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# SINGLE OUTPUT REDUNDANT DIRECT CURRENT POWER SUPPLIES

## AFR SERIES

### Overview

Single output redundant AC/DC power supplies, in magnetic resonance technology. Particularly developed for industrial automation applications where are requested high reliability and intrinsically safe performances and the ability to withstand, in input and output terminals, high overvoltages generated by perturbations on input line or in the distribution to the users lines.

### Electrical characteristics

The most important characteristics that distinguish this type of power supply are:

<b>Input voltage</b>	115/230/400 Vac
<b>Admitted tolerance</b>	±20%
<b>Input frequency</b>	50/60 Hz
<b>Admitted tolerance</b>	±2%
<b>Output voltage</b>	12/24/48/110 Vdc
<b>Warranted tolerances</b>	
Line variations	±2,5%
Load variations	±2,5%
Frequency variations	±2,5%
<b>AC superimposed ripple</b>	less than 2% RMS
<b>Overvoltages rejection</b>	more than 40 dB
<b>Short circuit current</b>	200% I nominal
<b>Inrush current</b>	less than 4 times the nominal input current
<b>Power factor</b>	more than 0,9 lagging at full load
<b>Efficiency</b>	more than 80%
<b>Sustain time</b>	about 50 mS with output voltage at -10%
<b>Single unit MTBF</b>	ab. 250.000 hours
<b>Redundant units MTBF</b>	ab. 1.000.000 hours

### Output power

The product range includes the following models as a function of the output powers.

Model	Output power
AFR152	150 Watt
AFR252	250 Watt
AFR402	400 Watt
AFR602	600 Watt

### Accessories

A wide range of accessories is available to equal the power supplies to the more complex applications and specifications.

The ones foreseen in normal production are the following.

- Input magnetothermic breaker
- Redundant connection diode
- Not trimmable output voltage breakdown relay
- If required
- Trimmable low output voltage relay
- Output magnetothermic breaker
- Forced ventilation
- Trimmable bipolar ground output voltage relay

### Mechanical characteristics

The mechanical construction is 19 inches Rack type according to DIN41612 standard, with stainless steel AISI 316 structure and anodized aluminium front side in black or natural color. The height units and modularity are a function of the supplied power. The overall dimensions are the following.

Model	Units x width	Depth
AFR152	3 x 84TE	305mm
AFR252	5 x 84TE	402mm
AFR402	5 x 84TE	402mm
AFR602	6 x 84TE	402mm

### Ambient compatibility

The power supplies are submitted to typical or production tests to warrant the ambient compatibility. The fundamental tests are the following (\* identifies typical tests).

*Vibrations	5 m.s <sup>-2</sup> - 0,032mm
*Storage temperature	from -25 to 70 °C
*Working temperature	from -10 to 60 °C
*Injected harmonics	less than 15%
1,2/50 µs pulse withstand	2 kVp
Dielectric strenght	2 kV RMS
Insulation resistance	100 MΩ at 500 Vcc
Damped oscillatory waves	1 kVp at 1MHz
CE mark ref. standards	EN50081-2/50082-2

## Product range

Model	Input Voltage 50Hz A=115 B=230 C=400 Input Voltage 60Hz D=115 E=208 F=440	Output breaker	Forced ventilation .	Relè di minima uscita	Ground fault relay	Integr.data supervisor	Ground fault relay for MDS01	Output Voltage	Output current
AFR152-0	A/B/C/D/E/F							12	12
AFR152-1	A/B/C/D/E/F							24	6
AFR152-2	A/B/C/D/E/F							48	3
AFR152-3	A/B/C/D/E/F							110	1,5
AFR252-1	A/B/C/D/E/F	I4		R6	T1	MDS01	MDA01	24	10
AFR252-2	A/B/C/D/E/F	I4		R6	T1	MDS01	MDA01	48	5
AFR252-3	A/B/C/D/E/F	I4		R6	T1	MDS01	MDA01	110	2,2
AFR402-1	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	24	16
AFR402-2	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	48	8
AFR402-3	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	110	3,6
AFR602-1	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	24	25
AFR602-2	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	48	12
AFR602-3	A/B/C/D/E/F	I4	V1	R6	T1	MDS01	MDA01	110	5,5

## Mechanical dimensions

