ATSEL -FD600

High Performance AC Drives

1HP/0.7kW to 1350 HP/1000kW

SELEC®
Creating Best Value



The new FD600 inverter is a brand-new masterpiece launched based on years of field experience.

Features:

- Dual-display LED keypad
- Multi-language LCD keypad (optional)
- Switch between multiple specialized application modes with parameter: Solar pumps, elevators, permanent magnet synchronous motors, and overhead cranes
- 7*DI,2*AI,2*AO · 2*Relay output, STO function
- Enhanced cooling for better stability and durability
- Support PROFIBUS, PROFINET, CANOPEN, ETHERCAT, MODBUS TCP/IP, PLC Module and various PG cards.

Modbus TCP
PROFIBUS®
PROFINET®
EtherCAT®
CANopen

Compatibility:

One Vfd For All software Applicable to ***Asynchronous Motor, Synchronous Motor, Single Motor, Elevator Motor*** and ***Solar Pump.***





Asynchronous Motor



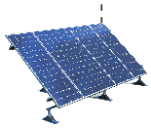
Synchronous Motor



Single Motor



Elevator Motor



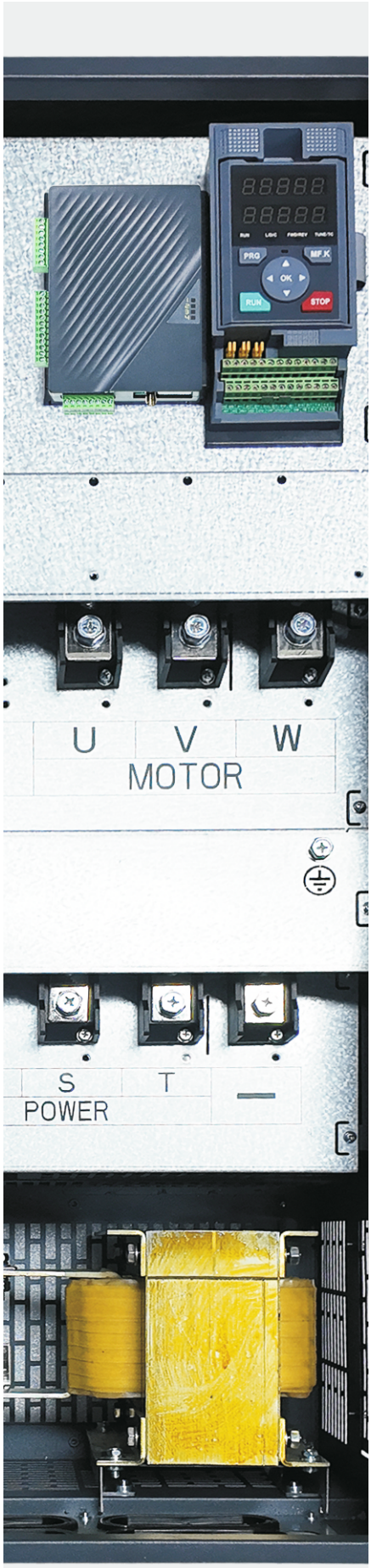
Solar Pump

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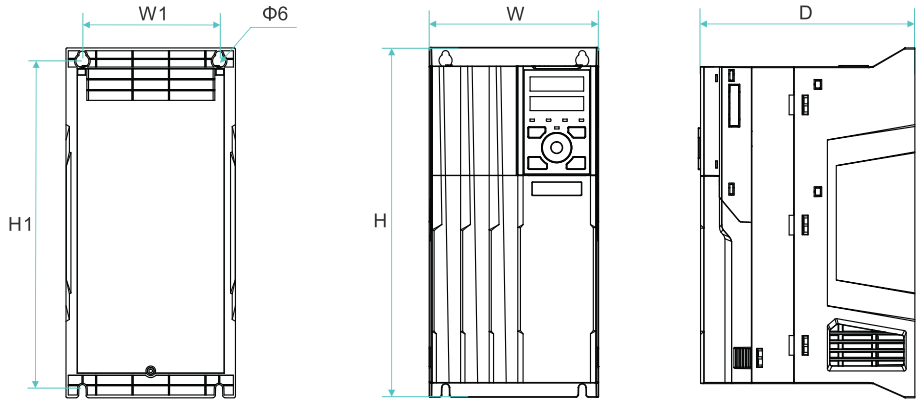
Technical Features

Project		Description
Control characteristics	Highest frequency	Vector control: 0～600Hz VF control: 0～1200Hz
	Carrier frequency	1K～16kHz; the carrier frequency can be adjusted automatically according to the load characteristics.
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: maximum frequency × 0.1%
	Control mode	V/F control; Open-loop vector control (SVC); Closed-loop vector control (FVC); Speed sensorless position control (VVC)
	Motor type	Asynchronous motor, permanent magnet synchronous motor
	Starting torque	G type machine: 0.5Hz/180% (Open-loop/closed-loop vector control) P type machine: 0.5Hz/120% (open loop vector control)
	Speed range	1: 200 (open-loop vector control); 1: 1000 (closed-loop vector control);
	Steady speed accuracy (speed control accuracy)	Open-loop flux vector control: ≤± 0.5% (rated synchronous speed) Closed-loop flux vector control: ≤ ± 0.2% (rated synchronous speed)
	Torque response	≤40ms (Open-loop Vector Control) ≤20ms (Closed-loop Vector Control)
	Overload capacity	G-type machine: 150% rated current for 60 seconds; 180% rated current for 3 seconds P-type machine: 120% rated current for 60 seconds; 150% rated current for 3 seconds
	Torque increase	Automatic torque increase; Manual torque increase: 0.1% to 30.0%
	V/F Curve	Three types: linear; multi-point; square V/F curve
	Acceleration and deceleration curve	Linear or S-shaped acceleration/deceleration mode; four types of acceleration/deceleration time; acceleration/deceleration time range: 0.0s to 3000.0s
	Direct braking	DC braking frequency: 0.0Hz to maximum frequency, braking time: 0.0 to 36.0 seconds, braking action current value: 0.0% to 100.0%
	Direct braking	DC braking frequency: 0.0Hz to maximum frequency, braking time: 0.0 to 36.0 seconds, braking action current value: 0.0% to 100.0%
	Point control	Point movement frequency range: 0.00Hz~50.00Hz; Point movement acceleration and deceleration time: 0.0s~3000.0s
	Simple PLC, multi-stage speed operation	Through the built-in PLC or control terminals, up to 16 speed runs can be achieved
	Built-in PID	It can conveniently realize the closed-loop control system for process control
	Automatic Voltage Regulation (AVR)	When the grid voltage changes, it can automatically maintain the output voltage constant
	Torque Limiting and Control	“Excavator” feature: automatically limits the torque during operation to prevent frequent overcurrent tripping; closed-loop vector mode can achieve torque control
Personalization function	Power-on peripheral device safety self-check	It can perform safety checks on peripheral devices upon power-on, such as grounding and short circuits
	Common DC bus function	It can enable multiple frequency converters to share a common DC bus
	MF.K key	Programmable keys: forward/reverse operation, forward/reverse point operation, terminal operation, communication operation switching function selection
	Textile swing frequency control	Various triangular wave frequency control functions
	Fixed-length control function	Built-in fixed-length control module
	Fast current limiting function	Built-in fast current limiting algorithm, reducing the probability of overcurrent alarms in the frequency converter and improving the overall anti-interference ability of the machine
	Timed control	Timed control function: set time range from 0h to 65535h
	Keyboard extension cable standardization	Customers can use standard network cables to extend the keyboard at their own discretion.
	Operation command channel	Three channels: operation panel setting, control terminal setting, serial communication port setting. Switchable through various methods.
	Frequency source	A total of 10 frequency sources: digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. Switchable through various methods.
	Auxiliary frequency source	10 auxiliary frequency sources. Can flexibly achieve auxiliary frequency fine-tuning and frequency synthesis.
	Functional characteristics	Synchronous and Asynchronous Integration Heavy Load and Light Load Combined Safe Torque Disconnection Function, Elevator Mode, Tension Control Mode, etc. Application Macro Quick Settings

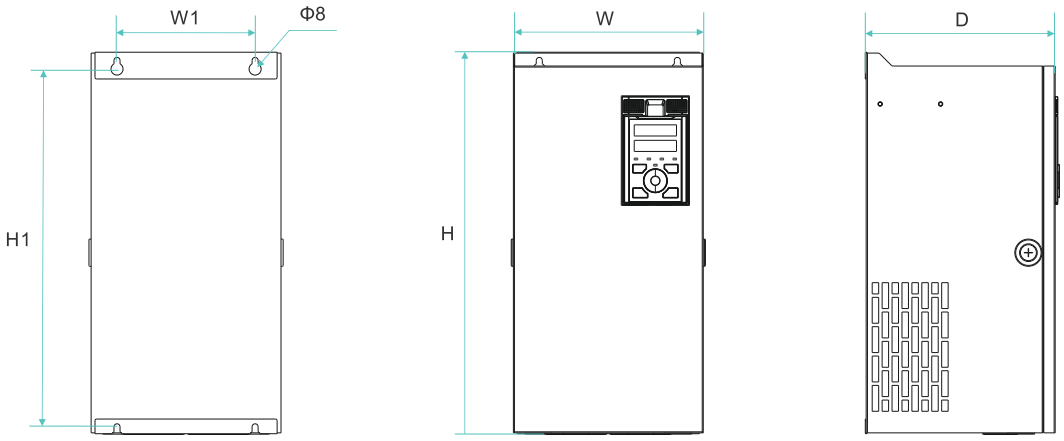
Project		Description
Input and output	External analog power supply	+10V, load capacity 100mA
	External digital power supply	+24V, load capacity 200mA
	Digital input	D1- DI7 multifunctional editable digital input terminal, HDI high-speed pulse input
	Digital output	FM, Pulse output or open collector switch output can be selected
	Digital terminal power mode	NPN or PNP can be selected
	Analog input	Two analog inputs, voltage 0-10V or current 0/4-20mA selectable
	Analog output	Two analog outputs, voltage 0-10V or current 0/4-20mA selectable
	Programmable relay output	Two relay outputs, contact capacity: 250VAC/3A or 30DC/1A
	Fire fighting mode	STO1 - +24V, STO2 - +24V
	Compatible with multiple encoders	Optional collector open circuit ABZ encoder card, differential input ABZ encoder card, sine cosine encoder card, and rotary encoder card.
	Compatible with multiple communication protocols	Standard Modbus 485 communication protocol, with optional matching resistors Optional bus modules and protocols such as Profinet, Probus, Ethercat, Can, Canopen, etc
Operation and Display	LED display	Dual digital display function parameter settings, status parameter viewing, and fault code viewing
	LCD display	Optional, language selection including Chinese/English /Russian
	Extended external display	Rj45 interface, LED or LCD selectable
	Parameter copying	Using LED LCD can achieve fast parameter replication
	Key locking and function selection	Implement partial or complete locking of keys, define the scope of action of some keys to prevent accidental operation
Protection function	Overpressure stall	Automatic control of bus voltage to prevent overvoltage faults
	Automatic current limiting protection	Automatic output current limitation to prevent overcurrent faults
	Overload pre-alarm and warning	Overload early warning and protection
	Output load drop protection	Load drop alarm function
	Input and output phase loss protection	Automatic detection and alarm function for input and output phase loss
	Process PID setpoint and feedback loss detection	Process PID automatic identification of whether the given and feedback are lost, and loss alarm function
	Output ground short circuit protection	Effective protection function against ground short circuit output
	Output interphase short circuit protection	Effective protection function for output phase to phase short circuit
Environmental	Place of use	Indoor, not exposed to direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping or salt, etc
	Altitude	Below 1000 meters, downgrading is required for use above 1000 meters
	Ambient temperature	-10 ℃ +50 ℃ (ambient temperature is between 40 ℃ 50 ℃, please reduce the rating for use)
	Humidity	Less than 95% RH, no condensation of water droplets
	Vibration	Less than 5.9 meters per second (0.6g)
	Storage temperature	−20℃~+60℃
	Class of pollution	Level 2 (dry, non-conductive dust pollution)
	Protection level	IP20
Standards	Product compliance with safety standards	IEC61800-5-1:2007
	The product complies with EMC standards	IEC61800-3:2005



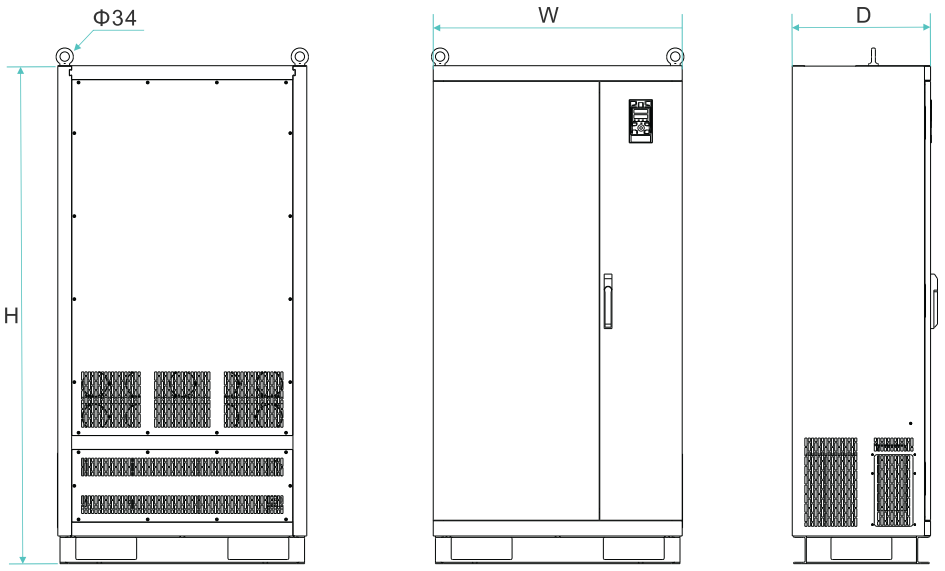
Dimensions



0.4kW~22kW plastic shell external dimensions and installation dimensions



30kW~250kW sheet metal chassis appearance, size and installation dimensions



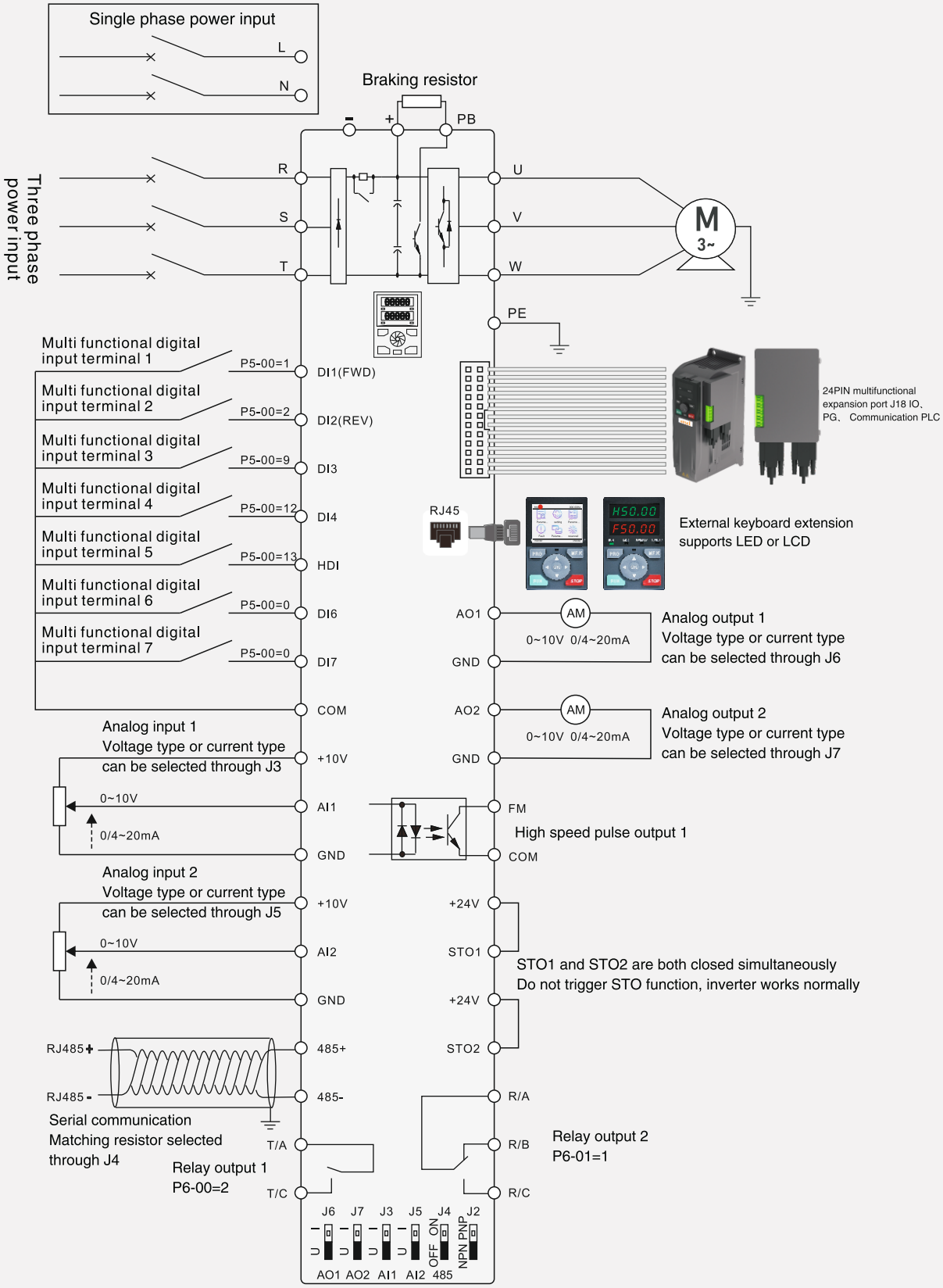
280kW~1000kW sheet metal chassis appearance, size and installation dimensions

AC Drive Model	Adapter motor (KW)	Installation size(mm)		Dimensions (mm)			Aperture
		W1	H1	W	H	D	d
Input voltage: three-phase 380V Range: -15%~20%							
FD600-3-010-EB-CE	0.7	65	205	80	216	143	5
FD600-3-020-EB-CE	1.5						
FD600-3-030-EB-CE	2.2						
FD600-3-050-EB-CE	3.7	80	234	102	245	168	5
FD600-3-075-EB-CE	5.5						
FD600-3-100-EB-CE	7.5	90	270	115	280	168	5
FD600-3-150-EB-CE	11	125	305	155	320	196	6
FD600-3-200-EB-CE	15						
FD600-3-250-EB-CE	18.5	130	376	170	445	215	6.5
FD600-3-300-EB-CE	22						
FD600-3-400-EB-CE	30	160	425	220	445	220	7
FD600-3-500-EB-CE	37						
FD600-3-600-EA-CE	45	160	495	245	510	280	7
FD600-3-750-EA-CE	55	245	500	316	514	256	10
FD600-3-1000-EA-CE	75						
FD600-3-1200-EA-CE	90	290	510	350	527	265	10
FD600-3-1500-EA-CE	110						
FD600-3-1750-EA-CE	132	270	700	383	720	335	12
FD600-3-2150-EA-CE	160	290	940	383	960	340	12
FD600-3-2500-EA-CE	185	300	1040	410	1060	380	12
FD600-3-2700-EA-CE	200						
FD600-3-3000-EA-CE	220						
FD600-3-3300-EA-CE	250	420	1100	470	1120	380	12
FD600-3-3750-EA-CE	280						
FD600-3-4200-EA-CE	315	500	1255	640	1275	405	12
FD600-3-4750-EA-CE	355						
FD600-3-5400-EA-CE	400						
FD600-3-6000-EA-CE	450						
FD600-3-6700-EA-CE	500	/	/	900	1800	500	Vertical
FD600-3-7500-EA-CE	550						
FD600-3-8450-EA-CE	630						
FD600-3-9500-EA-CE	710	/	/	1100	2200	600	Vertical
FD600-3-10750-EA-CE	800						
FD600-3-13500-EA-CE	1000	/	/	1300	2300	600	Vertical

Control Terminal Specification

Sort	Terminal	Name	Function Description
Power supply	+10V-GND	External +10V power supply	Provide +10V power supply to the outside, the maximum output current: 10mA Generally used as working power supply of external potentiometer, potentiometer resistance range: 1~5kΩ
	24V-COM	External +24V power supply	Provide +24V power supply to the outside, generally used as the working power supply of digital input and output terminals and external sensor power supply, Maximum output current: 200mA
Analog input	AI1-GND	Analog input terminal 1	Input range: DC0-10V or 0-20mA, Ai1 is determined by the J3 selection on the control board and is shipped in voltage mode. Ai2 is determined by the J4 selection on the control board and is shipped in voltage mode. Input impedance: 100K Ω for voltage input, 500 Ω for current input
	AI2-GND	Analog input terminal 2	
Digital input	DI1-COM	Digital input 1	Optocoupler isolation, compatible with bipolar input, switches NPN or PNP mode through J2 switch, factory set to NPN mode; Input impedance: 3.3kΩ; Voltage range for level input: 9-30V; Among them, HDI5 can be used as a high-speed input port, with a maximum input frequency of 50KHz
	DI2-COM	Digital input 2	
	DI3-COM	Digital input 3	
	DI4-COM	Digital input 4	
	DI5-COM	Digital input 5	
	DI6-COM	Digital input 6	
	DI7-COM	Digital input 7	
Analog output	AO1-GND	Analog output 1	The voltage or current output is determined by the DIP switch on the control board (refer to the bit number of the terminal wiring diagram). (Optional accessories: IO1, IO2 support AO2 function) Output voltage range: 0~10V Output current range: 0~20mA
	AO2-GND	Analog output 2	
Digital output	FM-COM	High-speed pulse output	Programmable optocoupler isolation, open collector output, maximum frequency: 50KHz; When the collector is open for output, it is consistent with the Y1 specification; Output voltage range: 0/24VDC, output current range: 50mA
	+24V-STO1	Fire mode output	Triggering Err48 fault, the fault type can be distinguished by checking the U1-35 values. 1: STO1 disconnected; 2: STO2 disconnected; 3: STO1 and STO2 are both disconnected
	+24V-STO2		
Communication Interface	485+，485-	Modbus communication interface	Modbus communication interface, can be selected through J4 whether to match resistors
Relay output 1	T/A-T/C	T/A-T/C normally open terminal; R/A-R/C normally open terminal, R/A-R/B normally closed terminal; Contact driving capability: AC250V, 3A, COSφ=0.4, DC30V, 1A.	
Relay output 2	R/A-R/B-R/C		
Relay output 2	RA-RB	Normally closed terminal	Contact drive capability:(Optional accessories: IO1, IO2 support function) AC250V, 3A, COSφ=0.4. DC30V, 1A
	RA-RC	Normally open terminal	
External keyboard interface	Rj45 interface	External keyboard interface	External LED and LCD keyboard interfaces can be extended using standard Ethernet cables

Standard Wiring Diagram for FD600



Ordering information

Model	Description	HSN Code	Output Current(A)	Braking Unit	Recommended Resistance Value	Certification
FD600-3-010-EB-CE	3 phase input 415V 3 phase output 0~415V 1HP/0.7KW, Built in EMC Filter	85044090	2.1/3.8	Built-in	150W≥600Ω	CE
FD600-3-020-EB-CE	3 phase input 415V 3 phase output 0~415V 2HP/1.5KW, Built in EMC Filter	85044090	3.8/5.1	Built-in	300W≥350Ω	CE
FD600-3-030-EB-CE	3 phase input 415V 3 phase output 0~415V 3HP/2.2KW, Built in EMC Filter	85044090	5.1/9.0	Built-in	450W≥250Ω	CE
FD600-3-050-EB-CE	3 phase input 415V 3 phase output 0~Input, 5HP/3.7KW. Built in EMC Filter	85044090	9.0/13.0	Built-in	750W≥150Ω	CE
FD600-3-075-EB-CE	3 phase input 415V 3 phase output 0~Input, 7.5HP/5.5KW. Built in EMC Filter	85044090	13.0/17.0	Built-in	1000W≥100Ω	CE
FD600-3-100-EB-CE	3 phase input 415V 3 phase output 0~Input, 10HP/7.5KW. Built in EMC Filter	85044090	17.0/20.0	Built-in	1500W≥89Ω	CE
FD600-3-150-EB-CE	3 phase input 415V 3 phase output 0~Input, 15HP/11KW. Built in EMC Filter	85044090	25.0/32.0	Built-in	2000W≥60Ω	CE
FD600-3-200-EB-CE	3 phase input 415V 3 phase output 0~Input, 20HP/15KW. Built in EMC Filter	85044090	32.0/37.0	Built-in	3000W≥45Ω	CE
FD600-3-250-EB-CE	3 phase input 415V 3 phase output 0~Input, 25HP18.5KW. Built in EMC Filter	85044090	37.0/45.0	Built-in	3500W≥36Ω	CE
FD600-3-300-EB-CE	3 phase input 415V 3 phase output 0~Input, 30HP/22KW. Built in EMC Filter	85044090	45.0/60.0	Built-in	4500W≥30Ω	CE
FD600-3-400-EB-CE	3 phase input 415V 3 phase output 0~415V 40HP/30KW, Built in EMC Filter	85044090	60.0/75.0	Optional	6000W≥22Ω	CE
FD600-3-500-EB-CE	3 phase input 415V 3 phase output 0~415V 50HP/37KW, Built in EMC Filter	85044090	75.0/90.0	Optional	7500W≥18Ω	CE
FD600-3-600-EA-CE	3 phase input 415V 3 phase output 0~415V 60HP/45KW, Built in EMC Filter	85044090	90.0/110.0	Optional	9000W≥15Ω	CE
FD600-3-750-EA-CE	3 phase input 415V 3 phase output 0~415V 75HP/55KW, Built in EMC Filter	85044090	110.0/152.0	Optional	10KW≥12Ω	CE
FD600-3-1000-EA-CE	3 phase input 415V 3 phase output 0~415V 100HP/75KW, Built in EMC Filter	85044090	152.0/176.0	Optional	15KW≥9Ω	CE
FD600-3-1200-EA-CE	3 phase input 415V 3 phase output 0~415V 120HP/93KW, Built in EMC Filter	85044090	176.0/210.0	Optional	18KW≥7.5Ω	CE
FD600-3-1500-EA-CE	3 phase input 415V 3 phase output 0~415V 150HP/110KW, Built in EMC Filter	85044090	210.0/253.0	Optional	20KW≥6Ω	CE
FD600-3-1750-EA-CE	3 phase input 415V 3 phase output 0~415V 175HP/132KW, Built in EMC Filter	85044090	253.0/304.0	Optional	26KW≥5Ω	CE
FD600-3-2150-EA-CE	3 phase input 415V 3 phase output 0~415V 215HP/160KW, Built in EMC Filter	85044090	304.0/340.0	External	30KW≥4.2Ω	CE
FD600-3-2500-EA-CE	3 phase input 415V 3 phase output 0~415V 250HP/185KW, Built in EMC Filter	85044090	340.0/380.0	External	35KW≥3.6Ω	CE
FD600-3-2700-EA-CE	3 phase input 415V 3 phase output 0~415V 270HP/200KW, Built in EMC Filter	85044090	380.0/426.0	External	40KW≥3.35Ω	CE
FD600-3-3000-EA-CE	3 phase input 415V 3 phase output 0~415V 300HP/220KW, Built in EMC Filter	85044090	426.0/465.0	External	45KW≥3Ω	CE
FD600-3-3300-EA-CE	3 phase input 415V 3 phase output 0~415V 330HP/250KW, Built in EMC Filter	85044090	465.0/520.0	External	50KW≥2.68Ω	CE
FD600-3-3750-EA-CE	3 phase input 415V 3 phase output 0~415V 375HP/280KW, Built in EMC Filter	85044090	520.0/585.0	External	14kW * 2≥4 - 6Ω * 2	CE
FD600-3-4200-EA-CE	3 phase input 415V 3 phase output 0~415V 420HP/315KW, Built in EMC Filter	85044090	585.0/650.0	External	16kW * 2≥4 - 6Ω * 2	CE

Ordering information

Model	Description	HSN Code	Output Current(A)	Braking Unit	Recommended Resistance Value	Certification
FD600-3-4750-EA-CE	3 phase input 415V 3 phase output 0~415V 475HP/355KW, Built in EMC Filter	85044090	650.0/725.0	External	11kW*3⩾4-6Ω*3	CE
FD600-3-5400-EA-CE	3 phase input 415V 3 phase output 0~415V 540HP/400KW, Built in EMC Filter	85044090	725.0/820.0	External	14kW*3⩾4-6Ω*3	CE
FD600-3-6000-EA-CE	3 phase input 415V 3 phase output 0~415V 600HP/450KW, Built in EMC Filter	85044090	820.0/900.0	External	10kW*4⩾4-6Ω*4	CE
FD600-3-6700-EA-CE	3 phase input 415V 3 phase output 0~415V 670HP/500KW, Built in EMC Filter	85044090	900.0/1000.0	External	12.5kW*4⩾4-6Ω*4	CE
FD600-3-7500-EA-CE	3 phase input 415V 3 phase output 0~415V 750HP/550KW, Built in EMC Filter	85044090	1000.0/1100.0	External	14kW*4⩾4-6Ω*4	CE
FD600-3-8450-EA-CE	3 phase input 415V 3 phase output 0~415V 845HP/630KW, Built in EMC Filter	85044090	1150.0	External	16kW*4⩾4-6Ω*4	CE
FD600-3-9500-EA-CE	3 phase input 415V 3 phase output 0~415V 950HP/710KW, Built in EMC Filter	85044090	1250.0	External		CE
FD600-3-10750-EA-CE	3 phase input 415V 3 phase output 0~415V 1075HP/800KW, Built in EMC Filter	85044090	1450.0	External		CE
FD600-3-13500-EA-CE	3 phase input 415V 3 phase output 0~415V 1350HP/1000KW, Built in EMC Filter	85044090	1900.0	External		CE

Note: The resistor selection in the table above is for standard applications. The following applications require larger scale specifications:

Elevator 20~30%: Resistor resistance no change; resistor power is 0.2-0.3 times of the inverter power.

Winding/Unwinding 20~30%: Resistor resistance no change; resistor power is 0.2-0.3 times of the inverter power.

Centrifugal Machine 50%~60%: Resistor resistance no change; resistor power is 0.5-0.6 times of the inverter power

Lifting 30%~40%: Resistor resistance no change; resistor power is 0.3-0.4 times of the inverter power.

Elevators: 20%–30% **Winding/Unwinding:** 20%–30% **Hoisting:** 30%–40% **Centrifuges:** 50%–60%

General braking: 10% (Percentage of load power) Resistance value generally remains constant

Application:



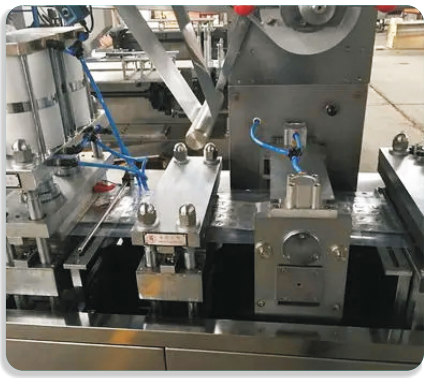
Printing Dyeiing



Wire Drawing Mchine



Water Supply



Packing Machiine



Industrial Washing Machine



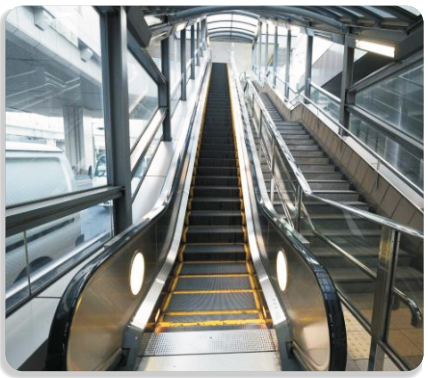
Construction Hoist



Ball Mill



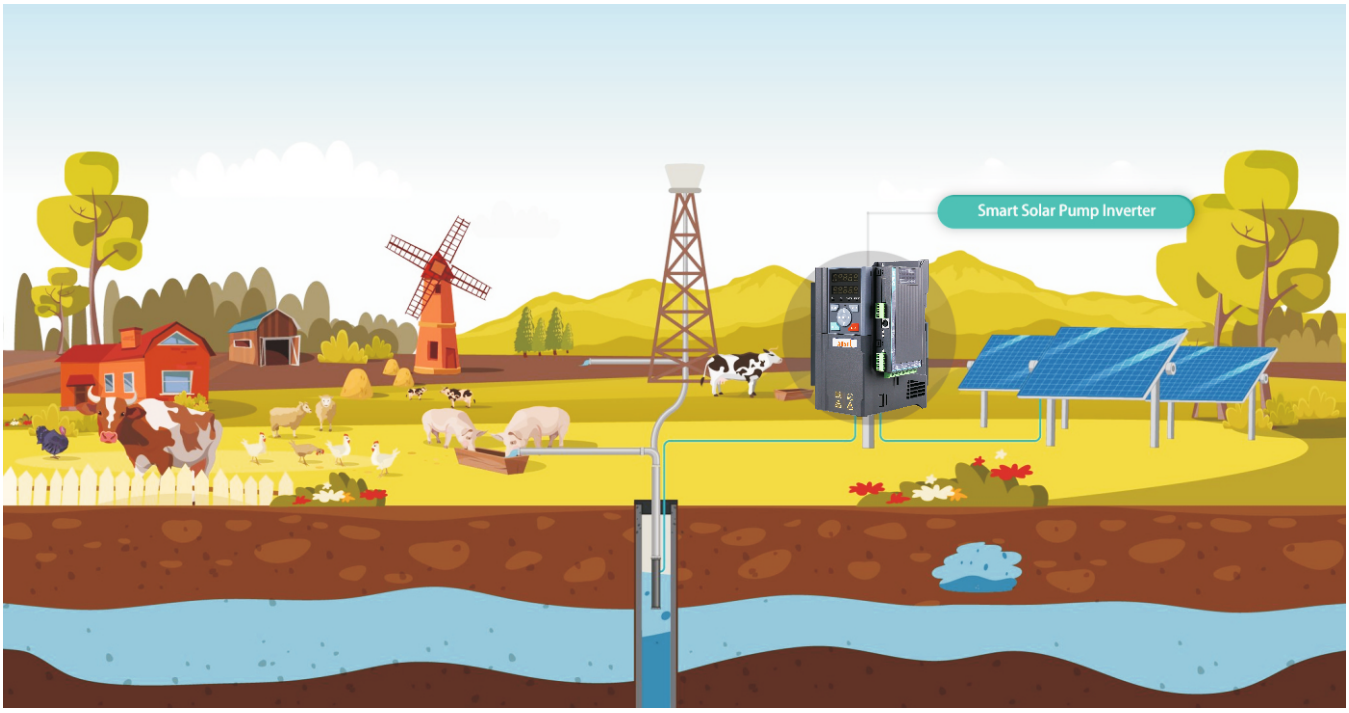
Air Compressor

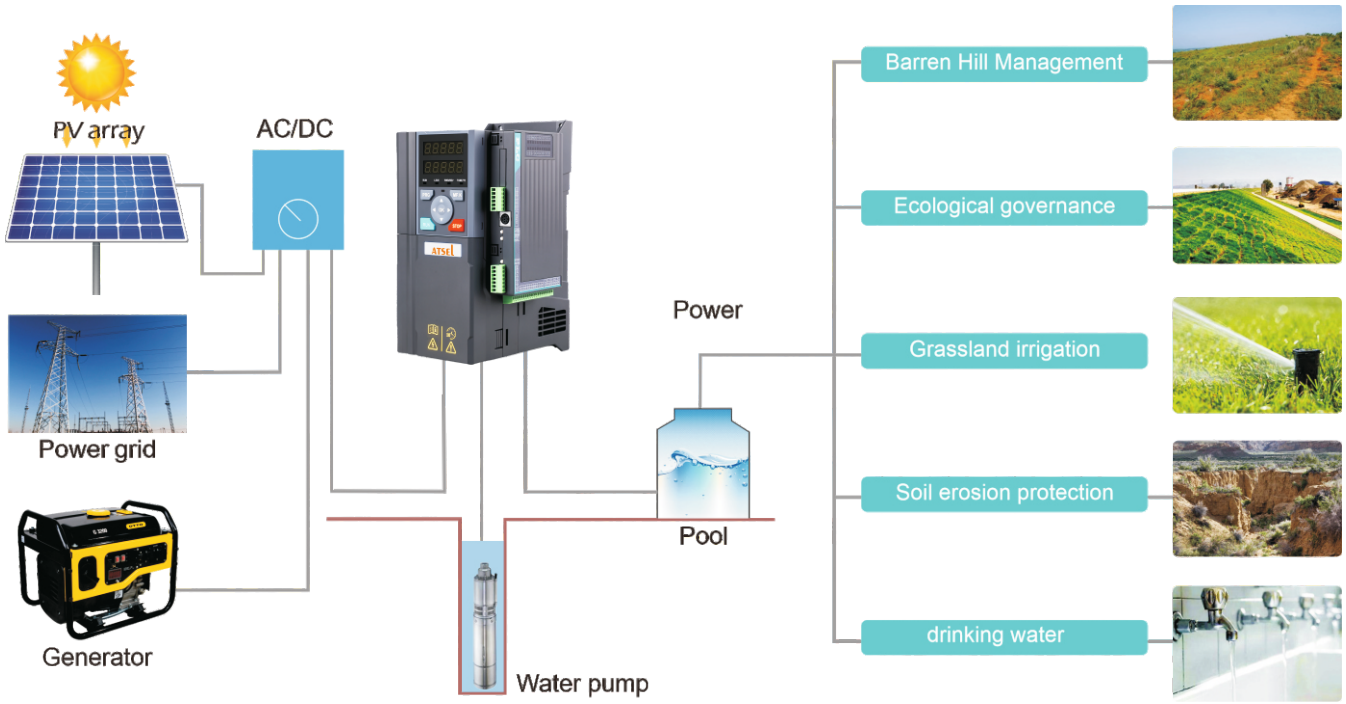


Escalator



Overhead Crane





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