

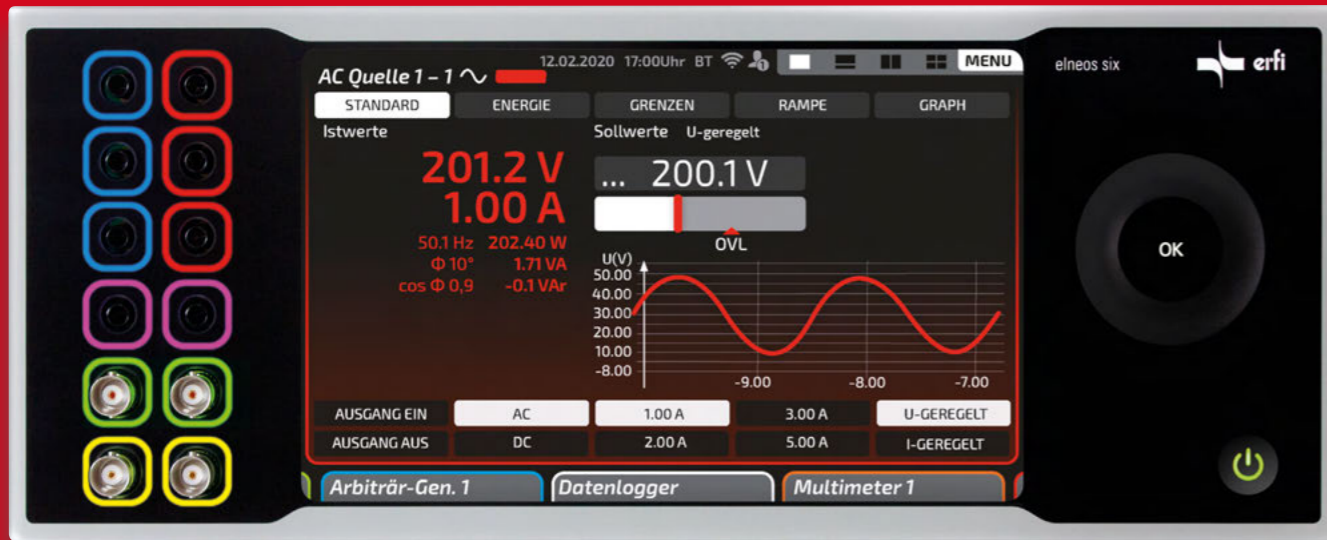
AC Voltage Sources

Order no. **EL6.AC1.030.04.1** to **EL6.AC3.720.03.1U** for 1- and 3-phase AC sources

Voltage sources incl. ramp function

The AC unit range includes extensive models for 1-phase and 3-phase AC power supply incl. ramp function and rectifier. The compact units are installed in a separate 19-inch subrack depending on the power and unit equipment.

The control centre communicates directly with the e-bus via the respective AC source, so up to seven AC sources can be controlled simultaneously. For single-phase units, a choice can be made between electro-mechanical AC sources and electronic AC sources. The electronic AC sources allow variable frequency adjustment up to 400 Hz.



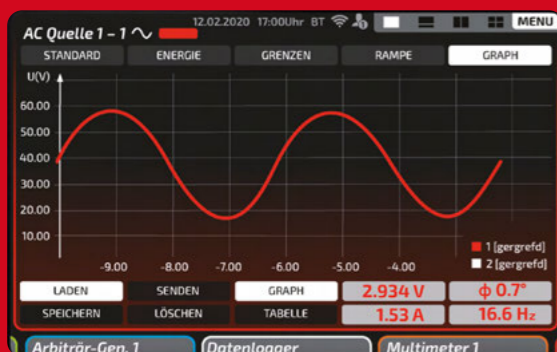
Standard view of the 1-phase source: The view informs about all values at any time, also in graphical form. An integrated power meter additionally evaluates the active, apparent and reactive power as well as the phase position.



3-phase AC sources with power and energy meter: For 3-phase AC sources, a 3-phase power and energy meter is included in the scope of delivery. The actual voltages between all phases and N are displayed simultaneously.



Ramp generator: The 8-inch display allows any sequences to be entered directly without any programming effort. Alternatively, the sequences can be transferred and started via the interface.



Data logger and graphic display of measured values: Visualisations and real-time recordings of freely programmable ramp functions for tracking voltage and current curves. The current values are always faded in. Alternatively, the data can be displayed in tabular form.



Limiter: The limiter allows free monitoring of voltage and current ranges in connection with limits. Each state can be coupled with an acoustic signal and a freely selectable digital output.

All advantages at a glance (order data p. 100-102)

Display and connections

- Vandal-proof toughened safety glass.
- Highly insulating glass front panel ensures 100% contact safety. This completely eliminates the possibility of voltage carry-over on the surface of the unit.
- The connections L1, L2, L3, N, PE, plus and minus as well as symbols for earth-free outputs and the visualisation of active output sockets are visualised by means of a disappearing effect.
- High contact reliability due to intelligent ring socket illumination with disappearing effect and illuminated socket labelling as well as flashing functions.

Slide-in technology and mechanics

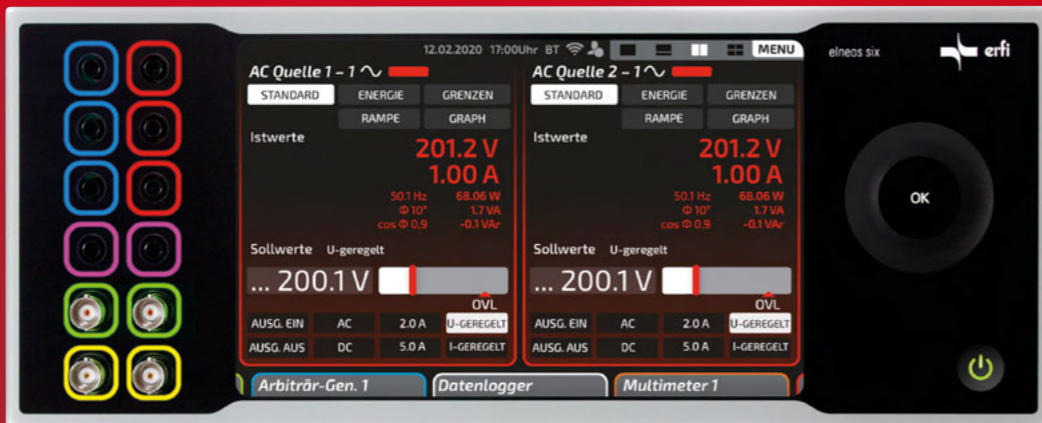
- In the 19-inch version, all connections on the glass unit front can be connected to the measurement technology with extremely short cable lengths, thus guaranteeing higher accuracy and lower susceptibility to interference from irradiation.
- Alternative aluminium fronts available depending on installation position (Expand 2 profiles vertical and horizontal, compact 19-inch superstructures).
- High ease of maintenance due to standardised 19-inch racks.
- Alternatively, the power modules can also be installed below the table surface in an energy carrier (TechCube).
- Noiseless, electromechanical control through newly developed electric motors.

Control and measurement

- Alternatively, very fast electronically controlling AC sources with adjustable frequency between 50, 60 and 400 Hz.
- Due to shortened and optimised cable lengths in conjunction with the 19-inch design, the use of high-quality 14-bit measuring technology with the highest measuring accuracy is made possible.
- Numerical and graphical representation of all the setpoints and actual values in the EL6.1 control centre (X-Y-graphs).
- Editable ramp generator for voltage and current ramps in the control centre.
- The *elneos six* control centre registers each bus participant through plug and play and continues to operate undisturbed if a module is removed.
- The devices can function as voltage regulators or as current regulators.
- The data logger stores all measured values, which can be called up at any time at the display and via the interface.
- To control DC loads, all 1-phase and 3-phase AC sources can be supplemented with rectifier modules built into the unit. The connected outputs "+" and "-" indicate accordingly by the ring socket lighting with disappearing effect.
- In the case of earth-free AC sources, only the active output is automatically illuminated due to the dimming effect (sockets or laboratory sockets).



Limitier: The limiter, guarantees the monitoring of current and voltage as well as the external control of other device groups and the indication light (integrated PLC function).



Halbscreen: Example of the simultaneous device display of two AC sources in half-screen mode. All other units remain accessible through the unit scroll bar at the bottom of the screen.



Dynamic screen content: The screen display adapts dynamically to all situations and even when the menu is displayed. The AC screen automatically scales itself to the correct size so that all the unit's information remains visible despite the extensive menu.

Technical data and features (order data p. 100-102)

Regulation

- 1- and 3-phase with electromechanical control
- 1-phase alternatively with electronic control

Type

19-inch racks for installation in device superstructures, cockpits and under-table mounting (TechCube).

Front panel and connection panel

1. ESG glass – device series elneos® six:

Scratch-resistant toughened safety glass with the highest safety function against impact and damage incl. ring bushing illumination with disappearing effect. For integration in 3 and 6U table superstructures and equipment cockpits.

2. Aluminium – device series basic:

For integration in 3 and 6U table superstructures and in unit cockpits.

3. Aluminium – device series acto®:

For horizontal / vertical integration into the Expand 2 aluminium extension profiles of the furniture series *elneos connect*.

Output

1-phase models with electro-mechanical / control
0 to 300 V AC / 1 A to 16 A, earthbound / earthfree

3-phase models with electro-mechanical control
0 to 720 V AC / 1 A to 14 A, earthbound / earthfree

1-phase models with electronically generated voltage
8 to 260 V AC / 3 or 5 A (780 or 1300 VA) / earthfree.
Output frequency variable between 50, 60 and 400 Hz.

Outputs for units with glass front

- All safety laboratory sockets with ring socket illumination and disappearing effect
- All sockets / CEE sockets with active indexing including disappearing effect

Note on earth-free transformers

- With earth-free transformers, the output voltage is connected by means of a contactor either to the laboratory sockets or to the socket.
- All earth-free models are clearly marked by backlit earth-free symbol.

Regulatory data –

Models with electromechanical control

- Motor:* noiseless drive
- Accuracy:* < ± 1,5 % f. s. with load change or 10 % mains fluctuation

Control time: approx. 1 sec. at 10 % mains fluctuation
Setting time: approx. 5 sec. from 2 to 260 V

Models with electromechanical control can be switched between voltage and current control.

Models with electronically generated voltage

- Power factor:* 0,95 %
- Frequency:* switchable between 50, 60 and 400 Hz.
- Accuracy:* < ± 0,7% f. s. with load change from 0 to 100 %
- Setting time:* 0,1 seconds

Measurement accuracy

14-bit resolution and high-quality TRMS converters for current and voltage;

Display

- display via control centre EL6.1
- COS Phi and frequency
- numerical and graphical

Voltages AC: Lx-Lx [V]
Currents AC: Ix [A]

Performance:
Active power: P [W]
Apparent power: S [VA]
Reactive power: Q [VA]

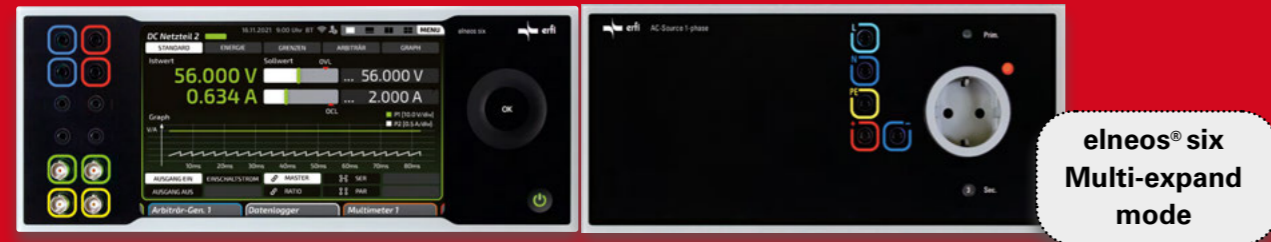
Energy per phase and total energy:
Active energy: [Wh]
Apparent energy: [VAh]
Reactive energy: [varh]

Optional rectifier

- Type:* built into the unit (option)
- 1-phase:* bridge rectifier RW 48 %
- 3-phase:* three-phase bridge rectifier RW 5 %

Installation Variants AC Voltage Sources

The AC power source system consists of a control centre, power modules and connection panels for the connections. The power modules are produced in 19-inch plug-in technology for installation in our 19-inch device cockpit, the tabletop structure or as a Tech Cube. The connection panels can be supplied either in ESG glass design with RGB LED ring socket lighting or in two variants made of aluminium (*basic* and *acto* device series).



**elneos® six
Multi-expand
mode**

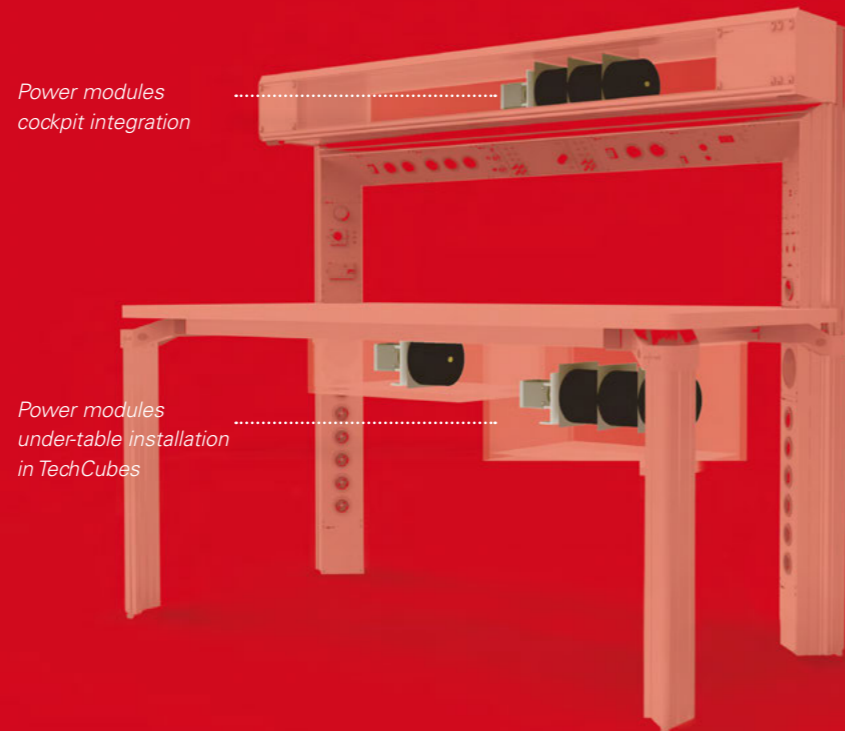
Control centre elneos® six
The control centre is connected to the AC power modules and the intelligent connection panels made of ESG glass via the e-bus.

Connection panel
Connection panels made of toughened safety glass incl. RGB-illuminated ring sockets and intelligent disappearing effect, alternatively made of aluminium fronts of the 19-inch unit series *basic* for integration into 19-inch device cockpits or table tops.

Connection panels of the unit series *acto* for integration into vertical and horizontal expand profiles (erfi-Bridge) from our furniture series *elneos connect*.

Power modules
The power modules can be placed in two locations depending on the space available:

- Cockpit integration
- Under-table installation (TechCubes)



Power modules cockpit integration

Power modules under-table installation in TechCubes



Control centre elneos® six for controlling AC voltage sources
1- and 3-phase AC voltage sources including ramp function and rectifier. Version optionally with electro-mechanical control function (1- and 3-phase) or electronic voltage generation and variable frequency.

Connection panel
Depending on the overall design of the AC sources, you can choose between toughened safety glass or various aluminium fronts for the connection panels.



Connection panel out of aluminium, basic
For installation in 19-inch table superstructures or cockpits as an economical alternative to toughened safety glass.

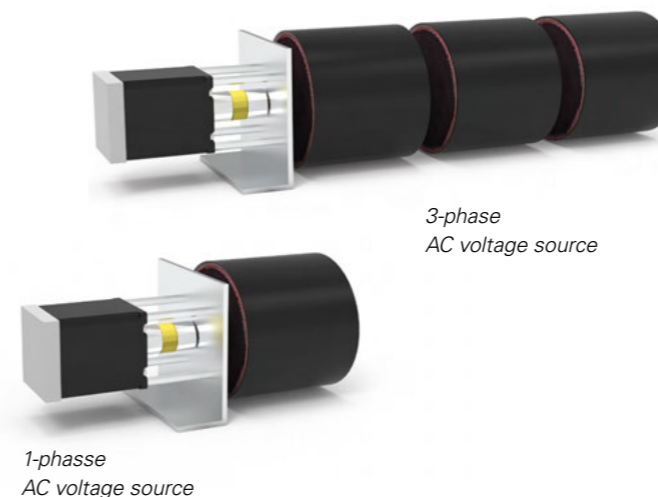


Connection panel out of aluminium, acto®
For vertical or horizontal installation in the Expand profile 2 of the *elneos connect* system.



Connection panel out of safety glass elneos® six
The glass front panels are made of very high-quality toughened safety glass (ESG) with intelligent ring socket lighting and function labelling using disappearing effect. They provide safe orientation through colour coding and flashing functions of the various states during operation.

The tempered glass fronts are completely insensitive to impact, shock and pointed objects. Thanks to the highly insulating glass surfaces, the intelligently controlled glass fronts offer a high level of protection against accidental contact. The ideal equipment for educational institutions and technically demanding industrial laboratories. They are designed for installation in 19-inch device cockpits and table-top superstructures. They can also accommodate power assemblies, provided the superstructures permit this (19-inch parts insertion technology).



1-phase AC voltage source

3-phase AC voltage source

Power modules
The power modules are designed as 19-inch subrack technology. For single-phase units, a choice can be made between electromechanical AC sources and electronic AC sources. The electronic AC sources additionally allow variable frequency adjustment 50, 60 and 400 Hz.