

V/F AND VECTOR INVERTERS

Advantages

TDE MACNO digital V/F and vector control inverters are the result of a significant experience in the design and development of products for industrial automation.

» EASE-OF-USE AND EASY SET UP

Thanks to the automatic functions of auto tuning of the motor, TDE MACNO' s products are easy to adjust to any kind of motor type. The programming software from PC allows a rapid and precise use of all the operations and makes the set-up easy and extremely quick.

» ADVANCED CHARACTERISTICS

The inverter series has been specifically developed to meet demanding process control needs. The control software enables particular functions such as Energy Saving, Electrical Gearing, Up and Down function, Regeneration Function for Short Power Interruptions, Flying Start, Line Loss Restart, Braking through DC current injection for a high flexibility in the control of the motor. The advanced control system of the speed and current loop allows high dynamic performances. In addition to the serial line RS485 with Modbus protocol, Can Bus and Profibus DP protocols are available.

» PARAMETER SETTING SOFTWARE

The programming software, developed in Windows operating system, leads the user to the programming of the drive: it displays all the set-up and control parameters and enables customised solutions.

» FLEXIBILITY AND CUSTOMISED SOLUTIONS

Based on our experience as application and systems engineers for industrial automation we provide our know-how to realise in a flexible way customised solutions for the specific needs of the customers.

» RELIABILITY

Since its establishment in 1976 TDE MACNO has been designing and developing comprehensive and straight forward solutions to a wide variety of industrial automation applications. We have a strong commitment to the continuous development of high quality and reliable solutions. This has made TDE MACNO your reliable partner.

DIGITAL INVERTERS

The frequency converters DFNT series have been designed for the open loop control of three-phase asynchronous motors. Ease of use and flexibility are combined with high control characteristics. The optimisation of the modulation allows the over-modulation operating mode and provides a great stability at high frequencies (2 ÷ 3 times the rated current).

MAIN FEATURES

SPECIAL FUNCTIONS

Motor interface:

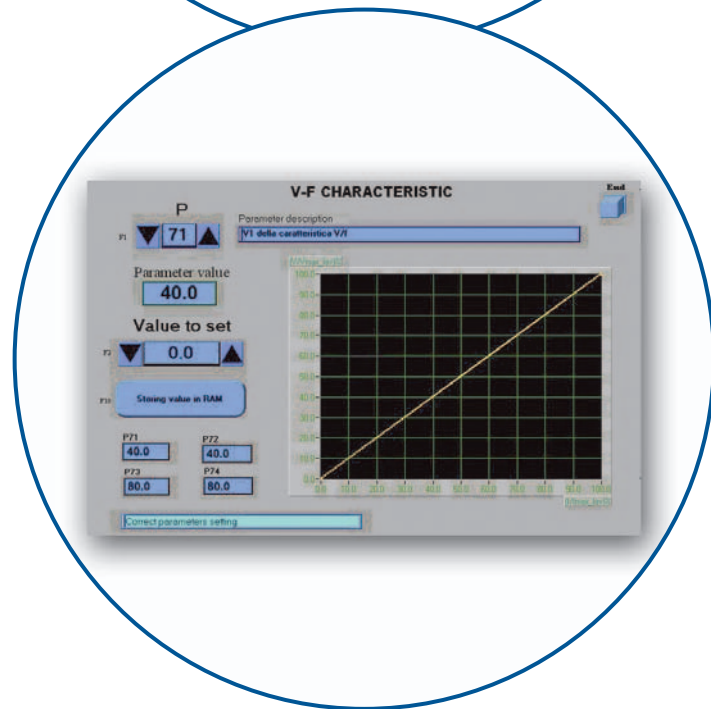
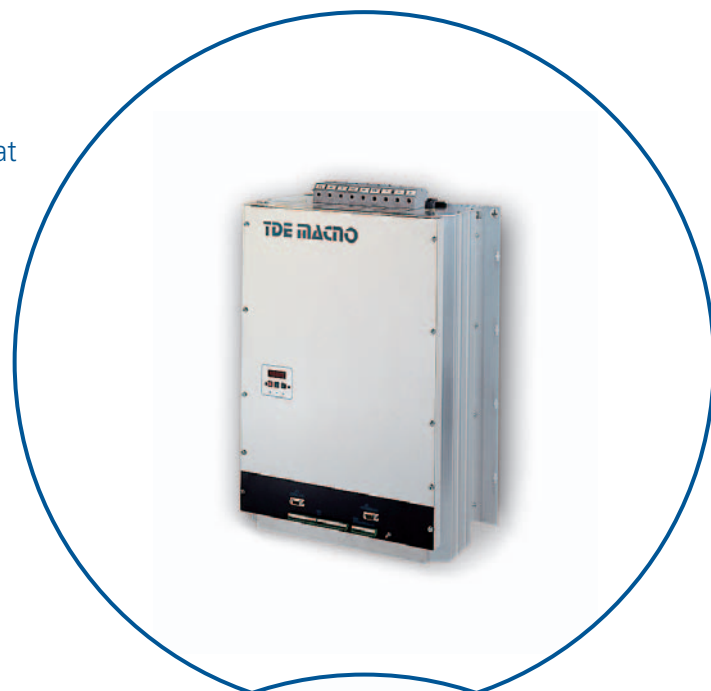
- » Motor auto tuning for low speed working mode optimisation
- » Slip compensation
- » Line loss restart
- » Motor stall protection
- » De-rating current curve selection for self cooling motors
- » Initial boost for an under load start

Technology and control

- » Energy saving function for optimisation of supplied current at same torque
- » Over modulation for voltage up to 10% more of the line voltage
- » Skip frequencies with two programmable skip bandwidth
- » Braking through DC current injection
- » Regeneration function during short power interruptions
- » DC voltage limitation in braking mode
- » Inverter temperature self monitoring system; alarm and pre-alarm level setting possible

Set-up and programming

- » PC monitor software with scope function for an easy setup and drive diagnostic
- » Parameters and alarms storing and displaying
- » RS485 serial port with Modbus protocol (RTU or ASCII)
- » Diagnostic and programming keypad with logical parameters clustering
- » Diagnostic and programming via fieldbus (option)



DFNT SERIES

POWER

Technical data

- ▶ Three-phase 400 ÷ 440V -15% + 10%, frequency 50/60 Hz ± 5%
- ▶ Power supply from external DC bus
- ▶ IGBT power stage
- ▶ PWM frequency: 3 ÷ 9 kHz
- ▶ Built in soft start device also with external enabling
- ▶ Maximum overload: 150% for 30 sec (S1) - 200% for 30 sec (S2)

CONTROL AND REGULATION

Features

- ▶ Full digital regulation with high calculation performances (DSP)
- ▶ Frequency regulation with internal torque loop and maximum current limit
- ▶ Output frequency: 0 ÷ 1.300 Hz
- ▶ V/F programmable characteristic (linear, quadratic or for single points)
- ▶ Independent ramps with S or linear motion profile
- ▶ Possibility of parameters storing of two motors with different electric characteristics

Protections

- ▶ Drive diagnostics through display or from serial line:
 - Short-circuit phase-to-phase/phase-to-ground
 - Short-circuit clamping circuit
 - Inverter over temperature (heatsink thermal switch or NTC)
 - Motor over temperature
 - Motor overload
 - Over voltage and under voltage

Signals and references

- ▶ 8 opto isolated configurable digital inputs
- ▶ 3 analog inputs ± 10 V for:
 - frequency reference (speed)
 - torque reference
 - torque limit
- ▶ 3 configurable opto isolated digital outputs
- ▶ 2 programmable analog outputs ± 10 V
- ▶ 3 digital speed jog references
- ▶ digital potentiometer function with up/down logic inputs and storing on EEprom of the last occurred value

DIGITAL INVERTERS DFNT SERIES

OPTIONS

Communication cards

- ▶ CAN BUS (can open)
- ▶ PROFIBUS DP
- ▶ RS232 / 485 interface card for PC connection with monitor software

Accessories

- ▶ Remote keypad for parameters setting
- ▶ Clamping circuit predisposition
- ▶ Clamping resistors
- ▶ Line inductors
- ▶ EMC filters
- ▶ Predisposition for analog inputs 4 ÷ 20 mA

Technical data

Mains supply

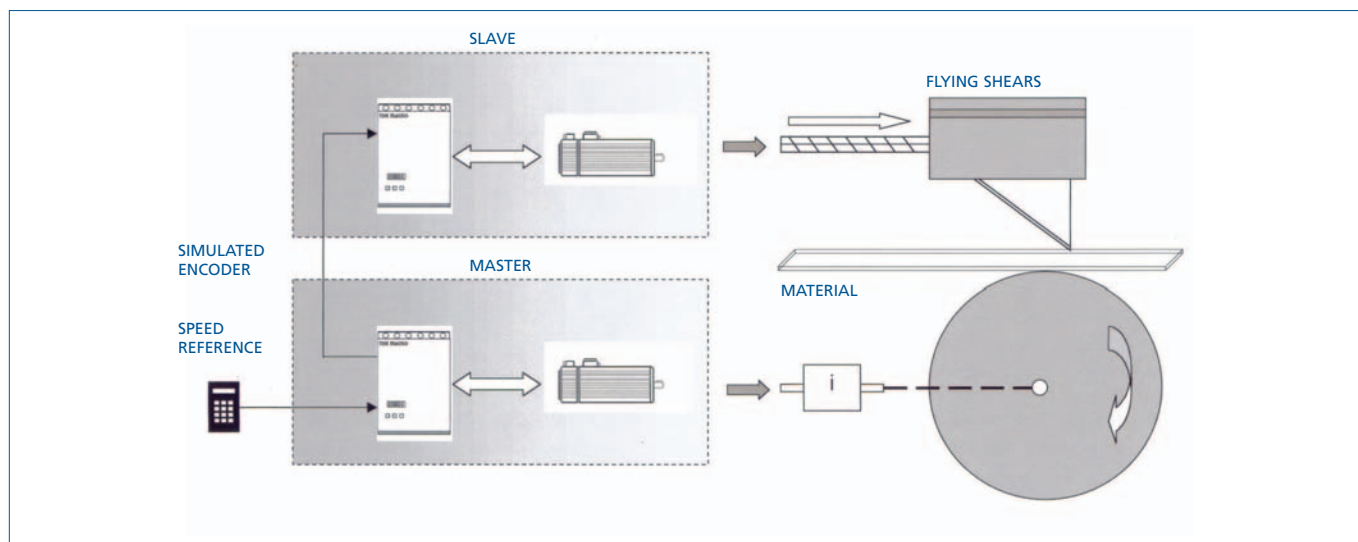
Voltage supply	V a.c.	three-phase 400 ÷ 440V a.c. -15% / -10%
Line frequency	Hz	50 ÷ 60 ± 5%
Power supply from external	DC bus (optional)	
Environment temperature	°C	0 ÷ 45
Protection	IP 20	

Sizes	Motor power 400V	S1 Series				S2 Series				
		Overload 150% for 30 sec		Overload 120% for 30 sec		Overload 200% for 3 sec 155% for 30 sec			Overload 200% for 30 sec	
		I rated (A)	I max (A)	I rated (A)	I max (A)	I rated (A)	I max (A)	I limit (A)	I rated (A)	I max (A)
1,5	1,84	4	6	4,5	5,4	3,75	7,5	5,8	3,2	6,4
3	3	7	10,5	8	9,6	6,75	13,5	10,5	5,75	11,5
4	4	10	15	11	13	9,5	19	14,7	8	16
5,5	5,5	12	18	13,5	16	11,5	23	18	10	20
7,5	7,5	17	25,5	19	23	16,5	33	25,5	14	28
11	11	24	36	27	32	21	42	35,5	18	36
15	15	32	48	36	43	-	-	-	-	-
18,5	18,5	37	55	42	50	35	70	54	30	60
22	22	48	72	54	65	46	92	71	40	80
30	30	60	90	67,5	81	57	114	88	48	96
37	37	70	105	79	95	67	134	104	57	114
45	45	90	135	101	121	86	172	133	74	148
55	55	107	161	118	142	100	200	155	85	170
75	75	150	225	167	201	140	280	217	120	240
90	90	175	263	195	234	165	330	256	140	280
110	110	220	330	248	298	210	420	325	180	360
132	132	250	375	280	336	238	476	369	203	406

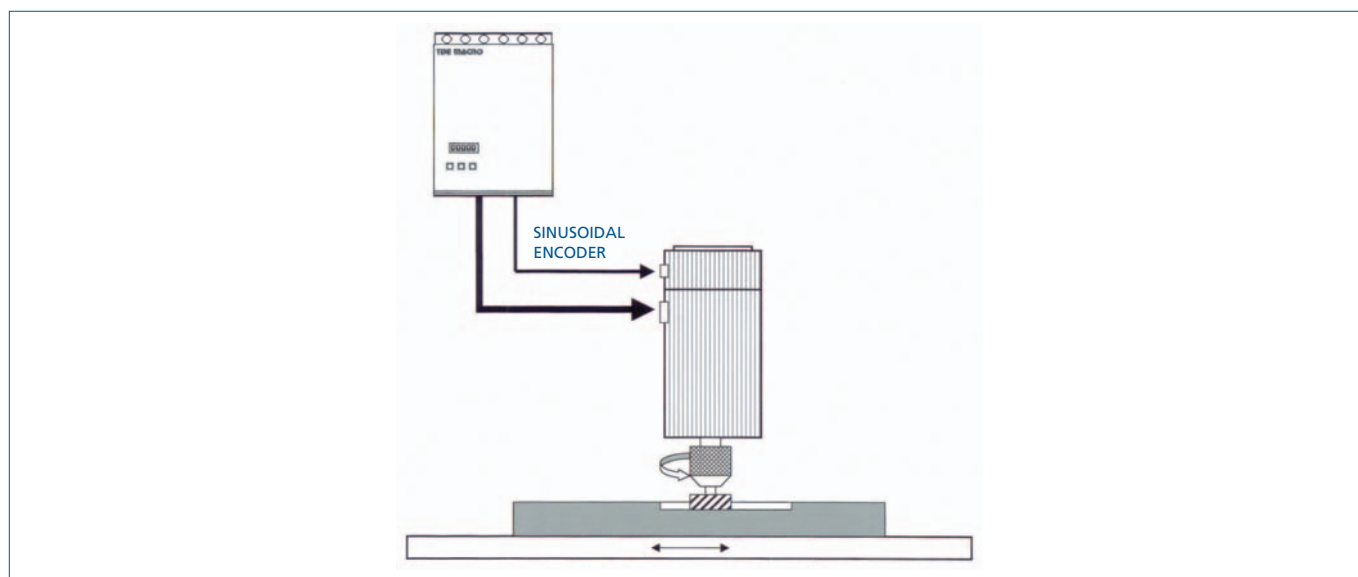
Sizes	1,5	3	4	5,5	7,5	11	15	18,5	22	30	37	45	55	75	90	110	132
Dimensions mm	H	330		360				460		520	680		680	905		905	1050
	L	126		230				230		230	230		230	475		475	475
	P	292		185				230		270	250		290	300		300	300

SOME APPLICATIONS

FLYING CUT



ELECTRO SPINDLE



TEXTIL - TRAVERSE FUNCTION

