



YILMAZ REDÜKTÖR A.Ş.

YDD Fast Door Drive

User Manual

V1.0

Yılmaz Redüktör San. ve Tic. A.Ş.

YDD Fast Door Drive User Manual

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1. Precautions for safety

Welcome to use the special control drive system for fast rolling shutter doors. Please pay attention to the following points before using:

A. When receiving goods, please pay attention to whether there is any distortion or damage during transportation. Do not install any damaged electronic components. Contact the company in time to confirm that it can be used.

B. Please install the control cabinet on the noncombustible object directly on the combustible object or near the combustible material which may cause fire.

C. Controllers should be stored for use in the following environments:

Ambient temperature: -20 °C to 40 °C (no ice).

Ambient humidity: less than 95% relative humidity (no dew).

Environment: indoor (non-corrosive gas, flammable gas, oil mist and dust), avoid direct fire.

Height: below 1000 meters above sea level. (for areas above 1000 meters above sea level, the control cabinet should be downgraded.).

Vibrate below 0.5G.

D. Installation requires professional implementation. Please confirm that the installation object can withstand the weight of the control cabinet, do not cause the control cabinet to drop, and make sure that the installation situation is safe and reliable. To prevent children and unrelated personnel from approaching the inverter.

E. On the output side of the frequency converter, do not install phase shift capacitor, surge absorber or radio noise filter, otherwise it will cause frequency converter failure.

F. Please note that the power line is wired separately from the control line to prevent interference.

G. Make sure the power is off before connecting. Please wire the cable according to the specification. Please ground correctly according to the grounding method specified in the instructions, otherwise it will cause electrical shock and fire hazard. Frequency converter power supply please do not use independent power source, absolutely avoid using the same power source as welder and other strong interference equipment. Please do not touch the bottom plate with wet hands, please do not touch the terminal directly, the input and output lines of the inverter must not be connected to the shell, otherwise it will cause the danger of electric shock.

H. Please make sure the power supply voltage is the same as the inverter voltage, otherwise it may cause the frequency converter failure and injury to the personnel. Please make sure the power supply is connected to the R, S, T terminals. Please do not connect the power to U, V, W terminals, otherwise it will cause internal trouble of frequency converter. Please install the brake unit, brake resistor and other peripheral accessories in accordance with the instructions, otherwise it will damage the frequency converter. Please make sure that the terminal screws are locked, otherwise the converter will fail.

I. Please make sure that the cover plate on the control cabinet is installed before power transmission. Please do not disassemble it. Make sure the cable is connected correctly and the signal line is connected correctly, otherwise it may lead to the risk of damage to the control cabinet. Verify that the parameters are set correctly. Confirm that the equipment

start up, will not cause mechanical damage, it is recommended in the trial operation, the use of no-load test operation. Be sure to prepare an emergency switch when the feature setting STOP is invalid. Do not use electromagnetic contactor start and stop inverter, otherwise will affect the service life of the control cabinet.

J. When the failure reboot function is set, the device may start automatically after it stops running, please do not approach the device. Before operation, please confirm that the use range of motor and machinery is allowed, which will cause motor and mechanical failure beyond the scope of use permitted by motor and machinery. Do not change the parameters of the frequency converter in operation. Do not touch the radiator or brake resistance during operation, otherwise there is a danger of burns. Do not touch the bottom with wet hands, use wet hands to operate switches, buttons, or it may lead to electric shock, injury. In the operation of the frequency converter, do not put the motor into or cut off, otherwise it may cause inverter protection or failure.

K. Before inspection and maintenance, please make sure the power supply has been cut off and the power indicator has been extinguished, otherwise, it may cause electrical shock injury. Before checking and maintaining the inverter, in order to prevent the damage caused by static electricity, please touch the metal objects around with your hand before contacting the inverter, and eliminate the static electricity on your body. Do not test the control circuit of the frequency converter with mega meter (insulation resistance). In addition to the designated professional personnel, other personnel do not carry out inspection, maintenance, replacement of parts. Please check, maintain or replace the parts according to the method specified in the instructions, absolutely prohibit self-modification, self-modification may lead to electric shock, injury or frequency converter failure.

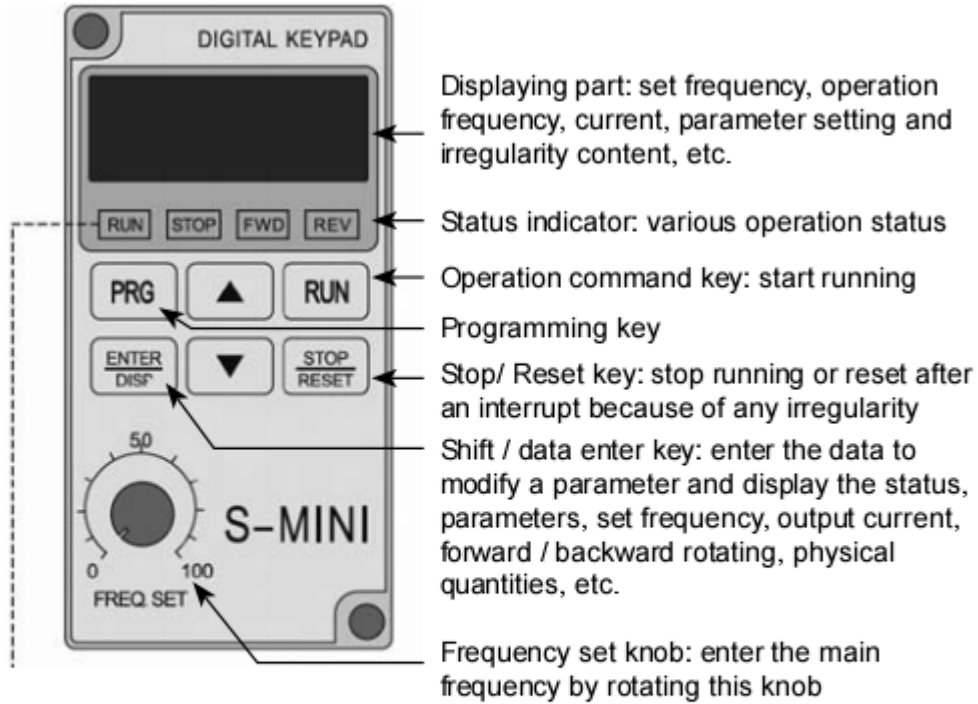
L. When the frequency converter protection starts, please press the frequency converter fault prompt, find out the reason, and troubleshoot, then reset the frequency converter, restart; Failure has not been eliminated, reset the frequency converter, restart the frequency converter, may lead to frequency converter or mechanical failure. In case of frequency converter failure, please do not repair it by yourself, please contact us and our dealer.

M. After the control cabinet is scrapped, please treat it as industrial waste. Do not incinerate.

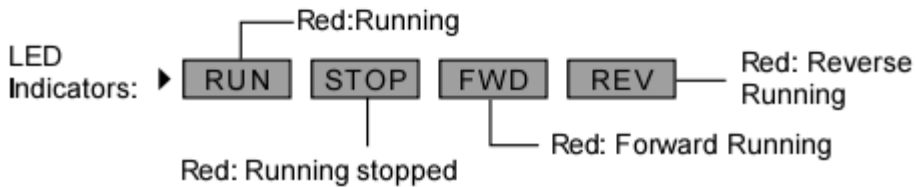
2. Introduction to the function of Digital Operation Panel

The digital operator, also known as the keyboard, is located in the center of the frequency converter and can be divided into two parts: the display area and the key control area. The display area provides parameter setting planning mode and displays different running states. Key control area for the user and frequency converter communication interface.

A. Digital operator



LED indicators:



B. Key function description

Key name	Function description
	Function selection key, used to select function menu
	Numeric change setting key for modifying function codes and parameters
	To make a digital shift key or switch display at short pressure, with a long press as the setting confirmation key.
	Operation command key used to start inverter
	Stop command key / failure reset key

C. Display project description

	Display item	Description
1	F00.0	Display frequency setting screen after power supply is turned on
2	H00.0	Actual operating frequency
3	A00.0	Motor running current
4	Frd rEu	Motor running direction

The above display interface, under the main menu under the short press ENTER key, by switching read.

3. Installation setup (learning functionality)

A. Confirm the motor power, voltage and current. This setting is used for the motor overload protection function.

P210	0.75KW	1.1KW	1.5KW	2.2KW
220V	3.5A	4.6A	6.4A	10.1A
380V	2.0A	2.8A	3.7A	5.8A

B.Setup encoder mode(P547 is 0 as factory default setting)

- 1) Set S4 (second shift switch) to the manual state.
- 2) P545 set to 1, start self learning, displays "STU0"
- 3) Press FWD / REV, the door is adjusted to the lower limit. Set S4 to automatic"position, then set to "manual"position, the limit is recorded 1000. Stored in parameter P542, inverter will display "STU1".
- 4) Press FWD / REV, the door is adjusted to the upper limit position (in this procedure, watching the change of the pulse number of encoder. The pulse should increase if all setting is correct, otherwise check encoder installation and wiring). Set S4 to "automatic", then to "manual"position, record the current encoder data as the upper limit position, stored in parameter P543, inverter will display "STU2".
- 5) Press FWD / REV, the door is adjusted to the ultimate upper limit. Set S4 to the "automatic", and then to the "manual"position, record the current encoder data as the value of the ultimate upper limit position, stored in parameter P544. Then all learning is finished, F5.45 = 0.
- 6) At this time the door is at the top and S4 is at the "manual" position . In order to prevent mistakes in setting of the P546 and make sure the up/lower limit position is recorded correctly, user should operate the door run one circle manually (from top to the bottom, and back to top).

Function description:

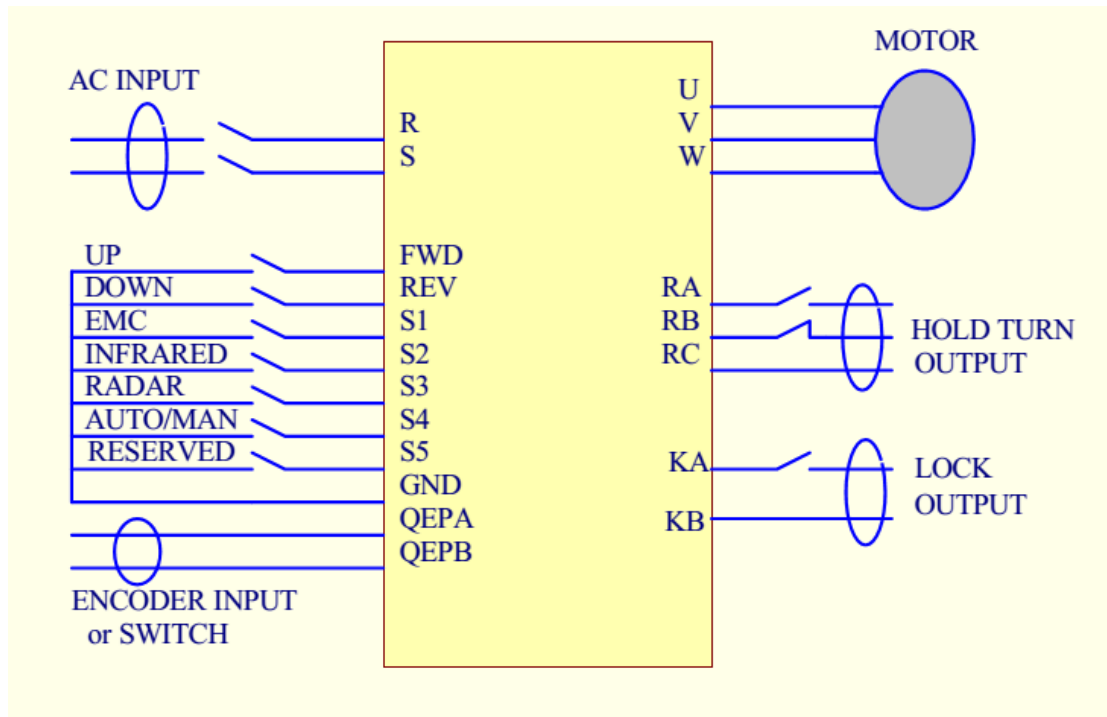
- 1) Only under automatic mode, the radar signal is valid; the radar signal is invalid under manual mode.
- 2) Optoelectronic sensor protection: the door drops to P542 + P549, the protection does not work, if the optoelectronic open function is needed, it can be connected to the radar function.

3) This control system has the function of ultimate upper limit position protection by default. When there is no ultimate limit sensor, the door should run slightly upward above the upper limit position ,then short S5 to GND to simulate the ultimate limit input.

C.Adjusting mechanical limit switch mode

- 1) Change P547 to 1 for mechanical limit switch mode.
- 2) The normally closed contact of the machine should be connected with the mechanical limit switch.
- 3) The QEPA and QEPB correspond to the lower and upper limit position of the mechanical limit switch.
- 4) Adjusting the position of the mechanical limit switch.

4. Basic wiring Diagram of fast door inverter



5. Controller terminal function description

Functional terminal	Function	
RA RB RC	RB RC NC RA RC NO	P325=1 Running action
KA KB	KA KB NO	P323=1 Running action

FWD	up	
REV	down	
S1	Emergency stop	Stop when disconnected and close normally
S2	Photoelectric protection signal	When S2 and GND closed during door going down, the door will rise.
S3	Radar	S3 and GND closed, door will rise.
S4	Manual / automatic	S4 and GND are closed in automatic mode, open means in manual mode
S5	Ultra upper limit switch input	
QEPA	Encoder input / limit switch input	under the limit switch modes: QEPA is the lower limit switch, QEPB is the upper limit switch
QEPB		
GND	Common point	

6. Terminal instructions

1	2	3	4	5	6	7	8	9	10	11	12	13
PE	L1	N	U	V	W	L14	N	PE	24V	0V	QEP A	QEP B

14	15	16	17	18	19	20	21	22	23	24	25
24V	0V	S2	0V	FWD	S1	REV	24V	0V	S3	7	8

Terminal symbol	Terminal function
PE	Power supply ground wire (safety protection)
L1 N (L2 L3)	External AC 220V power supply terminal(L1,L2,L3 for AC380V model)
U V W	Three-phase motor terminal
L14 N	AC220V brake power supply
24V 0V QEPA QEPB	Encoder or limit switch (normally closed contact)
S2	Photoelectric
FWD	Up
S1	Emergency stop
REV	Down
S3	radar

Notes for wiring:

Use a shielded cable or twisted wire for all control terminal. Using shielded cable, the shielding layer (inverter side) should be connected to the grounding terminal PE . The control cable should be apart from the main circuit and the power cable (including power line, motor line, relay, contactor cable, etc.) 20 cm or above, and parallel placement should be avoided.

7. Parameter function description

Set P900=100, inverter is set to fast door parameter mode.

1) Settings of frequently used parameters

Code	Function	Factory value	Adjustment range
P547	0: Encoder 1: Mechanical limit	0	0--1
P503	Rising high speed frequency	50Hz	0--50Hz
P504	Rising low speed frequency	5Hz	0--50Hz
P505	Descending high speed frequency	35Hz	0--50Hz
P506	Descending low speed frequency	5Hz	0--50Hz
P507	Start-up frequency	15Hz	0--50Hz
P518	Top stay time	5.0s	0--999.9s
P107	Acceleration time	0.4s	0--999.9s
P108	Deceleration time	0.4s	0--999.9s
P548	Upper limit deceleration pulse	500	0--30000
P549	Lower limit deceleration pulse	500	0--30000
P552	The number of pulses that stop in advance of the lower limit	20	0--100
P210	Inverter current limit	7.0A	Power variation

2) Rarely used parameter settings

Code	Function	Factory value	Adjustment range
P519	P507 running time at startup	0.3s	0--9999
P520	When the upper limit is on, protection is valid and, the setting of rising time	1.5s	0--9999
P542	Lower limit bit pulse number	1000	-
P543	Upper limit pulse number	Actual value	0--30000
P544	Ultra upper limit pulse number	Actual value	0--30000
P545	Setting 1 to enter Learning Mode	0	0--1
P546	0: After power on, it works normally. 1: After booting, FWD is effective. It runs to the upper limit before it can work properly.	0	0--1
P550	Memory pulse number L	0	-
P551	Memory pulse number H	0	-
P553	0: Interlocking is always valid 1: Interlocking automatic validity	0	0--1
P000	Display encoder pulse	8	-
P203	Stop frequency setting	10HZ	-

P206	Stop DC braking current	60	-
P207	Stop DC braking time	0.5s	-
P208	Automatic torque compensation	3.0	-
P102	Running instruction selection	1	-
P317	Emergency stop (S1)	17	-
P318	Photoelectric (S2)	28	-
P319	Radar (S3)	31	-
P320	Manual / automatic (S4)	32	-
P321	Over-limit switch input (S5)	27	-
P323	KA KB for interlocking function	30	-
P105	Maximum operating frequency	50	-

8. Fault treatment

Serial number	Problem	Cause and treatment
1	Parameter cannot be set	<p>1 Parameter lock, set P118 to 0, unlock, and then set other parameters</p> <p>2 Operator communication is abnormal, reinstall the operator to check if the connection is broken</p> <p>3 This parameter cannot be set while the machine is running, please stop setting</p>
2	Build according to operation (external terminal control) motor does not rotate	<p>1 Run mode setting error and check that P102 is set to 1</p> <p>2 Frequency instruction not given or frequency given less than start-up frequency</p> <p>3 Peripheral wiring error, check peripheral wiring</p> <p>4 Inverter input terminal definition error, not corresponding to the peripheral wiring, check P315-P322 parameters</p> <p>5 Start button failure, control line break, check control line and button</p> <p>6 Frequency converter in protective state, no reset, first reset and then start</p> <p>7 The motor line is not connected or equal, check the motor connection</p> <p>8 Malfunction of motor, check for malfunction of motor</p> <p>9 Frequency converter failure, check frequency converter for failure</p>
3	Motor overheating	<p>1 High ambient temperature, please improve the environment, ventilation conditions, reduce the ambient temperature</p> <p>2 The load is too large, the actual load has exceeded the rated torque of the motor, increasing the motor capacity</p> <p>3 Motor insulation drop, replace motor</p>

		<p>4 The distance between inverter and motor is long, please reduce the distance, install AC reactor</p> <p>5 The voltage between phases is not enough, and the switching action of the inverter will cause the impulse voltage between the windings of the motor. Usually, the maximum impulse voltage will be 3 times of the input voltage of the inverter. It is recommended that the special motor should be used.</p> <p>6 The motor runs at low speed and changes the deceleration ratio, which makes the motor run at higher speed.</p>
4	Mechanical vibration or abnormal sound	<p>1 Mechanical jam or poor lubrication, check mechanical load</p> <p>2 Mechanical resonance phenomenon, adjust carrier, change deceleration ratio, avoid resonance frequency, install shock absorber gasket.</p>
5	Motor can't reverse	To remove a reversal ban from.
6	Motor running in opposite direction	<p>1 Output Terminal U V W of Frequency Converter</p> <p>2 The operation control signal is reversed, if the original setting is positive, it can now be set to reverse</p>
7	Inverter start jamming other device	<p>1 Reducing carrier frequency</p> <p>2 Add filter to the input of Inverter</p> <p>3 Adding filters to the output of Inverter</p> <p>4 Correct grounding of Inverter and Motor</p> <p>5 Main circuit lines are wired separately from other signal lines</p> <p>6 The control line is shielded and the cable is covered with metal pipe</p> <p>7 Incoming side, outlet side with magnetic ring</p>

9. Fault information and troubleshooting

Fault code	Fault content	Possible cause of failure	Treatment scheme
OC1/UC1	Accelerated overcurrent	<p>1 Acceleration time is too short</p> <p>2 The setting of V / F curve is not reasonable.</p> <p>3 Motor, motor wire to ground short circuit</p> <p>4 Excessive torque lifting setting</p> <p>5 Network voltage is too low</p> <p>6 Direct start of motor in operation</p> <p>7 Frequency converter</p>	<p>1 Extended acceleration time</p> <p>2 Set the V / F curve correctly</p> <p>3 Check the insulation of motor and motor line</p> <p>4 Reducing torque lifting setting</p> <p>5 Check the power grid</p> <p>6 Check load</p> <p>7 Set track start</p> <p>8 Increase the capacity of</p>

		configuration is not up to standard 8 Frequency converter fault	frequency converter 9 To send for repair
OC2/UC2	Deceleration overcurrent	1 Deceleration time is too short 2 Improper configuration of Inverter capacity 3 Is there interference.	1 Extended deceleration time 2 Increase the capacity of frequency converter 3 Solve interference source
OC3/UC3	Running overcurrent	1 Poor Insulation of Motor and its output Line 2 Load fluctuating or slightly stuck 3 There are fluctuations in the power grid, and the voltage is low. 4 Improper configuration of Inverter capacity 5 Whether there is a high power motor starting in the system, the voltage of the power system will drop 6 Is there an interference source, a jamming inverter.	1 Check the insulation of motor and motor line 2 Check load for transient or stuck, poor lubrication, etc. 3 Check grid voltage 4 Amplifying frequency converter capacity 5 Solve transformer capacity 6 Solve interference source
OC0/UC0	Frequency converter overcurrent when shutdown	Frequency converter fault	Contact repair
OU0	Frequency converter overvoltage when shutdown	1 Improper configuration of Inverter capacity 2 Is there interference.	1 Check grid voltage 2 Contact repair
OU1	Accelerated overvoltage	1 Power source anomaly 2 Improper setting of peripheral lines (E. G. opening and stopping with empty space) 3 Frequency converter fault	1 Check grid voltage 2 Do not use the power supply empty control inverter start stop 3 Contact repair
OU3	Running overvoltage	1 Power source anomaly 2 Energy feedback load 3 Improper configuration of braking resistance	1 Check power supply voltage 2 Mounting brake unit, brake resistance 3 Reconfirm resistance configuration



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