

Electronic Pole Reversal Control Unit



The type 755 pole-reversal control units are compact and very versatile control units usable for magnets of all kinds.

By reversing the polarity, magnetism in magnets and in the workpiece is eliminated and demagnetised parts can then easily be removed from the magnets.

Within their respectively defined power

range, they can be configured and used by setting suitable parameters for practically all types of magnets. Applying a modern digital signal processor successfully facilitated the transfer from conventional voltage control to very precise current control. The current control stands out for the switching dynamics stretching new physical limits and the resulting super-fast clamping and polarity reversal

procedures, the repeatability of which is also drastically improved thanks to the precision regulation. Of course, the scope also includes balancing out of any voltage fluctuations from the power supply source.

In devices for standard applications, the basic configuration is implemented during the final inspection by the manufacturer. The basic configuration determines the basic properties of the reverse pole control unit used to control magnets. A difference is established between magnet types (electro, electropermanent and neodymium magnets) and their individual nominal voltages. Another basic setting is the number of adhesive force levels selectable via the adhesive force inputs.

Using the easily adapted calibration process, the device is adapted to the respective magnets.

Current control is established in accordance with the configured adhesive force level and the nominal voltage.

There are 15 different program cycles available to demagnetise electro and electropermanent magnets respectively.

For special applications, the reverse pole control unit can be additionally configured or aligned via an optionally available monitoring program.

Technical data:

- Mains voltage: 230 V AC (+/-10%)
- Mains frequency: 50 / 60 Hz
- Protection system: IP 20
- Operating mode: Continuous operation
- perm.temperature range: 0°C to 40°C
- EMC: EN 61000-6-2 / EN61000-6-4
- For the connection of the magnet use a shielded cable
- Available clamping force curves: 6, 8 or 16 steps.
- Installation height: 1000 mNN
When operating at great heights, the output power is limited.

Input signals:

- Clamping (SPA IN)
- Pole reversal (UMP IN)
- switch off without demagnetizing process (OFF/QUIT)
- acknowledge fault message (OFF/QUIT)
- 4 inputs for selecting the clamping force levels
- RS 232 interface for PC communication

Program selection

Use the coding switch on the front panel to select up to 16 pole reversal programs.

Output signals:

- Magnet clamped (SPA OUT)
- Pole reversal magnet (UMP OUT)
- Fault (Error or O.K.)
- All output signals are available as potential-free contacts and 24V signals.

Short-circuit behaviour:

The reverse pole control unit is short-circuit-proof. In the event of a short circuit, it is internally disconnected within 10µsec.

Connection values for various output voltages:

Type	nom. output voltage [V DC]	nom. output current [A DC]	Dimensions WxHxD [mm]	Weight [kg]	Use for
755-EL24/7	24	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EL110/7	110	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EL220/6	220	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EP210/10	210 EP	10	142,5x202,5x136	2,8	Elektro-permanent magnets (pulsed operation)

For compliance with the EMC directives the use of a line reactor is necessary! For line lengths over 20 m between pole reversal control unit and magnet it is necessary to use an output choke.

Accessories:

Control unit

For manual control of the pole-reversal control unit, different control units of type 744 are available. They are equipped with a coding switch to adjust the holding force and illuminated keys to clamp and unclamp the magnet. Keys and coding switch are also available as installation components.

Monitor program

With the additional "USG Monitor" software, the configuration options for the pole-reversal control unit are extended considerable. The following options are available, for example:

- selecting the 6-step, 8-step, and 16-step holding force curve and changing the freely-programmable holding force curve
- changing the pole reversal programs
- activating special options



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