

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
- Digital voltage setting
- Various interfaces
- Continuous analog voltage monitor
- Fixture temperature monitor
- Built-in peak current monitor
- Modular construction
- Internal + external emergency-stop with dropout protection
- Single shift 12 months warranty



• 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 Ø 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 50 mm (1.97 inch) and lengths up to 70 mm (2.75 inch) can be magnetized.

• Current classes

U-Series magnetizers can have two output current levels:

NC = "normal current" up to 25,000 A

The SCR of this model is short circuit protected by a choke coil.

HC = "high current" up to 60,000 A

Short circuit protection is realized by an SCR-circuit. This leads to a 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.

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.

Magnet-Physik fixtures have 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 also will open should excessive heat build up. Further magnetizing impulses will only be possible when the fixture has cooled down.

• Options

Interfaces:

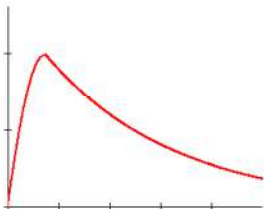
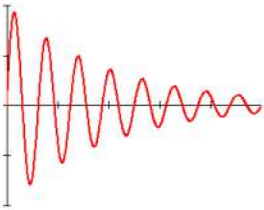
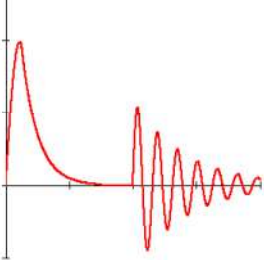
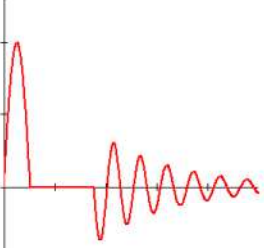
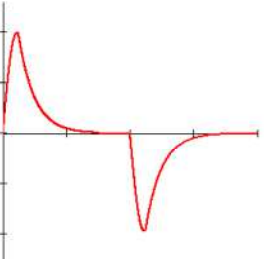
A 24 V I/O interface is standard.

Optional RS232, Profibus or Profinet interfaces are also possible.

High current output:

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

• **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 table below gives an overview of the different models and options available.

	NC		HC	
Energy (1 Ws = 1 Joule)	1400 Ws	2800 Ws	1400 Ws	2800 Ws
Voltage	2000 V			
Voltage setting	Resolution 1 V			
Function	A / D / AD / SD / AK		A	
Max. Current	25,000 A		60,000 A	
Short circuit protection	yes			
Cycle time	4 s	6 s	10 s	
Peak current measurement	Accuracy +1%			
Interface	RS / PB / 24 V I/O			
2nd output	possible			
Mains	1-phase: 230 V AC ± 10 %, 50/60 Hz, 16 A (other mains connections are possible)			
Dimensions mm (inch)				
Width	510 (20.1)	510 (20.1)	510 (20.1)	510 (20.1)
Depth	700 (27.6)	700 (27.6)	700 (27.6)	700 (27.6)
Height	390 (15.4)	570 (22.4)	390 (15.4)	570 (22.4)
Weight kg (lb)	90 (198)	110 (242)	90 (198)	110 (242)

Subject to change without notice.

