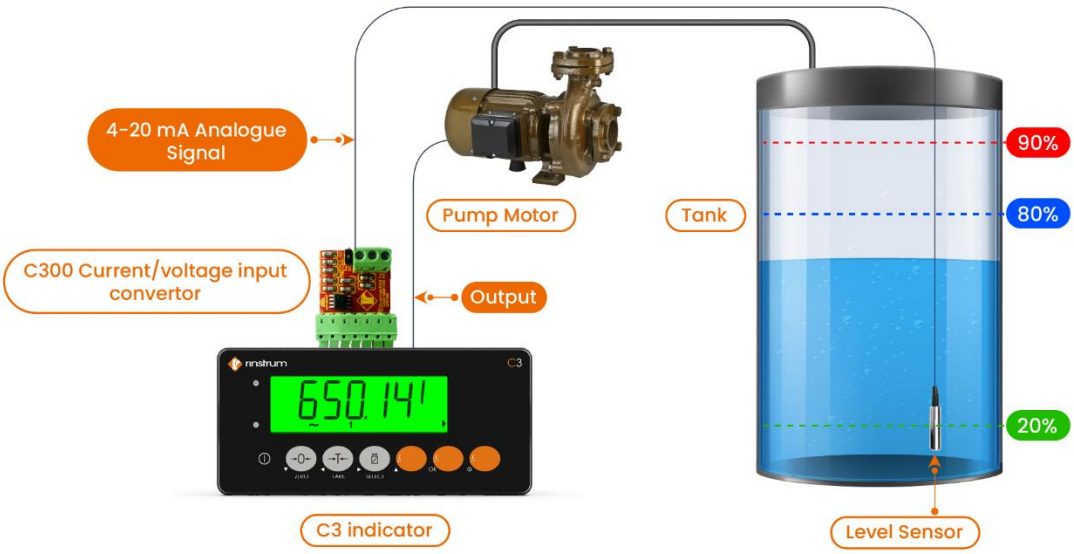
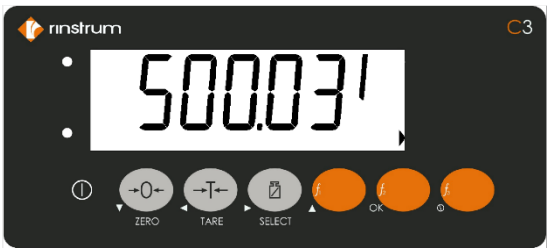
Application

The application utilizes a C320 to regulate tank filling, with a water level sensor connected via an M3902 0-10V/4-20MA converter on the load cell input. It employs a new weigh-in setpoint type for filling control. Setpoint 2 signals Setpoint 1 to reset if the tank overfills. The setpoints also switch the backlight colour when the motor runs for filling (Setpoint 1) and if an overfill occurs (Setpoint 2). Normal operation is neutral. A function key is setup for unit switching to litres.
There are 8 units available on the C320 and three can be configured at any time.

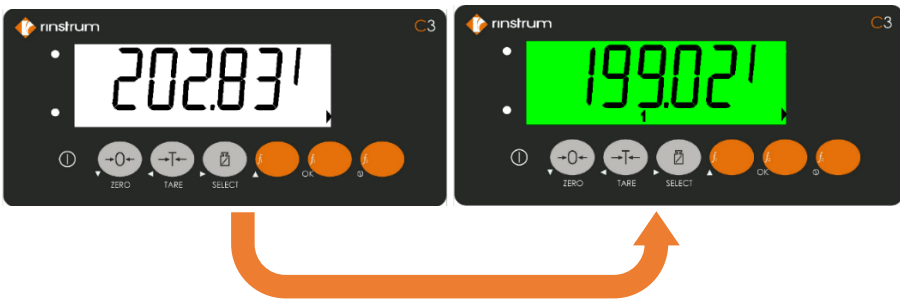


- Level sensor sends the respective **4-20 mA** analogue signal to the C300 current voltage input convertor.
- C3 indicator gets the converted signal as the input and displays the calibrated volume.
- Function key 1 (***f1***) is set to be the UNITS key.
- Setpoints control the pump motor switching on-off operation.

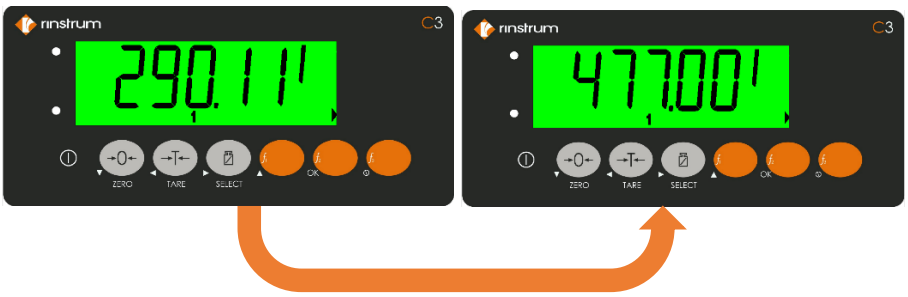
Operation



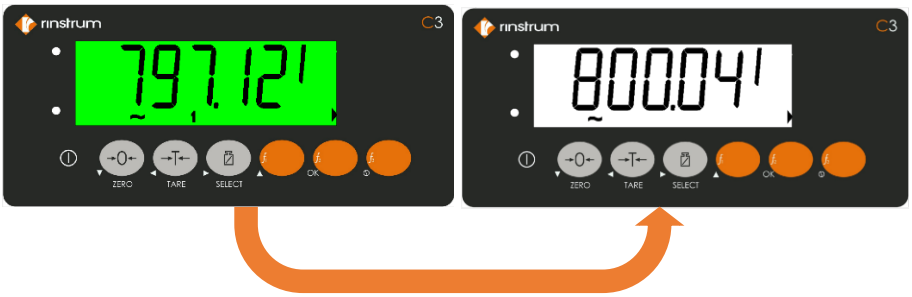
- The total capacity of the tank is 1000 l.
- Let's assume the initial volume as 50% of total capacity (500 l).
- And Water level is decreasing.



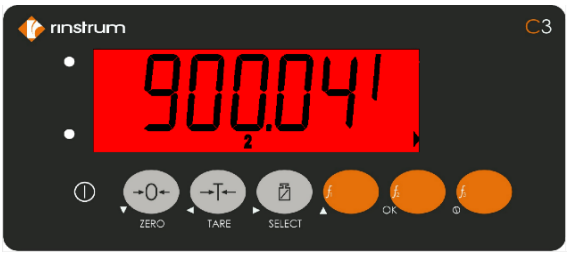
- The pump motor activates when the water volume drops below 200 litres.
- Indicator displays green colour when the motor is on.



- Water volume getting increased.
- Motor is on until water level reaches 800 litres.



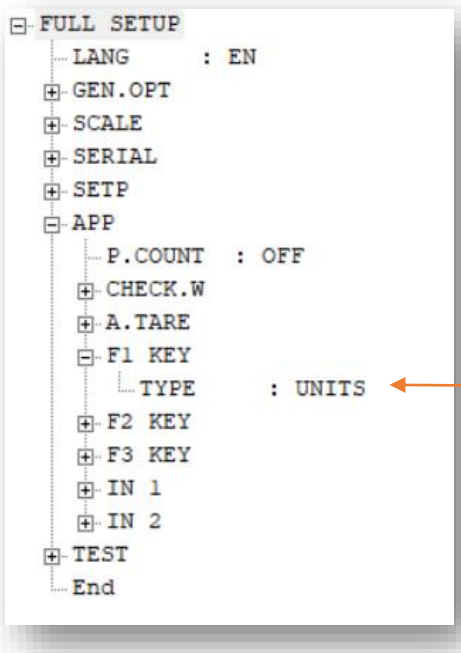
- Motor switches off when the water volume reaches 800 litres, which is 80% of its capacity.
- And the display colour switches to white.



- If the water level exceeds 90% (900 l) by any chance, Then the setpoint gets reset.
- Alarming starts to sign Over Filled situation.
- Display colour switches to red.

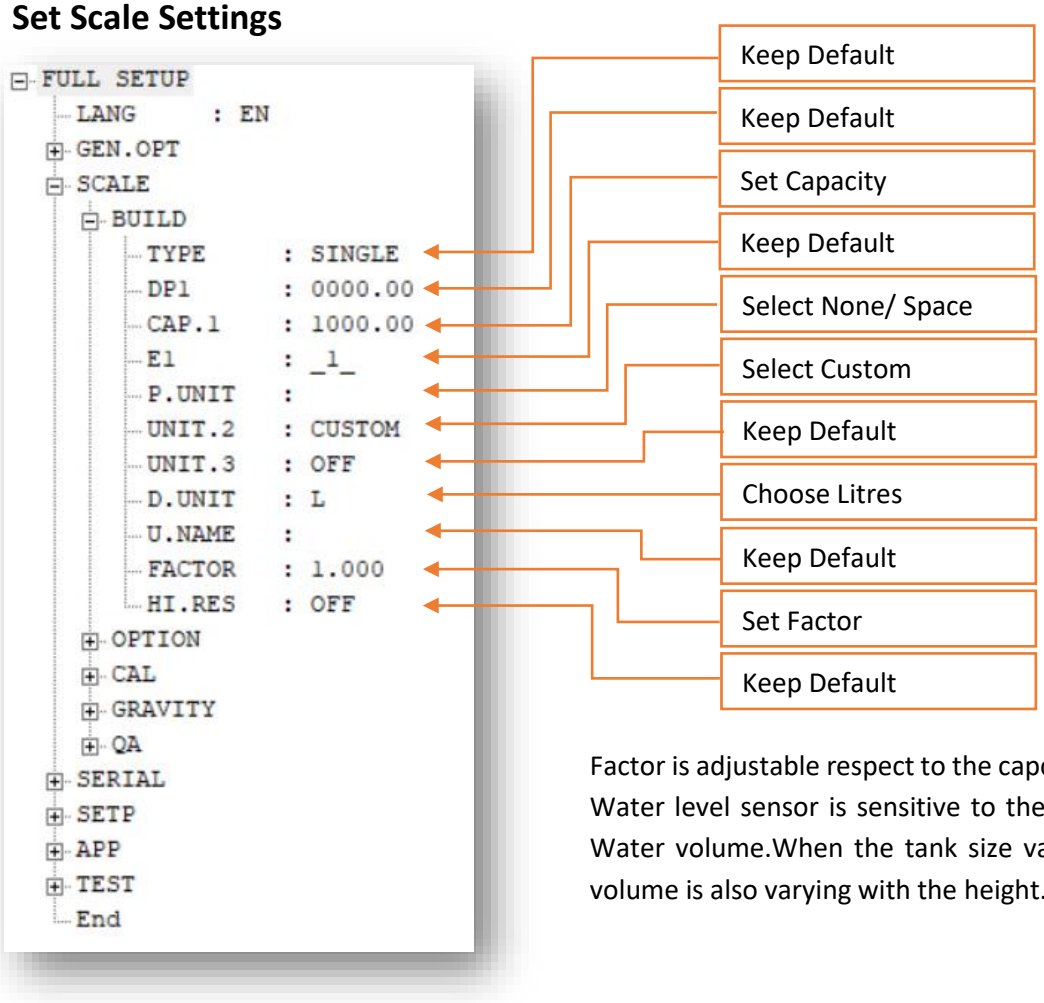
Configuration

1. Set *f1* key.

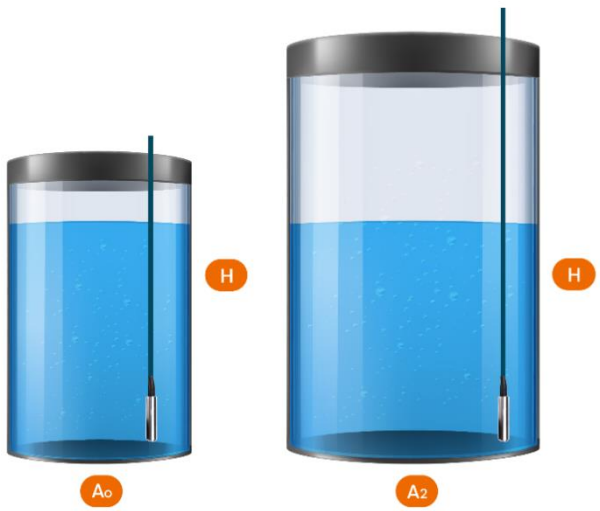


f1 key is set for Units.
Pressing F1 key displays the water volume in litres.

2. Set Scale Settings



Factor is adjustable respect to the capcity of the tank. Water level sensor is sensitive to the height of the Water volume.When the tank size varies the water volume is also varying with the height.



$$\frac{V_2}{Vo} = \frac{A_2 \times H}{Ao \times H}$$

$$V_2 = \frac{A_2}{Ao} \times Vo$$

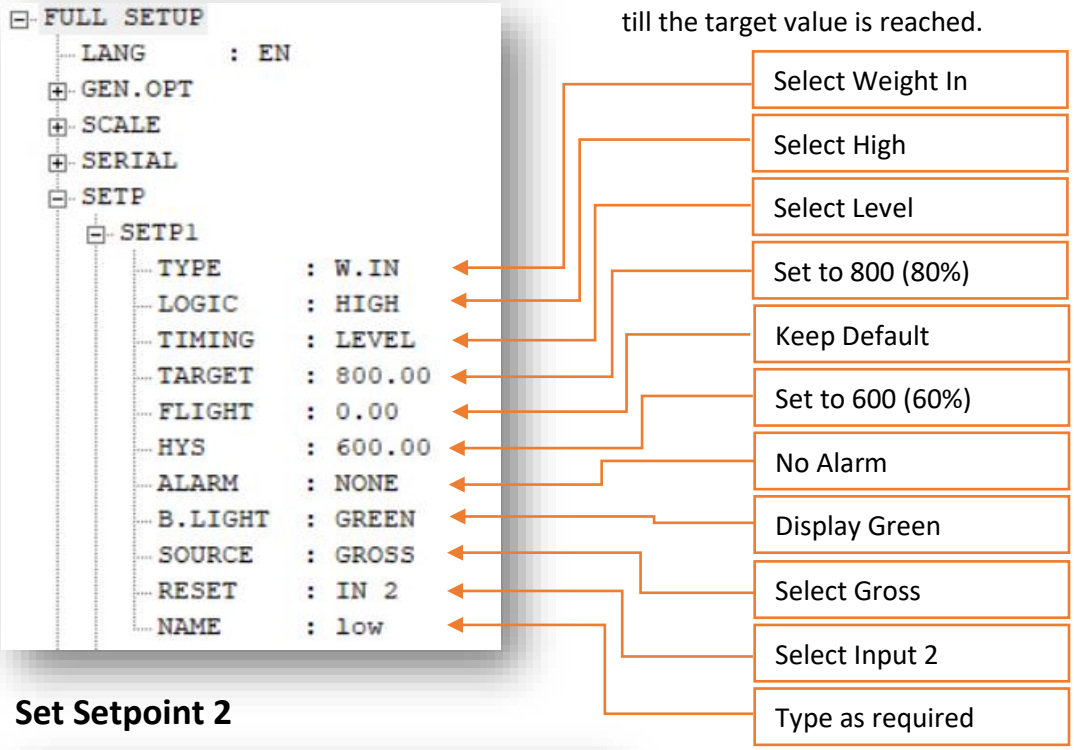
Factor

Denotations :
V -Volume
A -Cross Area
H-Water Level Height

- After calibrating for a tank, we can use the setup for a different sized tank simply setting the factor.
- Then, pressing ***f1*** key will display the existing water volume in litres.

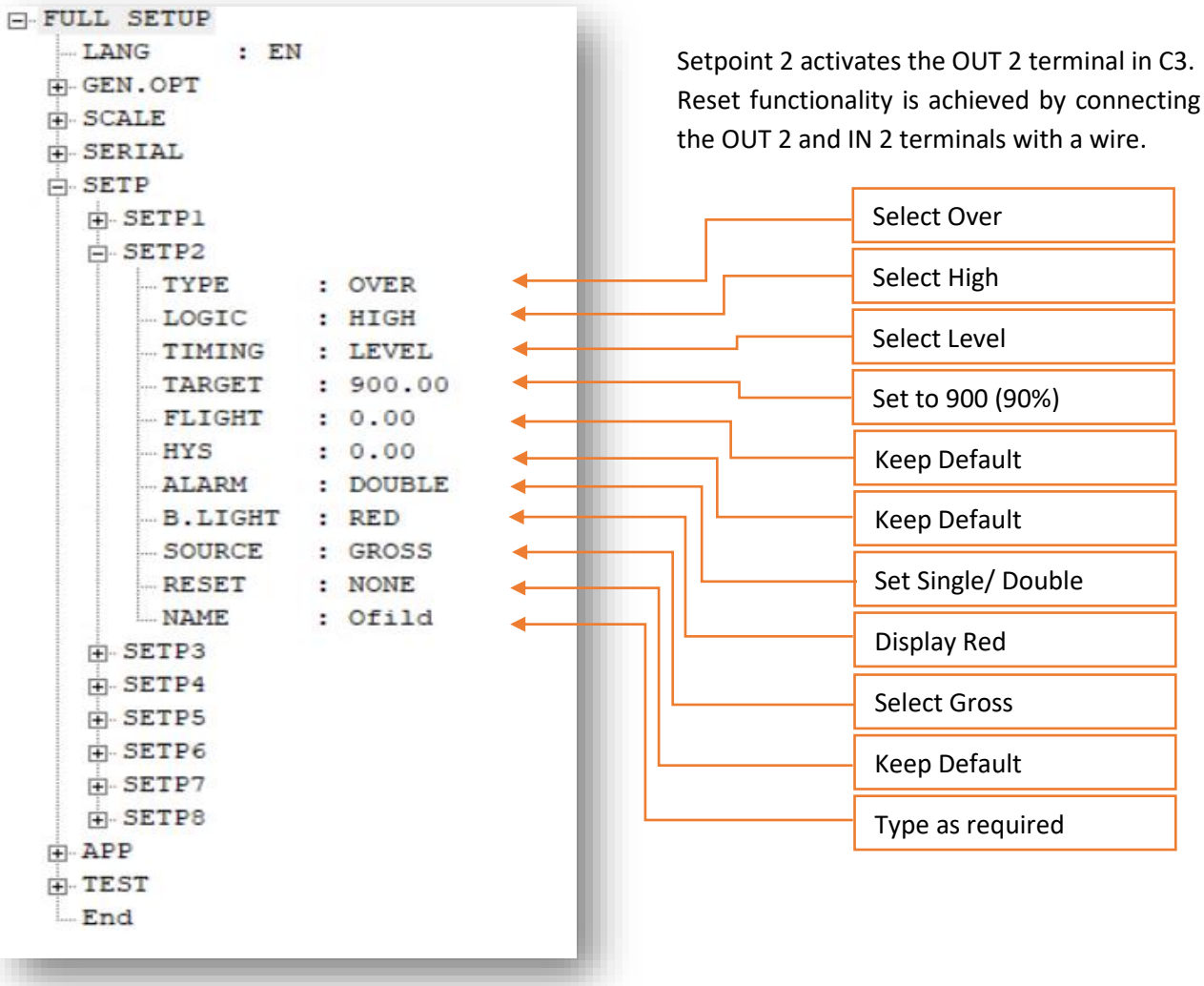
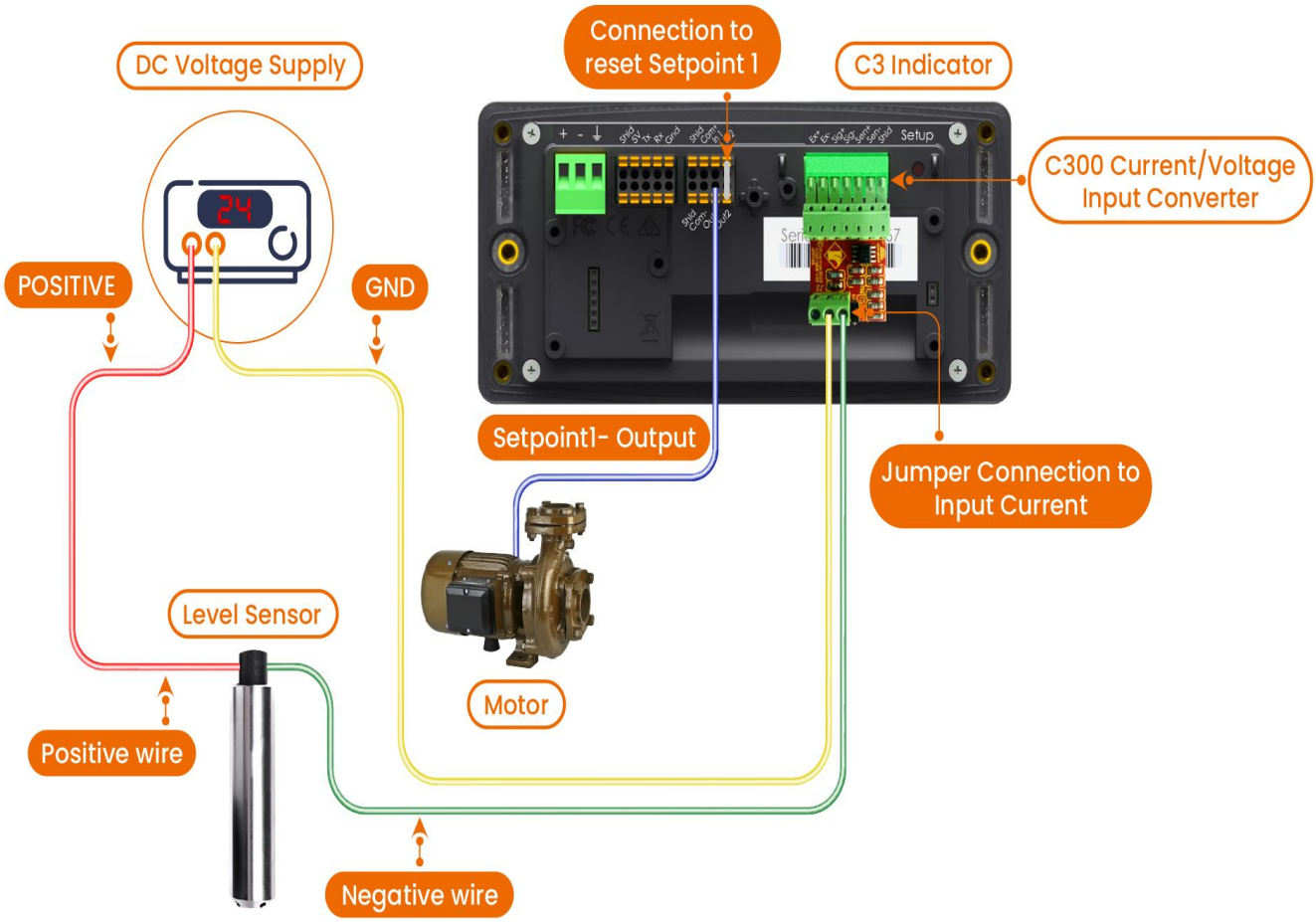
3. Set Setpoint 1

Weight IN sets the setpoint to be active till target weight is reached. Weight should be incremented till the target value is reached.



4. Set Setpoint 2

Setpoint 2 activates the OUT 2 terminal in C3. Reset functionality is achieved by connecting the OUT 2 and IN 2 terminals with a wire.



Cable Connection