



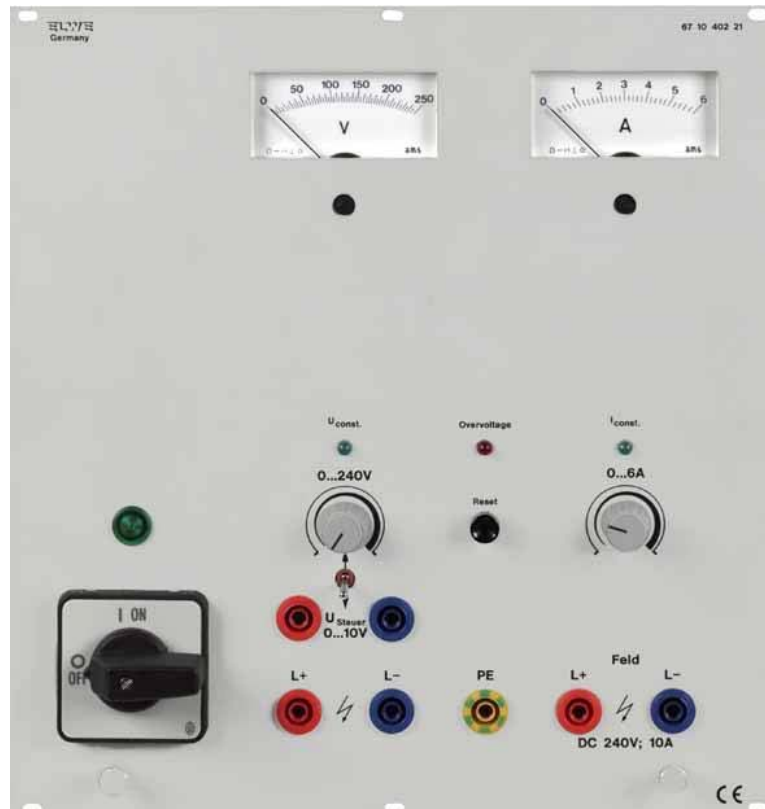
User Information

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DC-Stabiliser 0...240 V; 0...6 A



Please read the operating instructions thoroughly before using this device. The guarantee and the manufacturer's possible liability does not cover defects which are caused by non-observance of these instructions. If this device is passed on to others, then this manual must be, too.



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Brief description

Plug-in unit DC-Stabiliser 0...240 V, 0...6 A

Infinitely variable DC voltage 0...240 V with infinitely variable current limiting 0...6 A.

Specifications:

Input voltage:	230 V AC
Output voltage 1:	U(A) = 0...240 V DC, stabilised,
Output current:	I _{max} = 6 A, permanently short-circuit-proof,
Ripple voltage:	U(Br) < 1 V (at 240 V, 6 A)
LED display when applying current limitation	
Output voltage 2:	U = 240 V DC, 10 A
Control input:	0...10 V DC

Equipment:

- 1 measuring element 0...300 V
- 1 measuring element 0...6 A
- 1 3 pole circuit breaker
- 7 4 mm safety sockets

Safety instructions

- **The device must not be put into operation if:**
 - the device shows any visible damage.
 - the casing cover is missing.
 - the device has been dropped.
 - the cables are damaged.
- **The device must not be used**
 - in damp or wet locations.
 - in locations containing flammable gases, vapours or dust.
 - in explosion-risk locations.
 - outdoors.
- **Avoid**
 - impacts.
 - touching the device and its operating elements with wet hands.
 - the ingress of liquids.
 - overloads and short circuits.
 - heat concentration due to covered ventilation slots, ventilation holes and signal lamps – fire hazard!
 - opening the device when it is connected to power.
 - contacting live parts.
- **Make sure that**
 - a residual – current device has been connected in series.
 - the device is only cleaned when it is off-circuit.
 - only original spare parts are used if repair work has to be carried out.
 - Connected experimental set-ups are modified only when it is not connected to power
- **Only use**
 - plug-in connections with protection against electric shock.
 - undamaged experimental cables.
 - shock-proof equipment.
- **Electrical work and repairs must only be carried out by our service team or by an authorised electrical expert.**
- **Changes to the circuit or of any other kind are not permitted.**

The ELWE equipment, systems and installations correspond to the harmonised or national standards EN-61010-1, EN-60204, DIN VDE 0789 Part 100, EN-292, EN-982, EN-983 and the relevant product standards, depending on their functional use. The protection requirements specified by the law of electromagnetic compatibility (EMC) are fulfilled by the requirements of the harmonised standards EN-61326-1, EN-61000-6-3, EN-61000-6-4 and EN-55011. The operator of the experimental set-ups is responsible for observing the protection requirements specified by the EMC law. The experiments must only be conducted by skilled teachers and trainers.

Specifications

Mains connection

Rated voltage	230 V AC \pm 10%
Nominal frequency	50...60 Hz
Nominal power	1500 VA

Output

Output voltage (X3, X4)	0...240 V DC; not mains separated
Output current	0...6 A, short-circuit-proof
Ripple voltage	< 1 V
Output voltage (X6, X7)	240 V DC; 10 A; not mains separated

Control input	0...10 V DC – rate 24 V / 1 V
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Environmental conditions

Temperature range	corresponds to EN 61010-1 +5°C ... +40°C
Max. relative humidity	80% (31°C) ... 50% (40°C)
Max. operating level above sea level	2000 m

Dimensions

Installation width	49 PU (248 mm)
Installation height	6 PU
Weight	5.5 kg

The dimensions and the weight are approximate values. technical modifications reserved.

Intended use

The device is designed for use only in the ELWE plug-in unit system.

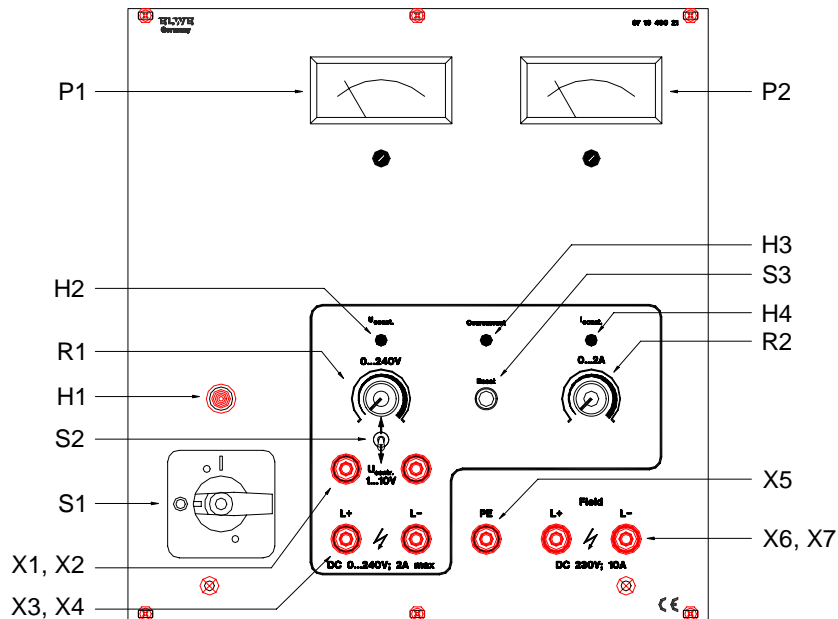
It is used for the power supply of electrical machine experimental set-ups for lessons and training according to the ELWE experimental manuals.

Operating the device without its casing is not permitted.

Experiments and exercises must be carried out in correspondence with the relevant regulations and must always be monitored by authorised teachers and trainers.

When experimenting with electrical power, please observe the regulations specified in DIN EN 50110 and DIN VDE 0105-12.

Operating elements and their functions



Designation	Operating element	Function
X0	System connector, rear	Connection of the mains AC voltage
X1	4mm safety socket	Control input 0...10 V, plus
X2	4mm safety socket	Control input 0...10 V, minus
X3	4mm safety socket	Output 0...240 V DC; L+
X4	4mm safety socket	Output 0...240 V DC; L-
X5	4mm safety socket	PE connection
X6	4mm safety socket	Output 240 V DC; L+
X7	4mm safety socket	Output 240 V DC; L-
S1	Twist knob switch	Mains switch
S2	Toggle switch	Change-over switch "manual adjustment" – Control input
S3	Pushbutton	"Reset" – to reset the protection circuit
H1	Pilot lamp, green	Display of the operating state
H2	Light emitting diode, green	Display of the operating state " U_{const} "
H3	Light emitting diode, red	Display of the activated protection circuit at over-voltage
H4	Light emitting diode, green	Display of the operating state " I_{const} "
P1	Measuring unit	Display of the output voltage
P2	Measuring unit	Display of the output current
R1	Rotary adjuster	Adjustment of the output voltage at X3, X4
R2	Rotary adjuster	Adjustment of the output voltage at X3, X4

Operation

Switching on – The device is switched on by means of switch (S1). The pilot lamp (H1) displays the switched on mode.

Note: before switching on, the rotary adjuster "voltage" (R1) must be turned all the way to the left.

Switching off – Before switching off, turn the rotary adjusters "voltage" (R1) and "current" (R2) all the way to the left.

Operation "Constant voltage" – Switch on the device. Turn the rotary adjuster "current" (R2) all the way to the right. The desired output voltage is set by means of the rotary adjuster "voltage" (R1). The selected output voltage is read out at the measuring unit (P1). The current is displayed at the measuring unit (P2). In operating mode "constant voltage" the light emitting diode (H2) lights up.

Operation "Constant current" – Switch on the device. Turn the rotary adjuster "current" (R2) all the way to the left and the rotary adjuster "voltage" (R1) to the maximum desired voltage. Connect the load resistor to the 4 mm safety sockets (X3, X4). The desired constant current is set by means of the rotary adjuster "current" (R2). In operating mode "constant current" the light emitting diode (H4) lights up.

Changing over "manual" – "control" – The toggle switch (S2) changes over the setting of the output voltage from manual, by means of the rotary adjuster, to external control, by means of a control voltage 0 ... 10 V. The control voltage is applied to the 4 mm safety sockets (X1, X2).

Overload behaviour – The device is short-circuit-proof. In the event of a short-circuit the maximum current at the 4 mm safety sockets (X3, X4) will be limited to 2 A. If the output voltage exceeds 240 V DC the integrated over-voltage protection circuit is released. The light emitting diode (H3) lights up. After eliminating the over-voltage, the protection circuit is reset by means of the pushbutton "reset" (S3).

Auxiliary voltage – A fixed voltage 240 V DC for DC machines can be taken off the 4 mm safety sockets (X6, X7).

Start up

Separate starting is not necessary.

Maintenance

The device is generally maintenance-free.

Electrical equipment and installations must be frequently inspected and maintained.

The inspection and service must only be conducted by skilled electricians. The relevant national regulations must be observed; in Germany these are BGV A2 and DIN VDE 0702.

After necessary repairs, electrical equipment must be checked according to the relevant regulations (in Germany: DIN VDE 0701). The same applies for electrical installations (in Germany: DIN VDE 0100, particularly part 410, 610 and 723, as well as DIN VDE 0105).

The service and inspection intervals are specified in the relevant regulations (in Germany: BGV A2, internal operational regulations).

Care

Warning! Before cleaning, disconnect the device from the voltage supply.

Use a soft, dry cloth to clean the unit. In case of stubborn dirt, moisten the cloth with a soap solution or mild detergent. Dry the device by wiping it with a soft cloth.

Never use alcohol, paint thinners, petrol or cloths treated with chemicals for cleaning, because it might damage the surface of the unit and harm the environment.

Further information

The use of this device to power electronic components is not permitted.

With inductive loads, a high induction voltage results if the device is switched off or experimental cables removed when voltage is present. Make sure that no voltage is present before switching the device off or modifying the experimental set-up.

Installation information

When connecting the duct or the column, the current IEC 60364 standard (equivalent DIN VDE 0100) must be observed. For laboratories with experimental stands, the DIN VDE 0100-723 standard applies in particular.

Note! Only qualified electricians can set-up the equipment when disconnected from the mains.

Installation:

Connect the system plug connector (X0) with the coupling of the cable harness.

After inserting the duct unit, fix it to the basic duct or the housing by means of the screws located on the top and bottom edges.

After installation, check for proper functionality.

Service address

For technical information on the product, please contact:

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For our filed representatives and agents in charge, please also contact the above address or visit our homepage.