

CONOTEC

CONOTEC CO., LTD.

DIGITAL TEMPERATURE CONTROLLER



ISO 9001:2008

FOX-M200, 2PT-1, 2CA-2, FM-5P,5C,5N, PM series, CM series

Instruction Manual



FOX-M200

FOX-2PT-1

FOX-2CA-2



FM-5P,5C,5N FOX-PM Series FOX-CM Series

• A user manual for this product is posted on the company website.

• Please download the technical document and communications manual on the company website

01 Safety precautions

Please read the safety precautions carefully for correct operation of the product.

※ The specifications and dimensions specified in this instruction manual may be changed without any notice for performance enhancement.

▲ Warning

1. This product was not made as a safe device. Therefore, this product should be attached with dual safety devices if it is used for the control purposes (e.g. a device vulnerable to accident and property damage, etc.).
2. Do not wire, inspect or service this product while the power is being supplied.
3. You must attach this product to a panel. Otherwise, it may cause an electric shock.
4. When connecting the power, you must check the terminal number.
5. Do not ever disassemble, process, modify or repair this product.

▲ Caution

1. Please make yourself familiar with all the operation instructions, safety precautions and warnings before using this product. Comply with related specifications and capacity requirements
2. Do not wire or install this product to any unit with high inductive load (e.g. motor, solenoid, etc.).
3. Use a shielded cable with a proper length when extending a sensor.
4. Do not use any part that generates an arc when used in the same power or directly switched in close proximity.
5. Keep the power cable away from a high-voltage cable and do not install this product in any place that is full of water, oil and dust.
6. Do not install this product in any place that is exposed to direct sunlight or rain.
7. Do not install this product in any place that is subject to strong magnetic power, noise, vibration or shock.

8. Keep this product away from any place that generates strong alkaline or acid substances. Use a separate pipe.
9. Do not sprinkle water onto this product for cleaning when installing it in the kitchen.
10. Do not install this product in any place where the temperature/humidity ratings are exceeded
11. The sensor cable should not be cut or cracked..
12. Keep the sensor cable away from a signal cable, a power cable or a load cable. Use a separate pipe.
13. Keep in mind that the follow-up service will not be available if this product has been arbitrarily disassembled and modified
14. ⚠ symbol on the terminal wiring diagram indicates a safety statement that alerts a warning or caution.
15. Do not use this product near any device generating strong high-frequency noise (e.g. high-frequency welding machine high-frequency sewing machine, high-frequency radio, large-capacity SCR controller, etc.).
16. Using this product in any method other than those specified by the manufacturer may lead an injury or a property damage
17. The product is not a toy. Keep it away from children.
18. The product should be installed only by an expert or a qualified person.
19. The company will not be liable for any damage caused by the violation of the above warnings and cautions or by a consumer's fault

▲ Danger

Caution: Risk of electric shock

- Electric shock - Do not touch the AC terminal while the current is flowing. It may cause an electric shock.
- Disconnect the input power before checking the input power.

02 Digital Panel Meter

1. FOX-M200 & 2PT-1 & 2CA-2

| Model | FOX-M200 | FM-2PT-1 | FM-2CA-2 |
|--------------------|---|-----------------|-------------|
| Sensor | NTC(10K) | PT100Ω | CA(K) |
| Temp.range | -55.0 ~ 99.9℃ | -199.9 ~ 400℃ | -50 ~ 1200℃ |
| Power Supply | 230VAC 50/60Hz | 100~240 50/60Hz | |
| Power consumption | Maximum : 1.5VA | | |
| Ambient Temp/Humi | 0 ~ 55℃ 35 ~ 80%RH | | |
| Storage Temp | -10 ~ 70℃ | | |
| Correction of Temp | - If you take off the front cover and use of up/down key, you can use the correction function for temperature. (M200:left key=up, right key=down) - Return at corrected temperature automatically after 5 seconds. | | |
| Display height | 12.4mm | | |
| Size | 72mm X 36mm | | |

2. FOX-PM 시리즈 & CM Series

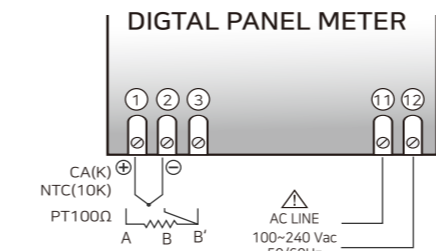
| Model | FOX-PM5000(T) FOX-PM5101(T) | FOX-PM6000(T) FOX-PM6101(T) | FOX-CM5000 FOX-CM5000T |
|--------------------|---|--------------------------------|---------------------------|
| Sensor | PT100Ω | NTC(10K) | CA(K) |
| Temp.range | -99 ~ 400℃ | -55 ~ 99.9℃ | 0 ~ 1200℃ |
| Waterproof | Waterproof | | Non-Waterproof |
| Power Supply | Please use the power supply only 12V AC/DC (electric current=over 150mA) If you use a special power supply, please use the adaptor. (When deliver=12V DC) - Specification for Adaptor : 12V AC/DC output minimum electric current = 150mA - If the adaptor is not used, it may cause a fire or out of order. - When sensor wire lengthened(PM series) ⇒ Pls use the 3P cable. - When sensor wire lengthened(PM series) ⇒ Pls use the thermo couple cable. ※ If you use it over 85℃, you have to use a special sensor. | | |
| Ambient Temp/Humi | 0 ~ 70℃ / 35 ~ 100%RH | | |
| Storage Temp | -10 ~ 70℃ | | |
| Display height | 56.8mm | | |
| Correction of Temp | After taking off the back panel, on the basis of white wire, Short-circuit white and red : increased by 1℃ white and black : reduced by 1℃ (But, PM 6000 series are increased/reduced by 0.1℃) | | |
| Maximum correction | ±30℃ | ±10℃ | ±50℃ |
| Material and Type | stainless | Wall-mounted | PM5000,PM6000,CM5000 |
| | | Stand type | PM5000T,PM6000T,CM5000T |
| | Acryl, Wall-mounted | one side | PM5101,PM6101 |
| | | both side | |
| Acryl, Stand type | one side | PM5101T,PM6101T | |
| | both side | | |

3. FM-5N & FM-5P & FM-5C

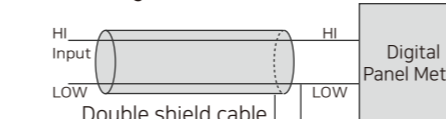
| Model | FM-5N | FM-5P | FM-5C |
|--------------------|--|---------------|-------------|
| Sensor | NTC(10K) | PT100Ω | CA(K) |
| Temp.range | -55.0 ~ 99.9℃ | -199.9 ~ 400℃ | -50 ~ 1200℃ |
| Power Supply | 100 ~ 240 VAC 50/60Hz | | |
| Ambient Temp/Humi | 0 ~ 55℃ 35 ~ 80%RH | | |
| Storage Temp | -10 ~ 70℃ | | |
| Correction of Temp | Rear terminal - UP Key : 13,14 - Down Key : 13,15 | | |
| Display height | 20.3mm | | |
| Size | 96mm x 48mm | | |

03 Terminal wiring diagram

■ [FOX-M200 & FM-2PT-1 & FM-2CA-2]



<drawing 1>



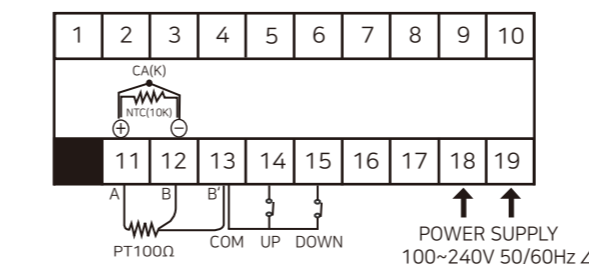
(1) Connection of input

- When PT100 connected, pls connect ①A ②B ③B'
- When CA(K) connected, pls connect ① + ②
- When NTC(10K) pls connect ① and ② without polarity

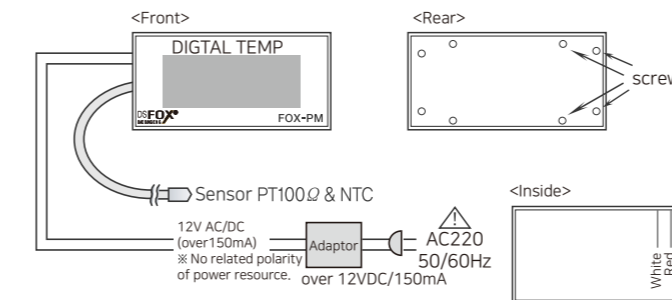
(2) Please use shield cable like <drawing 1>.

- To lengthen input wire for measuring
- Possibility for of a noise (Only FOX-M200 model)

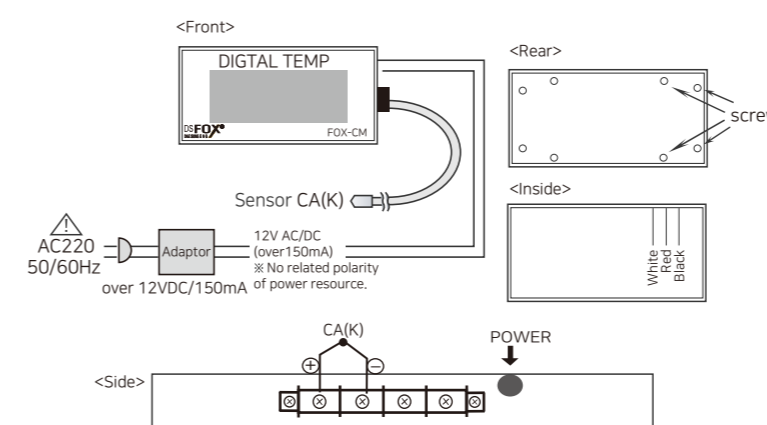
■ [FM-5P & FM-5C & FM-5N]



■ [FM-PM Series]

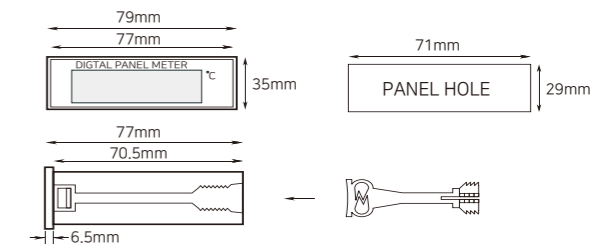


■ [FOX-CM Series]

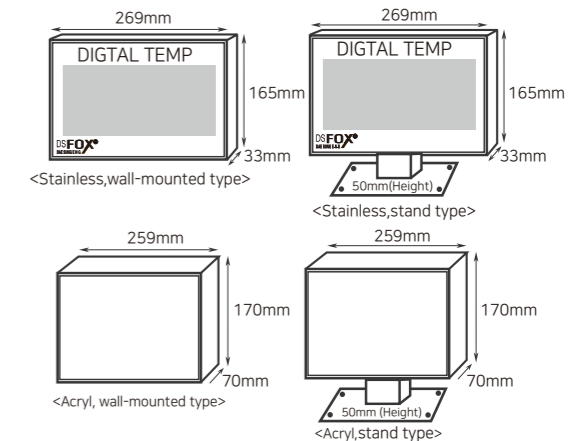


04 Diemension and panel hole sizes

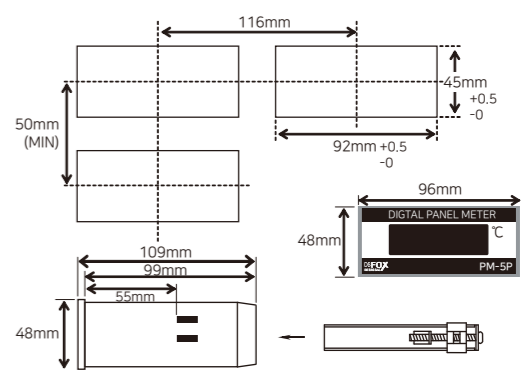
■ [FOX-M200 & FM-2PT-1 & FM-2CA-2] (Unit : mm / error : ±0.5)



■ [FOX-PM Series & FOX-CM Series]



■ [FM-5P & FM-5C & FM-5N]



05 Easy error diagnosis instructions

※ If an error is displayed while the product is running

- **ER1** : It is case where the product was subject to a strong external noise and internal data memories have been damaged In this case, contact us for product service.
- Although this controller was designed to withstand a certain level of external noise, it is not supposed to withstand all levels of noise.
- If the product is subject to a noise greater than 2KV, it could be internally damaged.
- If **O-E** (open error) or **S-E** (short error) is displayed, there is something wrong with a sensor. Please check the sensor.

※ The above specifications may be changed without any notice for performance enhancement. Please make yourself fully familiar with and follow the above precautions.

■ Warranty period: One year from the date of purchase

■ Address : (Street address) 56, Ballyongsandan 1-rp, Jangan-eup, Gijang-gun, Busan, ROK
(Land-lot address) 901-1, Ballyong-ri, Jangan-eup, Gijang-gun, Busan, ROK (46034)

- Product service : 070-7815-8289
- Customer service : 051-819-0425 ~ 0427
- FAX : 051-819-4562
- Email : conotec@conotec.co.kr
- SNS : Facebook, Instagram, Twitter, YouTube ▶ 'Search for 'Conotec'
- Website : www.conotec.co.kr

※ This manual was prepared in the Naver Nanum fonts.