

***INVERTER***  
***VARIABLE FREQUENCY DRIVE***  
***FREQUENZUMRICHTER***  
***CONVERTIDOR DE FRECUENCIA***



2010





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### **WIDE RANGE**

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Transtecno produce and sells a wide range of gearmotors, whose typical modularity is very appreciated all around the world.

Thanks to the efficient technical project and to the care in the development of the products, clients and partners of Transtecno can obtain quality and convenience, in term of costs and logistics.

### **A COMPLETE SOLUTION**

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Transtecno Group has built his own offer increasing day by day: gear unit, electric motor and now the variable frequency drive. Last introduced in range, the drive TT100 allows to obtain a complete solution from the same supplier. Rated Output Power from 0,20 to 15 Kw, single phase 230 Vac and 400 Vac, TT100 can cover the most of market needs.

### **COMPACT AND COMPLETE DRIVE**

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- Compact size to take up minimum space inside electric cabinets
- Mix vectorial and V/Hz control mode, to adapt the drive to every single motor
- A complete solution for a universal product, ideal for all applications. It has a built in EMI filter, PID feedback, built in dynamic brake unit, RS485 serial gate and Modbus communication protocol.
- Many features
- Different torque control modes to save energy

### **ENERGY SAVING**

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Since long time ago we have been focusing on technical development of our products. Less squandered energy means the use of a smaller size motor. Furthermore, thanks to TT100 It is possible to manage the speed and the output torque according to the application needs.

One typical application field for TT100 is water treatment, where the use of drives has a strong impact on energy consumption.



## CHARACTERISTIC

- Auto torque promotion and auto slip compensation realizes larger output torque at low frequency.
- User-defined curve, V/F curve can be adjusted.
- Lower-noise, carrier-wave frequency can be adjusted from 2KHz to 10KHz
- Control protection is immediate and reliable, which improves system stability.
- Built-in filter is optional.
- Compatible with NPN and PNP types.
- Advanced vector control technology realizes more precise control and more excellent performance. (Only for E2000)
- Torque is elevated automatically, starting torque reaches 150% at 0.5Hz, and torque control precision reaches  $\pm 5\%$ . (Only for E2000)
- Output frequency is 0.50~650.0Hz (V/F), 0.50~200.0Hz (SVC). The highest resolution is 0.01Hz.

## MAIN FUNCTION

- Built-in braking unit.
- Built-in EMI filter.
- Pulse frequency controls speed.
- Jogging speed control, multistage speed-control, external analog signal speed control and PC/PLC speed control.
- Standard RS485 communication interface, PC/PLC control by MODBUS communication and several inverters can be operated at the same time.
- Frequency source includes given digit, given analog voltage and given MODBUS, etc.
- With double-polarity NPN and PNP type.
- 6 digital input terminals, each of which can be used as user-defined function terminals and one of which can be used as pulse frequency input terminal. 2 analog input terminals, one of which can be used to input voltage (0~5v, 0~10v) and the other can be used to input current (0~20 mA, 4~20 mA).
- 1 digital output terminal, 1 multifunction relay output terminal and 2 analog output terminals. One of digital terminal can be defined as a high-frequency pulse output terminal.
- With the twinkling display of preset frequency, running frequency can be easily set before running.
- Current stalling adjusting.
- Built-in DC braking.



## SINGLE PHASE 230 V<sub>ca</sub>

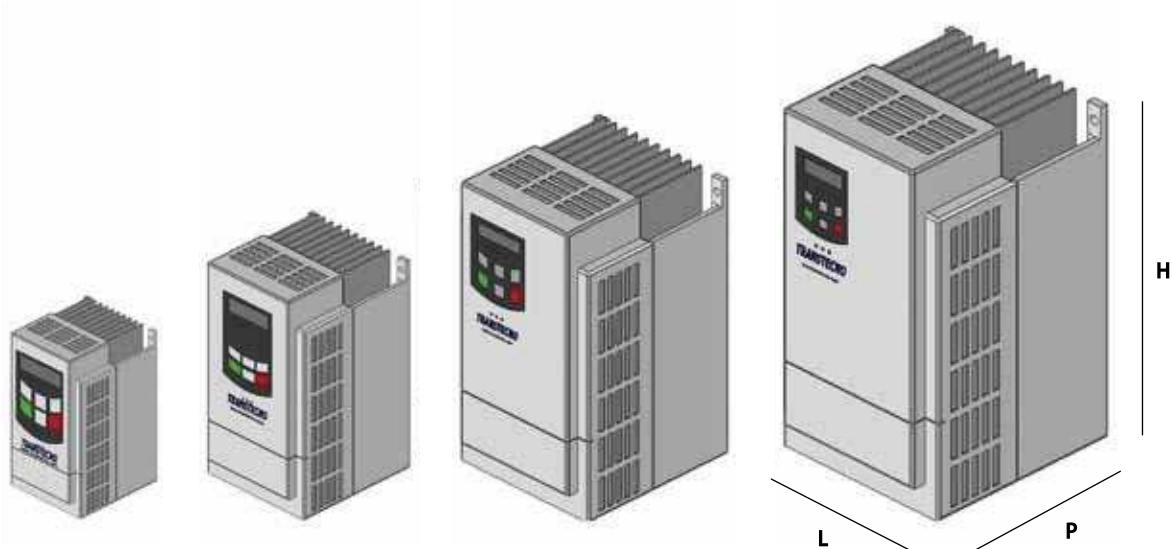
CODE	APPLICABLE MOTOR (KW)	RATED OUTPUT CURRENT (A)	STRUCTUR CODE	COOLING MODE	WEIGHT (KG)
TT100-0002S2F1R	0.2	1.5	E1	Self-cooling	1,36
TT100 -0004S2F1R	0.4	2.5	E1	Air-cooling	1,4
TT100-0007S2F1R	0.75	4.5	E1	Air Cooling	1,43
TT100 -0015S2F1R	1.5	7	E2	Air Cooling	2,0
TT100 -0022S2F1R	2.2	10	E3	Air Cooling	2,28

## THREE PHASE 400 V<sub>ca</sub>

CODE	APPLICABLE MOTOR (KW)	RATED OUTPUT CURRENT (A)	STRUCTUR CODE	COOLING MODE	WEIGHT (KG)
TT100 -0007T3F1R	0.75	2	E2	Air Cooling	2,0
TT100-0015T3F1R	1.5	4	E2	Air Cooling	2,0
TT100-0022T3F1R	2.2	6.5	E2	Air Cooling	2,0
TT100-0040T3F1R	4.0	9	E4	Air Cooling	3,02
TT100-0075T3F1R	7.5	17	E5	Air Cooling	4,4
TT100-0110T3F1R	11	23	E6	Air Cooling	8,0
TT100-0150T3F1R	15	32	E6	Air Cooling	8,2

## DIMENSIONS

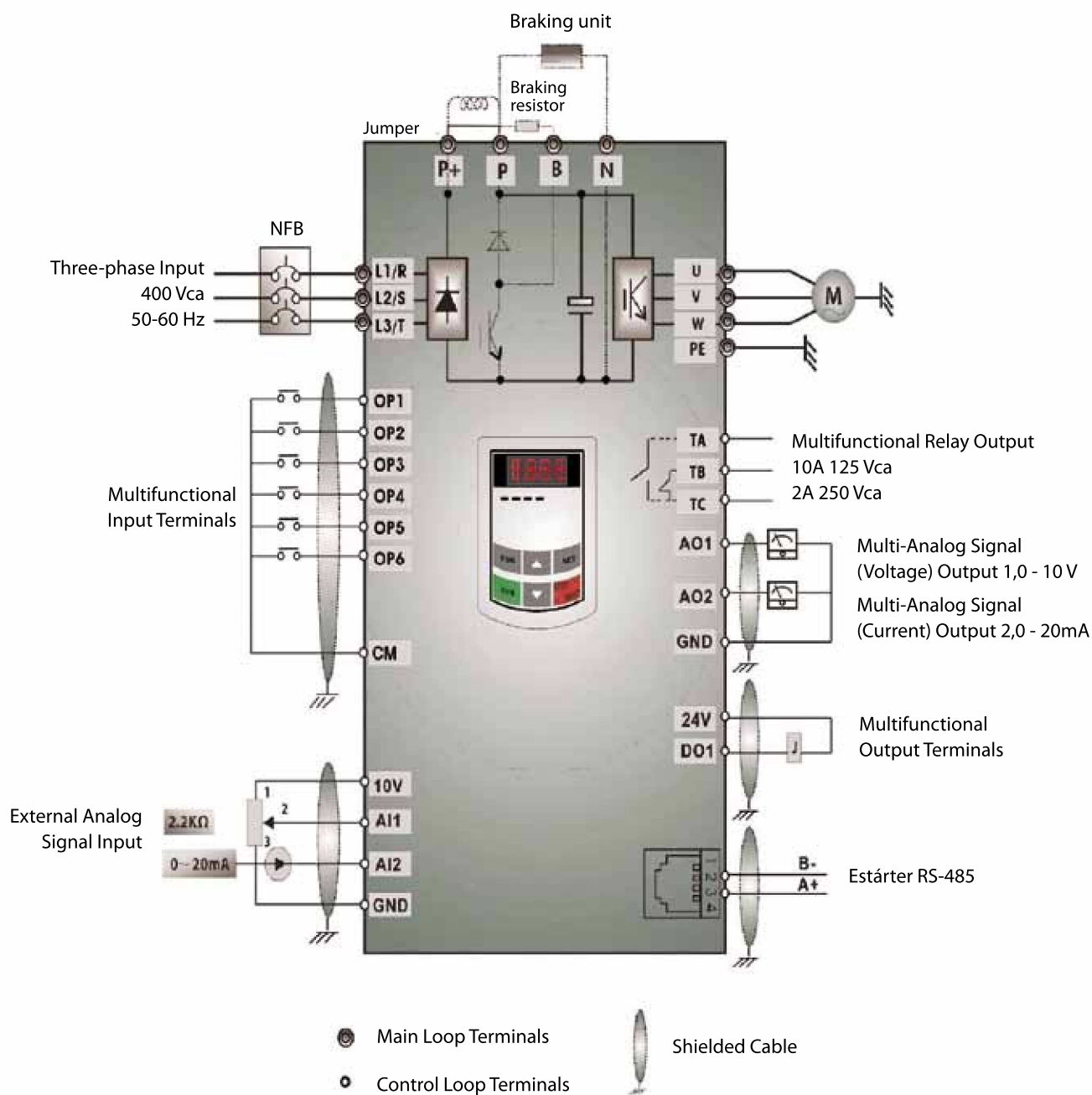
STRUCTURE CODE	EXTERNAL DIMENSION (H x L x P)	MOUNTING SIZE (W x Y) mm	MOUNTING BOLT
E1	138 x 80 x 135	128 x 70	M4
E2	180 x 106 x 150	170 x 94	M4
E3	180 x 106 x 170	170 x 94	M4
E4	235 x 138 x 152	225 x 126	M5
E5	265 x 156 x 170	255 x 146	M5
E6	340 x 205 x 196	330 x 194	M5



## TECHNICAL FEATURES

ITEMS		CONTENTS
Input	Rated Voltage Range	3-phase 400V±15%; single-phase 230V±15%
	Rated Frequency	50/60Hz
Output	Rated Voltage Range	3-phase 0~400V;3-phase 0~230V
	Frequency Range	0.50 ~ 650.0Hz
Control Mode	Carrier Frequency	2000~10000Hz; Fixed carrier-wave and random carrier-wave can be selected by F159
	Input Frequency Resolution	Digital setting: 0.01Hz, analog setting: max frequency 0.1%
	Control Mode	VVVF control
	Overload Capacity	150% rated current, 60 seconds
	Torque Elevating	Auto torque promotion, Manual Torque Promotion 0.1%~30.0% (VVVF)
	V/F Curve	4 kinds of modes: beeline type, square type, under-defined V/Hz curve and auto torque compensation
	DC Braking	DC braking frequency: 1.0~5.0 Hz, braking time: 0.0~10.0s
	Jogging Control	Jogging frequency range: min frequency~ max frequency, jogging acceleration/deceleration time: 0.1~3000.0s
	Auto Circulating Running and multi-stage speed running	Auto circulating running or terminals control can realize 15-stage speed running.
	Built-in PID adjusting	Easy to realize a system for process closed-loop control
Operation Function	Frequency Setting	Potentiometer or external analog signal (0~5V, 0~10V, 0~20mA); keypad (terminal)▲/▼ keys, external control logic and automatic circulation setting.
	Start/Stop Control	Terminal control, keypad control or communication control.
	Running Command Channels	4 kinds of channels from keypad panel, control terminal and series communication port.
	Frequency Source	Frequency sources: given digit, given analog voltage, given analog current and given series communication port.
	Accessorial frequency Source	Flexible implementation of 5 kinds of accessorial frequency fine adjustments and frequency compound.
	Braking unit	Built-in braking unit (only three phase 400 Vac)
	Serial Port	Modbus communication
Optional	Telecontrol panel	
EMC compliance	Built-in EMI filter, IEC/EN 61800-3: 2004 Adjustable speed electrical power drive systems-Part 3: EMC product standard including specific test methods.	
Protection Function	Input out-phase, Output out-phase, input under-voltage, DC over-voltage, over-current, over-load, current stall, over-heat, external disturbance.	
Display	LED nixie tube showing present output frequency, present rotate-speed (rpm), present output current, present output voltage, present linear-velocity, types of faults, and parameters for the system and operation; LED indicators showing the current working status of inverter.	
Environment Conditions	Equipment Location	In an indoor location, Prevent exposure from direct sunlight, Free from dust, tangy caustic gases, flammable gases, steam or the salt-contented, etc.
	Environment Temperature	-10°C ~ + 50°C
	Environment Humidity	Below 90% (no water-bead coagulation)
	Vibration Strength	Below 0.5g (acceleration)
	Height above sea level	1000m or below
Protection level	IP20	
Applicable Motor	0.2 ~ 15KW	

## DIAGRAM



BASIC WIRING DIAGRAM FOR THREE PHASE AC DRIVES (NPN TYPE)