EURONORM
DRIVE SYSTEMS

JI350 SERIES

Accuracy speed and torque control for motor

180% rated starting torque

IP 66
Drive for PMSM and IM

VF control and vector control

Plug ‘n play control box with emergency stop

HIGH PERFORMANCE VECTOR CONTROL DRIVE

Introduction

This JI350 sealed frequency inverter is a variable frequency inverter, with IP66 protection grade. The JI350 series has excellent anti-dust, water proof, anti-grease and anti-corrosion properties, the series is widely used in printing and dyeing, textile, cement, coal, ceramics industries and other harsh industrial conditions with heavy dust, moisture and high temperature.

Specification: (JI350)

- Single phase, 220V, 0.75kw to 3.7kw
- Three phase, 380V, 0.75kw to 30kw

Key product feature

- High performance flux vector control for IM and PMSM (AD800S can compatible PMSM)
- Excellent quick response with vector control
- High starting torque even under low speed
- Torque limit for machine safety protection
- Rapid current limit, up to 20 kinds protection function.
- Latest generation Infineon IGBT modules using

Outstanding motor control performance

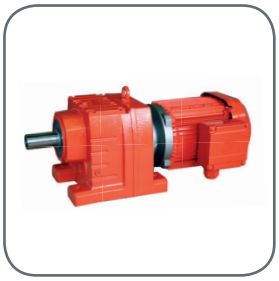
- Torque respond speed ≤5ms in OLV without PG
- Wide input voltage range, and work above 45C° is available
- Outstanding overload capacity, 150% rated current for 60s, 180% rated current for 3s, 200% rated current for instantaneous.
- Speed range 1:100 (SFVC), 1:1000 (CLVC)
- Startup torque, G type: 0.5 Hz/150% (SFVC); 0 Hz/180% (CLVC), P type: 0.5 Hz/100%
- Torque control accuracy, ± 5% (CLVC)

Hardware enhanced features

- Ti ‘s 32 bit DSP (28034/35), Germany Infineon intelligent modules;
- Sealed cabinet, conformal coating on PCB;
- Adopt using aviation plugs that have good quality water proof, gas and oil proof. (options)
- Imported high-speed ventilation fan with 24V DC power supply, good cooling effect;
- Lower failure rate and long service lift

Wiring diagram of JI350.

- It has 5 digital I/O input, compatible sink and source way. (PNP an NPN)
- 2 Analog input, support -10V to 10V, 0-10V, 0/4 to 20mA.
- 1 Analog output (0-10V/0-20mA is selectable)
- 2 collector output (FM and CME support the high pulse output).
- 1 relay output.
- Extension PG, I/O card are available.



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Models, input current, output current

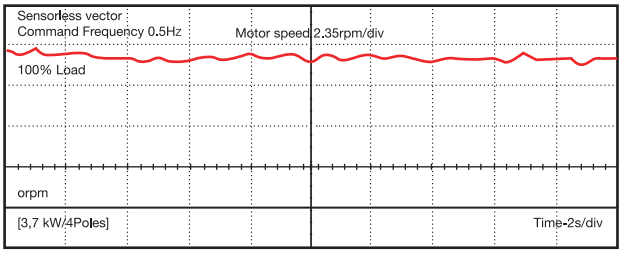
JI350 Series High Performance Vector Control Drive			
Artikel	Output power	Output current	Input voltage
JI3500r7G3Z	0,75	2,5	380V (3phase)
JI3501r5G3Z	1,5	3,7	380V (3phase)
JI3502r2G3Z	2,2	5	380V (3phase)
JI3503r7G3Z	3,7	8,5	380V (3phase)
JI3505r5G3Z	5,5	13	380V (3phase)
JI3507r5G3Z	7,5	16	380V (3phase)
JI350011G3Z	11	25	380V (3phase)
JI350015G3Z	15	32	380V (3phase)
JI350018G3Z	18	38	380V (3phase)
JI350022G3Z	22	45	380V (3phase)
JI350030G3Z	30	60	380V (3phase)
JI3500R7G1Z	0,75	4	230V (1phase)
JI3501r5G1Z	1,5	7	230V (1phase)
JI3502R2G1Z	2,2	10	230V (1phase)
JI3503r7G1Z	3,7	16	230V (1phase)

Features of product

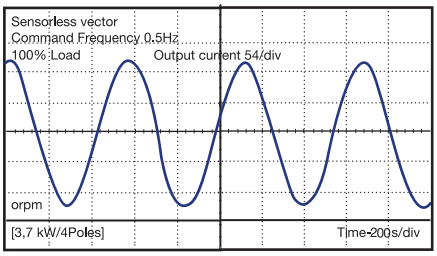
1). Wide speed control range

a). Sensorless open loop vector (OLV) control: 0.5 to 400Hz (1:100/50Hz datum point)

Sensorless without PG mode: 0.5 to 400Hz (1:100/50Hz)



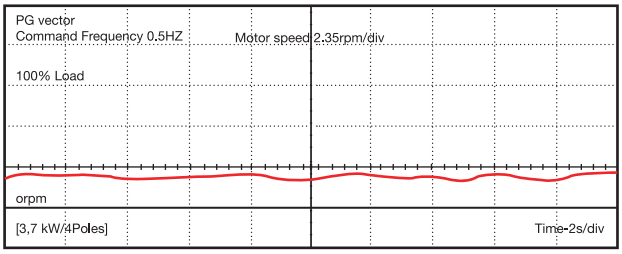
The speed waveform
with 100% load under 0.25Hz.



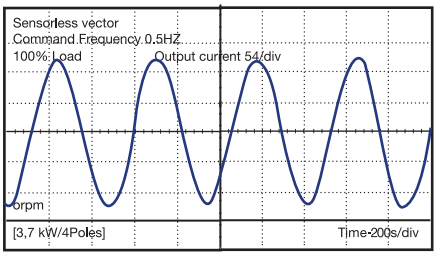
The current waveform
with 100% load under 0.25Hz.

b) . Sensor with PG card: 0.5 to 400Hz (1:100/50Hz datum point) Good current waveform

PG sensor vector control mode: 0.5 to 400Hz (1:100/50Hz)



Speed waveform under 0.25Hz
with full load in sensor close loop mode



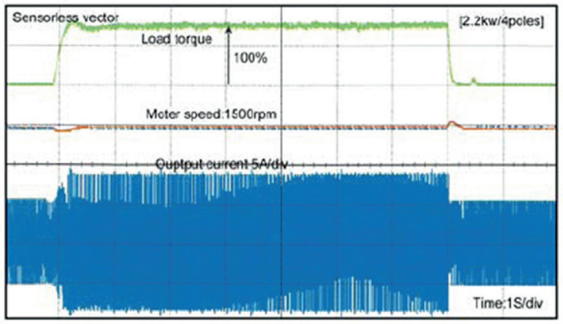
Current waveform under 0.25Hz
with full load in sensor close loop mode

2). Response speed improving

Adopting high speed 32 bit DSP to get the high speed response of frequency inverter.

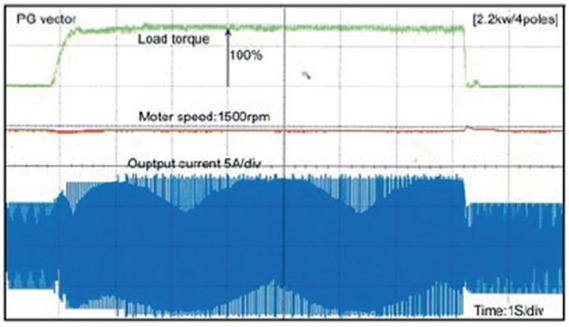
a.) The response 100rad/s, precision ± 0.5% in sensorless open loop vector control mode.
b.). The response 250rad/s, precision ± 0.01% in sensor close loop vector control mode

Sensorless vector control mode: response 100 rad/s, accuracy ±0.5%.



Impact load response characteristic (Senserless without PG)

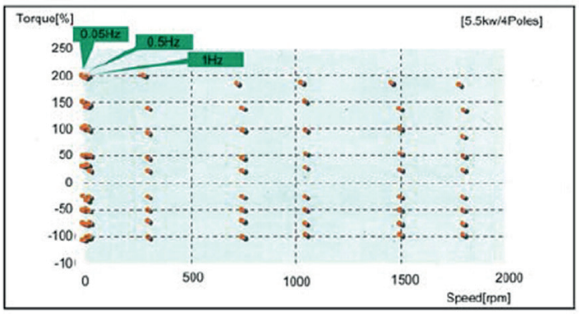
Sensor vector control mode: response 250rad/s, accuracy ±0.01%



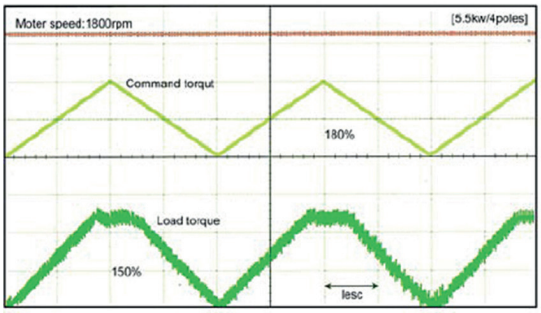
Impact load response characteristic (Senserless with PG)

3). High torque output under low speed to meet some big inertia load conditions

High torque under low speed achievement.
Adopting advanced current vector control technology and motor parameters detecting to make high torque under low speed is available.



Torque characteristic

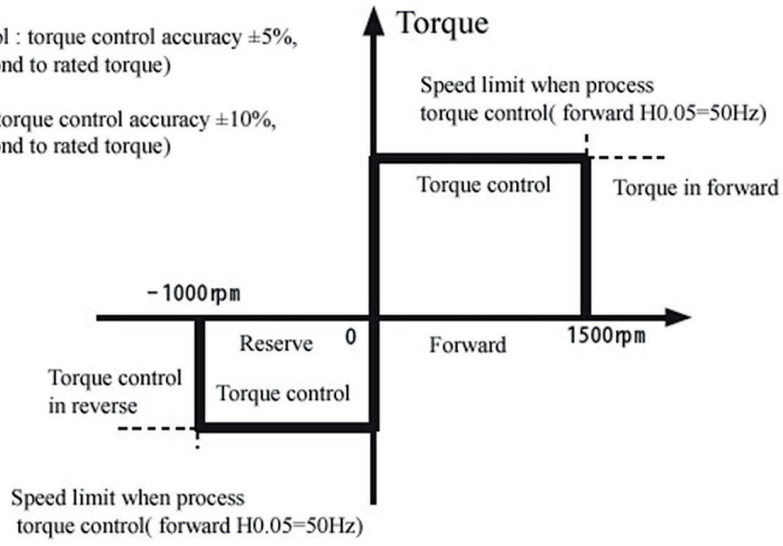


Accuracy torque limit

4). Torque control in OLV and CLV

Without PG open loop vector control : torque control accuracy ±5%, torque control range: 1:50 (correspond to rated torque)

With PG close loop vector control: torque control accuracy ±10%, torque control range: 1:20 (correspond to rated torque)



Speed lmimit in torque control mode

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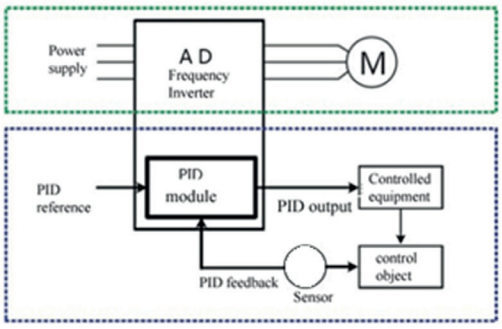
5). Powerful PID function

Possible to set PID1 and PID2 combination function, free switch between two PID parameters.

PID module can be used for external unit using with professional PID control.

Flexible PID control with sleep mode, configure waking up frequency, sleep frequency, that is very easy using for water supply.

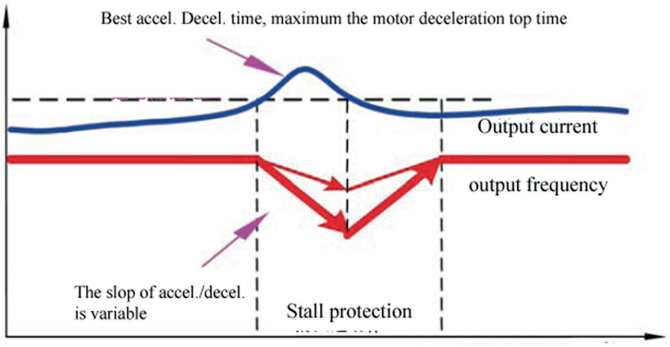


6). Stall protection function

When over current, over voltage occurs, the output frequency will be reduced, and the output frequency / voltage under limit value, the output frequency will restore.

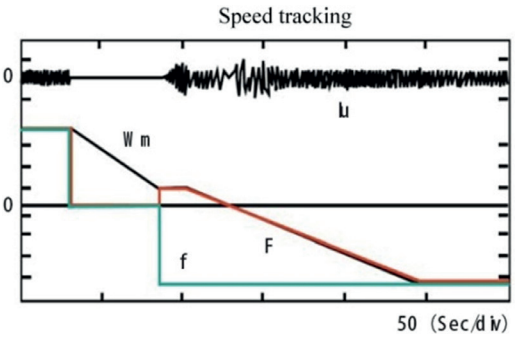
Appropriate acceleration and deceleration will be select according to the load control the motor stopping time even power loss instantaneous.

Stall protection illustrations



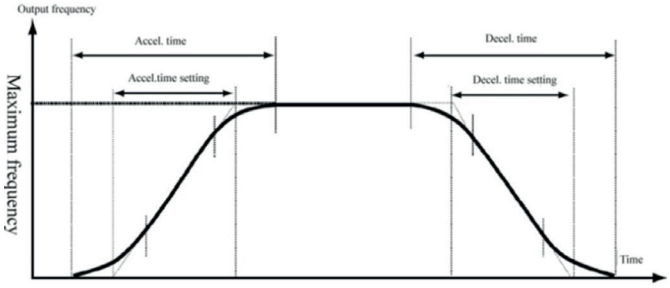
7). Speed tracking restart function

Detect motor speed and rotation direction automatically, no any trip during start even in reverse running status.

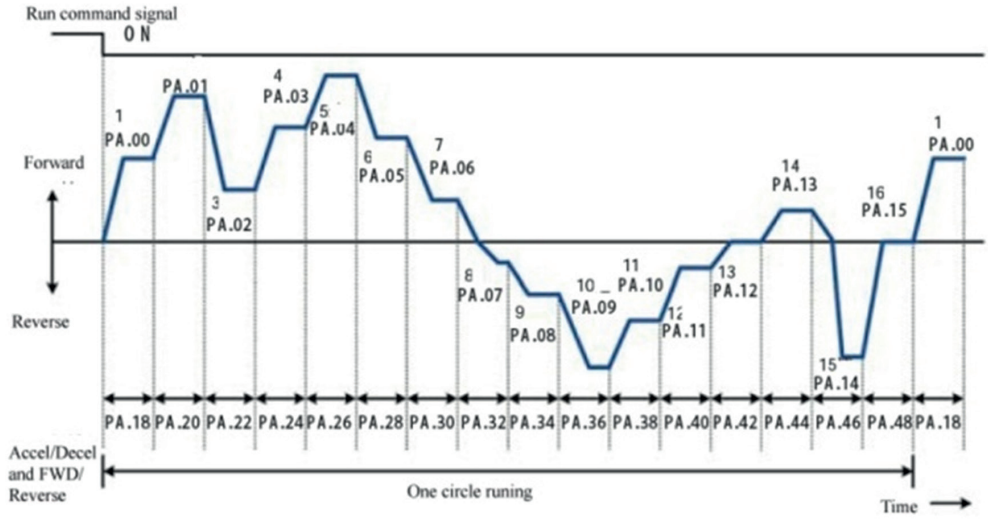


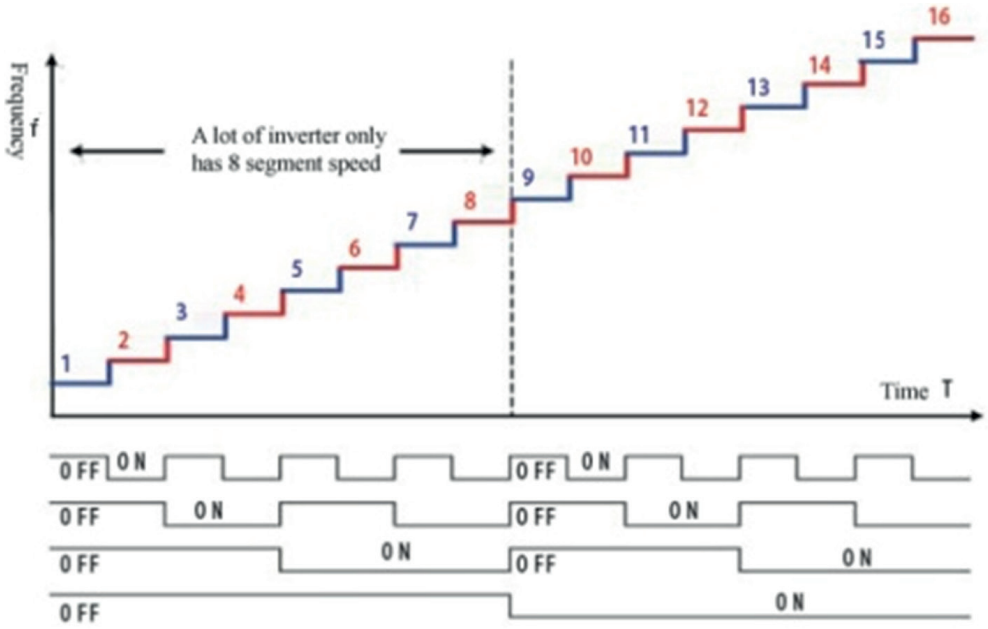
8). S curve function

S curve can improving the impact during the start and stop processing, it is very useful in crane, elevator application



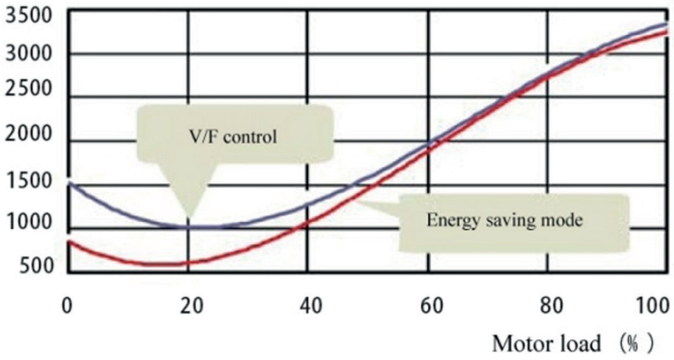
9).16 segment speed circle running, easy to configure.





10). Advanced energy saving technology

JI350 series inverter can detect the load status to control the output voltage and power factor to make motor work in high efficient mode.



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TECHNICAL SPECIFICATION

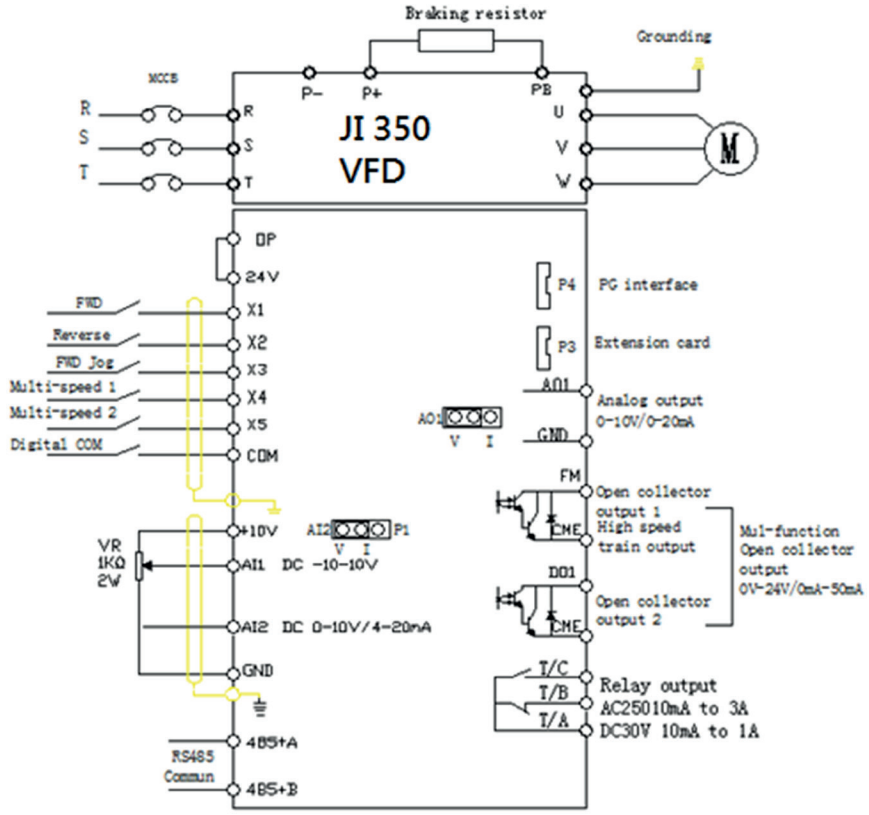
Items		Specification		
Control mode	Control mode	SVC in open loop	V/F control	Close loop vector control
	Starting torque	0.5Hz 180%	0.5Hz 150%	0.00Hz 180%
	Speed adjust range	1:100	1:100	1:100
	speed stabilizing			±0.02%
	precision			
	Torque precision	NO	NO	±5%
	Motor type	General induction motor, permanent magnet synchronous motor*		
	Highest frequency	General vector control :400Hz V/f control: 4000Hz		

Items		Specification
Function design	frequency resolution	Digital setting: 0.01Hz analog setting: maximum×0.025%
	carrier frequency	0.5K 16KHz, the carrier frequency can be adjust by temperature automatically
	Frequency reference setting method	Digital of Control panel, analog AI1, AI2, potentiometer of control panel, UP/DN control, communication, PLC pulse frequency
	Accel./decel. characteristic	Linear curve and S curve accel. /decel. mode, range of time: 0.0 to 65000S.
	V/F curve	3 mode: linear, multiple points, N Power
	V/F separation	2 times separation: totally separation, half separation
	DC braking	DC braking frequency: 0.0 to 300Hz, DC braking current: 0.0% to 100%
	Braking unit	Built in braking unit up to 15kw, optional is 18.5kw to 75kw, external built in for above 93kw.
	Jog function	Job frequency range: 0.0 to 50.0Hz, the accel. and decel. time of Jog
	Configuration PID	Easy to perform pressure, flow, temperature close loop control
	PLC multiple speed	To achieve 16 segment speed running through built in PLC or terminal control
	Common Dc bus *	Multiple inverters use one DC bus for energy balance.
	Auto voltage regulation (AVR)	Enable to keep output voltage constant when grid fluctuation
	Over load tolerance capability	G type model: 150% rated current for 60s, 180% rated current for 2s,
	P type Model: 120% rated current for 60s, 150% rated current for 3s.	
	tall control when over current, over voltage	Carry out limiting automation for running current, voltage to prevent over current, over voltage frequently
	Fast current limit function	minimize the IGBT module broken to protect the inverter, maximum reduce the over current fault.
	Torque limit and torque control	"Excavator" characteristics , torque limit automatically during motor running. Torque control is available in close loop vector control mode.

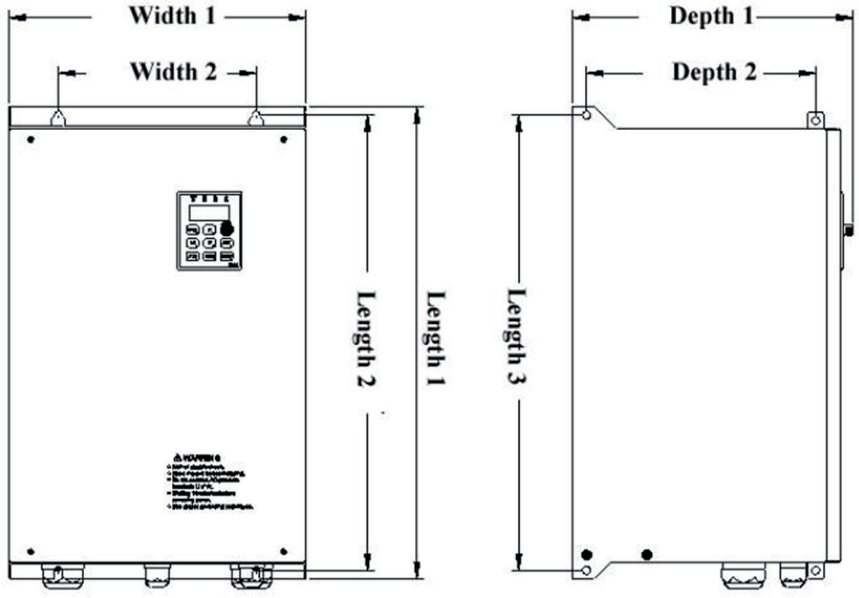
Items		Specification
features	friendly interface	Display Hello when power on.
	Multiple function key JOG button	It can set for Forward Jog, reverse Jog, forward/reverse switch
	Timing control function	A total running time and total running time calculating
	2 group motor parameters	To achieve two motor switching freely, control mode is selectable
	Motor over heat protection	Accepting motor temperature sensor signal input via AI1 terminals.
	Multiple kinds encoder *	Compatible collector, difference, and rotary transformer Encoder.
	Command source	Control panel, control terminals, series communication, switch freely.
	Frequency source	Digital setting, analog current/voltage, pulse setting, serial communication, main and auxiliary combination.
	Protection function	Short circuit detect after power on, input/output phase missing, over voltage, over current, under voltage, over heat, over load protection.

Items		Specification
Environment	Application site	Indoor, free of exposure to sunlight, no dusty, no corrosive, no inflammable gas, no oil and water vapor, and water dipping
	Altitude	Lower 1000m
	environment temperature	-10℃~+40 , power derate for 40~50℃, rated current derated 1% for 1℃ increasing.
	humidity	Less than 95%, no water condense.
	storage	-40~+70℃
	* Not for JI350 below 3.7 kW	

WIRING DIAGRAM



DIMENSIONS



Models	Power [kW]	L1	W1	D1	L2	W2	L3	D2	Slot hole
		External size			Install size 1		Install size 2		
JI350 (1Ph, 220V)	0.75-3.7	230	130	177	215	90	215	140	M5
JI350 (3Ph, 380V)	1.5-3.7	265	150	200	250	110	250	155	M5
JI350 (3Ph, 380V)	5.5-7.5	320	180	210	305	120	305	170	M5
JI350 (3Ph, 380V)	11-15	390	230	225	375	160	375	180	M6
JI350 (3Ph, 380V)	18.5-30	430	230	225	375	160	375	180	M6

LEVERINGSPROGRAMMA

EURONORM DRIVE SYSTEMS

Elektromotoren, Besturingen en Hydromotoren

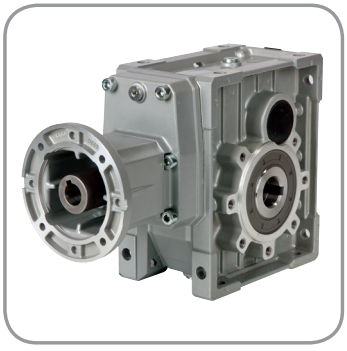
- Draai- en gelijkstroommotoren
- Frequentieregelaars
- Hydromotoren

Reductoren

- Wormwielreductoren
- Hypoïdereductoren
- Motorreductoren
- Hoek tandwielkasten
- Planetaire reductoren
- Zware tandwielkasten

Speciale aandrijvingen en Componenten

- Spindelhefelementen en Actuators
- Draaikranslagers
- Koppelingen
- Trilmotoren
- Trommelmotoren



Diensten

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Hub van Doorneweg 8
2171 KZ Sassenheim – NL

T +31(0)252 228850
F +31(0)252 228235
E info@euronorm.nl