

# SINGLE OUTPUT DIRECT-CURRENT ALTERNATE-CURRENT CONVERTER

## IMT SERIES

### Overview

Single output DC/AC converters, in magnetic resonance and IGBT 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 converter are:

<b>Input voltage</b>	12/24/48/110/220V
<b>Admitted tolerance</b>	±23%
<b>Output voltage</b>	115/230/400 Vac
<b>Warranted tolerances</b>	
Line variations	±2%
Load variations	±2%
Power fact.Variations	±2%
<b>Output frequency</b>	50/60 Hz
<b>Warranted tolerance</b>	±1%
<b>Harmonic distortion</b>	less than 5%
<b>Overvoltages rejection</b>	more than 40 dB
<b>Short circuit current</b>	170% I nominal
<b>Inrush current</b>	less than 4 times the nominal input current
<b>Efficiency</b>	more than 80%
<b>Admitted power factor</b>	from 1 to 0,6 lagg.
<b>Sustain time</b>	about 50 mS with output voltage at -10%
<b>Single unit MTBF</b>	ab. 150.000 hours

### Output power

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

Model	Output power
IMT150	150 Watt
IMT300	300 Watt
IMT500	500 Watt
IMT1000	1000 Watt
IMT1500	1500 Watt
IMT3000	3000 Watt
IMT5000	5000 Watt

### Accessories

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

The ones foreseen in normal production are the following.

**Input magnetothermic breaker**  
**Output magnetothermic breaker**  
**Not trimmable output voltage breakdown relay**  
**Analog output instruments (V/ I)**  
**Forced ventilation**  
**Trimmable low input voltage relay**  
**Trimmable low output voltage relay**  
**External line synchronisation**

### 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
IMT150	4 x 84TE	420mm
IMT300	4 x 84TE	420mm
IMT500	7 x 84TE	420mm
IMT1000	10 x 84TE	420mm
IMT1500	10 x 84TE	420mm
IMT3000	16 x 84TE	420mm
IMT5000	24 x 84TE	420mm

### Ambient compatibility

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

<b>*Vibrations</b>	5 m.s <sup>-2</sup> - 0,032mm
<b>*Storage temperature</b>	from -25 to 70 °C
<b>*Working temperature</b>	from -10 to 55 °C
<b>*Injected harmonics</b>	less than 15%
<b>1,2/50 µs pulse withstand</b>	2 kVp
<b>Dielectric strenght</b>	2 kV RMS
<b>Insulation resistance</b>	100 MΩ at 500 Vcc
<b>Damped oscillatory waves</b>	1 kVp at 1MHz
<b>CE mark ref. standards</b>	EN50081-2/50082-2

## Product range

Model	Output voltage 50Hz A=115 B=230 C=400 Output voltage 60Hz D=115 E=208 F=440	Input breaker	Output breaker	Output breakdown relay	Instruments	Forced ventilation	Low input voltage relay	Low output voltage relay	Ext. line synchronisation	Input voltage
IMT150-0	A/B/C/D/E/F	I1		R4						12
IMT150-1	A/B/C/D/E/F	I1		R4						24
IMT150-2	A/B/C/D/E/F	I1		R4						48
IMT150-3	A/B/C/D/E/F	I1		R4						110
IMT300-0	A/B/C/D/E/F	I1		R4						12
IMT300-1	A/B/C/D/E/F	I1		R4						24
IMT300-2	A/B/C/D/E/F	I1		R4						48
IMT300-3	A/B/C/D/E/F	I1		R4						110
IMT500-1	A/B/C/D/E/F	I1	I3	R4			R6	R5	L1	24
IMT500-2	A/B/C/D/E/F	I1	I3	R4			R6	R5	L1	48
IMT500-3	A/B/C/D/E/F	I1	I3	R4			R6	R5	L1	110
IMT500-4	A/B/C/D/E/F	I1	I3	R4			R6	R5	L1	220
IMT500-7	A/B/C/D/E/F	I1	I3	R4			R6	R5	L1	144
IMT1000-1	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	24
IMT1000-2	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	48
IMT1000-3	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	110
IMT1000-4	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	220
IMT1000-7	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	144
IMT1500-2	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	48
IMT1500-3	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	110
IMT1500-4	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	220
IMT1500-7	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	144
IMT3000-3	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	110
IMT3000-4	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	220
IMT3000-7	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	144
IMT5000-3	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	110
IMT5000-4	A/B/C/D/E/F	I1	I3	R4	S3	V1	R6	R5	L1	220

## Mechanical dimensions

