

# Linear Post-Processor Unit

for Regatron Power Supplies

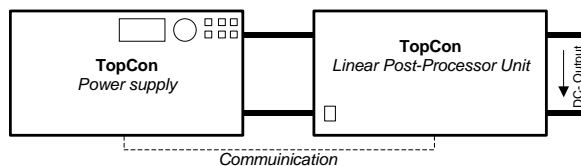


Linear Post-Processor Unit

## 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*.<sup>1)</sup>
- Seamless integration into the well established TopControl software.
- Swiss made: developed, manufactured and tested in Switzerland by Regatron AG.

## System Configuration (single Modules)



## Regatron AG

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# 40 A/20 A/1000 VDC

TC.LIN.SER.40.1000.40

## Input requirements and output specifications

### Mains input data (Auxiliary Supply)

Voltage..... 85 – 264 V<sub>AC</sub>  
 Frequency..... 48 – 62 Hz  
 Input power ..... 120 W

### DC Input ratings

Input voltage ..... 0 – 1000 V<sub>DC</sub>  
 Input current..... 40 A<sub>DCmax</sub>  
 Leakage current DC to PE ..... < 10 mA

### Output ratings

Output voltage range ..... 0 – 1000 V<sub>DC</sub><sup>2)</sup>  
 Drop Voltage (typical) ..... 40 V<sup>3)</sup>  
 Output current full range ..... 0 – 40 A<sup>4)</sup>  
 Output current half range ..... 0 – 20 A  
 Output Capacitor..... < 10 nF

### Dissipation Power

Continuous power diss..... 1500 W<sup>5)</sup>  
 Power diss. < 3 Min..... 2000 W<sup>6)</sup>  
 Transient power diss..... Full SOA protection

### Operating modes

AAP<sup>7)</sup> current regulation..... 0 – 100 % I<sub>max</sub>  
 @ 0 – (V<sub>max</sub>-V<sub>Drop</sub>)

### Resolution

Voltage, current resolution ..... 14.5 Bit<sup>8)</sup>

### Static accuracy

Load regulation ..... < ± 0.05 % FS typ.<sup>9)</sup>  
 Line regulation ..... < ± 0.05% FS typ.<sup>10)</sup>

### Transient response time

Load regulation ..... < 10 μs<sup>11)</sup>  
 Set value tracking ..... < 50 μs<sup>12)</sup>

### Stability

..... < ± 0.02 % FS<sup>13)</sup>

### Temperature coefficient

Current, voltage ..... < 0.01 % FS/°C<sup>14)</sup>

### Remote sensing

Terminals on rear side ..... cable voltage drop compensation

## General specifications

Weight..... 23 kg  
 Width front panel..... 483 mm  
 Width housing ..... 444 mm (19")  
 Height front panel..... 265 mm  
 Height housing..... 262 mm (6 U)  
 Depth with output terminals ..... 485 mm  
 Depth housing..... 450 mm  
 DC input terminals max..... 3 x 25 mm<sup>2</sup>  
 (DC+, DC-, PE)  
 DC Output terminals max ..... 3 x 25 mm<sup>2</sup>  
 (DC+, DC-, PE)  
 Remote Sensing terminals max ..... 2 x 10 mm<sup>2</sup>  
 (DC+,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 V<sub>DC</sub>, 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 60 % to 70 % load variation, at voltage drop 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 set value step 60 % to 70 %, ohmic load, voltage drop > 30 V and constant temperature conditions. line input and temperature conditions. Transient response time can be slightly affected by multi-unit operation.
- 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.

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**Ambient conditions**

Operating temperature ..... 5 – 40 °C  
 Storage temperature..... -25 – 70 °C  
 Relative air humidity ..... 0 – 95 %  
 (non-condensing)

**Cooling**

Fans ..... internal temperature-controlled

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**Safety**

**Type of protection (IEC 60529)**

Basic construction ..... IP 20  
 Mounted in cabinet ..... up to IP 53

**Isolation**

Line to output (auxiliary supply) ..... 4000 V<sub>rms</sub>  
 Line to case (auxiliary supply) ..... 2500 V<sub>rms</sub>  
 DC-Input, Output to case: ..... ± 1000 V<sub>DC</sub>, > 10 MΩ

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**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

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**Standard programming interfaces**

**Control port**

Isolation to electronics and earth: ..... 125 V<sub>rms</sub>  
 Connector ..... 15 pin D-sub, female  
 ..... on rear panel

**Control port**

Input functions ..... Future use  
 Output functions ..... Future use

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**Standard programming interfaces (continued)**

**RS232**

Isolation to electronics and earth: ..... 125 V<sub>rms</sub>  
 Connector ..... 9 pin D-sub, female  
 ..... on rear panel  
 Baud rate ..... 38400 baud  
 Resolution (programming and readback):  
 U, I ..... 0.005 % FS

**Ordering code**

TC.LIN.SER.40.1000.40

**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 ..... on Installation disc  
 API (DLL file) ..... for LabVIEW® and C/C++  
 ..... (and other programming languages,  
 ..... to be used in combination  
 ..... with TopCon Power Supplies.)