OVERVIEW

EBH 380V INVERTER



The groundbreaking EBH Series Inverter. Engineered to optimize the performance of solar powered water pumping systems, the EBH Series combines state-of-the-art technology with innovative Maximum Power Point Tracking (MPPT) functionality. This cutting-edge inverter is specifically designed to enhance the efficiency, reliability, and overall effectiveness of solar powered pumps. Whether you are in the agriculture sector, rural communities, or remote locations, the EBH Series is the ultimate solution for harnessing solar energy to drive water pumping systems.

Product Features

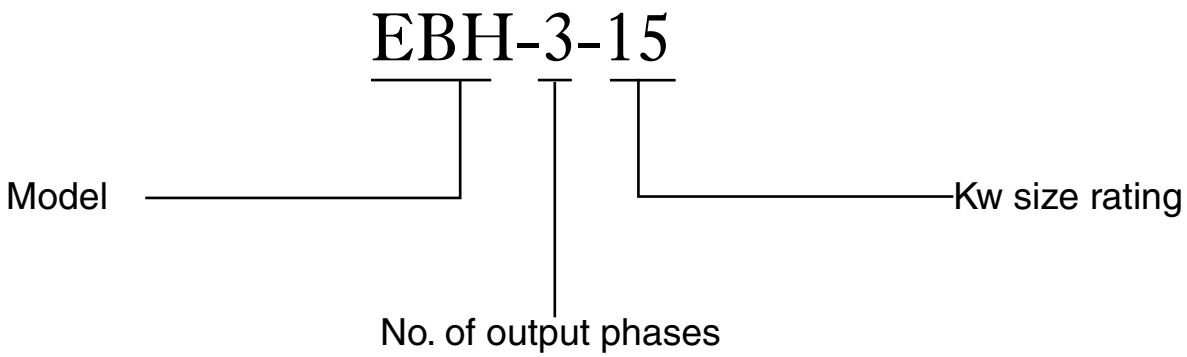
- **Sleep Function**
- **Low-Frequency Protection**
- **Dry Run Protection**
- **Over-Current Protection**
- **Minimum Power Protection**

Working Conditions

- **Max Ambient Temperature: 50°C**

SELECTION GUIDE

Description of Name Plate



Output 3AC 380V

Model No.	Rated Output Power	Rated Output Current	Motor Power (kW)
Output 3AC 380V			
EBH 3-4	4	10	4
EBH 3-5.5	5.5	13	5.5
EBH 3-7.5	7.5	17	7.5
EBH 3-11	11	25	11
EBH 3-15	15	32	15
EBH 3-18.5	18.5	38	18.5
EBH 3-22	22	45	22

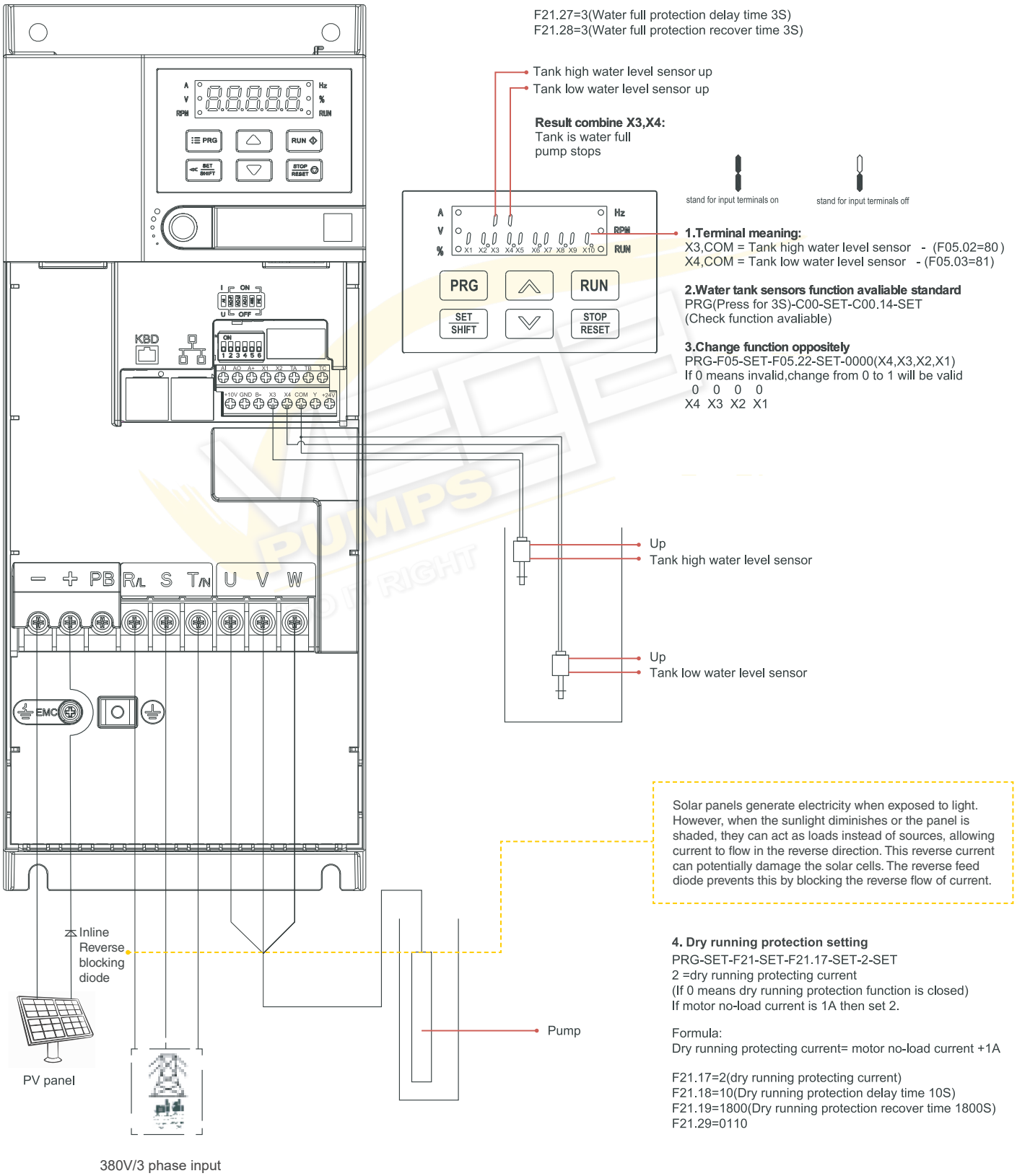
Output 3AC 380V

Maximum input DC voltage	780 VOC
Recommended DC input voltage range	540-700 VMP
Number of Input ports	1
Rated output voltage	3AC 380V
Output frequency range	0~600Hz
Cooling method	Air cooling
Altitude	This controller should be installed with altitude of lower than 1000m. It will be degraded when the altitude is higher than 1000m. For details, rated output current should be degraded 1% for every 100m
Ingress Protection	IP20

WIRING

Pump Wiring (Tank sensor up)

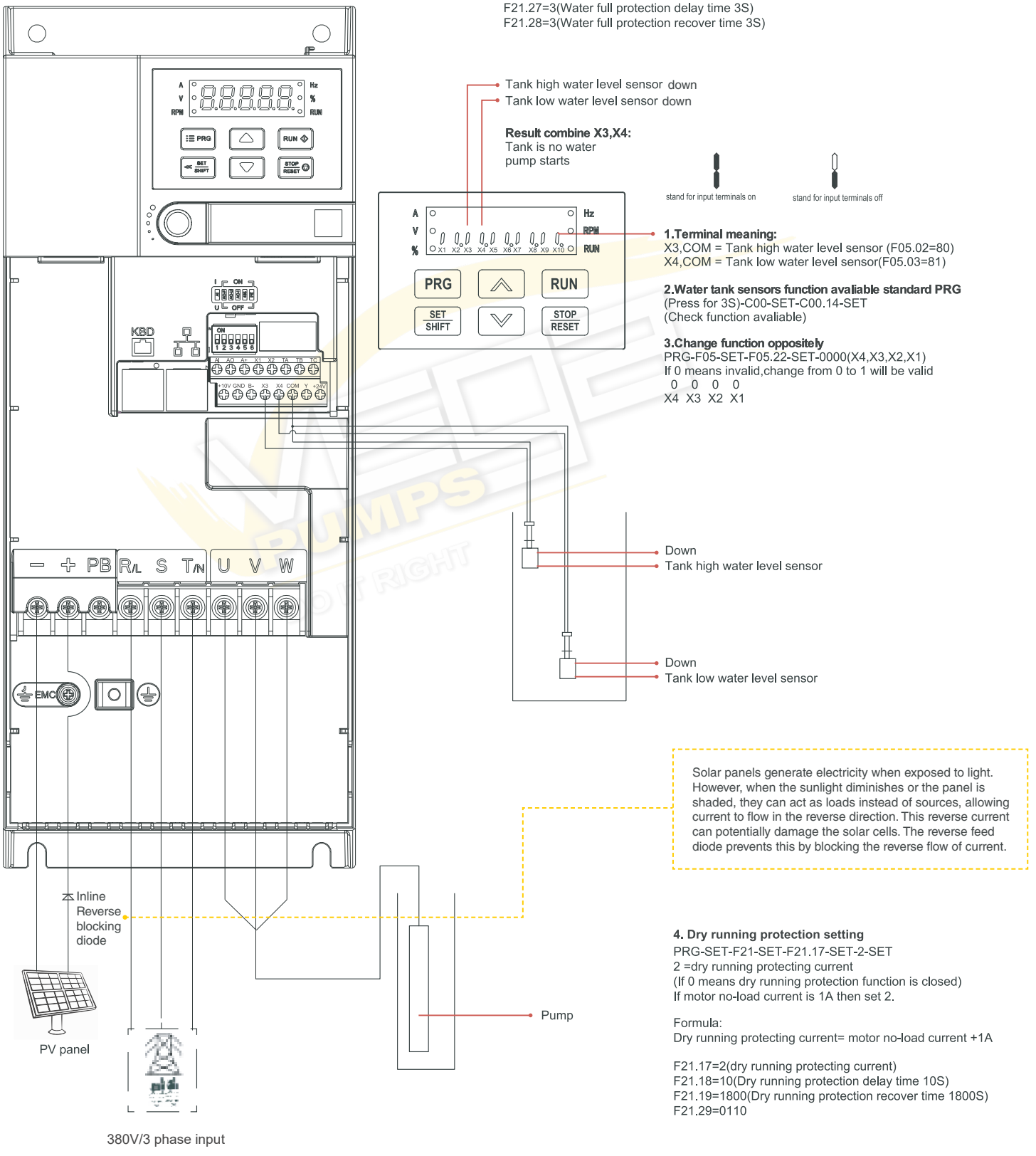
(Especially set dry running protection without well sensor.
For submersible centrifugal pump type)



Pump Wiring (Tank sensor down)

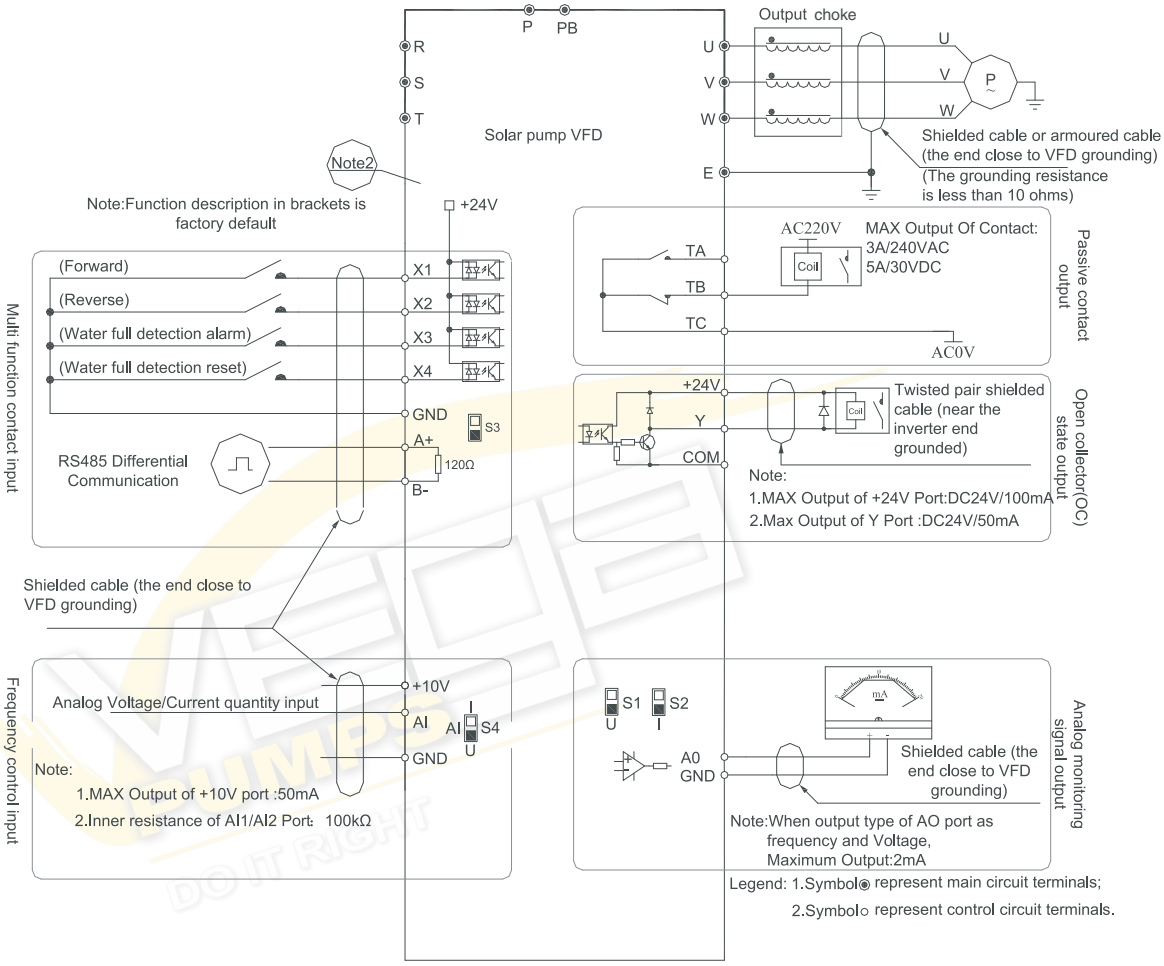
(Especially set dry running protection without well sensor.

For submersible centrifugal pump type)



Solar Pump Controller Wiring

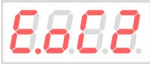
• Standard Connection Diagram



Terminal Symbol	Function Description
R、S、T	Terminals of 3 Phase AC Input
(+)、(-)	Terminals of DC Input
U、V、W	Terminals of 3 Phase AC Output
⏚/PE	Terminals of Ground
X3 ; X4	Input Terminals of Water-Level Detection Signal for the Reservoir
COM	Input Common Terminal of Water-Level Detection Signal

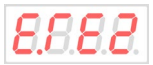
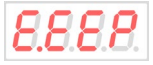
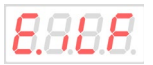
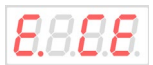
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ERROR CODES AND SOLUTIONS

Keypad Display	Fault code	Fault type	Possible Reason	Troubleshooting
	**E.LU2**	Under Voltage input	• Power voltage insufficient • DC main contactor fails to close	• Verify input power to resolve issue • Contact technical support
	**E.oU1**	Over voltage during acceleration	• Power voltage exceeding fluctuation limit • Initiation of rotating motor	• Inspect power grid • Restart when the motor has come to a complete stop, alternatively, configure F1.00 for either option 1 or 2.
	**E.oU2**	Over voltage during deceleration	• Deceleration time insufficiently short • The applied load exceeds recommended capacity • Power voltage exceeding fluctuation limit	• Prolong the deceleration time • Reduce the load, or select a bigger capacitor drive, or connect braking unit • Verify input power
	**E.oU3**	Over voltage during constant speed	• The input voltage exceeds acceptable range • During deceleration, an external force propels the motor	• Adjust the voltage to an acceptable range • Eliminate the external force or install a braking resistor
	**E.oU4**	Over voltage when motor is at a standstill	• Voltage fluctuation is beyond acceptable limit	• Verify input voltage
	**E.oC1**	Over current during acceleration	• Acceleration time is insufficiently short • Initiation of rotating motor • V/F setting is incorrect or torque boost setting is too high • Solar drive capacitor is insufficient	• Prolong the acceleration time • Restart the motor when it has come to a complete stop, alternatively, configure F1.00 for either option 1 or 2 • Reset V/F curve or torque boost setting
	**E.oC2**	Over current during deceleration	• The output circuit is either grounded or experiencing a short circuit • Motor auto-tuning has not been executed • Acceleration time is insufficiently short • Manual torque boost or V/F curve is not suitable • Voltage is below acceptable threshold • The startup operation is performed on the rotating motor • An abrupt load is introduced during the acceleration phase • Insufficient power capacity of the AC drive model	• Resolve external faults • Perform motor auto tuning • Increase the duration of the acceleration phase • Adjust the manual torque boost or V/F curve • Align the voltage to appropriate range • Choose either the rotational speed tracking restart or initiate motor startup after it has come to a complete stop. • Eliminate the additional load • Opt for an AC drive with a higher power rating

Keypad Display	Fault code	Fault type	Possible Reason	Troubleshooting
	E.oC3	Excessive current at consistent velocity	• The output circuit is either grounded or experiencing a short circuit • Motor auto-tuning has not been executed • Voltage is below acceptable threshold • An abrupt increase in load during operation • Insufficient power capacity of the AC drive model	• Resolve external faults • Perform motor auto tuning • Align the voltage to appropriate range • Eliminate the additional load • Opt for an AC drive with a higher power rating
	E.oL1	Motor overload	• The magnitude of boost torque exceeds VF control limits • The acceleration and deceleration time is insufficient • The motor parameters are misconfigured • Initiating a counter-rotating motor restart • The grid voltage is excessively low • The load is excessivly high or the motor is blocking the load • The selected AC drive is operating under excessive load	• Reduce boost torque • Increase the acceleration and deceleration time • Reset motor paramaters • Lower the current limit and implement speed tracking • Check grid voltage • Assess load condition • Upgrade to a higher power AC drive
	E.oL2	AC drive overload	• The magnitude of boost torque exceeds VF control limits • The acceleration and deceleration time is insufficient • The motor parameters are misconfigured • Initiating a counter-rotating motor restart • The grid voltage is excessively low • The load is excessivly high or the motor is blocking the load • The selected AC drive is operating under excessive load	• Reduce boost torque • Increase the acceleration and deceleration time • Reset motor paramaters • Lower the current limit and implement speed tracking • Check grid voltage • Assess load condition • Upgrade to a higher power AC drive
	E.SC	System anomaly	• The deceleration time is insufficient • Short circuit detected in solar drive output or phase, including a ground fault • Module malfunction • EMC interference	• Prolong the acceleration time • Perform inspection of peripheral equipment • Request assistance from the manufacturer • Inspect the wiring arrangement and cable grounding

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Keypad Display	Fault code	Fault type	Possible Reason	Troubleshooting
	**E.oH1**	VFD over-heat	• Temperature exceeds the acceptable range • Obstruction in air channel • Fan connection components are not securely fastened • Fan is damaged • Faulty temperature detection circuit	• Ensure the environment meets the required specifications • Clear the air channel • Inspect and reestablish the wire connection • Replace the faulty fan with an identical new one • Request assistance from the manufacturer
	**E.TE1**	Motor static detection fault	• Extended detection period • Commencing static detection while the motor is running • There is a substantial difference in capacitance between the motor and VFD • Error in motor parameter configuration	• Inspect the motor wiring connection • Perform detection once the motor has completely ceased operation • Replace the VFD model • Reconfigure parameters in accordance with the specifications on the nameplate
	**E.TE2**	Motor rotation detection fault	• Detection during motor operation • Detection while motor is under load • Prolonged detection duration • There is a substantial difference in capacitance between the motor and VFD • Error in motor parameter configuration	• Perform detection once the motor has completely ceased operation • Perform a new detection without any load • Inspect the motor wiring connection • Replace the VFD model • Reconfigure parameters in accordance with the specifications on the nameplate
	**E.EEP**	Memory fault	• Electromagnetic interference during the memory phase • EEPROM failure	• Restore load and save functionality • Request assistance from the manufacturer
	**E.iLF**	Input phase loss	• Open phase in 3-phase input power	• Inspect the 3-phase power supply and its phases • Verify the integrity of the 3-phase power supply wiring
	**E.oLF**	output phase loss	• Open phase in 3-phase output power	• Verify the voltage and current levels in the 3-phase output • Inspect the electrical wiring
	**E.Gnd**	output earth terminal short circuit	• Output grounding	• Verify the integrity of both wiring and insulation
	**E.HAL**	Current detection fault	• Circuit malfunction detection • Phase asymmetry	• Request assistance from the manufacturer • Verify the condition of the motor and wiring
	**Rs485 comuni-cation fault**	• Inappropriate baud rate configuration • Faulty wire connections	• RS485 communication fault	• Configure the appropriate baud rate setting • Verify the integrity of the communication wire • Verify the proper communication format