SanRex

Thyristor Type Power Adjusting Unit

CALPOTE
UF series

RS485 communication unit
UF－RS485
INSTRUCTION MANUAL

TABLE OF CONTENTS

Attachment

    RS-485 communication unit UF-RS485 MULTI-DROP METHOD USER MANUAL

FORWARD

Thank you very much for having purchased the "RS-485 communication unit UF-RS485 for Thyristor Type Power Adjusting Unit **UF series**".

The operators and other persons concerned are all requested to read this Operating Manual thoroughly and to operate this conversion board as instructed therein so that it can fulfill its functions perfectly.

Keep this Operating Manual carefully at any easily accessible place so that it can be referred to at any time when required.

In the following explanation, the RS-485 communication unit will abbreviate it to "UF-RS485".

1. PRECAUTIONS BEFORE USE

1.1 Confirmation of the product

Check if the following items are all provided.
- o UF-RS485   1unit
- o Screw for UF-RS485 installation   1pcs

1.2 The thing which has prepare

(1) RS485 cable

① Cable   The twisted pair shield line which is higher than 10 cores

Characteristic impedance   8 0 Ω (at 1 MHz)

1 5 0 Ω (at 1 0 kHz)

Recommended

S P M C − 1 0 D G   10 cores   made by Kaneko Code

② Connection connector

Plug   D s u b   9 pin

Recommended

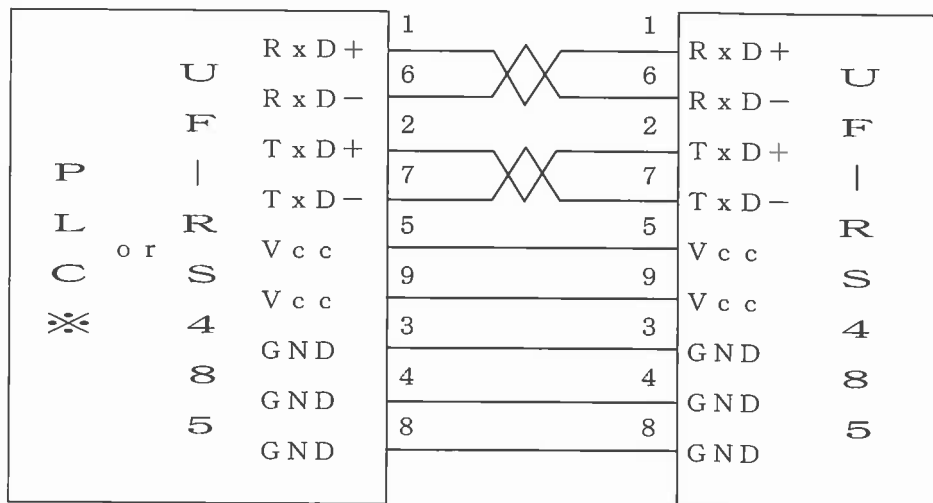X M 2 A − 0 9 0 1   made by Omron

Plug case   D s u b   9 pin

Recommended

X M 2 S − 0 9 1 1   made by Omron

※RS485 Cable for the UF-RS485, please prepare one per.

③ Wiring method

However, the portion of the cable shield, please plug connected to the case.

1-pin and 6-pin, 2-pin and 7-pin, please use the twisted pair.

※The cable is connected to the PLC power supply (Vcc, GND) wires do not need to.

(2) Connector termination

　① Connection resistance

　　(A) Terminating resistance

　　　(a) resistance　　　　　　　　1/4W　1 5 0 Ω

　　　(b) Between 2-7 and 1-6 while the plug, please connect a resistor as shown below.

　　(B) Pull-up resistor, pull-down resistor

　　　UF can be connected to the receiver communication unit, receiving the signal level is stable.

　　　(a) Resistance　　　　　　　　1/4W

　　　　Resistance, please see below.

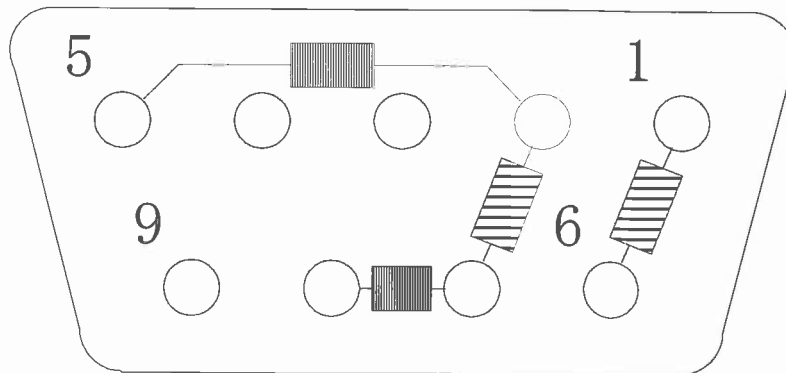　　　　Resistance is connected to a communication unit with a voltage change value.

Case of DC 9V power supply	$1.00 \text{ k}\Omega \leqq R \leqq 3.30 \text{ k}\Omega$
Case of DC 12V power supply	$1.00 \text{ k}\Omega \leqq R \leqq 4.43 \text{ k}\Omega$
Case of DC 15V power supply	$1.00 \text{ k}\Omega \leqq R \leqq 5.55 \text{ k}\Omega$
Case of DC 18V power supply	$1.01 \text{ k}\Omega \leqq R \leqq 6.68 \text{ k}\Omega$
Case of DC 24V power supply	$1.80 \text{ k}\Omega \leqq R \leqq 8.93 \text{ k}\Omega$

　　　(b) Between 7-8 and 2-5 while the plug, please connect a resistor as shown below.

　② Connection connector

　　　Plug　　　　　　D s u b　9 pin
　　　　　　　　　　　Recommended
　　　　　　　　　　　X M 2 A － 0 9 0 1　made by Omron

　　　Plug case　　　D s u b　9 pin
　　　　　　　　　　　Recommended
　　　　　　　　　　　X M 2 A － 0 9 0 1　made by Omron

　　　▭ : Terminating resistance
　　　▦ : Pull-up resistor, pull-down resistor

1. 3 Attention in the use

(1) While spend power switch, please do not do the exclusion and adding of the cable.
(2) When UF–RS485 cable for connecting the connector insert and body, please insert to fit the grooves.
(3) RS485 cable, the total wire length is 200m or less please.
(4) Operation from UF–RS485 is made possible when the GT and PH on the terminal block of the unit are short-circuited.
However, the signal sent from the terminal block (ST terminal) is given priority.
In other words, operation cannot be stopped from UF–RS485 when ST and PH are short-circuited.
Additionally, even when the unit is operated from UF–RS485 , if the ST and PH are short-circuited and then opened, the unit stops operation.

1. 4 How to install UF–RS485

(1) UF–unit has a cover for a communication connection is located on the side of the cut in the nippers etc. (Fig. 1. 4 (1))
(2) UF–RS485 wires are connected, UF–unit connects. (Fig. 1. 4 (2))
(3) UF–RS485 hooked to process it into two, UF–unit Connect. (Fig. 1. 4 (3))
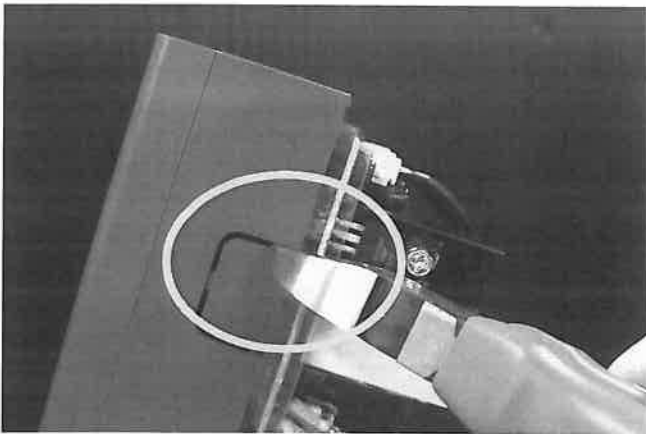(4) The UF–unit and the UF–RS485, UF–RS485 using a secure mounting screws are included. (Fig. 1. 4 (4))
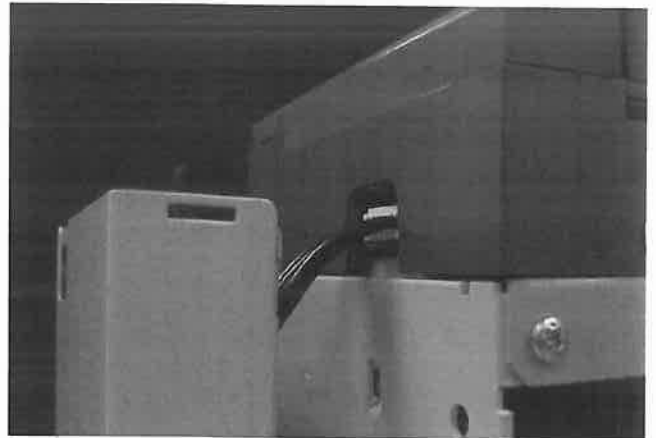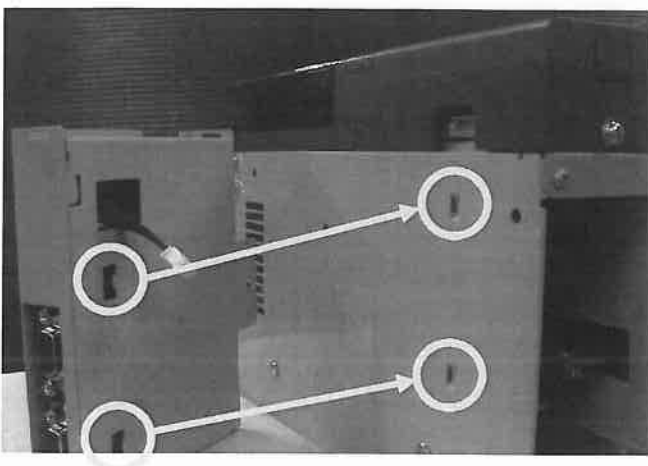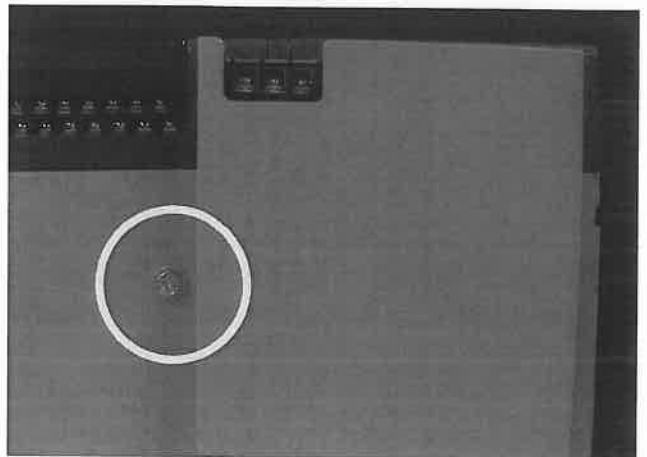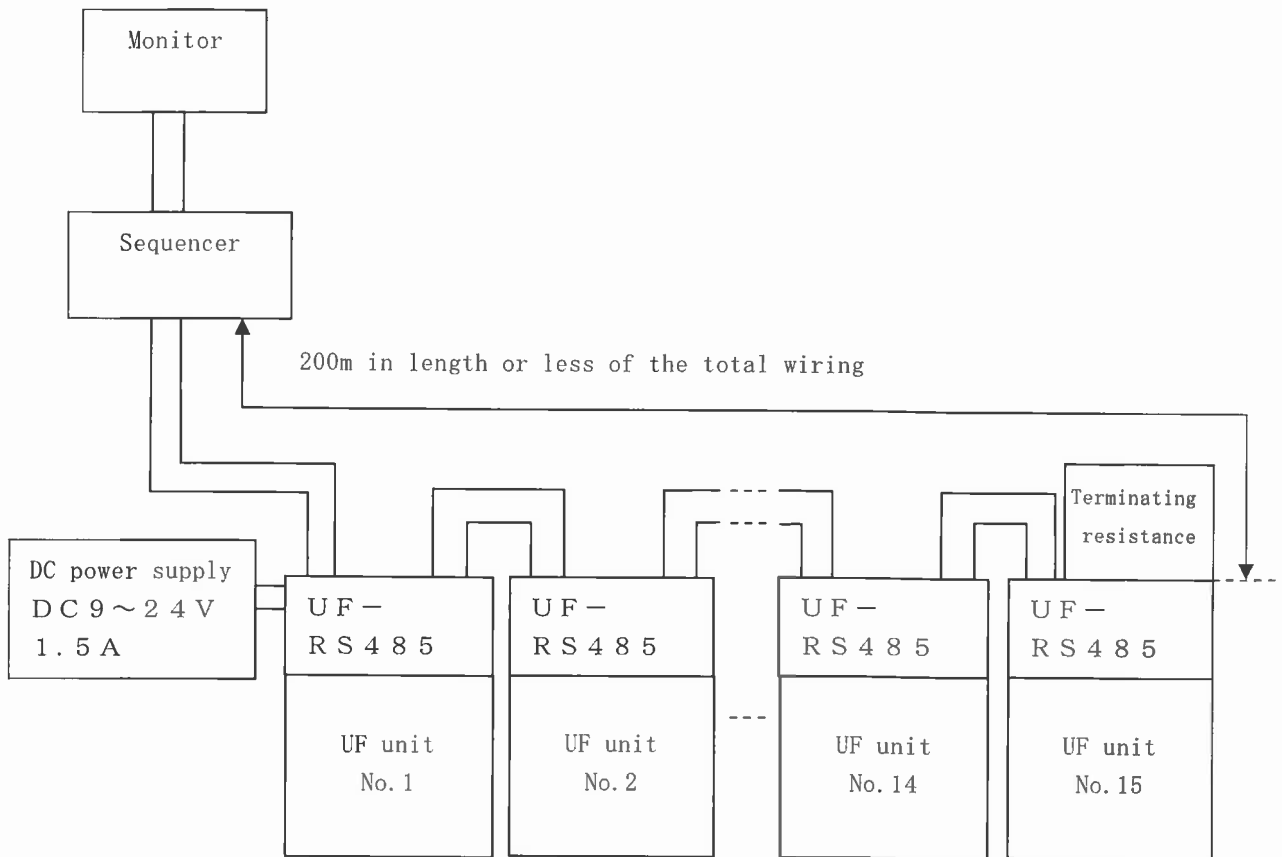

Fig. 1. 4 (1)

Fig. 1. 4 (2)

Fig. 1. 4 (3)

Fig. 1. 4 (4)

2. TO CONNECT TO UF-RS485

```
┌──────────────┐
│   Monitor    │
└──────┬───────┘
       │
┌──────┴───────┐
│  Sequencer   │
└──────┬───────┘
       │    200m in length or less of the total wiring
```

```
┌────────────────┐  ┌──────────┐  ┌──────────┐       ┌──────────┐  ┌──────────┐
│ DC power supply│  │  UF-     │  │  UF-     │       │  UF-     │  │  UF-     │
│ DC9~24V        │  │  RS485   │  │  RS485   │  ---  │  RS485   │  │  RS485   │
│ 1.5A           │  ├──────────┤  ├──────────┤       ├──────────┤  ├──────────┤
└────────────────┘  │ UF unit  │  │ UF unit  │  ---  │ UF unit  │  │ UF unit  │
                    │ No.1     │  │ No.2     │       │ No.14    │  │ No.15    │
                    └──────────┘  └──────────┘       └──────────┘  └──────────┘
```

Terminating resistance

The UF-unit assumes 15 of them one group, and the connection of the UF-unit in the group is random order.
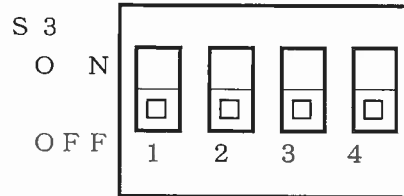
Please attach the terminal connector to "OUT" of UF-RS485 of the last unit of 15 UF-units.

In addition, please be attached to "OUT" of UF-RS485 of the last unit when am less than 15.

3. HOW TO SET THE UF-RS485

UF-unit take the front cover, inside it has S3. If use the UF-RS485, S3 must be set.

3.1 How to set S3

In S3, UF-RS485 unit No. can be set.
S3 default has been set as follows.

Using the S3 1 - 4, UF-RS485 of UF-unit No. Set.
How to set S3, please take a look at the table below.

N o.	S 3 - 1	S 3 - 2	S 3 - 3	S 3 - 4
0 (Not Set)	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
1 0	OFF	ON	OFF	ON
1 1	ON	ON	OFF	ON
1 2	OFF	OFF	ON	ON
1 3	ON	OFF	ON	ON
1 4	OFF	ON	ON	ON
1 5	ON	ON	ON	ON

4. HOW TO SETTING THE SET VALUES FROM UF-RS485

If set the UF-RS485, the signal display panel priority settings "2" should be set to change.

4.1 How to set the UF-RS485

Example
At the UF-RS485, L (Lower point(lower limit)signal) to be able to change settings.

(1) If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched. Press several times, the display-mode of display panels show "INPUT". (Fig. 4.1(1))
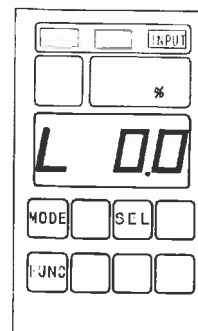
(2) Press the [SEL] key twice, 4-digit display on the left is "L" the display. (Fig. 4.1(1))

Fig. 4.1(1)

(3) If the [FUNC] key is pressed while the [SEL] key is being pressed down, the display mode is switched. The panels display by pressing the [FUNC] + [SEL] key one times to a 4-digit display on the left the "LS". (Fig. 4.1(2))
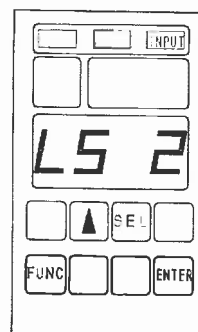
(4) Press [▲] several times "2" the display panel. (Fig. 4.1(2))

(5) Numeric display will blink, [ENTER] key press and light the key once. (Fig. 4.1(2))

Fig. 4.1(2)

Priority settings changed by manipulating the signal display panel as an example, UF-RS485 signals can change the settings
Table 1, by changing the settings on the display panel signal priority, UF-RS485 can change the signal settings.

Display item	Function
P	Control signal
H	Manual(upper limit) signal
L	Lower point(lower limit)signal
F	Grade signal
E	Soft start time
C	Current limit
U	Heater disconnecting amount
d	Delay time
—	Period time

Table 1

5. COMPUTER AND HOW TO COMMUNICATE WITH THE UF-RS485

The personal computer to communicate with the UF-RS485, refer to the attached document, please create programs.

Attachment
RS-485 communication unit UF-RS485 MULTI-DROP METHOD USER MANUAL

MEMO

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