SANTERNO
ENERTRONICA GROUP

SINUS VEGA

The new Santerno Economy product for General Purpose Applications and Elevator

SINUS VEGA , the inverter dedicated to any applications , guarantees to obtain reliable and performing plants :

- **Whole range 5.5kW to 220kW Maximum energy efficiency and low maintenance costs**

Precise self - learning of motor parameter

- Precise self - learning of motor parameter
- Static mode : Stator / rotor time constant - Dynamic mode : Magnetic flux parameter
- The best dynamic control

Optimizing of motor noise and heat

- Unique modulation technology , decreasing current harmonics
- Frequency spectrum balance technology , adjusting motor tone
- Decrease common - mode voltage , reducing leak current Carrier wave dynamic adjusting , reducing the temperature - Reducing switching frequency when high - frequency , decreas ing the module heat

Instantaneous stop & non - stop

- Instantaneous power off , keep the continuous running - Keep the DC - Bus voltage according to electricity generating from the load
- Suitable for applications that need continuous running , e.g. chemical fiber , chemical industry

Current Shock elimination technology

- Overcome the current shock of high - power motor in no - load or small - load
- Adopt unique shock limit technology , ensure the motor smooth running

Dynamic control of DC - bus technology

- Control the DC - Bus voltage under the over - voltage protec tion point , to avoid over - voltage alarm
- Not trip even without brake unit

Built - in PLC for flexible control

- Various running mode : circulation / one - time
- Up to 7 speed : frequency / time / direction / acceleration / deceleration could be set
- Could be controlled by terminal for pause / reset / inactive
- Could work together with length control / closed loop control / frequency - swing function

Speed tracking function with hardware

- Avoid the speed tracking lost with software , 100% successful
- Track the motor speed and direction smoothly and reliably

constant - pressure water supply functions

- Swing amplitude could be fixed (according to the biggest frequency) or shifty (according to the center frequency)
- Center frequency could be set flexibly : e.g. VCI / CCI / PLCI multi - speed / closed - loop
- Easily switching between frequency swing and normal mode

FDT function

- For application of winder spindle or lifting machine brake con- trol
- Output frequency reaching FDT level, Y terminal (relay) output
- FDT lag could be set, to avoid repeating active

Optimized closed - loop control

- Command / feedback channel Prop filter time could be set independently
- Closed - loop preset frequency , ensure the system reach the steady - state
- Work together with O - frequency return difference , easy to form constant pressure water supply and constant temperature control system
- Polar could be selected in plus - minus adjustment

Optimized Over - modulation technology

- Applications needing high frequency and load , with lower Voltage of Power supply
- Increase efficiency of DC - Bus voltage , increase the output voltage
- Provide the enough torque output
- Decrease output current , reduce the heat

High - speed pulse output

- Up to 50KHz of output frequency
- 11 Kinds of output mode
- Meet the requirement of cascading application or anti - jamming

Unique current limit technology

- Load current control in real time , automatic current amplitude limil , strong over - load ability
- Instantaneous value / effective value controlled together

Counting function

- Counting parameter set
- Counting parameter could transfer to PLCI HMI via communication
- Counting parameter could be reset by terminal or communic ation

0 - frequency returning difference and dormancy

- To avoid the damage when fan / pump load starts frequently in low speed , even with PI closed - loop control
- Water - supply system need dormant running in night - Variable - Frequency air conditioner or constant pressure water supply

Dedicated functions

Main Features

- Smart cooling system . Through - panel assembly , segregation of servo ventilation channels
- Simple and easy - to - read high brightness LED keypad as standard .
- Fast and stable motor thermal protection , by current detection
- Integrated digital potentiometer .
- Programmable multi - speed control
- Output frequency adjustment from 0 to 600Hz , up to 2000Hz is available
- Low noise levels of the connected motors , with random modula tion and carrier frequency up to 16kHz
- Measurement of the energy delivered to the pump (kWh)
- Automatic calibration for motor parameter tuning
- Built-in programming multiple acceleration and deceleration ramps
- Motor speed kept when instantaneous power off
- Precise speed tracking - Preset length control
- High speed pulse output up to 50kHz , 11 kinds of output mode
- Lowest voltage up to 285V DC , suitable for Fluctuations in power grid
- Torque in 0 Hz could be set , inverter can keep load still at 0 Hz under open - loop control mode
- Auto reverse when PID output is negative , to provide benefit for winder / unwinder applications

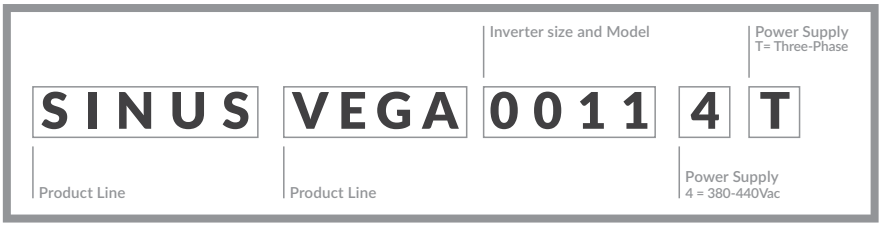
Standard I/Os :

- 7 programmable digital inputs in 3-phase Models
- 2 programmable analog inputs, 0-10 Vac,0(4)-20 mA
- 4 programmable digital outputs (2 relay outputs with changeover contacts , 2 open collector output)
- 2 programmable analog outputs 0-10 Vac,0(4)-20 mA
- RS485 serial communications with Built-in Modbus RTU protocol

Features

SINUS VEGA

Size	Model	W (mm)	H (mm)	D (mm)	Weight (mm)
K10	SINUS VEGA 0007 4T ~ SINUS VEGA 0011 4T	157	262	181	5
K15	SINUS VEGA 0015 4T ~ SINUS VEGA 0018 4T	198	305	188	7
K20	SINUS VEGA 0022 4T ~ SINUS VEGA 0037 4T	210	350	194	12
K25	SINUS VEGA 0045 4T ~ SINUS VEGA 0075 4T	276	438	220	18.5
K30	SINUS VEGA 0090 4T ~ SINUS VEGA 0132 4T	325	570	280	41.5
K35	SINUS VEGA 0160 4T ~ SINUS VEGA 0220 4T	489	759	298	85



SINUS VEGA 4T Applicable motor power with power supply 380 = 440Vac

Size	Model	Inom	Imax	Applicable Motor power NORMAL DUTY			Applicable Motor power HEAVY DUTY		
				kW	H	A	kW	H	A
K10	SINUS VEGA 0007 4T	17	20	7.5	10	17	5.5	7.5	13
K10	SINUS VEGA 0011 4T	25	29	11	15	25	7.5	10	17
K15	SINUS VEGA 0015 4T	32	38	15	20	32	11	15	25
K15	SINUS VEGA 0018 4T	37	48	18.5	25	37	15	20	32
K40	SINUS VEGA 0022 4T	45	56	22	30	45	18.5	25	37
K40	SINUS VEGA 0030 4T	60	68	30	40	60	22	30	45
K45	SINUS VEGA 0037 4T	75	90	37	50	75	30	40	60
K45	SINUS VEGA 0045 4T	90	113	45	60	90	37	50	75
K50	SINUS VEGA 0055 4T	110	135	55	75	110	45	60	90
K50	SINUS VEGA 0075 4T	152	165	75	100	152	55	75	110
K50	SINUS VEGA 0090 4T	176	228	90	125	176	75	100	152
K55	SINUS VEGA 0110 4T	210	264	110	150	210	90	125	176
K55	SINUS VEGA 0132 4T	260	315	132	180	260	110	150	210
K55	SINUS VEGA 0160 4T	305	390	160	220	305	132	180	260
K55	SINUS VEGA 0185 4T	350	460	185	250	350	160	220	305
K55	SINUS VEGA 0220 4T	425	570	220	300	425	185	250	350

NORMAL DUTY : Overaload 120 % rated current for 1 minute for applications which use self - ventilated induction motors and require a low overload capability (e.g. fans , pumps)

HEAVY DUTY : Overaload 150 % rated current for 1 minute - Overload 180 % rated current for 3 Sec- Overload 200 % rated current for 0.5 Sec , for constant torque applications which require a high overload capability (e.g. cranes , hoists)

Inom : Inverter nominal current.
Imax = max. current produced by the inverter for 60 secs every 10 min .

Features

Power / voltage range of the connected motor :

5.5 ~ 220kW 380 ~ 440Vac

Grid Vac supply voltage and supply frequency :

4T 380 ~ 440 Vac , three - phase , -15 % + 10 % 50-60Hz

Optional :

- Input inductors to limit current peaks and reduce harmonic contents
- dv/dt output inductors to limit current pulses due to parasitic capacity of cables
- Extension card for Injection molding machine
- Sinusoidal filters
- Multi pump controller up to 5pumps
- Encoder Card
- Profibus DP Card

Other features :

- Unique current limit technology
- Dynamic control of DC - bus technology
- Speed tracking function with hardware
- Built - in PLC for flexible control
- Optimized closed - loop control
- High - speed pulse output
- Constant pressure water supply functions
- FDT function

Application :

- CNC Lathe , CNC Milling Machine , CNC wood veneer peeling lathe
- Winder Machine , Grinding Machine , Injection Machine
- Extruder
- Fan , pump , Hvac
- Conveyor Belt
- Compressor
- Lift , Elevator
- Crane
- Boiler

Ambient temperature

- 10°C to 40°C without derating (2% every °C over 40°C)

SINUS VEGA , THE NEW SANTERNO ECONOMY DRIVE FOR ALL APPLICATIONS GUARANTEES MAXIMUM EFFICIENCY AND FULL SYSTEM CONTROL.

SINUS VEGA Series Inverter is the high performance vector inverter . Using unique flux vector technology , SINUS VEGA ensures 180% rated torque while at 0.5Hz and speed precision less than 0.5% via decoupling control of flux current and torque current , as well as torque increasing technology

Employing special control mode , the motor primacy switch steress caused by drive can be reduced , and motor temperature rise and noise can be reduced as well , thus prolong motor lifetime .

Thanks to the excellent dynamic and static features , SINUS VEGA is widely applied to variouse applications ,

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