FS - 600R Transmitter
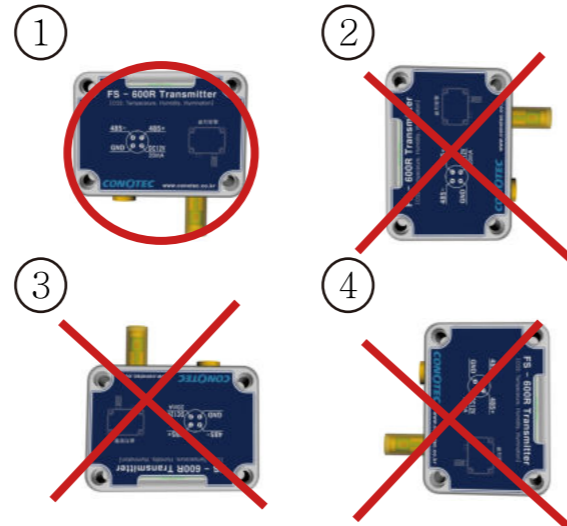[CO2, Temperature, Humidity, Illumination]

* **Features**

- Transmitting CO2, temperature, humidity and illumination sensor value (RS-485)
- Equipped with Dual Sensor type of NDIR CO2 Sensor not requiring recalibration for a long time
- A special filter blocking penetration of liquid and pollutants but allowing gases and vapors to pass through is applied to minimize errors of CO2 Sensor.
- Type of installation on the wall. For the direction at installation, please refer to notes on installation of Sensor.

Notes on Installation of Sensor

As this product is fitted with FS-600R illumination sensor, it is fixed for the illumination sensor to face upward and it should be installed at a place where the intensity of illumination can be measured most properly.

* If it is installed at a shady place or at an unfavorable place for measurement of illumination, it may make an error in measurement.
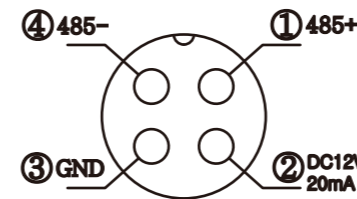
① ② ③ ④

■ 1. FS-600R must be installed in the same direction as O mark (No. 1).
2. Power should not be cut off during operation.
3. If the product is installed in a wrong direction or power is cut off, moisture may be penetrated into the inside of the product and it may be a cause of product trouble or cause a problem in measuring illumination.
4. If power should be cut off inevitably, it is better to keep the product under an environmental condition without moisture.
5. Please note that our company will not take any responsibility for any trouble caused by a wrong installation or negligence in storage.

Cautions for Handling

■ Thank for your purchase of a product of CONOTEC Co., Ltd.
This product (FS-600R) is fitted with special filters at both left and right sides to measure CO2.
Please note that when any flaw occurs due to the user's negligence such as torn-off, press, etc, the repair charge will be for the user's account.

In addition, this product has waterproofing structure in accordance with IP67, but do not open the product because it may bring moisture in the product. If any flaw occurs due to this, the repair charge will be for the user's account.

Connection Diagram of Sensor

④ 485−   ① 485+
③ GND   ② DC12V 20mA

Features of Sensor

<Temperature Sensor>

Item	Content	Remark
Measuring Range	−20.0 ~ 65.0℃	
Resolution	0.01 ℃	
Repeatability	±0.1 ℃	
Response Time	(Min) 5 ~ (Max) 30 Sec	

<Humidity Sensor>

Item	Content	Remark
Measuring Range	0 ~ 100 %RH	
Resolution	0.03 %RH	
Repeatability	±0.1 %RH	
Response Time	4 Sec	

<Illumination Sensor>

Item	Content	Remark
Measuring Method	0 ~ 54600 Lux	
Resolution	32 Lux	
Measurement Accuracy	0.75 ~ 1.65 Times	
Response Time	(Min) 2.9 ~ (Max) 4.5 ms	

<CO2 Sensor>

Item	Content	Remark
Measuring Method	NDIR Method	
Measuring Range	0 ~ 5000 ppm	
Accuracy	±2 %	@ 10 ~ 50 ℃
Response Time	0 ~ 80 % < 30 Sec	
Signal Updating Interval	Every 2.0 Seconds	
Warm-up Time	@ 25 ℃ < 90 Sec	
Operation Temperature / Humidity Condition	0 ~ 50℃, 0 ~ 95% RH	
Storage Temperature	−40 ~ 70 ℃	

Communication Protocol

■ Data Request Format

Byte	1	2	3	4	5	6	7	8	9	10
Content	STX	ID	R	X	Z	T	H	L	ETX	BCC

■ Data Response Format

Byte	1	2	3	4	5	6	7	8	9	10
Content	STX	ID	R	D	Z	CO2 Value				T

Byte	11	12	13	14	15	16	17	18	19	20
Content	Temperature Value					H	Humidity Value			

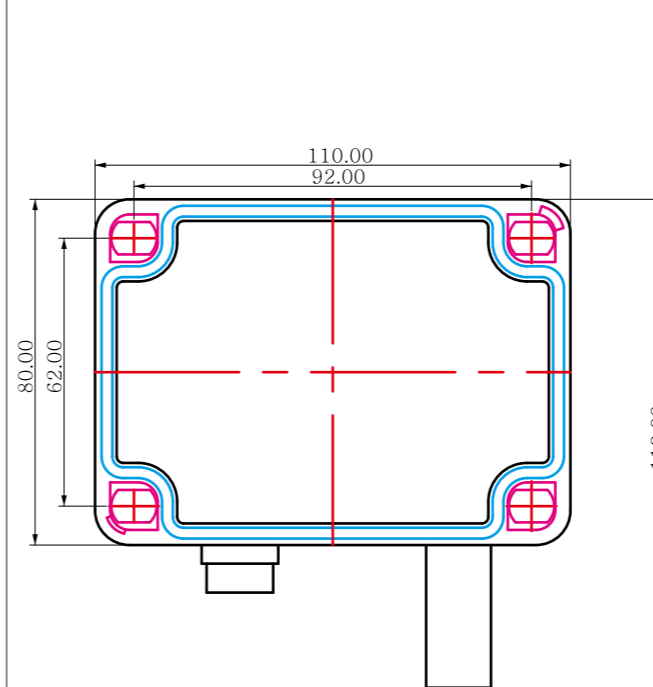| Byte	21	22	23	24	25	26	27	28
Content	L	Illumination Value					ETX	BCC

* The content of each item is displayed in ASCII Codes.
- STX : Start Code [02H]
- ID : Address Code, Terminal ID [30H ~ 38H]
- RX : Reading Request,R[52H] X[58H]
- ZTHL : Temperature, Humidity, Illumination measurement value
  Z[5AH],T[54H],H[48H],L[4CH]
- CO2 Value : Indication of CO2   Ex) 3000ppm : [33H],[30H],[30H],[30H]
- Temperature Value : Indication of Temperature Value
  In the event of above 0℃, 11th byte [31H]
  In the event of below 0℃, 11th byte [30H]
- Humidity Value : Indication of Humidity Value
- Illumination Value : Indication of Illumination Value
- ETX : End Code [03H]
- BCC : Abbreviation of Block Check Character indicating XOR Computing value from Start of Protocol (STX) to ETX

Sensor Communication ID

8-pin Dip Switch ID Setting

ON [1 2 3 4 5 6 7 8]   Setting to ID No. 0 and transmitting on data request

ON [1 2 3 4 5 6 7 8]   Setting to ID No. 1 and transmitting on data request

ON [1 2 3 4 5 6 7 8]   Setting to ID No. 2 and transmitting on data request

ON [1 2 3 4 5 6 7 8]   Setting to ID No. 3 and transmitting on data request

ON [1 2 3 4 5 6 7 8]   Setting to ID No. 4 and transmitting on data request

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ON [1 2 3 4 5 6 7 8]   Setting to ID No. 8 and transmitting on data request

Dimension of Sensor Case

110.00
92.00
80.00
62.00
113.00