

DPC-4F DUPLEX/BACKUP 4 FLOAT PUMP CONTROLLER INSTALLATION INSTRUCTIONS

⚠ WARNING



ELECTRICAL SHOCK HAZARD

A qualified service person must install and service this product according to applicable codes and electrical schematics. Disconnect power prior to servicing any equipment with the DPC-4F controller.

⚠ WARNING



EXPLOSION OR FIRE HAZARD

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within the controller housing.

- Do not connect power to this equipment if it has been damaged or has any missing parts.
- The DPC-4F contains no serviceable parts: do not attempt to repair this equipment.
- Do not install in areas with excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration.

OVERVIEW

The DPC-4F is a multi-function pump controller designed to operate two pumps. The unit can be configured to operate as a backup controller or a duplex controller. The controller operates using inputs from 1-4 float switches.

MULTI-FUNCTION

4 MODE selector switch and operation

- MODE 1: 1-float backup operation with pump run timer
- MODE 2: 2-float backup operation
- MODE 3: 3- or 4-float backup operation
- MODE 4: 3- or 4-float duplex operation

Pump alternator selector switch

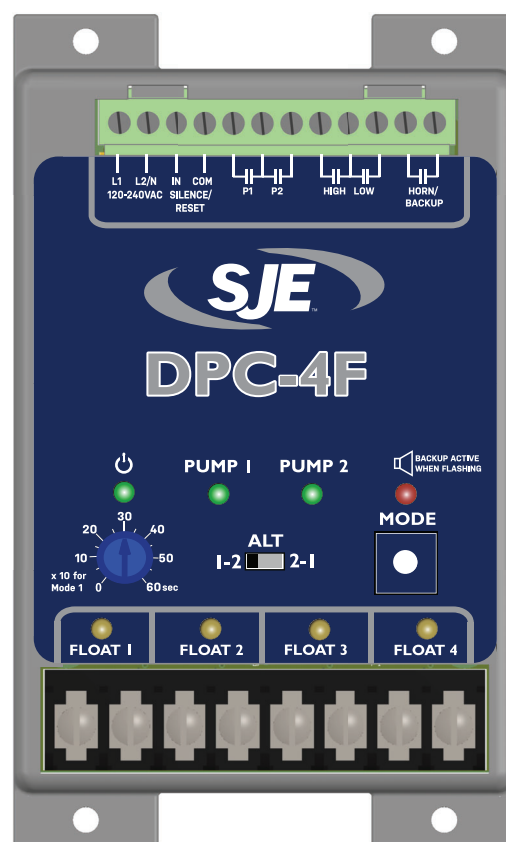
Adjustable lag pump delay/pump run timer

FEATURES

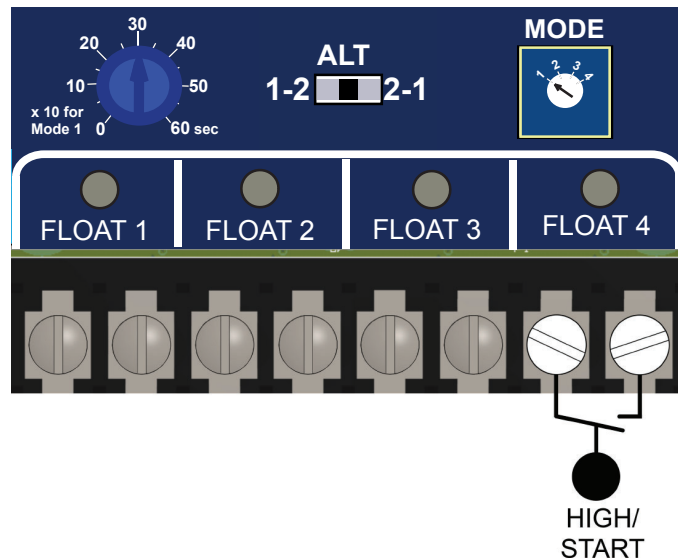
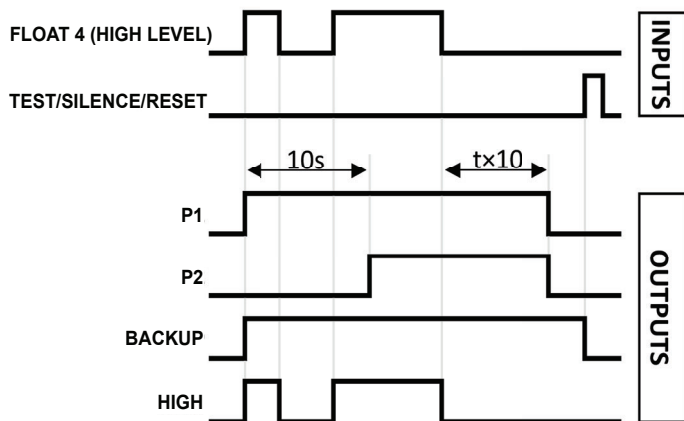
- Green LED indicators for Power On and Pump Call-To-Run
- Red LED indicator for Alarm and Backup Mode
- Amber LED indicators for Float Status
- Float out of sequence detection (Mode 4 only)
- HIGH level relay directly operated by FLOAT 4, independent of microcontroller
- 12 VDC power to float switches
- Relay Outputs: Pump Call-To-Run (2),
Low, High, Horn/Backup
- UL Listed
- 2-year limited warranty

WARNINGS

Users must read this manual and understand controller operation before changing any settings. Incorrect settings may result in damage to equipment. All floats shall be normally open floats for proper operation.



MODE 1: Single Float Backup with Pump Timer



Basic Operation:

Pump turns on when Float 4 closes. Pump turns off when Float 4 opens and pump run timer expires.

Backup Mode Activated by: Float 4 closed.

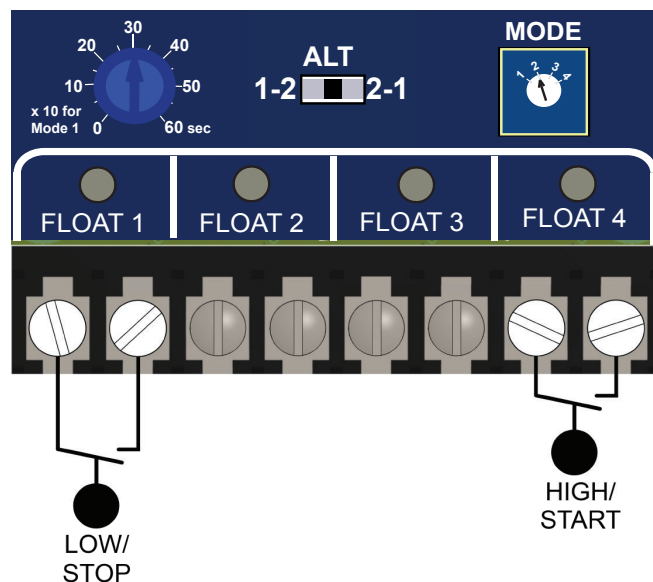
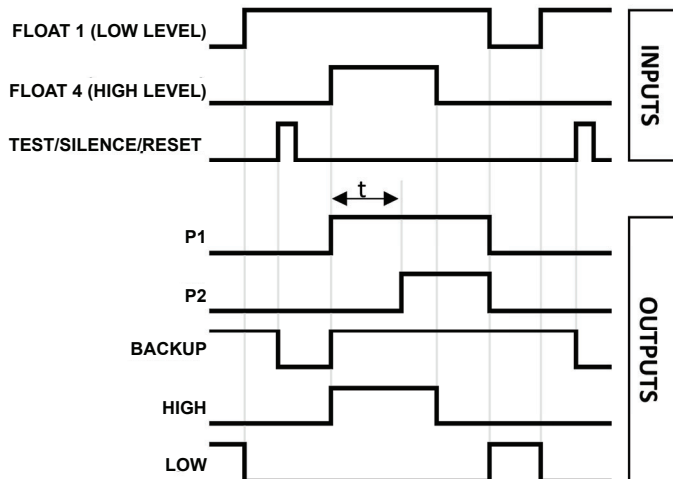
Backup Mode Reset: Trigger the Reset input while Float 4 is open.

Lag Pump Delay Timer: 10 seconds (not adjustable).

Timer Dial: Controls pump run time (0—600 seconds), timer begins when Float 4 opens. Set timer based on actual field conditions to prevent short cycling pump or running the pump dry.

The High relay will close when Float 4 is closed.

MODE 2: Two Float Backup



Basic Operation:

Pump turns on when Float 4 closes. Pump turns off when Float 1 opens.

Backup Mode Activated by: Float 4 closed or Float 1 open.

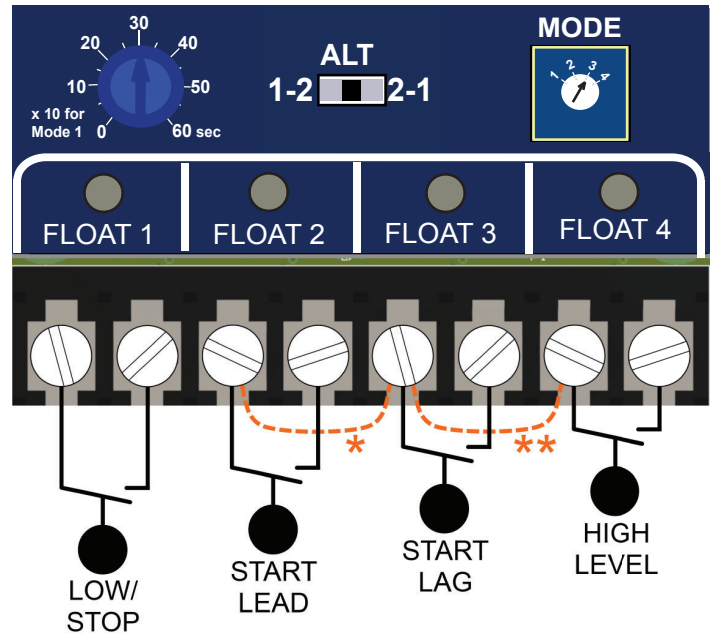
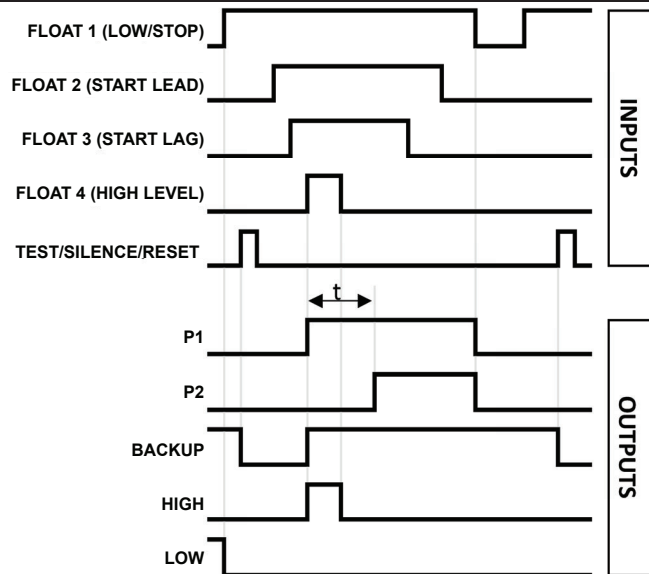
Backup Mode Reset: Trigger the Reset input while Float 4 is open and Float 1 is closed.

Timer Dial: Controls lag pump delay time (0—60 seconds).

The High relay will close when Float 4 is closed.

The Low relay will close when Float 1 is open.

MODE 3: Three or Four Float Backup



Basic Operation:

Pump turns on only in Backup Mode, when Float 4 closes. Pump turns off when Float 1 opens or backup mode is reset.

Backup Mode activated by: Float 4 closed or Float 1 open.

Backup Mode Reset: Trigger the Reset input while Float 4 is open and Float 1 is closed.

Timer Dial: Controls lag pump delay time (0—60 seconds).

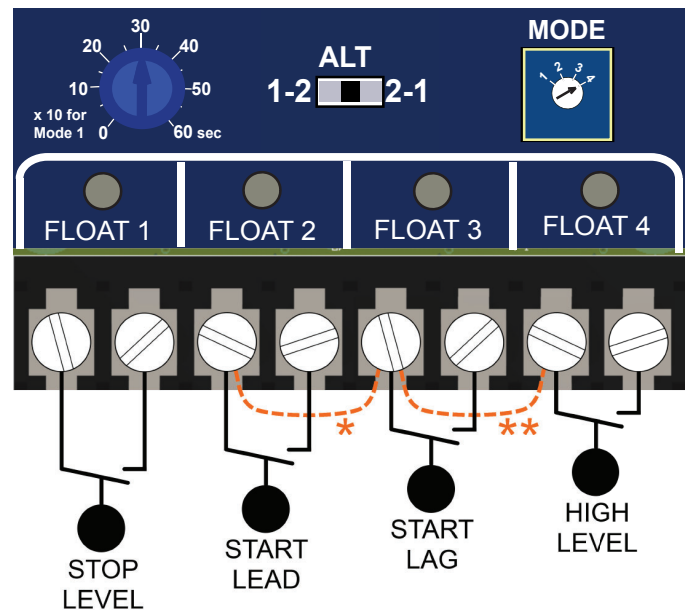
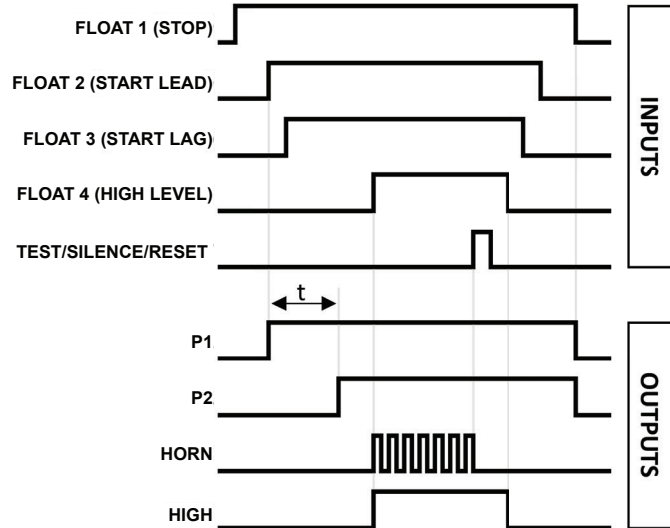
The High relay will close when Float 4 is closed.

For 3-float operation, connect floats to Float 1, Float 2, and Float 4.

*Jumper Float 2 and 3 for lead pump and lag pump activation.

**Jumper Floats 3 and 4 for lead pump start, and lag pump/alarm activation.

MODE 4: Four Float Duplex Operation



Basic Operation:

Pump turns on when Float 2 closes. Lag pump turns on when Float 3 closes. Pumps turn off when Float 1 opens.

Timer Dial: Controls lag pump delay time (0—60 seconds).

The High relay will close when Float 4 is closed. The Horn relay will flash while Float 4 is closed unless it is silenced by triggering the Silence input.

For 3-float operation, connect floats to Float 1, Float 2, and Float 4.

* Jumper Float 2 and 3 for lead pump and lag pump activation.

** Jumper Floats 3 and 4 for lead pump start, and lag pump/alarm activation

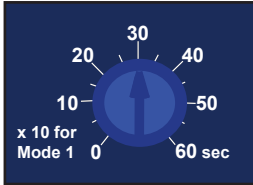
*** Alarm Test Feature - If the Test/Silence/Reset input is activated when there is no alarm condition present, the Horn Relay will flash, and the Low Relay will close.

**** Mode 4 provides for Float Out-Of-Sequence detection. If Float 1, 2, or 3 fails to activate in the correct sequence (ex ample below), the low relay will activate ON. The Out-Of-Sequence fault will clear when the failed float returns to the correct position.



Mode	Input Functions					Output Relay Functions			Time Dial Function
	Float 1	Float 2	Float 3	Float 4	Pushbutton	Horn/Backup	Low	High	
1	None	None	None	High/Start	Backup Mode Reset	Backup	None	High	Pump Run (0-600s)
2	Low/Stop	None	None	High/Start	Backup Mode Reset	Backup	Low	High	Lag Delay (0-60s)
3	Low/Stop	Lead Start	Lag Start	High	Backup Mode Reset	Backup	Low	High	Lag Delay (0-60s)
4	Stop	Lead Start	Lag Start	High	Test/Silence	Horn	Floats Out-of-Sequence	High	Lag Delay (0-60s)

Pump Run/Lag Timer



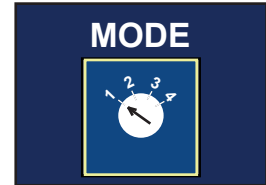
Pump Run Timer: Mode 1
(10x number indicated)
Pump Lag Delay Timer: Modes 2, 3 & 4

Alternation Selector Switch



ALT: Automatic alternation
1-2: Pump 1 always lead
2-1: Pump 2 always lead

Mode Switch



Controller flashes pump and alarm lights the number of times indicated on the Mode selector at power-up or if the mode is changed.

SPECIFICATIONS

Electrical Ratings:

Input voltage: 100 ~ 250 VAC (50/60 Hz)
Transient Protection: 10,000 V for 20 microseconds
Float switch inputs: 12 VDC, 26 mA each
Max float switch cable length: 328 feet (100 m)

Dimensions:

Enclosure: 5.81 x 3.5 x 1.98 inches (14.8 x 8.9 x 5.1 cm)
Mounting holes: 5.43 x 2.50 inches (13.8 x 6.4 cm)
Recommended mounting screws: Size 8
Weight: 7.5 oz (213 g)

Relay Outputs:

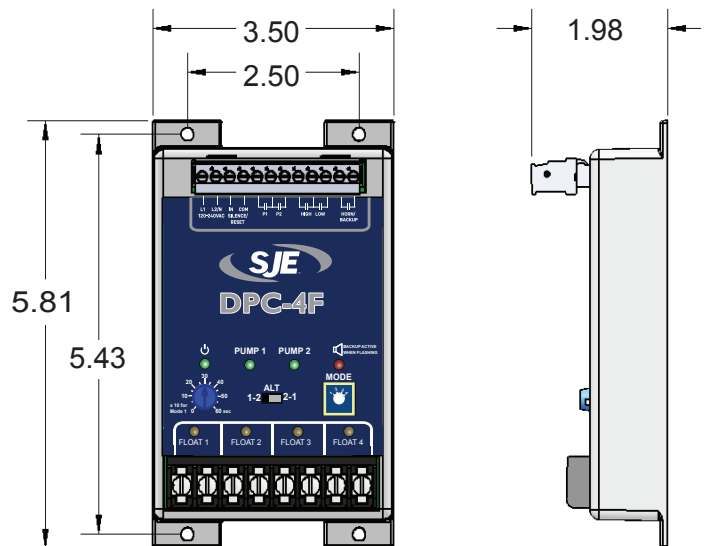
Rating: 5 A max. @ 240 VAC
Mechanical: 10,000,000 operations
Full load: 100,000 operations

Environmental Rating:

Internal panel mount only
Operating temperature: -18°F ~ 140°F (-28°C ~ 60°C)
Storage temperature: -40°F ~ 185°F (-40°C ~ 85°C)
Relative humidity: 95% non-condensing

Conductor Size and Terminal Torque Requirements:

Float terminals: 22-14 AWG, 7 in-lbs
Top green terminals (pluggable): 22-14 AWG, 7in-lbs



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