Specification

Item		Item description
Input	Rated volt, frequency	1 phase 220 volt. level：1 phase 220V，50Hz/60Hz 3 phase 380 volt. level：3 phase 380V，50Hz/60Hz
Input	Allowed volt. range	1 phase 220 volt. level：200～260V 3 phase 380 volt. level：320～460V
Output	Voltage	0～380V
Output	Frequency	0～600Hz
Output	Overload capacity	150% of rated current for 1 minute
Control Performance	Control mode	Vector control（Without PG） Vector control（PG） Open–loop V/F control Torque control（without PG） Torque control（PG）
Control Performance	Speed control accuracy	±0.5% rated synchronous speed（without PG vector control） ±0.1% rated synchronous speed（PG vector control） ±1% rated synchronous speed（V/F control）
Control Performance	Speed regulation range	1：2000（PG vector control） 1：100（without PG vector control） 1：50（V/F control）
Control Performance	Start–up torque	1.0Hz：150% rated torque（V/F control） 0.5Hz：150% rated torque(without PG vector control) 0Hz：180% rated torque（PG vector control）
Control Performance	Speed fluctuation	±0.3% rated synchronous speed（without PG vector control） ±0.1% rated synchronous speed（PG vector control）
Control Performance	Torque control accuracy	±10%rated torque (without PG vector control,without PG torque control） ±5% rated torque (PG vector control, PG torque control)
Control Performance	Torque response	≤20ms（without PG vector control） ≤10ms（PG vector control）
Control Performance	Frequency precision	Digital setting：max. frequency×±0.01% Analog setting：max. frequency×±0.5%
Control Performance	Frequency resolution — Analog setting	0.1% of max. frequency
Control Performance	Frequency resolution — Digital setting precision	0.01Hz
Control Performance	Frequency resolution — Exterior impulse	0.1% of max. frequency
Control Performance	Torque boost	Automatic torque boost, manual torque boost 0.1～12.0%
Control Performance	V/F curve(volt. frequency characteristic)	Setting rated frequency arbitrarily at range of 5～650Hz, can choose constant torque, decreasing torque1, decreasing torque 2, decreasing torque 3, self–defined V/F curve in total 5 kinds of curve
Control Performance	Acceleration& Deceleration curves	Two modes: straight line acceleration and deceleration, "S" curve acceleration and deceleration； 15 kinds of acceleration and deceleration time, the time unit is optional(0.01s,0.1s,1s), max is 1000 minutes
Control Performance	Brake — Power consumption brake	Inbuilt brake unit，add brake resistor between（＋）and PB
Control Performance	Brake — DC brake	Start–up and stopaction optional, action frequency 0～15Hz, action current 0～100% of rated current, action time 0～30.0s
Control Performance	Jog	Jog frequency range：0Hz～up limit frequency；jog acceleration and deceleration time 0.1～6000.0 seconds for setting
Control Performance	Multi–step speed run	Realized by inbuilt PLC or control terminal; with 15 steps speed, each step speed with separately acceleration and deceleration time; with inbuilt PLC can achieve reserve when power down
Control Performance	Inbuilt PID controller	Convenient to make closed–loop control system
Control Performance	Automatic energy saving run	Optimize V/F curve automatically to achieve power saving run according to the load status

Item		Item description
Control Performance	Automatic voltage regulate(AVR)	Automatically keep output voltage constant, when the power grid voltage fluctuation
Control Performance	Automatic current limiting	Current limited automatically under run mode in avoid of inverter over–current frequently to trip
Control Performance	Carrier modulation	Modulate carrier wave automatically according to the load characteristic
Control Performance	Speed tracking restart	Make rotating motor smoothly start without shocking
Running function	Running command specified channel	Keypad specified, control terminal specified, communication specified can switch through various means
Running function	Running frequency specified channel	Main & auxiliary specified to a realize one main adjusting and one fine control. Digital specified, analog specified, pulse specified, pulse width specified, communication specified and others, which can be switched by many means at any time
Running function	Binding function	Run command channel and frequency specified channel can bind together randomly and switch synchronously
Input output characteristic	Digital input channel	Channel 7 for universal digital input, max. Frequency 1KHz, channel 1 can be used as pulse input channel, max. Input 50KHz
Input output characteristic	Analog input channel	Channel 2 for analog input channel, AI1 can choose 4～20mA or 0～10V output，AI2 is differential input channel，4～20mA or –10～10V for option
Input output characteristic	Pulse output channel	0.1～20KHz pulse square signal output to achieve setting frequency, output frequency and other physical quantity output
Input output characteristic	Analog output channel	Channel 1 for analog signal output, AOcan choose 4～20mA or 0～10Vto achieve setting frequency, output frequency and other physical quantity output
Unique function	Rapid current limit	Limit inverter over current to the greatest point, and make it run more stably
Unique function	Monopulse control	Suitable for working site where need one button to control inverter start and stop, first press to start, then press to stop, and that cycle repeats. Its very simple and reliable
Unique function	Fixed length control	Realize fixed length control
Unique function	Timing control	Timing control function: setting time range 0.1Min ～ 6500.0Min
Unique function	Virtual terminal	Five group virtual input & output IO can realize simply logical control
Keypad	Keypad display	The parameters as setting frequency, output frequency, output voltage, output current can be displayed
Keypad	Button Locked	Lock all or part of the buttons
Protection function	Protection function	Motor power on Shot circuit test, input & output phase loss protection, over–current protection, over voltage protection, under voltage protection, over heat protection, overload protection, under load protection, relay absorption protection, terminal protection and no stop protection under power off
Environment	Application site	Indoor, not bare to sunlight, no dust, no corrosive gas, no flammable gas, no vapor, no water drop or salt etc
Environment	Altitude	Under 1000 meter（above 1000 meter require to reduce volume to use, output current reduce about 10% of rated current per 1000 meter high）
Environment	Environment temperature	–10℃～+40℃（environment temperature between 40℃～50℃, need to reduce volume or strengthen heat sink）
Environment	Environment humidity	Smaller than 95%RH，no drop condenses
Environment	Vibration	Smaller than 5.9 M/S^2(0.6g)
Environment	Storage temperature	–40℃～+70℃
Structure	Protection grade	IP20
Structure	Cooling mode	Forced air cooling and natural
Structure	Installation mode	Wall hanging

V17.05.0

EN630 series

mini high performance vector inverter

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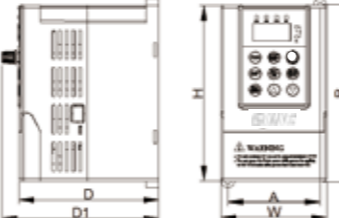
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EN630 mini high performance vector inverter

Product brief

EN630 series mini high performance vector inverter adopt 32 bit DSP hardware platform, inbuilt in PG function, encoder inlet to terminal directly can achieve PG closed loop vector control; with advanced control algorithm, along speed vector and torque vector mode, it can achieve high precision control, fast response and good performance at low frequency, with smart detection and good protection, keypad with digital potentiometer to adjust speed and with copy function.

Power range: 220V 0.4KW–1.5KW; 380V 0.75KW–1.5KW.

| Inverter type	Rated output current (A)	Adaptable motor (KW)	W (mm)	H (mm)	D (mm)	D1 (mm)	A (mm)	B (mm)	Fix hole (mm)	G.W.(KG)
EN630–2S0004	2.5	0.4								1.5
EN630–2S0007	4	0.75								1.5
EN630–2S0015	7	1.5	89	89	89	89	89	89	5	1.5
EN630–4T0007	2.3	0.75								1.5
EN630–4T0015	3.7	1.5								1.5

Product features

- PG vector control, vector control without PG, torque control without PG, PG torque control, open loop V/F control
- User self defined V/F curve setting function
- Keypad copy function
- Encoder & pressure gauge disconnection detect function
- Inbuilt in PID control function
- Support multiple channel frequency setting
- I/O terminal programmable

- Jump frequency parameter for inhibition mechanical vibration
- Instant power off without halt function
- AVR output function
- Overload, under load etc various smart protection
- Drop control function
- speed tracking function
- Inbuilt PG function

Application

Widely used to food processing, machinery manufacturing, wire drawing machine, printing machine, textile machine, cement processing, ceramic and medical device, metal processing and other small power drive in industrial automation field.

food processing

machinery manufacturing

medical device

metal processing
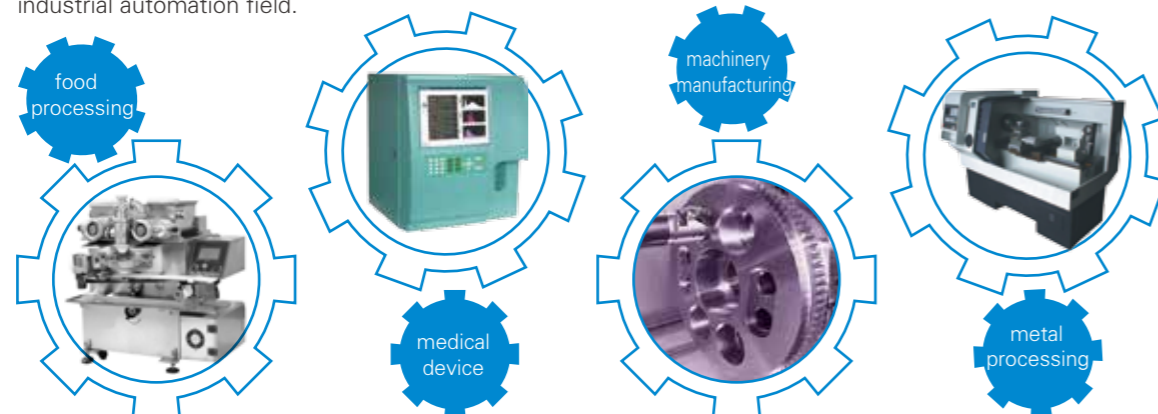
Solution

Case 1：Inbuilt PG function, no need extra to buy
EN630 inbuilt in PG function, user can connect encoder to terminal directly to use.

encoder feedback cable
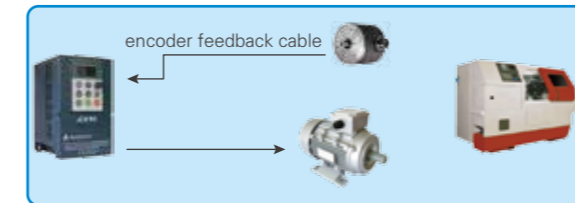
Case 2：PC control, no need to develop monitor software for upper host
The monitoring software developed by ENCOM can be installed on computer to operate inverter, setting parameter and monitor status. One computer can achieve 255 set inverter online operation.

PC

upper host   EN630 min inverters
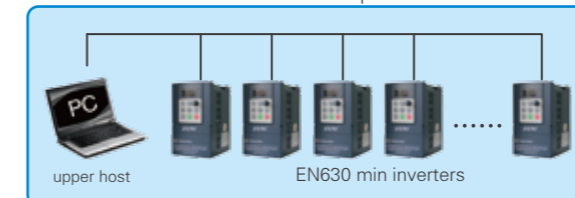
Case 3：Smart disconnection detect
EN630 can smart detect pressure gauge disconnection feedback by PID, encoder disconnection and halt with alarm.
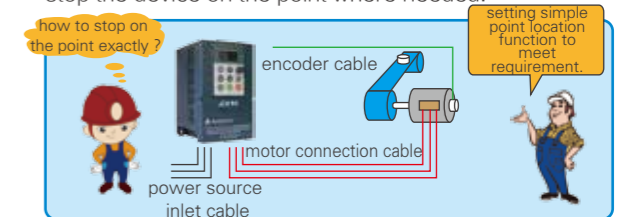
cable disconnection
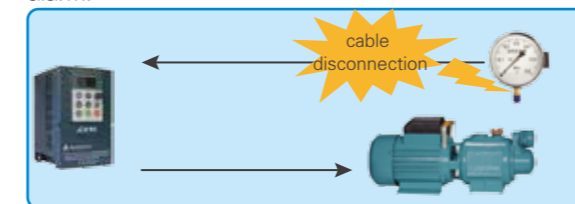
Case 4：Speed tracking restarting
Starting the machine during rotation will regenerate electricity, EN630 speed tracking restarting function can avoid the regeneration.

restarting after a sudden power off   big inertia load
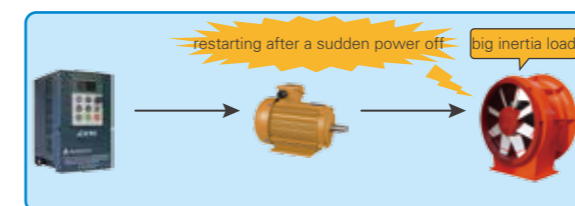
Case 5：Instant power sway without halt
When power grid unstable to cause power off or sway , EN630 can set instant power off without halt to make inverter work continuously.

power unstable and swaying   blood analysis device

power grid

Case 6：Halt location function
This function can achieve simple location control and stop the device on the point where needed.

how to stop on the point exactly ?   encoder cable   setting simple point location function to meet requirement.

motor connection cable

power source inlet cable

WARNING
• Do not connect AC power to output terminals UVW
• Do not open this front cover while power is applied and within 10 minutes after power-off

Advantage

- Mini size, easy installation, simple operation.
- High integration, inbuilt in PG function, encoder signal can inlet terminal direct.
- Full smart detect, include smart PID feedback disconnection detect protection, encoder disconnection detect etc.
- Good performance with self study function to achieve speed control and torque control, big torque under low frequency, fast response and high precision control.
- Strong function with communication, speed tracking, simple PLC, user self defined V/F, constant pressure water supply, swing frequency function, fixed length function, constant torque output, drop function, analog non linear given adjust, keypad copy function etc.