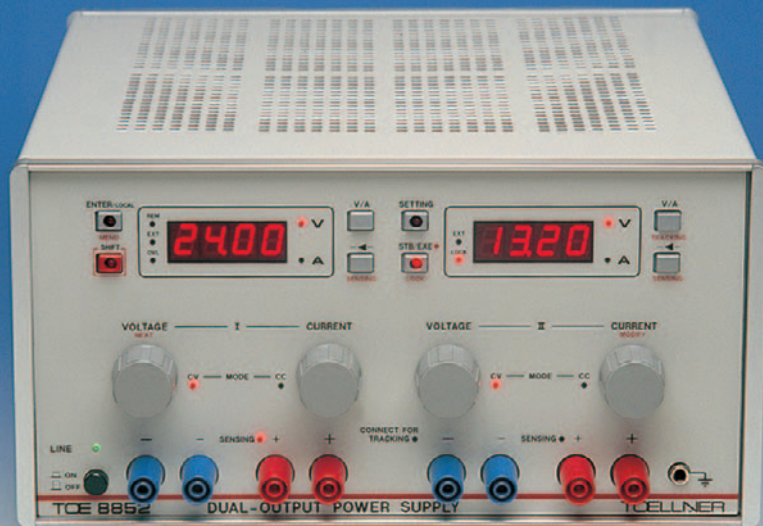


Single-output and dual-output power supplies up to 320 W with GPIB/RS 232 remote control from TOELLNER®

TOE 8840 / TOE 8850



Adjustment using incremental spinwheels

The output values are adjusted with a selectable sensitivity using wear-free incremental spinwheels, thus permitting reliable and precise adjustment of the output voltage and current even after many years of service.

Remote control (option)

All instruments can be remote-controlled in analog mode as well as via GPIB and RS 232 interfaces using the SCPI command set (SCPI: Standard Commands for Programmable Instruments). The system interfaces are characterized by a high response and measuring rate. In addition, instrument driver software is available under "LabView".

Automatic calibration

Fast and convenient calibration of all output parameters is possible externally within a few minutes without any adjustment of trimmers or interventions in the instrument. This "software calibration" can be carried out simply using the control elements or supported by a computer within a test system. The "software calibration" provides an advantage which should not be underestimated when considering the regular calibration intervals which are becoming increasingly important in quality assurance systems.

Voltage or current source

Depending on the values set for the voltage and current, each power supply can be operated as a voltage source or a current source depending on the load conditions. All outputs can be connected in parallel or series without problem.

High performance and exemplary operating characteristics

- ❖ Adjustment of voltage and current using wear-free incremental spinwheels.
- ❖ Maximum precision using μ P-controlled autocalibration.
- ❖ System-compatible with GPIB and RS 232 interfaces.
- ❖ Comprehensive protective equipment, OVP and OCP

A proven concept

has been used for the new, system-compatible single-output and dual-output power supplies of the **TOE 8840 and TOE 8850 series**. Exceptional specifications are achieved with a total output power of 160 W or 320 W as a result of the classical in-phase control principle. A total of 18 different models deliver voltages up to 130 V and currents up to 20 A. With a resolution of 12 bits in the voltage and current ranges, a simple and convenient user interface and the excellent specifications, these instruments are suitable for both manual and bus-based mode.

Integrated measurements

A further significant characteristic is the high-resolution measurement of the voltage and current values; these are output on 4-digit LED displays and can be read at a high rate in bus mode. This means that additional measuring instruments are usually superfluous.

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Remote control

GPIB interface (option)

Interface connection according to IEEE 488.1; electrically isolated from main outputs

Interface functions:

AH1, SH1, L4, T6, SR1, PP1, RL1, DC1, DT0, E1/E2, C0

Device address: adjustable from 0 to 30 decimal in menu

Software standard: command syntax to IEEE 488.2 with command set switchable between compatible TOELLNER commands and SCPI commands

Setting rate: approx. 25 settings/s

Measuring rate: approx. 20 measurements/s

RS 232 interface (option)

Interface connection: 9-pin Sub-D plug, electrically isolated from main outputs

Transmission: half-duplex mode, asynchronous; 110 - 19200 baud adjustable in menu

Software standard: command syntax to IEEE 488.2 with command set switchable between compatible TOELLNER commands and SCPI commands

Setting rate: approx. 20 settings/s

Measuring rate: approx. 15 measurements/s

Additional functions

These modern, proven and exceptionally well equipped power supplies are additionally characterized by supplementary functions such as the saving of 100 instrument settings, the standby circuit for the power outputs, sense and tracking modes as well as (option) overvoltage (OVP) and overcurrent (OCP) protective circuits for TOE 8841 and TOE 8851.

Price and performance

In addition to the exceptional specifications and characteristics, all power supplies of the TOE 8840 and TOE 8850 series have a remarkable price/performance ratio.

Common operating functions

Display of voltage and current: separately on two 4-digit displays for all single instruments; on two selectable 4-digit V/A displays for the dual instruments. Constant voltage or constant current mode is indicated by single LEDs.

Sense mode (only with the TOE 8850 series) can be selected directly. Connection to front or rear of instruments. Non-volatile memory for 100 complete instrument settings and the last setting when switching-off.

General data

Main outputs:

Floating and electrically isolated from the system interface.

Output sockets:

On front of instrument with TOE 8840 series.

On front of instrument and optionally at rear with TOE 8850 series.

Standby circuit of power outputs directly selectable.

Mains voltage:

115 V/230 V $\pm 10\%$, 48 to 60 Hz.

Power consumption:

TOE 8840 approx. 370 VA

TOE 8850 approx. 730 VA

Protective measures:

Protection class 1 according to DIN 57411/VDE 0411 Part 1/IEC 348

Operating temperature: 0 to 40 °C

Reference temperature: 23 °C

Warm-up time: 30 min.

Dimensions (WxHxD)

TOE 8840: 265 x 147 x 330 mm

TOE 8850: 265 x 147 x 437 mm

Weight:

TOE 8840: approx. 8 kg

TOE 8850: approx. 15 kg

Housing: Aluminium

Ordering data:

Power supply TOE 8841-xx

Power supply TOE 8842-xx

Power supply TOE 8851-xx

Power supply TOE 8852-xx

xx = voltage value

Options/accessories

System remote control according to IEEE 488 and RS 232

For TOE 8841 and TOE 8851 **TOE 8861/015**

For TOE 8842 and TOE 8852 **TOE 8862/015**

Analog remote control

For TOE 8841 and TOE 8851 **TOE 8861/016**

For TOE 8842 and TOE 8852 **TOE 8862/016**

Protective circuits

OVP and OCP for TOE 8841

and TOE 8851 **TOE 8861/020**

Output on rear panel

For TOE 8851 **TOE 8850/252**

For TOE 8852 **2 x TOE 8850/252**

19" adapter, 3HU for

TOE 8841, 8842, 8851, 8852 **TOE 9501**

Software driver

under LabView

(full version)

TOE 9060

The instruments of the TOE 8840 series can be equipped with a system remote control or an analog remote control.

Simultaneous fitting of both options is not possible.

Specifications

Single-output and dual-output power supplies, 160 W from TOELLNER®

TOE 8841 / TOE 8842

| Single-output power supplies | | | | | |
|--|---------|-----------------------|-----------------------|-----------------------|----------------------|
| Model | TOE | 8841-24 | 8841-32 | 8841-64 | 8841-130 |
| Output data | Voltage | 0 ... 24 V | 0 ... 32 V | 0 ... 64 V | 0 ... 130 V |
| | Current | 0 ... 6.5 A | 0 ... 5 A | 0 ... 2.5 A | 0 ... 1.2 A |
| Adjustment resolution | Voltage | 10 mV | 10 mV | 20 mV | 100 mV |
| | Current | 2 mA | 2 mA | 1 mA | 1 mA |
| Adjustment accuracy | Voltage | 0.1 % + 15 mV | 0.1 % + 20 mV | 0.1 % + 20 mV | 0.1 % + 100 mV |
| | Current | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |
| Deviation in regulation with 100 % change in load | Voltage | 5×10^{-4} | 5×10^{-4} | 2×10^{-4} | 2×10^{-4} |
| | Current | 2×10^{-4} | 2×10^{-4} | 5×10^{-3} | 10^{-3} |
| Regulation time for a load transition from 20 % to 100 % and settling to within 0.1 % of rated voltage | | < 100µs | < 100µs | < 80µs | < 80µs |
| Residual ripple (10 Hz ... 1 MHz) | Voltage | 0.4 mV _{rms} | 0.4 mV _{rms} | 0.8 mV _{rms} | 1 mV _{rms} |
| | Current | 300 µA _{rms} | 200 µA _{rms} | 100 µA _{rms} | 50 µA _{rms} |
| Measurement accuracy | Voltage | 0.1 % + 25 mV | 0.1 % + 30 mV | 0.1 % + 40 mV | 0.1 % + 200 mV |
| | Current | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |

| Dual-output power supplies | | | | | |
|--|---------|-----------------------|-----------------------|-----------------------|----------------------|
| Model | TOE | 8842-24 | 8842-32 | 8842-64 | 8842-130 |
| Output data | Voltage | 2 x 0 ... 24 V | 2 x 0 ... 32 V | 2 x 0 ... 64 V | 2 x 0 ... 130 V |
| | Current | 2 x 0 ... 3.25 A | 2 x 0 ... 2.5 A | 2 x 0 ... 1.2 A | 2 x 0 ... 0.6 A |
| Adjustment resolution | Voltage | 10 mV | 10 mV | 20 mV | 100 mV |
| | Current | 2 mA | 1 mA | 1 mA | 1 mA |
| Adjustment accuracy | Voltage | 0.1 % + 15 mV | 0.1 % + 15 mV | 0.1 % + 20 mV | 0.1 % + 100 mV |
| | Current | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |
| Deviation in regulation with 100 % change in load | Voltage | 2×10^{-4} | 2×10^{-4} | 10^{-4} | 10^{-4} |
| | Current | 2×10^{-4} | 5×10^{-4} | 10^{-3} | 2×10^{-3} |
| Regulation time for a load transition from 20 % to 100 % and settling to within 0.1 % of rated voltage | | < 80µs | < 80µs | < 80µs | < 80µs |
| Residual ripple (10 Hz ... 1 MHz) | Voltage | 0.4 mV _{rms} | 0.3 mV _{rms} | 0.6 mV _{rms} | 1 mV _{rms} |
| | Current | 200 µA _{rms} | 100 µA _{rms} | 50 µA _{rms} | 25 µA _{rms} |
| Measurement accuracy | Voltage | 0.1 % + 25 mV | 0.1 % + 30 mV | 0.1 % + 40 mV | 0.1 % + 200 mV |
| | Current | 0.2 % + 4 mA | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |

Specifications

Single-output and dual-output power supplies, 320W from TOELLNER®

TOE 8851 / TOE 8852

| Single-output power supplies | | | | | | |
|--|---------|-----------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Model | TOE | 8851-16 | 8851-24 | 8851-32 | 8851-64 | 8851-130 |
| Output data | Voltage | 0 ... 16 V | 0 ... 24 V | 0 ... 32 V | 0 ... 64 V | 0 ... 130 V |
| | Current | 0 ... 20 A | 0 ... 13 A | 0 ... 10 A | 0 ... 5 A | 0 ... 2.5 A |
| Adjustment resolution | Voltage | 10 mV | 10 mV | 10 mV | 20 mV | 100 mV |
| | Current | 10 mA | 10 mA | 5 mA | 2 mA | 1 mA |
| Adjustment accuracy | Voltage | 0.1 % + 10 mV | 0.1 % + 10 mV | 0.1 % + 10 mV | 0.1 % + 20 mV | 0.1 % + 100 mV |
| | Current | 0.2 % + 20 mA | 0.2 % + 20 mA | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA |
| Deviation in regulation with 100 % change in load | Voltage | 5×10^{-5} | 5×10^{-5} | 5×10^{-5} | 5×10^{-5} | 10^{-4} |
| | Current | 5×10^{-5} | 5×10^{-5} | 10^{-4} | 2×10^{-4} | 5×10^{-4} |
| Regulation time for a load transition from 20 % to 100 % and settling to within 0.1 % of rated voltage | | < 200 μ s | < 100 μ s | < 80 μ s | < 80 μ s | < 80 μ s |
| Residual ripple (10 Hz...1 MHz) | Voltage | 0.5 mV _{rms} | 0.5 mV _{rms} | 0.5 mV _{rms} | 1 mV _{rms} | 2 mV _{rms} |
| | Current | 1 mA _{rms} | 500 μ A _{rms} | 500 μ A _{rms} | 200 μ A _{rms} | 100 μ A _{rms} |
| Measurement accuracy | Voltage | 0.1 % + 20 mV | 0.1 % + 20 mV | 0.1 % + 20 mV | 0.1 % + 40 mV | 0.1 % + 200 mV |
| | Current | 0.2 % + 20 mA | 0.2 % + 20 mA | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA |

Dual-output power supplies

| Model | TOE | 8852-16 | 8852-24 | 8852-32 | 8852-64 | 8852-130 |
|--|---------|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------|
| Output data | Voltage | 2 x 0 ... 16 V | 2 x 0 ... 24 V | 2 x 0 ... 32 V | 2 x 0 ... 64 V | 2 x 0 ... 130 V |
| | Current | 2 x 0 ... 10 A | 2 x 0 ... 6.5 A | 2 x 0 ... 5 A | 2 x 0 ... 2.5 A | 2 x 0 ... 1.2 A |
| Adjustment resolution | Voltage | 10 mV | 10 mV | 10 mV | 20 mV | 100 mV |
| | Current | 5 mA | 2 mA | 2 mA | 1 mA | 1 mA |
| Adjustment accuracy | Voltage | 0.1 % + 10 mV | 0.1 % + 10 mV | 0.1 % + 10 mV | 0.1 % + 20 mV | 0.1 % + 100 mV |
| | Current | 0.2 % + 10 mA | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |
| Deviation in regulation with 100 % change in load | Voltage | 5×10^{-5} | 5×10^{-5} | 5×10^{-5} | 5×10^{-5} | 10^{-4} |
| | Current | 10^{-4} | 2×10^{-5} | 2×10^{-4} | 5×10^{-4} | 10^{-3} |
| Regulation time for a load transition from 20 % to 100 % and settling to within 0.1 % of rated voltage | | < 100 μ s | < 80 μ s | < 80 μ s | < 80 μ s | < 80 μ s |
| Residual ripple (10 Hz...1 MHz) | Voltage | 0.5 mV _{rms} | 0.5 mV _{rms} | 0.5 mV _{rms} | 1 mV _{rms} | 2 mV _{rms} |
| | Current | 500 μ A _{rms} | 300 μ A _{rms} | 200 μ A _{rms} | 100 μ A _{rms} | 50 μ A _{rms} |
| Measurement accuracy | Voltage | 0.1 % + 20 mV | 0.1 % + 20 mV | 0.1 % + 20 mV | 0.1 % + 40 mV | 0.1 % + 200 mV |
| | Current | 0.2 % + 10 mA | 0.2 % + 10 mA | 0.2 % + 4 mA | 0.2 % + 2 mA | 0.2 % + 2 mA |