Linear Post-Processor Unit TC.LIN

for Regatron Power Supplies

Features
- The Linear Post-Processor Unit combines the advantages of a primary switched power supply like high efficiency, small outline, light weight, cost efficiency, with the fast, smooth linear controlled output capability of a linear power supply.
- To be used in combination with TopCon power supplies.
- Modular concept for easy power increase: Parallel, master-slave-operation of power supplies and Linear Post-Processor Units.
- Very fast digital controller features quick response time, enhanced dynamics and programmable control characteristics.
- User-friendly PC program available. This enables the user to communicate over the power supply to the Linear Post-Processor Unit. 
- Seamless integration into the well established TopControl software.
- Swiss made: developed, manufactured and tested in Switzerland by Regatron AG.

System Configuration (single Modules)

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Linear Post-Processor Unit TC.LIN

50 A / 25 A / 1500 VDC

TC.LIN.75.1500.50

Input requirements and output specifications
Mains input data (Auxiliary Supply)
Voltage ........................................ 189 – 253 VAC
Frequency ................................... 48 – 62 Hz
Input power .................................... 46 W
DC Input ratings
Input voltage .................................. 0 – 1500 VDC
Input current .................................. 50 A
Leakage current DC to PE ...................... < 10 mA
Output ratings
Output voltage range ......................... 0 – 1500 VDC
Drop Voltage (typical) ...................... 50 V
Output current full range ................... 0 – 50 A
Output current half range .................... 0 – 25 A
Output Capacitor ............................ < 100 nF
Dissipation Power
Continuous power diss. ...................... 2000 W
Power diss. < 3 Min. ....................... 2500 W
Transient power diss. ................. Full SOA protection
Operating modes
AAP
current regulation ...................... 0 – 100 % I
Resolution
Voltage, current resolution .............. 14.5 Bit
Static accuracy
Load regulation ................................ < ± 0.05 % FS typ.
Line regulation .......................... < ± 0.05 % FS typ.
Transient response time
Load regulation ................................ < 10 µs
Set value tracking ........................... < 50 µs
Stability ..................................... < ± 0.02 % FS
Temperature coefficient
Current, voltage ...................... < 0.01 % FS/°C
Remote sensing
Terminals on rear side ................. cable voltage drop compensation

General specifications
Weight .................................. ~21 kg
Width front panel ......................... 483 mm
Height front panel ......................... 132 mm
Height housing ......................... 132 mm (3 U)
Depth with PACOB ..................... 515 mm
Depth housing ......................... 452 mm
DC input connections max.: .............. 16 mm²
(AC+, DC-, PE) 
DC Output connections max.: .............. 16 mm²
(AC+, DC-, PE)
Remote Sensing connections max. .......... 0.8 mm²
(AC+, DC-)

1) Most commonly used parameter are accessible via PC Program TopControl connected to TopCon power supply.
2) Maximum Output Voltage = Input Voltage – Drop Voltage.
3) Adjustable Value, the Drop Voltage influences directly the power dissipation.
4) Full Range / Half Range are selectable by PC program TopControl.
5) At ambient temperature 25 °C, for current half range 60 % of specified value.
6) For Drop Voltage < 250 VDC, for current half range 50 % of specified value.
7) Application Area Programming, e.g. I(U) curves of solar panel / solar array.
8) Improved by using oversampling technics.
9) Typical value for variation within 20 V to 60 V drop voltage, at constant load and temperature conditions.
10) Typical value for variation within 20 V to 60 V drop voltage, at constant load and temperature conditions.
11) Typical recovery time to within < ± 2 % band of set value for a load step 60 % to 70 %, ohmic load, voltage drop > 30 V and constant temperature conditions.
12) Typical recovery time to within < ± 2 % band of set value for a load step 60 % to 70 %, ohmic load, voltage drop > 30 V and constant temperature conditions.
13) Maximum drift over 6 hours after 30 minute warm-up time, at constant line input, load and temperature conditions.
14) Typical change of output values versus ambient temperature, at constant line input and load conditions.
### Ambient conditions
- **Operating temperature**: 5 – 40 °C
- **Storage temperature**: -25 – 70 °C
- **Relative air humidity**: 0 – 95% (non-condensing)

### Cooling
**Standard**
- Fans: 5 fans, internal temperature-controlled

Optional: Integrated liquid cooling system of the power stage with completely integrated liquid to liquid heat-exchange system.

- **Material**: EN AW-5083
- **Inlet/outlet on rear side size**: G ½"
- **Flow**: 2.5 l/min
- **Pressure max.**: 10 bar
- **Pressure drop**: 50 mbar/3 l/min

### Safety
**Type of protection (IEC 60529)**
- **Basic construction**: IP 20
- **Mounted in cabinet**: up to IP 53

**Isolation**
- **Line to output**: 4000 V<sub>ms</sub>
- **Line to case**: 2500 V<sub>ms</sub>
- **DC-Input, Output to case**: ± 1000 V<sub>DC</sub>, > 10 MΩ

**Conformity CE-Marking**
- **EMC Directive**
  - **EMC emission**: EN 61000-6-4
  - **EMC immunity**: EN 61000-6-2

- **Low Voltage Directive**
  - Electronic equipment for use in power installations: EN 50178

**Standard programming interfaces**
- **RS232**
  - Isolation to electronics and earth: 125 V<sub>ms</sub>
  - Connector: 9 pin D-sub, female
- **Baud rate**: 38400 baud
- **Resolution (programming and readback)**: 0.005 % FS

**Ordering code**
TC.LIN.75.1500.50

**Scope of delivery**
- TopCon Linear Post-Processor Unit ready to install, including:
  - Operating manual language: English
  - RS232 cable length: 1.8 m
  - CAN bus: CAN cable
  - CANTerm Connector

**Software**
- TopControl: for LabVIEW® and C/C++ (and other programming languages, to be used in combination with TopCon Power Supplies.)

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