

EWS Ground Level Monitoring

Specifications & Install Guide



Adroit is New Zealand's leading real-time environmental monitoring provider for councils, worksites, construction, civil and heavy industries.

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Environmental IoT

EWS Ground Level Monitoring Overview



Overview

The EWS Well-Cap leverages the power and reliability of our Switch Data logger family to deliver a cost-effective, self-contained package for simplifying Groundwater Monitoring. Made from extremely robust glass filled nylon with a lockable hasp, the Switch device sits safely within the top section and can be easily configured via our Bluetooth mobile app. The Well-Cap offers hassle-free and quick installation, simply connect to the sensor, place over the monitoring bore and fix in place with lock screws. Different adapters allow it flexibility to fit to any bore diameter and the flip back lid provides easy access to the bore after install for pump sampling events or calibration dips.



Features

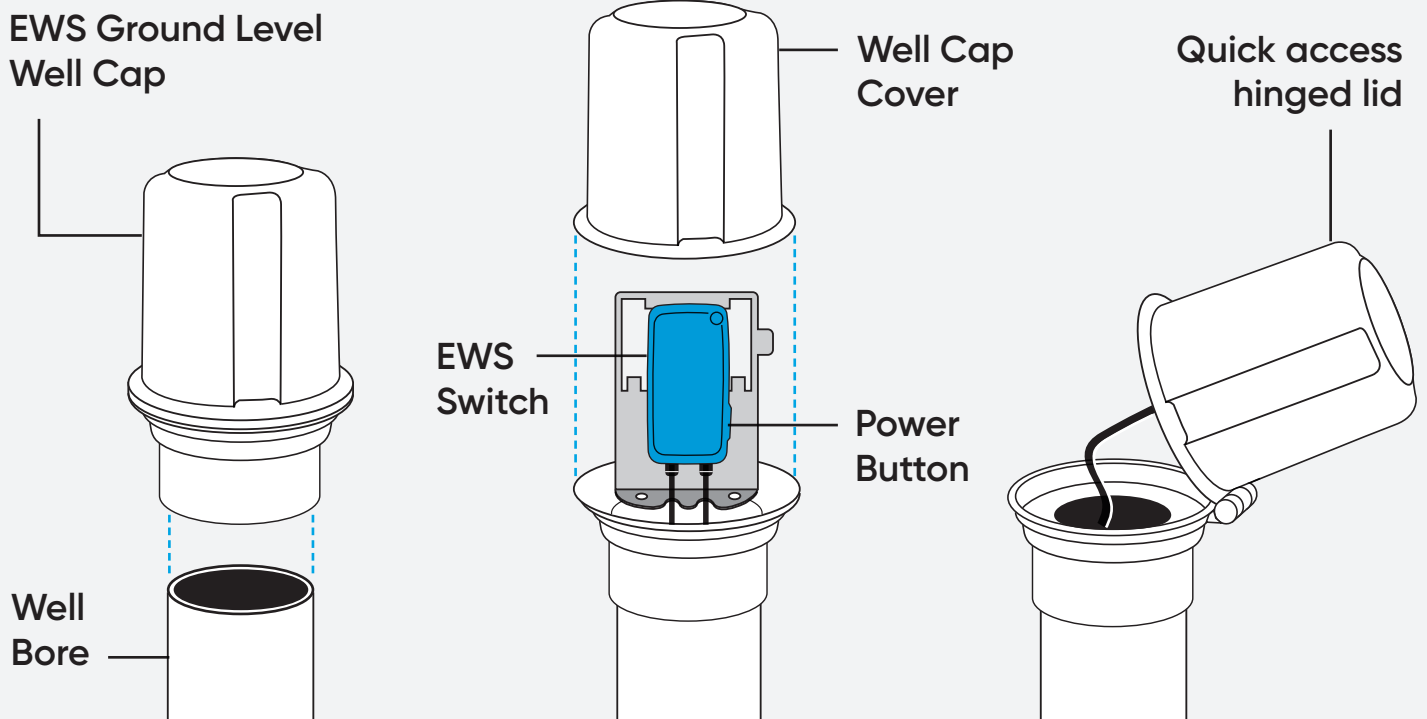
- Multi-Communications options; Send data via Satellite Iridium or 4GLTE.
- Reads SDI12, Modbus, 4-20mA, Pulse sensor protocols.
- Robust Glass-filled nylon material.
- Lockable hasp for added security
- External battery pack or solar options.
- Flip top lid for easy access to the bore.
- Sensor hanger to support the weight of the sensor cable.
- Fits standard 50mm or 120mm diameter bores.
- Adapters available for all bore sizes.
- Ultra-Low power draw with internal battery backup.
- Configure using Bluetooth mobile app (available on Apple and Android).
- Remotely change settings with two-way communications including via Iridium.
- Compact form factor, entire package: diameter 160mm x 180mm
- Rugged and robust for harsh environments - IP68.

Benefits

- Simplifies remote groundwater monitoring.
- Connects to all standard environmental sensors.
- Secure and lockable for deployments in public areas. Maintain easy access to the borehole.
- Compact and discreet, reducing installation time and footprint.
- Designed and Manufactured in Australia.
- Rugged and robust - designed for harsh remote environments.
- Plug and play setup onsite.
- Very straightforward and scalable for fast deployments and large monitoring roll outs.
- Perfect for new and retrofit instrumentation projects.



Ground Level Meter Monitoring Setup guide



STEP 1

Place Cap over exposed ground well, using the hex screws pre installed tighten to clamp cap onto well.

STEP 2

Release the quick access lid pin to flip back. This will give you access to the well.

STEP 3

Drop sensor probe into the well and set to disired depth based on manual measurements.

STEP 4

Close cap and using and re-lock using the pin provided.

STEP 5

Twist and pull upwards on the well cap cover to expose the EWS switch. Push the button once to power on the device.

STEP 6

Close the cap, and consult the network test user guide for next steps.

Ground Level Monitoring Location and Position

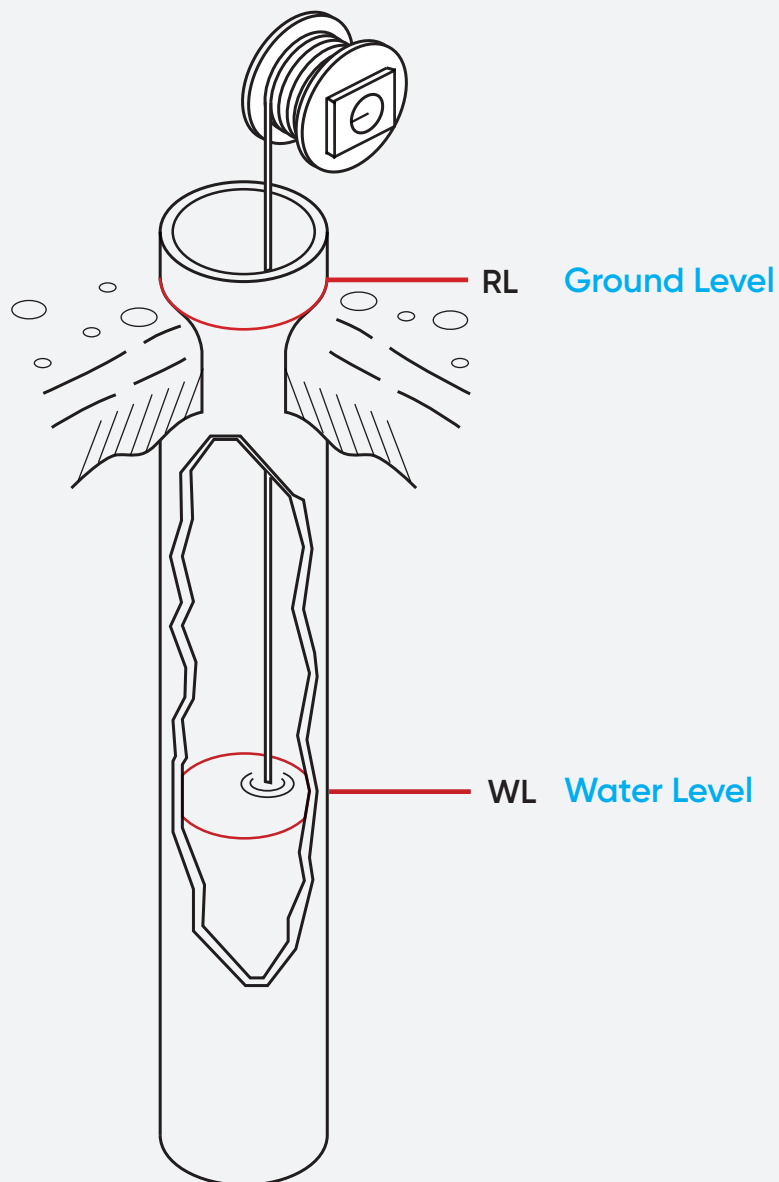


Manual Level Measurement

Measuring water level prior to install required for Platform baselines

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Measure from ground
level to water level



EWS Switch

Network connectivity testing

adroit



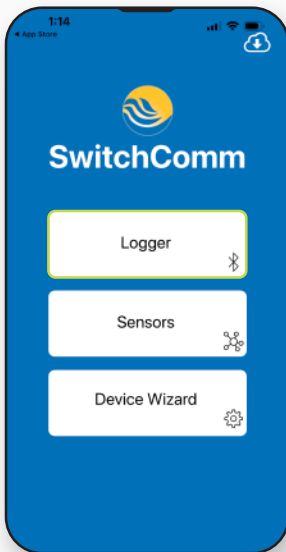
STEP 1

Download the EWS Switch-Comm app on iOS and Android devices



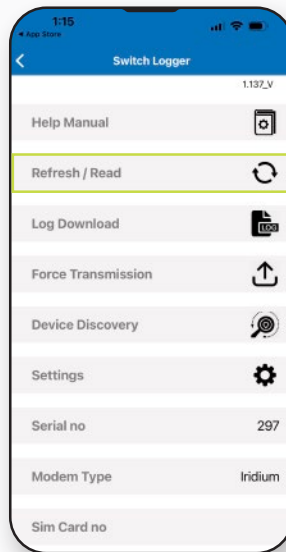
STEP 2

From the main menu select logger



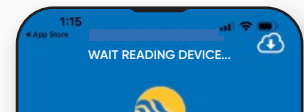
STEP 3

Select Refresh / Read to initiate device read



STEP 4

Wait for the device to complete read

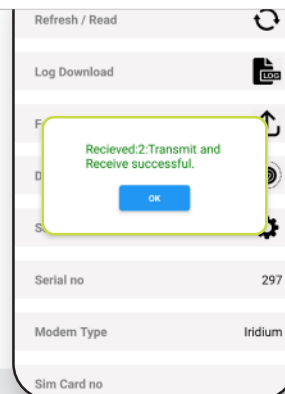
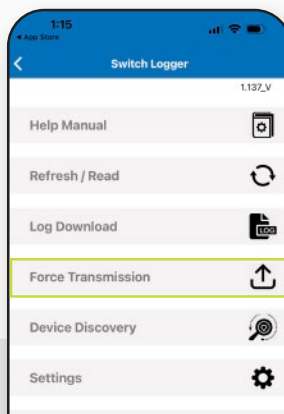


When the prompt disappears, select Logger



STEP 5

Select Force Transmission and wait for the transmit and receive successful window to appear, this may take a few minutes



Press OK to complete network testing, if unsuccessful close app & repeat steps

Mechanical			
Size	Diameter 160mm		Height 180mm
Weight	800 grams		
Weather protection	IP68		

Environmental			
Operating Temperature	-20	-	60 °C
Storage Temperature	-40	-	65 °C
Humidity	5	-	95 % Re

Power			
External Power Supply			
Input Voltage	12 V		24 V
Input Current	700 mA		
Internal Battery (Rechargeable)			
Chemistry	Lion		
Terminal Voltage	6.8 V	7.8 V	8.4 V
Capacity	1.8/4.8 Ahr		
Internal Battery (Non-rechargeable)			
Chemistry	LiMnO2		
Terminal Voltage	6.8 V	7.8 V	8.4 V
Capacity	4.8 Ahr		
Sensor Power Output			
Output Voltage	11 V	12 V	13 V
Output Current	500 mA		
Digital Output			
Output Voltage	11 V	12 V	13 V
Estimated Battery Life	5 hrs		10 hrs

Storage			
Non-volatile-Log			
Size	4 MB		
Events	256000 Events		

Bluetooth Support			
Bluetooth standard	5.0		
Data rate	2.5 kbps		

Clock			
RTC			
Accuracy (-10 to 70°C)	± 20 ppm	± 70 ppm	
Network Time Sync Support			
Supported Networks	Iridium satellite	CAT-M1	NB-IoT
Cellular			

Telemetry Support			
Iridium			
Protocols	Short Burst Data		
Coverage	Worldwide		
4G Cellular LTE-M/NB-IOT			
Protocols	MQTT		
Email			
Network Support	Spark		
Coverage	100% NZ Coverage		

Bult-in sensor channels			
Barometer - Pressure			
Range	10	1200 mbar	
Accuracy 25 °C, 750 mbar	-15	+15 mbar	
Barometer - Temperature			
Range	-40 °C	85 °C	
Accuracy	-0.8 °C	+0.8 °C	
Battery Voltage			
Supply Voltage			
Refernece Voltage			
Radio Signal Strength			
Microprocessor			
Temperature			