

(1) METAL OXIDE VARISTOR (MOVS)

Input and output MOVs provide additional lightning protection for the pump and motor.

(2) MULTI-COLOR LED

Indicates operating status.

(3) DC POWER SUPPLY INPUT

Terminals for the DC Power Supply input from the solar array.

(4) OUTPUT MOTOR PHASE CONNECTIONS

Terminals for motor phase connections.

(5) JUMPER CONNECTIONS

For selecting single- or two-level control.

(6) DATA COMMUNICATIONS BOARD TERMINALS

Terminals provided for optional data communications board.

(7) LEVEL CONTROL SWITCH CONTACTS

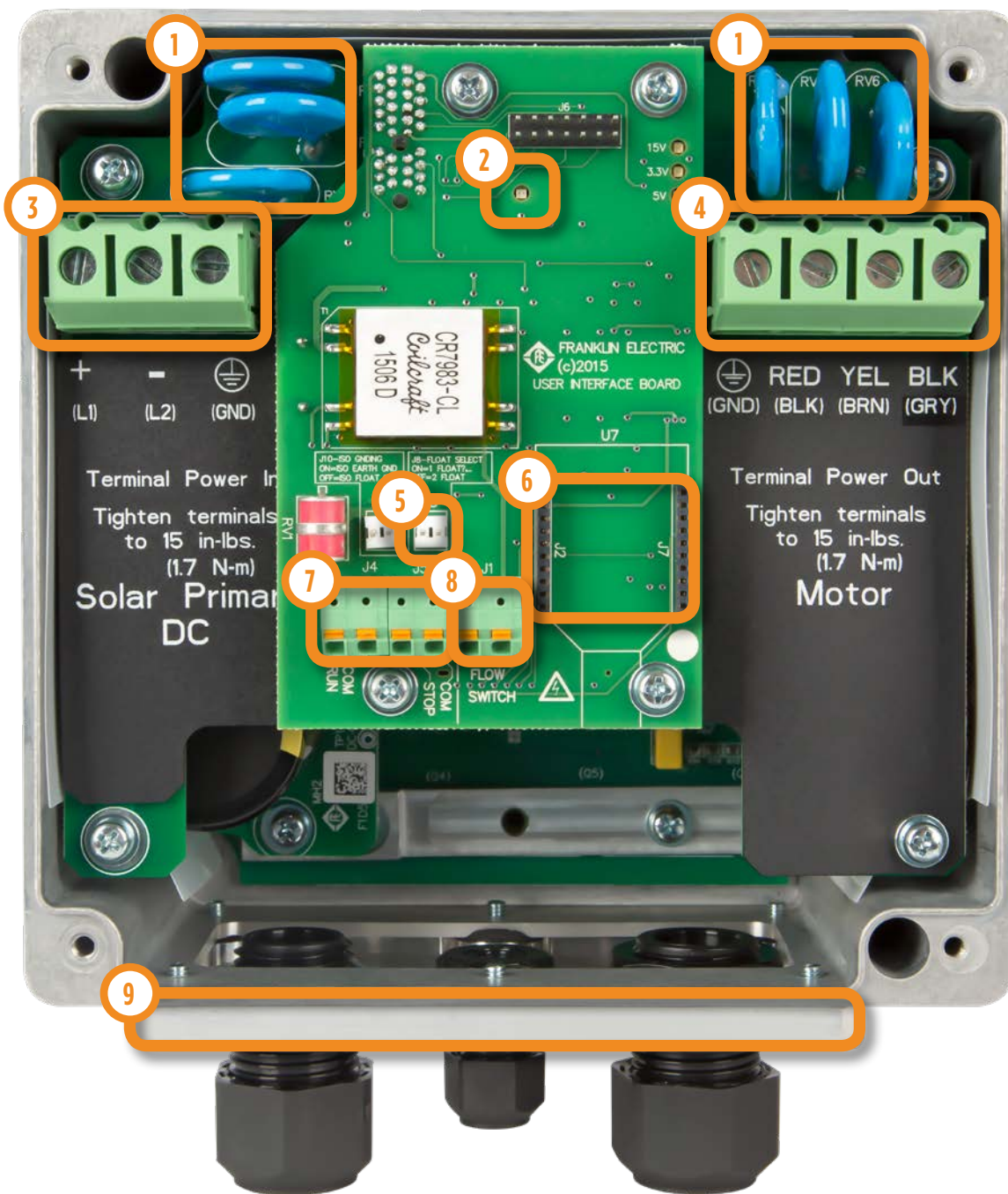
Contacts for up to two level-control switches.

(8) FLOW SWITCH INPUT

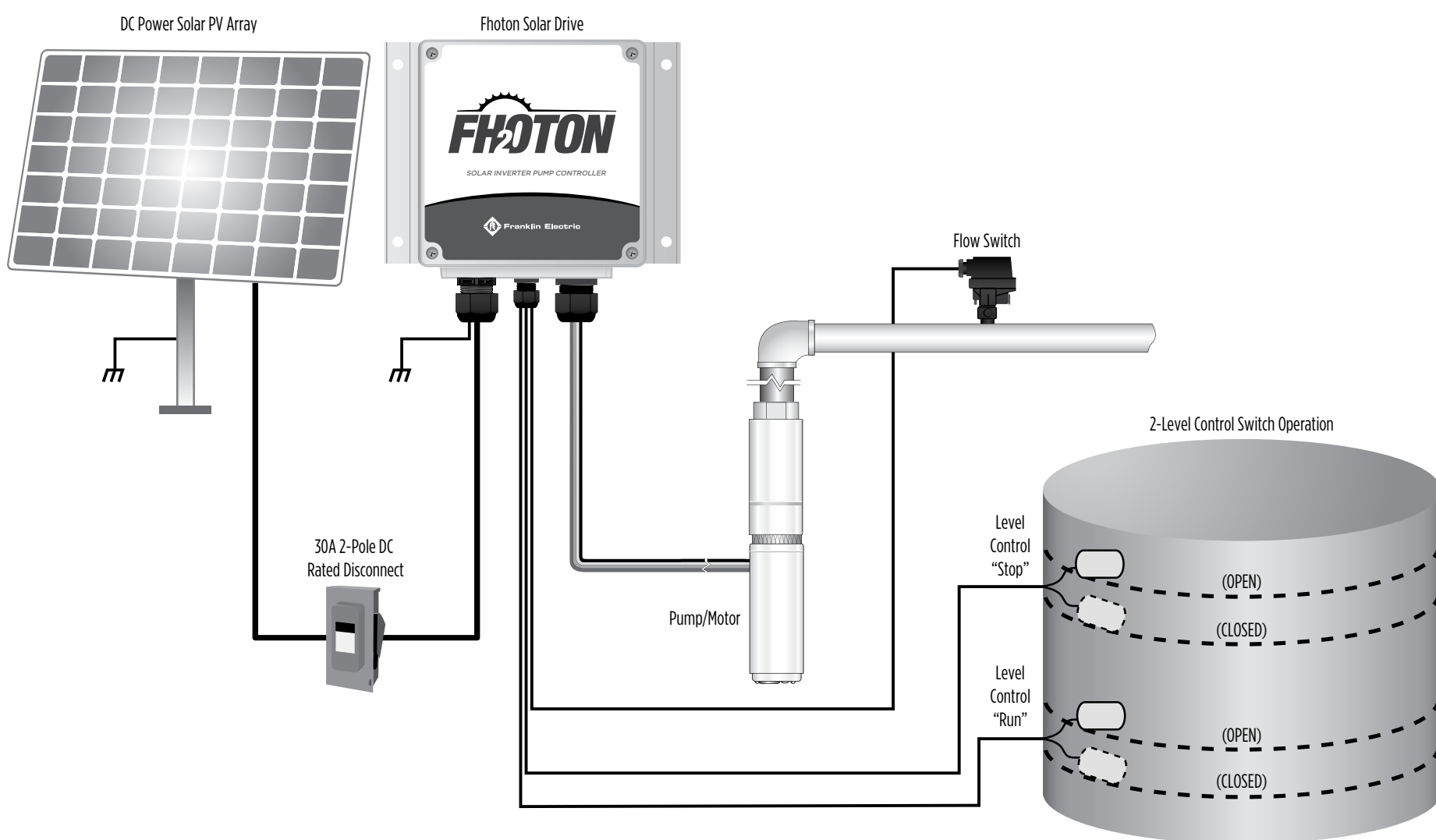
Input for flow switch in order to detect dry-run and dead-head conditions for additional motor and pump protection.

(9) REMOVABLE BOTTOM GLAND PLATE

Allows for simple conduit installation.



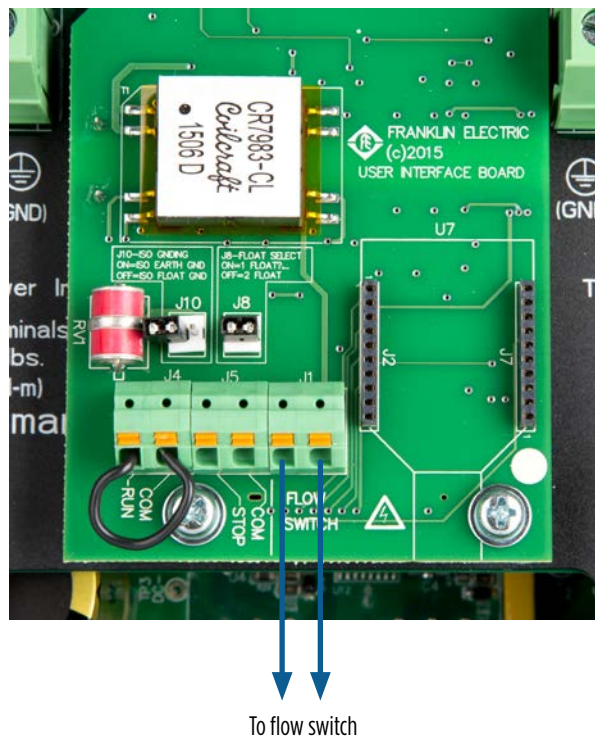
FH2OTON™ INSTALLATION



FLOAT SWITCH WIRING OPTIONS

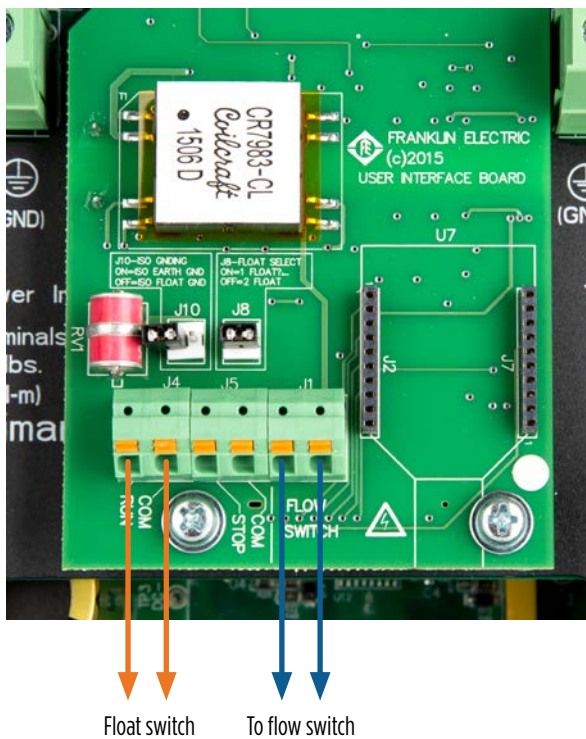
No Float Switch

- Place jumper wire between “RUN” and “COM” terminals
- Factory-provided jumper for J8 pins should be left in place



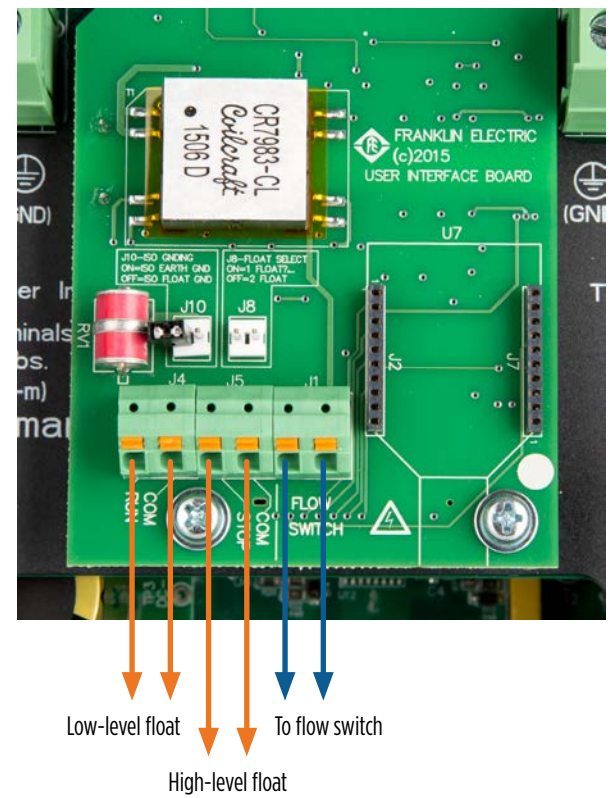
One Float Switch

- Connect wires from the float switch to the “RUN” and “COM” terminals
- Factory-provided jumper for J8 pins should be left in place



Two Float Switches

- Connect wires from the “low-level” float switch to the “RUN” and “COM” terminals
- Connect wires from the “high-level” float switch to the “STOP” and “COM” terminals
- Factory-provided jumper for J8 pins should be removed



NOTE: It is recommended that the flow switch is always connected to prevent running in dead-head situation.

FLASH SEQUENCES (GREEN LIGHT)

Flash Sequence Count	Rotor Speed (Hz)
1	< 15
2	15 - 25
3	25 - 35
4	35 - 45
5	45 - 55
6	55 - 65

Solid Green Light: Idle or insufficient current from solar panel.
Rapid Flashing Green Light: Pump/motor is going through start-up sequence.

FAULT CODES (RED LIGHT)

Flash Sequence Count	Fault	Possible Causes	Corrective Action
1	Motor Underload	Air-locked pump. Overpumped or dry well. Worn pump, damaged shaft or coupling, blocked pump or pump screen.	Wait for well to recover and auto restart to occur. If the problem persists, check pump and motor.
2	Overvoltage	Misconnected input leads. Incorrect sizing of solar array.	Ensure array wiring is correct. Check series/parallel connections. Confirm array ratings are within Photon™ Drive input range.
3	Locked Pump	Motor/pump misaligned. Pump bound up with sand or abrasive. Dragging motor or pump.	Unit will attempt to free a locked pump. If it is unsuccessful, check the motor and pump.
4	Low Flow Trip	Flow switch miswired. Flow switch clogged. Inadequate power to generate flow. Motor wired incorrectly.	Check that “FLOW SWITCH” terminal is correctly wired to flow switch. Check that flow switch is properly installed in pipe discharge. Check that the flow switch is not clogged. Check that pipe discharge is not blocked. Wait for sufficient solar power to pump adequate water. Check that the motor is wired correctly and spinning in the correct direction.
5	Open Circuit	Loose or open connection to motor. Defective motor or cable.	Check motor cable connections. If problem persists, check cable and motor.
6	(a) At power-up: Short Circuit (b) While running: Over Current	(a) Short in motor connections at terminal or within motor cable. (b) Debris in pump.	(a) Check motor connections at terminal. (b) Check pump. If problem persists, check motor cable and pump.
7	Overheated Controller	Unit in direct sunlight. High ambient temperature. Obstruction of air flow.	Shade unit. Clean any debris from heat sink fins on rear of enclosure. This fault automatically resets when temperature returns to safe level.
9	Internal Error	Controller internal processing has encountered an incorrect value.	Cycle input power.*

*“Cycle input power” means disconnecting PV power (if used) for at least five minutes, then re-connecting power.