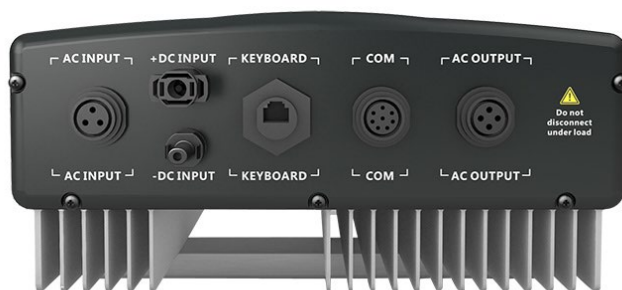
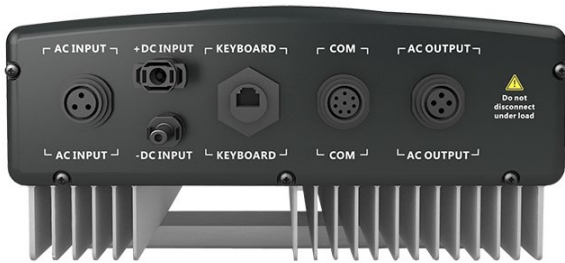




# INVT BPD BASIC SETUP MANUAL



# PRODUCT PACKAGING INCLUDE



AC OUTPUT PLUG

AC INPUT PLUG

MC4 CONNECTORS

ANCHORING BOTS



LED KEYPAD DISPLAY

LED DISPLAY CABLE

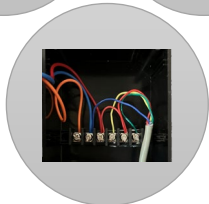
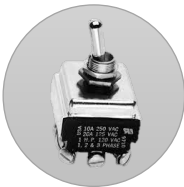
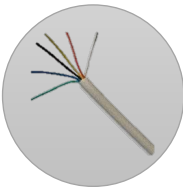
COMMUNICATION PORT

SWITCH BOX



## SWITCH BOX INCLUDE

LED keypad display, LED display cable, communication port, communication port cable, and Hand, off, Auto switch,

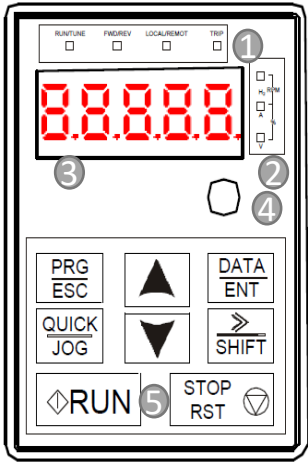


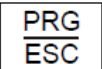
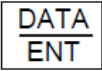
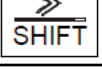
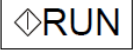
Terminal connection for external switching



| Model                                    | BPD0K7<br>TN(AC)                                                                                       | BPD1K5<br>TN(AC)        | BPD2K2<br>TN(AC)     | BPD004<br>TNAC       | BPD2K2<br>TRAC(S)                           | BPD004<br>TRAC(S) | BPD5K5<br>TRAC(S) |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|----------------------|----------------------|---------------------------------------------|-------------------|-------------------|
| DC input                                 |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Maximum DC voltage (V)                   | 450                                                                                                    |                         |                      |                      | 800                                         |                   |                   |
| Starting voltage (V)                     | 80                                                                                                     | 100                     |                      |                      | 220                                         |                   |                   |
| Minimum working voltage (V)              | 60                                                                                                     | 80                      |                      |                      | 180                                         |                   |                   |
| Recommended MPPT voltage (V)             | 80–400                                                                                                 | 100–400                 |                      |                      | 220–750                                     |                   |                   |
| Number of input channels                 | 1/MC4 connector                                                                                        | 2/MC4 connector         |                      |                      | 1/MC4 connector                             | 2/MC4 connector   |                   |
| Maximum input DC current (A)             | 9                                                                                                      | 12                      | 12                   | 20                   | 12                                          | 20                | 20                |
| Bypass AC input (supporting mains input) |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Input voltage (V AC)                     | 220/230/240(1PH) (-15%–+10%)                                                                           |                         |                      |                      | 380 (3PH) (-15%–+10%)                       |                   |                   |
| Input frequency (Hz)                     | 47–63                                                                                                  |                         |                      |                      |                                             |                   |                   |
| AC input terminal                        | L, N, PE                                                                                               |                         |                      |                      | R, S, T, PE                                 |                   |                   |
| AC output                                |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Rated power (W)                          | 750                                                                                                    | 1500                    | 2200                 | 4000                 | 2200                                        | 4000              | 5500              |
| Rated current (A)                        | 5.1 (1PH)<br>4.2 (3PH)                                                                                 | 10.2 (1PH)<br>7.5 (3PH) | 14 (1PH)<br>10 (3PH) | 25 (1PH)<br>16 (3PH) | 5.5                                         | 9.5               | 14                |
| Output voltage (V AC)                    | 0–Input voltage                                                                                        |                         |                      |                      |                                             |                   |                   |
| Output wiring mode                       | 1P2L: 1PH motor 1PH control 2P3L: 1PH motor 2PH control<br>3P3L: Connected to a 3PH asynchronous motor |                         |                      |                      | 3P3L: Connected to a 3PH asynchronous motor |                   |                   |
| Output frequency (Hz)                    | 1–400                                                                                                  |                         |                      |                      |                                             |                   |                   |
| Control performance                      |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Control mode                             | V/F                                                                                                    |                         |                      |                      |                                             |                   |                   |
| Motor type                               | Asynchronous motor (1PH/3PH)                                                                           |                         |                      |                      | Asynchronous motor (3PH)                    |                   |                   |
| Other parameters                         |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Dimensions (WxDxH) (mm)                  | 255×300×137                                                                                            | 280×300×137             |                      | 410×360×154.5        | 331×360×154.5                               | 454×360×154.5     |                   |
| Net weight (kg)                          | 6.4                                                                                                    | 7                       |                      | 13.15                | 10.1                                        | 14.1              |                   |
| Package weight (kg)                      | 8.5                                                                                                    | 9                       |                      | 16                   | 12                                          | 16                |                   |
| Ingress protection rating                | IP65                                                                                                   |                         |                      |                      |                                             |                   |                   |
| Cooling                                  | Natural cooling                                                                                        |                         |                      |                      |                                             |                   |                   |
| HMI                                      | External LED keypad                                                                                    |                         |                      |                      |                                             |                   |                   |
| Communication terminals                  |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| External communication                   | RS485/3 digital inputs                                                                                 |                         |                      |                      |                                             |                   |                   |
| Communication interface                  | Multi-core waterproof connector                                                                        |                         |                      |                      |                                             |                   |                   |
| Certification                            |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Standards                                | CE; EMC meets the requirements of IEC61800-3 C3.                                                       |                         |                      |                      |                                             |                   |                   |
| Operating environment                    |                                                                                                        |                         |                      |                      |                                             |                   |                   |
| Ambient temperature                      | -25–60°C (derated at temperature higher than 45°C)                                                     |                         |                      |                      |                                             |                   |                   |
| Altitude                                 | 3000 m (derated at altitude higher than 2000 m)                                                        |                         |                      |                      |                                             |                   |                   |

# KEYPAD INTRODUCTION



| No. | Name                 | Description                                                                         |                                                                                                                                                                                                                                 |                                                                                                                                                                |
|-----|----------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Status indicator     | RUN/TUNE                                                                            | Running status indicator.<br>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.<br>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.<br>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<br>A – Unit of current<br>V – Unit of voltage<br>RPM – Unit of rotating speed<br>% – 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<br>This key is used to reset all control modes in   |

# BASIC SETUP 230V 3PH / 380V 3PH



**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                                                      | 15        | Deceleration time               | 15 Borehole 20 Centrifugal                    |
| 00.13                                                      | 0/1       | Rrunning direction              |                                               |
| GROUP 1 START UP AND STOP CONTROL                          |           |                                 |                                               |
| 1.08                                                       | 0         | Stop mode                       |                                               |
| 01.18                                                      | 1         | Operation protection            |                                               |
| 01.21                                                      | 1         | Restart after power of          |                                               |
| GROUP 2 MOTOR 1 PARAMMETER                                 |           |                                 |                                               |
| 02.00                                                      | 0         | 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                                                      | 230 / 380 | Rated of Voltage (V)            | TO BE OBTAINED FROM MOTOR                     |
| 02.05                                                      |           | Rated Current (A)               | TO BE OBTAINED FROM MOTOR                     |
| GROUP 4 SVPWM CONTROL                                      |           |                                 |                                               |
| 04.34                                                      | 10        | 2PH control of 1Ph Motor        | 10=3PH Motor or with cap, 01=1PH Motor        |
| GROUP 5 Input terminals                                    |           |                                 |                                               |
| 05.01                                                      | 0         | S1 Terminals function selection |                                               |
| 05.02                                                      | 1         | S2 Terminals function selection | Fw Run                                        |
| 05.03                                                      | 46        | S3 Terminals function selection | 46 = No Water Signal (Probes) 0 = No Function |
| 05.10                                                      | 4         | HDI Terminals Function          | s3 polarity switch                            |
| GROUP 8 ENHANCED FUNCTIONS                                 |           |                                 |                                               |
| 08.28                                                      | 8         | Nr. Fault Reset Times           |                                               |
| 08.29                                                      | 1000      | Fault reset seconds             |                                               |
| GROUP 11 PROTECTIVE PARAMETERS                             |           |                                 |                                               |
| 11.06                                                      |           | Auto current limit              | Default 120                                   |
| 11.09                                                      |           | Overload protection             | Default 120                                   |
| 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                             |
| 15.20                                                      | 100       | Delay Time Weak Light           | ALS detection time                            |
| 15.21                                                      | 600       | Wake-up delay weak Light        |                                               |
| 15.29                                                      | 2         | PV /AC INPUT SELECTION          | 0=Auto, 1=AC, 2=PV                            |
| 15.32                                                      | 5         | Empty-water delay               | A-TL detection time                           |
| 15.33                                                      | 1200      | Wake-up delay empty-water       | A-TL wake up time                             |

Setting

15.05 = P00.05 / P00.03\*100

Setting

11.06 = Motor Amp / Rated output current of drive \*100

11.09 = 11.06 + 3

All setting in yellow to be set

# BASIC SETUP 230V 1PH (EXCL Run Cap)



**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    | 15                                                | Deceleration time               | 15 Borehole 20 Centrifugal                    |
| 00.13    | 0/1                                               | Rrunning direction              |                                               |
| GROUP 1  | START UP AND STOP CONTROL                         |                                 |                                               |
| 1.08     | 0                                                 | Stop mode                       |                                               |
| 01.18    | 1                                                 | Operation protection            |                                               |
| 01.21    | 1                                                 | Restart after power of          |                                               |
| GROUP 2  | MOTOR 1 PARAMMETER                                |                                 |                                               |
| 02.00    | 1                                                 | 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    | 230                                               | Rated of Voltage (V)            | TO BE OBTAINED FROM MOTOR                     |
| 02.05    |                                                   | Rated Current (A)               | TO BE OBTAINED FROM MOTOR                     |
| GROUP 4  | SVPWM CONTROL                                     |                                 |                                               |
| 04.34    | 01                                                | 2PH control of 1Ph Motor        | 10=3PH Motor or with cap, 01=1PH Motor        |
| 04.35    |                                                   | Phase Balancing                 | See advance setting page                      |
| GROUP 5  | Input terminals                                   |                                 |                                               |
| 05.01    | 0                                                 | S1 Terminals function selection |                                               |
| 05.02    | 1                                                 | S2 Terminals function selection | Fw Run                                        |
| 05.03    | 46                                                | S3 Terminals function selection | 46 = No Water Signal (Probes) 0 = No Function |
| 05.10    | 4                                                 | HDI Terminals Function          | s3 polarity switch                            |
| GROUP 8  | ENHANCED FUNCTIONS                                |                                 |                                               |
| 08.28    | 8                                                 | Nr. Fault Reset Times           |                                               |
| 08.29    | 1000                                              | Fault reset seconds             |                                               |
| GROUP 11 | PROTECTIVE PARAMETERS                             |                                 |                                               |
| 11.06    |                                                   | Auto current limit              | Default 120                                   |
| 11.09    |                                                   | Overload protection             | Default 120                                   |
| 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                             |
| 15.20    | 100                                               | Delay Time Weak Light           | ALS detection time                            |
| 15.21    | 600                                               | Wake-up delay weak Light        |                                               |
| 15.29    | 2                                                 | PV /AC INPUT SELECTION          | 0=Auto, 1=AC, 2=PV                            |
| 15.32    | 5                                                 | Empty-water delay               | A-TL detection time                           |
| 15.33    | 1200                                              | Wake-up delay empty-water       | A-TL wake up time                             |

Setting

15.05 =  $P00.05 / P00.03 * 100$

All setting in yellow to be set

Setting

11.06 = Motor Amp / Rated output current of drive \*100

11.09 = 11.06 + 3

# BASIC SETUP 230V 1PH (With Run Cap)



**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                                                      | 15   | Deceleration time               | 15 Borehole 20 Centrifugal                    |
| 00.13                                                      | 0/1  | Rrunning direction              |                                               |
| GROUP 1 START UP AND STOP CONTROL                          |      |                                 |                                               |
| 1.08                                                       | 0    | Stop mode                       |                                               |
| 01.18                                                      | 1    | Operation protection            |                                               |
| 01.21                                                      | 1    | Restart after power of          |                                               |
| GROUP 2 MOTOR 1 PARAMMETER                                 |      |                                 |                                               |
| 02.00                                                      | 1    | 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                                                      | 230  | Rated of Voltage (V)            | TO BE OBTAINED FROM MOTOR                     |
| 02.05                                                      |      | Rated Current (A)               | TO BE OBTAINED FROM MOTOR                     |
| GROUP 4 SVPWM CONTROL                                      |      |                                 |                                               |
| 04.34                                                      | 10   | 2PH control of 1Ph Motor        | 10=3PH Motor or with cap, 01=1PH Motor        |
| GROUP 5 Input terminals                                    |      |                                 |                                               |
| 05.01                                                      | 0    | S1 Terminals function selection |                                               |
| 05.02                                                      | 1    | S2 Terminals function selection | Fw Run                                        |
| 05.03                                                      | 46   | S3 Terminals function selection | 46 = No Water Signal (Probes) 0 = No Function |
| 05.10                                                      | 4    | HDI Terminals Function          | s3 polarity switch                            |
| GROUP 8 ENHANCED FUNCTIONS                                 |      |                                 |                                               |
| 08.28                                                      | 8    | Nr. Fault Reset Times           |                                               |
| 08.29                                                      | 1000 | Fault reset seconds             |                                               |
| GROUP 11 PROTECTIVE PARAMETERS                             |      |                                 |                                               |
| 11.06                                                      |      | Auto current limit              | Default 120                                   |
| 11.09                                                      |      | Overload protection             | Default 120                                   |
| 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                             |
| 15.20                                                      | 100  | Delay Time Weak Light           | ALS detection time                            |
| 15.21                                                      | 600  | Wake-up delay weak Light        |                                               |
| 15.29                                                      | 2    | PV /AC INPUT SELECTION          | 0=Auto, 1=AC, 2=PV                            |
| 15.32                                                      | 5    | Empty-water delay               | A-TL detection time                           |
| 15.33                                                      | 1200 | Wake-up delay empty-water       | A-TL wake up time                             |

Setting

15.05 = P00.05 / P00.03\*100

Setting

11.06 = Motor Amp / Rated output current of drive \*100

11.09 = 11.06 + 3

All setting in yellow to be set

## Auto AC / DC Setup

| GROUP 15 | GROUP SPECIAL FUNCTION PARAMETERS FOR PV INVERTER |                                       |                    |
|----------|---------------------------------------------------|---------------------------------------|--------------------|
| 15.29    | 0                                                 | PV /AC INPUT SELECTION                | 0=Auto, 1=AC, 2=PV |
| 15.30    | 230                                               | Threshold setting for switching to AC |                    |
| 15.31    | 230                                               | Threshold setting for switching to PV |                    |

## 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

Drive Rated Current

| MODEL                | BPD0K7<br>TN           | BPD1K5<br>TN            | BPD2K2<br>TN         | BPD4K0<br>TN         | BPD2K2<br>TRAC | BPD4K4<br>TRAC | BPD5K5<br>TRAC |
|----------------------|------------------------|-------------------------|----------------------|----------------------|----------------|----------------|----------------|
| Rated<br>current (A) | 5.1 (1PH)<br>4.2 (3PH) | 10.2 (1PH)<br>7.5 (3PH) | 14 (1PH)<br>10 (3PH) | 25 (1PH)<br>16 (3PH) | 5.5            | 9.5            | 14             |

## Phase Balancing of 04.35 for 230V 1PH (Excl Run Cap)

| GROUP 4 | SVPWM CONTROL |                 |                           |
|---------|---------------|-----------------|---------------------------|
| 04.35   |               | Phase Balancing | See advance setting below |

Phase Balancing:

Check value of 17.38 and 17.39 while inverter is running at 50 Hz. The goal is to get these figures as close as possible

To accomplish this, adjust 04.35 from 0.75 to 1.25 and constantly monitor 17.38 and 17.39 after each adjustment (Adjustment tolerance of 04.35 +/- 0.2)

## 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 |  |

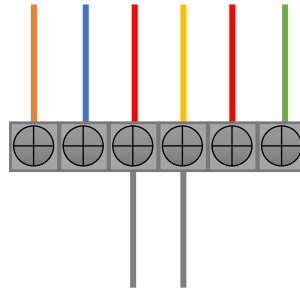
Note:

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

# CONNECTION

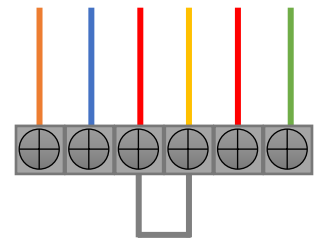


## Dry Run Protection (Probes / Flout for above ground application)



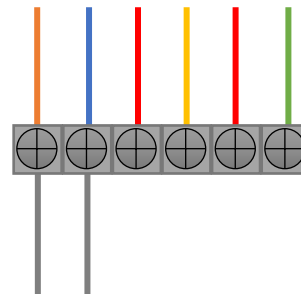
TO PROBES /  
Flout

05.03=46

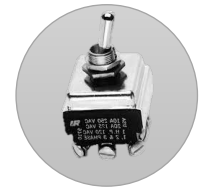


Bridge out when no probe in hole

## EXTERNAL SWITCH (DRY CONTACT) – FLOAT / PRESSURE SWITCH



TO FLOAT  
SWITCH



Run on Auto

## AC OUTPUT CONNECTION



Connect motor wire to correct  
number on the AC OUTPUT PLUG

### **3PH Motors:**

- 1,2,3 – Connect motor
- 4 – Earth

### **1PH Motors (Excl Run Cap):**

- 1 & 3 – Run and Start
- 2 – Common
- 4 – Earth

### **1PH Motors (with Run Cap):**

- 2 – Neutral
- 3 – Live
- 4 – Earth

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                                                                                                                                                                                                                                                                                                                                        | Solutions                                                                                                                                                                                                                                                                                                                                                                        |
|------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OV1        | Overvoltage when acceleration           | 1. The input voltage is abnormal.<br>2. There is large energy feedback.<br>3. No brake components.<br>4. Braking energy is not open.                                                                                                                                                                                                                  | 1. Check the input power.<br>2. Check if the DEC time of the load is too short or the inverter starts during the rotation of the motor, or it needs to increase the energy consumption components.<br>3. Install the brake components.<br>4. Check the setting of related function codes.                                                                                        |
| OV2        | Overvoltage when deceleration           |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                  |
| OV3        | Overvoltage when constant speed running |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                  |
| OC1        | Overcurrent when acceleration           | 1. The acceleration or deceleration is too fast.<br>2. The voltage of the grid is too low.<br>3. The power of the inverter is too low.<br>4. The load transients or is abnormal.<br>5. The grounding is short circuited, or the output is phase loss.<br>6. There is strong external interference.<br>7. The overvoltage stall protection is not open | 1. Increase the ACC time.<br>2. Check the input power.<br>3. Select the inverter with a larger power.<br>4. Check if the load is short circuited (the grounding short circuited or the wire short circuited) or the rotation is not smooth.<br>5. Check the output configuration.<br>6. Check if there is strong interference.<br>7. Check the setting of related function codes |
| OC2        | Overcurrent when deceleration           |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                  |
| OC3        | Overcurrent when constant speed running |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                  |
| UV         | Bus undervoltage                        | 1. The voltage of the power supply is too low.<br>2. The overvoltage stall protection is not open.                                                                                                                                                                                                                                                    | 1. Check the input power of the supply line.<br>2. Check the setting of related function codes.                                                                                                                                                                                                                                                                                  |
| OL1        | Motor overload                          | 1. The voltage of the power supply is too low.<br>2. The motor setting rated current is incorrect.<br>3. The motor stall or load transients is too strong.                                                                                                                                                                                            | 1. Check the power of the supply line.<br>2. Reset the rated current of the motor.<br>3. Check the load and adjust the torque lift.                                                                                                                                                                                                                                              |
| OL2        | Inverter overload                       | 1. The acceleration is too fast.<br>2. The rotating motor is reset.<br>3. The voltage of the power supply is too low.<br>4. The load is too heavy.<br>5. The motor power is too small.                                                                                                                                                                | 1. Increase the ACC time.<br>2. Avoid the restarting after stopping.<br>3. Check the power of the supply line.<br>4. Select an inverter with bigger power.<br>5. Select a proper motor.                                                                                                                                                                                          |

| Fault code | Fault type                 | Possible cause                                                                                                                                                                           | Solutions                                                                                                                                                                                                               |
|------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPI        | Input phase loss           | Phase loss or fluctuation of input R,S,T                                                                                                                                                 | 1. Check input power.<br>2. Check installation distribution.                                                                                                                                                            |
| SPO        | Output phase loss          | U,V,W phase loss output (or serious asymmetrical three phase of the load)                                                                                                                | 1. Check the output distribution.<br>2. Check the motor and cable.                                                                                                                                                      |
| OH1        | Rectifier overheat         | 1. Air duct jam or fan damage<br>2. Ambient temperature is too high.<br>3. The time of overload running is too long.                                                                     | 1. Dredge the wind channel or change the fan.<br>2. Decrease the environment temperature.                                                                                                                               |
| OH2        | IGBT overheat              |                                                                                                                                                                                          |                                                                                                                                                                                                                         |
| EF         | External fault             | SI external fault caused by actions of input terminals                                                                                                                                   | Check the external device input.                                                                                                                                                                                        |
| CE         | 485 Communication error    | 1. The baud rate setting is incorrect.<br>2. Fault occurs to the communication wiring.<br>3. The communication address is wrong.<br>4. There is strong interference to the communication | 1. Set proper baud rate.<br>2. Check the communication connection distribution<br>3. Set proper communication address.<br>4. Change or replace the connection distribution or improve the anti-interference capability. |
| ItE        | Current detection fault    | 1. The control panel connector is in poor contact.<br>2. The Hall component is damaged.<br>3. The magnifying circuit is abnormal.                                                        | 1. Check the connector and rewire.<br>2. Replace the Hall component.<br>3. Replace the main control panel.                                                                                                              |
| EEP        | EEPROM fault               | 1. Error occurs in writing or reading control parameters.<br>2. EEPROM is damaged.                                                                                                       | 1. Press [STOP/RST] to reset.<br>2. Replace the main control panel.                                                                                                                                                     |
| PIDE       | PID feedback fault         | 1. PID feedback is offline.<br>2. The PID feedback source disappears.                                                                                                                    | 1. Check the PID feedback signal line.<br>2. Check the PID feedback source.                                                                                                                                             |
| END        | Running time reached       | The actual running time of the inverter is longer than the preset running time.                                                                                                          | Ask the supplier to adjust the preset running time.                                                                                                                                                                     |
| OL3        | Electrical overload        | The inverter will report overload pre-alarm according to the set value.                                                                                                                  | Check the load and the overload pre-alarm points.                                                                                                                                                                       |
| dEu        | Velocity deviation fault   | The load is too heavy or stalled.                                                                                                                                                        | 1. Check the load and ensure it is normal. Increase the detection time.<br>2. Check whether the control parameters are normal.                                                                                          |
| STo        | Maladjustment fault        | 1. The control parameters of the synchronous motors not set properly.<br>2. The autotuning parameter is not correct.<br>3. The inverter is not connected to the motor                    | 1. Check the load and ensure it is normal.<br>2. Check whether the control parameter is set properly or not.<br>3. Increase the maladjustment detection time.                                                           |
| LL         | Electronic underload fault | The inverter will report the underload pre-alarm according to the set value.                                                                                                             | Check the load and the underload pre-alarm points.                                                                                                                                                                      |
| tSF        | Hydraulic probe damage     | The hydraulic probe is damaged.                                                                                                                                                          | Replace the hydraulic probe.                                                                                                                                                                                            |

| <b>Fault code</b> | <b>Fault type</b>           | <b>Possible cause</b>                                                                                                                                   | <b>Solutions</b>                                                                                                                                                                                                                                                                 |
|-------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PINV              | PV reverse connection fault | The PV wiring is not properly performed.                                                                                                                | Identify the positive and negative PV terminals, and rewire.                                                                                                                                                                                                                     |
| PVOC              | PV overcurrent              | 1. The ACC/DEC is too fast.<br>2. The inverter power is too low.<br>3. The load suddenly changes or is abnormal<br>4. The grounding is short circuited. | 1. Increase the ACC/DEC time.<br>2. Use an inverter with greater power.<br>3. Check whether the grounding or cable connection is short circuited or whether the rotation is blocked.                                                                                             |
| PVOV              | PV overvoltage              | The solar panel input voltage is too high, or the model is 380V but set to 220V.                                                                        | 1. Reduce the serially connected solar panels.<br>2. Check and reset the model.                                                                                                                                                                                                  |
| PVLV              | PV undervoltage             | 1. The power of the serially connected solar panels is too low, or it is rainy and cloudy.<br>2. The starting current of the motor is too high.         | 1. Increase solar panels or test it again under normal sunlight.<br>2. Replace the motor.                                                                                                                                                                                        |
| A-LS              | Weak light alarm            | The sunlight is weak or too few solar panels are configured.                                                                                            | 1. The device automatically operates after the sunlight gets stronger, and no processing is needed.<br>2. Check whether solar panels are properly configured.                                                                                                                    |
| A-LL              | Underload alarm             | The water pumping tank is empty.                                                                                                                        | Check the water pumping tank. Set 05.17 lower by 10                                                                                                                                                                                                                              |
| A-tF              | Water full alarm            | The water storing tank is full.                                                                                                                         | If the water full alarm function is enabled, the device automatically stops after the water full alarm remains for a certain period of time, and no processing is needed. If the water full alarm function is not enabled, check whether there are terminals misconnected.       |
| A-tL              | Water empty alarm           | The water pumping tank is empty.                                                                                                                        | 1. If the water empty alarm function is enabled, the device automatically stops after the water empty alarm remains for a certain period of time, and no processing is needed. If the water empty alarm function is not enabled, check whether there are terminals misconnected. |