

Droplet Specifications (Hardware V5.0)



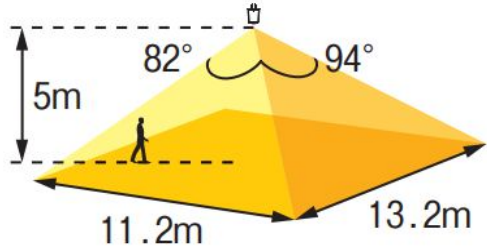
Model Name and Definition

Droplet	D-LR-THLM	LoRa RAW wall mount sensor. Temp, Humidity, Lux. PIR
Droplet	D-LR-THL	LoRa RAW wall mount sensor. Temp, Humidity, Lux.
Droplet	D-LR-TH	LoRa RAW wall mount sensor. Temp, Humidity
Droplet	D-LW-THLM	LoRa WAN wall mount sensor. Temp, Humidity, Lux. PIR
Droplet	D-LW-THL	LoRa WAN wall mount sensor. Temp, Humidity, Lux.
Droplet	D-LW-TH	LoRa WAN wall mount sensor. Temp, Humidity



Power Options and Requirements:	
Batteries	3x AA Batteries

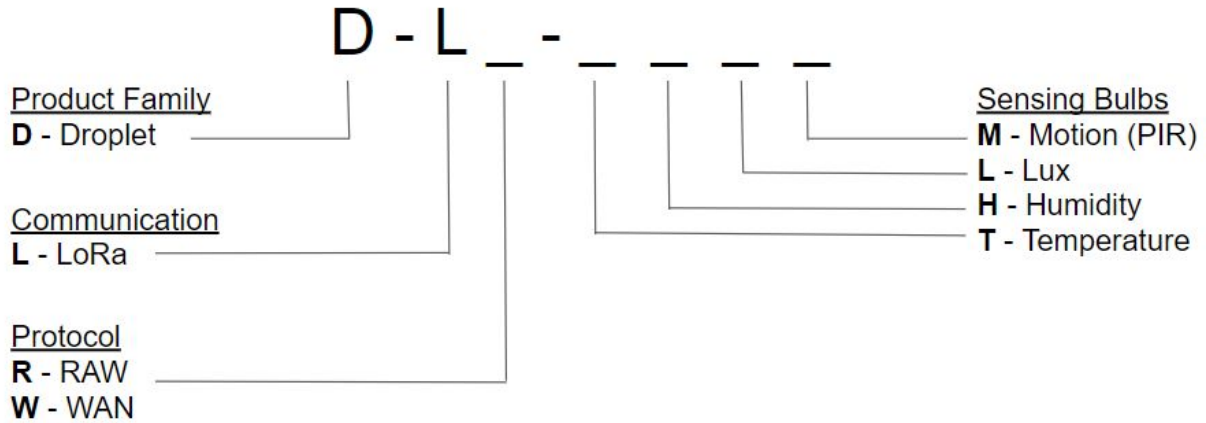
LoRa Capabilities:	
Supported Frequencies	868/915Mhz
Spreading Factor	6-12
Bandwidth	7.8 - 500 kHz
Effective Bitrate	.018 - 37.5 kbps
Est. Sensitivity	-111 to -148 dBm

Sensor Specifications:	
Temperature Sensor	@25°C ± 0.5°C, from 0...65°C ±1°C
Humidity Sensor	-40°C -> 85°C, Resolution .008 %RH
PIR Sensor	<p>Detection Distance 5. Example Coverage for ceiling mounted scenario:</p>  <p><i>Image Source: industrial.panasonic.com</i></p>
Light Sensor	Range of 1 - 65535lx

Power Specifications:	
Batteries	3x AA (Alkaline, non-rechargeable)
Life Span	Dependant on push rate and environment conditions, from 3-5 Years.



Model Selection

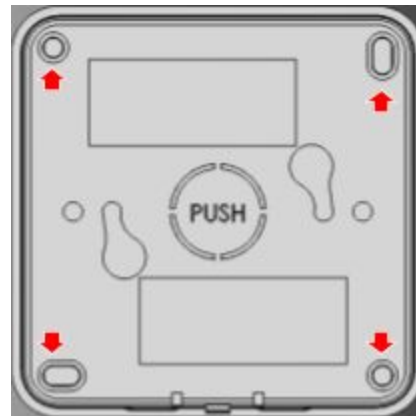


Installation and Enclosure

The Droplet can be mounted to the wall via screws on the backing plate, or simply via double-sided-tape if you want the convenience of a drill-less setup or being able to move sensors around a facility.

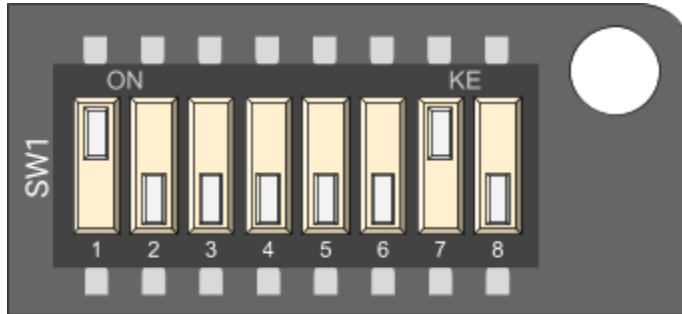
The backing plate is removable, to allow for access to the batteries and reset switch, and also so the wallplate can be mounted.

Height	86 mm
Width	86 mm
Depth	25.5 mm
Material Type	Plastic (ABS)
UL Rating	UL94-V0
IP Rating	IP40



Use the holes indicated to mount the backing plate onto the wall, with the "PUSH" word facing towards the wall.

Dip Switch Settings:




Dip switches are used to configure a variety of things, including the frequency it needs to listen on and to enable programming or RTC only modes. There are 8 Dip Switches, each with two positions, On/Off. The following table specifies special modes that the modem recognizes, the *setting* refers to which switches are set to On. All others should be in the Off position. EG: In the following diagram, the *setting* is (1,7).

Enabling Modes:

In order to enable a mode the Droplet must first be in the correct dip switch setting and then the power must be cycled. To do this simply remove a battery and put it back into the droplet or press the reset button S1 to the right of the dip switches.

Special Modes:

The first switch defines if the Droplet is in a special operation mode or not. If it is on, the Connect will be in one of the following *modes*. More modes may become available through firmware updates.

Mode	Purpose	Setting
OFF	Don't do anything. Preserve Battery and Sleep.	<p>1</p> 



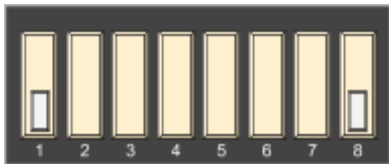

General Mode:

For general use, the dip switches define what frequency the droplet should transmit on and what "ID" should be used for the network. These settings would then need to be duplicated on the LoRa Connect Modem to enable communication between the two.

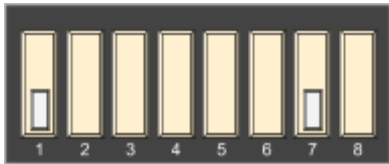

The rules for the settings are as follows:

The **first** DIP switch is to the special operation modes, so this should be off for general use.





8 is used for **Frequency**

915		918	
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7 is used for **Spreading Factor**:


6		9	
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5 and 6 are used for **Push rate**:

1 Min		5 Min	
15 Min		30 Min	



2, 3 and 4 are for “Channel” (Used for separating close by networks):

AA		AB	
BB		BC	
CC		CE	
EE		EF	

About Nube iO

Designed by HVAC controls experts, Nube iO provides a reliable and economical platform to control and monitor your HVAC system. With emphasis on utilizing open platforms and device security Nube iO allows you to break free from restrictive BMS platforms without the huge cost of having to replace existing controllers.

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