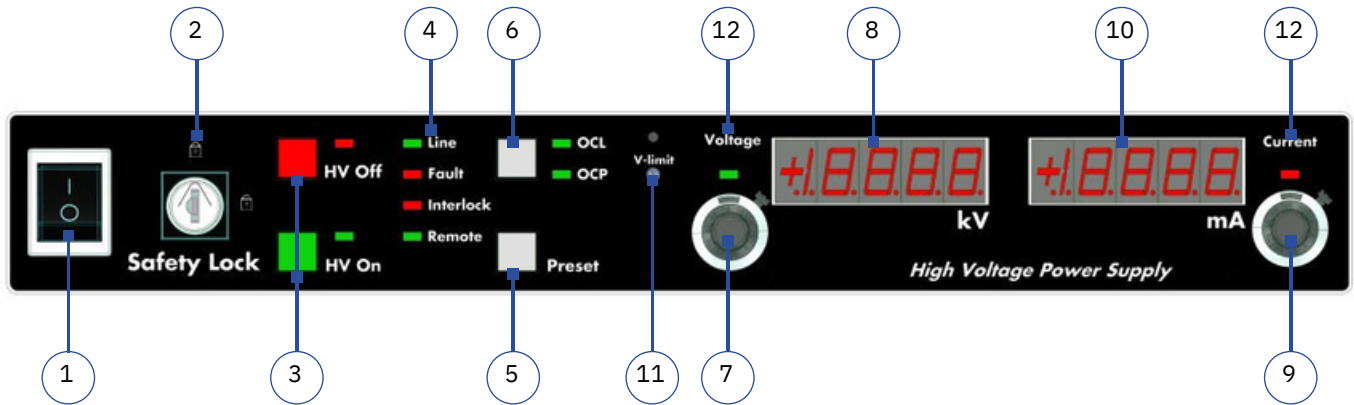
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| CE CERTIFIED AND ACCORDING | <p>Low voltage directive: 2014/35/EU</p> <p>EMC directive: 2014/30/EU</p> <p>RoHS directive: 2011/65/EU</p> <p>EN 61000-6-2:2005 + AC (2005)</p> <p>EN 61000-6-4:2007 + A1 (2011)</p> <p>EN 61326-1:2013</p> <p>EN 61000-3-2:2014</p> <p>EN 61000-3-3:2013</p> <p>EN 61010-1:2010</p> <p>EUROLAB EMC decision n°11: issue 1 of 18 of December 2007</p> |
|----------------------------|--|

DOCUMENTATION AND SERVICES

| | |
|----------------|---|
| DOCUMENTATIONS | <p>User manual</p> <p>Device test report</p> <p>EU declaration of conformity </p> <p>RoHS2 declaration of conformity </p> |
| WARRANTY | <p>2 years</p> <p>Extension on demand</p> |
| ON DEMAND | <p>Factory Acceptance Test (FAT)</p> <p>Detailed design report</p> <p>Custom tests</p> <p>Manufacturing process certification</p> <p>Special engineering</p> |

INTERFACES

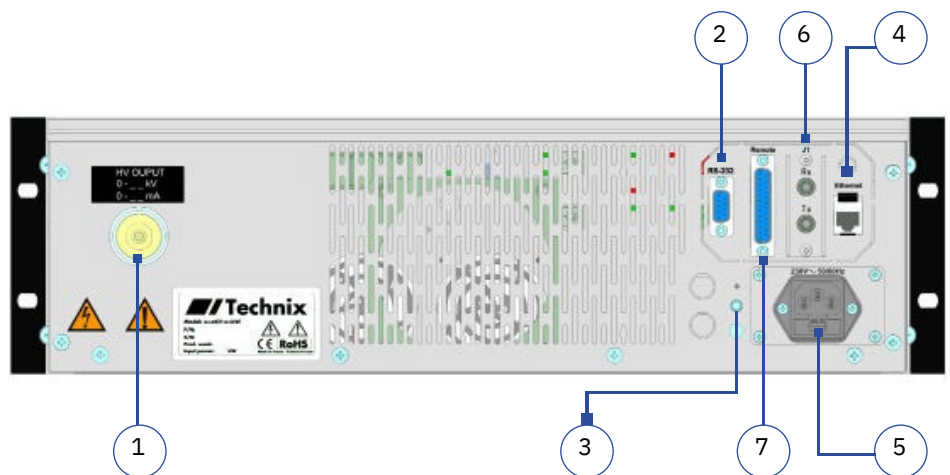
FRONT PANEL



- | | | |
|--------------------------|---|---|
| 1. ON/OFF switch | 4. Statuses (Line, Fault, Interlock, Remote) | 8. Voltage display |
| 2. Safety lock (key) | 5. Preset push button | 9. Current setting |
| 3. HV ON/OFF push button | 6. Over Current Limitation (OCL) Over Current Protection (OCP) | 10. Current display |
| | 7. Voltage setting | 11. Local voltage setting limitation |
| | 11. Local voltage setting limitation | 12. Regulation mode (Current) |
| | 12. Regulation mode (Voltage) | |

REAR PANEL

1. HV output
2. RS-232 (option)
3. Earth bolt
4. Ethernet (option)
5. Mains input
6. Optical fiber (option)
7. Analog interface



0-10V ANALOG INTERFACE

| PIN | SIGNAL | SIGNAL DESCRIPTION | I/O | IMPEDANCE |
|----------|--|---|--------|--------------|
| 1 | HV-Off control | Produced by a fleeting opening from pin 16 | Input | 20Ω |
| 2 | Fault status | Internal Fault: 0V = Detected; +15V = No | Output | 100Ω |
| 3 | Interlock status | fault External interlock: 0V = Open; +15V = | Output | 475Ω |
| 4 | HV-On control | Closed Produced by a fleeting closing to | Input | 20Ω |
| 5 | Output voltage measurement | pin 16 | Output | 475Ω |
| | Output current measurement | 0V to 10V = 0% to 100% | | 475Ω |
| 6 | Inhibit control | 0V to 10V = 0% to 100% | Output | |
| 7 | Remote | Activated by digital signal between +5V to +24V | Input | |
| 8 | control | Open contact = Local control mode; Closed contact = Remote control mode | Input | 20Ω |
| 9 | | Not connected | | |
| 10 | Arc monitor (Mains Monitor for older models) | Generates a signal when an arc is detected: +15V = No arc; 0V = Arc detected Older models (shipped before January 2023): Generates a fault if the mains input is failing: 0V = Mains is fine ; +15V = Mains is failing | Output | 100Ω |
| 11 | Output power measurement (option) | 0V to 10V = 0% to 100% (option) | Output | 475Ω |
| 12 | Local output voltage setting | Copy of the setting on the front panel potentiometer. 0V to 10V = 0% to 100% | Output | 10Ω |
| 13 | Local output current setting | Copy of the setting on the front panel potentiometer. 0V to | Output | 10Ω |
| 14 | Remote output current setting | 10V = 0% to 100% | Input | 115Ω |
| 15 | +10V reference | 0V to 10V = 0% to 100% | Output | 2.7Ω |
| 16 | 0V reference (digital signals) | +10V reference for analog signals, max current : 5mA | Output | |
| 17 | Remote output voltage setting | 0V ground reference for digital signals | Output | |
| 18 | Regulation mode status or End of Charge status | 0V to 10V = 0% to 100% of max output voltage | Input | 115Ω |
| 19 | HV-On status | DC power supply: Open contact = Current Regulation; +24V = Voltage Regulation CC power supply: Open contact = Capacitor charging; +24V = End of charge | Output | 100Ω |
| 20 | 0V reference (analogue signals) | 0V = HV output disabled (HV Off) +15V = HV output enabled (HV On) | Output | 100Ω |
| 21-22-23 | | 0V ground reference for analogue signals | Output | |
| 24 | External Interlock | Not connected | | |
| 25 | +10V Reference or Remote output power setting (option) | Connect to pin 16 to close the interlock. | Input | 500Ω |
| | | Standard: +10V reference for analog signals, max current : 5mA Option: 0V to 10V = 0% to 100% of max output power | Output | 2.7Ω or 115Ω |

OPTIONS

- Reversibility
- Floating Outputs
- Auto inhibition
- Parallel operation
- Custom remote interface
- Emergency stop switch
- Special mains input
- Non Instrumented front panel
- Industrial dust filters
- Transportable case
- Remote Front panel
- Tropicalization
- Custom design

RANGES

model reference: CCR 0.7 kV to 16 kV - 0.15 kJ/s to 1 kJ/s

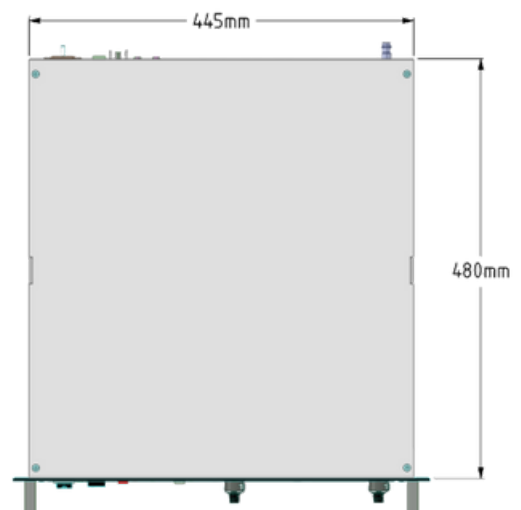
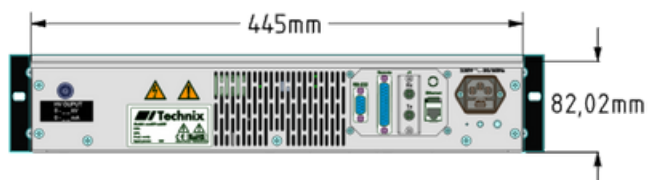
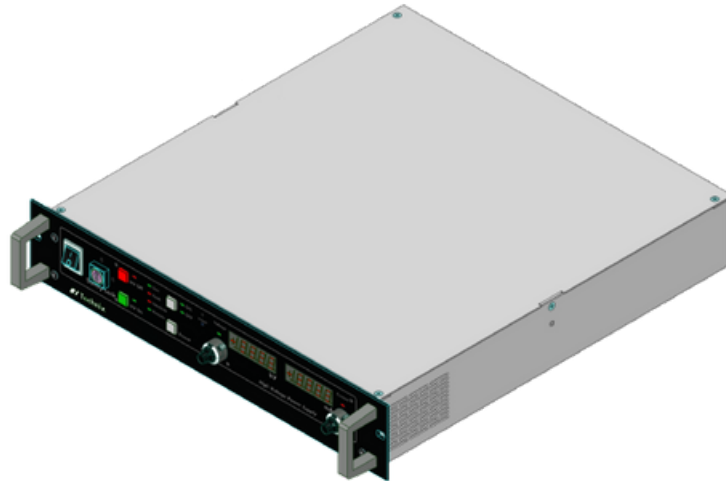
VOLTAGE

CHARGING POWER

| OUTPUT VOLTAGE | 150 J/s | 300 J/s | 600 J/s | 1 kJ/s |
|----------------|-------------|---------|---------|---------|
| | Max Current | | | |
| 0.7 kV | 428 mA | 857 mA | 1.71 A | 2.86 A |
| 1 kV | 300 mA | 600 mA | 1.2 A | 2 A |
| 2.5 kV | 120 mA | 240 mA | 480 mA | 800 mA |
| 5 kV | 60 mA | 120 mA | 240 mA | 400 mA |
| 10 kV | 30 mA | 60 mA | 120 mA | 100 mA |
| 15 kV | 20 mA | 40 mA | 80 mA | Contact |
| 16 kV | Contact us | | | |

DIMENSION

MODEL 2U - 19" : 133 x 483 x 480mm (H x W x D)



DIMENSION

MODEL 3U - 19" : 133 x 483 x 480mm (H x W x D)

