

Impulse magnetizer U-Series

• Features

- Energy up to 2,800 Ws
- Impulse currents up to 60,000 A
- Short-circuit-proof
- Short cycle times
- Touch panel
- Siemens PLC controls
- Various interfaces
- Continuous analog voltage monitor
- Fixture temperature monitor
- Built-in peak current monitor
- Internal + external emergency-stop with dropout protection
- Various housing designs
- 12 months warranty for single shift operation



• Description

The U-Series impulse magnetizers are suited for a wide scope of magnetizing, demagnetizing and magnet adjustment applications in laboratory and production settings.

They are available in different current and energy classes and can be configured with various combinations of magnetize, demagnetize and magnetize/calibrate functions.

All models have special integrated operational features, including a current comparator for continuous monitoring of the magnetizing process, and a temperature measuring unit, which monitors the temperature of the connected fixture and protects it from damage due to overheating.

In combination with axial magnetizing coils of type **MF-As / MF-Am**, AlNiCo, ferrite and even NdFeB magnets can be magnetized with coil diameters of up to $\varnothing 52$ mm (2.05 inch).

The energy of these models is especially suitable for the magnetization of rotors with ferrite or NdFeB magnets in magnetizing fixtures of type **MF-Rm**. Rotors with outer diameters up to $\varnothing 50$ mm (1.97 inch) and lengths up to 70 mm (2.75 inch) can be magnetized.

• Current classes

U-Series magnetizers are available in current classes of 20, 25 and 60 kA. The magnetizers are short circuit protected.

Short circuit protection of the “high current” model, which produces currents up to 60,000 A, is realized by an SCR-circuit. This leads to very low internal impedance. When used in combination with low-inductance magnetizing fixtures, e.g. of type **MF-Rm**, a highly efficient magnetizing process can be achieved:

- Better magnetizing results
- Higher current in the magnetization fixture
- Less heating of the magnetization fixture
- Longer lifetime of magnetization fixtures
- Faster cycle rates in production

• Safety functions

Safety is a key area for MAGNET-PHYSIK. Operation without interruption and protection of the operator are primary concerns. The connection box for the fixtures is monitored. If the cover is not locked correctly, the magnetizer shows fault and cannot be started. Integrated locking flaps make it impossible to get in contact with the connection area.

Moreover, all basic functions are controlled continuously by the PLC. The voltage at the capacitors is monitored by safety relays. In case of a fault or interruption of the mains power, the capacitors are discharged automatically in a controlled manner. The magnetizers have an emergency-stop switch with dropout protection. Connection to an external emergency-stop is possible.

MAGNET-PHYSIK fixtures dispose of internal thermocouples that allow fixture heating to be monitored. The magnetizer displays a warning message when a pre-determined temperature limit value is exceeded. A separate, independent switch in the fixture will open, should excessive heat build up. Further magnetizing impulses will only be possible when the fixture has cooled down.

• Options

Interfaces:

A 24 V I/O interface is standard.

Optionally RS232, Profibus or Profinet interfaces are also available.

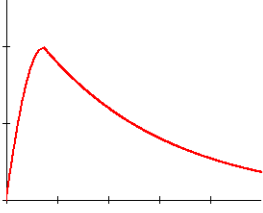
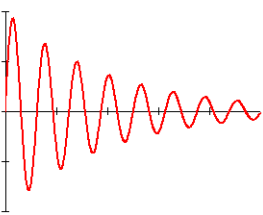
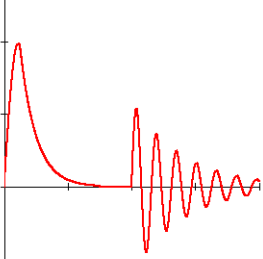
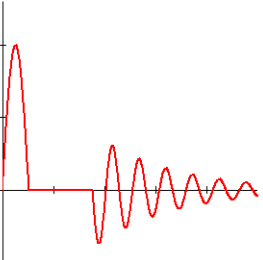
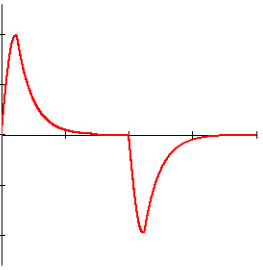
High current output:

The U-Series is available with a second high-current output (see technical data).

Cabinet variants:

Besides the standard cabinets of 39 and 57 cm height the U-series is also available in a mobile cabinet for standing workplaces, e.g. in combination with the MAGSTAT (semiautomatic magnetizing station).

• **Functions / waveforms**

<p>A Aperiodically damped</p>		<p>Magnetization</p>
<p>D Damped oscillation</p>		<p>Demagnetization Stabilization</p>
<p>AD Aperiodically damped with subsequent damped oscillation (Functions A and D can also be used separately)</p>		<p>Magnetization and demagnetization (Weakening, Stabilization and adjustment of magnets)</p>
<p>SD Sine half wave with subsequent damped oscillation (Functions S and D can also be used separately)</p>		<p>Special adjustment processes</p>
<p>AK Aperiodically damped, Commutated (Functions A and K can also be used separately)</p>		<p>Magnetization with polarity change</p>

• **Technical data**

The following table gives you an overview about the different models and their available options

	350 Ws		1400 Ws		2800 Ws	
Max. current	20 kA		25 kA	60 kA	25 kA	60 kA
Voltage	1000V		2000 V			
Voltage setting	Resolution 1 V					
Function	A / AD		A / D / AD / SD / AK	A	A / D / AD / SD / AK	A
Short circuit protection	Yes					
Cycle time (at I _{max})	5 s		4 s	10 s	6 s	10 s
Peak current measurement	Accuracy 1%					
Interface	PN / PB / RS-232 / 24 V I/O					
2nd output	not possible		possible			
Mains	1-phase: 230 V AC ± 10 %, 50/60 Hz, 16 A (other mains connections are possible)					
Dimensions						
Width	510 mm (20.1 inch)				510 mm (20.1 inch)	
Depth	700 mm (27.6 inch)				700 mm (27.6 inch)	
Height	390 mm (15.4 inch)				570 mm (15.4 inch)	
Weight	80 kg (176 lb)		90 kg (198 lb)		110 kg (242 lb)	

Subject to change without notice.



Front view



Rear view

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