

# Control Panel

Control panel series for all kinds of pump applications



Fire pump control panel



water supply/booster pump control panel



Submersible pump control panel



Inverter pump control panel (standard type)



Inverter pump control panel (double-layer door)



Inverter pump control panel (double-layer door with touch screen)



Multiple inverter systems inside layout

Main fire pump sets & jockey pumps	Water supply pumps, Auto booster pump systems	Submersible sewage/sump pumps	Inverter booster pump systems
			



Standard inverter control panel  
(Duplex operation)



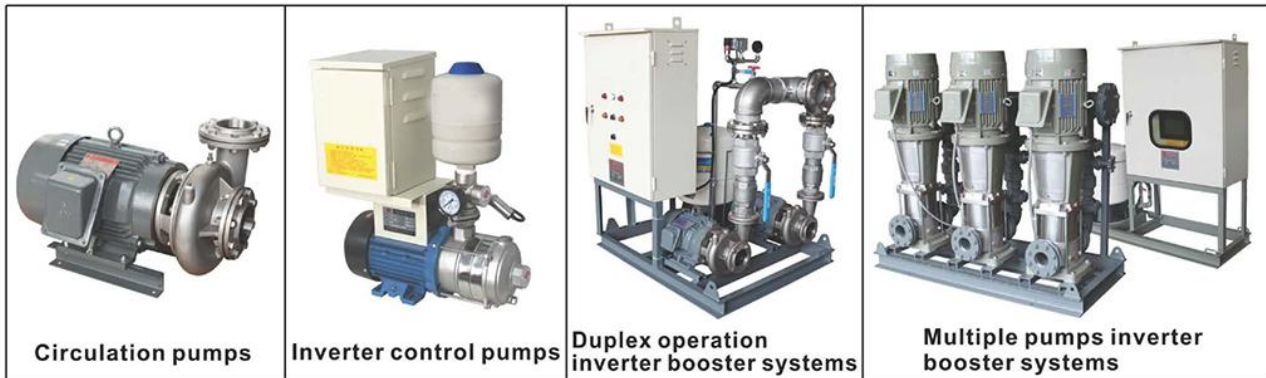
HMI inverter control panel  
(Duplex operation)



Accessories adopt Delta inverter series  
(we can change to other brands depend  
on customer demands)

### Applications

- Water supply for apartments, households, residential buildings and villas.
- Water supply for public facilities, parks, motels, hotels, restaurants, schools, hairdressing salons.
- Water supply for factories, IC manufacturers, industrial precision equipments.
- Water supply for car wash, tap water pressurize station, reverse osmosis and construction zone.
- It can be used for single or multiple pumps operation.



Circulation pumps

Inverter control pumps

Duplex operation  
inverter booster systems

Multiple pumps inverter  
booster systems

### Product Features

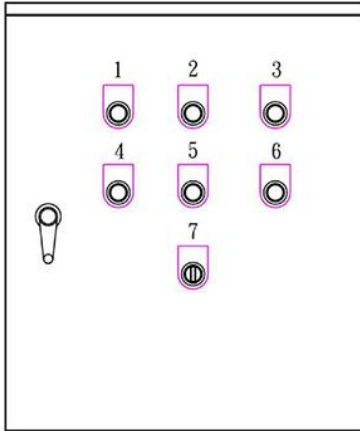
- We can custom made control panel with different schemes for different environments.
- It saves electricity and energy. The motor will change rotational speed depend on the water usage by the users.
- Customers can change pump performance by adjusting different pressure, capacity and temperature with PLC function.
- Customers can add PID algorithm function which will improve system operation stability.
- We can provide monitor port which can organize operation and monitor interface according to customer demands.
- We provide RS485 communication interface. Output signal 0~10V or 4~30mA. Continuous variable controller.

### Specifications

- Casing material: SS400, stainless steel.
- Single layer and double layer types can be chosen by customer demands.
- Inverter conforms to UL and CE certificates.
- IP protection class: Ip54



### Panel Instructions



Single layer door inverter control panel(duplex operation)

NO	Name
1	No. 1 running(Red)
2	Power(White)
3	No. 2 running(Red)
4	No. 1 failure(Yellow)
5	No.1 Auto. Stop Man.
6	No. 2 failure
7	No. 2 Auto. Stop Man.



Double layer door inverter control panel(duplex operation)

### Dimensions

Classification		( HP)	W	H	D	Material
220V/ 380V	Single inverter	1 ~ 3	450	750	250	iron
		5 ~ 15	550	950	300	iron
	Double inverter	1 ~ 3	550	600	250	iron
		5 ~ 15	600	800	280	iron

Remarks: Appearance · material · dimension · coating...etc. All can be custom made by customer requirements.

### Double inverter alternating operation control panel

#### ● Inside layout



#### ● Components table

NO	Name	NO	Name
1	Inverter	6	Double timer relay
2	Fan	7	Timer relay
3	No fuse breaker	8	Aux. relay
4	Fuse	9	Terminal block
5	Transformer	10	Grounding conductor

#### Remarks

- We can add earth leakage circuit breaker, PID controller, PLC programmable logic controller depend on customer demands.
- Components table and inside layout usually vary with different horsepowers and control methods.
- We can change inside layout and component brand depend on customer demands.

### ● HMI double inverter control panel --Inside layout

### ● Components table



NO	Name
1	Fan
2	Inverter
3	PLC
4	Terminal block
5	Aux. relay
6	Fuse
7	Magnetic switch
8	Switch
9	Grounding conductor
10	Transformer
11	No fuse breaker
12	HMI

#### Remarks:

- Components table and inside layout usually vary with different horsepowers and control methods.
- We can change inside layout and component brand depend on customer demands.

### ■ Accessories

#### ● Earth leakage circuit breaker

1. Protection for electric leakage/ overload/short circuit.
2. It adopts SHIHLIN brand or other approved equivalent brands.
3. It adopts CNS5422 specifications.
4. Electric leakage can be shown by mechanical button.
5. Rated voltage common type. Its range is from 110~440V(Below480V).



#### ● PID controller

(Process/Temperature Controller)

1. It has fast sampling function(It will sample once per 200msec). It has anti-electro magnetic interference ability. It can control inverter driven motor to change pump system pressure.
2. Fuzzy artificial intelligence+PID computer control.
3. High precision: Input 18-BIT analog to digital and output 15-BIT digital to analog.
4. Automatic algorithm adjustment, system abnormal alarm and HEATER disconnected alarm.



#### ● Programmable Logic Controller, PLC

(Programmable Logic Controller,PLC)

PLC is an electrical computing control system. Its framework has the characteristics of simplify save program and easy expansion design. It provides sequence/position control and timing input/ouput control commands which are widely used in automation control industry.

- It has build in 3 communication ports: 1 for RS-232 and 2 for RS-485.Each one can operate independently.
- Max. expansion up to 10 digit: 256 digit input+16 digit output or 256 digit output+ 16 digit input.
- DVP-EX2 mainframe has build in 12-bit analog resolution of 4AD/2DA. It also provides 14-bit analog resolution for users.
- It has build in 8 digit input(2 digit 100khz,6 digit 10khz) which supports U/D、U/D Dir and A/B counter mode.
- Newly add more special commands: closed loop、benchmarking、blanking in、instant speed and (S-Curve)acceleration & deceleration functions.
- Emerging industry applications:Aim for solar power energy industry specially desgin for its own commands and funcitors.
- Inverter easy commands:Upright、reverse、stop、run...etc.
- Password protection functions:Sub-program password、subscriber identifier、attempt frequency limitation.
- It can perform high efficiency commands.

(Adopts Delta PLC)

