

Technical Information

MONO phase fan speed controller “DRV100” FRIENDLY series



General characteristics

The FRIENDLY series equipment mod. DRV100, are mono-phase electronic voltage regulators which utilize the phase-cutting principle in order to regulate the output active voltage, driving as a function of the 0-10Vdc applied to the inputs contact 0-10V/Gnd. In this way it's possible to do a continuous stepless regulation of the VAC fans, from 0% to 100%.

By applying the working 0-10Vdc, the active voltage on the load changes to the fixed VAC value.

The regulators are designed for the control of asynchronous motors (suitable for phase-cutting regulation) connected to fans, pumps, mixers, stirrers, etc. .

The regulators are equipped with EMC civil filter and a protection against electric surge by a double internal varistors on the power supply.

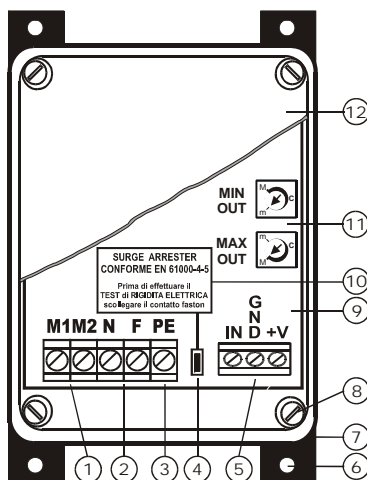
It is recommended to verify the suitability of the motors to be used with the phase cutting control

Regulator fixing into the electrical panel: It's very important that the internal temperature does not exceeds 50°C and the air circulation is adequate.

Electrical connections

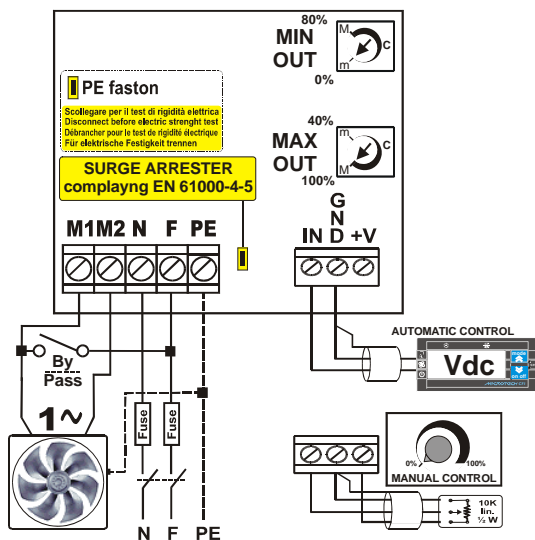
The regulator must be connected as shown in figure, being careful:

- to prearrange a knife switch upstream of the regulator & a couple of fuses, so as to interrupt of the power supply for inspection;
- to control the power connections and check the efficiency of the earthing, before energizing the regulator;
- to utilize, for the power connections and the earth cable, a cable with a right section (from 1.5 mm.);

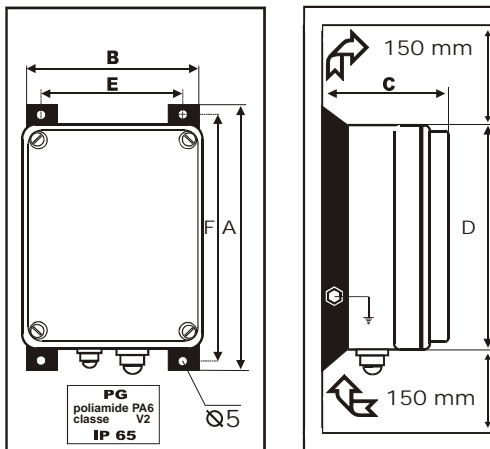


- 1 Terminals block for the load connection (M1 – M2)
- 2 Terminal block for the Power supply connection (F-N)
- 3 Terminal block for the ground reference (PE) connection
- 4 PE Faston for the SURGE ARRESTER filter disconnection
- 5 Terminal block for the remote control signal connection
- 6 Tab with holes for wall mounting the device
- 7 Alluminium heat sink
- 8 NPT clamping screw (CEI 23-58) max.2,5Nm
- 9 PB 1078/1 control card
- 10 SURGE ARRESTER filter (EN 61000-4-5)
- 11 MIN & MAX output working limit
- 12 GW Plast™ protection box

DRV112 Connections



MODEL	A	B	C	D	E	F	Kg.
DRV 112	158	130	90	158	70	173	0,8



Servicing

After verifying the card wiring supply, connect the 0-10Vdc control signal and work at the desired VAC output.

The output voltage ranges are selected from the 0-10Vdc input.

The input/output characteristic is reported in the graph where the X-axis represents the 0-10Vdc control signal, whereas the Y-axis indicates the possible output voltages.

The DRV100 it's a SLAVE controller and can work only with the 0-10Vdc control signal applied to the indicated connections.

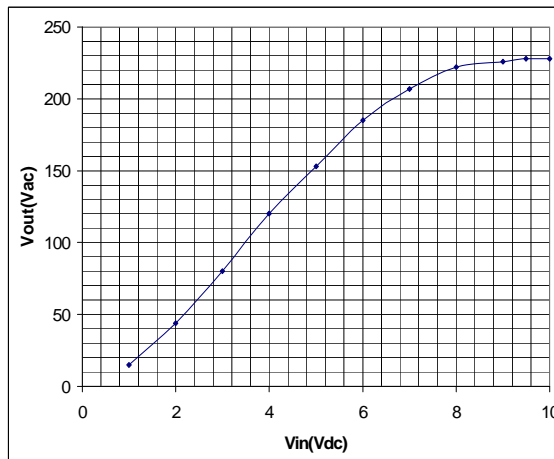
It's possible to connect also a manual command, supplied by the DRV100 with a stabilized +10V.

To drive at MAX speed through the controller it's possible with a bridge between the 0-10Vdc/+10V connections contacts.

The DRV100 is a voltage regulator for MONO phase motors which operates connected to the MONO phase mains voltage.

The regulator must be installed by qualified personnel who will connect the electric supply, attach the cables in their permanent positions and commission the plant. Incorrect installation of the DRV100 voltage regulator or the fan connected to it may cause damage to objects or people so ensure the instructions in this manual and all required security measures are read and followed carefully.

Model	Nominal current (Amp)	In-rusch current (Amp)	Max power dissipation (Watt)	Dimensions
DRV 112	12A	24A	1,3 W x Ampere	158 X 130 X 90



V in (Vdc)	V out (Vac)
0	00
1	15
2	44
3	80
4	120
5	153
6	185
7	207
8	222
9	226
9,5	228
10	230

Technical characteristics

- Mono-phase supply : 230V +/-15%
- Frequency : 50/60Hz
- Load: 12 A RMS @ 50°C ambient
- Power supply consumption: 3 VA
- Driving output signal : 0-10Vdc
- Operating temperature : -20÷50°C
- Storage temperature : -30÷85°C
- Heatsink temperature : MAX 55°C
- Ageing characteristics : 60,000h
- Pollution level of the control device : Normal
- Protection degrees of the case : IP55
- Electric stress of the of the insulating parts : Long
- Electrical Connection : tabs 6,3 mm. x 1,0 mm.

Insulation characteristics

2000 Vac between grounding protection and energized parts of the device

The device is suitable for the installation in units of class I, II and III.

EMC compliance for PDS applications (Power Drive System)

