Yolico

Detailed Work Makes Quality
Our Quality Equals Perfection

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YD5000

Heavy Duty Flux Vector Inverter

ISO9001 CE

Technical data subject to change without notice / Y5 2015.06.V03

YD5000
General Functions

Friendly easy Operation

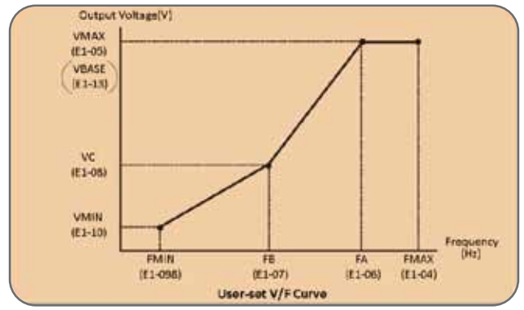
Parameters can be selected easily by logic groups

Dynamic Self-Study Mode

Self-Study Mode works at vector control
Inverter can be set with details of motor nameplate

Various V/f Curve Setting

There are totally 15 preset V/f curves setting and 1 adjustable V/f curve setting can be selected, such as High Starting Torque Curve, Variable Torque Curve, High Speed Operation. They can match different kind of loadings, also Uer-set V/f curve can work at PG Vector Control Mode as Well.



Various Frequency Command Given

Multi-Channel Analog Input Given :
2 off Voltage Signal Input Channel : 0~10VDC or 0~+/- 10VDC (motor reverse with negative input)
1 off Current Signal Input Channel : 0(4)~20mA (voltage signal input available by parameter setting)

Setting Frequency Command by Digital Operator
Communication Command

Monitor Function

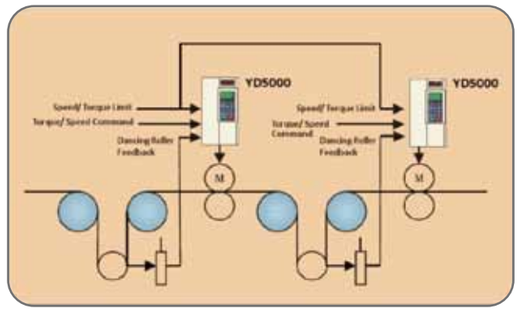
The following items can be monitored with the Digital Operator. Frequency Command, Output Frequency, Output Current, Motor Speed, Output Voltage, Main Circuit DC Voltage, Output Power, Torque Command, Input Terminal Status, Operating Status, Speed Deviation, PID feedback Value, Fault History, and so on.
With Monitor Function, both Inverter and Motor will have better performance.

PID Control Function

PID Control Function may through controlling the Rotational Speed of motor to achieve the controlled Process Quantity as the Target, this process Quantity may be Temperature, Flow, Pressure, Speed, and so on.

The purpose of PID control is making the Process Quantiry Stabilizing as the Target (setting) value. The PID control with Feedforward Speed setting Function is comprehensive used in Synchrunization or Winder / Unwinder Control System.

The Given Command and Feedback Quantity decide the output Frequency of the Inverter.



PID Control Function

Over Load, Over Current, Over Voltage, Over Torque, Low Voltage, Phase Loss, Ground Fault, and so on.
To make equipment operated properly.

Energy Saving Control

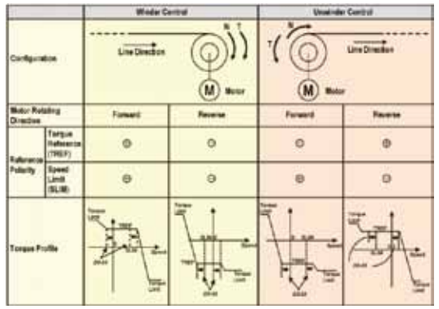
Automatically adjust output voltage according to loadiing at vector control in order to give better performance when motor operates on different load.
It improves motor efficiency then saves energy.

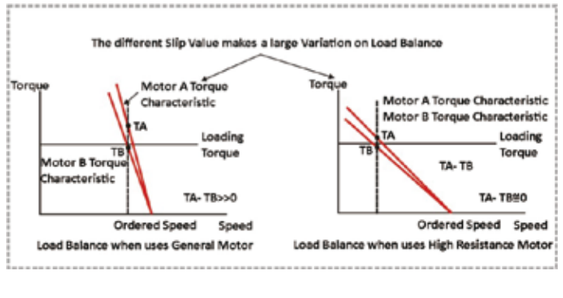
Option Card

YD5000
The Unique Function with PG Flux Vector Control

Four Quadrants Operation

The Torque Direction could be opposite with Motor Speed Direction such as the process of lift running down with Heavy Load, Unwinding Process, etc.





DROOP Control Function

It allows user to set the Motor Slip Value, when Arigidity Load is Operated with two motors (such as a Crane / Conveyor). Also, it is easy to make adjustment watching the Load Balance, because the value of Slip can be set arbitrarily.

ECO-Friendly - Better Designing for Better Environment

High Harmonic Solution

DC Reactor Built-in for YD5000 18.5~630kW, to reduce high harmonic
AC Reactor is optional for 1.5~630kW if needed

Low Audio Noise

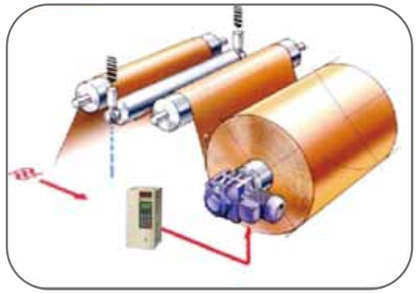
The Output Circuit of the Inverter is an IGBT (Insulated Gate Bipolar Transistor). Using Sine-Wave PWM with a High-Carrier Frequency, the motor not generate Metallic Audio Noise. The Motor Audio Noise is almost as the same as Grid Power Supply, when motor is drived by Inverter.

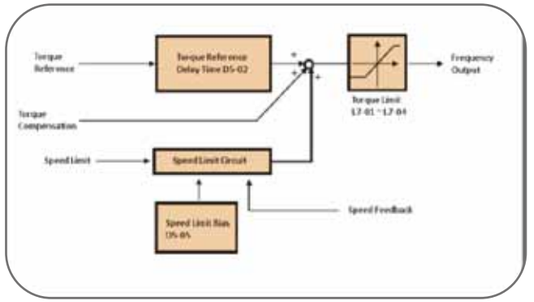
Torque

For all Winding Device, the Accelerating and Decelerating Torque will be varied by the Load Situation. For the Central Winding System, the requiring Torque will be varied following the diameter of Spool Piece.
What do you need is a Device which can precisely Control the Output Torque in Torque Control Mode. Using the Torque Control Function of YD5000 series Inverter can solve this problem easier.
Take an example : The tip of Winding Operation is Controlling the Tension of Winding Material. For keeping the constant Tangential Tensile Strength in the different Line Speed or Rotating Diamemter Situation, the Inverter must follow the Torque Reference in a huge range.

Torque Control Function

In the Torque Control, the Motor output the Torque accords to the Torque Command by the Analog Input. In according to reach the Output Torque, Inverter will not control the Motor Speed, the Output Frequency will be Increased / Decreased by Inverter Automatically.
To avoid the Motor Over Speeding and the Load Torque lose seddenly, we suggest to use Speed Limit Function.





Torque Improvement

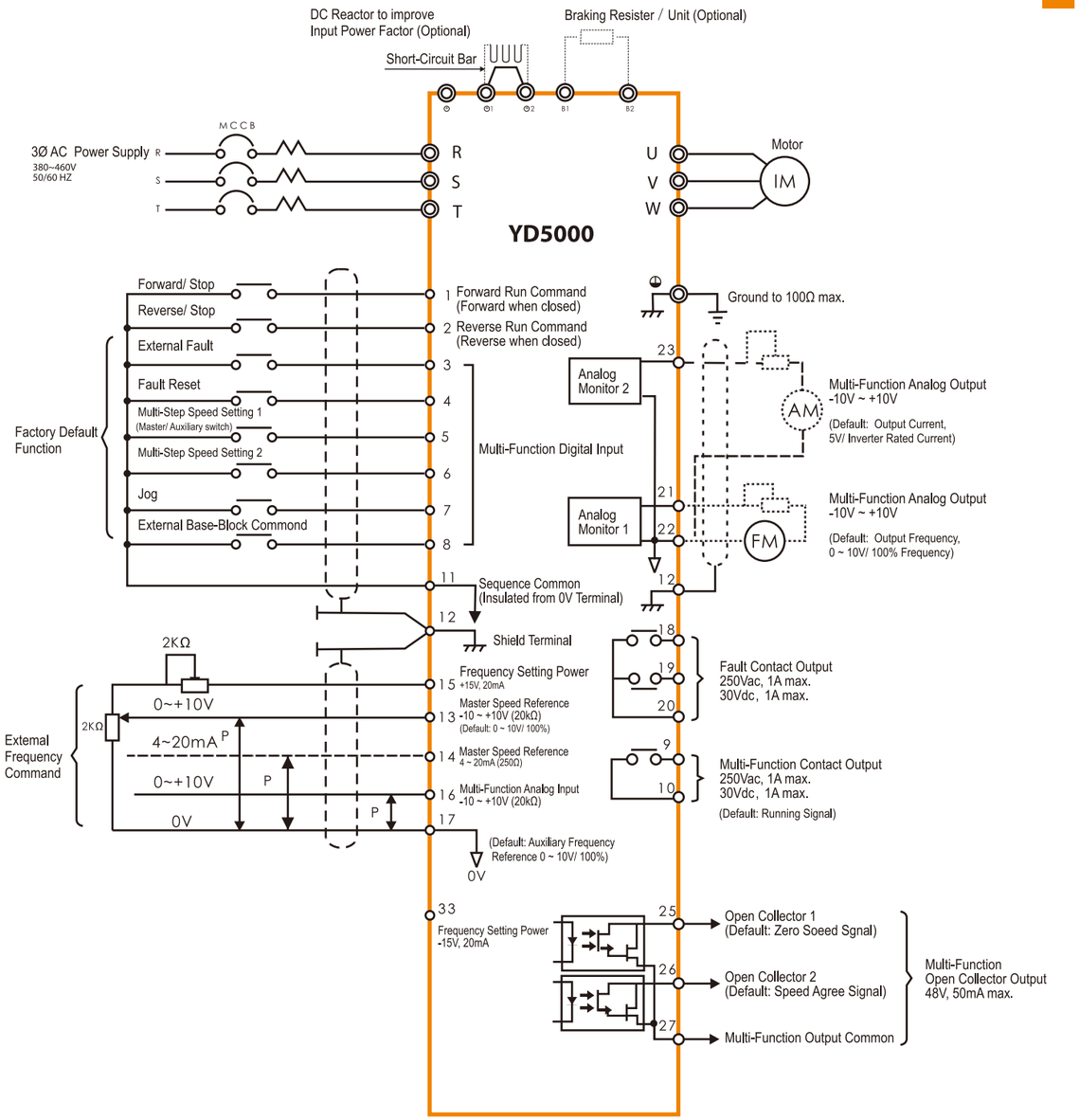
In PG Sensorless Control, using the Torque Compensation in order to make early response to Torque Command when Start the motor. It helps the Heavy Frictional Load Application which requires the Starting Torque, such as Traveling / Hoisting / Lifting, and so on.

Zero Servo Control Function

It helps motor can output 100% holding Torque at 0 speed. It sufficient guarantee the positioning ability of Device when in Stopping Situation.

YD5000 Connection Example (Diagram)

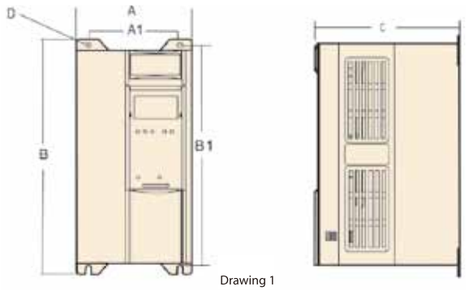
Please follow the Diagram making a Wire Connection
When using the Digital Operator, the Motor can be operated by wiring only the Main Circuit



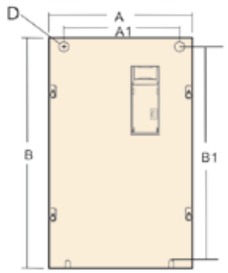
YD5000 Standard Specification

	YD5000	1P5	2P2	3P7	5P5	7P5	011	015	018	022	030	037	045	055	075	093	110	132	160	185	200	250	250	280	315	355	400	450	500	630
	Applicable Motor Capacity (kW)	1.5	2.2	3.7	5.5	7.5	11	15	18	22	30	37	45	55	75	93	110	132	160	185	200	220	250	280	315	355	400	450	500	630
Rated Output	Capacity (kVA)	3.7	4.7	6.1	11	14	21	26	31	37	50	61	73	98	130	140	170	200	230	260	300	340	380	430	460	490	519	585	650	780
	Rated Ouput Current (A)	4.8	6.2	8	14	18	27	34	41	48	65	80	96	128	165	180	224	260	302	340	380	450	470	530	605	695	788	890	986	1185
Rated Output	Max. Output Voltage(V)	3Ø 380/ 400/ 415/ 460V(Proportional to Input Voltage)																												
	Rated Output Frequency	Up to 400Hz (Avaliable by Programming)																												
Power Supply	Voltage, Frequency	3Ø 380/ 400/ 415/ 460V, 50/ 60Hz																												
	Allowable Voltage Fluctuation	+10%, -15%																												
	Allowable Frequency Fluctuation	±5%																												
Control Characteristic	Control Method	Current Flux Vector, Sine Wave PWM																												
	Torque Characteristic	150% at 1Hz (150% at 0 Rpm with PG)																												
	Speed Control Range	1:100 (1:1000 with PG)																												
	Speed Control Accuracy	±0.2% (25°C ± 10°C) (±0.02% with PG)																												
	Speed Control Response	5Hz (30Hz with PG)																												
	Torque Limits	Provided (4 Quadrant Steps can be changed by Parameter Setting)																												
	Torque Control Accuracy	±5%																												
	Frequency Control Range	0.1 ~ 400Hz																												
	Frequency Accuracy (Temperature Characteristic)	Digital Reference: ±0.01% (-10°C ~ +40°C), Analog Reference: ±0.1% (25°C ± 10°C)																												
	Frequency Setting Resolution	Digital Reference: 0.01Hz, Analog Reference: 0.03Hz/ 60Hz (11 bits + Sign)																												
	Output Frequency Resolution (Caculation)	0.01Hz																												
	Overload Capacity	150% Rated Current for 1 minute																												
	Frequency Setting Signal	Analog -10 ~ +10V, 0 ~ 10V, 4-20mA																												
	Acceleration/ Deceleration Time	0.01 ~ 6000Seconds(4 Selectable Combinations of Independent Acceleration and Deceleration Settings)																												
	Braking Torque	Approximately 20%																												
Protective Functions	Motor Protection	Protection by Electric Thermal Overload Relay																												
	Instaneous Overcurrent Protection	Stops at approx. 200% of Rated Output Current																												
	Fuse Blown Protection	Stops as Fuse Blown																												
	Overload Protection	150% Rated Current for 1 minute																												
	Overvoltage Protection	Stops when Main Circuit DC Bus Voltage is approx. 820V																												
	Undervoltage Protection	Stops when Main Circuit DC Bus Voltage is approx. 380V																												
	Momentary Power Loss Ridethru	Stops for 15mS or more. By selecting the Momentary Power Loss Mode, operation can be continued if Power is restored within 2 Seconds																												
	Cooling Fin Overheating	Portection by Thermistor																												
	Stall Prevention	Stall Prevention during Acceleration, Running, Deceleration																												
	Grounding Protection	Protection by Electric Circuit (Overcurrent Level)																												
	Charge Indicator (Internal LED)	Lit when the Main Circuit DC Bus Voltage is approx. 50V or more																												
Environment	Ambient Operating Humidity	90% RH max.																												
	Ambient Operating Temperature	-10°C ~ +40°C (Enclosed Wall-Mounted Type) -10°C ~ +45°C (Open Chassis Type)																												
	Storage Temperature	-20°C ~ +60°C																												
	Application Site	Indoor (No Corrosive Gas, Dust, etc.)																												
	Altitude	1000 m max.																												
	Vibration	10 ~ 20Hz, 9.8m/S^2 (1G) max.; 20 ~ 50Hz, 2m/S^2 (0.2G) max.																												
Options	Profibus Communication	Yes (by option Card)																												
	PG Flux Vector Control	Yes (by option Card)																												
	Zero Sever	Yes (by option Card)																												
	RS-485 Communication	Yes (Built-In)																												
	PID Function	Yes (Built-In)																												
	Speed Limit Function of Torque Control Mode	Yes (by option Card)																												

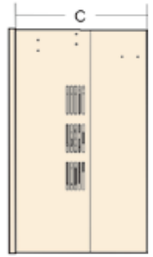
YD5000 Dimension

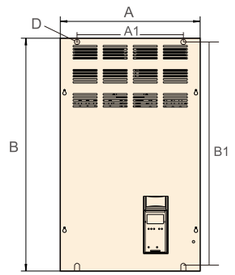


Drawing 1

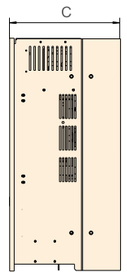


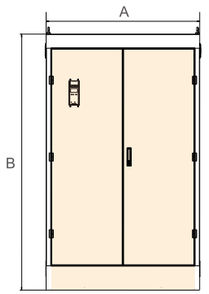
Drawing 2



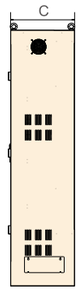


Drawing 3

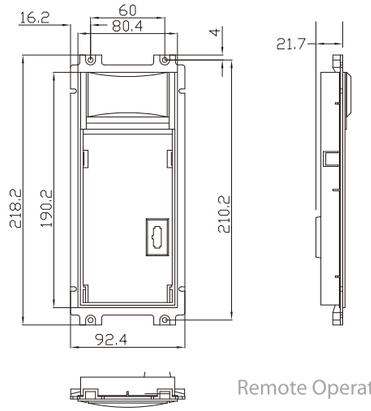




Drawing 4



Applicable Motor Capacity (kW)	Dimension						Drawing
	A	A1	B	B1	C	D	
1.5~3.7	146	116	316	300	200	7	Drawing 1
5.5~7.5	200	170	340	324	210	7	
11~15	239	150	390	364	230	9	Drawing 2
18.5~22	337	230	463	430	280	11	Drawing 3
30~45	338	230	623	595	280	11	
55~93	465	325	774	740	369	15	
110~185	585	445	924	895	401	15	
200~250	765	625	1044	1015	404	15	
280~400	1050	800	1645	1600	500	18	
450~630	1200		2000		500		Drawing 4



Remote Operator Mounting Kit Installing Dimension

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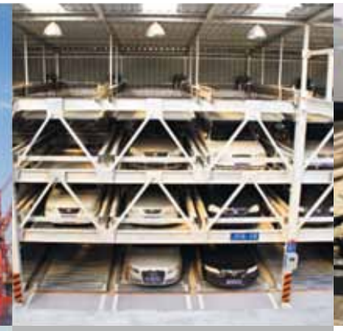

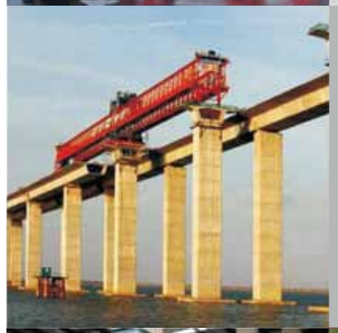

Crane & Hoist
Wood Machinery
Textile Machinery
Fan & Blower

Packaging Machinery
Food Machinery
Chemical Industry
Treadmill

Steel & Metal
Conveyor
CNC Machinery
Pump