K-DRIVE

KD100 SERIES
Mini Vector Series

QUALIFICATION HONOR

(ISO9001 quality management
system certification & CE certificate)

SMALL BODY, BIG POWER

Do whatever you want ! Give you what you want

OUTSTANDING QUALITY

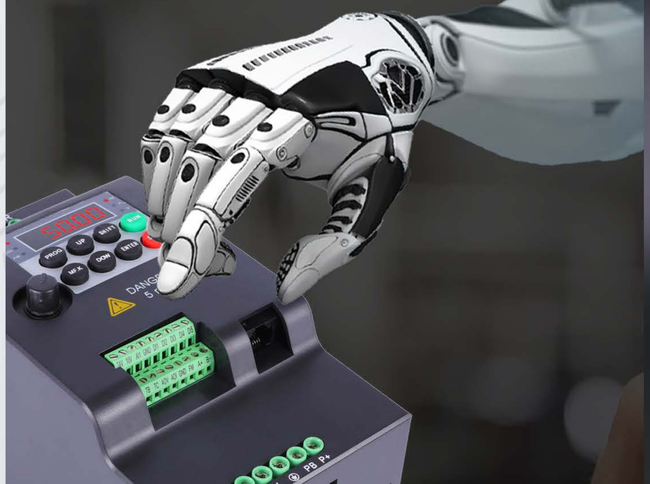
01 100% Start Torque@0.5Hz	02 200% Overload Capability	03 ±0.5% Speed accuracy
04 40 ℃ Ambient Temp	05 1:100 Speed Regulation	06 16 Multi-step speed max.

USE MORE VARIETY

Control panel can be extended ex-
ternally

FULL FUNCTIONING

485 communication interface +
16 speed adjustable



NEW KEYBOARD

more convenient to use

PROG PROGRAMMING
ENTER CONFIRM
UP INCREMENT
DOW DECREMENT
SHIFT SHIFT
RUN RUN
STOP STOP
MF.K MULTIFUNCTION
POTENTIOMETER

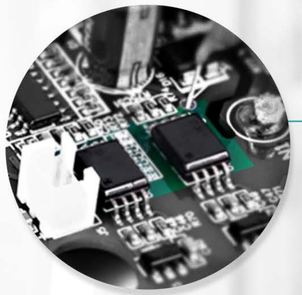
RELIABLE DEVICE

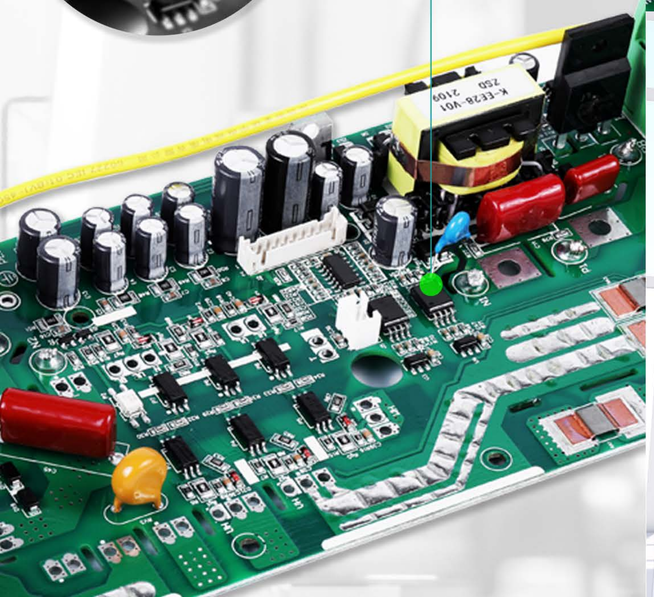
Adopt world-class brand devices

AVAGO TECHNOLOGIES · TEXAS INSTRUMENTS · infineon · TDK · FE · VISHAY

A FULL RANGE OF BUILT-IN HALL CHIPS

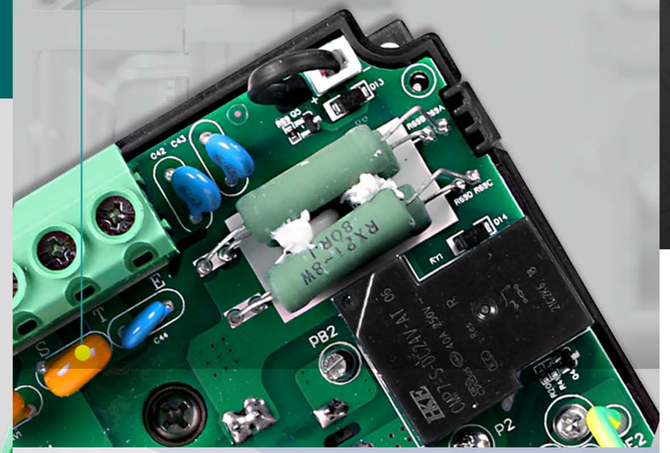
For overload and overcurrent protection





EMC GROUNDING DESIGN

Independent grounding design, easy to solve EMC interference and leakage current problems



UPDATED KEYPAD

(MORE CONVENIENT AND STABLE)

OUTSTANDING ABILITY

EMC Filter — C3 Level Filter Build-In Standardly
Better EMC Performance

IGBT — Selection Of Large Margin
Current>2 Times of VFD Current

200% — 120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

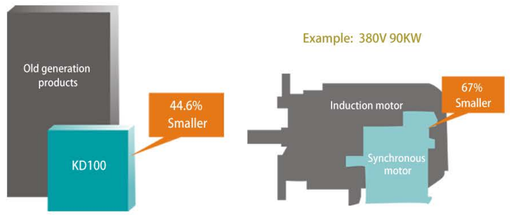
±15% — Compatible with ±15% input voltage
fluctuation, output voltage s

S Curve — S Curve Acceleration/Deceleration
Better Start /Stop Performance

Flying Start — Restart The Running Motor Smoothly
No Current Surge

MORE COMPACT STRUCTURE

K-DRIVE continues to make applications even smaller by combining the compact designed drive with the light, efficient design of a synchronous motor.



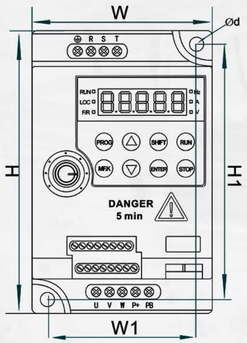
INDEPENDENT AIR DUCT DESIGN

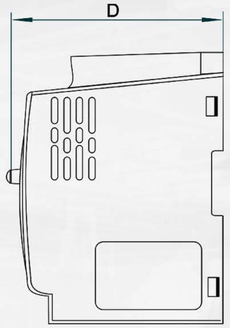
Independent air duct design, effectively preventing dust entering inverter, causing short-circuit and other faults and improving reliability;

Use bigger air volume and long life cooling fan effectively reduces the internal temperature rise of the inverter and ensures reliable and stable operation of inverter.

PRODUCT SIZE

For detailed data, please refer to the user manual

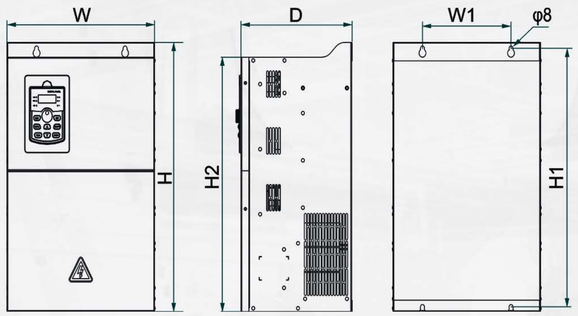




AC Drive Model	Power Capacity (KVA)	Rated Input Current(A)	Rated Output Current(A)	Dimensions(mm)		
				L	W	H
Input voltage: single-phase 220V Range: -15%~20%						
2S-0.4G	1.0	5.8	2.5	140	85	105
2S-0.7G	1.5	8.2	4	140	85	105
2S-1.5G	3.0	14.0	7	140	85	105
2S-2.2G	4	23.0	9.6	140	85	105
2S-4.0G	6.6	39.0	16.5	240	105	150
2S-5.5G	8	48.0	20	240	105	150
Input voltage: three-phase 380V Range: -15%~20%						
4T-0.7G	1.5	3.4	2.1	140	85	105
4T-1.5G	3.0	5.0	3.8	140	85	105
4T-2.2G	4.0	5.8	5.1	140	85	105
4T-4.0G	5.9	10.5	9.0	180	100	115
4T-5.5G	8.9	14.6	13.0	180	100	115
4T-7.5G	12	20	17	180	100	115
4T-11G	17.7	26	25	240	105	150
4T-15G	24.2	35	32	240	105	150

PRODUCT SIZE

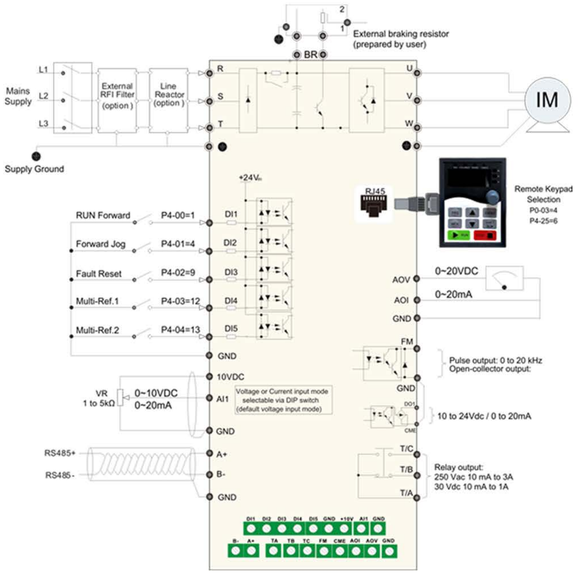
For detailed data, please refer to the user manual



Model	Installation size (mm)		External size (mm)				Installation Aperture
	W1	H1	H2	H	W	D	
4T-18.5G	120	317	–	335	200	178.2	Φ8
4T-22G							
4T-30G	150	387.5	–	405	255	195	Φ8
4T-37G							
4T-45G	180	437	–	455	300	225	Φ10
4T-55G							
4T-75G	260	750	–	785	395	285	Φ12
4T-90G							
4T-110G							
4T-132G	300	865	–	900	440	350	Φ12
4T-160G							
4T-185G	360	950	–	990	500	360	Φ16
4T-200G							
4T-220G							
4T-250G	400	1000	–	1040	650	400	Φ16
4T-285G							
4T-315G	600	1252	–	1300	815	422	Φ16
4T-355G							
4T-400G							

BASIC WIRING DIAGRAM

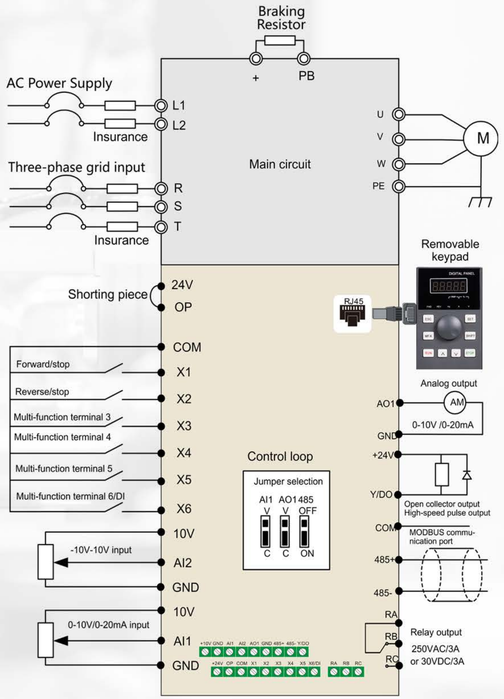
0.4KW~15KW Main circuit wiring diagram

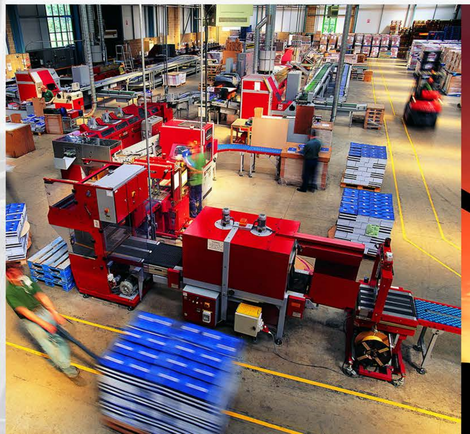


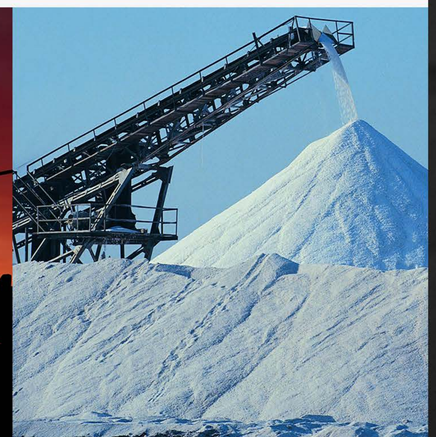
Terminal	Terminal Name	Terminal	Terminal Name
D1~D5	Digital Input X5	AI1	Analog Input X1
A,B	RS485 X1	TA1,TB1,TC1	Relay Output X1
X5	HDI (High Speed Pulse Input /Output) X1		

BASIC WIRING DIAGRAM

18.5KW~400KW Main circuit wiring diagram

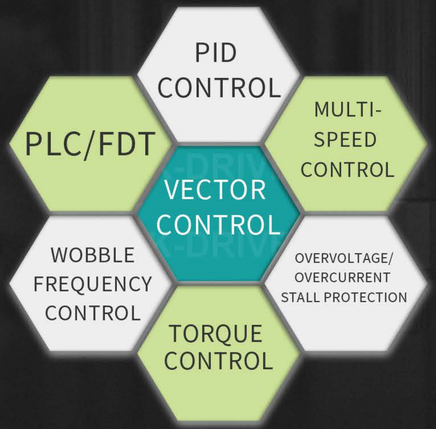






FEATURES A LOT

POWER RANGE | Single-phase input: 220V 0.4KW~4.0KW | Three-phase input: 380V 0.4KW~400KW



Input & Output

Input voltage	1AC 220~240V(± 15%) 3AC 220~240V(± 15%) 3AC 380~460V(± 15%)
Input frequency	50Hz/60Hz ±5%
Output voltage	0~input voltage, deviation <±3%
Output frequency	0~600Hz

Control Characteristics

Control mode	v/f control Sensor-less vector control Torque control
Speed accuracy	±0,5% (V/f) ±0,2% (SVC)
Speed fluctuation	±0,3% (SVC)
torque response	< 10ms (SVC)
Starting torque	0,5Hz: 150% (V/f) 0,25Hz: 180% (SVC)
Overload capability	150% Rated current -60s 180% Rated current -10s 200% Rated current -1s
Simple PLC Multi-step speed	16 speed External digital signal control Internal clock
PID function	Standard build-in
Communication	Modbus

Featured functions

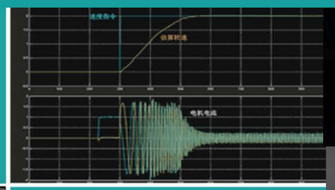
Featured functions	Input &Output delay Flexible parameters display AVR (Automatic Voltage Regulation) Timing control, fixed length control, etc. Simple PLC, 16-steps speed control Torque control build-in S curve acceleration/deceleration Multi-functional programmable keypad V/f separated control

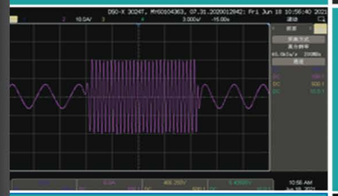
Environment Limitation

Installation location	Without direct sunlight,free from dust,corrosive gases, oil mist, flammable gases, water vapor, water drop and salt,etc.
Altitude	0~2000m Derated 1% for every 1000m when the altitude is above 1000meters
Ambient temperature	-10°C~50°C (Output derated while the temperature is higher than 40°C)
Storage temperature	-20°C~+70°C
Relative Humidity	5-95% no condensation

HIGH SPEED ACCURACY AND WIDE SPEED RANGE

100Hz step response



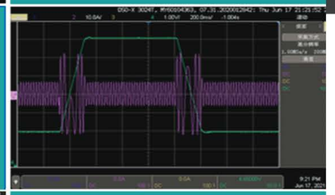


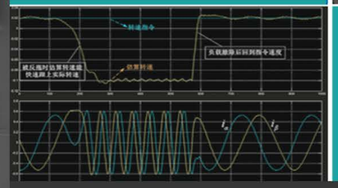
HIGH TORQUE IN LOW SPEED, FAST RESPONSE

0.25Hz plus 150% load

RAPID RESPONSE TO IMPACT LOADS

0.0s acceleration and deceleration time
fast forward and reverse



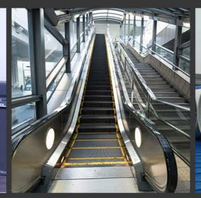


OPTIMIZED SVC ALGORITHM, STABLE OPERATION IN POWER GENERATION

Reversed waveform

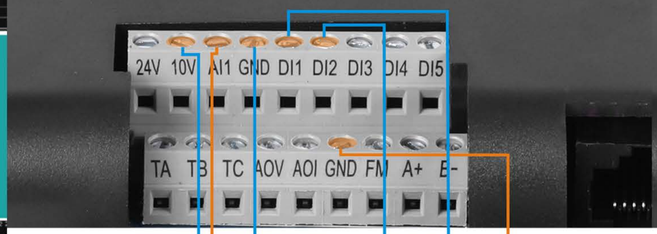
APPLICATION

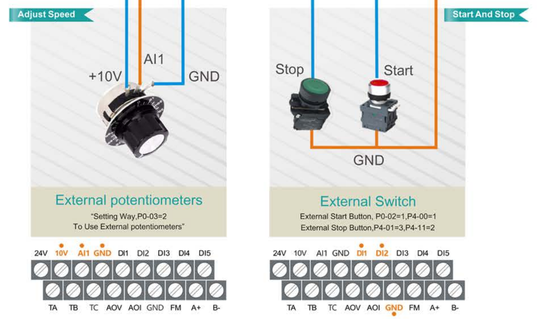
Fans / Water Pumps / Injection Molding Machines / Extruders / Ball Mills / Screw Air Compressors / Winding Machines / Mixers / Conveyors / CNC Machine Tools / Hoists, etc.



BELT CONVEYER

KD100 Wiring diagram





PARAMETER SETTING STEP

Step	Function Code	Set Value	Description
1	P0.02	1	Terminal control start and stop
2	P0.03	2	Frequency setting selection analog
3	P0.17	Set as need	Acceleration time
4	P0.18	Set as need	Deceleration time
5	P4.00	1	Forward running

FIELD APPLICATION

Load Feature:

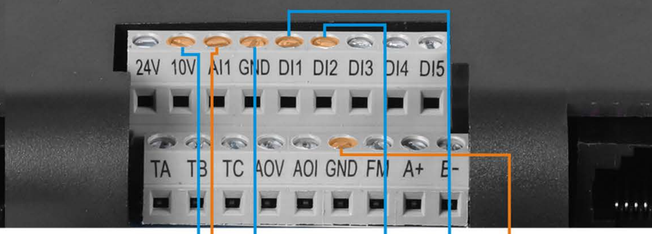
- With big fluctuation ;
- Lots of dusts in the operation sites.

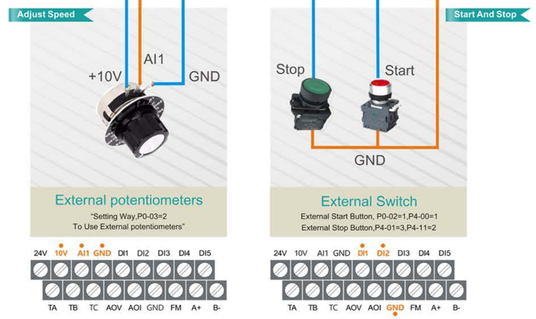
Requests For VFD:

- Soft start the motor, reduce the surge current, protect the motor and conveyer.
- Big output torque at low frequency, it should run smoothly during working.
- Motor speed can be adjusted by external potentiometer.
- Running current can be monitored timely.
- While the failures happen, the AC drive can output alarm or stop.

FAN & WATER PUMP

KD100 Wiring diagram





PARAMETER SETTING STEP

Step	Function Code	Set Value	Description
1	P0.02	1	Terminal control start and stop
2	P0.03	2	Frequency setting selection analog
3	P0.17	Set as need	Acceleration time
4	P0.18	Set as need	Deceleration time
5	P4.00	1	Forward running
6	P6.10	1	Free parking

FIELD APPLICATION

Load Feature:

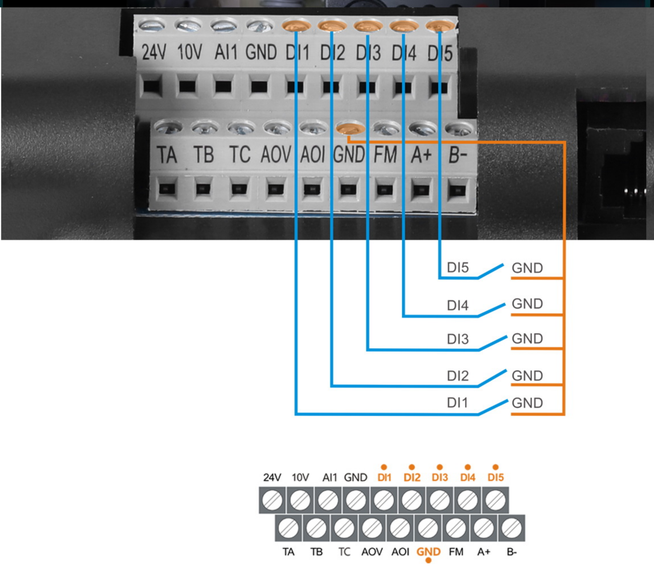
- Both of them belong to fluid control;
- If without VFD, fluid is controlled by valve or baffles;
- For less fluid required system, there will be more energy saving;
- In theory, if the running frequency is H1, then Energy Saving = 1-(H1/50)3.

Requests For VFD:

- Soft start the motor, reduce the surge current;
- VFD should work continuously without fault;
- Speed tracking and start (flying start) function should be reliable;
- In some systems, PID function is required.

MULTISTAGE SPEED

KD100 Wiring diagram



PARAMETER SETTING STEP

Step	Function Code	Set Value	Description
1	P0.02	1	Terminal control start and stop
2	P0.03	6	Multi-speed command
3	P4.00	1	Forward running
4	P4.01	12	Multi-speed 1
5	P4.02	13	Multi-speed 2
6	P4.03	14	Multi-speed 3
7	P4.04	15	Multi-speed 4
8	PC.01	Set as need	Multi-speed 1 frequency percentage
9	PC.02	Set as need	Multi-speed 2 frequency percentage
10	PC.04	Set as need	Multi-speed 3 frequency percentage
11	PC.08	Set as need	Multi-speed 4 frequency percentage

FIELD APPLICATION

Load Feature:

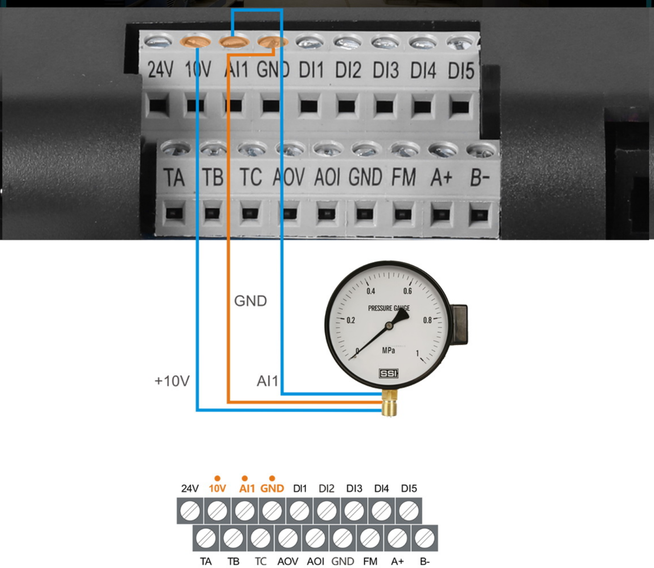
- ✧ During washing processing, the running frequency is around 10Hz;
- ✧ Heavy load at low frequency;
- ✧ Forward/reverse running switched frequently;
- ✧ Big surge current;
- ✧ During spinning-dry processing, the running frequency is as high as 130Hz or higher than 130Hz;
- ✧ It always works at high humidity and high temperature conditions.

Requests For VFD:

- ✧ Soft start the motor, reduce the surge current;
- ✧ Should run stably at high speed.

PID CONSTANT PRESSURE WATER SUPPLY

KD100 Wiring diagram



PARAMETER SETTING STEP

Step	Function Code	Set Value	Description
1	P0.02	1	Terminal control start and stop
2	P0.03	8	–
3	PA.01	Set as need	PID given value
4	PA.02	0	PID feedback value is set by analog AI1
5	PA.08	0	Reverse operation is prohibited
6	P8.49	Set as need	Wake-up frequency
7	P8.50	Set as need	Wake-up delay time
8	P8.51	Set as need	Sleep frequency
9	P8.52	Set as need	Sleep delay time

FIELD APPLICATION

Load Feature:

- ✧ PID function is required;
- ✧ need a pressure sensor in system;
- ✧ In theory, if the running frequency is H1, then Energy Saving = 1-(H1/50)3.

Requests For VFD:

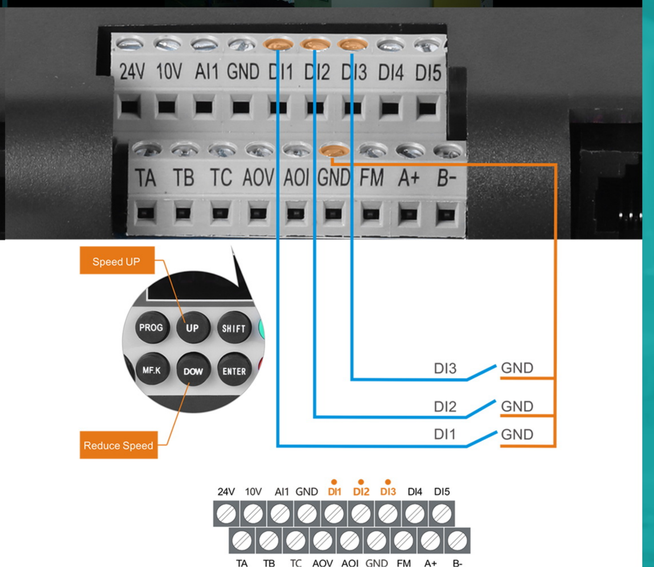
- ✧ Soft start the motor, reduce the surge current;
- ✧ PID control should be stable.

Notice:

- ✧ select a suitable pressure sensor, the calculation of P6.04 as below if pressure sensor measure range is 16bar (1.6Mpa), and the target pressure is 5bar (0.5Mpa), then P6.04=5/16*100%=31.3%.

UP AND DOWN

KD100 Wiring diagram



PARAMETER SETTING STEP

Step	Function Code	Factory Default	Set Value	Description
1	P0.02	1	1	Terminal Control Start & Stop
2	P0.03	0	0	Hz Setting Given
3	P0.17	Change As Need	Set as need	Acc time
4	P0.18	Change As Need	Set as need	Dec time
5	P4.00	1	1	Forward Run
6	P4.01	6	6	Terinmal Up
7	P4.02	7	7	Terminal Down

FIELD APPLICATION

- ✧ This case is very convenient and easy for customer to operate, once build this system,customer only need to press “UP” to add machine speed, and “DOWN” to reduce motor speed, and it is almost suitable for all kinds of ending-machines

Load Feature:

- ✧ Soft start the motor, reduce the surge current ;
- ✧ Should run stably at high speed.

K-DRIVE

Energy efficient, Beautiful environment

Frequency Inverter | Soft Starter | Servo Drive & Motor | PLC Manufacturer

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