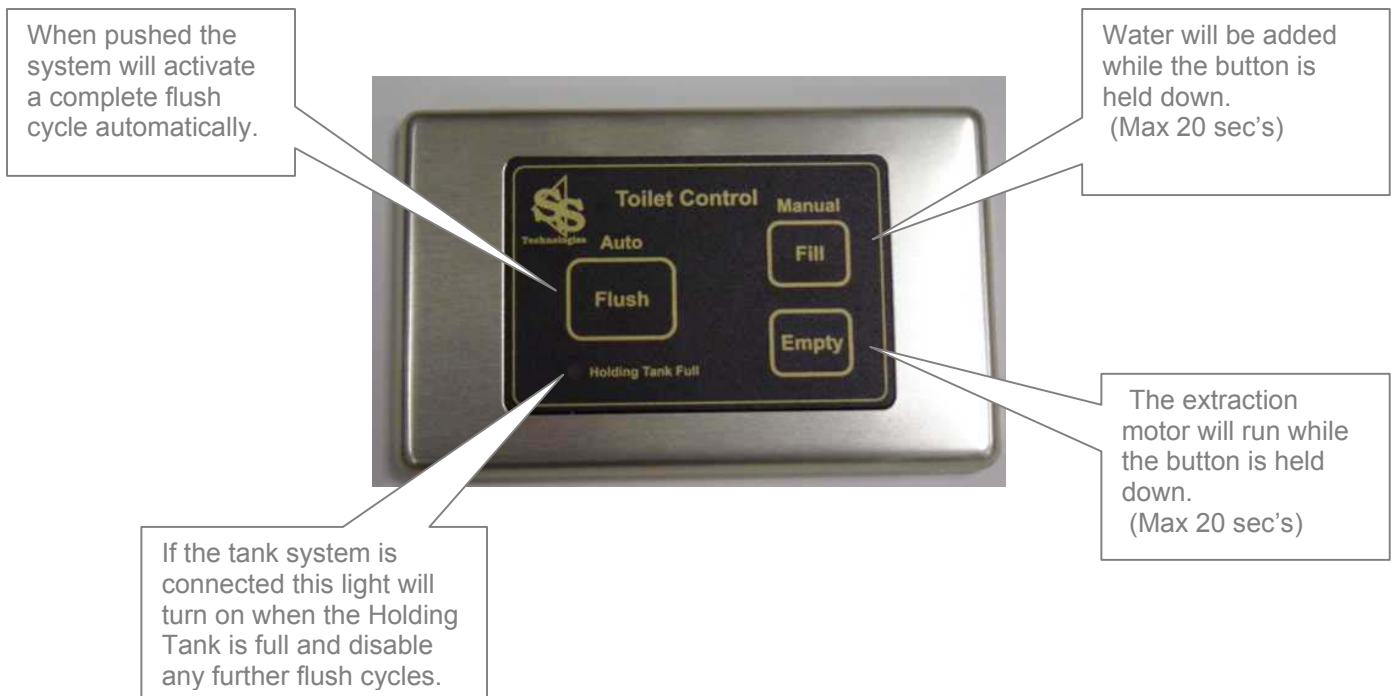


Smart Switch Deluxe Toilet Controller Set-Up Instructions

Model: STS-220

The unique Smart Switch Deluxe Programmable Toilet Controller 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 auto touch pad is pushed or 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 require altering these settings please follow instructions on following page's.

Programming:

This product has three Modes of operations:

Mode 1 = Standard Mode

Mode 2 = Tecma Silence (Series)

Mode 3 = Tecma Prestige (Series)

This product has been factory default set to Mode 2 (see page 3)

Factory Default: T1 = 20sec's **Mode** = Tecma Silence (Series)

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

Should you require changing 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 timer. Increase your flush volume appropriately if the discharge line is greater than 6 feet in length.

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.

Programming for Standard Mode:

Step 1 – Placing the unit in program mode:

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

Once in program mode you can now program one of the following three times: 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, push the AUTO button the number of times required for the Water Valve/Inlet Pump time (one push = 1 sec's two = 2 sec's. etc) the Tank LED will flash once indicating a valid key push. Note: If the button is pushed 21 times it will start back at 1 second.

Once this is done push the EMPTY 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, push the EMPTY button the number of times required for the Discharge Pump time (one push = one second) the Tank LED will flash once indicating a valid key push. Note: If the button is pushed 21 times it will start back at 1 second.

Once this is done push the AUTO 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, push the FULL button the number of times required for the Water Valve/Inlet Pump time (one push = ZERO sec's, two = 1 sec's three = 2 sec's. etc) the Tank LED will flash once indicating a valid key push. Note: If the button is pushed 21 times it will start back at zero.

Once this is done push the AUTO 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) Mode:

Step 1 – Placing the unit in program mode:

After wiring and applying power, hold the Fill & Empty buttons down together for three seconds. The Holding Tank Full LED will give three quick flashes indicating you have entered program mode and 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 4) 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, push the AUTO button the number of times required for the Water Inlet / Discharge Pump time (one push = 1 sec's two = 2 sec's. etc) the Tank LED will flash once indicating a valid key push. Note: If the button is pushed 21 times it will start back at 1 second.

Once this is done push the EMPTY 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, push the FULL button the number of times required for the Water Valve/Inlet Pump time (one push = ZERO sec's, two = 1 sec's three = 2 sec's. etc) the Tank LED will flash once indicating a valid key push. Note: If the button is pushed 21 times it will start back at zero.

Once this is done push the AUTO button to store this value (the unit will flash three times indicating the time has been set and you have left program mode).

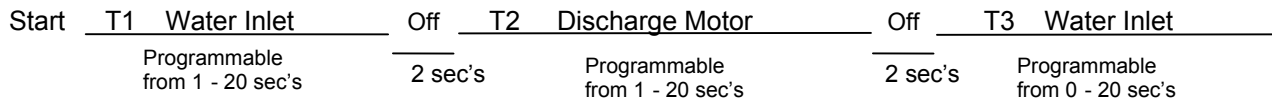
Programming for Tecma Prestige (Series) Mode:

There is NO programming required for this mode as the times are fixed (see timing chart page 4).

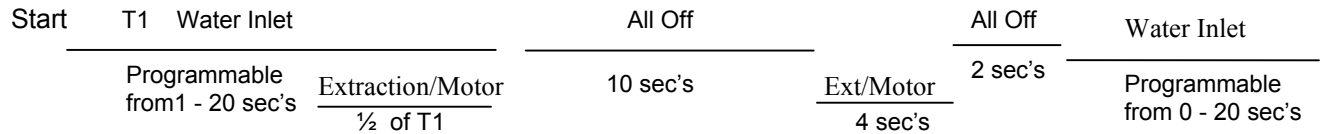
Model Timing Chart:

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

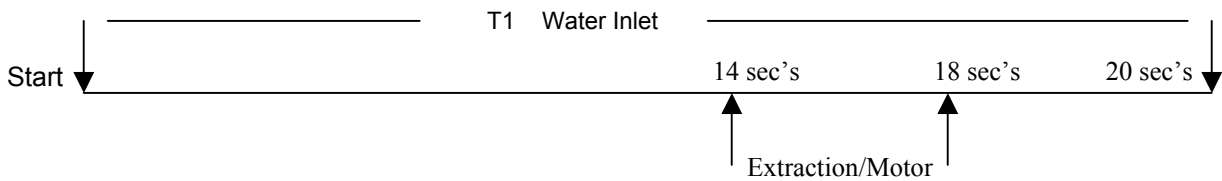
Mode 1: Standard Mode



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



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



Programming the Device for Model Mode or Disable Features:

Place the unit in Model / Disable Features: Program Mode

Hold the FILL & EMPTY buttons down together for three seconds. The holding tank full LED will give THREE flashes indicating you have entered program mode, WHILE STILL HOLDING DOWN THESE TWO BUTTONS, push the FLUSH button. The holding tank full LED will give TWO flashes indicating you have entered model/disable features program mode, release both buttons.

Model Mode Select:

Push the FLUSH button, the holding tank full LED will give FOUR flashes indicating you have entered model program mode.

You may now select which model: Push the FLUSH button for **Tecma Silence (Series)** or the EMPTY button for **Standard Mode** or the FILL button for **Tecma Prestige (Series)**. The Holding Tank Full LED will give THREE flashes indicating you have finished model program mode.

Disable Features:

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

Push the EMPTY button, the holding tank full LED will give SIX flashes indicating you have entered disable feature mode.

You may now select which feature to disable. Push the FLUSH button to disable the open motor sensor feature or the FILL button to disable the manual buttons.

Repeat the step to re enable these features.

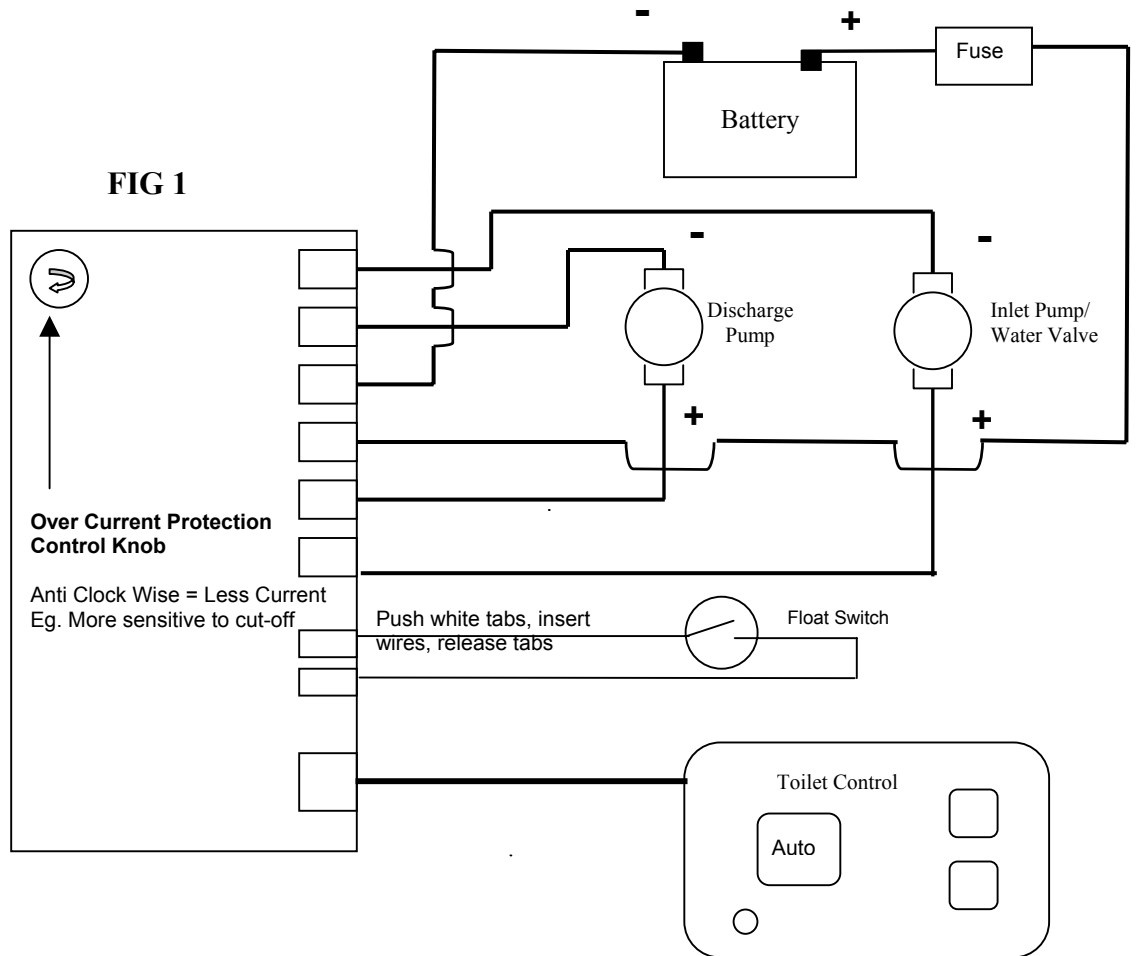
NOTE: The factory default setting is on for both of these features.

Please see Over Current Protection Setup Page 5

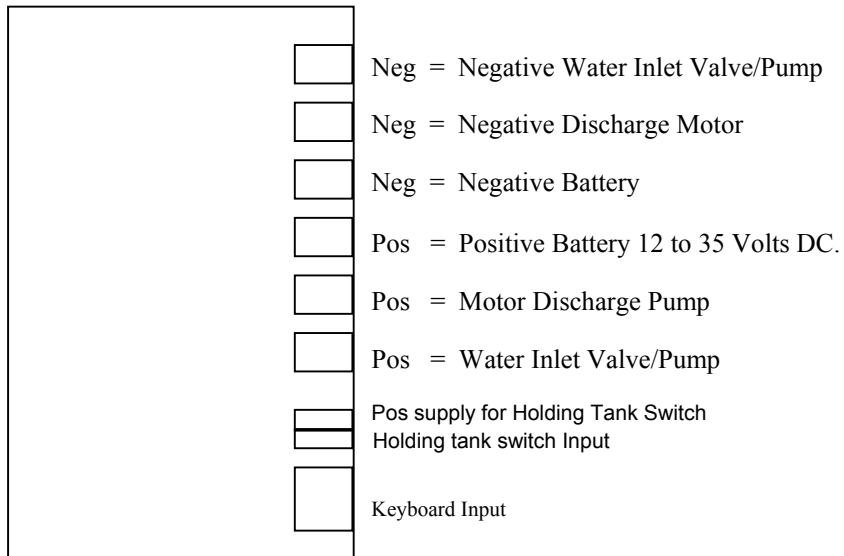
Electrical Specifications:

Supply Voltage	=	12, 24 or 32 Volts DC (Auto-sensing)
Quiescent Current	=	.015 Amps
Input	=	EMI protected
Data Retention	=	40 years (without power)
Max Motor Output	=	88 Amps (Peak = 300 Amps)
Max Valve Output	=	40 Amps (Peak = 120 Amps)
Protection	=	Reverse Polarity, Over Voltage, Over Temperature, Short Circuit.

Wiring



Connections:



Operating Instructions:

AUTO:

Pushing the AUTO button will run the auto cycle. (see page 3 for details)



FILL:

While this button is held down the water valve/inlet pump will activate. (Maximum 20 seconds per push) After activation this button will be disabled. The EMPTY button will need to be pushed for 1 second to reactivate this button.

EMPTY:

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



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. If this sensor is on due to Tank Full it will disable the controller until the tank has been emptied. If this feature is not required leave the Float Switch Input unconnected.

NOTE: The Float Switch input is looking for a positive voltage when the tank is full.

ERROR CODES: Please see WARNING under Fitting Instructions

Over Current Protection Setup:

This feature will prevent the discharge motor or wiring from burning out causing extensive and expensive repairs due to toilet blockage.

After programming the cycle times turn the Over Current Protection Control Knob (As seen in Fig 1) fully clockwise and push the auto button to ensure the system is fully operational.

Start turning the Over Current Protection Control Knob in small amounts anti-clockwise and with every adjustment push and hold the EMPTY button for a few seconds. Repeat this until the motor cuts off and the LED flashes five times. You have adjusted to far therefore turn clockwise a small amount until the motor does not cut off. This system is now set.

Over Current Protection:

If the discharge motor jams the unit has built-in over current protection circuitry, which will cut the motor off and display **five quick flashes** on the Holding Tank Full LED and the FILL button will be disabled. Once the blockage is removed push the AUTO button to resume the operation. If the blockage is still present the above will repeat.

Short Circuit Protection Discharge Motor:

If the discharge motor has a fault or is shorted the unit has built-in protection circuitry, which will cut the discharge motor off and display **three sets of two quick flashes** on the Holding Tank Full LED. All operations will be cancelled.

Short Circuit Protection Water Valve/Pump:

If the water valve/pump has a fault or is shorted the unit has built-in protection circuitry, which will cut the discharge motor off and display **three sets of three quick flashes** on the Holding Tank Full LED. All operations will be cancelled.

Open Circuit Detection:

If the discharge motor or wiring is open circuit the unit will display **ten quick flashes** on the Holding Tank Full LED. This feature may be disabled see page 4 for details.

Over heat protection:

The device is fitted with automatic over temperature cut-off circuitry.

Fault	LED Code	Action
Over Current Discharge Motor	● ● ● ● ●	Adjust Over Current Control Knob
Short Circuit Discharge Motor	● ● ● ● ● ●	Check wiring or call authorised Dealer
Open Circuit Discharge Motor	● ● ● ● ● ● ● ● ● ●	Check wiring or call authorised Dealer
Short Circuit Water Valve	● ● ● ● ● ● ● ● ●	Check wiring or call authorised Dealer

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 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

