ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Elettronica Santerno LE-100* at our website: ***Click HERE***

TECHNICAL SPECIFICATION

INVERTER VEGA DRIVE

ELETTRONICA SANTERNO

151311950

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Contents

- Overview 3
- Features & selection guide 4/5
- Data sheet 6/7
- Wiring & connection terminals 8/9
- Keypad & parameters navigation 10/11
- Dimensions 12
- Braking resistor & option 13
- Emi filters 14

1513111950

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Overview



Standard features:

- kW/voltage range
  0.55~1.8kW 200-230Vac, 1phase
  0.55~4.0kW 200-230Vac, 3phase
  0.55~4.0kW 380-460Vac, 3phase
- IP20
- IGBT Inverter
- SPACE-VECTOR Control
- RS 485 protocol MODBUS RTU
- Remotable smart keyboard
- Overload 150% of In for 60 sec.
- Overload 200% for short time span
- Maximum torque 180% Cn
- Maximum output frequency 400Hz
- Anti-stalling and antitrip algorithm
- 8 speed sets
- 3 frequency jumps (skip)
- 8 NPN PNP programmable digital inputs
- 2 analog inputs 0-10Vdc and 4-20mA
- 2 digital outputs (1 shunt relay)
- 1 analog output
- Adjustable carrier 1-10kHz
- Incorporated braking unit
- Automatic and manual torque boost
- Speed search
- PID function
- "S" ramps
- EMC compliant with EN 61800-3, industrial power utility, second environment

Options

- Cable for remote keyboard operation (3 metres)
- EMC foot print filters EN 55011 Cl. A and B, public utility, first environment.

Applications

- Fan
- Pumps
- Food processing machines
- Electrical shutter
- Dryers
- Transport
- Industrial washing machines
- Grinders
- Textile machines
- Machines for handling materials
- Centrifuges
- Doors for elevators
- Tooling machinery

Compliance with global standards

- Compliance with UL and cUL for North America
- CE marking for Europe
- Quality process controlled by ISO 9001.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Features

Reduced size



Besides improving performance, VEGA DRIVE presents a smaller format compared to the previous model Sinus GX series.
In the VEGA DRIVE model, volume has been cut down by 50% in order to allow installation on smaller control panels with a lower total weight. VEGA DRIVE allows you to make panels and design systems with a better price-performance ratio.

"Remote Drive" communication interface and management software

RS - 485

ModBus-RTU™







VEGA DRIVE incorporates widely available communication interfaces, such as Modbus-RTU and RS485.
It combines the simple functions of the small inverter with the excellence of a large-power inverter.

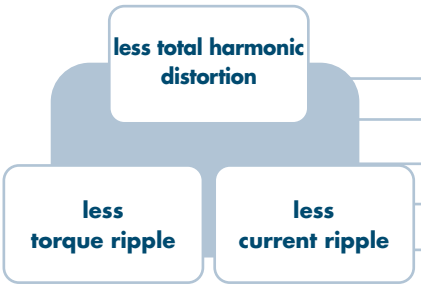
The "Remote Drive" software provides tools for controlling the inverter via PC, such as capturing video pictures, keyboard emulator, setting parameters and receiving-transmitting-saving data from and on PC.
"Remote Drive" allows remote service to the inverter via a simple internet connection. The chat line of the "Remote Drive" software allows swift communication between the user of the inverter and our engineers.
"Remote Drive" is applicable to all ELETTRONICA SANTERNO converters.

Incorporated PID Control

Useful for control processes, the PID algorithm optimizes the management of flows, temperatures, pressure and much else, through proportional, integral and differential calculation between the feedback value and the reference value, in closed loop.

Space vector PWM technology

Space vector technology affords incredible performance in terms of control. It offers minimum total harmonic distortion, smaller current ripple, reduced torque ripple, small motor temperature increase and better use of voltage. The advantages afforded by PWM Space vector technology have been proven in various applications.



Improved efficiency (lower loss in motor iron)

Lower motor temperature

Better use of voltage

Steady and smooth operation

High and steady torque

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Selection guide

Optimum acceleration and deceleration

In order to get the best torque during acceleration and deceleration, the so-called "anti-stalling" function can be activated. Improper manual programming of the ramps may lead to stalling of the motor. To avoid this, the 32 bit-CPU DSP checks the current transitory during acceleration and deceleration and automatically carries out the curve which makes the best use of the motor torque features.

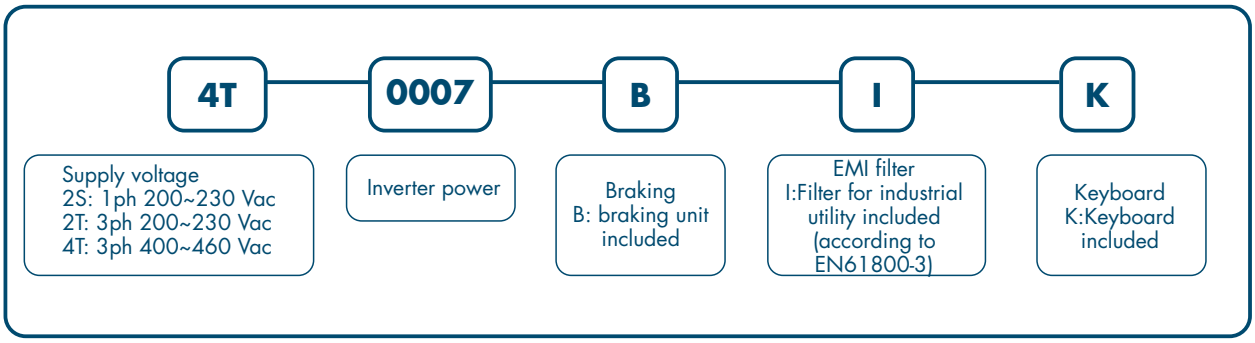
PNP and NPN signals presettable

VEGA DRIVE accepts both PNP and NPN command signals for control by PLC. Whatever kind of PLC or control signal, VEGA DRIVE can run at 24Vdc positive and 24Vcc negative.

Guide to selecting the power of the inverter

APPLICABLE MOTOR		200-230Vac	200-230Vac	380-460Vac
Kw	CV	1 phase	3 phase	3 phase
0,55	0,75	2S0001BIK	2T0001BIK	4T0001BIK
0,9	1,1			4T0002BIK
1,1	1,5	2S0002BIK	2T0002BIK	
1,5	2			4T0003BIK
1,8	2,5	2S0003BIK	2T0003BIK	
2,2	3		2T0005BIK	4T0005BIK
4,0	5,5		2T0007BIK	4T0007BIK

Nomenclature



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Voltage 200~230V

INVERTER TYPE		2S0001	2S0002	2S0003	2T0001	2T0002	2T0003	2T0005	2T0007
MOTOR POWER	HP	0.75	1.5	2.5	0.75	1.5	2.5	3	5.5
	kW	0.55	1.1	1.8	0.55	1.1	1.8	2.2	4.0
OUTPUT	Power [kVA]	1.2	2.0	3.2	1.2	2.0	3.2	4.8	6.8
	Current [A]	3	5	8	3	5	8	12	17
	Max torque	180% Cn							
	Frequency	0 ~ 400 Hz							
	Voltage	200 ~ 230 V							
INPUT	Voltage	1 phase 200 ~ 230 V (10 %)			3 phase 200 ~ 230 V (10 %)				
	Current (A)	6	10	16	3.3	5.5	9	13	19
	Frequency	50 ~ 60 Hz (± 5 %)							
BRAKING TORQUE	Braking circuit	On board							
	Average braking torque	20 % (with external optional resistor: 100% ,150%)							
	Max. continuous braking torque	15 sec							10 sec
	Max. duty	30 %							10%
	Lowest applicable resistor (‰)	47	47	39	47	47	39	27	42
WEIGHT	[kg]	1.2	1.8	2.1	1.2	1.2	1.8	2.1	2.2

Voltage 380~460

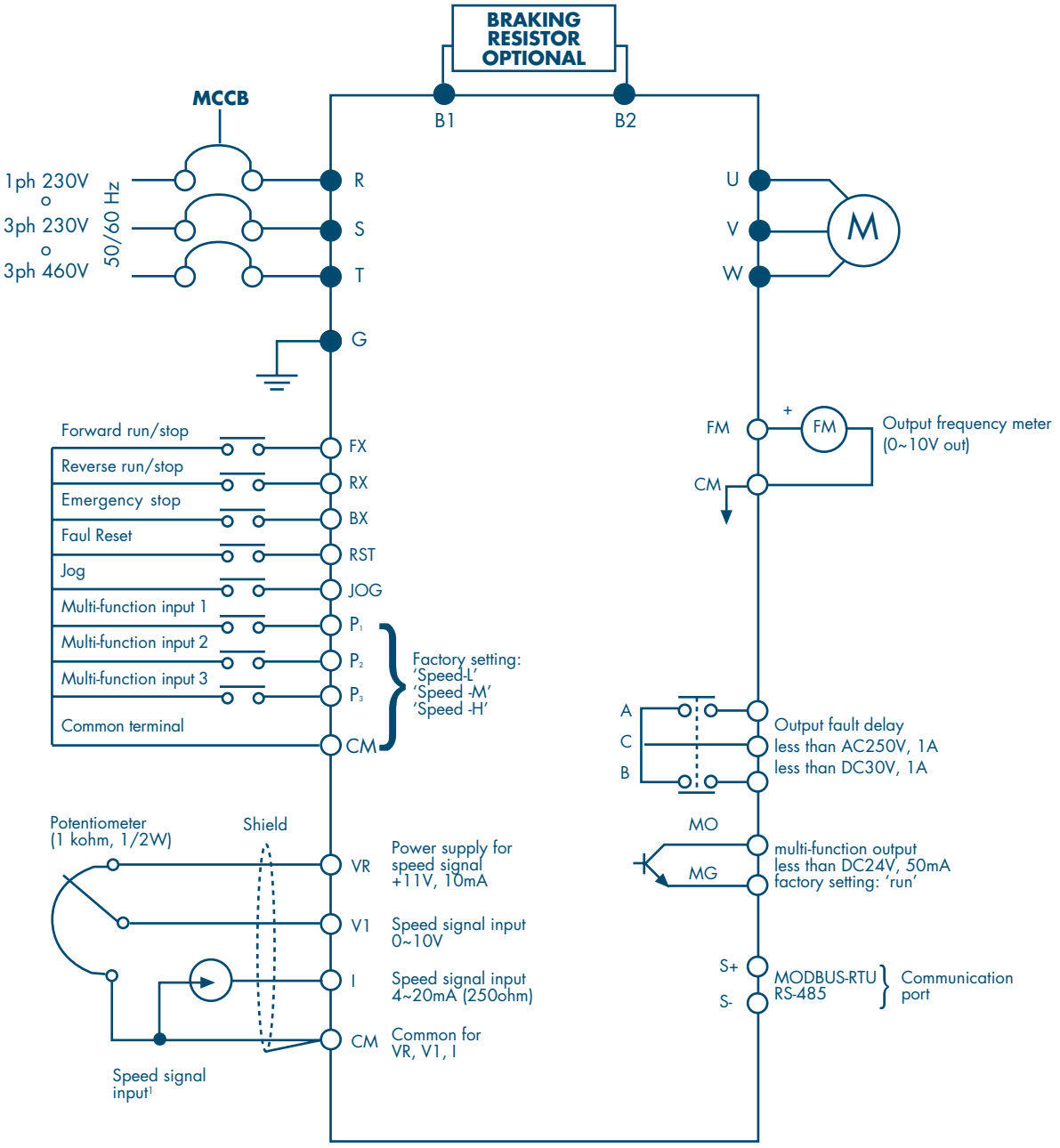
INVERTER TYPE		4T0001	4T0002	4T0003	4T0005	4T0007
MOTOR POWER	HP	0.75	1.25	2	3	5.5
	kW	0.55	0.9	1.5	2.2	4.0
OUTPUT	Power [kVA]	1.2	2.0	3.2	4.8	7.2
	Current [A]	1.5	2.5	4	6	9
	Max torque	180% Cn				
	Frequency	0 ~ 400 Hz				
	Voltage	380 ~ 460 V				
INPUT	Voltage	3 phase 380 ~ 460 V (±10 %)				
	Current (A)	2	3	4.5	6.5	10
	Frequency	50 ~ 60 Hz (5 %)				
BRAKING TORQUE	Braking circuit	On board				
	Average braking torque	20 % (with external optional resistor: 100% ,150%)				
	Max. continuou s braking torque)	15 sec				10 sec
	Max duty	30 %				10%
	Lowest applicable resistor (‰)	100	100	100	100	100
WEIGHT	[kg]	1.7	1.7	1.8	2.1	2.2

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Data sheet

CONTROL		Method	Space vector control
		Frequency setting resolution	Digital reference : 0.01 Hz (below 100 Hz), 0.1 Hz (over 100 Hz) Analog reference : 0.03 Hz / 50 Hz
		Frequency accuracy	Digital: 0.01 % of the max. output frequency Analog: 0.1 % of the max. output frequency
		V/F Ratio	Linear, Square pattern, User V/F
		Overload capacity	150 % of the nominal current for 1 min, 200% of the nominal current for 0,5 sec.
		Torque boost	Manual torque boost (0 ~ 15 %), automatic torque boost
OPERATION	Input signal	Method	Key / terminal / communication interface
		Frequency setting	Analog : 0 ~ 10V / 4 ~ 20 mA Digital: keypad
		Start signal	Foreward, reverse
		Multi step speed	8 presettable speed
		Multi step accel/decel/time	0 ~ 6˙000 sec, up to 8 type can be set and selected for each setting (use the multi-function terminal) Accel/Decel pattern: linear pattern, U pattern, S pattern optimun, minimun
		Emergency stop	Inverter switch off
		Jog	Jog operation
	Output signal	Fault reset	Reset fault when a protection is active
		Operation status	Frequency level detection, overload alarm, stalling, overvoltage, undervoltage, inverter overtemperature, running, stop, constant speed, speed search
		Fault output	Contact (30A,30C,30B) – AC250V 1A, DC30V 1A
		Indicator	Selectable among: output frequency, output current, output voltage, DC bus voltage
		Operation function	DC braking, frequency limit, frequency jumps, second motor, slip compensation, reverse rotation prevention, auto restart, PID control
PROTECTIVE FUNCTION		Inverter trip	Overvoltage, undervoltage, overcurrent, inverter overtemperature, motor overtemperature, in/out phase loss, input/output phase missed, overload protection, communication error, speed control loss, hardware fault
		Inverter alarm	Stall prevention, overload alarm
		Temporary power loss	Less than 15 msec: continuous operation, over15 msec : auto restart possible
DISPLAY KEYPAD		Operation information	Output frequency, output current, output voltage, frequency setting, operating speed, DC voltage
		Trip information	Describe the operating condition when in allarm condition 5 fault recordable
ENVIRONMENT		Ambient temperature	-10 °C~ 40 °C
		Storage temperature	-20 °C ~ 65 °C
		Ambient humidity	90 % RH max. Without condensation
		Altitude/Vibration	Max 1000 m/Max 5,9m/sec_(=0,6g)
		Application site	No corrosive gas, non-inflammable gas, no-oil mist, no dust
		Pressure	70 ~ 106 kPa
		Cooling systems	Forced ventilation/natural ventilation for VEGA DRIVE 4T0002 only.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

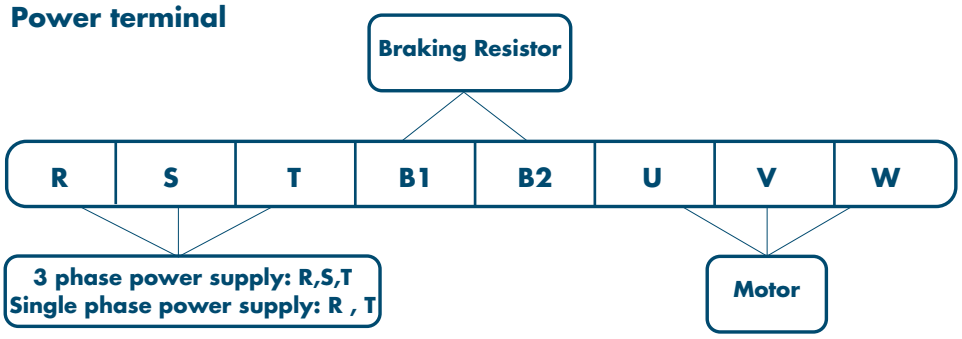


1. Analog speed control can be set by voltage, current and both

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Connection terminal

Power terminal



SYMBOL	FUNCTION
R S T	AC input 3(1) phase, 200 ~ 230V CA/3 phase 380 ~ 460V CA. single phase connection terminal: R and T
U V W	Output terminal for 3 phase motor
B1 B2	Connection for braking resistor
G	GND on chassis

Control terminal

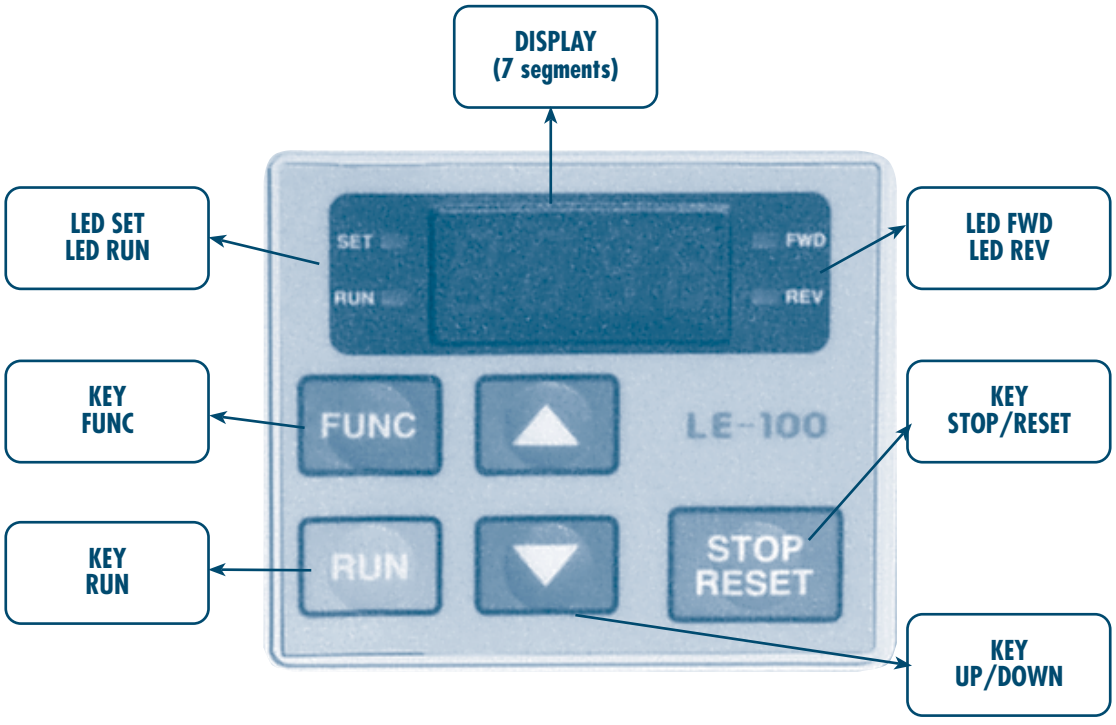
TYPE		SYMBOL	NAME	DESCRIPTION
Input signal	Starting contact function selection	P1, P2, P3	Multi function input 1,2,3	Used for multifunction input. Default: step frequency 1, 2, 3.
		FX	Forward run command	Forward run when closed, stop when open.
		RX	Reverse run command	Reverse run when closed, stop when open.
		JOG	Jog frequency reference	Run at jog frequency when the jog is active.
		BX	Emergency stop	When on, no power supply for motor. When electrical braker is used to stop a motor BX signal need to be used.
		RST	Fault reset	Used when inverter in protection.
		CM	Common (0V)	Common of the input terminal.
	Analog frequency refence	VR	Auxiliary power supply	11V, 10mA used as supply for potentiometer of the frequency reference.
		V1	Frequency reference (V)	0-10V, 20 k‰ input frequency reference.
		I	Frequency reference (I)	4-20mA, 250 ‰ input frequency reference.
		CM	Common	Common terminal for frequency reference.
Output signal	Pulse	FM-CM	Analog output(For external monitoring)	Programmable as: output frequency, output current, output voltage, DC voltage. On 12V, 1mA. Default: output frequency.
	Contact	30A 30C 30B	Output fault contact	Enabled when in protection present: 30A-30C closed (30B-30C open) max AC250V 1A or DC30V 1A. Fault.
		MO - MG	Multi-function output (open collector)	Default: output frequency reached DC24V, 50mA.
RS-485		S+, S-	Communication port	MODBUS-RTU.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Keypad

Description

4 characters, 7 segments display for signalisation and parameter description.
In this page the function of all the display parts.

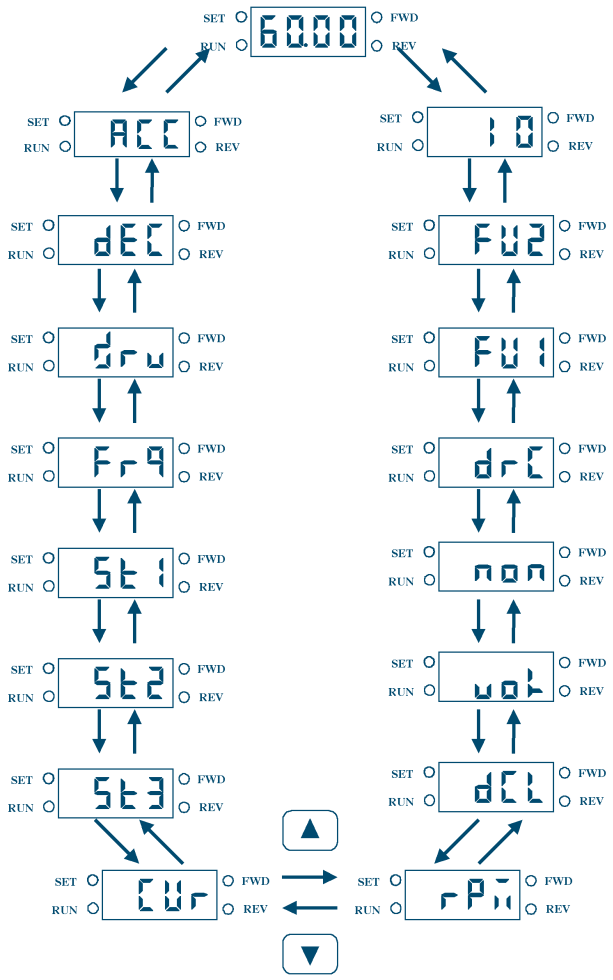


	NAME	FUNCTION	DESCRIPTION
TASTO	FUNC	Program	Press to change the parameter setting.
	△	Up	Press to scroll parameter up or to increase a value.
	▽	Down	Press to scroll parameter down or decrease a value.
	RUN	Inverter Run	Press to start inverter.
	STOP/RESET	Inverter STOP/RESET	Press to stop inverter or to reset a fault.
LED	REV	Reverse run	Lit when inverter is on.
	FWD	Forward run	Lit when inverter is on.
	SET	Setting	Lit when a parameter is setting.
	RUN	Operation	Lit when inverter is on, blinking when in acceleration or in deceleration

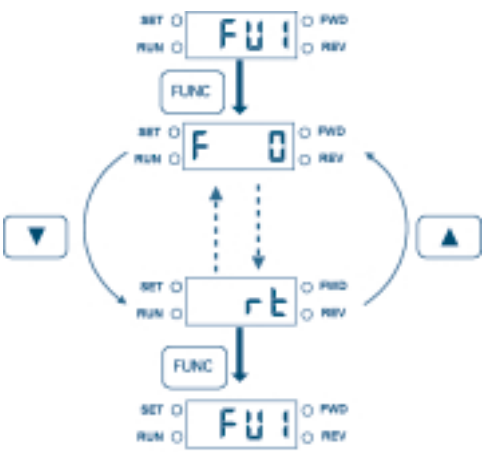
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Parameters navigation

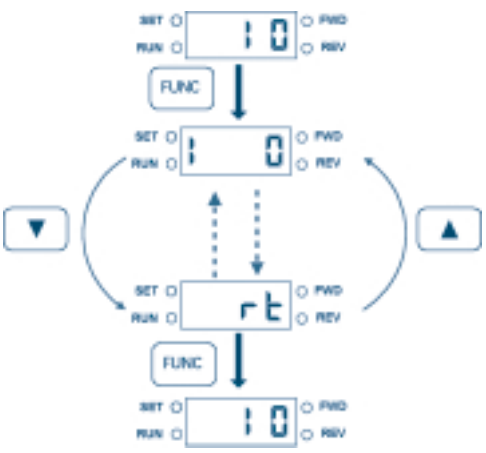
Drive group



Function group



I/O group



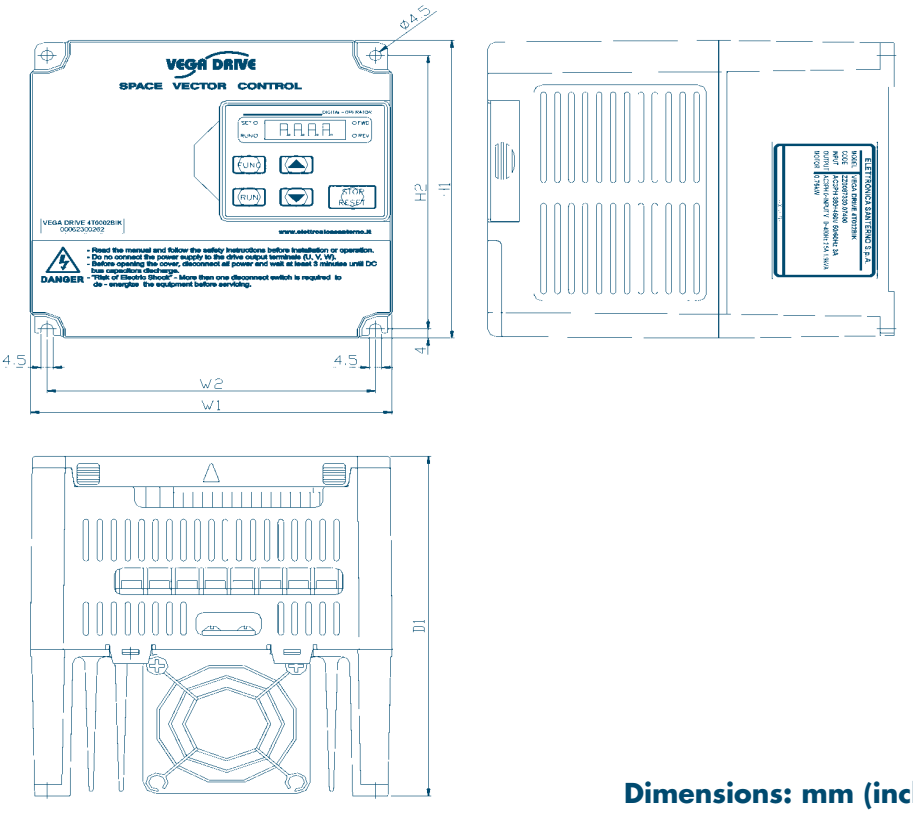
More information parameters download manual at www.elettronicasanterno.it

151311950

ELETTRONICASANTERNO

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Dimensions



Dimensions: mm (inch)

INVERTER VEGADRIVE	kW	W1	W2	H1	H2	D1
2S0001BIK	0.55	100 (3.94)	88 (3.46)	128 (5.04)	117.5 (4.63)	130.9 (5.15)
2T0001BIK	0.55	100 (3.94)	88 (3.46)	128 (5.04)	117.5 (4.63)	130.9 (5.15)
2S0002BIK	1.1	130 (5.12)	118 (4.65)	128 (5.04)	117.5 (4.63)	150.9 (5.94)
2T0002BIK	1.1	100 (3.94)	88 (3.46)	128 (5.04)	117.5 (4.63)	130.9 (5.15)
2S0003BIK	1.8	150 (5.90)	138 (5.43)	128 (5.04)	117.5 (4.63)	155 (6.10)
2T0003BIK	1.8	130 (5.12)	118 (4.65)	128 (5.04)	117.5 (4.63)	150.9 (5.94)
2T0005BIK	2.2	150 (5.90)	138 (5.43)	128 (5.04)	117.5 (4.63)	155 (6.10)
2T0007BIK	4.0	150 (5.90)	138 (5.43)	128 (5.04)	117.5 (4.63)	155 (6.10)
4T0001BIK	0.55	130 (5.12)	118 (4.65)	128 (5.04)	117.5 (4.63)	150.9 (5.94)
4T0002BIK	0.9	130 (5.12)	118 (4.65)	128 (5.04)	117.5 (4.63)	150.9 (5.94)
4T0003BIK	1.5	130 (5.12)	118 (4.65)	128 (5.04)	117.5 (4.63)	150.9 (5.94)
4T0005BIK	2.2	150 (5.90)	138 (5.43)	128 (5.04)	117.5 (4.63)	155 (6.10)
4T0007BIK	4.0	150 (5.90)	138 (5.43)	128 (5.04)	117.5 (4.63)	155 (6.10)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

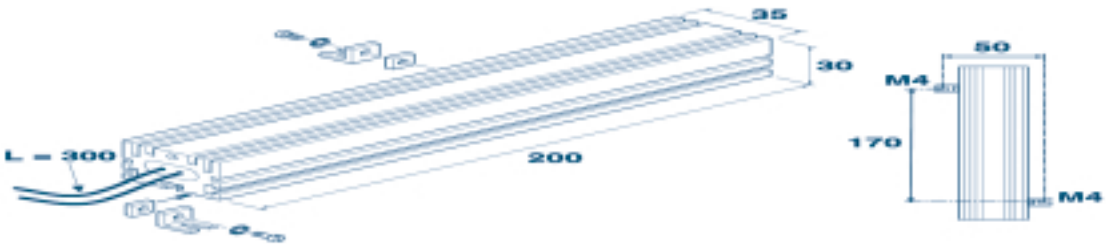
Breaking resistor & option

Inverter 230V

INVERTER VEGADRIVE	2S0001 2T0001 230V 0.55kW	2S0002 2T0002 230V 1.1kW	2S0003 2T0003 230V 1.8kW	2T0005 230V 2.2kW	2T0007 230V 4.0kW
RESISTOR	200Ω 350W	100Ω 350W	56Ω 350W	56Ω 350W	56Ω 550W
CODE	RE2644200	RE2644100	RE2643560	RE2643560	RE2643560
AVERAGE BRAKING TORQUE (%)	150	150	150	120	80
DUTY CICLE (%)	50	25	15	15	15
MAX CONTINUOS BRAKING TIME (S)	14	7	4	4	4

Inverter 400V

INVERTER VEGADRIVE	4T0001 400V 0.55kW	4T0002 400V 1.1kW	4T0003 400V 1.8kW	4T0005 400V 2.2kW	4T0007 400V 4.0kW
RESISTOR	400Ω 350W	400Ω 350W	200Ω 350W	200Ω 350W	200Ω 350W
CODE	RE2644400	RE2644400	RE2644200	RE2644200	RE2644200
AVERAGE BRAKING TORQUE (%)	150	150	150	150	100
DUTY CICLE (%)	25	25	12	12	12
MAX CONTINUOS BRAKING TIME (S)	6	6	3	3	3



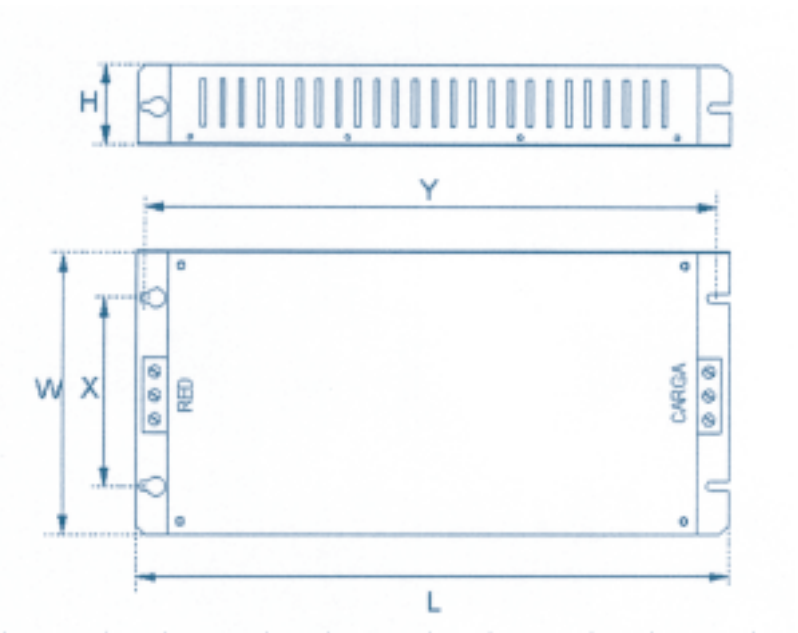
Peripheral device (options)

INVERTER VEGADRIVE	MOTOR	MCCB	CONTACTOR	WIRE (mm2)			IMPUT FUSES	IMPUT CHOXE
				R,S,T	U,V,W	GHD		
1S001	.55kW	240V/10A	240V/10A	2.5	2.5	4	10A	2.1mH/10A
1S002	1.1kW	240V/10A	240V/10A	2.5	2.5	4	10A	2.1mH/10A
1S003	1.8kW	240V/10A	240V/10A	2.5	2.5	4	16A	1.1mH /18A
2T001	.55kW	240V/10A	240V/10A	2.5	2.5	4	10A	2.1mH/10A
2T002	1.1kW	240V/10A	240V/10A	2.5	2.5	4	10A	2.1mH/10A
2T003	1.8kW	240V/10A	240V/10A	2.5	2.5	4	16A	2.1mH/10A
2T005	2.2kW	240V/16A	240V/16A	2.5	2.5	4	25A	1.1mH /18A
2T007	4.0kW	240V/25A	240V/25A	4	4	4	40A	1.1mH/18A
4T001	.55kW	480V/10A	480V/10A	2.5	2.5	2.5	6A	2.1mH/10A
4T002	1.1kW	480V/10A	480V/10A	2.5	2.5	2.5	6A	2.1mH/10A
4T003	1.8kW	480V/10A	480V/10A	2.5	2.5	2.5	10A	2.1mH/10A
4T005	2.2kW	480V/10A	480V/10A	2.5	2.5	2.5	10A	2.1mH/10A
4T007	4.0kW	480V/10A	480V/10A	2.5	2.5	2.5	20A	2.1mH/10A

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Filterbox Dimensions (mm)

MODEL	VOLTAGE	CURRENT	LEAKAGE CURRENT		DIMENSION				
			Nominal	Max	L	W	H	Y	X
FV10-1S-FP	250Vac 1ph	10A	-	3.5mA	173.5	103.5	40	159.5	80
FV11-1S-FP	250Vac 1ph	11A	-	3.5mA	173.5	133.5	40	159.5	110
FV20-1S-FP	250Vac 1ph	20A	-	3.5mA	173.5	153.5	45	159.5	130
FV05-2T-FP	250Vac 3ph	5A	0.3mA	18mA	173.5	103.5	40	159.5	80
FV12-2T-FP	250Vac 3ph	12A	0.3mA	18mA	173.5	133.5	40	159.5	110
FV20-2T-FP	250Vac 3ph	20A	0.3mA	18mA	173.5	153.5	45	159.5	130
FV06-4T-FP	460Vac 3ph	6A	0.5mA	27mA	173.5	133.5	40	159.5	110
FV11-4T-FP	460Vac 3ph	11A	0.5mA	27mA	173.5	153.5	45	159.5	130

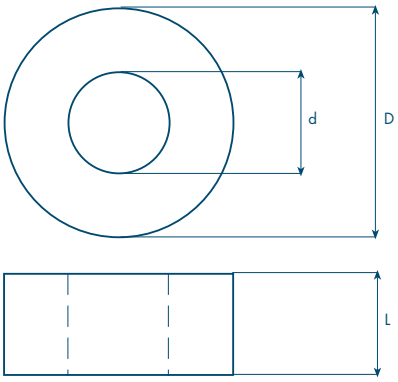


•The addition of the optional input filters ensure compliance to the fallowing normative documents:
EN 55011 gr. 1 cl.A
EN 55022 cl. A
VDE 0875N

•The addition of the input and output optional filters ensure compliance to the fallowing normative documents:
EN 55011 gr. 1 cl.B
EN 55022 cl. B
VDE 0875G

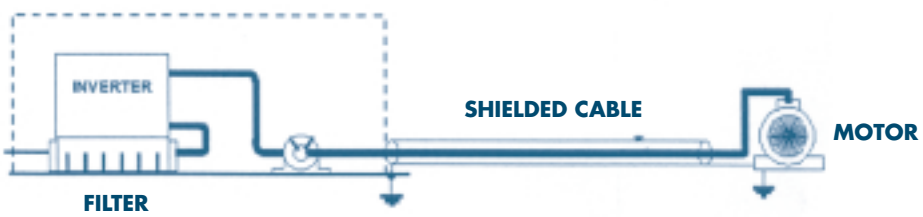
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Output filter dimensions (mm)



Models	d	D	L
2xK618	15	26	22
2xK674	23	37	31

Filter connection diagram



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Grafica BGC



ELETTRONICA
SANTERNO

Via G. di Vittorio, 3 - 40020 Casalfiumanese - Bo - Italy
tel. +39 0542 668611 - fax +39 0542 668600
e-mail: sales@elettronicasanterno.it - www.elettronicasanterno.it

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP