

MAGV DC

DC/DC Electromagnet Controller

MAGV DC - Catalog





> Description and Advantages

The **AC/DC MAG V - (VRT) Varixx** controller is a device designed to supply electrical energy to electromagnets. The operating principle is based on two controllers modules with inverted polarities, one to magnetize the electromagnet and the other to demagnetize.

The converter only needs an electrical command to magnetize the electromagnet. Demagnetization is performed when the command signal is removed. At this point, the converter inverts the polarity of the energy applied to the electromagnet and starts counting a demagnetization time. This time is adjustable using a trimpot ranging from 0.4 to 10 seconds. After this time, the converter is ready for a new cycle.

As it is a completely solid-state device, it has a useful life of over two hundred million maneuvers, is highly immune to vibrations and impacts, and can be used in aggressive and dirty environments. A plug-in type removable control module, a heat sink, fans for cooling the converter, a thermostat that turns off the converter if its temperature exceeds 90°C and a thermostat that turns on the fans if the heat sink temperature exceeds 45°C complete the equipment.

The **MAGV DC Varixx Solid State Electromagnet Controllers** complement the traditional MAGV AC Varixx line powered by alternating current, representing an important evolution in the market, with no competitors for applications powered by direct current.

The **MAGV DC Electromagnet Controllers** present numerous advantages compared to schemes with two bar-type DC contactors, including:

- › Operates in harsh and dirty environments.
- › High number of maneuvers per hour.
- › Extremely long-lasting and silent operation.
- › Does not require periodic maintenance.
- › Does not show wear.
- › Does not generate noise for PLC.
- › Does not cause vibrations to other components of the panel.
- › Does not generate overvoltages when turned off.
- › Low consumption in the control module, compatible with PLC output (approximately 15 mA).

We can also consider that they have a competitive cost in relation to conventional DC contactors, bar type, which can present accelerated wear of the contacts due to difficulty in extinguishing the electric arc when opening the contacts, which normally requires arc extinguishing chambers, by electromagnetic blowing, which also increases the chance of arc extinguishing failure with serious consequences for the equipment and the system. It has reduced dimensions and takes up little space in the panel. The control module is of the Plug-in type, being the same for the entire range of converter currents from 50 to 300 A.

> Main Advantages



Operating in harsh environments



They do not suffer wear
No electric arc when opening



Does not require periodic maintenance



Silent and vibration-free operation



High number of maneuvers per hour



Long service life

MAGV DC



> Features

Electrical Characteristics

- › **Nominal Currents:** 50 to 300A DC.
- › **Peak Currents:** 5x nominal x 20 mS.
- › **Control Voltage:** 24 VDC.
- › **Fan Voltage:** 24 VDC or 110 or 220VAC.
- › **Service Life:** greater than 200 million maneuvers.
- › **Demagnetization Time:** 0.4 to 10 sec.
- › **Control Module:** Plug In with fault indication including short circuit.
- › **Firing Modules:** Isolated between control and power. 3500V insulation.
- › **Auxiliary Contacts:** Isolated, 2x, Magnetized (N.O.), Demagnetized (N.C.).
- › **Supply:** MAGV DC only or complete solution.

Environmental Characteristics

- › **Ambient temperature:** 0 to 50°C.
- › **Humidity:** 0 to 90% non-condensing.
- › **Altitude:** Up to 2000 meters.
- › **Protection level:** IP20.

Mechanical Characteristics

- › **Base and Box:** Steel with highly resistant electrostatic paint.
- › **Heatsinks:** Extruded aluminum
- › **Terminals:** High-impact ABS plastic.
- › **Control Module:** High-impact ABS plastic.
- › **Firing Module:** High-impact ABS plastic.
- › **Power Connectors:** Electrolytic copper busbar or protected terminals (Terminal Block).

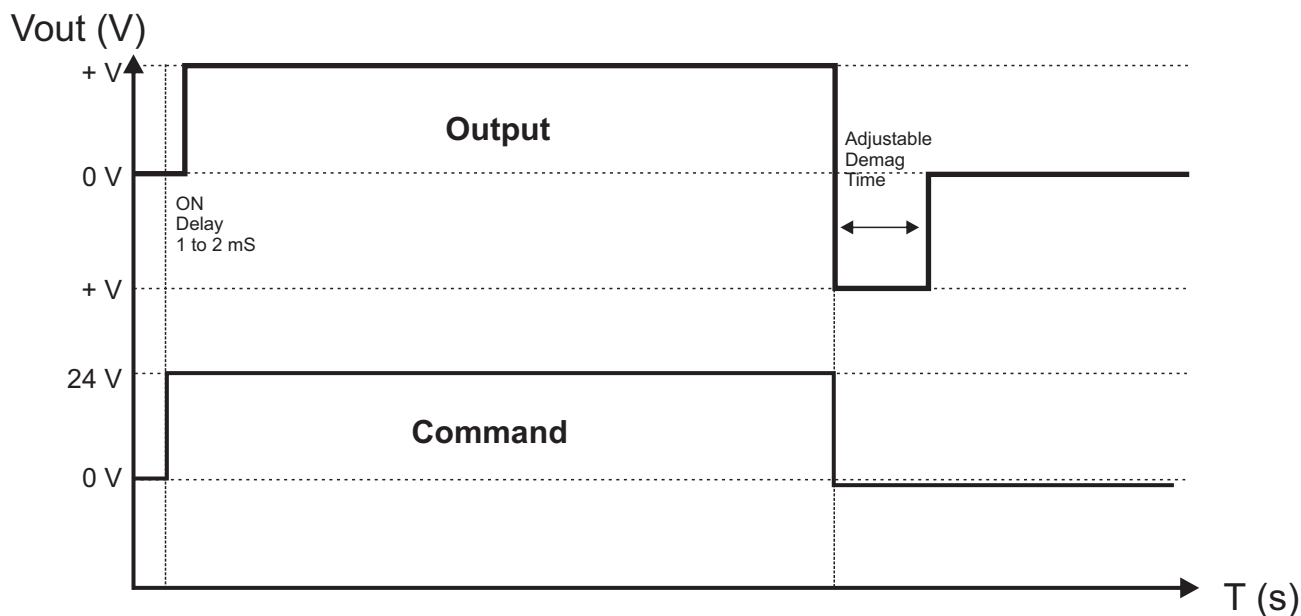
Supply - Solutions

- › **MAGV DC:** Only the electromagnet controller for use and installation by the user.
- › **CM-VRD:** Panel with all components for actuating the electromagnet.
- › **EVOMAG DC:** Panel with all components for actuating the electromagnet + MOBATT battery bank charger (Digital) + Stationary battery bank.

Rated Currents	50 to 300 A DC
Control Voltage	24 VDC
Fan Voltage	24 VDC / 127 VAC / 220 VAC
Useful Life	More than 20 million maneuvers
Demagnetization Time	Adjustable 0.4 to 10 s
Control Module	Plug In with fault indication
Firing Modules	Isolated and with fault detection
Auxiliary Output Contacts	1 N.O. Mag and 1 N.C. Desmag
Control / Power Isolation	3500 V



> Operating diagram



After the command, the controller switches on the electromagnet after a minimum delay of 1 to 2 ms.

When the command is removed, the output voltage is inverted for the time set between 0.4 and 10 s and after that it will be ready for new magnetization.

When magnetization occurs, the auxiliary contact Mag. closes and the contact Demag. opens. After the Demag time, the contracts return to normal.

> Dimensions

CURRENT (A)	COOLING	DIMENSIONS A x L x P (mm)
50	D0	50 >> 170 x 150 x 250
75	D0	75 >> 170 x 200 x 250
100	D1 / D2 / D3	100 >> 170 x 150 x 250
125	D1 / D2 / D3	125 >> 170 x 200 x 250
150	D1 / D2 / D3	150 >> 170 x 250 x 250
200	D1 / D2 / D3	200 >> 170 x 250 x 250
250	D1 / D2 / D3	250 >> 291 x 240 x 253
300	D1 / D2 / D3	300 >> 280 x 251 x 275



> Features

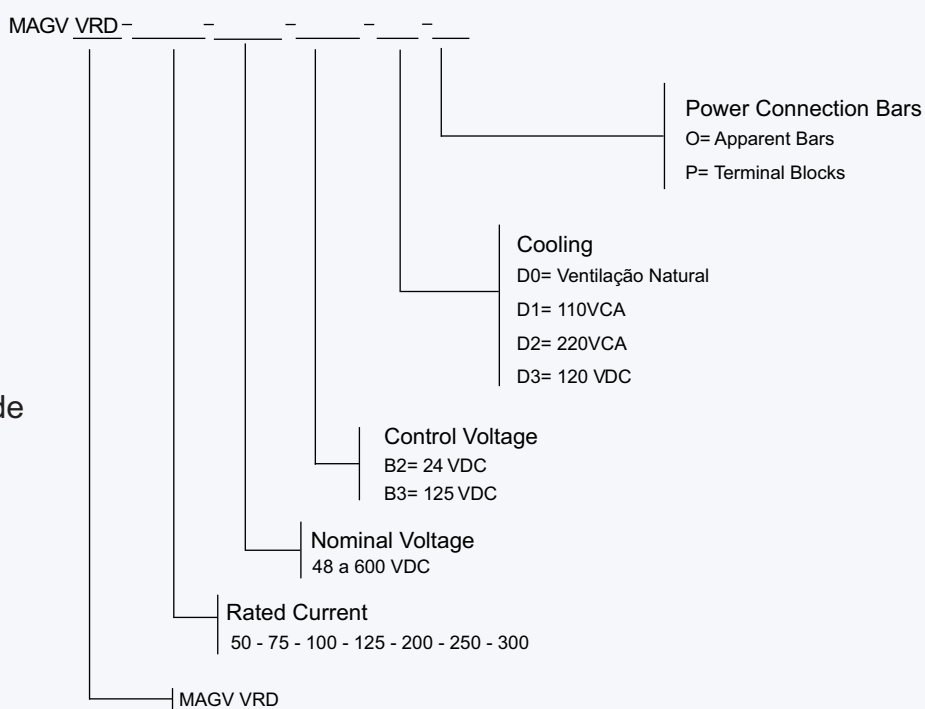
Models from 50 to 300 A DC

Nominal Voltages: 48 to 600 VDC

Control voltages: 20 to 50 VAC/VDC, 100 to 240 VAC/VDC

Static Auxiliary Contacts: 2 NO + 2 NC (10 to 250 VAC / VDC - 1A max)

Key Code



ABOUT VARIXX

For over 40 years, Varixx has pursued its vocation for developing high-tech products and focuses its efforts on serving the industrial market with quality and speed. Our know-how in power electronics has allowed us to offer the market a wide range of products that have become known for their long service life and reliability. We were the creators of the global online thermography market, with the Zyggot line, which is becoming a global reference in the market for temperature monitoring and diagnostics and arc flash detection in electrical systems in general.

Our product portfolio also includes LED luminaires from our ONNO division, developed and manufactured 100% in Brazil with cutting-edge technology. Varixx values the introduction of innovative concepts worldwide.

AREAS OF ACTIVITY

- ✓ **MANUFACTURERS OF GENERATOR MACHINES AND SYNCHRONOUS MOTORS**
Static Exciters, Control Box Controllers, Low and Medium Voltage Soft Starters, Semiconductors and Onno LED Luminaires.
- ✓ **ALUMINUM AND HYDROGEN / OXYGEN PRODUCTION**
High Current Rectifiers, Solid State Contactors, Smart Relay for CCM, Online Thermography System / Continuous Temperature Monitoring and Arc Flash Detection, Onno LED Luminaires.
- ✓ **BASE INDUSTRY, MINING AND STEEL**
Smart Relays for CCMs, Low and Medium Voltage Soft Starters, Solid State Contactors, AC/DC Converters for Electromagnets, High Current Rectifiers, Online Thermography System / Continuous Temperature Monitoring, Arc Flash Protection, Onno LED Luminaires.
- ✓ **OIL COMPANIES**
Smart Relays for CCMs, Static Excitation, Low and Medium Voltage Soft Starters, Solid State Contactors / Continuous Temperature Monitoring, Online Thermography System, Arc Flash Protection, Onno LED Luminaires.
- ✓ **PANEL BUILDERS**
Smart Relays for CCMs, Online Thermography / Continuous Temperature Monitoring, Arc Flash Detection and Protection Systems, Semiconductors, Solid State Contactors, Power Supplies, Onno LED Luminaires.

Access our Site and get more information about Varixx solutions

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