

The SI Water controller automates your borehole pump and municipal backup valve from a pressure probe in the tank. All logic runs on the controller itself — it keeps working even if the internet is down. This guide covers installation, first power-up, connecting it to WiFi and the Solaire portal, and tuning the automation.

YOUR CLIENT ID

Every SI Water unit ships with a 6-character **Client ID**, printed on the enclosure label and on page 1 of the guide packed with your unit. Wherever this guide shows **XXXXXX**, substitute your unit's Client ID.

1. Mounting the enclosure

- Mount the DB enclosure on a wall near the tank and pump circuit, out of direct rain and spray, at a comfortable working height.
- Leave clearance below the box for cable glands: mains in, pump trigger out, valve out, and the probe cable.
- The enclosure contains a circuit breaker, a 12 V DIN-rail power supply, the SI Water controller, comm terminals for the probe, and two relay outputs (NO).

2. Wiring

Terminal	Connect to	Notes
Mains in → breaker	220 V AC supply	Feed via the on-board breaker. Isolate supply before wiring.
12 V PSU output	Controller + probe power	Pre-wired. The RS485 probe requires 12 V — it will not read without it.
Comm terminals A / B	Probe RS485 A / B	Match A→A, B→B per the tag on the probe cable. If readings stay blank, swap A and B.
Relay 1 (NO)	Borehole pump trigger	Volt-free contact — switch the pump contactor / controller enable, not the motor directly.
Relay 2 (NO)	Municipal fill valve	Solenoid valve for municipal backup fill.

The internal DB comes pre-wired — see the **SI Water DB Wiring Diagram (DB-001)** on the Documents page for the full circuit.

3. Installing the probe

- Lower the probe to the bottom of the tank so the tip rests on (or just above) the floor. It measures the water column above it.
- Secure the cable at the tank lip so the probe can't drift; leave the vented cable end inside the dry enclosure — do not seal or submerge it.
- Route the cable away from mains wiring where practical to keep the RS485 signal clean.

4. First power-up & WiFi connection

1. Switch on the breaker. The status LED lights while the controller boots (≈10 seconds).
2. On a phone or laptop, join the WiFi network **SI-Water-XXXXXX-Setup** — password **solairesetup**.
3. A setup page opens automatically (if not, browse to **192.168.4.1**).
4. Select the property's WiFi network, enter its password, and tap **Save**.
5. The controller reboots and joins the WiFi. The setup network disappears — that means it worked.

If the WiFi password was mistyped, the setup network reappears after about a minute — simply repeat the steps.

5. Local dashboard (on the same WiFi)

Browse to **http://si-water-XXXXXX-01.local** (or the controller's IP address from the router) to open the built-in dashboard. All readings, switches and settings referenced below live here. This works entirely on the local network — no internet or account needed.

6. Connecting to the Solaire portal

Client (owner) workflow

1. Go to **portal.solaire-intelligence.co.za** and create an account (register as a **Client**).
2. After signing in, choose **Link a device**.
3. Enter the Client ID printed on your unit, and give the installation a name (e.g. "Farm House").
4. All SI devices at the installation link to the account in one step, and the account becomes active. The SI Water dashboard appears immediately.

Installer workflow

1. Installers register as an **Installer** on the same portal. Installer accounts are approved by Solaire Intelligence before they can link devices.
2. Once approved, the installer selects the client the installation belongs to, then links it with the unit's Client ID on their behalf.
3. Ownership goes to the client; the installer keeps an association with the site for commissioning and future support.
4. If the client has already linked the system themselves, the installer entering the same Client ID simply adds their support association — nothing is taken over.

A device already registered to another account cannot be claimed — the portal will refuse and refer you to Solaire support.

7. Tank calibration (do this first)

Open the local dashboard (or the portal) and set two values so litres and percentages read true:

Setting	Set to	Default
Tank Height Config (cm)	Water depth at 100% full: distance from the probe tip up to the overflow level.	167
Tank Total Volume Config (L)	Usable volume of the tank at that height (rated capacity is fine).	2250
Low Level Warning Config (%)	Level that raises the Low Tank warning.	20

Check: **Water Level (cm)**, **Tank Level (%)** and **Tank Volume (L)** should now match reality. A sanity check with a dipstick or sight glass at one known level is worth the two minutes.

8. Borehole & fill automation

With **Auto Mode** and **Borehole Enabled** switched on, the controller manages everything. Priority order when rules overlap: **Critical** → **Emergency** → **Normal Fill** → **Municipal**. Defaults:

Function	What it does	Defaults
Borehole Schedule	Time window in which the borehole pump is allowed to run for normal filling.	06:00 – 18:00
Daily Top-Up	Once a day, tops the tank up to the target level.	07:00, to 80%
Normal Fill	Starts the pump when level drops below the start point; stops at the stop point.	start <60%, stop 80%
Emergency Fill	Ignores the schedule window when the level gets low.	start 30%, stop 80%
Critical Override	Last-resort fill that overrides everything, including faults where safe.	15%
Municipal Backup	Opens the municipal valve when the borehole can't hold the level.	start 20%, stop 60%

Each function has its own enable switch (Borehole Schedule Enabled, Daily Top Up Enabled, Normal Fill Enabled, Emergency Fill Enabled, Municipal Backup Enabled) — turn off what the site doesn't use, e.g. Municipal Backup where there is no municipal feed.

9. Run-dry protection

Protects the borehole pump if the hole runs dry. While the pump runs, the controller watches the tank's fill rate:

Setting	Meaning	Default
Minimum Flow Rate (L/min)	Below this inflow the pump is considered to be running dry.	0.5
No Flow Timeout (min)	How long low flow is tolerated before the pump is stopped.	5
Maximum Retry Count	Restart attempts (with a recovery wait between) before latching a fault.	3

After the final retry the **Borehole Fault** warning latches, the pump stays off, and Municipal Backup (if enabled) takes over. Once the borehole has recovered, press **Borehole Fault Reset** on the dashboard to resume.

10. Quick reference — warnings

Indicator	Meaning / action
Low Tank Warning	Level below the low-level setting — watch usage; filling should already be underway.
Low Flow Warning	Inflow below minimum while pumping — borehole struggling or valve/pipe restriction.
Borehole Fault	Run-dry protection tripped after all retries. Investigate, then press Borehole Fault Reset.
Critical Warning	Tank at critical level — check water supply immediately.
Water System Status	Live state of the automation engine (Idle, Normal Fill, Daily Top-Up, Emergency, Municipal, Retry Wait, Critical).

Support: Solaire Intelligence · info@si-sa.co.za · quote your Client ID and the serial number printed on your unit's label.