SP2+B-LCD (SP1+B and SP2+B)

Quick Start Guide - 2023

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Introduction

The SP2+B-LCD combines the SP2+ software & features with the LCD display. These compact units include the hardware to support up to 4 sensor ports, dry contact, built in PoE and LCD display to show data from connected sensors. The SP2+ LCD Basic can be upgraded to the Pro version with a one time software license.

Basic vs Professional Versions

The below table shows the features included with the SP2+B-LCD Basic, and the benets of upgrading to the Professional license. Please contact our sales team (sales@akcp.com) for the cost details.

SP2+B-LCD	Basic	Pro
5 dry contact	—	—
Virtual Sensors	—	5
Event Log	✓	✓
Notifications	✓	✓
MQTTS	✓	✓
Graphs	✓	✓
Maps	—	✓
3rd Party Modbus	—	✓
IPv6	—	✓
SNMPV3	—	✓
VPN	—	✓
Access Control User	—	✓
RADIUS	—	✓
Heartbeats	—	✓
Modbus	—	✓
Cloud	—	✓
Authentication	—	✓

Setup of the SP2+-B-LCD Base Unit & Notifications

Please refer to the SP2+ Introduction and Notifications manual on our website support portal for all of the details on the setup of the unit, connecting sensors and sending notifications.

Here are the direct links for these manuals;

http://www.akcp.in.th/downloads/Manuals/SP2+/SP2+%20Introduction%20Manual.pdf
http://www.akcp.in.th/downloads/Manuals/SP2+/SP2+%20Notifications%20Manual.pdf
http://www.akcp.in.th/downloads/Manuals/SP2+/SP+%20Email%20Alerts%20Quick%20Start%20Guide.pdf

Hardware Configuration Options

Connect up to 4 AKCP sensors, including combined cabinet thermal maps and contactless current meters, providing up to 9 sensors per port.

Optional Hardware & Configurations

4G Modem - External cellular data modem plugs into dedicated UART EXT modem port.
External PSU - Add a 5VDC external power supply for reduancy when combined with PoE
Modbus RS485 - Change the dry contact input to be Modbus RS485 (SP2+B-LCD-MOD)

Again, please refer to our specific product manuals for the USB external modem, the Modbus RS485 & the dry contact here below when setting these up on the SP2+B-LCD;

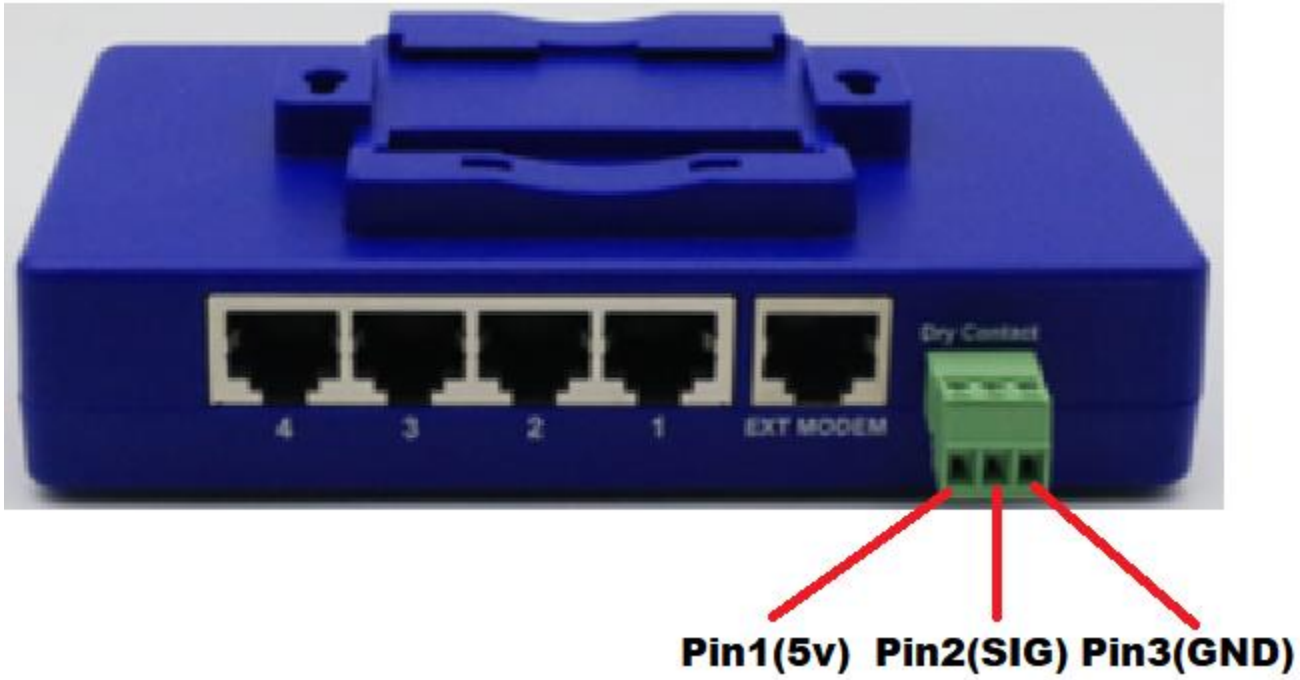
http://www.akcp.in.th/downloads/Manuals/ExternalModem/SP+%20External%20Modem%20QuickStart%20Manual.pdf

http://www.akcp.in.th/downloads/Manuals/Modbus%20on%20SP+/SP+%20Modbus%20Manual.pdf

Dry Contact Input & Output

When connecting an external 3rd party dry contact to the internal dry contact input on the SP2+LCD, the connections are Pin 2(SIG) and Pin 3(GND) as shown in the diagram below. The initial status will be critical, and when shorted it becomes normal.

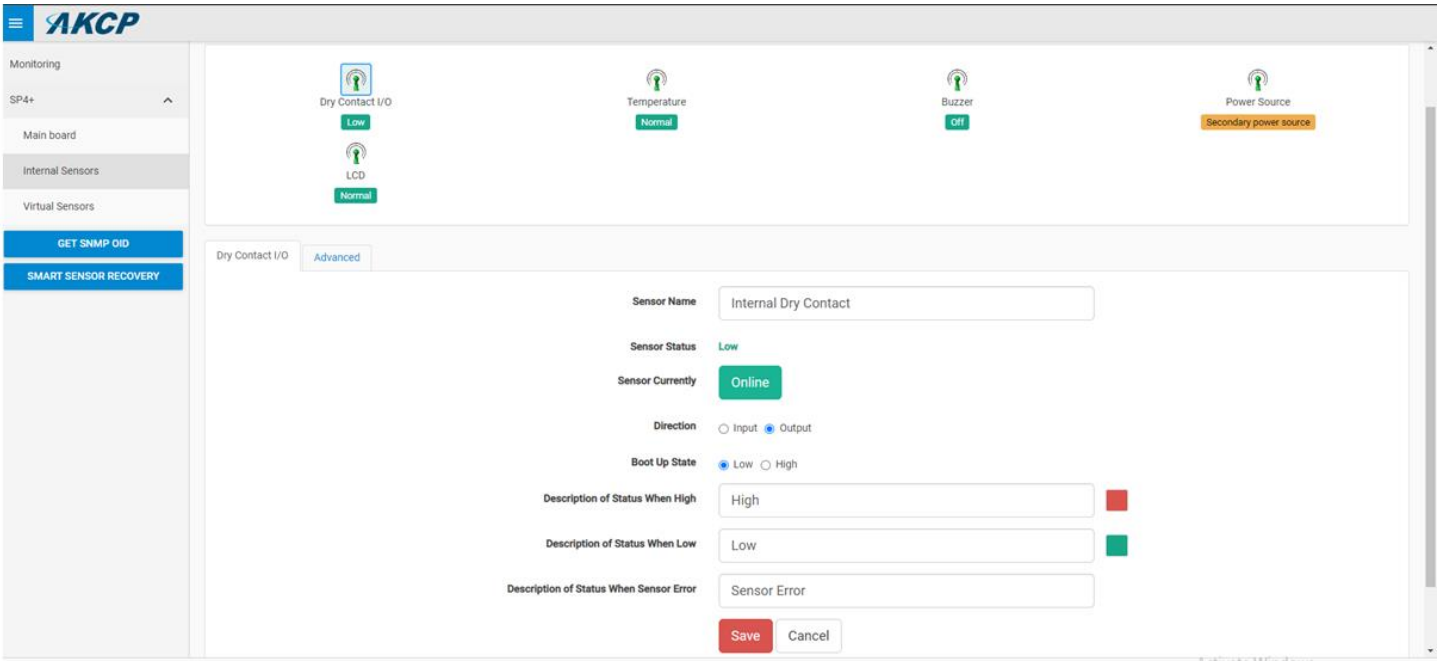
This is the same when configuring the dry contact as an output. The connections are Pin 2(SIG) and Pin 3(GND), When the status is set to low, Pin2 and Pin3 is 0VDC which you can check via a multimeter, then when the status is set to high the voltage is 5VDC.

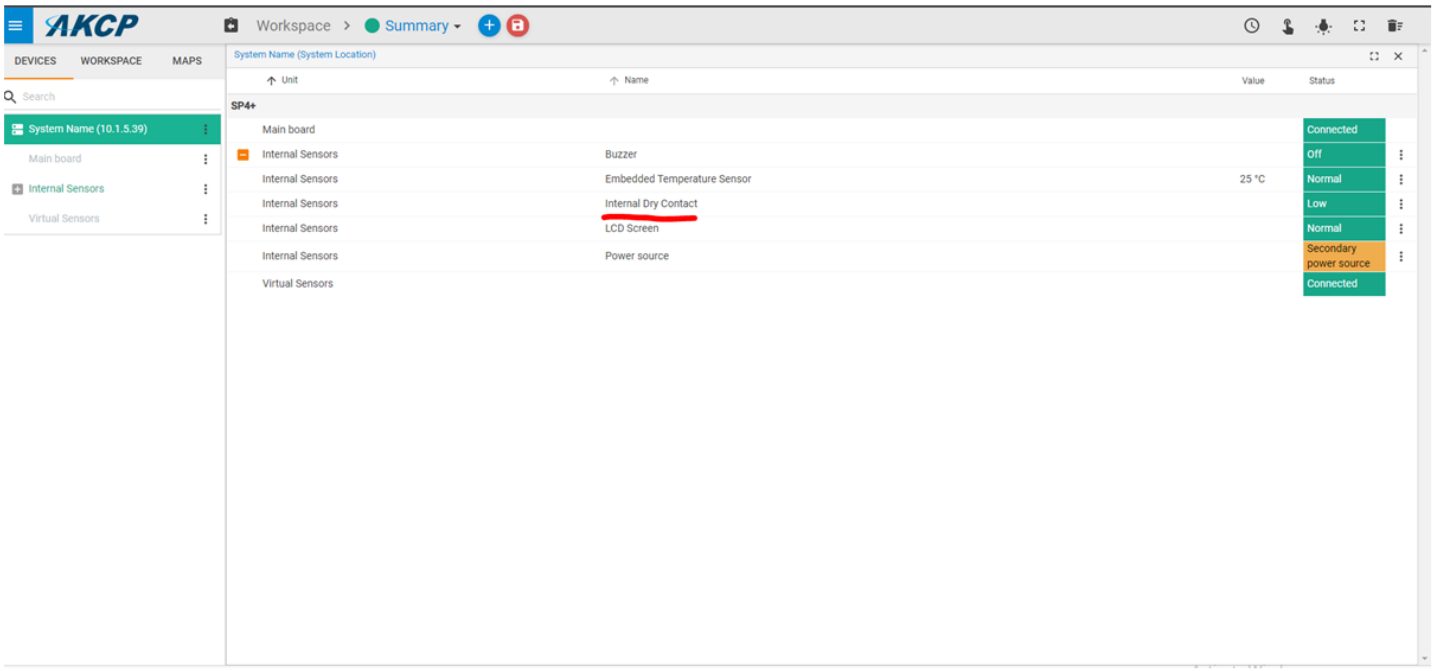


Note: The dry contact connection pin assignments are shown in the above picture.

Dry Contact Web UI configuration

Please see the screen shots below on where in the SP2+LCD web UI the dry contact is configured.





LDC display

The LCD display combined on the SP2+B-LCD base unit can be programmed to display the data from any AKCP sensor or virtual sensor.

You can mount the unit on the end of an aisle, on the door of every cabinet, or on the wall of a room. The LED indicators will alert if a sensor is in critical condition, as well as the on screen display of the critical or warning status.

LCD Overview

Features:

- Easy to read, high quality backlit LCD display
- Program to display specific sensors
- Keyhole mounting
- LED Status indicator for Critical and Warning sensor statuses
- Built-in temperature sensor (not available on the SP2+LCD)
- Displays the base unit's IP address (see below)

Please Note: The temperature reading in the top left corner of the unit will not show as the built-in temparature sensor is not available on the SP2+LCD.

Watch our Youtube video refering to the LCD sensor: https://youtu.be/klieKQJ52-U
Which will also apply to the LCD funtions on the SP2+LCD.

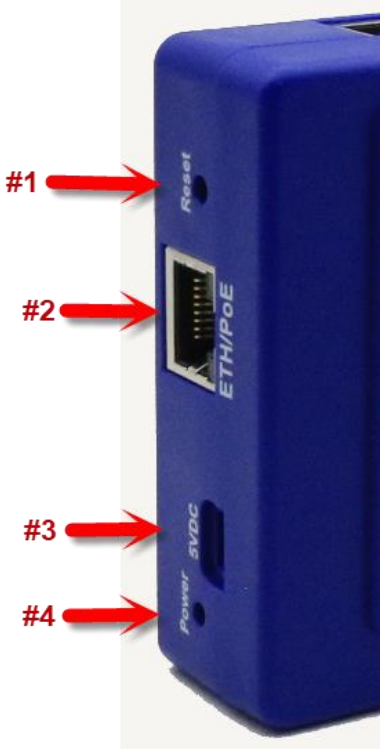
SP2+LCD Reset Button

The reset button on the SP2+LCD unit functions the same as the SP2+ unit.

The reset button performs the following on the SP2+LCD.

A. IP address broadcasting (press for 0 - 3 seconds)
B. Device reboot (press for 3 - 7 seconds)
C. Web UI password reset (press for 7 - 12 seconds)
D. Soft reset (press for 12 - 17 seconds)
E. Hard reset (press for 17 - 22 seconds)
F. Reset to default IP 192.168.0.100 (press for 22 - 25 seconds)
G. No action (25 seconds)

SP2+LCD Power & Additional Connections



#1. Reset Button | The reset button as explained above.

#2. Ethernet Connection & PoE.

#3. Power Connections. The unit can be powered by both PoE and a micro USB 5VDC adapter simultainiously (micro USB cable included).

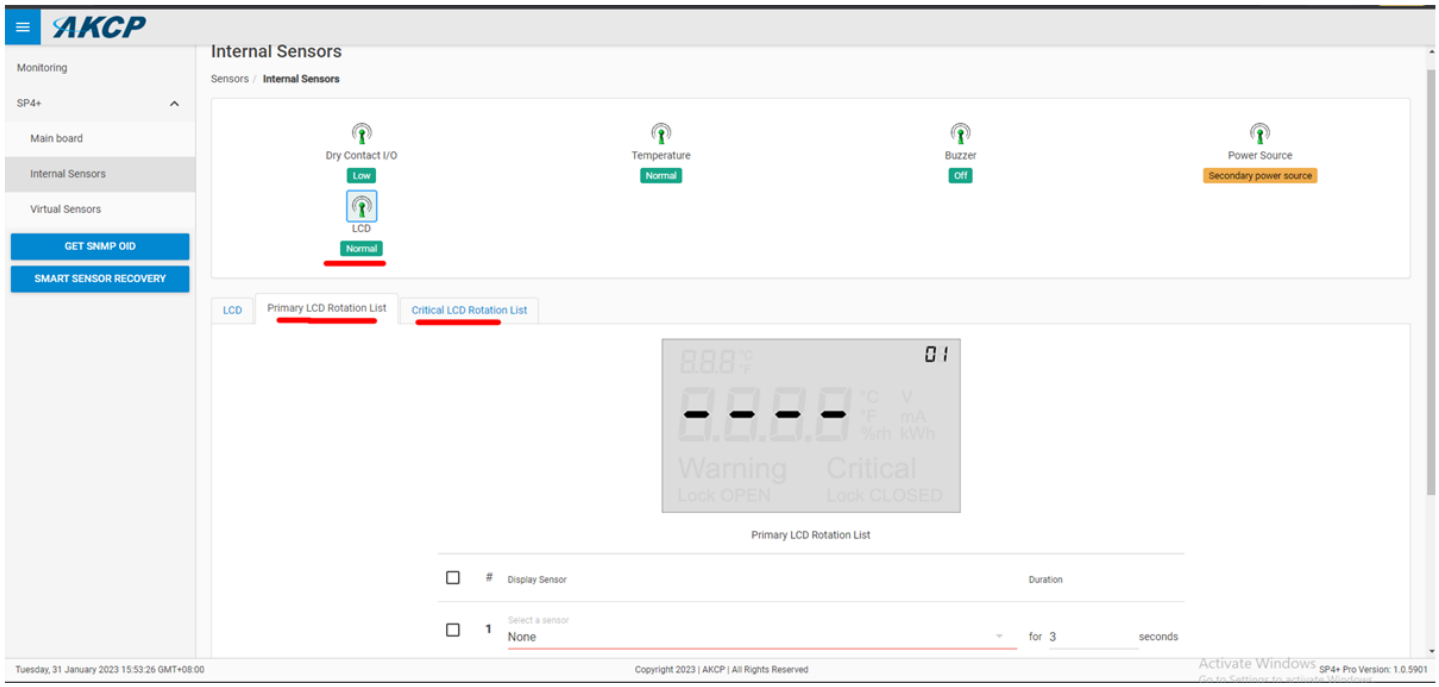
It can also be powered by our 5.5VDC 3A power adapter using this DC jack to micro USB adopter shown below. The 5.5VDC adapter or the adapter shown below are not included.

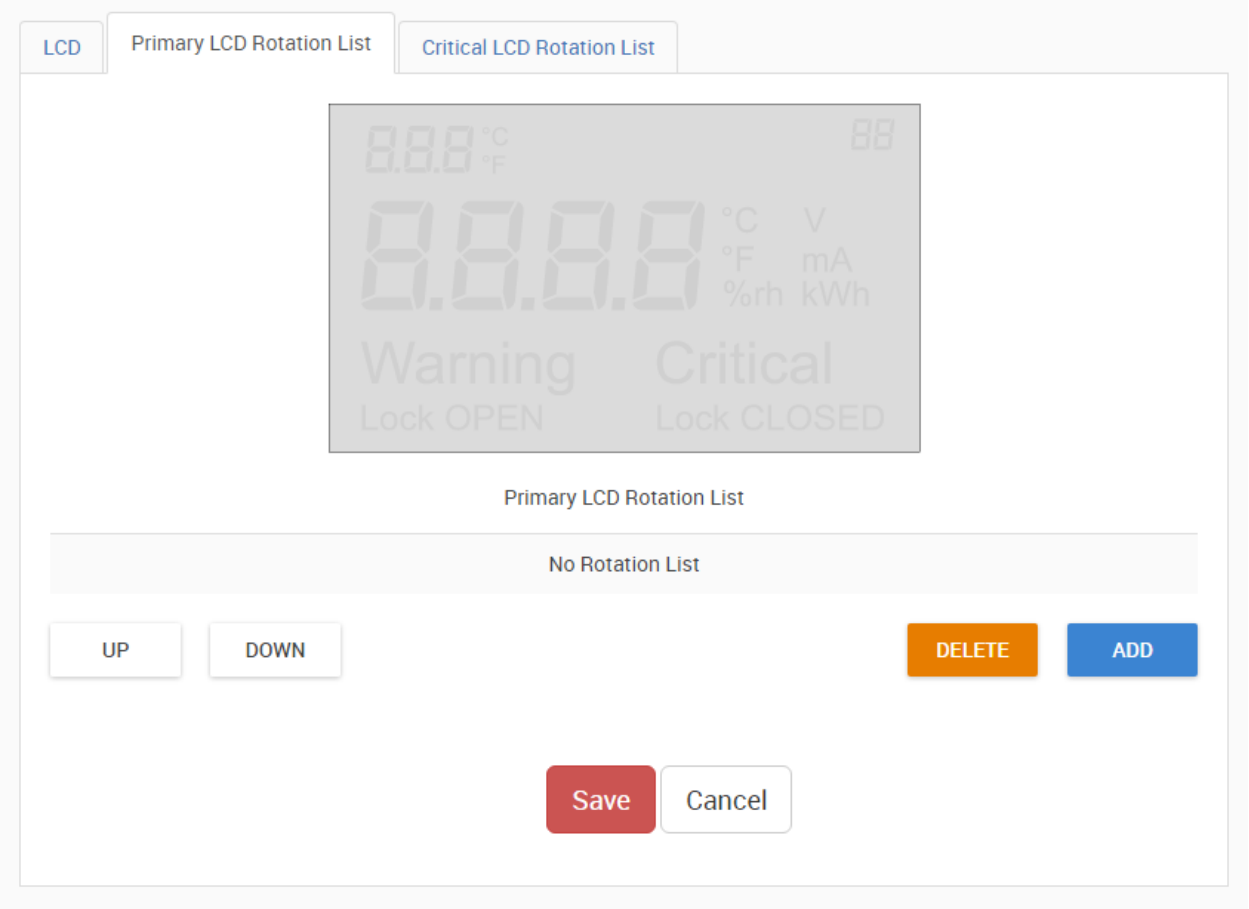
#4. Power LED.

Note: Please contact our sales team for more details on the options available when ordering the SP2+LCD units.

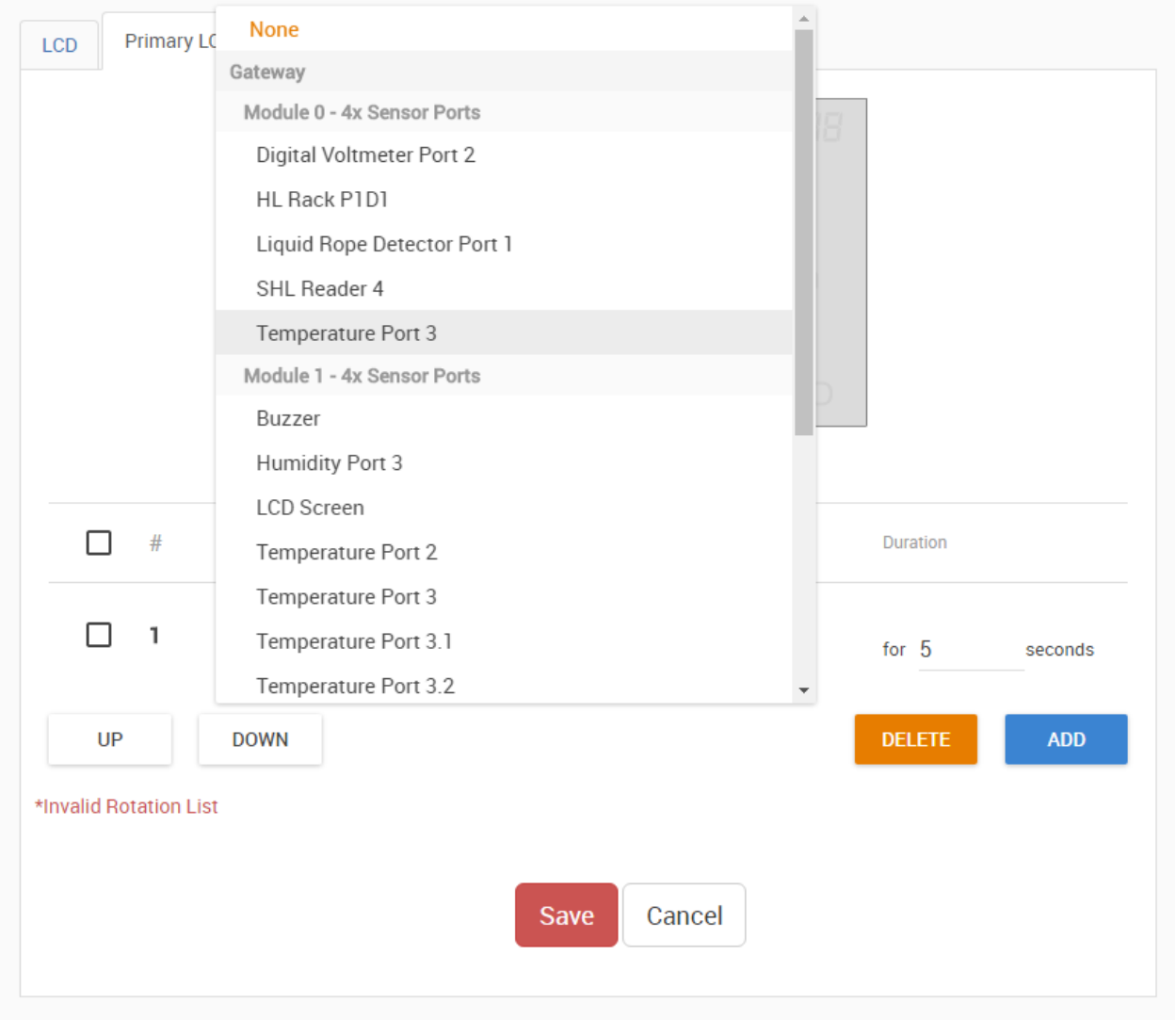
LCD Configuration

The SP2+-B-LCD configuration is shown below in the following screen shots.



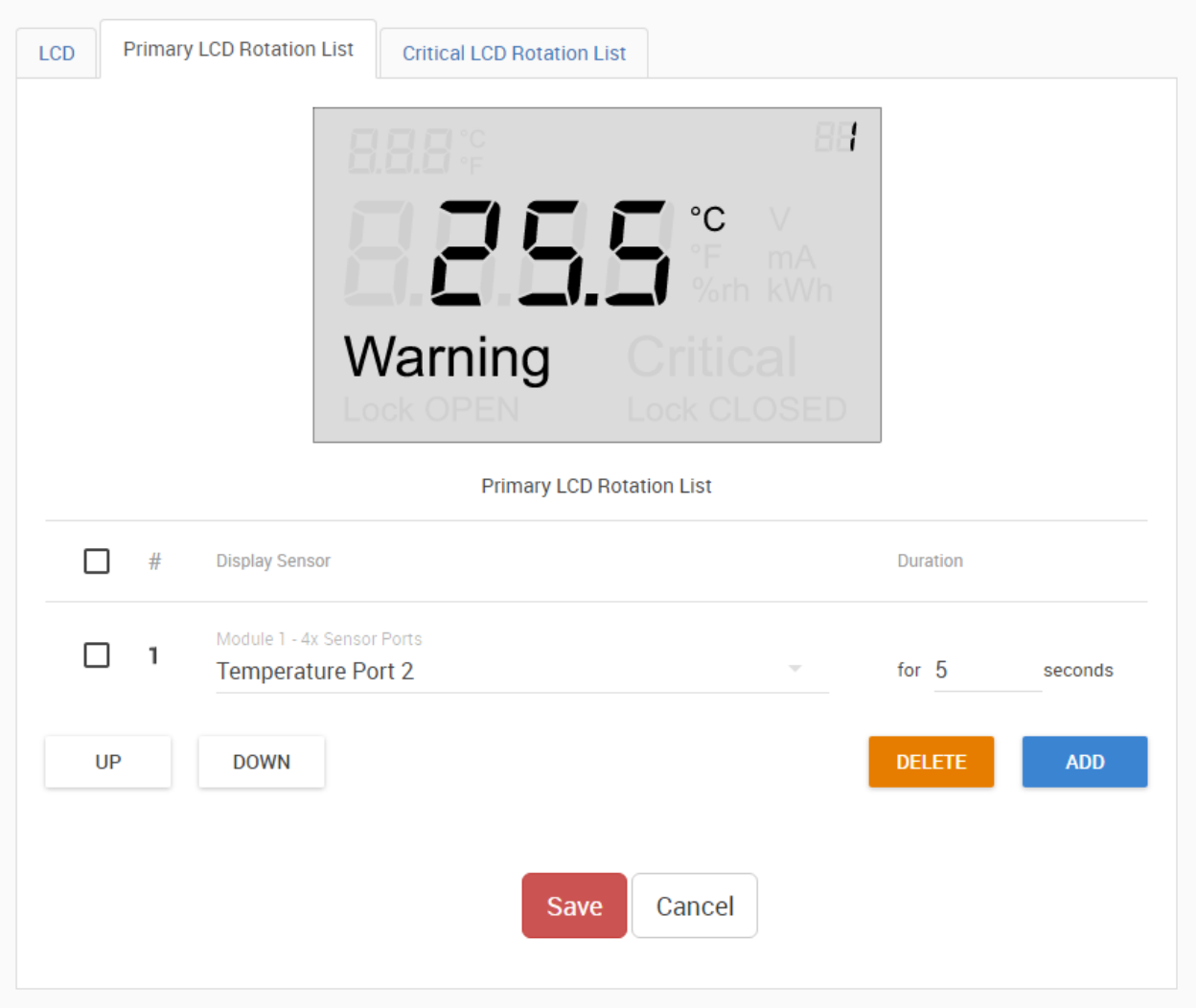


Now you can define the display rotation list that will be displayed on the LCD.
The Primary Rotation List is what will be normally displayed on the screen.

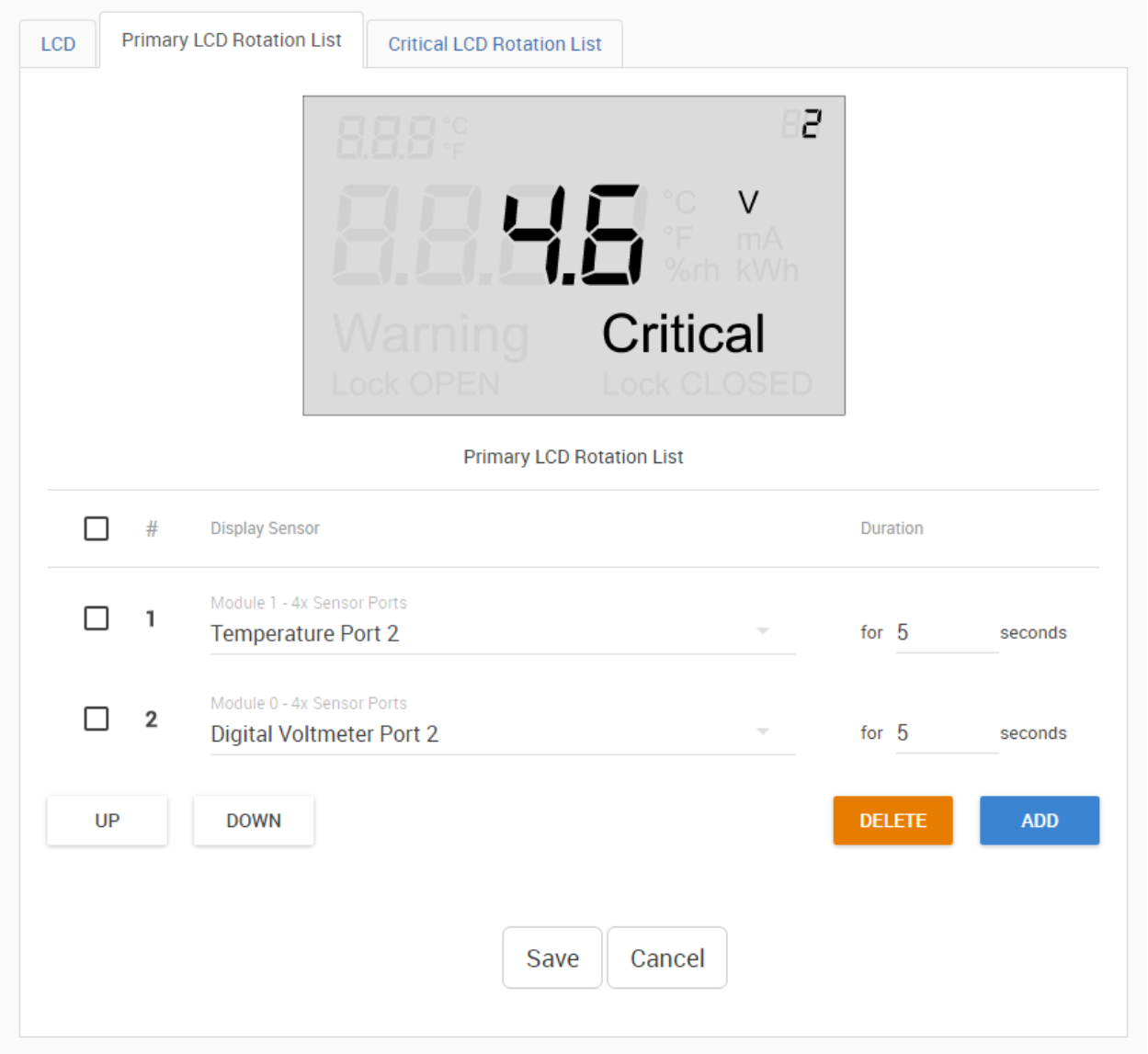


Click on the Add button, and one by one add the sensors that you'd like to have their statuses displayed on the LCD.

Note: You can only select the sensors which are already connected to the unit.



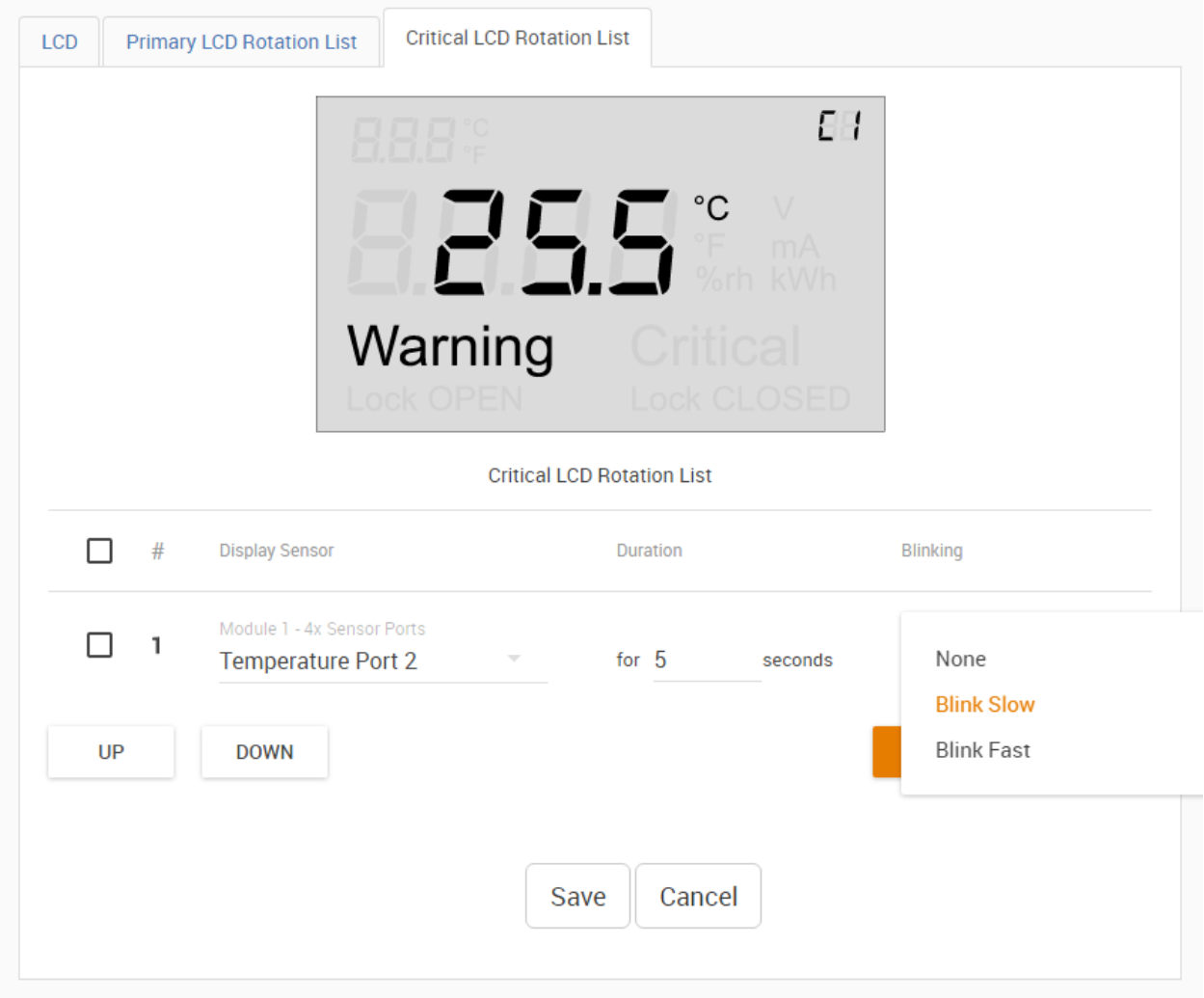
For each sensor, you can define the duration of the display, before it will switch to the next sensor status display.



The preview screen will show you how the configured display will look like, with the actual sensor reading and status value.

The small index counter on the top right corner of the LCD screen shows the sensor's order number in the list. You can reorder the sensors by selecting them and clicking on the Up/Down buttons accordingly.

Save your configuration, then it will be uploaded to the sensor (this takes a few seconds).



There's also a Critical Rotation List configuration, which will be used when one of the monitored sensor's status is in a warning or critical state.

Important: The Critical Rotation List will override the Primary Rotation List if a sensor's status is warning or critical and will only display those sensor statuses.

The display configuration is the same as for the Primary Rotation List, but you can also define a blinking rate value (slow or fast) to emphasize the value reading that is being displayed.

LCD Display Sensor Types

Switch type sensors that have no unit values are displayed as a sensor-type. The following list provides a definition of the sensor mapped to a specific sensor type. Examples can be seen on the following page.

ST-01 - Airflow
ST-02 - Dry Contact I/O
ST-03 - Dry Contact Input
ST-04 - Motion Detection
ST-05 - Water Sensor
ST-06 - Security Sensor
ST-07 - Siren and Strobe
ST-08 - Sensor Controlled Relay
ST-09 - AC Voltage Sensor
ST-10 - 8x Sensor Controlled Relay
ST-11 - Smoke Detector
ST-12 - 8 Dry Contact I/O
ST-13 - Rope Water Sensor
ST-14 - 5 Input Dry Contact
ST-15 - Handle Lock Status
ST-16 - Handle Lock Reader Status
ST-17 - Virtual Sensor (Switch Type)
ST-18 - LCD sensor status

Examples of LCD Display program

Sensor 1 - Temperature (°C)

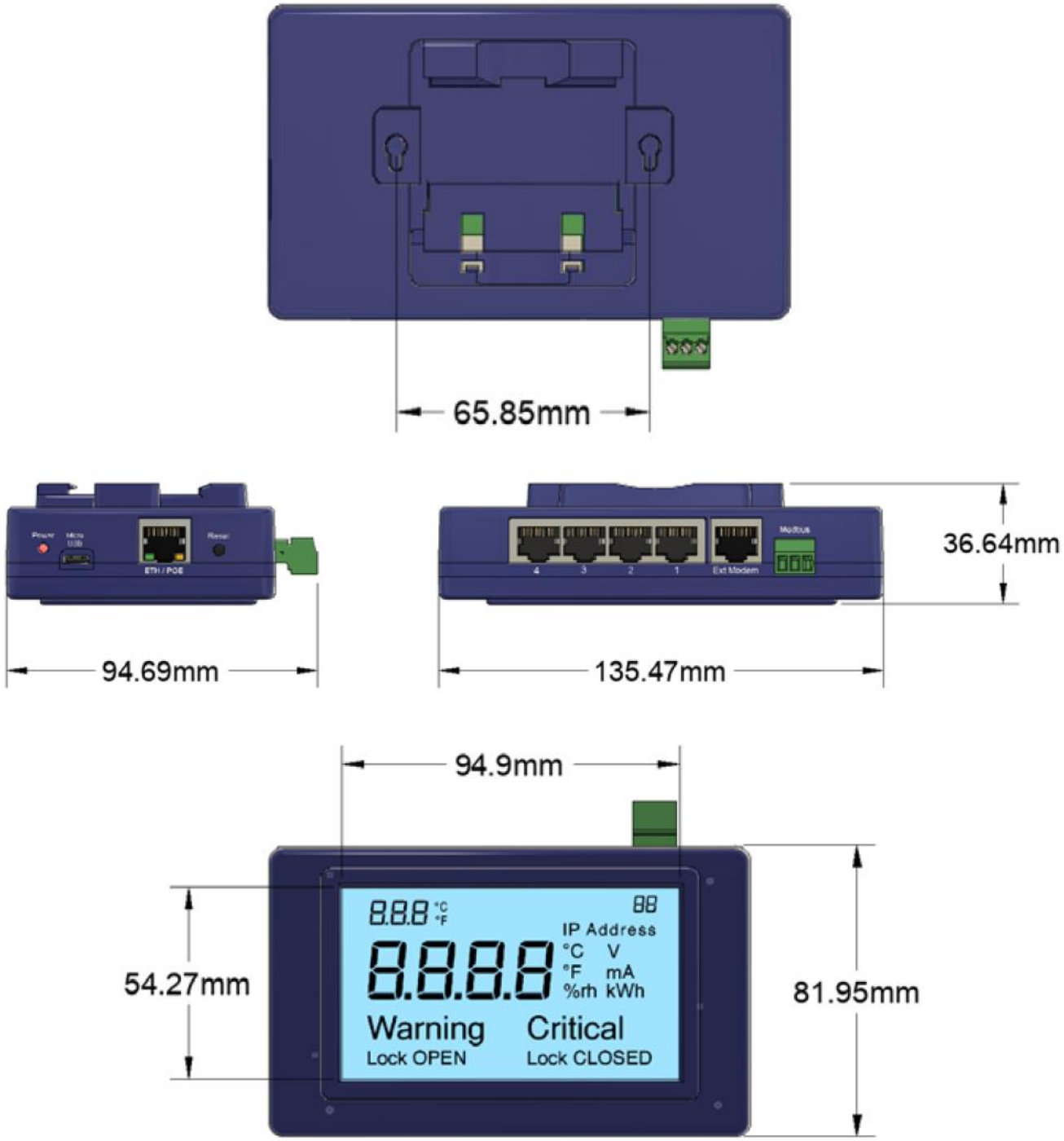
Sensor 2 - Power (Amps)

Sensor 3 - Cabinet door lock (sensor type 16)

Sensor 4 - Voltage Sensor (V)

Through the SP2+LCD web interface the LCD display is programmed to display the sensors you wish to view and the sequence in which they are displayed. The above example shows a series of 4 sensors status being displayed.

Technical Drawing (also refer to the SP2+LCD datasheet)



Technical Specifications (also refer to the SP2+LCD datasheet)

Dimension	Size 135 x 81 x 36 mm Weight 0.4 Kg
Network Interface	Standard 10/100 Mbps Full Duplex Ethernet RJ-45 Port
Mounting	0U rack-mountable Built in DIN rail mounting clip Screw hole mounting
Power Requirements	PoE IEEE 802.3af support External 5.5V 3A Power Adapter Input Voltage and Current ratings : 100V~240V - 0.22A
Status Indication	LCD display for sensor values, status and IP address LED indication for Power LED for network connectivity LED for sensor online and threshold status
RJ-45	4 RJ-45 Sensor Ports for connecting AKCP Autosense Sensors Up to 20 Dry Contact Input and Output (0VDC/5VDC)
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -35° C – Max.80° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
MTBF	1,400,000 Hours based on field experience with sensorProbe units.
Inputs	4x RJ-45 Sensor Ports (SP2+) 1x 10/100 Ethernet Port 1x UART external modem port
Outputs	Configurable output signals (0VDC/5VDC) on any of the 4 RJ-45 sensor ports
Max Sensors	Maximum of 400 onlined sensors, including virtual sensors.
Maximum Number of Access Control Users	500 Users 100 Users default
Supported Protocols **Requires Pro License**	Rsyslog MQTT / MQTTS SNMP V1/2 IPV6 RADIUS TACACS HTTPS Encrypted E-mail
Pro License Features	
5 Dry Contact	5 dry contact input sensor (per port) 1 License equals 1 RJ45 port unlocked
Virtual Private Network (VPN)	VPN - Connect to AKCPro Server from your base unit through VPN over Ethernet or cellular network.
Virtual Sensor pack	Virtual sensor (pack of 5 sensors). Maximum of 80 virtual sensors. * **
3rd Party PMS & Modbus	3rd Party Modbus / PMS device. Up to 4 modbus devices with 15 sensors.* **
500 Access Control user database : UA	500 users for access control (SP+ series has 100 users as standard)
IPV6	Support for IPV6 network addresses
Radius	Radius user authentication server connection. TACACS authentication to Radius.
Important Notes	* the sensorProbe+ units can only have 60 Modbus RS485 sensors (virtual sensor + modbus devices) ** the sensorProbe+ units can only have 60 Modbus TCP/IP sensors (virtual sensor + modbus devices)

Please contact support@akcp.com if you have any further technical questions or problems.

Thanks for Choosing AKCP!