

AQUUV™ PoU

Flowing water disinfection unit

SPECIFICATION P/N : APCN-L2

DESCRIPTION

- ◆ AQUUV PoU is disinfection unit with UVC LED
- ◆ This unit is designed for PoU applications

FEATURES

- ◆ Eco friendly product : No mercury, no chemical
- ◆ UVGI : UVC LED
- ◆ Cost-effective and Low Power consumption
- ◆ High disinfection rate : more than 99.99% (E. coli at 2.5LPM)
- ◆ Waterproof and Compact design
- ◆ Using Food-graded materials
- ◆ Easy installation : 1/4" one-touch fitting connection

APPLICATIONS

- ◆ Disinfection / Sterilization
- ◆ Water purifier / Dispenser
- ◆ Under sink
- ◆ RV, boat



Quantum Matrix Inc.

2F 212, Business Incubator Center, 237, Sangidaehak-ro, Siheung-si, Gyeonggi-do, 15073,
Republic of Korea. TEL: +82-31-497-8861, FAX: 0504-287-2616, e-mail: swlee.qm@gmail.com

CONTENTS

- 1.Product brief
- 2.Recommended Operating Conditions
- 3.Absolute Maximum Ratings
- 4.Electrical Characteristics
- 5.Enable Input Characteristics
- 6.Dimensions
- 7.Wiring Diagram and Specification
- 8.Installation
- 9.Handling and Operation Precautions

Recommended Operating Conditions

Parameter	Unit	Min.	Typ.	Max.	Note
UV transmittance of water	%/cm	95	97	-	UVC range
Water flow rate ¹	L/min	0.3	2	2.5	
Max. working pressure	psi	-	-	100	
Water temperature	°C	Above freezing	20	40	
Ambient temperature	°C	-	-	50	
Relative humidity	%	-	-	75	
Continuous operation time	min	-	No limit	-	with water running

Notes

1. Water flow rate is a range that the unit can cover more than 99.9% of reduction rate of E. coli ATCC 25992 tested by third party.

Absolute Maximum Ratings

Name	Unit	Rating
Input voltage	V	30
Reverse input voltage	V	0.3
Enable pin voltage	V	5.5
Water temperature	°C	50
Electrostatic discharge	kV	2.0(HBM)

Electrical Characteristics

Parameter	Unit	Min.	Typ.	Max.	Note
Input voltage	V	18	24	30	DC24V
Power consumption(operation)	W	2.5	3.4	4.2	DC24V
Power consumption(standby)	W	-	0.06	0.08	DC24V
Enable input voltage	V	-0.3	-	5.5	

Enable Input Characteristics

Parameter	Unit	Min.	Typ.	Max.	Note
Input voltage High (V_H)	V	1.7	5	5.5	
Input voltage Low (V_L)	V	-	-	0.4	

The Enable signal is provided by control board or flow switch.

If Enable input is less than 3.5V, the light of indicator LED may be weak.

Power Operations

In the case that the Enable is not connected with a flow sensor output or a flow switch, when the power is applied to Vcc, both UVC LEDs and indicator LEDs are turned on.

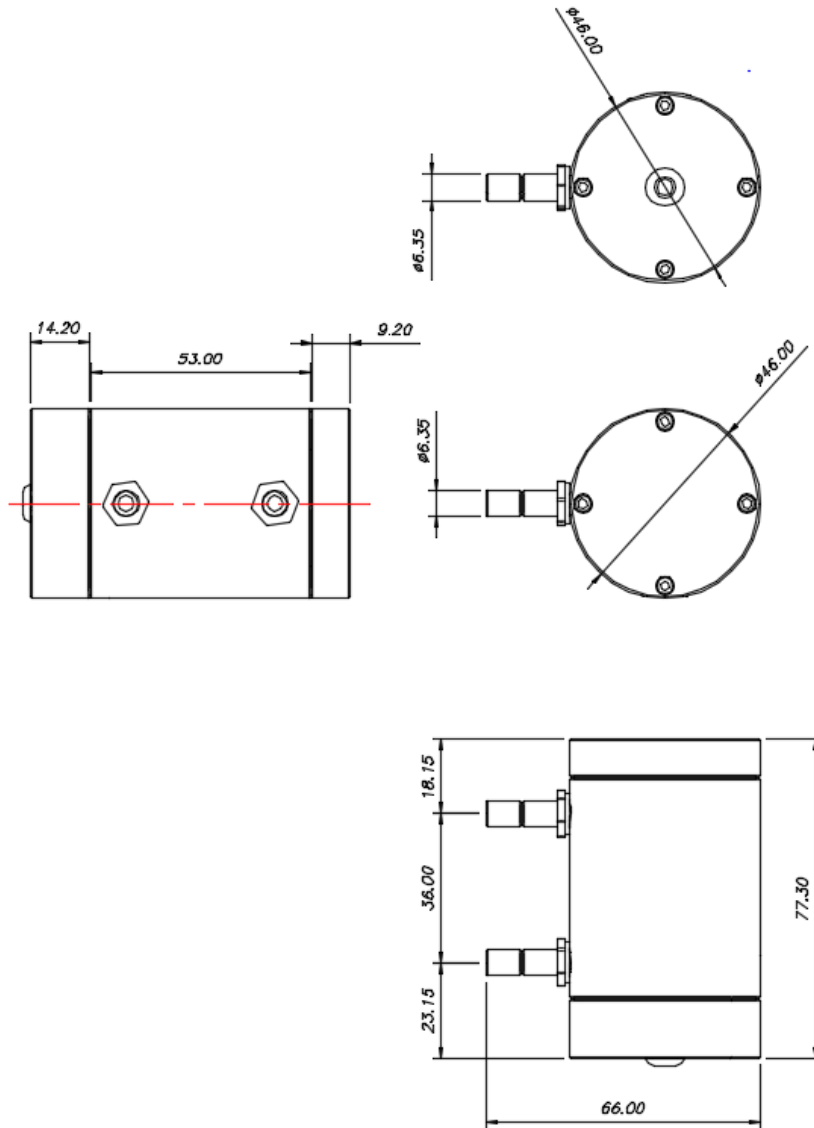
In the case that the Enable is connected with a flow sensor output or a flow switch,

- i) when Enable is Low and the power is applied to Vcc, the device is standby.
- ii) when Enable is High and the power is applied to Vcc, the device is normal operation.
- iii) when Enable is High and the power is not applied to Vcc, the indicator LEDs are only turned on.

Dimensions

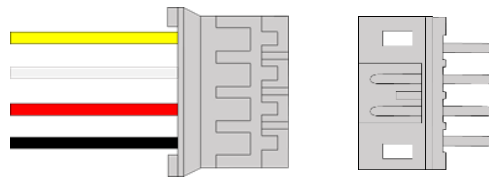
Notes

1. Unit : mm
2. Tolerance : $\pm 0.5\text{mm}$



Wiring Diagram and Specifications

Yellow
White
Red
Black



Wire length : 30cm

Female connector
(JST P/N : PHR-4)

Matching Male connector
(JST P/N : JST B4B-PH-K-S)

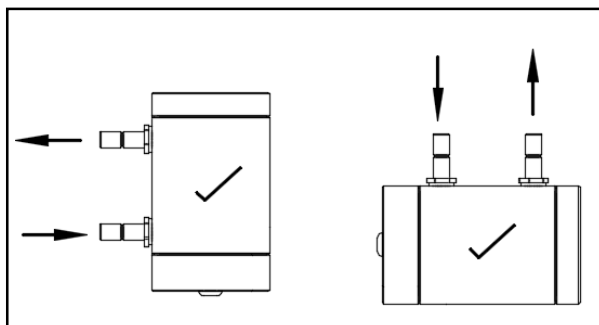
Name	Direction	Note
Indicator(Yellow)	Output	Blue LED is recommended
Enable (White)	Input	5V-High operation, Low-Standby
Vcc (Red)	Input	DC24V required
GND (Black)	GND	It is for Vcc, Enable and Indicator

Notes

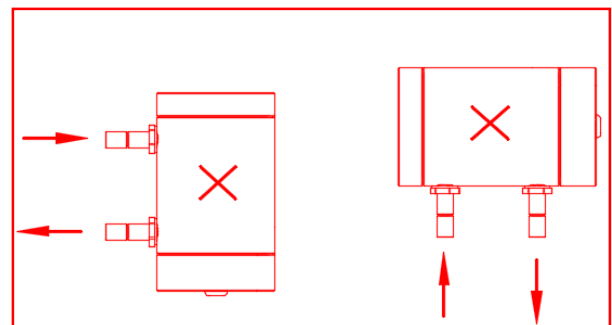
The indicator Blue LED should be connected in series between the indicator pin(+) and GND.
The LED is ON during water flowing.

Installation Orientations

AQUUV PoU should use the reactor in one of the two acceptable orientations to ensure performance meets specifications. Failing to do so may result in inadequate disinfection performance or damage to the AQUUV PoU.



CORRECT



INCORRECT

Handling and Operation Precautions

The AQUUV PoU contains microelectronic components sensitive to shock, moisture, and operation in conditions beyond stated maximums. Care should be taken in handling the AQUUV PoU during shipping, handling, installation, and operation.

The AQUUV PoU is ESD (electrostatic discharge) sensitive; static electricity and surge voltages seriously damage internal components and can result in product failure.

The AQUUV PoU is ESD (electrostatic discharge) sensitive; static electricity and surge voltages seriously damage internal components and can result in product failure.

- ✓ Ensure that tools, jigs and machines being used are properly grounded and do not exert excessive force upon the AQUUV PoU.
- ✓ Use proper ESD protection, including grounded wrist straps, ESD footwear and clothes when handling the AQUUV PoU.
- ✓ Dropping the product may cause permanent damage.
- ✓ Pre-filtration should be used before the AQUUV PoU that can assure inlet water is of sufficient quality to meet required specifications.
- ✓ Operating without pre-filtration may lead to a reduction of disinfection performance or damage to the AQUUV PoU.
- ✓ The AQUUV PoU should be filled with water during LED ON operation. Operating the AQUUV PoU dry for extended periods may cause permanent damage.
- ✓ The AQUUV PoU should not be modified or disassembled in any way. Doing so may result in damage, hazardous operation conditions, and Ultraviolet (UV) light exposure hazards.
- ✓ Ensure circuit power is off before connecting AQUUV PoU.

