

COMPLEX FUNCTION REALISATION

Adopting the advanced modular design, TG600 series inverters are custom design products that could lower the customer's purchasing cost efficiently. In the mean time, we offer an open platform to make the clients realize their customized function easily. All the below listed Extension cards are OPTIONAL

EXTENSION CARD	FUNCTION
Serial Communication Card	Offers RS 232 and RS 485 dual physical communication interface. 1. RS 232 adopts standard D9 master seat. 2. 3-hole RS 485 interface. 3. In-line MODBus RTU standard communication protocol.
PG Card	Receive high-speed pulse from encoder to realize high-accuracy close-loop vector control. 1. Both push-and pull input and open-circuit collector input. 2. Offer frequency division output, the frequency-division factor can be selected by dial switch. 3. Connect to the encoder by softwire. (Simulation)
Injection Moulding Card	Achieve energy saving function for injection moulding machine by collecting and processing pressure and flow signal.
Tension Control Card	Wind and Unwind control, compensation of moment of inertia, multiple tension setting mode, automatic winding diameter calculation and display, linear speed collect and display, prevent wire breakage, prevent overdrive, RS 485 port
Water Supply Control Card	Realize functions such as close-loop constant of water supply pressure, multi pumps variable frequency switch, time and multi-segment water supply, dormant protect, prevent water hammer, water level control and synthetic process of supply-discharge etc, RS 232 port.
I/O Extension Card	Offer more input / output terminal to enhance the external function of inverter, RS 485 port.

APPLICATIONS

True Genius AC Drive is suitable for various types of constant and variable torque loads in industries such as:-

- | | | | | |
|-----------|-------------------|----------------|---------------------|--------------|
| ⇒ Textile | ⇒ Sugar | ⇒ Plastic | ⇒ Pharmaceutical | ⇒ EOT Cranes |
| ⇒ Paper | ⇒ Steel | ⇒ Chemical | ⇒ Tyre and Rubber | ⇒ Mining |
| ⇒ Cement | ⇒ Food Processing | ⇒ Machine Tool | ⇒ Material Handling | ⇒ Lifts |

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The design and manufacture of our products are subject to constant improvement. Hence the above specification / model may slightly vary from the product illustrated / supplied.

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No. INV / TG-600 / 2008 - 09
Issue: May 2008

Gemini Printers. Ph : 080-41241532

KIRLOSKAR ELECTRIC



True Genius
TG - 600



AC DRIVES

0.75 to 900 kW @ 415V
22 to 1500 kW @ 690V

Certified ISO 9001:2000 by



INTRODUCTION

True Genius TG-600 series AC Drives are high performance Vector controlled inverters, adopting modular design based on dual CPU control. Three types of control methodology are built into the drive software, which are selectable through parameters, based on the application requirement, viz., V/f control, Sensor less Vector control and the closed loop vector control.

Closed loop Torque control is easily achieved through using the PG card option to detect the motor speed and adjust the output torque in time according to the changing load demand.

Special feature of Automatic adjustment of Carrier frequency, if enabled, ensures quiet operation by adjusting the carrier frequency automatically in accordance with the changing load and temperature.

SELECTION CHART

Drive Model TG 600	P75	1P5	2P2	3P7	5P5	7P5	011	015	018	022	030	037	045	055	075
Motor Output (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
Rated Current at 415V (Amps)	2.5	3.7	5.0	9.0	13	17	25	32	37	45	60	75	90	110	NA
Rated Current at 690V (Amps)	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	35	45	52	63	86
Nett Weight (kg)	3.8			6.5			21			45					
Dimension(H*W*D) in mm	250*160*180			320*220*180			467*290*215			577*375*270					

Drive Model TG 600	075	090	110	132	132	160	185	200	200	220	250	280	315	350	400
Motor Output (kW)	75	90	110	132	132	160	185	200	200	220	250	280	315	350	400
Rated Current at 415V (Amps)	150	176	210	NA	250	300	340	NA	380	415	470	520	600	NA	NA
Rated Current at 690V (Amps)	NA	98	121	150	NA	175	198	218	NA	240	270	320	350	380	430
Nett Weight (kg)	75			150			220								
Dimension(H*W*D) in mm	755*460*330			1180*490*390			1264*750*400								

Drive Model TG 600	350	400	500	560	630	710	800	900	1000	1100	1200	1300	1500
Motor Output (kW)	350	400	500	560	630	710	800	900	1000	1100	1200	1300	1500
Rated Current at 415V (Amps)	640	690	860	950	1100	1210	1360	1520	NA	NA	NA	NA	NA
Rated Current at 690V (Amps)	NA	NA	540	600	680	760	860	970	1070	1180	1290	1400	1610
Nett Weight (kg)	650			975									
Dimension(H*W*D) in mm	1821*1505*400			1821*2260*400									

NA - Not Applicable

FEATURES

SIMPLE PLC PROGRAMMING

Ensures 16 step speed control, without the usage of multi-step speed programming.

PID CONTROL

Precise control of the application in accordance with the changing load / output pattern.

MOTOR AUTO TUNING

Ensures precise control and fast response to cater the output requirement.

S-CURVE

Ensures smooth acceleration and deceleration for applications like lifts, elevators etc.

MULTIPLE V/F CURVE SETTING

Enables to suit the drive for various applications both constant torque & variable torque, employing only V/f control.

AVR FUNCTION

Whenever this function is enabled, the drive output voltage does not change in accordance with the input voltage or DC Bus voltage and is maintained constant within the output capacity range.

ENERGY SAVING

Whenever this function is enabled, the drive will adjust the output voltage in accordance with the load by detecting the output load current thereby saving Energy automatically (fan and pump loads).

PARAMETER COPY

This enables uploading / downloading of parameters to external LCD display unit thereby reducing the commissioning time taken for identical machines.

SERIAL COMMUNICATION

Standard RS-485 communication with MODBus RTU protocol as option.

TECHNICAL SPECIFICATION

Input	Input Voltage Range	3 phase, 415V / 690V AC \pm 15%
	Input Frequency Range	47 ~ 63Hz
Output	Output Voltage Range	3 phase, 415V AC / 690V AC (Same as input voltage)
	Output Frequency Range	0 ~ 600 Hz
External Interface	Programmable Digital Input	Six Channel inputs. One is the high-speed pulse input (HDI1). Another four channel inputs can be extended by optional I/O card
	Programmable Analog Input	AI1; 0~10V, AI2; 0~10V or 0~20mA, optional I/O extension card can offer another two inputs; AI3; -10V~10V, AI4; 0~10V or 0~20mA.
	Programmable Open Circuit Collector Output	One channel output, optional I/O extension card can offer another one (Open circuit collector output or high-speed pulse output)
	Relay Output	Two channel outputs, optional I/O extension card can offer another one
	Analog Output	One channel output, optional I/O extension card can offer another one, 0/4~20mA or 0/2~10V selectable.
Technology Features	Control Mode	Sensorless Vector control, Vector Control with PG, V/f Control.
	Overload Capacity	150% rated current for 60 sec. 200% rated current for 2 sec, (Vector control)
	Starting Torque	Sensorless Vector Control: 0.5 Hz / 150%, Vector Control: 0 Hz / 180%
	Speed-Adjust Ratio	Sensorless Vector Control: 1:100, Vector Control with PG: 1:1000.
	Speed Accuracy	Sensorless Vector Control : \pm 0.5% of maximum speed, Vector Control: \pm 0.02% of maximum speed.
	Carrier Frequency	1.0KHz~16.0 KHz. It can be adjusted automatically according to the features of temperature and load.
Function Features	Frequency - Setting Mode : Digital Setting, Analog Setting, Pulse Frequency Setting, Serial Communication Setting, Multi-Speed, Simple PLC Setting and PID Setting etc. The switch between the defining combination and the defining mode can be realized.	
	Torque-Control Function offers multimode torque setting.	
	PID Control Function offers precise process control.	
	Simple PLC & Multi-segments Speed Control Function offers 16 segments speed Control.	
	Traverse Control Function	
	Length and Time Control Function.	
	Non-Stop Function while instantaneous power failure	
	Speed trace Function (Catch-on fly) offers smooth start of the running motor.	
	QUICK / JOG Function offers Multi-function shortcut key defined by user.	
	Automatic Voltage Adjust Function offers to maintain the output voltage constant automatically when mains voltage is fluctuating.	
Up to 29 functions for failure protection offers protection against over current, over voltage, under voltage, over temperature, input / output phase failure, drive / motor load, IGBT failure, etc.		