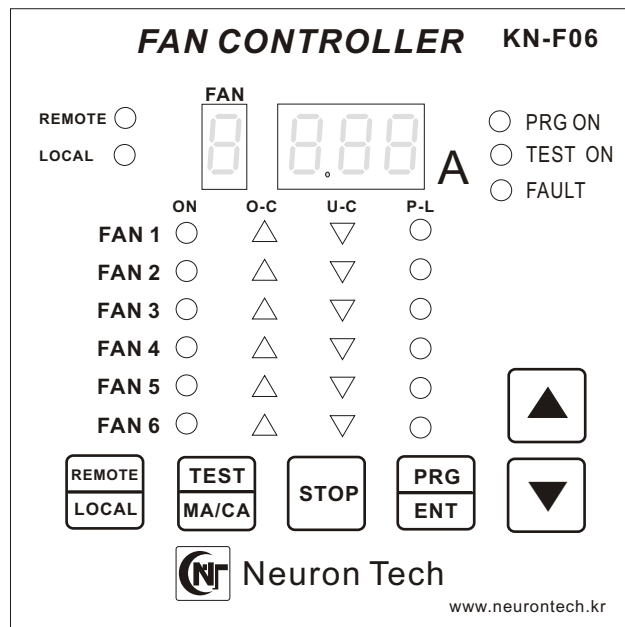


COOLING FAN CONTROLLER

USER MANUAL



CONTENTS

● SAFETY REQUIREMENTS	.....	- 2-
1.SPECIFICATIONS	.....	- 3-
2.Connection Diagram	.....	- 4-
3.Features	.....	- 5-
4.Operation mode Explanation	.....	- 5-
5.Name of Each Part	.....	- 6-
6.REMOTE MODE MANUAL	.....	- 7-
7.PROGRAM MODE SETTING MANUAL	.....	- 8-
8.LOCAL MODE MANUAL	.....	- 9-
9.TEST MODE MAN/CAL MANUAL	.....	- 10-
10.OVER TEST MANUAL	.....	- 11-
11.UNDER TEST MANUAL	.....	- 12-
12.EXAMPLE OF WRING	.....	- 13-
13.External Dimension and Panel Cutting Size	.....	- 14-

SAFETY REQUIREMENTS

ATTENTION

USE RESERVED TO QUALIFIED PERSONNEL

The purchased goods are a sophisticated electronic device that is totally unsuitable to be used by non-qualified personnel.

Any intervention must be carried out by a specialist engineer.

Read the manual carefully before starting to use the control unit.

Keep the instructions for future reference.

Do not open the device, touching any internal components can cause electric shock.

Contact over 50 Volts AC can be fatal. To reduce the risk of electric shock, do not dismantle the back of the device for any reason.

Moreover its opening would void the warranty.

Before connecting the device to the power supply, make sure that all the connections are correct.

Always disconnect the unit from the supply before any cabling modification.

Do not expose the equipment to splashes or drops, do not position it in places with humidity exceeding 90% and never touch with wet or humid hands.

If any liquid penetrates the control unit, disconnect it immediately and contact technical service.

Disconnect the power cable before cleaning the control unit, use a dry cloth to dust it, without any solvent or detergents, and compressed air.

Never insert any objects into the cracks of the control unit. If this happens, disconnect the control unit and contact an engineer.

The use of non-original accessories or spare parts might damage the unit and endanger users' safety. In the event of faults, contact technical service.

Install the control unit indoors, in a place protected from water splashes and sun rays.

Do not place near heat sources exceeding the parameters stated in this manual.

Position on a stable surface, far from any possible vibrations.

Position the unit as far as possible from any intense magnetic fields.

Do not open the control unit. For any fault, always use qualified personnel.

The opening of the control unit and/or the removal of the series identifying label entails the automatic forfeiture of the warranty.

The Warranty seal is applied to all devices, and attempt to open the unit would break the seal and cause the consequent automatic forfeiture of the warranty.

Product power precautions

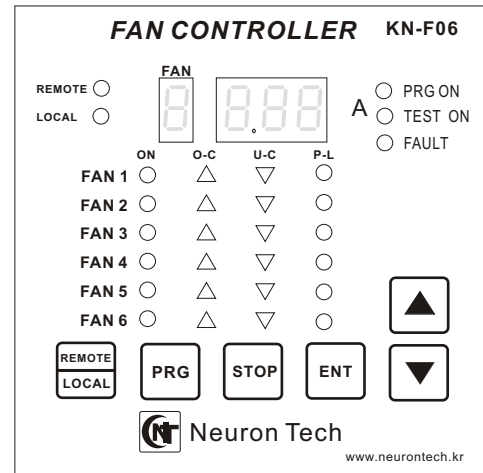
- Do not use power directly from the transformer as much as possible.

It is recommended to supply separate power

COOLING FAN CONTROLLER KN-F06

Cooling fan motors protection

- ◆ REMOTE CONTROL FUNCTION FAN ON/OFF.
- ◆ FAN OVER CURRENT, UNDER CURRENT PERCENT SETTING FUNCTION.
- ◆ FAN OVER CURRENT, UNDER CURRENT DELAY TIME SETTING FUNCTION.
- ◆ FAN MANUAL ON/OFF FUNCTION.
- ◆ EACH FAN RUN/STOP SETTING FUNCTION.
- ◆ EACH FAN OVER CURRENT, UNDER CURRENT TEST FUNCTION.
- ◆ FAULT OUTPUT RELAY CONTACT.
- ◆ COMMUNICATION FUNCTION (RS-485).



1. SPECIFICATIONS

◆ Power supply

Power: AC 100~270 V \pm 10% 50/60Hz, DC 100~300V

◆ INPUTS

Contact to enable the remote control(enable)

◆ FAULT OUTPUTS

1 alarm and fault relay

Output relay capacity: AC 230 V 10A, DC 30V 10A

◆ FAN OUTPUTS

Outputs FAN1, FAN2, FAN3, FAN4, FAN5, FAN6

Output relay capacity: 5A AC 230 V

◆ POWER CONSUMPTION

10VA

◆ SERIAL COMMUNICATION *(OPTION)

RS-485 MODBUS RTU

◆ ACCRUCY

+/- 0.05 A (FULL Scale)

TESTS AND PERFORMANCES

- Dielectric strength 2000 Vca for 1 minute: supply-relay fault, supply remote.
- Ambient operating temperature from -20°C to +60°C.
- Humidity 90% non-condensing.

DIMENSIONS

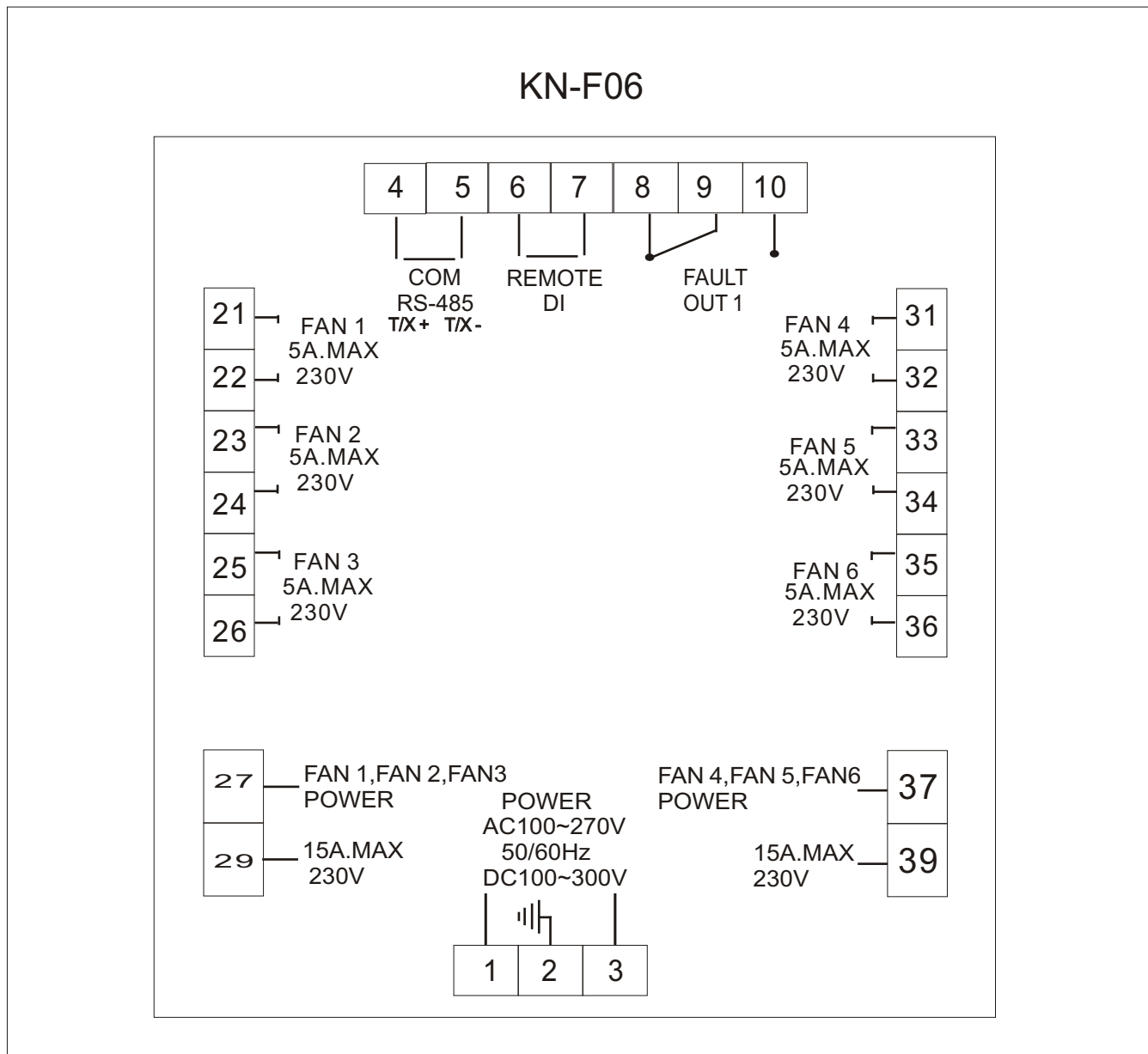
- 96×96mm DIN43700 depth 140mm (terminal box included)
- Panel cut-out 92×92mm

WEIGH

- 750g

2.Connection Diagram

*Connection diagram.



CAUTION: When power is turned on, terminals 8-9 are open and 9-10 are closed during normal operation, close power off or FAULT ON .
It is recommended to use an external boolean when driving FAN since the life expectancy is shorter than the rating.

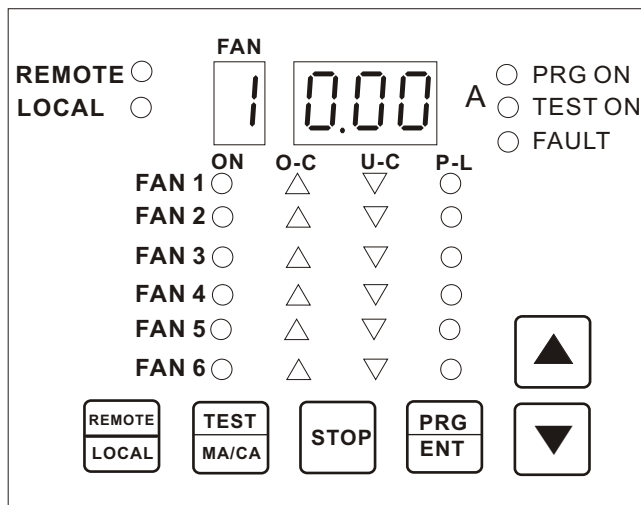
3.Features



- ⦿ Power input is free voltage (AC 100~270V,DC 100~300V) and it is stably operated even at bad condition such as outside power change, surge etc
- ⦿ REMOTE/LOCAL Mode FAN ON/OFF Control.
- ⦿ FAULT Out put relay contact.
- ⦿ STOP KEY: Fan emergency stop .
Change into LOCAL mode .
- ⦿ Current measurement method :current transformer method.
- ⦿ Current transformer are large inductance and have excellent electromagnetic noise suppression properties.
- ⦿ During 6 FAN operations, the measured current is lower than during1 FAN operation due to a voltage drop.

4.Operation mode Explanation

- ⦿ REMOTE MODE
Input DI contact remote operation.
- ⦿ LOCAL MODE
Manual fan ON/OFF.
FAN MANUAL SETTING.
REMOTE Operation fan run/stop setting function. .
- ⦿ PROGRAM MODE
FAN TRIP SETTING.
CALIBRATION SETTING
- ⦿ TEST MODE
OVER CURRENT, UNDER CURRENT Test function.
MANUAL CALIBRATION.

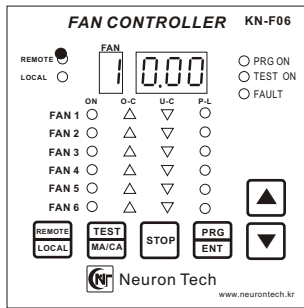
5.Name of Each Part



	<h3>1. DISPLAY LED</h3>
FUNCTIONS	<p>1.1 REMOTE : REMOTE mode shows.</p> <p>1.2 LOCAL : LOCAL mode shows.</p> <p>1.3 PRG ON : program setting mode shows.</p> <p>1.4 TEST ON : TEST mode shows.</p> <p>1.5. FAULT : FAN Fault output.</p> <p>1.6 FAN 1~6 “ON” Shows.</p> <p>1.7. o-C : FAN Over current shows.</p> <p>1.8. U-C : Fan Under current shows.</p> <p>1.10. P-L :FAN Power line open or faulty shows.</p>
	<h3>2. SWITCH</h3>
KEY	<p>2.1 REMOTE/LOCAL: Setting switch (2 SEC pressing). Change mode “ REMOTE or LOCAL “</p> <p>2.2 TEST,MA/CA : In the REMOTE mode 2 SEC pressing. Change into the TEST mode .</p> <p>2.3 STOP: Fan emergency stop . Change into LOCAL mode.</p> <p>2.4 PRG/ENT: Program mode setting key.</p> <p>2.5. Δ/∇: UP/DOWN key.</p> <p>2.6. ∇ DOWN Key 3 SEC pressing  dot of Fan FND is ON : Channel current manual reading through cursor keys</p> <p>∇ DOWN Key 3 SEC pressing  dot of Fan FND is OFF : Control device displays in scansion all activated channels</p>

6.REMOTE MODE MANUAL

-When the power is turned on, the remote mode screen is displayed.



- REMOTE MODE LED ON.

-Terminal NO 4,5 DI REMOTE input,FAN NO 1~6 operation.



-Emergency stop switch.

Anywhere press the switch to switch to local mode.



- LOCAL MODE LED ON.

FAN 1 **OFF**

* REMOTE does not operate in LOCAL MODE (manul mode)

-Automatic channel rotation display from FAN NO 1~ 6

-SCAN FAN NO 1~6-

1 2.53

2 2.34

3 2.21

6 2.95

-USER OPERATION-



UP, DOWN Key
Change a fan number
(FAN NO :1~6)

-Check the condition of the fans and replace any faulty ones.

Re-program the device

-Example) ERROR DISPLAY

Over-Current test

1 O-C



-Over current occurs in the No. 1 FAN.

Under-Current test

2 U-C



-Under current occurs in the No. 2 FAN.

Phase-Loss

3 P-L



-Phase loss occurs in the No. 3 FAN.

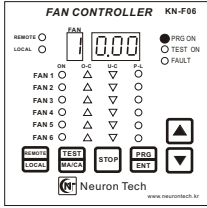
Fan-Manual setting

4 F-n



-Fan manual setting in the No. 4 FAN.

7.PROGRAM MODE SETTING MANUAL



- REMOTE MODE "PRG/ENT" KEY 2 SEC.



"PRG ON" Led turns on

A **d-f** **d**elay-**T**ime
Start delay time



A **10** **▼** **▲** Up,Down key setting
Time range (5,10,15,20,25,30)



A **r-p** **T**rip-**P**ercent
Trip Percent setting



A **10** **▲** **▼** Up,Down key setting
Percent range ($\pm 1\sim 30\%$)



A **F-d** **F**ault trip-**d**elay time
Fault trip out delay time setting



A **10** **▲** **▼** Up,down key setting
Time ange (1~30SEC)



A **Cof** **▲** **Con**
FAN **CAL oFF** FAN **CAL on**



To perform "Calibration" all fans.

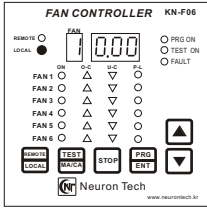
A **d-f** Return to first display

*Anywhere in the program by pressing **PRG/ENT** key 3 seconds
or key operation is not longer than 60 seconds
in the measurement mode is changed.

*Remote mode

●PRG ON PRG ON led turns off

8. LOCAL MODE MANUAL

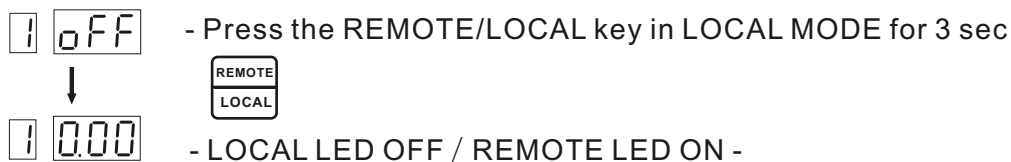
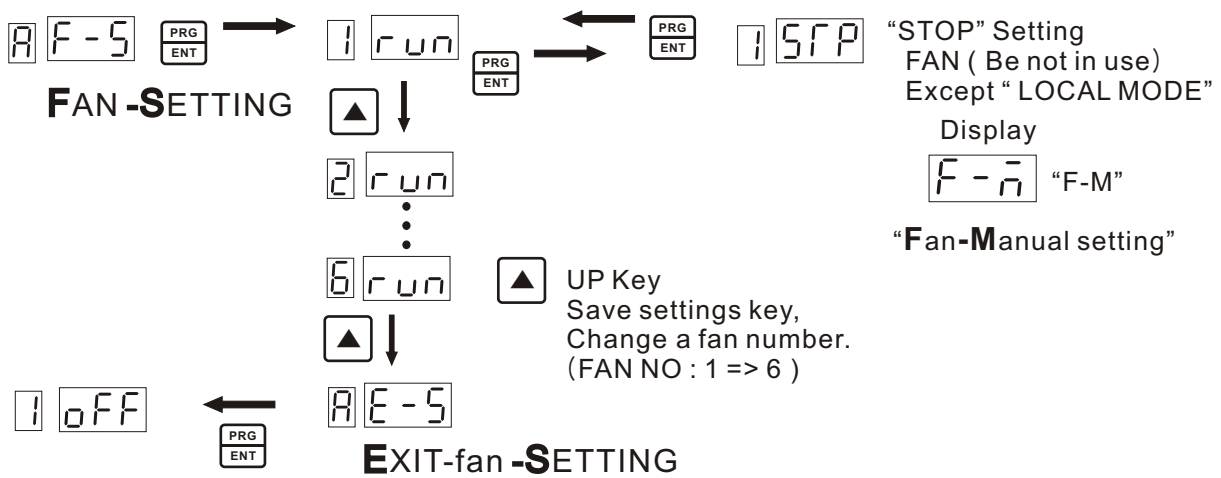
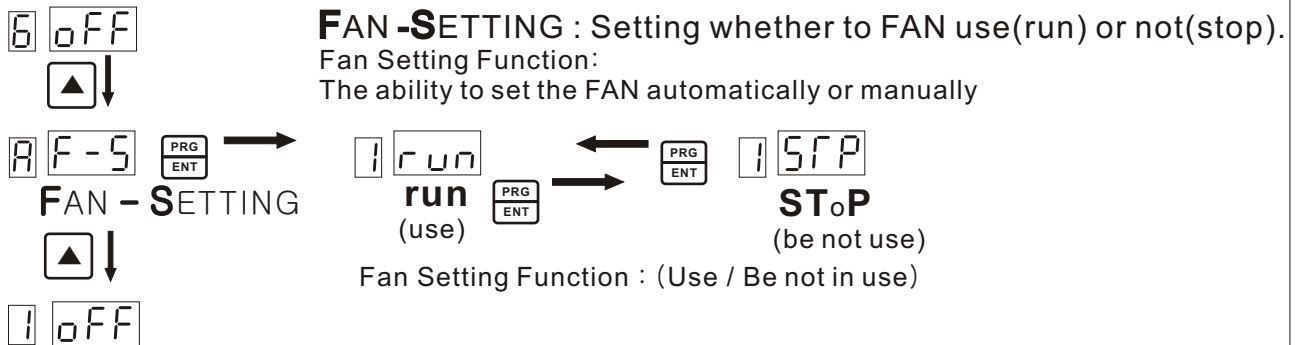
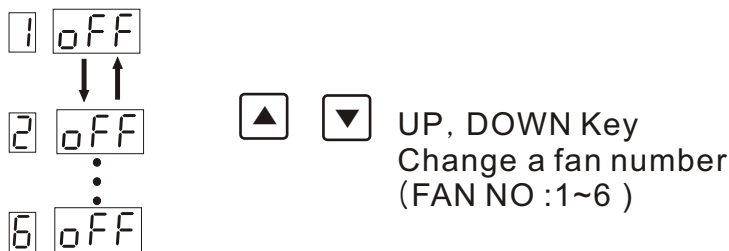
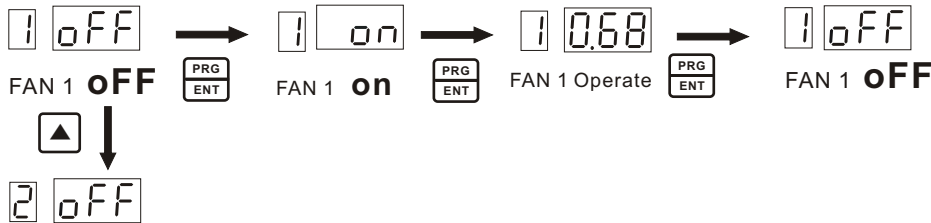


- **REMOTE MODE** “REMOTE/LOCAL” KEY 3 SEC.

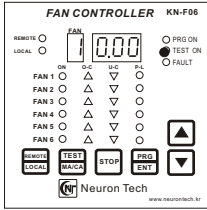


- LOCAL LED ON / REMOTE LED OFF -

- Fan Manual “ON/OFF” Function - * REMOTE does not operate in LOCAL MODE (manual mode)



9. TEST MODE MAN/CAL MANUAL



- REMOTE MODE "TEST/MA CA" KEY 2 SEC.



- TEST LED ON / REMOTE LED OFF -

- Fan OVER/UNDER CURRENT TEST AND CAL VALUE CHECK Function -

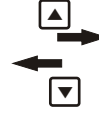
Calibration- Manual

A. C-a



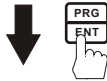
Over-Current test

A. O-C



Under-Current test

A. U-C



FAN CALIBRATION MANUAL

Calibration- Manual

A. C-a



A. E-C

EXIT -CAL



1 2.53

FAN 1 CAL VALUE



PUSH 2 SEC

Fan calibration.
Cal value change



⋮

6 2.53



UP, DOWN Key
Change a fan number
(FAN NO :1~6)



A. Con

FAN CAL on



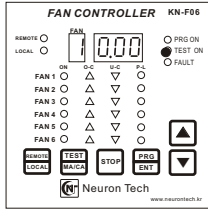
PUSH 2 SEC ALL fan calibration.
Cal value change

A. E-C

EXIT -CAL

To perform "Calibration" all fans.

10.OVER TEST MANUAL



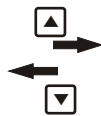
- REMOTE MODE "TEST/MA CA" KEY 2 SEC.



- TEST LED ON / REMOTE LED OFF -

- Fan OVER/UNDER CURRENT TEST AND CAL VALUE CHECK Function -

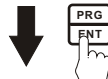
Calibration- Manual



Over-Current test



Under-Current test



FAN OVER CURRENT TEST MANUAL

Over- Current test



EXIT -T est



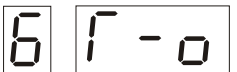
FAN 1 OVER CURRNET TEST



2 SEC Pressing



⋮

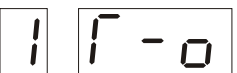


UP, DOWN Key
Change a fan number
(FAN NO :1~6)

Fan OVER CURRENT TEST
Fan calibration value 15% down
and trip 5% setting over current
occurance
Check
FAULT OUT ON / RELAY OUT,
o-C LED ON Display "o-C".

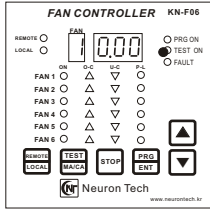


EXIT -T est



Over- Current test

11. UNDER TEST MANUAL



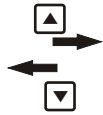
- REMOTE MODE "TEST/MA CA" KEY 2 SEC.



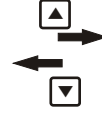
- TEST LED ON / REMOTE LED OFF -

- Fan OVER/UNDER CURRENT TEST AND CAL VALUE CHECK Function -

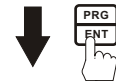
Calibration- Manual



Over-Current test

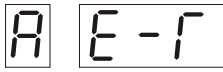


Under-Current test



FAN UNDER CURRENT TEST MANUAL

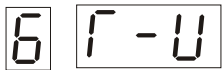
Under-Current test



EXIT -Test



⋮



FAN 1 UNDER CURRENT TEST

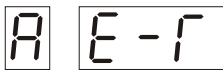


PUSH 2 SEC

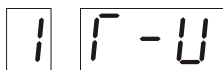


UP, DOWN Key
Change a fan number
(FAN NO :1~6)

Fan UNDER CURRENT TEST
Fan calibration value 15% UP
and trip 5% setting UNDER current
occurrence
Check
FAULT OUT ON / RELAY OUT,
U-C LED ON Display "U-C".



EXIT -Test

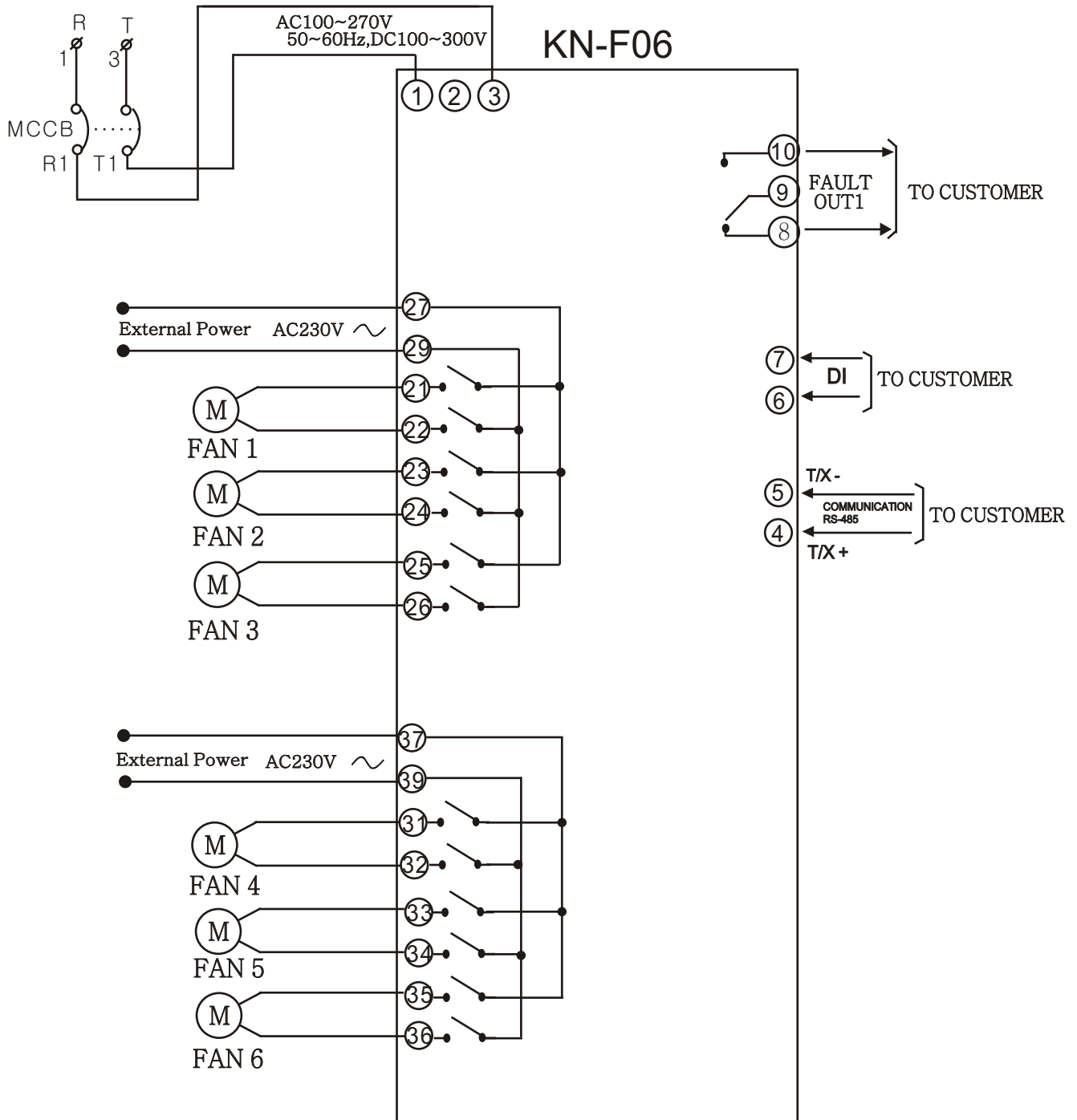


Under-Current test

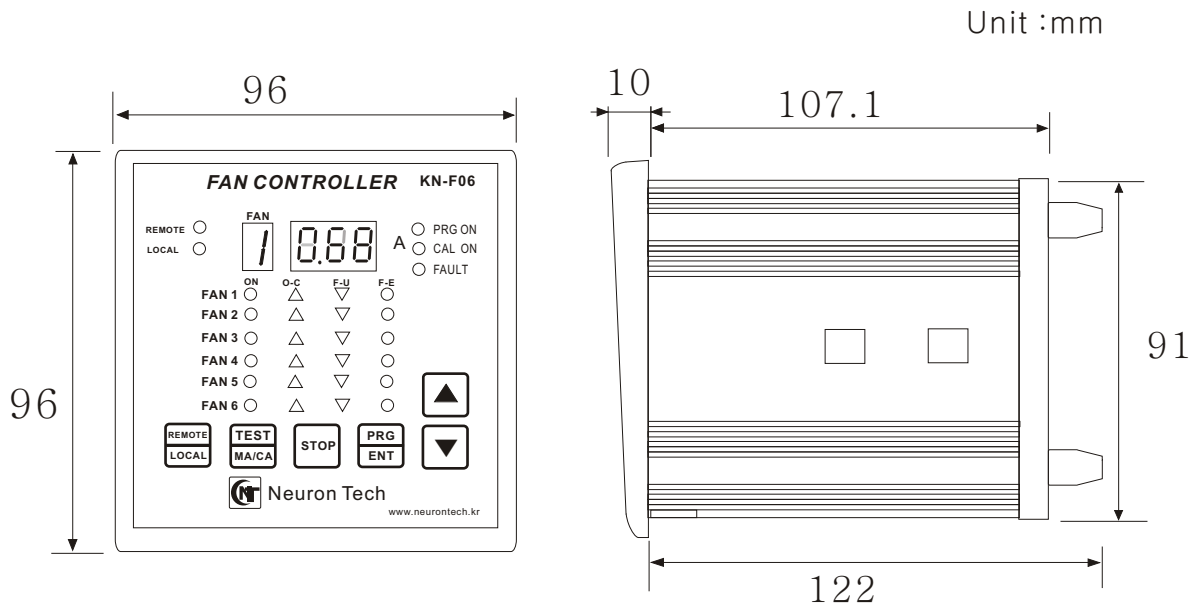
12.EXAMPLE OF WRING

-EXAMPLE OF WRING

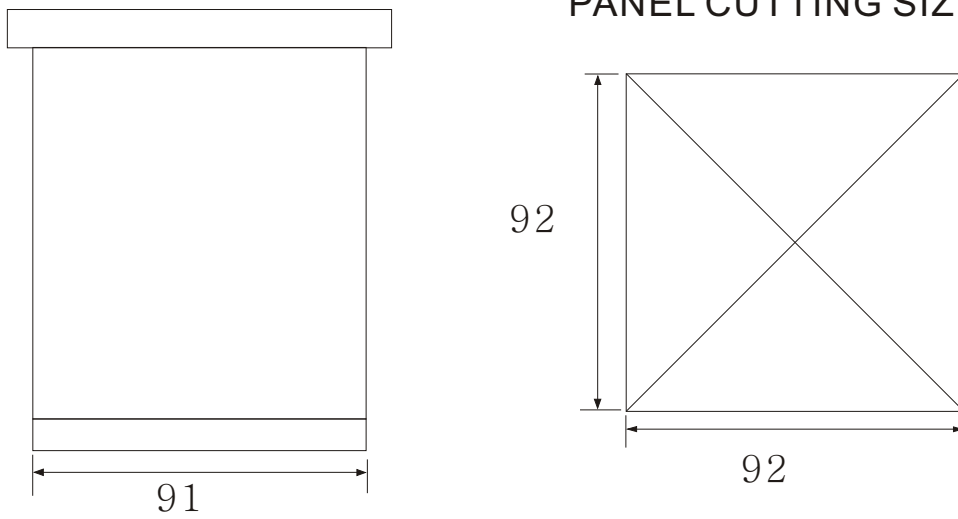
- ◆ The recommended to use product power separately from FAN power.



13.External Dimension and Panel Cutting Size



PANEL CUTTING SIZE





A 304 ,873 Maesonggosaek-Ro, Gwonseon-Gu,
Suwon-City, Gyeonggi-Do, Korea, 441-230
TEL : +82-31-227-4504 / FAX : +82-31-298-1962
www.neurontech.kr