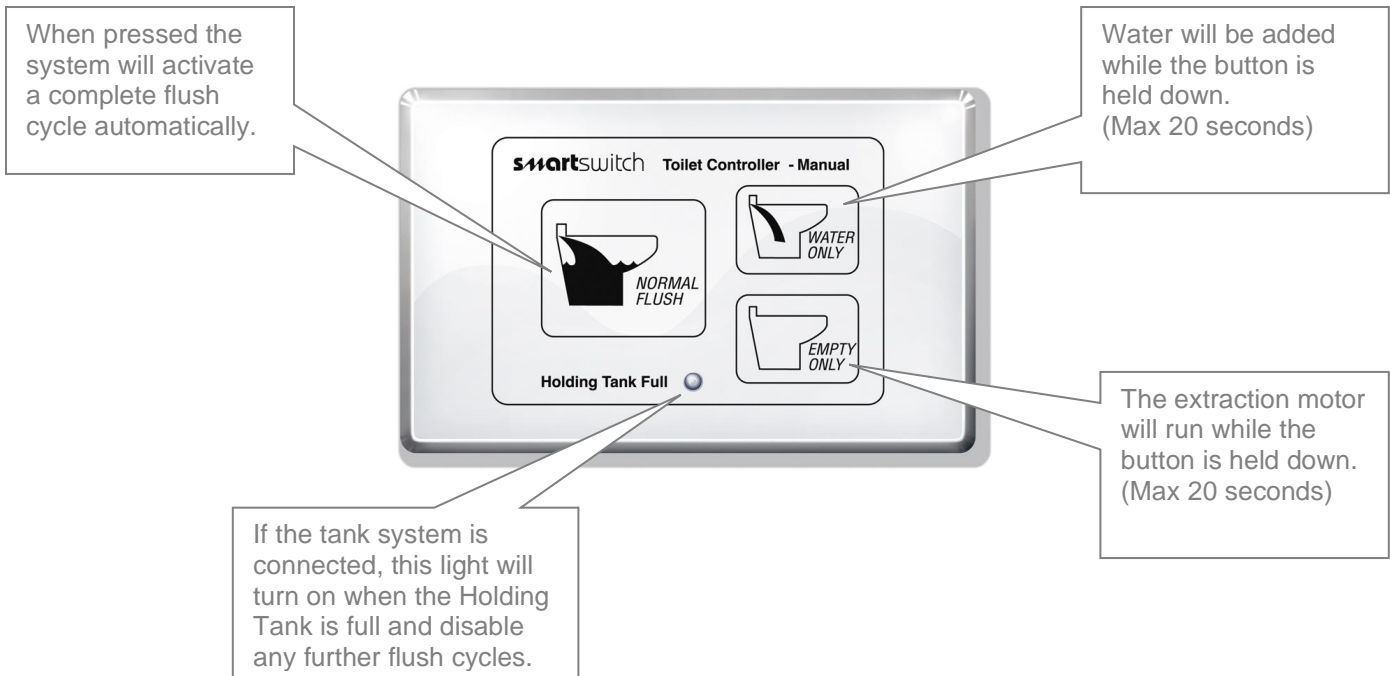


Smartswitch Toilet Controller

Model: STS-220

The unique Deluxe Programmable Toilet Controller by Smartswitch was designed for all electric marine toilets with remote, fresh or salt water flushing supply via an inlet pump or water solenoid valve. The stylish control panel provides fully automatic programmed flushing when the Flush touch pad is pressed. It also provides independent operation of the inlet or discharge pumps for maintenance or line clearance when the manual touch pads are used. In-built troubleshooting features and toilet pump protection are standard.



This Product has been Factory Preset to operate effectively without making any further adjustments.

Should you wish to alter these settings please follow proceeding instructions.

Programming

This product has three Model Modes of operations:

Model Mode 1 = Standard Mode

Model Mode 2 = Tecma Silence (Series)

Model Mode 3 = Tecma Prestige (Series)

Model Mode 4 = European Mode

This product has been factory default set to Model Mode 2 (see page 4)

Factory Default: T1 = 20 seconds Model **Mode** = Tecma Silence (Series)

Please Note: If you have a Tecma Silent (Series) Toilet System **ALWAYS** choose Model Mode 2.

Should you wish to change these settings then proceed as below.

Advisory Warning: 1.5 litres per flush is the recommended minimum flush setting for discharge lines of less than 6 feet. Dilution is the secret to efficient waste transfer, through pipes and must be considered when programming your controller. Increase your flush volume appropriately if the discharge line is greater than 6 feet in length.

Note – Variations in controllers may substitute the following buttons: Flush = Normal Flush, Fill = Water Only, Empty = Empty Only.

Programmable Time Options (Actuate to $\pm 0.1\%$)

Timer T1 & T2 (**Water** Valve/Pump) & (Extraction Motor) from 1 to 20 seconds.

Timer T3 (**Water** Valve/Pump) is programmable from 0 to 20 seconds.

This manual applies to units manufactured after 01/08/2012

Programming for Standard Model Mode 1

Step 1 – Placing the unit in program mode:

After wiring and applying power, hold the **Water Only & Empty Only** buttons down together for 3 seconds. The Holding Tank Full LED will give three quick flashes indicating you have entered program mode. You may now release both buttons. Once in program mode you can now program one of the following three timers: T1 = Water Valve/Inlet Pump, T2 = Discharge Pump or T3 = Water Valve/Inlet Pump. **Step 1** will need to be repeated for each of these delay times.

Setting T1 Water Valve/Inlet Pump Time:

After placing the unit in program mode, as in *Step 1* above, press the **Normal Flush** button the number of times required for the Water Valve/Inlet Pump time (one press = 1 second, two = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 1 second. Once this is done press the **Empty Only** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Setting T2 Discharge Pump Time:

After placing the unit in program mode, as in *Step 1* above, press the **Empty Only** button the number of times required for the Discharge Pump time (one press = 1 second, two = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 1 second. Once this is done press the **Normal Flush** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Setting T3 Water Valve/Inlet Pump Time:

After placing the unit in program mode, as in *Step 1* above, press the **Water Only** button the number of times required for the Water Valve/Inlet Pump time (one press = 0 sec's, two = 1 second, three = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 0 seconds. Once this is done press the **Normal Flush** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Programming for Tecma Silence (Series) Model Mode 2

Step 1 – Placing the unit in program mode:

After wiring and applying power, hold the **Water Only & Empty Only** buttons down together for 3 seconds. The Holding Tank Full LED will give three quick flashes indicating you have entered program mode. You may now release both buttons.

Once in program mode you can now program one of the following two times: T1 = Water Inlet / Discharge Pump or T3 = Water Valve/Inlet Pump.

Step 1 will need to be repeated for each of these delay times.

Tecma mode differs as the water inlet and pump discharge times work together:

The pump discharge time will be half (1/2) of the T1 = Water Inlet time (see timing chart page 6) therefore **ONLY** T1 & T3 need to be programmed.

Setting T1: Water Inlet / Discharge Pump Time:

After placing the unit in program mode, as in **Step 1** above, press the **Normal Flush** button the number of times required for the Water Inlet / Discharge Pump time (one press = 1 second, two = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 1 second.

Once this is done press the **Empty Only** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Setting T3: Water Valve/Inlet Pump Time:

After placing the unit in program mode, as in **Step 1** above, press the **Water Only** button the number of times required for the Water Valve/Inlet Pump time (one press = 0 sec's, two = 1 second, three = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 0 seconds.

Once this is done press the **Normal Flush** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Programming for Tecma Prestige (Series) Model Mode 3

There is no programming required for this mode as the times are fixed (see timing chart page 6).

Programming for European Model Mode 4

Step 1 – Placing the unit in program mode:

After wiring and applying power, hold the **Water Only & Empty Only** buttons down together for 3 seconds. The Holding Tank Full LED will give three quick flashes indicating you have entered program mode. You may now release both buttons. Once in program mode you can now program one of the following two timers: T1 = Water Valve/Inlet Pump, T2 = Discharge Pump

Step 1 will need to be repeated for each of these delay times.

Setting T1 Water Valve/Inlet Pump Time:

After placing the unit in program mode, as in **Step 1** above, press the **Normal Flush** button the number of times required for the Water Valve/Inlet Pump time (one press = 1 second, two = 2 sec's, etc). The Tank LED will flash once indicating a valid key press.

Note: If the button is pressed 21 times it will start back at 1 second.

Once this is done press the **Empty Only** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

Setting T2 Discharge Pump Time:

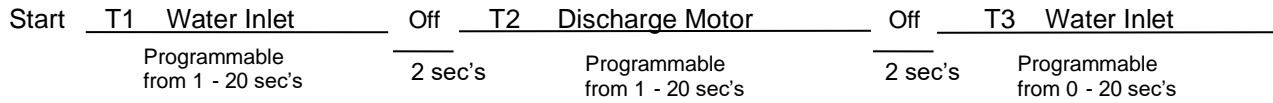
After placing the unit in program mode, as in **Step 1** above, press the **Empty Only** button the number of times required for the Discharge Pump time (one press = 1 second, two = 2 sec's, etc). The Tank LED will flash once indicating a valid key press. Note: If the button is pressed 21 times it will start back at 1 second.

Once this is done press the **Normal Flush** button to store this value. The unit will flash three times indicating the time has been set and you have left program mode.

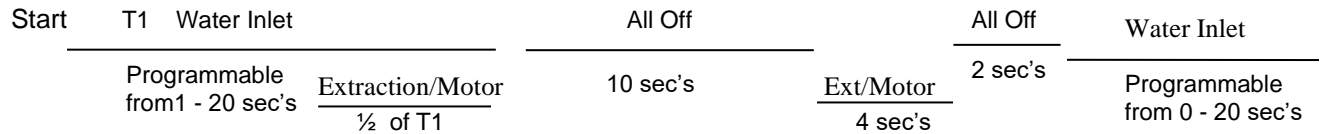
Model Timing Chart

This device has three different timing sequences, any one may be selected.
 (Factory default is Model Mode 2 = Tecma Silence)

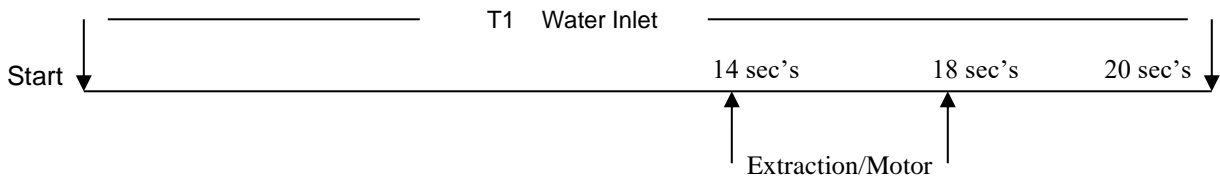
Mode 1: Standard Model Mode 1



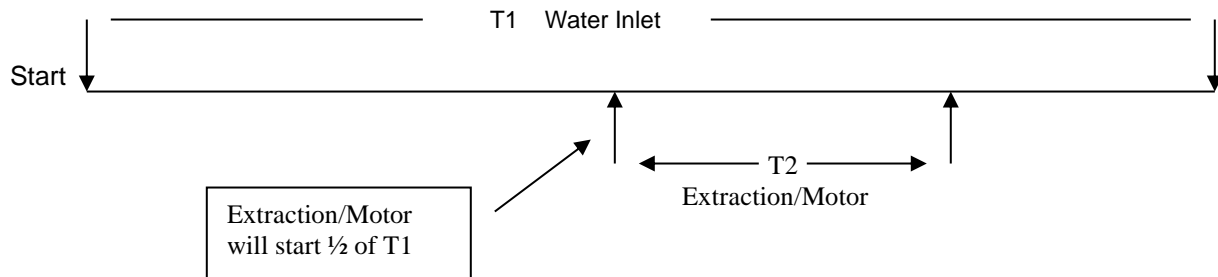
Model Mode 2: Tecma Silence (Series) - Factory Default Tecma Single Button Emulation Mode:



Model Mode 3: Tecma Prestige (Series) - Fixed time = 20 seconds



Model Mode 4: European Mode



Programming the Device for Model Mode or Disable Features

Place the unit in Model Mode / Disable Features Program Mode:

Hold the **Water Only** & **Empty Only** buttons down together for 3 seconds. The Holding Tank Full LED will give three flashes indicating you have entered program mode. While still holding down these two buttons, press the **Normal Flush** button. The Tank LED will give six flashes indicating you have entered Model Mode / Disable Features program mode, release both buttons.

Selecting Model Mode:

Press the **Normal Flush** button, the Holding Tank Full LED will give four flashes indicating you have entered program Model Mode.

You may now select which Model Mode you require: Press the **Normal Flush** button for **Tecma Silence (Series)** (model mode 2), the **Empty Only** button for **Standard Mode** (model mode 1) or the **Water Only** button for extended models, press the **Normal Flush** for **Tecma Prestige (Series)** (model mode 3) or the **Water Only** button for **European Mode** (model mode 4). The Tank LED will give three flashes indicating you have finished model program mode.

Disable Features:

You can disable or enable two features:

1/ **The Manual buttons.** If disabled the only button that will work is the Flush button. The **Water Only** and **Empty Only** buttons will be disabled.

2/ **Tank Full.** If enabled and the tank is FULL the LED will be turn on and NO buttons will work. If disabled and the Tank is FULL the LED will be on and ALL buttons will still work.

3/ Deactivation of the **Water Only** button after use. If this feature is enabled then after the **Water Only** button has been pushed and released it will be deactivated. The **Empty Only** button will need to be pressed for at least 1 second to reactivate the **Water Only** button. This feature can be disabled or enabled.

Place the unit in Model / Disable Features Program Mode as above (top of page).

Push the **Empty Only** button, the holding tank full LED will give three flashes indicating you have entered disable feature mode.

You may now select which feature to disable.

1/ Push the **Normal Flush** button disable or enable the Tank Full feature.

2/ Push the **Water Only** button to disable or enable the Manual buttons.

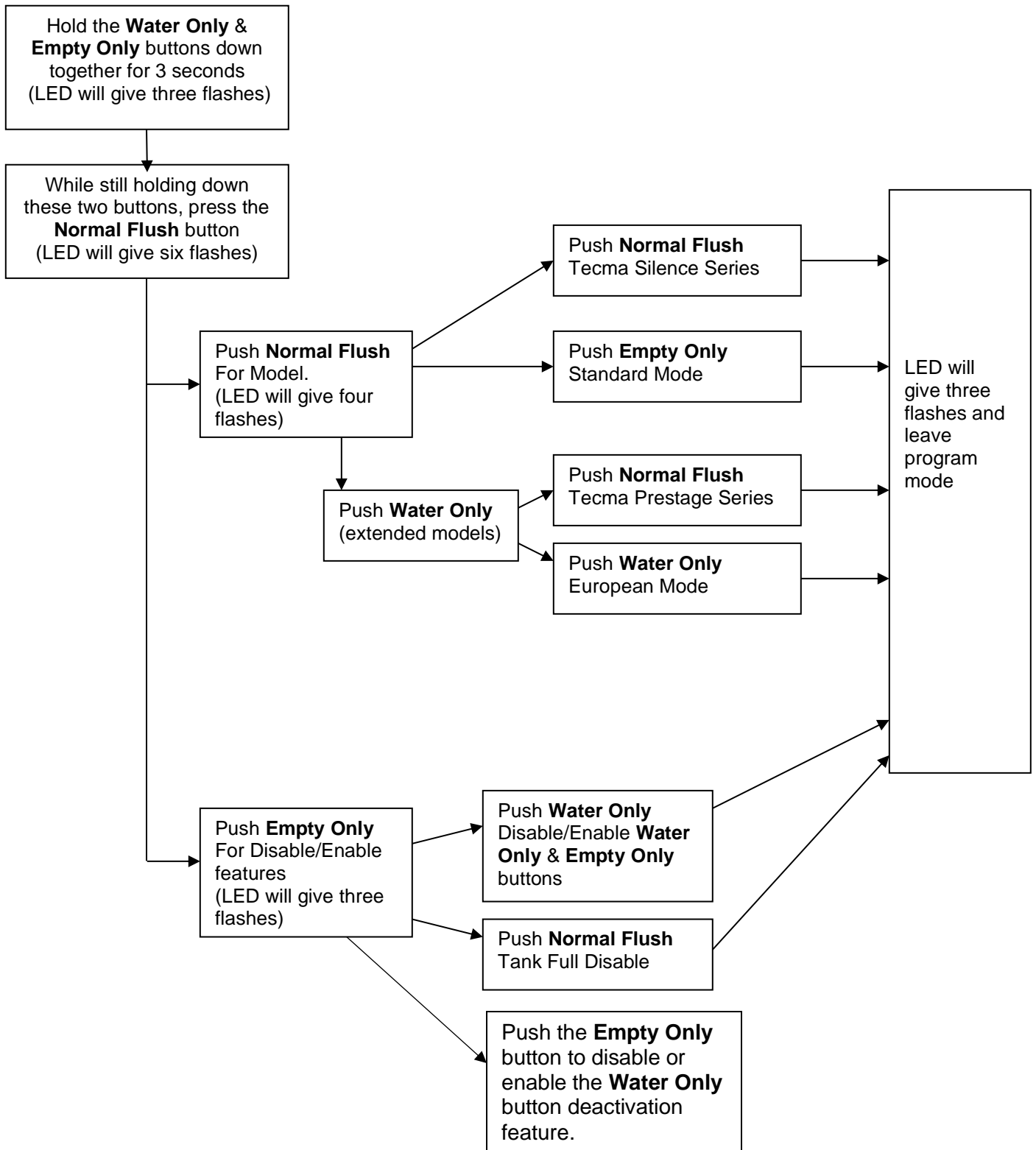
3/ Push the **Empty Only** button to disable or enable the **Water Only** button deactivation feature.

The Tank LED will give three flashes indicating you have finished model program mode.

Repeat the step to re enable these features.

NOTE: The factory default setting is on for both of these features.

Programming Flow Chart



Operating Instructions:

Normal Flush:

Pressing the **Normal Flush** button will run the auto cycle (see page 6 for details).



Water Only:

While this button is held down the water valve/inlet pump will activate (Maximum 20 seconds per press). After activation this button will be disabled. The **Empty Only** button will need to be pressed for at least 1 second to reactivate this button. This feature can be disabled or enabled see page 5.

Empty Only:

While this button is held down the discharge pump will activate (Maximum 20 seconds per press).



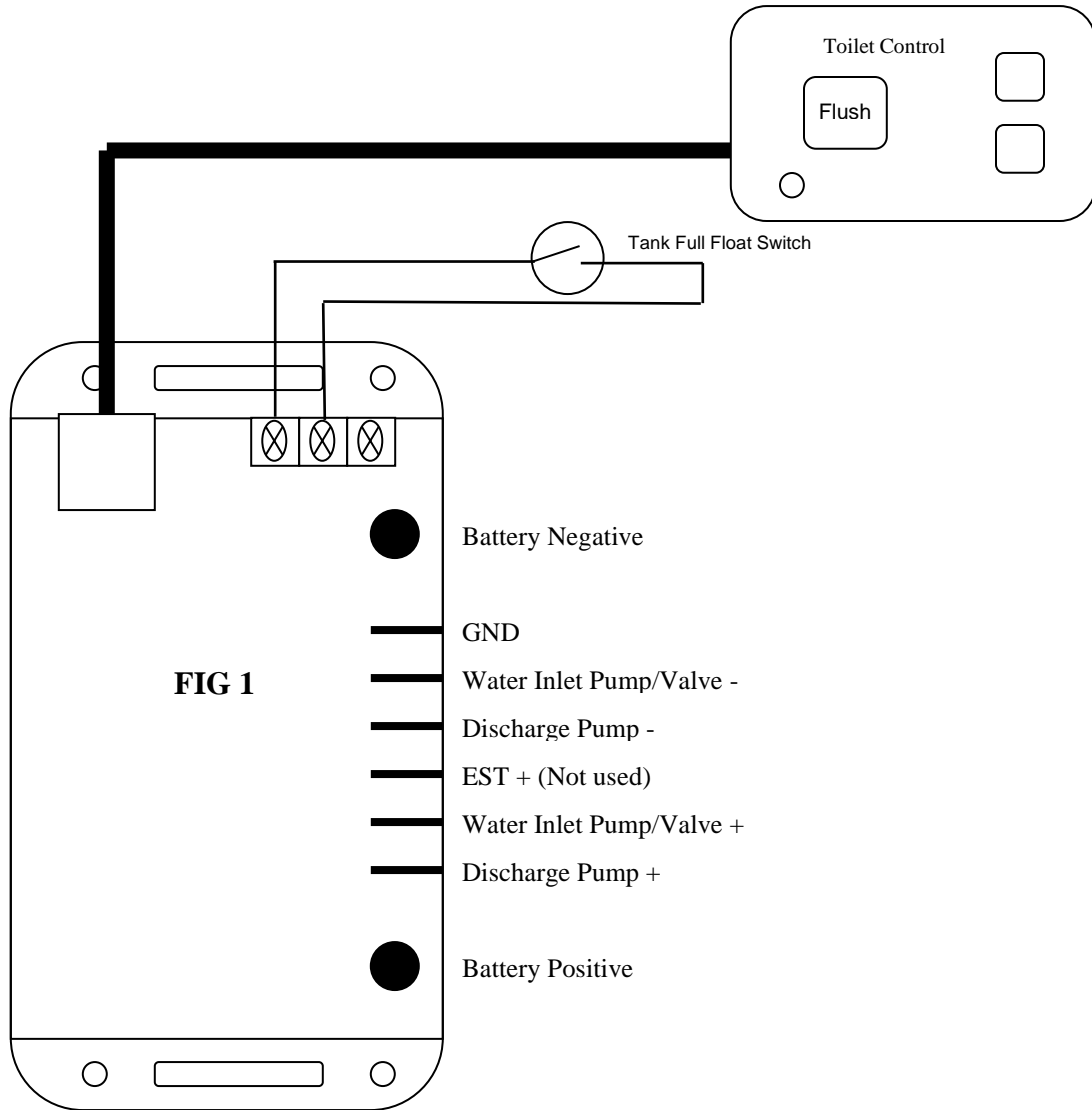
Holding Tank Full: (Optional)

If the vessel is fitted with a Holding Tank Full Sensor Switch, it can be wired to the controller as per diagram FIG 1 – page 10. If this sensor is on, due to a full tank, it will disable the controller until the tank has been emptied. If this feature is not required leave the Float Switch Input unconnected.

Electrical Specifications:

Supply Voltage	=	12-30 Volts DC (Auto-sensing)
Quiescent Current	=	.015 Amps
Input	=	EMI Protected
Max Motor Output	=	44 Amps
Max Valve Output	=	44 Amps
Max EST Output	=	12 Amps

Connections



Fitting Instructions

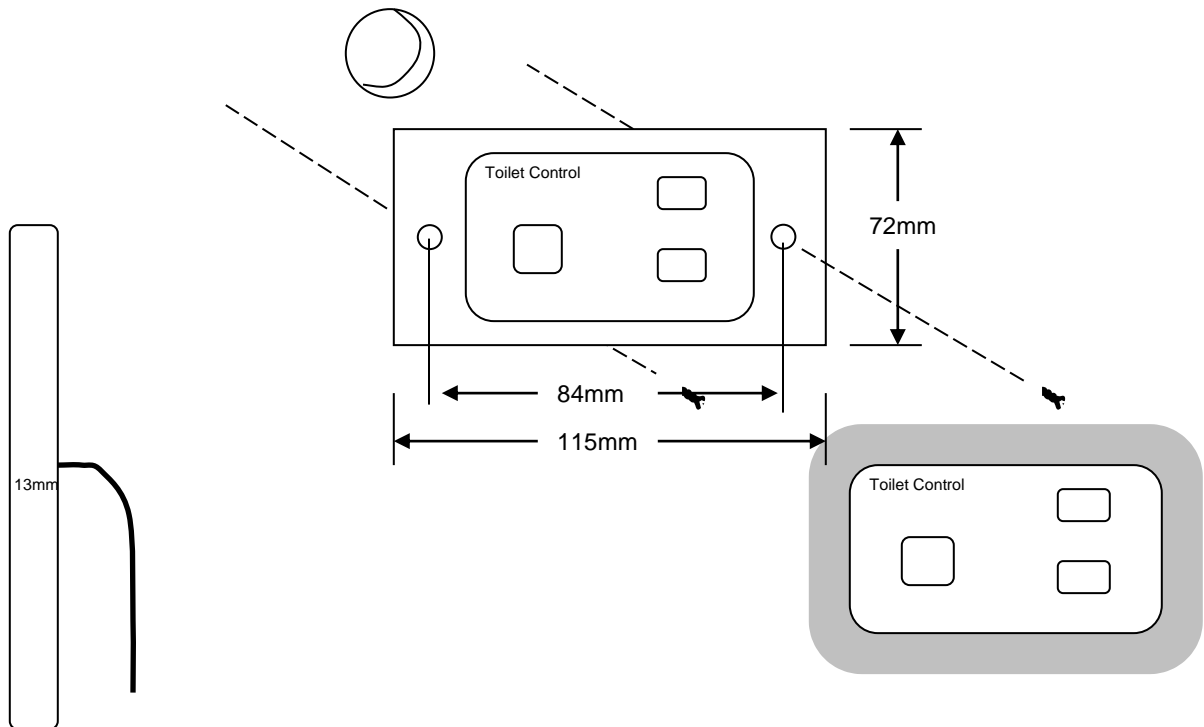
“ Warning ”

This device should be fuse protected and mounted in a dry area as close to the Toilet as is practical. DO NOT cover the ventilation slot on the top of this device.

If the keyboard is mounted in an area where it may experience moisture or wetting, please ensure that a bead of silicon is placed around the keyboard to waterproof it.

Fitting Face Panel:

Drill a small hole, approx 8mm, through the wall for the cable. Align panel, ensuring level and fasten with screws supplied. Remove the protective film from the clip on surround panel and clean with a soft cloth. Clip in place.



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