



## hydroSpider2 Quick Start Guide

v1.02

This quick start guide contains a brief overview of some of the information presented in the User Manual. Please refer to the complete hydroSpider2 manual available for additional and more in-depth information. The full user manual is available for download from the Halytech website at [www.halytech.com.au](http://www.halytech.com.au).

### Package Contents:

Item	Quantity	Checked
hydroSpider2	1	
Accessories pack	1	
LAN link cable		
Packed By:		

## Opening the hydroSpider2

1. Disconnect all external power supplies and sensors from the hydroSpider2.
2. Undo the four screws on the lid of the case



3. Lift the lid off the enclosure

## Closing the hydroSpider2

1. Align the lid of the case onto the enclosure
2. Reinsert and tighten the screws in each of the four corners of the lid. It is recommended to tighten the screws in a diagonal fashion: top left, bottom right, bottom left, top right.

## Installing a SIM card

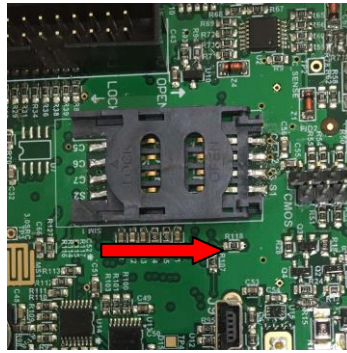
Installing a SIM card into the hydroSpider2 allows it to send email and FTP reports, as well as send and receive SMS messages. Halytech is able to provide you with fully functioning SIM cards, or you can source your own SIM card – just contact your preferred mobile phone carrier and ensure that your chosen SIM card is provisioned with a plan enabling internet access.

hydroSpider2 units are fitted with two different type of SIM card holders. They are easily distinguishable by the colour of their cover - either black or silver. Please follow the instructions relevant to the type of SIM card holder installed in your unit.

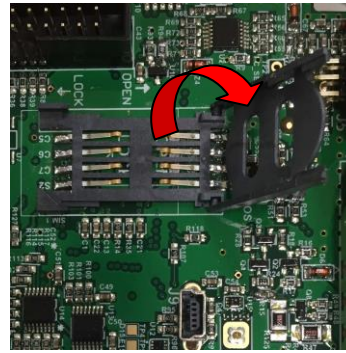
**IMPORTANT:** Before installing a SIM card into a hydroSpider2, put it in a standard mobile phone and disable its PIN, if it has one.

To install a SIM card into a hydroSpider2 fitted with a **BLACK** SIM card holder:

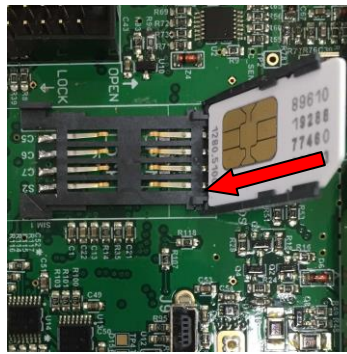
1. Open up the hydroSpider2 as described in *Opening the hydroSpider2*.
2. Insert the SIM card:
  - a. Slide the SIM card cover holder to the “OPEN” position
  - b. Lever it upwards on its hinge to open it.
  - c. Slide the SIM card into the groove of the cover, observing the proper notch orientation.
  - d. Close the cover and slide the cover into the “LOCK” position.



a.



b.



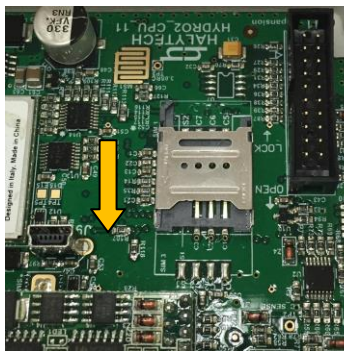
c.



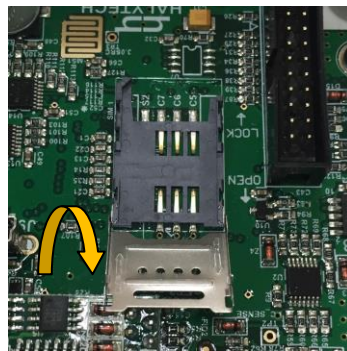
d.

To install a SIM card into the hydroSpider2 fitted with a **SILVER** SIM card holder:

1. Open up the hydroSpider2 as described in *Opening the hydroSpider2*.
2. Insert the SIM card:
  - a. Slide the SIM card cover holder to the “OPEN” position
  - b. Lever it upwards on its hinge to open it.
  - c. Lay the SIM card flat onto the base of the SIM socket, observing the proper notch orientation.
  - d. Close the cover
  - e. Slide the cover into the “LOCK” position.



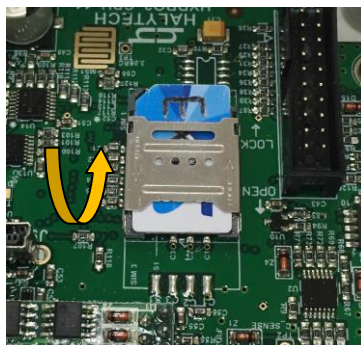
a.



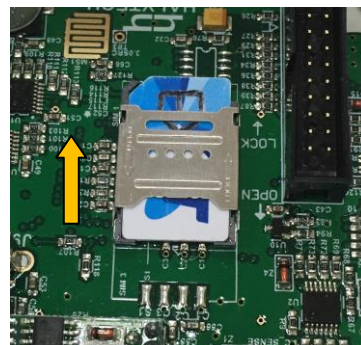
b.



c.



d.



e.

## Connecting the internal 9V backup battery (Optional)

The internal 9V battery serves as backup for the hydroSpider2 state. The state refers to information such as the system date and time, counters, alarm state, when the modem should perform retries, and other current system information.

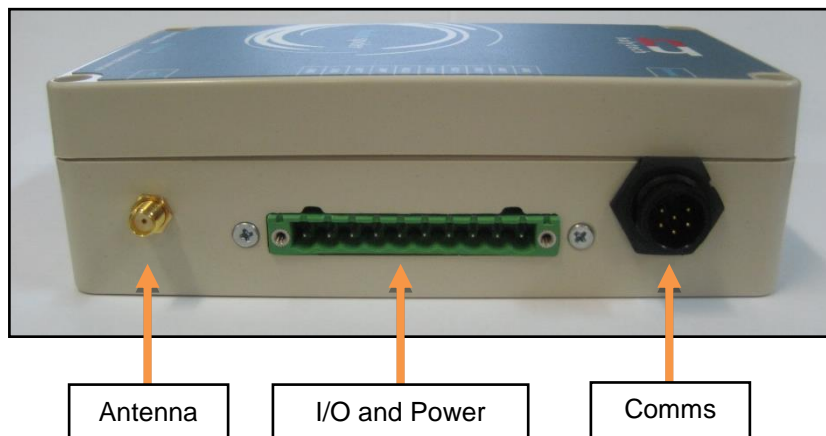
Should hydroSpider2 lose power completely, its state will be lost and the information listed above will reset. The 9V backup battery prevents this by providing the hydroSpider2 with enough power to keep the state when all other power is lost. With just the 9V battery powering the unit, the hydroSpider2 will not perform its normal operations (logging, alarming, reporting, etc.). Normal operation resumes when the power supply returns to 12V.

To insert the battery, open the hydroSpider2 and connect a standard 9V battery to the battery clip. Insert the battery into the metal holder as shown in the picture below.



## Connectors

The hydroSpider2 has three connector groups on the side of the case – Antenna, I/O and Power, and Comms. These are shown in the image below:



## ***I/O and Power Connector***

This section describes the pins on the hydroSpider2 green I/O and Power connector. These pins are labelled on the lid of the hydroSpider2 and change depending on the hydroSpider2 model.

### **Standard hydroSpider2**

<b>Label</b>	<b>Name</b>	<b>Function(s)</b>	<b>Comment</b>
GND	GND	Ground	Common for all signals
AIN1	AIN1	Analogue 1 (Voltage 0 - 2.4V or Current 4-20mA)	User selectable
DIN1	DIN1	Switch 1 Counter 1 Quadrature 1a	Active is short to ground
OC	-	-	Future expansion
DIN2	DIN2	Switch 2 Counter 2 Quadrature 1b	Active is short to ground
AIN2	AIN2	Analogue 2 (Voltage 0 - 2.4V or Current 4-20mA)	User selectable
SWP	PWR OUT	Switched Power Out	Driven by control 1, max 1A
BATT	PWR IN	External Power In or Battery	Nominal 12V DC max 7.2Ah battery
CHG	CHARGER IN	Charger Supply In	16V – 24V 2A DC or 12V Solar Panel
GND	GND	Ground	Common for all signals

### **SDI-12 / RS-485 hydroSpider2**

<b>Label</b>	<b>Name</b>	<b>Function(s)</b>	<b>Comment</b>
GND	GND	Ground	Common for all signals
AIN1	AIN1	Analogue 1 (Voltage 0 - 2.4V or Current 4-20mA)	User selectable
DIN1	DIN1	Switch 1 Counter 1	Active is short to ground
SDI-12	SDI-Data	SDI-12 Data	SDI-12 data wire
485 +	RS485 D+	RS485 Data +	RS-485 differential data wire
485 -	RS485 D-	RS485 Data -	RS-485 differential data wire
SWP	PWR OUT	Switched Power Out	Driven by control 1, max 1A
BATT	PWR IN	Battery or External Power In	Nominal 12V DC max 7.2Ah battery
CHG	CHARGER IN	Charger Supply In	16V – 24V 2A DC or 12V Solar Panel
GND	GND	Ground	Common for all signals

**NOTE:** the two GND pins are equivalent and all inputs and outputs are referenced to this common ground.

## ***Using the Connectors***

Some usage scenarios of the hydroSpider2 I/O connector are outlined below:

- Connect inputs as per manual:
  - Switch, pulse and counter inputs - connected directly to appropriate input and ground.
  - 4-20mA – connect directly between an available analogue input and GROUND. External resistors are NOT required
  - Voltage inputs with a range of up to 2.4V – connected directly between an available analogue input and ground
  - Voltage inputs with a range over 2.4V – connected via dividing resistors (not supplied – see manual for details)
- Switched Power Out (SWP) can be used to power sensors from either the BATT or CHG terminals (whichever is the higher voltage). The hydroSpider2 will switch the power to the sensor when required.

## ***Connecting the antenna***

The antenna can be connected to the hydroSpider2 by simply screwing the SMA antenna connector into the ANT port of the hydroSpider2 using your fingers. Do not use tools to tighten the connector as this will likely cause damage.

## ***Connecting power***

The hydroSpider2 can be powered by any 12V battery or 12V DC supply capable of supplying 1A. However, if you wish to use the charger feature of the hydroSpider2 then you must use a rechargeable 12V SLA battery of **no more than 7.2Ah capacity**.

Simply connect the selected power source to the *BATT* and *GND* ports. Take caution to observe the correct polarity to avoid damaging the hydroSpider2.

## ***Connecting a charger supply***

The hydroSpider2 features an inbuilt battery charger. This charger port can be used to both power the hydroSpider2 and to charge a rechargeable 12V SLA battery of **no more than 7.2Ah capacity** connected to the *BATT* port.

Simply connect a 15V – 24V DC 2A power supply or a 12V solar panel to the *Charger* port. Take caution to observe the correct polarity to avoid damaging the hydroSpider2.

**Note:** the hydroSpider2 can be solely powered from the charger supply by not connecting anything to the *BATT* port.



## Connecting to the hydroSpider2 from your PC

A LAN link cable is required to communicate with the hydroSpider2.

1. Power up the hydroSpider2 as described in the section "Connecting Power". The hydroSpider2 will not communicate with you unless it is powered up.
2. Turn your computer on and disconnect it from all networks, including any wireless networks.
3. Connect the black connector on the Communications Interface to the Comms port of the hydroSpider2.
4. Connect the LAN and USB connectors on the other end of the Communications Interface to your computer.
5. Wait 60 seconds for the hydroSpider2 to power up and register with your computer.
6. Open a browser on your computer (eg: Internet Explorer) and request the following page: <http://192.168.0.177>
7. The hydroSpider2 Log In page should be displayed. The default username is 'user' and the default password is 'changeme'.

## Configuring the hydroSpider2

A hydroSpider2 is shipped from Halytech with factory default settings. It is recommended to set up the hydroSpider2 in the following order:

1. Location
2. Date and Time
3. Username and password
4. Control names
5. Input channels
6. Channel calibration
7. Network parameters
8. Email
9. Twitter
10. Alarms
11. Reports
12. Perform modem diagnostics
13. Automatic setup updates
14. Automatic software updates
15. Save a copy of the setup

To begin making changes to the hydroSpider2 configuration, go to the *Change Setup* page by clicking the Change Setup link from the menu on the left. This page gives you links to all the other pages required during the setup of the hydroSpider2.

Refer to the hydroSpider2 User Manual for further instructions.

## Using the Keypad and Display (if fitted)

The Keypad / LCD is normally turned off and consumes no power. Pressing and holding any of the keys for approximately one second turns the display and its backlight on.

In order to conserve battery power, the display will automatically turn off after two minutes of key press inactivity. The shutdown happens in two stages – firstly the backlight turns off to indicate that the display is about to be switched off, and secondly after approximately another 30 seconds the display will completely turn off.

Normally, the display shows:

**Halytech  
hydroSpider 2**

Different display screens are accessed by briefly pressing the left and the right arrow keys. The 'OK' key is reserved for future functionality. Each key press will display a new screen. Different screens are:

1. Current date and time
2. Current state of inputs
3. Current states of battery charger and battery voltage
4. Current value of system temperature
5. Current state of System Moisture Indicator
6. Current LAN IP address and IP Mask
7. Software version

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