

Pump Disable Function

It is possible to remove a pump out of the operation sequence. This pump LED will flash continuously and will not be called to run in any mode (1~4).

Procedure:

Hold the RESET input on for 10 sec while powering up the controller. The controller will enter the program mode.

Keep the RESET input ON.

P1 will flash then P2, then P3. This sequence will continue until the RESET is released.

To disable P1, release the RESET while P1 is flashing.

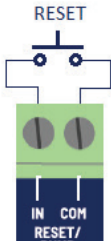
To disable P2, release the RESET while P2 is flashing.

To disable P3, release the RESET while P3 is flashing.

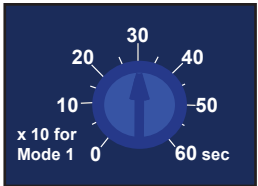
To cancel the pump disable function, release the RESET while no pumps are flashing (after P3 flashing).

Note:

No pumps will be called to run while the controller is in the program mode.

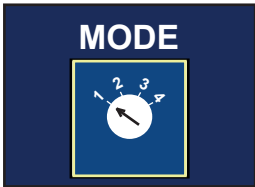


Pump Run/Lag Timer



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

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)

Relay Outputs:

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

Environmental Rating:

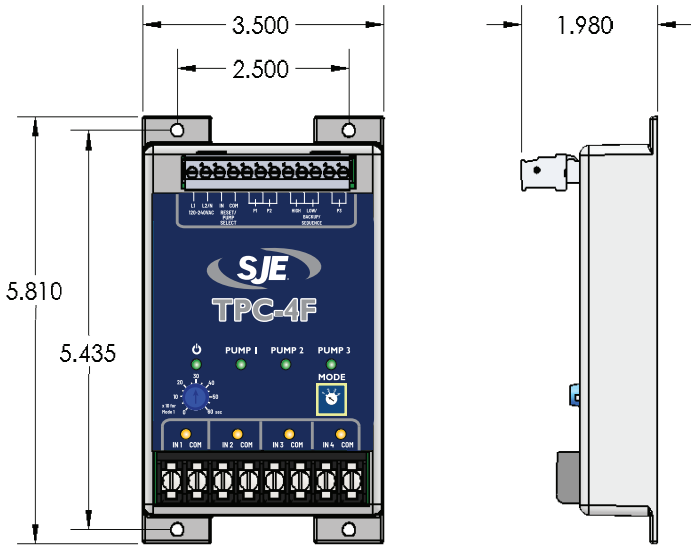
Internal panel mount only
Operating temperature: -18°F ~ 140°F (-28°C ~ 60°C)
Storage temperature: -40°F ~ 185°F (-40°C ~ 85°C)
Relative humidity: 95% non-condensing

Conductor Size and Terminal Torque Requirements:

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

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)



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TPC-4F TRIPLEX/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 TPC-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 TPC-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 TPC-4F is a multi-function pump controller designed to operate three pumps. The unit can be configured to operate as a backup controller or a triplex controller. The controller operates using inputs from 1-4 float switches (or pressure switch in Mode 3).

MULTI-FUNCTION

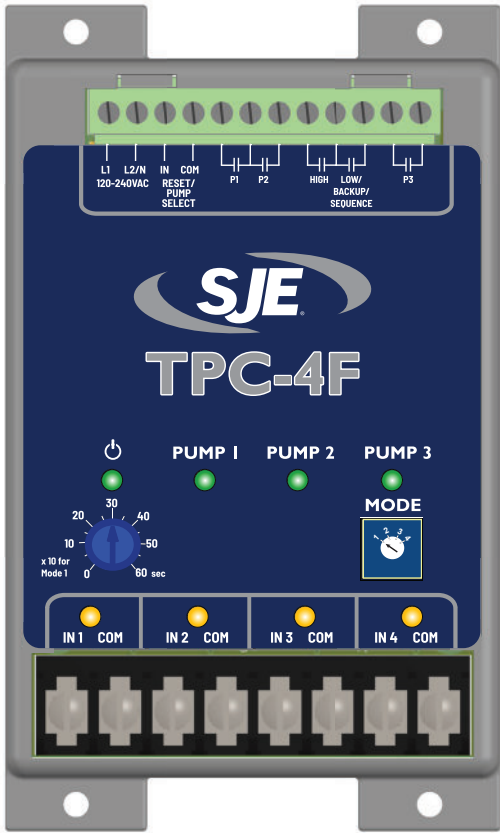
- 4 MODE selector switch and operation
- MODE 1: 1-float backup operation with pump run timer
 - MODE 2: 2-float backup operation
 - MODE 3: Pressure booster operation
 - MODE 4: 4-float triplex operation

FEATURES

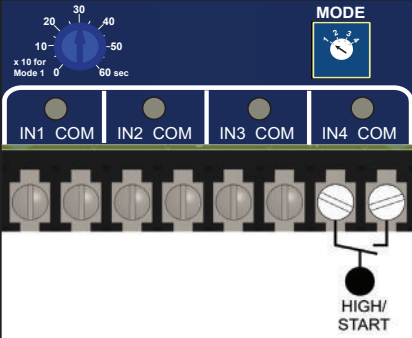
- Green LED indicators for Power On and Pump Call-To-Run
- Amber LED indicators for Input Status
- Float out of sequence detection (Mode 4 only)
- HIGH (level/pressure) relay directly operated by Input 4, independent of microcontroller
- 12 VDC power to Inputs
- Relay Outputs: Pump Call-To-Run (3), Low, High
- Adjustable lag pump delay/pump run timer
- Pump lock-out function
- 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. All pressure switches shall have an adjustable ON/OFF range. Example: Close below 40 PSI and open above 60 PSI.

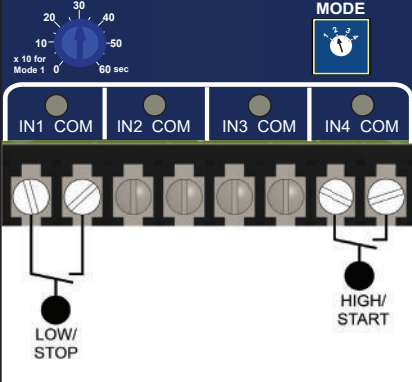


MODE 1: Single Float Backup with Pump Timer



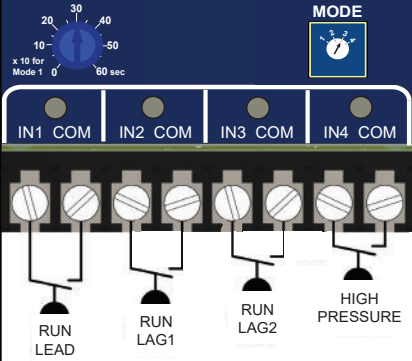
Connection		Condition	Action
Input	Description	If IN4 is ON	Activate HIGH LEVEL RELAY + start LEAD PUMP
IN1	NOT USED	If IN4 remains on for 25s	Start LAG1 PUMP
IN2	NOT USED	If IN4 remains on for 50s	Start LAG2 PUMP
IN3	NOT USED	The TIMER DIAL is used for PUMP MINIMUM PUMP RUN TIME (0-600s). Timer starts when IN4 transitions from ON to OFF.	
IN4	HIGH LEVEL ALARM/START PUMPS	When TIMER is complete while IN4 is OFF	Stop all pumps
		LOW/BACKUP RELAY activates when IN4 is ON. It remains ON until RESET = ON and IN4 = OFF	
			LOW/BACKUP RELAY (ON/OFF)

MODE 2: Two Float Backup



Connection		Condition	Action
Input	Description	If IN1 & IN4 are ON	Activate HIGH LEVEL RELAY + start LEAD PUMP
IN1	LOW LEVEL ALARM/STOP PUMPS	After TIME DELAY, the TIMER DIAL is used for LAG DELAY TIME (0-60S).	Start LAG1
IN2	NOT USED	After LAG1 starts + TIME DELAY (0-60S):	Start LAG2
IN3	NOT USED	Pumps stay running if IN4 is OFF and IN1 is ON.	
IN4	HIGH LEVEL ALARM/START PUMPS	If IN1 = OFF	Stop all pumps
		LOW/BACKUP RELAY activates when IN4=ON or IN1=OFF. It remains ON until RESET=ON, IN4=OFF, and IN1=ON.	
			LOW/BACKUP RELAY (ON/OFF)

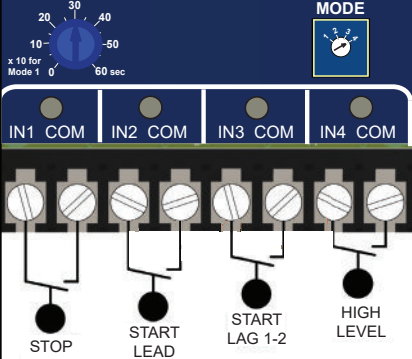
MODE 3: Pressure Booster Control (4 Pressure Switches)



Connection		Condition	Action
Input	Description	If pressure < 40 PSI (IN1=ON)	Start LEAD
IN1	RUN LEAD (Example 40/60 PSI)	If pressure > 60 PSI (IN1=OFF)	Stop LEAD
IN2	RUN LAG1 (EXAMPLE 35/55 PSI)	PUMP RUN cycle will have a minimum run time set by the DIAL TIMER (0-60s).	
IN3	RUN LAG2 (Example 30/50 PSI)	If 1 LEAD PUMP is running + pressure < 35 PSI (IN2=ON) + 5 SEC TIMER	Start LAG1
IN4	HIGH PRESSURE ALARM (Example >70 PSI)	LEAD PUMP keeps running + pressure > 55 PSI (IN2=OFF)	Stop LAG1
		LEAD and LAG1 PUMPS are running + pressure < 30 PSI (IN3=ON) + 5 SEC TIMER	Start LAG2
		LEAD + LAG1 PUMPS keep running + pressure > 50 PSI (IN3=OFF)	Stop LAG2
		If pressure < 30 PSI (IN3=ON) and 3 PUMPS are running + 30 SEC TIMER	Activate LOW RELAY
		HIGH PRESSURE ALARM + IN4 is on for more than 10 SEC	Stop all pumps + activate HIGH RELAY
		HIGH PRESSURE CONDITION will override the MINIMUM RUN TIMER (0-60s).	
		PRESSURE SWITCHES IN1, IN2, and IN3 must close on the LOW PRESSURE SETTING and open on the HIGH PRESSURE SETTING.	
		Use a HIGH PRESSURE SWTICH for recommended safety. Select a switch that will close when the pressure is high.	

Notes:
To limit operation to 2 pumps at a time, do not connect IN3.
To limit operation to 1 pump at a time, do not connect IN2 & IN3.

MODE 4: Four Float Triplex Operation



Connection		Condition	Action
Input	Description	If IN1 is OFF	Stop all pumps
IN1	STOPS PUMPS	If IN1 + IN2 are ON, start LEAD PUMP. Pump runs until IN1 turns OFF.	Start LEAD
IN2	START LEAD PUMP	If IN1 + IN2 + IN3 are ON, after TIME DELAY, start LAG1. LEAD and LAG1 pumps run until IN1 turns OFF.	Start LAG1
IN3	START LAG1 / LAG2 PUMPS	If IN1 + IN2 + IN3 are ON, after TIME DELAY x2, start LAG2. LEAD, LAG1 and LAG2 Pumps run until IN1 turns OFF.	Start LAG2
IN4	HIGH LEVEL ALARM	If IN4 is ON	Activate HIGH Relay
		The TIMER DIAL is used for LAG PUMP DELAY TIME (0-60s)	
		* Mode 4 provides for Float Out-Of-Sequence detection. If Float 1, 2, or 3 fails to activate in the correct sequence (example below), the LOW relay will activate. The Out-Of-Sequence fault will clear when the failed float returns to the correct position.	

