



INVT GD100 BASIC SETUP MANUAL



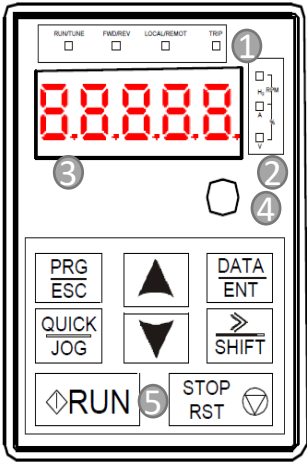
PRODUCT SPECIFICATIONS

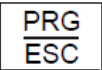
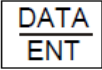


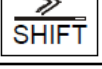
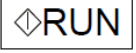



Model	SS2	S2	-2	-4	
AC input voltage (V)	220(-15%) ~240(+10%) (1PH)		220(-15%) ~240 (+10%) (3PH)	380(-15%) ~440 (=10%) (3PH)	380(-15%) ~440 (=10%) (3PH)
Max. DC input voltage (V)	440	440	440	800	900
Start-up voltage (V)	200	200	200	300	300
Lowest working voltage (V)	150	150	150	250	250
Recommended Dc input voltage range (V)	200 - 400	200 - 400	200 - 400	300 - 750	300 - 850
Recommended MPP voltage (V)	330	330	330	550	550
Rated output voltage (V)	220 (1PH)	220 (3PH)	220 (3PH)	380 (3PH)	380 (3PH)
Output frequency range (Hz)	0-400				
MPPT	99%				
Installation method	wall mounting/rail mounting/flange installation				
Environment parameters	10°C ~+50°C. If above 40°C, derate 2% for every additional 1°C				
Altitude	below 1000M. If above 1000M, derate 1% every additional 100M				
Cooling manner	fan cooling				
Protection level	IP20 ; IP54 (cabinet)				

Series	Model	Rated output power		Rated input current (A)	Rated output current (A)
		KW	HP		
1 PH 220 input	GD 100-0R4G-SS2-PV	0.4	0.5	6.5	4.2
	GD 100-0R7G-SS2-PV	0.75	1	9.3	7.2
1 PH 220V output	GD 100-1R5G-SS2-PV	1.5	2	15.7	10.2
	GD 100-2R2G-SS2-PV	2.2	3	24	14
1 PH 220V	GD 100-0R4G-S2-PV	0.4	0.5	6.5	2.5
	GD 100-0R7G-S2-PV	0.75	1	9.3	4.2
	GD 100-1R5G-S2-PV	1.5	2	15.7	7.5
	GD 100-2R2G-S2-PV	2.2	3	24	10
3 PH 220V	GD 100-1R5G-2-PV	1.5	2	7.7	7.5
	GD 100-2R2G-2-PV	2.2	3	12	10
	GD 100-004G-2-PV	4	5.5	17	16
	GD 100-5R5G-2-PV	5.5	7.5	25	20
	GD 100-7R5G-2-PV	7.5	10	33	30
3 PH 380V	GD 100-0R7G-4-PV	0.75	1	3.4	2.5
	GD 100-1R5G-4-PV	1.5	2	5	4.2
	GD 100-2R2G-4-PV	2.2	3	5.8	5.5
	GD 100-004G-4-PV	4	5.5	13.5	9.5
	GD 100-5R5G-4-PV	5.5	7.5	19.5	14
	GD 100-7R5G-4-PV	7.5	10	25	18.5
	GD 100-011G-4-PV	11	15	32	25
	GD 100-015G-4-PV	15	20	40	32
	GD 100-018G-4-PV	18.5	25	47	38
	GD 100-022G-4-PV	22	30	56	45
	GD 100-030G-4-PV	30	41	70	60
	GD 100-037G-4-PV	37	50	80	75
	GD 100-045G-4-PV	45	61	90	92
	GD 100-055G-4-PV	55	73	105	115
	GD 100-075G-4-PV	75	100	139	150
	GD 100-090G-4-PV	90	120	168	180
	GD 100-110G-4-PV	110	147	201	215
	GD 100-132G-4-PV	132	177	265	260
	GD 100-160G-4-PV	160	214	310	305
	GD 100-185G-4-PV	185	248	345	340
	GD 100-200G-4-PV	200	268	385	380
	GD 100-220G-4-PV	220	299	430	425
	GD 100-250G-4-PV	250	340	485	480
	GD 100-280G-4-PV	280	381	545	530
	GD 100-315G-4-PV	315	428	610	600
	GD 100-355G-4-PV	355	482	625	650
	GD 100-400G-4-PV	400	544	715	720
	GD 100-450G-4-PV	450	612	840	820
	GD 100-500G-4-PV	500	680	890	860

KEYPAD INTRODUCTION



No.	Name	Description		
1	Status indicator	RUN/TUNE	Running status indicator. LED off means that inverter is in the stopping state; LED blinking means the inverter is in the parameter auto tuning sate; LED on means the inverter is in the running state.	
		FWD/REV	FED/REV indicator. LED off means the inverter is in the forward rotation state; LED on means the inverter in in the reverse rotation state.	
		LOCAL/REMOTE	LED for keypad operation, terminals operation and remote communication control; LED off means that the inverter is in the keypad operation state; LED blinking means the inverter is in the remote communication control state.	
		TRIP	Fault indicator. LED on when the inverter is in the fault state; LED off in normal state; LED blinking means the inverter is in the overload pre-alarm state.	
2	Unit Indicator	Indicating the unit of the displayed digits	Hz – Unit of frequency A – Unit of current V – Unit of voltage RPM – Unit of rotating speed % – Percentage	
3	Code displaying zone	displaying zone	5-digit LED display , displaying various monitoring data and alarm code such as set frequency and output frequency	
4	Analog potentiometer	Corresponds to AI1.		
5	Buttons		Programming key	Enter or escape from the first level menu and remove the parameter quickly
			Entry key	Enter the menu step-by-step confirm parameters
			Up key	Increase data or function code progressively
			Down key	Decrease data or function code progressively
			Right-shift key	Move right to select the displaying parameter circularly in stopping and running mode. Select the parameter modifying digit during the parameter modification.
			Run key	This key is used to run the inverter in key operation mode.
			Stop /Reset key	This key is used to stop the inverter when it is in running state, and is limited by function code PO07.04 This key is used to reset all control modes in

BASIC SETUP SHEET FOR GD100



NB: Pump need to be off to set box

GROUP 0	BASIC FUNTION GROUP		
00.01	1	Terminal Run Command	
00.03	50	Maximum Running Frequency	
00.04	50	Upper Freq Limit	
00.05	35	Minimum Running Frequency	
00.11	1.5	Acceleration time	1.5 Borehole 20 Centrifugal
00.12	20	Deceleration time	15 Borehole 20 Centrifugal
00.13	0/1	Running direction	
GROUP 1	START UP AND STOP CONTROL		
1.08	0	Stop mode	Controlled stop (0) Coast to stop (1)
01.18	1	Operation protection	
01.21	1	Restart after power of	
GROUP 2	MOTOR 1 PARAMMETER		
02.00		Motor type	0=3PH Motor, 1=1PH Motor
02.01		Rated of Power (kW)	TO BE OBTAINED FROM MOTOR
02.02	50	Rated of Freq (Hz)	
02.03		Rated of Speed (RPM)	TO BE OBTAINED FROM MOTOR
02.04		Rated of Voltage (V)	TO BE OBTAINED FROM MOTOR
02.05		Rated Current (A)	TO BE OBTAINED FROM MOTOR
GROUP 5	Input terminals		
05.01	1	S1 Terminals function selection	Fw Run
05.02	44	S2 Terminals function selection	44 = Low Level Probes 0 = No Function
05.03	0	S3 Terminals function selection	
05.04	0	S4 Terminals function selection	
05.05	0	S5 Terminals function selection	
05.10	2	HDI Terminals Function	S3 Invert polarity
GROUP 8	ENHANCED FUNCTIONS		
08.28	8	Nr. Fault Reset Times	
08.29	1000	Fault reset seconds	
GROUP 15	GROUP SPECIAL FUNCTION PARAMETERS FOR PV INVERTER		
15.00	1	PV inverter selection	
15.01	1	Vmpp Voltage reference	
15.05	70%	Lower freq limit %	See setting below
15.16	5	Delay off tank low	
15.17	600	Tank low wat up time	
15.23	30	Delay time weak light	
15.24	1200	Wate up wark light	

Setting

15.05 = P00.05 / P00.03*100

All setting in yellow to be set

Dry Run Settings

GROUP 15	GROUP SPECIAL FUNCTION PARAMETERS FOR PV INVERTER		
15.17	50	Current detection of underload operation	See setting below (Default 50)

Setting = Drive current / motor current at 30Hz x 100

Reset Drive

Factory Default Reset:

GROUP 0	BASIC FUNTION GROUP		
00.18	1	Factory Default Drive	0 = No operation, 1 = Restore the default value

Note:

1. The function code will restore to 0 after finishing the operation of the selected function code.
2. Restoring to the default value will cancel the user password, please use this function with caution.
3. Power off vsd for 1 min, then power back on

Master Reset:

GROUP 29			
29.00	40721	Password	
29.02	1	Change value up then date enter	
29.02	0	Change value back to original value then data enter	

Note:

1. Power off vsd for 1 min, then power back on

FAULT DIAGNOSIS AND SOLUTIONS



Do as follows after inverter encounter a fault

1. First, check whether there is something wrong with the keypad. If yes, contact the local INVT office
2. If there is nothing wrong, check function codes of P07 group, view the corresponding recorded fault parameters, and identify the actual state when the current fault occurred based on all the parameters
3. See the following table, check for exceptions based on the specific solutions.
4. Rectify the fault or seek help
5. After ensuring that the fault has been rectified, perform fault reset and start the inverter

Fault code	Fault type	Possible cause	Solution
OUt1	VFD unit U-phase protection	<ul style="list-style-type: none">▪ Acceleration is too fast.▪ IGBT module is damaged.▪ Misacts are caused by interference.▪ Drive wires are poorly connected.▪ To-ground short circuit occurs.	<ul style="list-style-type: none">▪ Increase the ACC time.▪ Replace the power unit.▪ Check drive wires.▪ Check whether there is strong interference surrounding the peripheral device.
OUt2	VFD unit V-phase protection		
OUt3	VFD unit W-phase protection		
OV1	Overvoltage during acceleration	<ul style="list-style-type: none">▪ The input voltage is abnormal.▪ There is large energy feedback.▪ No braking components.▪ Dynamic brake is disabled.	<ul style="list-style-type: none">▪ Check the input power.▪ Check whether the loaded DEC time is too short or the VFD starts when the motor is rotating.▪ Install the braking components.▪ Check the setting of related function codes.
OV2	Overvoltage during deceleration		
OV3	Overvoltage during constant speed running		
OC1	Overcurrent during acceleration	<ul style="list-style-type: none">▪ Acceleration or deceleration is too fast.▪ The voltage of the grid is too low.▪ The power of the VFD is too low.▪ The load transients or is abnormal.▪ There is to-ground short-circuit or output phase loss.▪ There is strong external interference▪ The Overvoltage stall protection is disabled	<ul style="list-style-type: none">▪ Increase the ACC time.▪ Check the input power.▪ Select the VFD with larger power.▪ Check whether there is short circuit (to-ground or inter-wire) in the load, or the rotation is not smooth.▪ Check the output wiring.▪ Check whether there is strong interference.▪ Check the setting of related function codes.
OC2	Overcurrent during deceleration		
OC3	Overcurrent during constant speed running		
UV	Bus undervoltage	<ul style="list-style-type: none">▪ The voltage of the grid is too low.▪ Overvoltage stall protection is disabled.	<ul style="list-style-type: none">▪ Check the grid input power.▪ Check the setting of related function codes.
OL1	Motor overload	<ul style="list-style-type: none">▪ The grid voltage is too low.▪ The rated current of the motor is set incorrectly.▪ Motor stall or load jumps violently.	<ul style="list-style-type: none">▪ Check the grid voltage.▪ Reset the rated current of the motor.▪ Check the load and adjust torque boost.
OL2	VFD overload	<ul style="list-style-type: none">▪ Acceleration is too fast.▪ The rotating motor is reset.▪ The grid voltage is too low.▪ The load is too heavy.▪ The motor power is too small.	<ul style="list-style-type: none">▪ Increase the ACC time.▪ Avoid the restarting after stop.▪ Check the grid voltage.▪ Select a VFD with larger power.▪ Select a proper motor.

Fault code	Fault type	Possible cause	Solution
SPI	Phase loss on the input side	<ul style="list-style-type: none"> Phase loss or violent fluctuation occurred on input R, S, T. 	<ul style="list-style-type: none"> Check the input power. Check the installation wiring.
SPO	Phase loss on output side	<ul style="list-style-type: none"> Phase loss output occurs to U, V, W (or the three phases of the load are seriously asymmetrical) 	<ul style="list-style-type: none"> Check the output wiring. Check the motor and cable.
OH1	Rectifier module overheating	<ul style="list-style-type: none"> Air duct jam or fan damage occurs. Ambient temperature is too high. The time of overload running is too long. 	<ul style="list-style-type: none"> Dredge the vent duct or replace the fan. Lower the ambient temperature.
OH2	VFD module overheat		
EF	External fault	<ul style="list-style-type: none"> SI external fault input terminals action. 	<ul style="list-style-type: none"> Check the external device input.
CE	RS485 communication fault	<ul style="list-style-type: none"> The baud rate setting is incorrect. A fault occurs to the communication wiring. The communication address is incorrect. Communication suffers from strong interference. 	<ul style="list-style-type: none"> Set a proper baud rate. Check the communication interface wiring. Set a proper communication address. Replace or change the wiring to enhance the anti-interference capability.
ItE	Current detection fault	<ul style="list-style-type: none"> The control board connector is in poor contact. Hall device is damaged. An exception occurs on the magnifying circuit. 	<ul style="list-style-type: none"> Check the connector and re-plug. Replace the Hall device. Change the main control board.
tE	Motor autotuning fault	<ul style="list-style-type: none"> The motor capacity does not match the VFD capacity. Motor parameters are not set correctly. The difference between the parameters obtained from autotuning and the standard parameters is great. Autotuning timed out. 	<ul style="list-style-type: none"> Change the VFD mode. Set the motor type and nameplate parameters correctly. Empty the motor load. Check the motor wiring and parameter settings. Check whether the upper limit frequency is higher than 2/3 of the rated frequency.
EEP	EEPROM operation fault	<ul style="list-style-type: none"> Error in reading or writing control parameters. EEPROM is damaged. 	<ul style="list-style-type: none"> Press STOP/RST for reset. Change the main control board.
PIDE	PID feedback disconnection	<ul style="list-style-type: none"> PID feedback is disconnected. The PID feedback source disappears. 	<ul style="list-style-type: none"> Check the PID feedback signal wires. Check the PID feedback source.
END	Running time reached	<ul style="list-style-type: none"> The actual running time of the VFD is longer than the internal set running Time 	<ul style="list-style-type: none"> Ask the supplier to adjust the preset running time.
OL3	Electronic overload	<ul style="list-style-type: none"> The VFD reports overload pre-alarm according to the setting. 	<ul style="list-style-type: none"> Check the load and overload pre-alarm threshold.
ETH1	To-ground short-circuit fault 1	<ul style="list-style-type: none"> VFD output is short connected to the ground. There is a fault in the current detection circuit. 	<ul style="list-style-type: none"> Check whether the motor wiring is proper. Replace the Hall device. Change the main control board.
ETH2	To-ground short-circuit fault 2		
tSF	Hydraulic probe damage	<ul style="list-style-type: none"> Hydraulic probe damage. 	<ul style="list-style-type: none"> Replace the hydraulic probe.

Fault code	Fault type	Possible cause	Solution
dEu	Speed deviation fault	<ul style="list-style-type: none"> The load is too heavy or stalled. 	<ul style="list-style-type: none"> Check the load and increase the detection time if the load is normal. Check whether control parameters are set correctly.
STo	Mal-adjustment fault	<ul style="list-style-type: none"> SM control parameters are set incorrectly. Autotuned parameters are not accurate. The VFD is not connected to the motor. 	<ul style="list-style-type: none"> Check the load and ensure the load is normal. Check whether control parameters are set correctly. Increase the maladjustment detection time.
LL	Electronic underload	<ul style="list-style-type: none"> The VFD reports underload pre-alarm according to the setting. 	<ul style="list-style-type: none"> Check the load and underload pre-alarm threshold.
PINV	PV reverse connection fault	<ul style="list-style-type: none"> PV wiring is incorrect. 	<ul style="list-style-type: none"> Change the wiring direction of positive and negative terminals, and perform the wiring again.
PVOC	PV overcurrent	<ul style="list-style-type: none"> ACC or DEC is too fast. The power of the VFD is too low. The load transients or is abnormal. There is to-ground short circuit 	<ul style="list-style-type: none"> Increase the ACC/DCC time. Select the VFD with larger power. Check if the load is short circuited (to-ground short circuit of line-to-line short circuit) or the rotation is not smooth
PVOV	PV overvoltage	<ul style="list-style-type: none"> The solar cell panel input voltage is too high. Model -4 is set as another model. 	<ul style="list-style-type: none"> Reduce the number of solar cell panels in series connection. Check and reset the model.
PVLV	PV undervoltage	<ul style="list-style-type: none"> The power of the solar cell panels in series connection is too low or it is cloudy and rainy weather. The starting current of the motor is too high. 	<ul style="list-style-type: none"> Increase the number of solar cell panels or perform the test in the normal sunlight. Replace the motor.
E-422	Fault on 422 communication with the boost module	<ul style="list-style-type: none"> Communication cables are in poor contact. 	<ul style="list-style-type: none"> Check four communication cables of 422 communication, ensuring that they are connected reliably.
OV	Bus overvoltage detected on the boost side	<ul style="list-style-type: none"> The sunlight changes sharply. 	<ul style="list-style-type: none"> Adjust the boost PI parameters, and enlarge the values of P19.07 and P19.08.
A-LS	Weak-light pre-alarm	<ul style="list-style-type: none"> The sunlight is weak or the solar panel configuration is insufficient. 	<ul style="list-style-type: none"> The device will automatically run when the light is sufficient. Check whether the solar panel configuration is sufficient.
A-LL	Underload pre-alarm	<ul style="list-style-type: none"> The pumping pool has no water. 	<ul style="list-style-type: none"> Check the pumping pool.
A-tF	Full-water pre-alarm	<ul style="list-style-type: none"> The pumping pool is full. 	<ul style="list-style-type: none"> If you have configured the full-water pre-alarm function, the device automatically stops when the pre-alarm elapsed. Otherwise, check whether terminals are wired correctly.
A-tL	Empty-water pre-alarm	<ul style="list-style-type: none"> The pumping pool has no water. 	<ul style="list-style-type: none"> If you have configured the empty-water pre-alarm function, the device automatically stops when the pre-alarm elapsed. Otherwise, check whether terminals are wired correctly.