OutBack POWER — member of The Alpha Group™

Figure 9   Series Stack (Classic)

Models
FX / VFX (includes J, M, N Series)
GTFX
GVFX
GTFX (LA Series)
GVFX (LA Series)
GFX

- 2 inverters; up to 8 other devices
- Master and single Slave inverter use separate output AC buses (L1 and L2)
- Both inverters always active (no Power Save mode); outputs are loaded independently but output regulation is controlled by load on Master
- Ports 3 through 10 can host other devices (3 and 4 shown here)
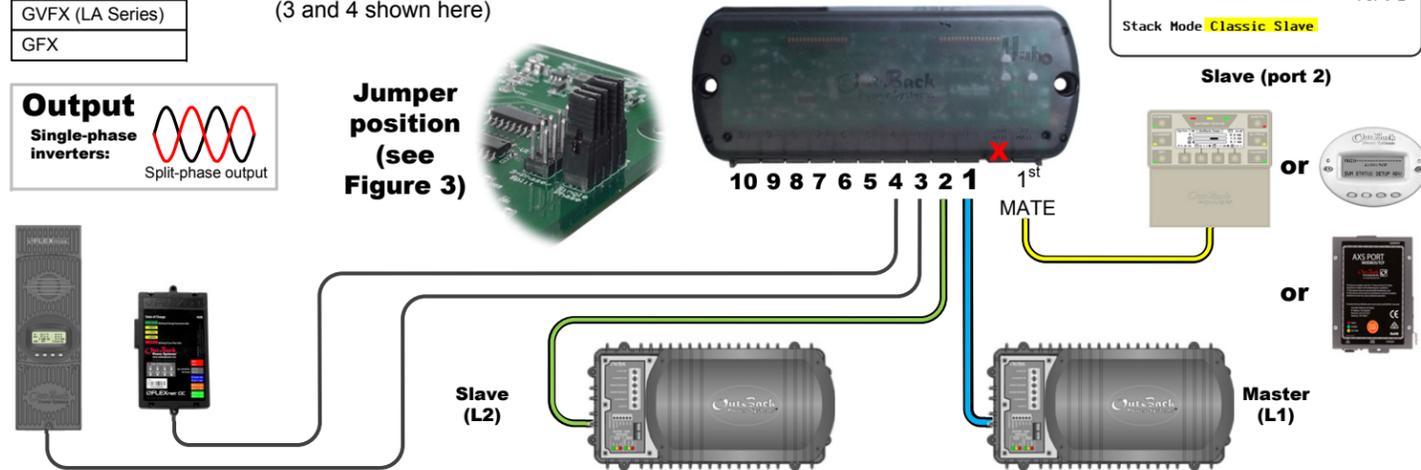
Inverter Stacking Port 1
Stack Mode **Master** or **1-2phase Master**
Master (port 1 only)

Inverter Stacking Port 2
Stack Mode **Classic Slave**
Slave (port 2)

Output
Single-phase inverters: Split-phase output

Jumper position (see Figure 3)

10 9 8 7 6 5 4 3 2 1   1st MATE

Slave (L2)   Master (L1)

Figure 10   Series Stack (OutBack)

- Up to 10 inverters or other devices; requires balancing transformer
- Master inverter and half of the Slave inverters use common output AC bus (L1)
- The remaining Slave inverters use a separate common AC bus (L2)
- Master inverter is always active; regulates output based on load; can power both L1 and L2 buses using balancing transformer
- Slave inverters remain in Power Save mode; Master activates any Slave inverters for either L1 or L2 based on load
- Unused ports can host other devices (not shown here)

Models
FX / VFX (includes J, M, N Series)

Output
Single-phase inverters: Split-phase output

Inverter Stacking Port 1
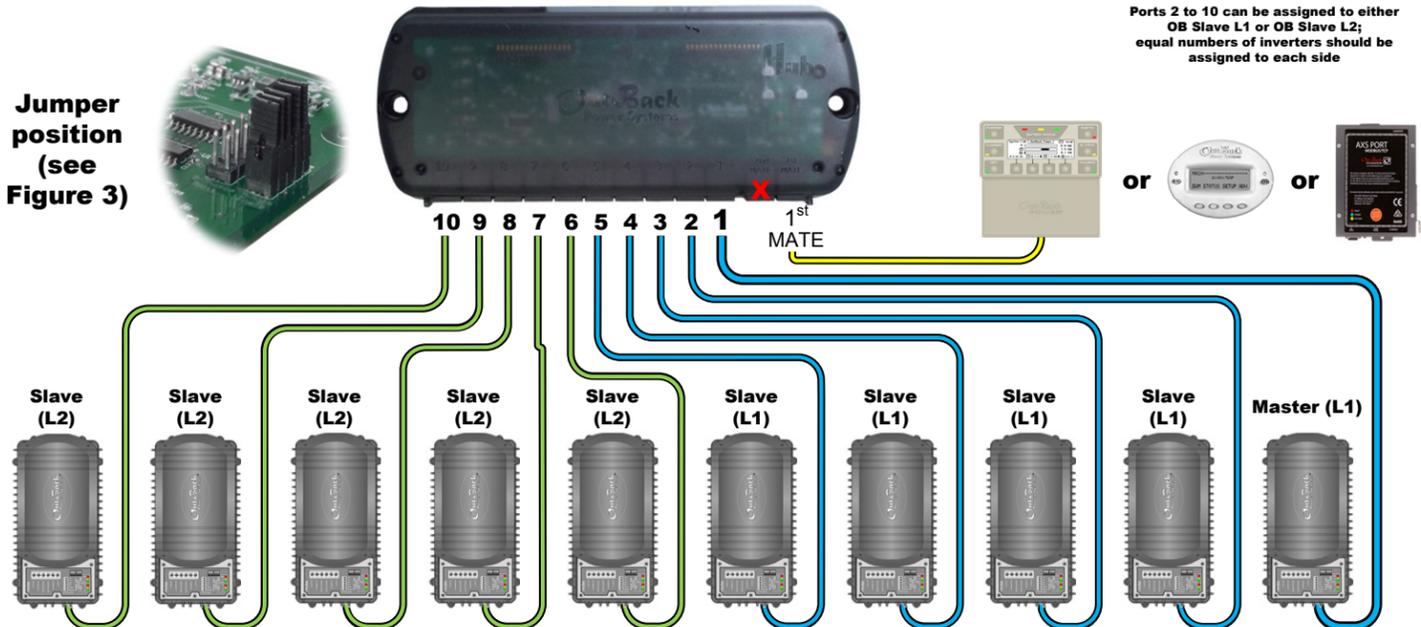Stack Mode **Master or 1-2phase Master**
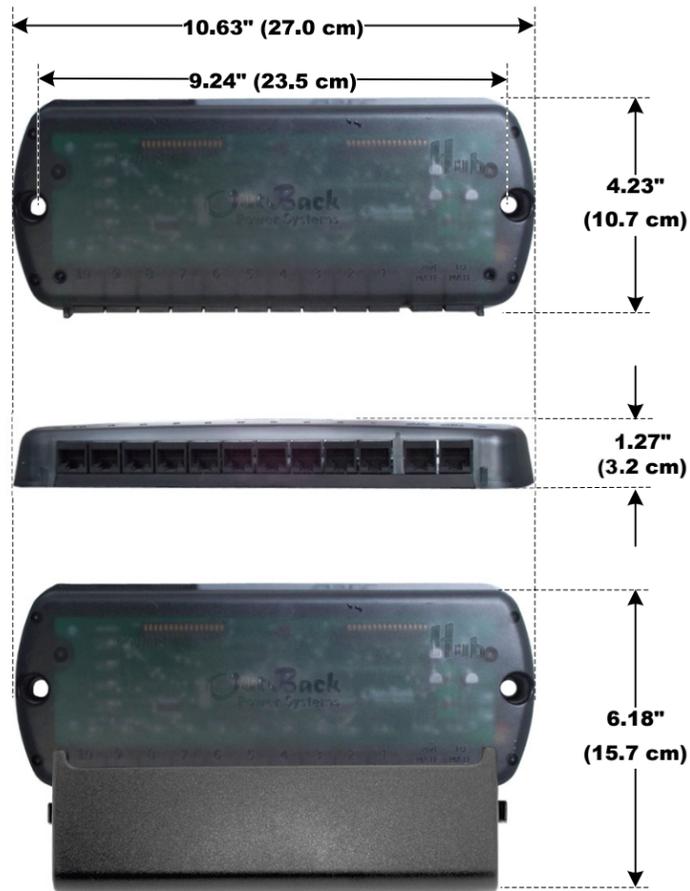**Master (port 1 only)**

Inverter Stacking Port 2
Stack Mode **OB Slave L1** or **OB Slave L2**
Slave (port 2)

Ports 2 to 10 can be assigned to either OB Slave L1 or OB Slave L2; equal numbers of inverters should be assigned to each side

Jumper position (see Figure 3)

10 9 8 7 6 5 4 3 2 1   1st MATE

Slave (L2) | Slave (L2) | Slave (L2) | Slave (L2) | Slave (L2) | Slave (L1) | Slave (L1) | Slave (L1) | Slave (L1) | Master (L1)

HUB10.3 Communications Manager

Parts List	
HUB10.3	HUB Wiring Cover
#10 x ½" Screws x 2	Cable, CAT5e, 3' (1 m) x 2
Shutter Bushing x 2	Cable, CAT5e, 6' (2 m) x 3
Snap Bushing x 2	Cable, CAT5e, 10' (3 m) x 4

NOTE: See inverter literature for more information on stacking modes and designations.

Figure 1   Dimensions

10.63" (27.0 cm)
9.24" (23.5 cm)
4.23" (10.7 cm)
1.27" (3.2 cm)
6.18" (15.7 cm)

Contact Technical Support:
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Website: www.outbackpower.com

IMPORTANT: Not intended for use with life support equipment.

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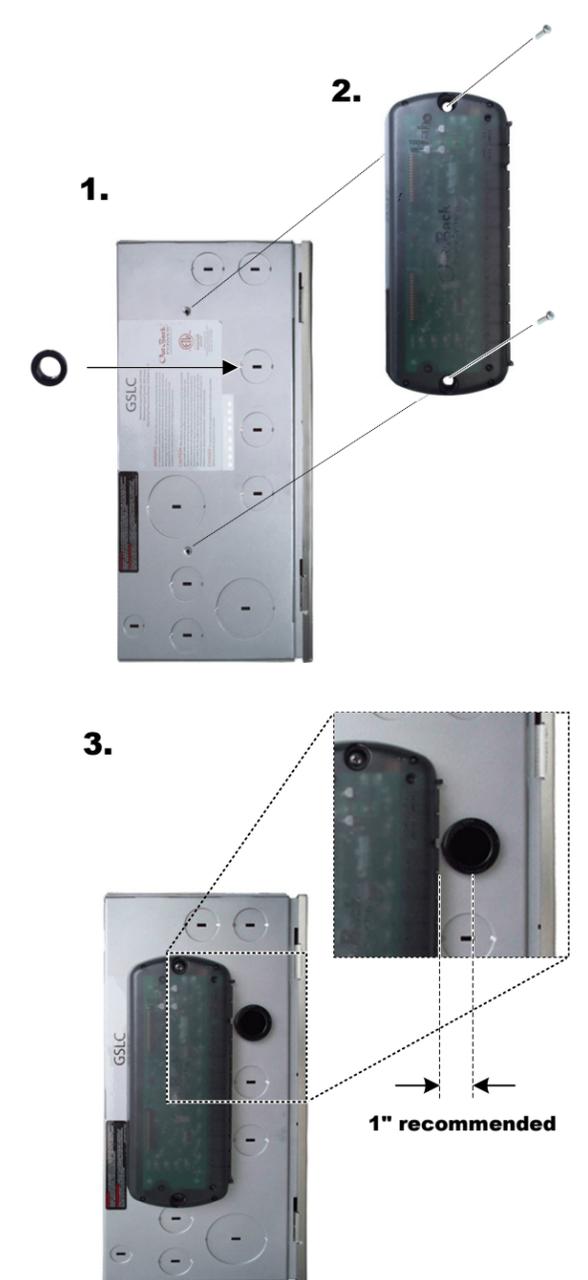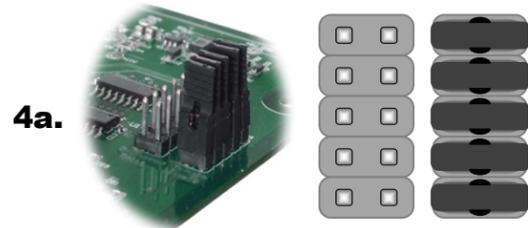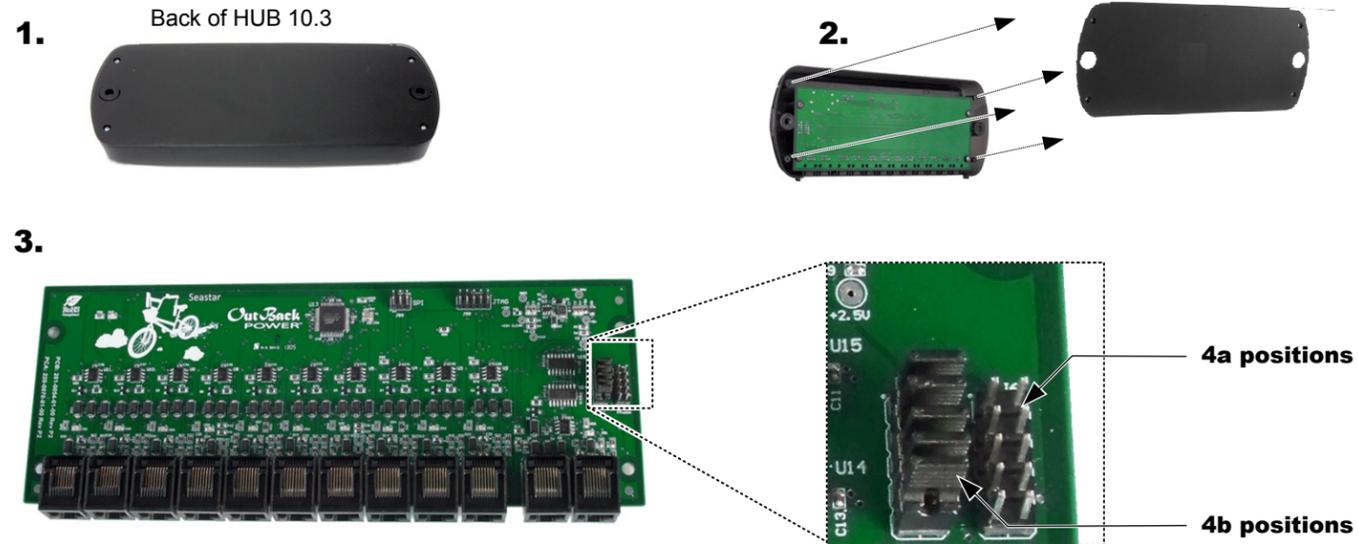
Date and Revision

July 2016, Revision E

Figure 2   Mounting

1.

2.

3.

1" recommended

Jumper Configurations

Figure 3   Changing Jumpers

1. Back of HUB 10.3

2.

3.

4a positions
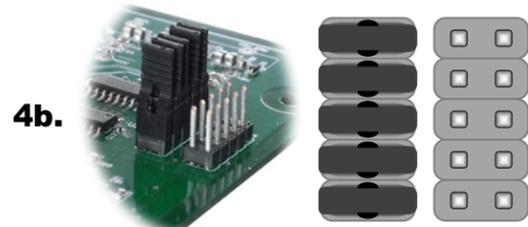
4b positions

4a.

This is the factory-installed initial position.
- Used for parallel stacking in all models. See Figure 4.
- Used for classic or OutBack series stacking. See Figures 8 and 9.
- Used for three-phase OutBack stacking with models GVFX(E) and GTFX(E). See Figure 6.

For these applications, verify that all jumpers are in the positions noted in the photograph and the diagram.

Jumper position identified by MATE3 on power-up:

```
Searching for Devices

Found

HUB10.3
```

4b.

- Used for Subphase Master stacking in FXR, GS, and GFX inverters (both series and three-phase configurations). See Figures 7 and 8.

For these applications, place all jumpers in the positions noted in the photograph and the diagram.

NOTE: This option requires MATE3 firmware revision 002.013.000 or higher.

Jumper position identified by MATE3 on power-up:

```
Searching for Devices

Found

HUB10.3
```

4c.
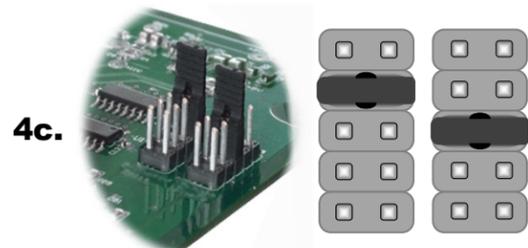
- Used for three-phase OutBack stacking with FX, VFX, FX(E) or VFX(E) inverters. See Figure 5.

For this application, place *only two jumpers* in the positions noted in the photograph and the diagram.

Remove all remaining jumpers. No others are used for this configuration.
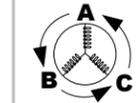
Jumper position identified by MATE3 on power-up:

```
Searching for Devices

Found

HUB10.3 Sub-phase Master
```
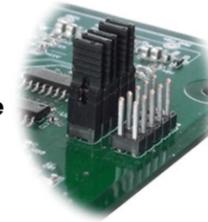
Figure 8   Three-Phase Stack (Subphase Master)

Models
FXR (A series)
FXR (E series)
GS (E Series)
GFX
GFX (E Series)

Output

Single-phase inverters:
Three-phase output

- PHASE A
- PHASE B
- PHASE C

Jumper position (see Figure 3)

```
Inverter Stacking
                      Port 1
Stack Mode Master
```
Master (port 1 only)

```
Inverter Stacking
                      Port 2
Stack Mode Slave
           or
           OB Slave L1
```
Slave (port 2)
Also ports 3, 5, 6, 8, and 9

```
Inverter Stacking
                      Port 4
Stack Mode B Phase Master
           or
           3p Classic B
```
Subphase Master (port 4)

```
Inverter Stacking
                      Port 7
Stack Mode C Phase Master
           or
           3p Classic C
```
Subphase Master (port 7)

- Up to 9 inverters (ports 1 to 9); 1 other device (port 10); MATE3 only
- Master inverter (required on port 1) and up to two Slaves (ports 2 & 3) use Phase A output AC bus
- Subphase Master (required on port 4) and up to two Slaves (ports 5 & 6) use Phase B output AC bus
- Subphase Master (required on port 7) and up to two Slaves (ports 8 & 9) use Phase C output AC bus
- Phase A, B, and C Slave inverters should be equal in number; Slave selection screen may display **Slave** but could display **OB Slave L1** depending on model
- Master and Subphase Masters are always active; each Master regulates output based on its own load
- Slave inverters remain in Power Save mode; the Master activates Phase A Slave inverters based on its load, while the Subphase Masters **independently** activate Phase B or C Slave inverters based on their own loads
- Port 10 not used for inverters; this and any unused slave ports can host other devices

Rev 002.013.000 or higher

or

Master (A)
Slave (A) Slave (A)

10 9 8 7 6 5 4 3 2 1   1st MATE

Subphase Master (B)
Slave (B) Slave (B)

or

Subphase Master (C)
Slave (C) Slave (C)

Figure 7　　Series Stack (Subphase Master)

Models

Models
FXR (A Series)
GFX

Output　Single-phase inverters:　Split-phase output

- Up to 8 inverters (ports 1 to 4, 7 to 10); balancing transformer is not used
- Master inverter and half of the Slave inverters use common output AC bus (L1); ports 2 to 4 are L1 slaves
- Subphase Master inverter and half of the Slave inverters use a separate common AC bus (2); ports 8 to 10 are L2 Slave inverters despite the screen selection (OB Slave L1)
- Port 7 is the L2 Subphase Master despite the screen selection (Classic Slave); this port is required regardless of the number of Slave inverters
- Master and Subphase Master are always active; each Master regulates output based on its own load
- Slave inverters remain in Power Save mode; Master activates L1 Slave inverters based on its load, while the Subphase Master **independently** activates L2 Slave inverters based on its own load
- Ports 5 and 6 not used for inverters; these and any unused slave ports can host other devices

```
Inverter Stacking              Port 1
Stack Mode  Master
```
Master (port 1 only)

```
Inverter Stacking              Port 2
Stack Mode  OB Slave L1
```
Slave (port 2)
Also ports 3, 4, 8, 9, and 10
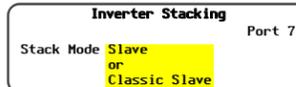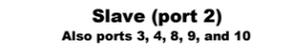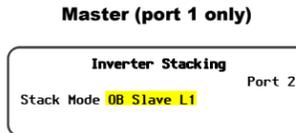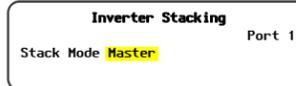
```
Inverter Stacking              Port 7
Stack Mode  Slave
            or
            Classic Slave
```
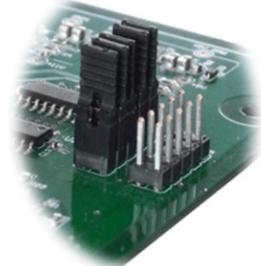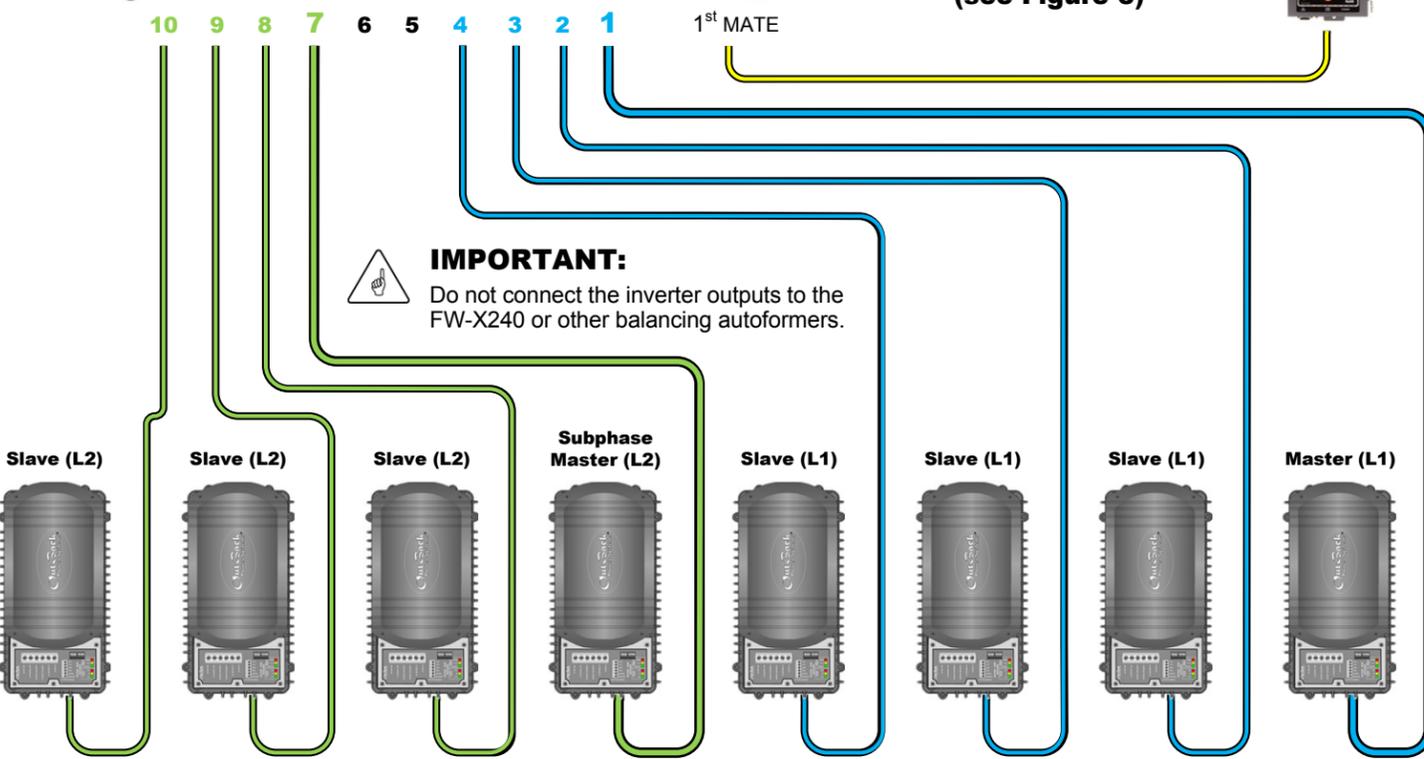**Subphase Master (port 7)**

Jumper position (see Figure 3)

10 9 8 7 6 5 4 3 2 1   1st MATE

IMPORTANT:
Do not connect the inverter outputs to the FW-X240 or other balancing autoformers.

Slave (L2) | Slave (L2) | Slave (L2) | Subphase Master (L2) | Slave (L1) | Slave (L1) | Slave (L1) | Master (L1)

Figure 4　　Parallel Stack

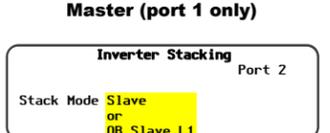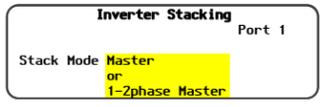| Models |
|---|
| FXR (A Series) |
| FXR (E Series) |
| GS (A Series) |
| GS (E Series) |
| GS8048 |
| FX / VFX (all series, including E, J, M, N, and W) |
| GFX |
| GFX (E Series) |
| GTFX / GVFX (E Series) |
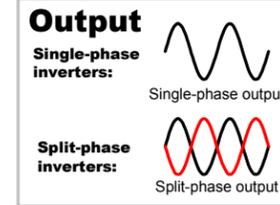
- Up to 10 inverters or other devices
- All inverters use common AC output bus
- Master inverter always active; regulates power output based on load
- Slave inverters remain in Power Save mode; Master activates Slave inverters based on load
- Any unused port can host other devices (ports 9 and 10 shown here)

```
Inverter Stacking              Port 1
Stack Mode  Master
            or
            1-2phase Master
```
Master (port 1 only)

```
Inverter Stacking              Port 2
Stack Mode  Slave
            or
            OB Slave L1
```
Slave (port 2, port 3, etc.)

Output
Single-phase inverters:　Single-phase output
Split-phase inverters:　Split-phase output

Jumper position (see Figure 3)

or

(with FX-class inverter)

or

10 9 8 7 6 5 4 3 2 1   1st MATE

Slave | Slave | Slave | Slave | Slave | Slave | Slave | Master
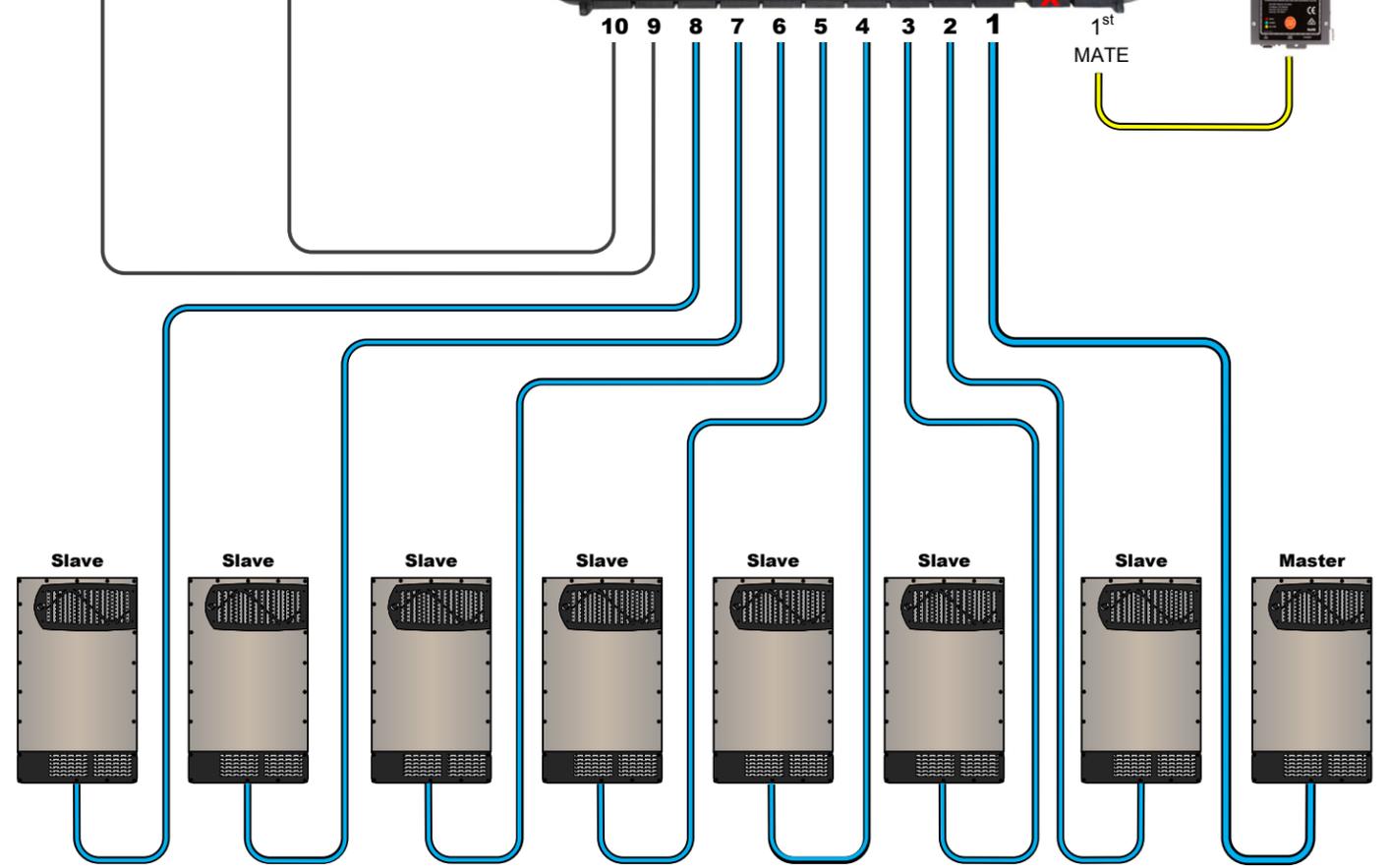
Figure 5 Three-Phase Stack (all series FX)

Models

FX / VFX (all series, including E, J, M, N, and W)

- 3 inverters; up to 7 other devices
- Master and two Slave inverters use separate output AC buses (A, B,and C)
- All inverters always active (no Power Save mode); outputs are loaded independently but output regulation is controlled by load on Master
- Ports 2,3, and 6 through 10 can host other devices (ports 9 and 10 shown here)

```
Inverter Stacking
                    Port 1
Stack Mode Master
```
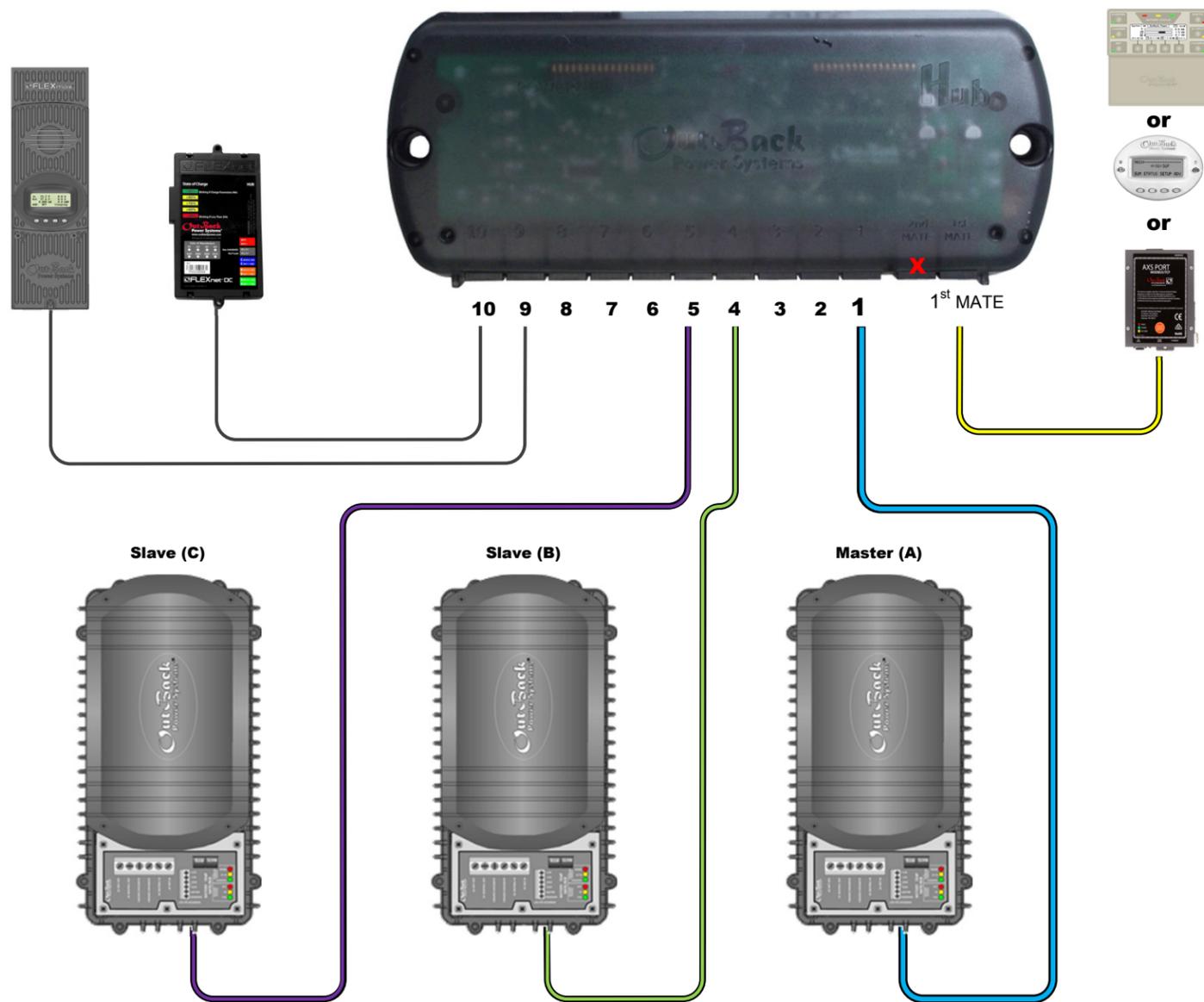**Master (port 1 only)**
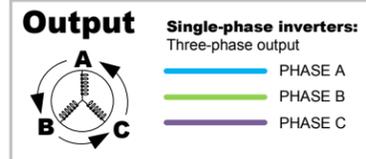
```
Inverter Stacking
                    Port 4
Stack Mode 3ph Slave
```
Slave B (port 4 only)

```
Inverter Stacking
                    Port 5
Stack Mode 3ph Slave
```
Slave C (port 5 only)

Jumper position (see Figure 3)

Output

Single-phase inverters:
Three-phase output

— PHASE A
— PHASE B
— PHASE C

10 9 8 7 6 5 4 3 2 1   1st MATE

Slave (C) Slave (B) Master (A)

Figure 6 Three-Phase Stack (E series FX)

Models

GTFX (E Series)
GVFX (E Series)

- Up to 9 inverters; 1 other device
- Master and two Slave inverters use separate output AC buses (A, B,and C)
- All inverters always active (no Power Save mode); outputs are loaded independently but output regulation is controlled by load on Master
- Any unused port can host other devices (port 10 shown here)
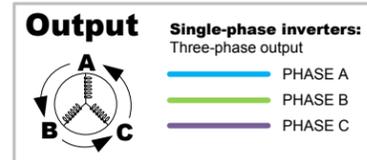
```
Inverter Stacking
                    Port 1
Stack Mode Master
```
Master (port 1 only)

```
Inverter Stacking
                    Port 2
Stack Mode 3phase OB Slave A
           3phase OB Slave B
           3phase OB Slave C
```
Slave A, B, or C (port 2, port 3, etc.)

Ports 2 to 10 can be assigned any 3phase OB Slave stack mode; no more than 3 inverters per mode

Jumper position (see Figure 3)

Output

Single-phase inverters:
Three-phase output

— PHASE A
— PHASE B
— PHASE C

10 9 8 7 6 5 4 3 2 1   1st MATE

Slave (A) Slave (A) Master (A)

Slave (B) Slave (B) Slave (B)

Slave (C) Slave (C) Slave (C)

or