

# Pump Controller MT2PC Duplex / MT3PC Triplex Pump Controllers

The Duplex MT2PC and Triplex MT3PC Pump Controllers offer advanced control functions in a compact integrated controller.



- Easy level settings via keypad or laptop PC.
- Full mode control for pumps and alarms.
- Level indication, pump and fault status.
- Monitors four levels of motor faults.
- Multiple pump operation - up to 9 pumps.
- Multiple level inputs from multi-sensor probe, 4-20mA or ball floats.
- Automatic probe backup when using 4-20mA analog input.
- Industry standard communications, RS485 & RS232.
- Connects directly to a MonitorPro for total control panel solution.
- Din-rail mountable base unit and removable keypad for remote mounting.
- Station efficiency improvement functions.
- Plug-in screw terminals.
- In-built transient protection.
- Two levels of security access.
- Remote mimic & control (up to 3000ft).
- Configurable inputs & outputs.

**MultiTrove pump controllers provide level and pump status at a glance in an intuitive interface for operating pumps, resetting alarms, pump alternation and level settings.**

In addition, more than 50 preset essential and useful pump management functions are incorporated to safeguard and protect equipment, as well as reduce or eliminate common problems such as water hammer, station odors and fat problems.

Operators can change level set points and many other functions easily, in seconds, all via keypad.

This product has set the standard in pump controllers. Complex wiring and many standard components such as timers, thermistors, alternators, seal failure devices, flashing and level sensing relays, indicator lights and switches are eliminated.

This not only simplifies and reduces the size of the panel, but reduces costs, and enables operations and maintenance personnel to efficiently control their water and wastewater pump stations.

## Visual Indication

Pump mode (auto/off/hand), lead/alternation, next pump to start, liquid level, high/low level alarms and several individual pump faults (active and unacknowledged) are displayed at a glance.

## Fail-safe Hand/Off Mode:

Operators sometimes forget to set pumps back to Auto when leaving a station. With "Hand/Auto"; Fail Safe, pumps will never be damaged.

## Level Alarm Muting

Level alarms can be temporarily muted or disabled to allow work to be carried out without the distraction of visual and audible alarms.

## Level Simulation

Level simulation eliminates the common, but very risky, practice of leaning into the well to move level sensing devices to check pump and alarm activation.

## Maximum Number of Pumps to Run

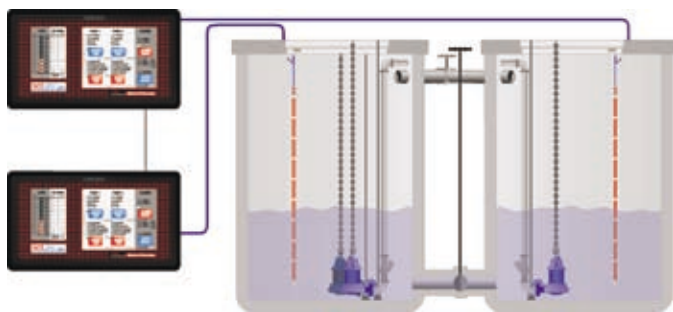
The number of pumps allowed to run at one time can be preset. This prevents electrical overloads and also protects the hydraulic network from excessive pressure.

## Jockey Pump Control

When using jockey pumps, it is beneficial to turn off the jockey pump(s) when a large pump is activated during peak periods. Group alternation is also available.

## Multi-well Mode

The Split or Multi-well design enables one well to be shut down for maintenance, while inflow is diverted into the other. In the past, pumps either ran dry or could not keep up due to the flow equalization between pits. MultiTrode's pump controllers correctly manage both pits and alternate the pumps.



## Municipal Functions

### Blocked pump detection

Eliminates the damage to pump seals and wasted energy caused by blocked pumps. The controller can be set to allow several attempts at restarting before locking out the pump.

### Odor reduction

Complaints from residents regarding odor are a problem with some stations. These controllers have a configurable maximum off-time function which prevents wells turning septic during periods of low activity.

### Excessive station starts

Excessive starts can result in pump and control damage and excessive energy consumption. MultiTrode controllers offer innovative solutions by monitoring pump starts and adaptively changing level set points so as to minimize starts during peak periods.

### Reduced station fat build-up

Random duty start delay can be set to prevent fat build-up at the activation level.

### Preset factory defaults

Are available for both water and sewage, greatly simplifying installation.

## Advanced Pump Protection

### Flygt seal and thermal faults

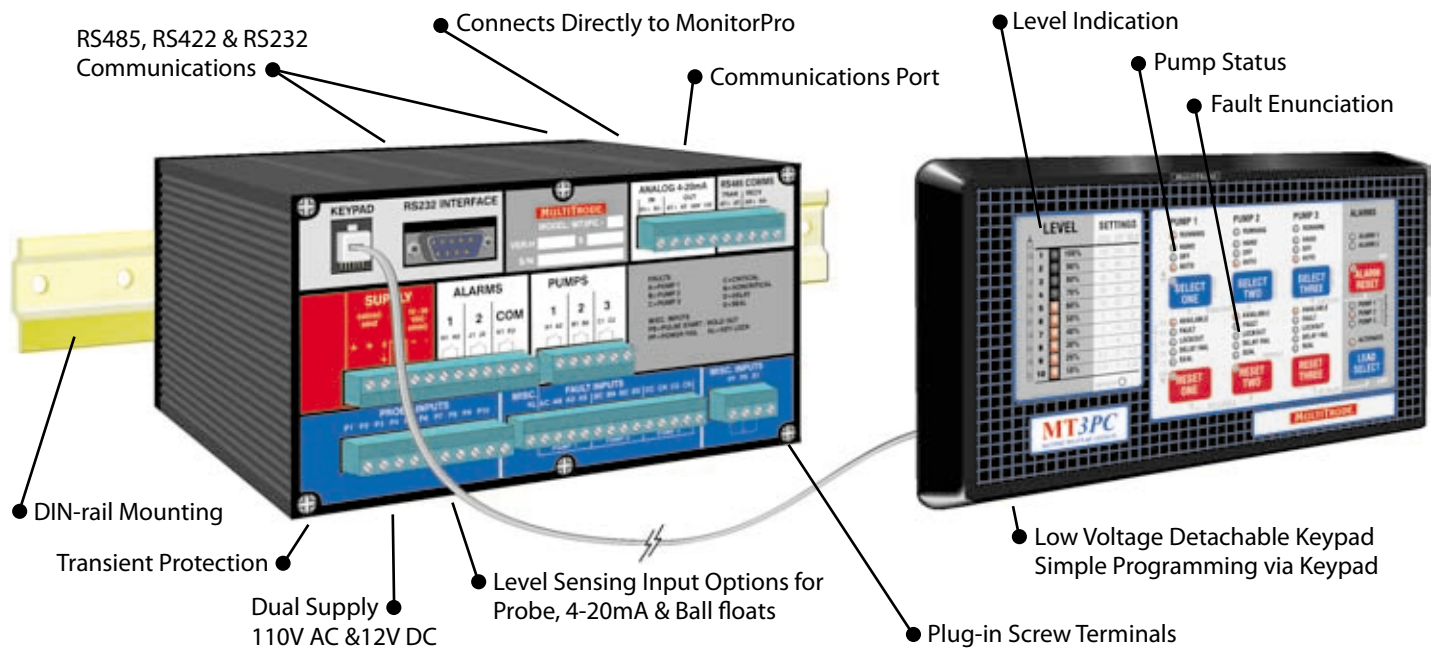
Flygt seal and thermal (minicas) as well as standard thermistor and pump seal monitoring and protection functions are incorporated in the controller. This reduces panel components, cost and complexity, and provides advanced pump protection, resulting in improved reliability.

### Excessive pump starts

Pumps are designed to have a maximum number of starts per hour. By setting the controller to the manufacturer's recommended value, additional protection is provided.

### Critical and non-critical faults

By separating the critical, non-critical and delay faults, reliable user-selected fault detection is provided.



### Configurable Outputs

The user may configure up to 5 digital outputs. Each output can be activated from a selection of 64 sources, e.g. desired station starts exceeded, well washer on, all pumps unavailable, level device fault, no pumps running, thermal fault, or any pumps running, etc. Additionally, each output can be set as a N/C or N/O relay, providing flexible control and indication to other devices.

### Redundant Level Sensing

Where analog level sensors are used, a probe can be used as a redundant level sensor.

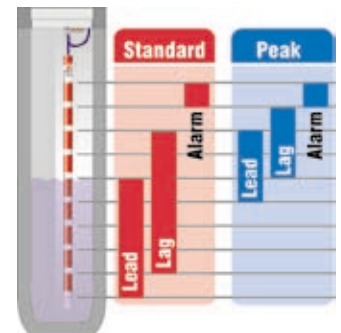
### Alternation

Comprehensive pump alternation, duty selection and grouping options are easily selected via the keypad.



### Peak Level

The controller can store two groups of set operating points and time delays for all pumps and level alarms. These can be activated via a digital input from a timer or via Outpost municipal SCADA.



### Off-Peak Pumping

Significant energy savings can be achieved in municipal water applications by pumping in off-peak periods. Pulse start, hold out and peak levels provide valuable tools to effectively manage both water and sewerage networks.

### Pump Decommissioning

This feature allows the operator to decommission a pump that is requiring maintenance. Pump decommissioning can also be used where a second or third pump is to be installed in the future, saving control panel modifications when the additional pumps are installed.

### Charge/Discharge Mode

The pump controller can be used for both water and sewer applications, helping with standardization across a municipal authority's network. Each mode has preset factory default settings to simplify installation.

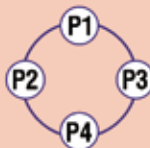
#### Fixed Starting Order

Pump start, sequence fixed.



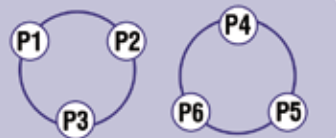
#### Alternation Starting

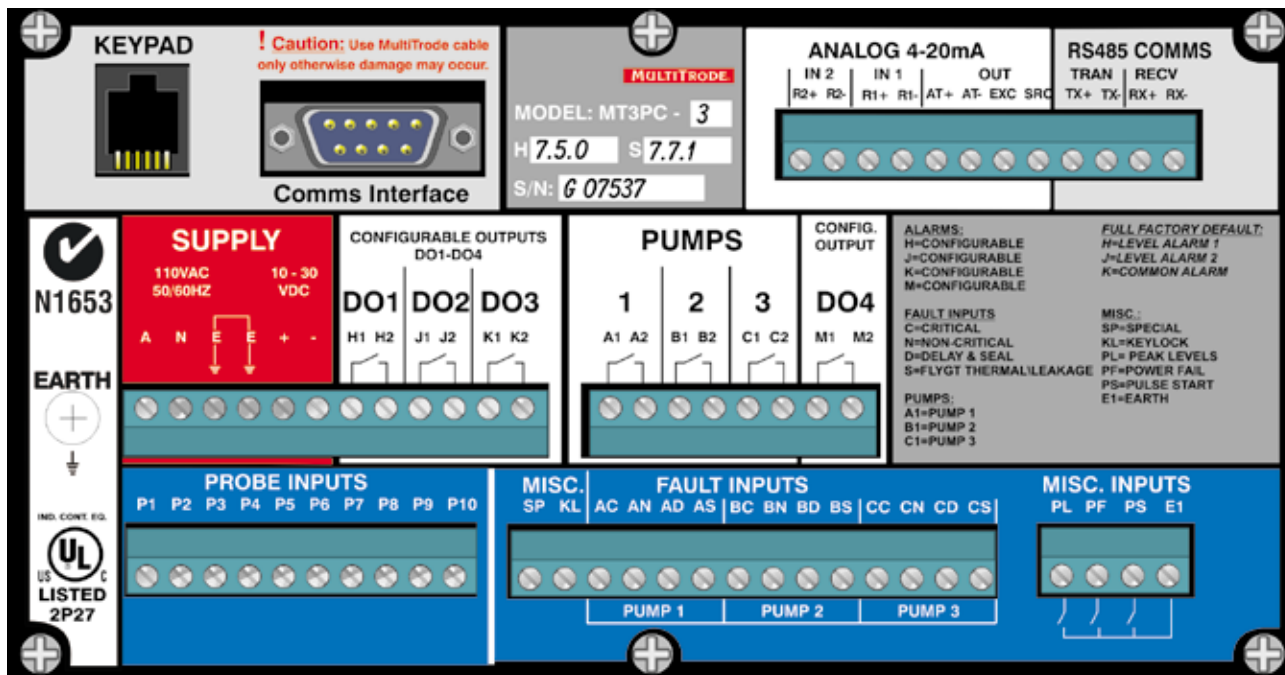
Pump start, sequence alternates.



#### Two Groups Alternating

Jockey pump mode:  
Group 2 on  
Group 1 off





## Specifications

### Mode of Operation:

Mode Charge or Discharge (Fill or Empty)

### Probe Inputs:

Sensor inputs 10  
 Sensor voltage 5VAC Nominal  
 Sensor current 0.8mA max. (per sensor)  
 Sensitivity 1k, 2k, 4k, 10k, 15k, 20k, 30k, 40k, 80k, 120k

### Other Inputs:

Analog 4-20mA x 2  
 Fault inputs Critical, Non-critical, Delay fail, Thermistor & Seal fail for each pump, Keypad lockout, Power fail  
 Pulse start, Power fail(Hold out), Peak Levels  
 All inputs are also configurable as SCADA inputs

### Relay Outputs:

No of relay outputs MT3PC - 3 Pumps + 4 Configurable  
 MT2PC - 2 Pumps + 5 Configurable  
 Output delays 0.25 sec to 120 min  
 Relay contact rating 250VAC 5A Resistive, 2A Inductive  
 Relay contact life 10<sup>5</sup> Operations  
 Terminal size 2 x 13 AWG / 2.5mm<sup>2</sup>  
 Other outputs Keypad (can be remotely mounted via 6ft cable provided)  
 Analog 4-20mA,  
 (locally powered via 13.8vdc supply)  
 - Optional external supply maximum 15vdc  
 - Maximum allowable loop resistance 500 Ohms

### Communications:

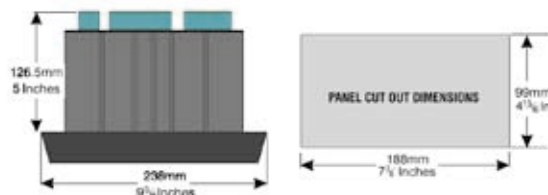
Local area network Digital RS485

### Display:

LEDs High Intensity ( Red & Green)

### Physical Product:

Dimensions 5<sup>5</sup>/<sub>16</sub> H x 9<sup>5</sup>/<sub>16</sub> x 3<sup>7</sup>/<sub>8</sub> (Inches)  
 137h x 237w x 162d (mm)  
 Mounting Panel mounted or internal. (DIN Rail)  
 \* Keypad may be remotely mounted.  
 Enclosure Extruded aluminum



### Power Supply:

Supply Voltage AC 110, 240VAC Nominal 50/60Hz  
 18VA Max  
 Supply Voltage DC 10-30VDC - 6 watts max.

### Environmental Range:

Fahrenheit +14°F to +140°F  
 Centigrade - 10°C to +60°C  
 Humidity 90% non condensing

### Available Models & Ordering Information:

MT2PC-2 240VAC & 10-30VDC  
 MT3PC-2 240VAC & 10-30VDC  
 MT2PC-3 110VAC & 10-30VDC  
 MT2PC-3 110VAC & 10-30VDC



All MultiTrove Products carry a full two year warranty



[www.multitrove.com](http://www.multitrove.com)

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