

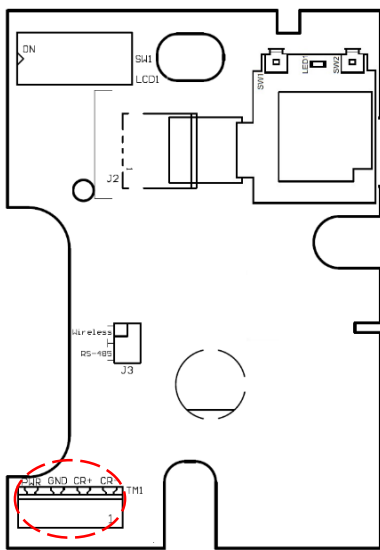
AVC-410 Ammonia (NH3) Transmitter (RS485/Wireless) Instruction Manual

Thanks for choosing our product! Please read carefully and follow this instruction before using!

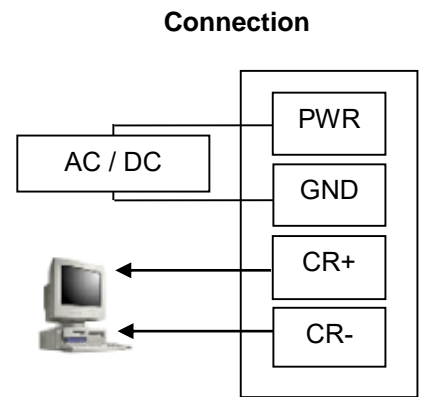
Introductions

AVC-410 is designed for the detection of Ammonia concentration in the environment and also can send signal via RS485 or LoRa wireless transmission to monitoring center to control air purifying or ventilation system, depending on measurement result. This would be an efficient solution to analyze or monitor the Ammonia level and to ensure a better indoor air quality. The perfect applications are public toilet, cold storage plant, refrigeration plant, fertilizer plant, or livestock farm and etc.

Wiring



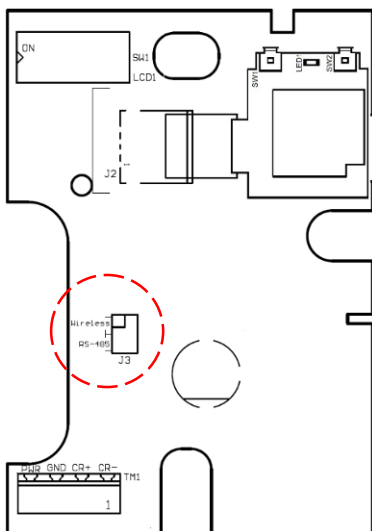
1	PWR	DC 12 ~ 36V AC 24V(50/60Hz)
2	GND	System GND
3	CR+	RS-485(+)
4	CR-	RS-485(-)



【Figure 1】

Notice: Please remove power from the unit before wiring, in order to avoid any damage or hazard.

Transmission Mode setting

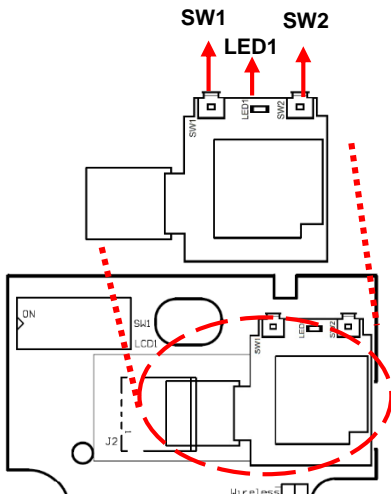


Jumper setting:

Transmission Mode setting (Wireless/RS485)

Transmission Mode	J3
RS485	
Wireless	

Join a wireless network (Only available for wireless version)



If the transmission mode is set as “Wireless”, please follow the steps as below to establish the connection between transmitter and receiver.

1. Please make sure the wireless receiver has been connected with PLC or with computer. (Please refer the manual of wireless receiver for the detail operation.)
2. Please press and hold the SW2 on wireless module until the LED1 (Green) is ON. And it will activate the pairing procedure and complete the connection within 60 secs.
3. When the LED1 switches off, the connection between the transmitter and receiver has been done. If the LED1 blinks every 5 secs, the connection fails. Then please press SW1 (Reset) and repeat the above-mentioned steps.

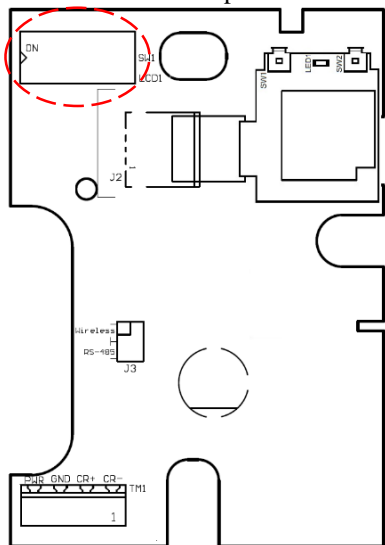
Notes: 15.19(a) (3) Regulations:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

RS485 settings

1. Device ID: Setup device ID with dip switch; ON :1, OFF :0



Device ID (ON : 1, OFF : 0)							
1	0000 0001	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	0000 0010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
64	0100 0000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
65	0100 0001	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

2. Protocol :
Baud Rate = 9600 (Default); Word Length = 8; Parity = none; Stop Bits = 1.

Data Reading Type

	Device ID	Function	Address (High byte)	Address (Low byte)	Data Length (High byte)	Data Length (Low byte)	Checksum
NH3	By setting	0x03	0x00	0x00	0x00	0x01	XXXX

Responding Data Type

	Device ID	Function	Data byte	Data (High byte)	Data (Low byte)	Checksum
NH3	By setting	0x03	0x02	0x00	0x64	XXXX

**** Remark 1:**

1. XXXX is the checksum for CRC-16/MODBUS.
2. The unit of Ammonia data is ppm. The data obtained is hexadecimal. To get Ammonia value, convert hexadecimal to decimal and divided it by 10.
For example, the data obtained is 0x0064. Convert it to decimal and divide it by 10. And then we will get 10.0 ppm, which is the Ammonia value.

Calibration

To calibrate 2ppm to 1ppm, the correction value is $(1-2)*10 = -10$. And convert the calibration value into 0xFFFF6 (hexadecimal).

	Device ID	Function	Address (High byte)	Address (Low byte)	Data (High byte)	Data (Low byte)	Checksum
NH3	By setting	0x06	0x00	0x01	0xFF	0xF6	XXXX

To reset to default value, set 0x0000.

	Device ID	Function	Address (High byte)	Address (Low byte)	Data (High byte)	Data (Low byte)	Checksum
NH3	By setting	0x06	0x00	0x01	0x00	0x00	XXXX

**** Remark 2:**

The calibration range of NH3 is ± 50.0 (ppm).

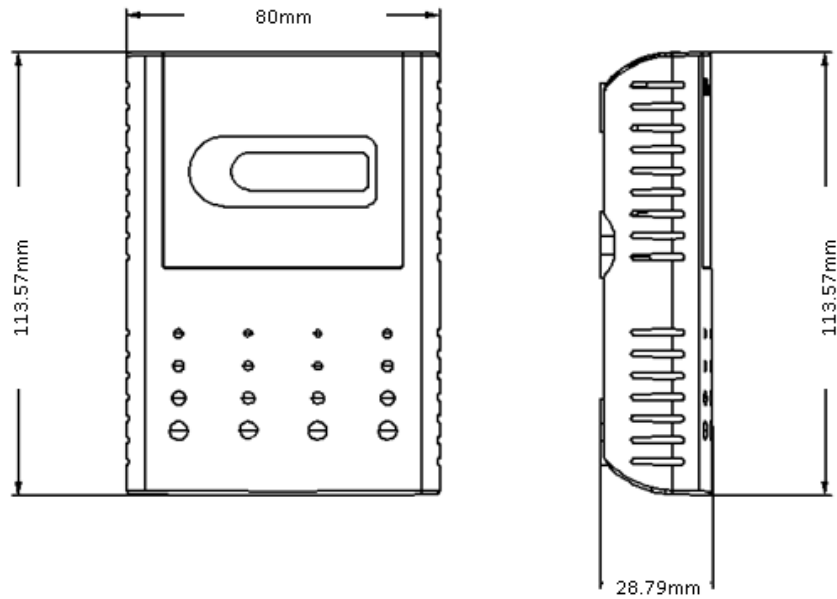
Baud rate setting

To change baud rate from 9600 to 19200, set as hexadecimal "0x0010".

Baud Rate	Device ID	Function	Address (High byte)	Address (Low byte)	Data (High byte)	Data (Low byte)	Checksum
9600	By setting	0x06	0x00	0x02	0x00	0x00	XXXX
19200	By setting	0x06	0x00	0x02	0x00	0x10	XXXX
38400	By setting	0x06	0x00	0x02	0x00	0x20	XXXX
57600	By setting	0x06	0x00	0x02	0x00	0x30	XXXX
115200	By setting	0x06	0x00	0x02	0x00	0x40	XXXX

**** Notice : If the transmission mode is set as "Wireless", please set the baud rate to 9600.**

Dimensions



Installation

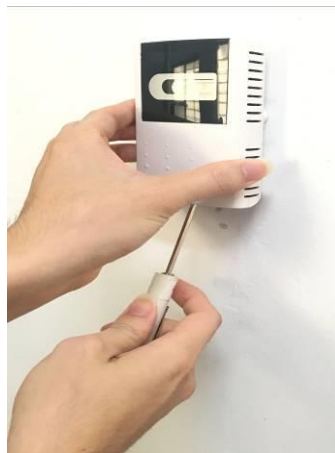
1. Please check if the transmitter, accessory pack and instruction manual are included in the package.
2. Please decide right position for installation.
3. Press tenon on top of the housing with a screw driver to remove the upper cover. (Please refer to the Figure 2 to Figure 4).
4. Fix the base with screws on the wall.
5. Please refer Figure 1 for wiring.

Notice: Please remove power from the unit before wiring, in order to avoid any damage or hazard.

6. Replace and fix the upper cover back to the unit.



【Figure2】



【Figure3】



【Figure4】

Notice for installation

1. Please install the transmitter near the ceiling and the height is around eye level.
2. Please install the transmitter on the downwind side and near the potential leak sources with distance about 1M.
3. Please avoid the location near fans, exhaust fan, or air conditioner vent.
4. Please avoid the waterish area
5. For the installation at semi-outdoor environment, please protect the transmitter from direct sunlight or rain. And also, please pay attention to the wind direction and make sure the transmitter near the potential leak sources.