

A close-up, high-speed photograph of water splashing, creating a series of white, crown-like droplets against a light blue background. The water is in motion, with ripples and reflections visible.

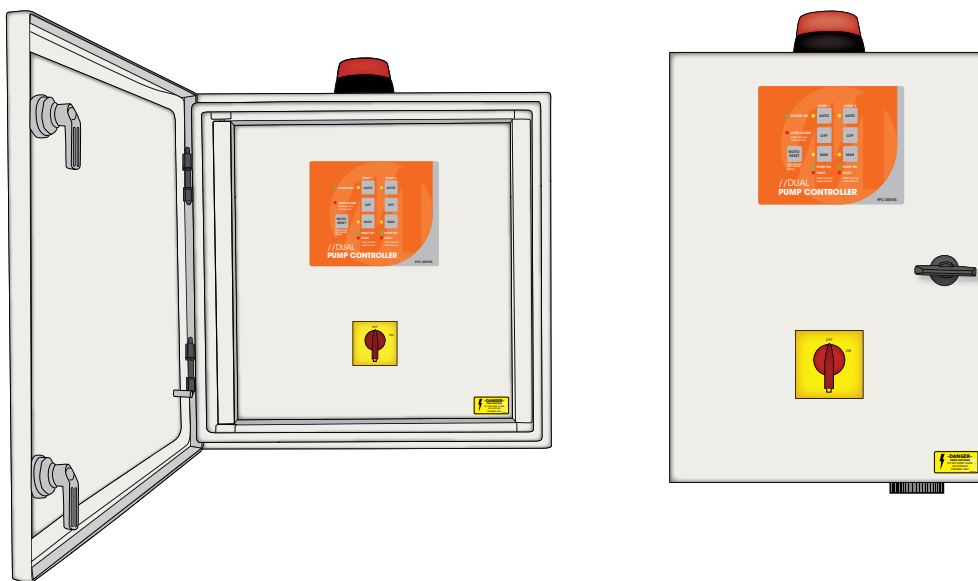
# Dual Pump Controllers

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## Selecting Your Controller

1. Do I need to control 1 phase or 3 phase pumps?
2. What is the 'full load current' rating of the pumps in amps?
3. Do I want to 'direct switch' the single phase pumps (6Amps max) or do I want to switch them through contactors and overloads?
4. What type of enclosure do I require; with inner door, or with the controls on the external door?
5. Do I require BMS outputs for remote monitoring?
6. Do I require a Remote Status Indicator for remote pump station status indication?

Once the above questions have been answered, selecting a product from our standard range, including optional auxiliary equipment, will be easy.



# Dual Pump Controllers

## The Range

Product Code	Voltage Rating	Contactors Rating	Overload Rating	Enclosure Type *
FPC-30000	240Vac	N/A	N/A	201
FPC-30010-AA	240Vac	18Amp	1.6 - 2.5Amp	102
FPC-30010-A	240Vac	18Amp	2.5 - 4Amp	102
FPC-30010-B	240Vac	18Amp	4 - 6Amp	102
FPC-30010-C	240Vac	18Amp	7 - 10Amp	102
FPC-30010-D	240Vac	18Amp	9 - 13Amp	102
FPC-30010-E	240Vac	18Amp	12 - 18Amp	102
FPC-30020-AA	240Vac	18Amp	1.6-2.5Amp	104
FPC-30020-A	240Vac	18Amp	2.5 - 4Amp	104
FPC-30020-B	240Vac	18Amp	4 - 6Amp	104
FPC-30020-C	240Vac	18Amp	7 - 10Amp	104
FPC-30020-D	240Vac	18Amp	9 - 13Amp	104
FPC-30020-E	240Vac	18Amp	12 - 18Amp	104
FPC-30030-AA	415Vac	18Amp	1.6-2.5Amp	102
FPC-30030-A	415Vac	18Amp	2.5 - 4Amp	102
FPC-30030-B	415Vac	18Amp	4 - 6Amp	102
FPC-30030-C	415Vac	18Amp	7 - 10Amp	102
FPC-30030-D	415Vac	18Amp	9 - 13Amp	102
FPC-30030-E	415Vac	18Amp	12 - 18Amp	102
FPC-30040-AA	415Vac	18Amp	1.6-2.5Amp	104
FPC-30040-A	415Vac	18Amp	2.5 - 4Amp	104
FPC-30040-B	415Vac	18Amp	4 - 6Amp	104
FPC-30040-C	415Vac	18Amp	7 -10Amp	104
FPC-30040-D	415Vac	18Amp	9 - 13Amp	104
FPC-30040-E	415Vac	18Amp	12 - 18Amp	104

\* Please Note: Refer to Section 5 of this document for Enclosure Specifications

# Dual Pump Controllers

## The Range

	Product Code	Voltage Rating	Contactor Rating	Overload Rating	Enclosure Type *
BMS Models	FPC-30220	240Vac	18Amp	TBA	104
	FPC-30240	415Vac	18Amp	TBA	104
RMWC Models	FPC-32020	240Vac	18Amp	TBA	104
	FPC-32040	415Vac	18Amp	TBA	104
RMWC+BMS Models	FPC-32220	240Vac	18Amp	TBA	104
	FPC-32240	415Vac	18Amp	TBA	104

\* Please Note: Refer to Section 5 of this document for Enclosure Specifications

# Dual Pump Controllers

## Common Features

*"One Controller.....All Applications"*

Building on the success of the FPC-300 Series Dual Pump Controller, the new FPC-300-Advanced version, further enhances the **"One controller does it all"** concept, while at the same time, makes "simplicity of operation" even more user friendly. Although many unique features of the controller are common to all pumping applications, many "system specific" optional features, can be enabled or disabled at the flick of a switch.

### Applications

- Submersible Sewage
- Submersible Storm Water
- Constant Pressure Systems
- Hot Water Circulation Systems
- Transfer Pumping Systems

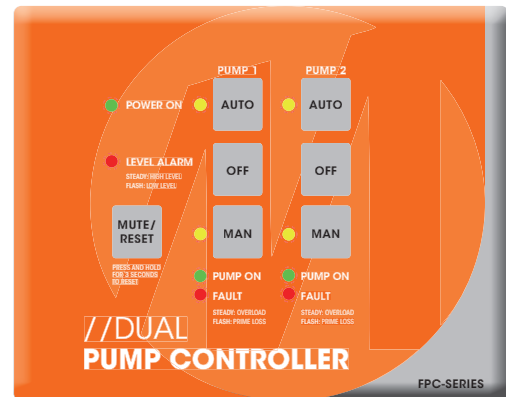
### Common Features

#### Hardware

- Advanced Micro Processor Control Module
- Distinctive, Highly durable and aesthetically attractive Electronic Keypad
- Circuit Breaker protected Low Voltage Control and input Circuitry
- Lockable Main Isolator
- Individual Pump Isolation
- Auto/Off/Manual Operation of Both Pumps
- Thermal Overload Protection of Pump Motors\*
- Visual and Audible Alarms c/w Mute Switch
- LED Indicator Lights for System Status indication
- IP 65 Weather Proof, Powder Coated Metal Enclosures c/w removable gland plate
- User friendly, clearly labelled, Din Rail mounted, Input and Output Terminal Connection
- Individually Serial Numbered and logged for traceability and product support
- Owner/Operator, Installation and Operation Manual supplied with each controller

#### Function

- Auto Alternation of Pump Duty
- Provision for 4 digital + 1 Analogue input (typically Low Level, Stop/Start, Standby In and High Level)
- Delayed Start and Minimum Run Time Feature
- Maximum Run Time and Auto Alternation Feature
- Maximum Idle Time Feature, for "pump out" of residual in Pump Well situations
- Anti Seize/Freeze feature, for Low Use and Seasonal Pumping applications
- Smart "Auto Silencing" and "Chirp Mode" audible Alarm
- Delayed Standby Pump Start, avoids two motors starting simultaneously
- Optional "Time Out" on Manual Pump Mode automatic reset to Auto
- Lamp, Strobe and Buzzer Test button
- No Flow/Pressure - Inbuilt Timer feature
- Level Alarm Delay feature avoiding nuisance tripping
- Interconnectable with **Remote Status Indicator** panel, via simple data connection (**see Section 3**)
- Interconnectable with **Building Monitoring System** Module, via simple data connection (**see Section 3**)



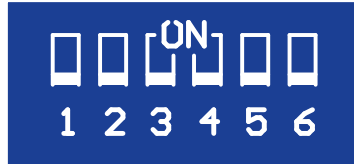
# Dual Pump Controllers

## Operating Data

### Operation

This controller can perform control functions for most Dual Pump pumping applications. It is more than likely that the control parameters have already been set up for your particular application however; hereunder you will find details of the set up and configuration options.

There are six DIP switches located on the lower side of the control module, which allows for selecting "mode" and "feature" options, as per the following table:



DIP Switch	Position	Function
1/2	Off/Off	Mode A: Standard typical float switch configuration (Start, Stop and High level).
	Off/On	Mode B: Standard configuration plus Low level (Start, Stop, High level and Low level).
	On/Off	Mode C: Standard configuration plus Prime Loss enabled, on Low level (Input 1)
	On/On	Mode D: Pressure Pumping configuration (Lead, Lag and Low pressure)
3	Off	Operating pump alternates each time a pump start is triggered or after 30 minutes continuous running
	On	Operating pump alternates after 6 hours continuous running
4	Off	Anti-seize timer disabled
	On	Anti-seize timer 10 seconds every 7 days enabled
5	Off	When placed in Manual mode, pump remains in Manual mode
	On	When placed in Manual mode, after 5 minutes the pump will revert to Auto
6	Off	High Level Alarm automatically resets upon open circuit of High Level input. High Level Alarm has 15 minute delay
	On	High Level Alarm can only be reset manually. High Level Alarm has 5 minute delay

Table 1: Mode switch settings and descriptions

INPUT1 4-20mA + -	INPUT2	INPUT3	INPUT4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Mode A: Standard Configuration

Start/Stop/High level operation. When the pump start input is closed contact (triggered), the duty pump will be turned on. The pump will remain on until both the pump start and pump stop inputs have turned off (open circuited). Upon high level both pumps will run until the pump stop input turns off.

In addition to this, there is a maximum idle timer, which will trigger a pump start condition, if either pump has not run for 4 hours, and the stop flow contacts are closed, the pump will continue to run until the stop float contacts open. Input functions are as per table (right)

Input	Function
Input 1	Not used
Input 2	Pump Stop
Input 3	Pump Start
Input 4	High Level

### Mode B: Standard Configuration plus Low Level Alarm

As per Mode A, except it has an active Low Level input. The Low Level input must be closed for pump start and pump stop inputs to function. The High Level input however, will still override the Low Level and run both pumps. Input functions are as per table (right)

Input	Function
Input 1	Low Level
Input 2	Pump Stop
Input 3	Pump Start
Input 4	High Level



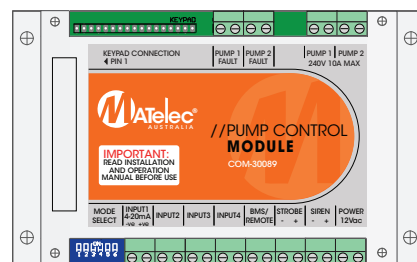
# Dual Pump Controllers

## Operating Data

### Maximum Run and Alternation Mode

With **DIP switch 3** set to "Off", the unit will alternate as usual, each time a pump start condition occurs. Additionally, the controller will automatically alternate pump duty if a pump has been running continuously for 30 minutes (maximum run timer).

Setting this DIP switch to "On" will cause the controller to operate in "Circulation Mode" where duty will only alternate once the pump has run for 6 hours of accumulated time.



FPC-300 Series Module

### Anti-Seize Timer

With **DIP Switch 4** set to "On", the Anti-Seize timer will automatically run the pumps for 10 seconds, every 7 days. This pump operation will completely override all inputs including the low level (if enabled). This feature will only run pumps that are set in Auto. This "Pump Run", will alternate between Pump 1 and Pump 2. A pump that has been locked out due to a fault will not run.

### Manual Mode Time out

With **DIP Switch 5** set to "On", the pump will only remain in Manual Mode for 5 minutes, after which time it will automatically revert to Auto.

### High Level Alarm Reset

With **DIP Switch 6** set to "Off", the High Level Alarm will automatically reset once the high level input opens circuit. The controller will also use the alternate high level alarm delay. Typically used for Storm Water applications. High Level Alarm delay in this mode is 5 minutes.

Setting this DIP Switch to "On", will cause the High Level Alarm to remain active until the controller is reset. The High Level Alarm will use the standard High Level Alarm activation delay. Typically used for Sewerage applications. High Level Alarm delay in this mode is 5 minutes.

### Audible and Visual Alarm Test

By pressing the **Mute/Reset** button on the keypad continuously for a period of 5 seconds, the Strobe, Siren and Indicator Lights will be powered up for inspection.

### Fault Reset

To reset all faults on the controller, press and hold the **Mute/Reset** button on the keypad continuously for a period of 3 seconds until an acknowledgement beep is heard.

### Pump Fault

A Pump Fault is indicated for two types of faults. A Thermal Overload will be indicated by way of a steady Fault Indicator light. A Prime loss fault will be indicated by way of a flashing Fault Indicator light. Both types of faults can be reset by way of the Fault Reset button.

### Level Alarms

A High Level Alarm is indicated by way of a steady Level Alarm Indicator light.

A Low Level/Low Pressure Alarm is indicated by way of a Flashing Level Alarm light.

### Auto Silencing Alarm Feature

The Audible Alarm is programmed to sound for 5 minutes continuously, unless muted, and will thereafter automatically silence and enter "Chirp" mode. In Chirp mode the Audible Alarm will sound briefly (2 seconds) every 5 minutes.

### Second Pump-Start Delay

A feature of the controller is that it has a start delay on "Second Pump Start Up". This feature means that overloading the power supply is avoided effectively with a staggered start of both pumps.



# Dual Pump Controllers

## Control Logic Setup

- Common DOL Dual Pumping Applications -											
APPLICATION <i>One Controller.....all applications!</i> Revision: 25/05/10	Input 1	Input 2	Input 3	Input 4	M	Dip 1	Dip 2	Dip 3	Dip 4	Dip 5	Dip 6
	Connections						Mode Type	Mode Type	Switch Settings Alterna. Time	Anti- Seize	Manual Run Time
<b>Submersible - Sewage Pumping System</b>											
Automatic Pumps	-	-	Bridge	-	A	Off	Off	On	Off	On	On
Automatic Pumps + High Level Float	-	-	Bridge	High Level	A	Off	Off	On	Off	On	On
2 Floats	-	-	Start/Stop	High Level	A	Off	Off	Off	Optional	Optional	On
3 Floats	-	Stop	Start	High Level	A	Off	Off	Off	Optional	Optional	On
3 Floats c/w Standby In	Standby Start	-	Start/Stop	High Level	A	Off	Off	Off	Optional	Optional	On
4 Floats c/w Standby In	Standby Start	Stop	Duty Start	High Level	A	Off	Off	Off	Optional	Optional	On
4 Floats c/w Low Level Alarm	Low Level	Stop	Start	High Level	B	Off	On	Off	Optional	Optional	On
Transducer + Optional High Level Float	Transducer	-	-	High Level	A	Off	Off	Off	Optional	Optional	On
<b>Submersible - Stormwater Pumping System</b>											
Automatic Pumps	-	-	Bridge	-	A	Off	Off	On	Off	On	Off
Automatic Pumps + High Level Float	-	-	Bridge	High Level	A	Off	Off	On	Off	On	Off
2 Floats	-	-	Start/Stop	High Level	A	Off	Off	Off	Optional	Optional	Off
3 Floats	-	Stop	Start	High Level	A	Off	Off	Off	Optional	Optional	Off
3 Floats c/w Standby In	Standby Start	-	Start/Stop	High Level	A	Off	Off	Off	Optional	Optional	Off
4 Floats c/w Standby In	Standby Start	Stop	Duty Start	High Level	A	Off	Off	Off	Optional	Optional	Off
4 Floats c/w Low Level Alarm	Low Level	Stop	Start	High Level	B	Off	On	Off	Optional	Optional	Off
Transducer + Optional High Level Float	Transducer	-	-	High Level	A	Off	Off	Off	Optional	Optional	Off
<b>Hot Water Recirculation Pumping System</b>											
No Thermostat	-	-	Bridge	-	A	Off	Off	On	Off	Off	Off
With Thermostat	-	-	Thermostat	-	A	Off	Off	On	Off	Off	Off
<b>Constant Pressure Pumping System</b>											
Automatic (Press Control)	-	-	Bridge	-	A	Off	Off	Off	Off	On	Off
Automatic (Press Control) + Standby In Switch	-	-	Bridge	Standby In	A	Off	Off	Off	Off	On	Off
1 Pressure Switch	-	-	Start/Stop	-	A	Off	Off	Off	Off	On	Off
1 Pressure Switch + Prime Loss	Prime Loss Sw	-	Start/Stop	-	C	On	Off	Off	Off	On	Off
2 Pressure Switches	-	Lead	Lag	-	D	On	On	Off	Off	On	Off
2 Pressure Switch + Pressure Loss Sw.	-	Lead	Lag	Pressure Loss P	D	On	On	Off	Off	On	Off
2 Pressure Switch + Prime Loss Press/Flow Sw	Prime Loss Sw	-	Start/Stop	Low Press Sw	C	On	Off	Off	Off	On	Off
<b>Transfer Pumping System</b>											
1 Pressure or Float Switch	-	-	Work Level	-	A	Off	Off	Off	Optional	Optional	Off
As above + Prime Loss	Prime Loss Sw	-	Work Level	-	C	On	Off	Off	Optional	Optional	Off
1 Pressure Start/Stop & Low Level Cut Out Float	-	-	Series Conn.	-	A	Off	Off	Off	Optional	Optional	Off
As above + Prime Loss	Prime Loss Sw	-	Series Conn.	-	C	On	Off	Off	Optional	Optional	Off