

SanRex

Thyristor Type Power Adjusting Unit

CALPOTE

UF series

RS485 communication unit

UF-RS485

MULTI-DROP METHOD

USER MANUAL

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1. COMMUNICATION

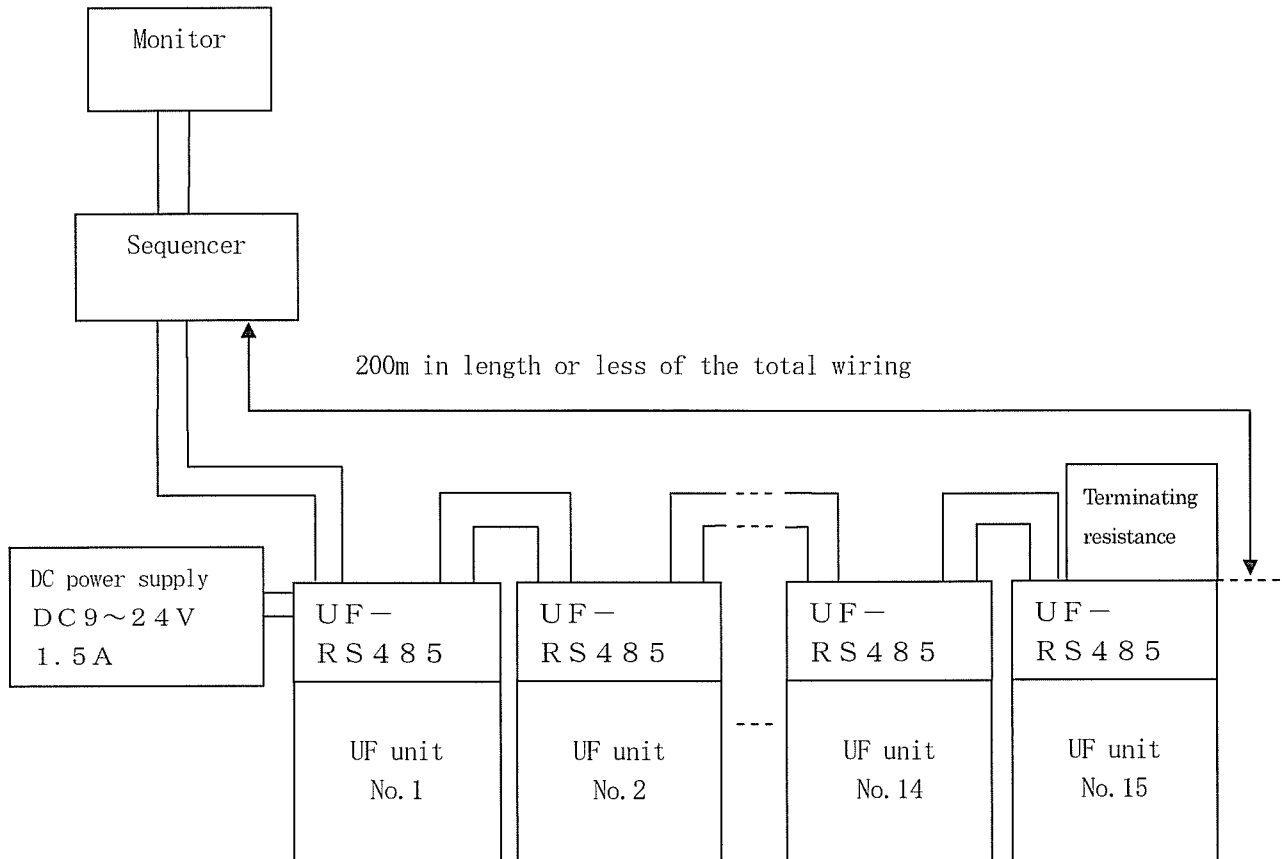
1. 1 Summary

To the communication between the UF-unit and the external unit, there are RS485, Device Net, CC-Link, Prof-Bus communications.

In this USER MANUAL, explains the correspondence procedure in the UF-unit and the RS422/485 communication.

2. SPECIFICATIONS

2. 1 System configuration



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.

2. 2 Communication conditions

The standard communication conditions are as below.

Parameters	Specifications
Communication system	Synchronous start-stop system (Full-duplex)
Communication speed	9600bps
Start bit	1bit
Data length	8bits
Parity	Even number parity
Stop bit	1bit
Error detection	Vertical parity and horizontal parity
Signal mode	According to RS-485 standard

The setting change for communication conditions can be done as follows by the use of the display panel.

2. 2. 1 Transmission speed

【Content】 Transmission (communication) speed of the communication is set.

【Setting】 Setting transmission speed is as listed below

Setting range of this unit is as listed below no.1~9

Initial setting 5

Setting Value	Transmission Speed
1	600bps
2	1,200bps
3	2,400bps
4	4,800bps
5	9,600bps
6	14,400bps
7	19,200bps
8	28,800bps
9	31,250bps

2. 2. 2 Transmission mood

【Content】 Transmission of transfer mode (data format) speed of the communication is set.

【Setting】 The transfer mode becomes as follows by the setting.

Setting range is from No.1 to No.6 as below

Initial setting 3

Setting Value	Data Length	Parity	Stop Bit
1	8	None	1
2	8	Odd number	1
3	8	Even number	1
4	8	None	2
5	8	Odd number	2
6	8	Even number	2

2. 2. 3 Addition of CR code of communication text

【Content】 Whether CR (carriage return (0Dh)) code is added as the line terminator of the communication message (text) is set.

【Setting】 It becomes the following by the setting.

0: The CR code is not added as the terminator of the message. (Usually)

1: The CR code is added as the line terminator of the message.

Initial setting 0

2. 2. 4 BCC check of reception text

【Content】 The confirmation operation of BCC of received message (block check code) is set.

【Setting】 The confirmation operation of BCC becomes the following by the setting.

0: The confirmation operation of BCC is not done.

1: The confirmation operation of BCC is done. (usually)

Initial setting 1

【supplement】 It is necessary to transmit the BCC code of the dummy even when a set value is assumed to be "0", and it is assumed the setting that doesn't confirm BCC.

The purpose of this is to confirm the data length on the receiving side.

2. 2. 5 Time of reception time-out

【Content】 The timeout period receiving the communication text is set.

【Setting】 The set value takes the following ranges.

10 ~ 999 (Unit 10mS)

Initial value 50 (500mS)

2. 2. 6 Transmission waiting time

【Content】 The timeout period of the transmission waiting time is set.

【Setting】 The set value takes the following ranges.

0 ~ 999 (Unit 1mS)

Initial value 0 (0mS)

3. COMMUNICATION METHOD

3.1 Communication command

Communication shown below is possible.

- (1) Communication by unconditional read (ID=0010xxxxB) (Setting-data writing/Monitor-data reading)
- (2) Communication by conditional read 1 (ID=0110xxxxB) (Monitor-data reading)
- (3) Communication by conditional read 2 (ID=1110xxxxB) (Setting-data reading)
- (4) Communication by conditional write (ID=1010xxxxB) (Setting-data writing)
- (5) Communication by unconditional write (ID=10100000B) (Lump setting-data writing)

3.2 Each command explanation of the communication

- (1) Communication by unconditional read (ID=0010xxxxB) (Setting-data writing/Monitor-data reading)

Communication procedure

	Sequencer	Direction	UF-unit
1	$[E_{OT}] ID [E_{NQ}]$	➔	
2		➔	$[S_{TX}] addr, mon0mon1mon2 [E_{TB}] [B_{CC}]$ o r No reply
3	$[S_{TX}] addr, set0set1set2 [E_{TB}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$	➔	
4		➔	$[S_{TX}] addr, mon3mon4mon5 [E_{TB}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$ o r $[E_{OT}]$
5	$[S_{TX}] addr, set3set4set5 [E_{TB}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$	➔	
6		➔	$[S_{TX}] addr, mon6mon7mon8 [E_{TB}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$ o r $[E_{OT}]$
7	$[S_{TX}] addr, set6set7set8 [E_{TX}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$	➔	
8		➔	$[S_{TX}] addr, mon9mon10mon11 [E_{TX}] [B_{CC}]$ o r $[A_{CK}] ([N_{AK}])$ o r $[E_{OT}]$
9	$[A_{CK}]$	➔	
10		➔	$[E_{OT}]$
11	$[E_{OT}]$	➔	

- ① After the start request sent from the sequencer sends the requested UF-unit is ready for communication.
- ② The requested UF-unit sends data to the sequencer in order from the top of the monitor-data.
- ③ Successfully received by the sequencer monitor-data sends data to the UF-unit in order from the top of the setting-data.
If the monitor-data is not received successfully, " N_{AK} " the UF-unit transmitted to request the retransmission of data.
- ④ Successfully received by the UF-unit setting-data sends the monitor-data to the sequencer.
If the setting-data is not received successfully, " N_{AK} " the sequencer transmitted to request the retransmission of data.
- ⑤ The UF and the sequencer there is no data to send both. At that time, the UF and the sequencer send " A_{CK} ".
- ⑥ " A_{CK} " receiving side, when there not data to send, " E_{OT} " send.
- ⑦ Sequencer " E_{OT} " when receiving, UF-unit to " E_{OT} " send.
This, the UF-unit will complete a series of operations to prevent send.

(2) Communication by conditional read 1 (ID=0110xxxxB) (Monitor-data reading)

Communication procedure

	Sequencer	Direction	UF-unit
1	$\lceil^{E_{OT}}\rceil$ ID $\lceil^{EN_Q}\rceil$	➡	
2		⬅	$\lceil^{A_{CK}}\rceil$ o r No reply
3	$\lceil^{S_{TX}}\rceil$ addr, num $\lceil^{E_{TX}}\rceil$ $\lceil^{B_{CC}}\rceil$ o r $\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$)	➡	
4		⬅	$\lceil^{S_{TX}}\rceil$ addr, mon (A) mon (A+1) mon (A+2) $\lceil^{E_{TB}}\rceil$ $\lceil^{B_{CC}}\rceil$ o r $\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$
5	$\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$	➡	
6		⬅	$\lceil^{S_{TX}}\rceil$ addr, mon (A+3) mon (A+4) mon (A+5) $\lceil^{E_{TB}}\rceil$ $\lceil^{B_{CC}}\rceil$ o r $\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$
7	$\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$	➡	
8		⬅	$\lceil^{S_{TX}}\rceil$ addr, mon (A+6) mon (A+7) mon (A+8) $\lceil^{E_{TB}}\rceil$ $\lceil^{B_{CC}}\rceil$ o r $\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$
9	$\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$	➡	
1 0		⬅	$\lceil^{S_{TX}}\rceil$ addr, mon (A+9) mon (A+10) mon (A+11) $\lceil^{E_{TX}}\rceil$ $\lceil^{B_{CC}}\rceil$ o r $\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$
1 1	$\lceil^{A_{CK}}\rceil$ ($\lceil^{N_{AK}}\rceil$) o r $\lceil^{E_{OT}}\rceil$	➡	
1 2		⬅	$\lceil^{E_{OT}}\rceil$
1 3	$\lceil^{E_{OT}}\rceil$	➡	

- ① After the start request sent from the sequencer sends the requested UF-unit is ready for communication.
- ② The requested UF-unit sends " A_{CK} " to the sequencer.
- ③ The sequencer receives " A_{CK} " from the UF-unit.
The sequencer send the UF-unit reading-data start address and number of reading-data to the UF-unit.
- ④ The UF-unit receives the start address and number of read data from the sequencer.
Sequentially, sends the data from the address of the required number of specified data from the sequencer.
If the data is not received successfully, " N_{AK} " the sequencer transmitted to request the retransmission of data.
- ⑤ Successfully received by the sequencer data sends " A_{CK} " to the UF-unit.
If the data is not received successfully, " N_{AK} " the UF-unit transmitted to request the retransmission of data.
- ⑥ When there are no data sent by the UF-unit, the UF-unit " E_{OT} " to send it to the sequencer.
- ⑦ " E_{OT} " received the sequencer, " E_{OT} " to send it to the UF-unit.
This, the UF-unit will complete a series of operations to prevent send.

(3) Communication by conditional read 2 (ID=1110xxxxB) (Setting-data reading)

Communication procedure

	Sequencer	Direction	UF-unit
1	$\Gamma^{E_{0T}}ID\Gamma^{E_{N_Q}}$	➡	
2		⬅	$\Gamma^{A_{C_K}}$ o r No reply
3	$\Gamma^{S_{T_X}}addr, num\Gamma^{E_{T_X}}\Gamma^{B_{C_C}}$ o r $\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$	➡	
4		⬅	$\Gamma^{S_{T_X}}addr, set(A)set(A+1)set(A+2)\Gamma^{E_{T_B}}\Gamma^{B_{C_C}}$ o r $\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$
5	$\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$	➡	
6		⬅	$\Gamma^{S_{T_X}}addr, set(A+3)set(A+4)set(A+5)\Gamma^{E_{T_B}}\Gamma^{B_{C_C}}$ o r $\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$
7	$\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$	➡	
8		⬅	$\Gamma^{S_{T_X}}addr, set(A+6)set(A+7)set(A+8)\Gamma^{E_{T_X}}\Gamma^{B_{C_C}}$ o r $\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$
9	$\Gamma^{A_{C_K}}(\Gamma^{N_{A_K}})$ o r $\Gamma^{E_{0T}}$	➡	
1 0		⬅	$\Gamma^{E_{0T}}$
1 1	$\Gamma^{E_{0T}}$	➡	

- ① After the start request sent from the sequencer sends the requested UF-unit is ready for communication.
- ② The requested UF-unit sends " A_{C_K} " to the sequencer.
- ③ The sequencer receives " A_{C_K} " from the UF-unit.
The sequencer send the UF-unit reading-data start address and number of reading-data to the UF-unit.
- ④ The UF-unit receives the start address and number of read data from the sequencer.
Sequentially, sends the data from the address of the required number of specified data from the sequencer.
If the data is not received successfully, " N_{A_K} " the sequencer transmitted to request the retransmission of data.
- ⑤ Successfully received by the sequencer data sends " A_{C_K} " to the UF-unit.
If the data is not received successfully, " N_{A_K} " the UF-unit transmitted to request the retransmission of data.
- ⑥ When there are no data sent by the UF-unit, the UF-unit " E_{0T} " to send it to the sequencer.
- ⑦ " E_{0T} " received the sequencer, " E_{0T} " to send it to the UF-unit.
This, the UF-unit will complete a series of operations to prevent send.

(4) Communication by conditional write (ID=1010xxxxB) (Setting-data writing)

Communication procedure

	Sequencer	Direction	UF-unit
1	$\lceil^{E_{0T}}\rceil ID \lceil^{E_{N0}}\rceil$	➡	
2		⬅	$\lceil^{A_{CK}}\rceil (\lceil^{N_{AK}}\rceil)$ o r No reply
3	$\lceil^{S_{TX}}\rceil$ addr, set0set1set2 $\lceil^{E_{TB}}\rceil \lceil^{B_{CC}}\rceil$ o r $\lceil^{E_{0T}}\rceil$	➡	
4		⬅	$\lceil^{A_{CK}}\rceil (\lceil^{N_{AK}}\rceil)$ o r $\lceil^{E_{0T}}\rceil$
5	$\lceil^{S_{TX}}\rceil$ addr, set3set4set5 $\lceil^{E_{TB}}\rceil \lceil^{B_{CC}}\rceil$ o r $\lceil^{E_{0T}}\rceil$	➡	
6		⬅	$\lceil^{A_{CK}}\rceil (\lceil^{N_{AK}}\rceil)$ o r $\lceil^{E_{0T}}\rceil$
7	$\lceil^{S_{TX}}\rceil$ addr, set6set7set8 $\lceil^{E_{TX}}\rceil \lceil^{B_{CC}}\rceil$ o r $\lceil^{E_{0T}}\rceil$	➡	
8		⬅	$\lceil^{A_{CK}}\rceil (\lceil^{N_{AK}}\rceil)$ o r $\lceil^{E_{0T}}\rceil$
9	$\lceil^{E_{0T}}\rceil$	➡	

- ① After the start request sent from the sequencer sends the requested UF-unit is ready for communication.
- ② The requested UF-unit sends " A_{CK} " to the sequencer.
- ③ The sequencer receives " A_{CK} " from the UF-unit.
The sequencer send the UF-unit setting-data start address and setting-data to the UF-unit.
- ④ Successfully received by the UF-unit data sends " A_{CK} " to the sequencer.
If the data is not received successfully, " N_{AK} " the sequencer transmitted to request the retransmission of data.
- ⑤ When there are no data sent by the sequencer, the sequencer " E_{0T} " to send it to the UF-unit.
This, UF-unit will complete a series of operations to prevent send.

(5) Communication by unconditional write (ID=10100000B) (Lump setting-data writing)

Communication procedure

	Sequencer	Direction	UF-unit
1	$\lceil^{E_{0T}}\rceil ID \lceil^{E_{N0}}\rceil$	➡	
2		⬅	" "
3	$\lceil^{S_{TX}}\rceil$ addr, set0set1set2 $\lceil^{E_{TX}}\rceil \lceil^{B_{CC}}\rceil$	➡	
4		⬅	" "
5	$\lceil^{E_{0T}}\rceil$	➡	

- ① The sequencer sends a request to start sending to all the UF-unit.
However, all the UF-unit is the state which prohibits transmission .
- ② The UF-unit receives the start request sent from the sequencer. However, the UF-unit does not reply to the sequencer.
- ③ After waiting 50ms time, the sequencer send the UF-unit setting-data start address and setting-data to the UF-unit.
- ④ The UF-unit, regardless of whether or not received successfully received from the sequencer, the UF-unit does not reply to the sequencer.
- ⑤ When there are no data sent by the sequencer, the sequencer " E_{0T} " to send it to the UF-unit.
This, the UF-unit will complete a series of operations to prevent send.

3.3 Other procedures

(1) Communication when the data which transmitted a message on the way were completed

Communication procedure

	Sequencer	Direction	UF-unit
—	$[^S_{Tx}]addr, set0set1set2[^E_{Tx}] [^B_{Cc}]$	➡	
1		⬅	$[^A_{Ck}]$
2	$[^E_{0T}]$	➡	

	Sequencer	Direction	UF-unit
—		⬅	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tb}] [^B_{Cc}]$
1	$[^A_{Ck}]$	➡	
2		⬅	$[^E_{0T}]$
3	$[^E_{0T}]$	➡	

- ① When there not data to send, " $^A_{Ck}$ " send.
- ② " $^A_{Ck}$ " receiving side, when there not data to send, " $^E_{0T}$ " send.
- ③ Sequencer " $^E_{0T}$ " when receiving, UF-unit to " $^E_{0T}$ " send.

(2) Communication when the transmission and reception of data was not made right

- (a) Communication error(Parity error, Over run error, Framing error)
- (b) BCC code(Block Check Character Code) error
- (c) Receive address out of the range
- (d) Receive data out of the range

Communication procedure

	Sequencer	Direction	UF-unit
—		⬅	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tb}] [^B_{Cc}]$
1	$[^N_{Ak}]$	➡	
2		⬅	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tb}] [^B_{Cc}]$

- ① " $^N_{Ak}$ " when the reply, it sends the data again just before it was sent.

	Sequencer	Direction	UF-unit
—	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tb}] [^B_{Cc}]$	➡	
1		⬅	$[^N_{Ak}]$
2	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tb}] [^B_{Cc}]$	➡	

- ① " $^N_{Ak}$ " when the reply, it sends the data again just before it was sent.
- ② Retransmit the data even if the number N times " $^N_{Ak}$ ".
If the response is, stop sending once.
Please try again later sent again from the beginning.

(3) Communication when a reply did not return

Communication procedure

	Sequencer	Direction	UF-unit
—		←	$[^S_{Tx}]addr, mon3mon4mon5[^E_{Tx}] [^B_{CC}]$
1	“ ”	→	
2		←	“ ”

- ① After sending data to the sequencer from the UF-unit, but from the sequencer after the time at the UF-unit receive timeout is not sending data to, the UF-unit stops sending data to the sequencer.

	Sequencer	Direction	UF-unit
—	$[^S_{Tx}]addr, set3set4set5[^E_{Tx}] [^B_{CC}]$	→	
1		←	“ ”
2	$[^S_{Tx}]addr, set3set4set5[^E_{Tx}] [^B_{CC}]$	→	

- ① After sending data to the UF-unit from the sequencer, but from the UF-unit after about 1S response is not sending data to, it sends the data again just before it was sent.
- ② The UF-unit also count from the sequencer to send data to N times, the UF-unit did not send the data back to the time from the sequencer, the sequencer please stop sending the UF-unit.

(4) Received data

(a) Reception beginning

① Function

The transmission to the sequencer begins. When unit No. (ID) that has been sent from own unit No. and sequencer matches it, the UF-unit makes the data transmission to the sequencer possible.

Also, when unit No. can be not corresponding and it transmit, the transmission is prohibited.

② Received data

[E _{OT}]	ID	[E _{NQ}]
--------------------	----	--------------------

EOT : End of Transmission Code ASCII character code 0 4 H

ID : Communication condition + Unit No.

Communication Condition		Fixation		Unit Address			
7	6	5	4	3	2	1	0
		1	0				

The 6~7 bit : 0 0 : Unconditional lead
 0 1 : Conditional lead 1
 1 0 : Conditional light/Unconditional light
 1 1 : Conditional lead 2

The 5 bit : 1 : Fixation

The 4 bit : 0 : Fixation

The 0~3 bit : 0 0 0 0 : Common address
 0 0 0 1 : Unit address 1
 0 0 1 0 : Unit address 2
 . .
 1 1 1 1 : Unit address 15

ENQ : Inquiry Code ASCII character code 0 5 H

(b) Reading data address reception

① Function

The initial address and the number of bytes for the monitor value of the UF-unit to be read from the sequencer are specified. The UF-unit sends the sequencer a specified byte data from the specified address after this.

② Received data

A ([E _{CC}] check range)					
[S _{TX}]	addr	,	num	[E _{TB}] ([E _{TX}])	[E _{CC}]

STX : Start of Text Code ASCII character code 0 2 H

addr : Initial address of data to be read (one digit hexadecimal number ASCII)

, : Delimitation data ASCII character code 2 C H

num : Number of data to be read (one digit hexadecimal number ASCII)

ETB : End of Block Code ASCII character code 1 7 H

(ETX : End of Text Code ASCII character code 0 3 H)

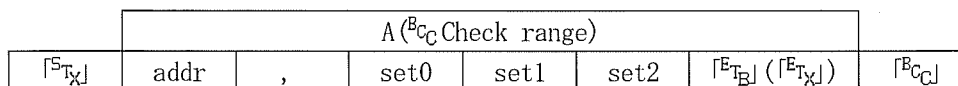
BCC : Block Check Character Code XOR of each character in A section

(c) Set value reception

① Function

A set value of the UF-unit is received from the sequencer, and the value is set again.

② Received data



S T X : Start of Text Code ASCII character code 0 2 H

addr : Initial address of data to be read (one digit hexadecimal number ASCII)

, : End data ASCII character code 2 C H

set0 : The setting value 0 data (four digit hexadecimal number ASCII)

set1 : The setting value 1 data (four digit hexadecimal number ASCII)

set2 : The setting value 2 data (four digit hexadecimal number ASCII)

(For example) The data =When is 1000(3E8H)



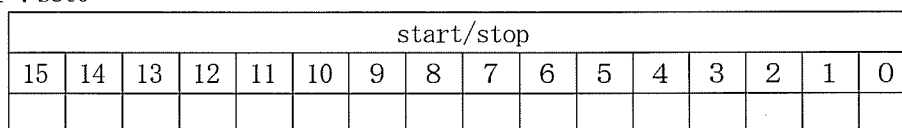
E T B : End of Block Code ASCII character code 1 7 H

(E T X : End of Text Code ASCII character code 0 3 H)

B C C : Block Check Character Code XOR of each character in A section

Date Name	Parameters	Minimum Unit	Date Length	Data Range
set0	start/stop		4byte	0:stop 1:start * 1
set1	Control signal	0.1%	4byte	0 ~ 100.0%
set2	Manual(upper limit) signal	0.1%	4byte	0 ~ 100.0%
set3	Lower point(lower limit) signal	0.1%	4byte	0 ~ 100.0%
set4	Grade signal	0.1%	4byte	0 ~ 100.0%
set5	Soft start time	0.1S	4byte	0 ~ 99.9S * 2
		1.0S		100.0 ~ 300.0S * 2
set6	Delay time	0.1S	2byte	0 ~ 3.0S * 3
	Period time	0.1S	2byte	1.0 ~ 3.0S * 3
set7	Reservation		2byte	* 4
	I/O characteristic change (Function No.)		2byte	Function No. 0~7 * 4
set8	Current limit	1%	2byte	50 ~ 110% * 5
	Heater disconnecting amount	1%	2byte	Case of UF1 5 ~ 50% Case of UF3 8 ~ 50% * 5

* 1 : set0



The 15~1 bit : Reservation

The 0 bit : 1 : start 0 : stop

* 2 : set5

Soft start time															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~0 bit : 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 : 0.0S

0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 : 0.5S (Standard setting)

0 0 0 0 1 0 1 1 1 0 1 1 1 0 0 0 : 300.0S

* 3 : set6

Delay time								Period time							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~8 bit : 0 0 0 0 0 0 0 0 : 0.0S (Standard setting)

0 0 0 1 1 1 1 0 : 3.0S

The 7~0 bit : 0 0 0 0 1 0 1 0 : 1.0S (Standard setting)

0 0 0 1 1 1 1 0 : 3.0S

* 4 : set7

Reservation								I/O characteristic change (Function No.)							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~9 bit : Reservation

The 7~0 bit : 0 0 0 0 0 0 0 0 : Function No.0 (Standard setting)

0 0 0 0 0 1 1 1 : Function No.7

* 5 : set8

Current limit								Heater disconnecting amount							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~8 bit : 0 0 1 1 0 0 1 0 : 50%

0 1 1 0 1 1 1 0 : 110% (Standard setting)

The 7~0 bit : 0 0 0 0 0 1 0 1 : 5%

0 0 1 1 0 0 1 0 : 50% (Standard setting)

(d) Positive acknowledgement reception

① Function

Response when the sequencer receives data from the UF-unit properly and there is no data from sequencer to the UF-unit.

② Received data

「ACK」

ACK : Acknowledge Code ASCII character code 0 6 H

(e) Negative acknowledgement reception

① Function

Response when the sequencer did not receive data sent from the UF-unit properly.

② Received data

「NAK」

NAK : Negative Acknowledge Code ASCII character code 1 5 H

(f) End of transmission

① Function

Response when a series of communication with sequencer ends.

When this code is received, the UF-unit puts the transmission to the sequencer into the state of the prohibition.

② Received data

「EOT」

EOT : End of Transmission Code ASCII character code 0 4 H

(5) Transmit data

(a) Monitor value transmission

① Function

The monitor value is transmitted from the UF-unit to the sequencer.

② Transmit data

A ^(BC) Check range)							
「STX」	addr	,	mon0	mon1	mon2	「ETB」 (「ETX」)	「BCC」

STX : Start of Text Code ASCII character code 0 2 H

addr : Initial address of data to be read (one digit hexadecimal number ASCII)

, : Delimitation data ASCII character code 2 C H

mon0 : The monitor value 0 data (four digit hexadecimal number ASCII)

mon1 : The monitor value 1 data (four digit hexadecimal number ASCII)

mon2 : The monitor value 2 data (four digit hexadecimal number ASCII)

(For example) The data =When is 1000 (3E8H)

30H	33H	45H	38H
-----	-----	-----	-----

ETB : End of Block Code ASCII character code 1 7 H

(ETX : End of Text Code ASCII character code 0 3 H)

BCC : Block Check Character Code XOR of each character in A section

◎ When monitor value lead mode is set (Case of UF1)

Date Name	Parameters	Minimum Unit	Date Length	Data Range
mon0	State display • Start/Stop		4byte	0:stop 1:operation * 6
mon1	Out current	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25
mon2	Out voltage	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25
mon3	Out power	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25
mon4	Soft start time	0.1S	4byte	0 ~ 99.9S * 2
		1.0S		100.0 ~ 300.0S * 2
mon5	Delay time	0.1S	2byte	0 ~ 3.0S * 3
	Period time	0.1S	2byte	1.0 ~ 3.0S * 3
mon6	Self-diagnostic function setting		2byte	0:Release 1:Yes * 7
	I/O characteristic change (Function No.)		2byte	Function No. 0 ~ 7 * 7
mon7	Current limit	1%	2byte	50 ~ 110% * 5
	Heater disconnecting amount	1%	2byte	5 ~ 50% * 5
mon8	Spacing		4byte	

* 6 : mon0

start/stop															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15 bit : 1 : abnormality 0 : normalcy
 The 14 bit : 1 : over current abnormality 0 : normalcy
 The 13 bit : 1 : fuse disconnection 0 : normalcy
 The 12 bit : 1 : temperature rise abnormality 0 : normalcy
 The 11 bit : 1 : thyristor abnormality 0 : normalcy
 The 10 bit : 1 : load abnormality 0 : normalcy
 The 9 bit : 1 : power supply undervoltage 0 : normalcy
 The 8 bit : 1 : abnormal frequency 0 : normalcy
 The 7 bit : 1 : heater disconnection 0 : normalcy
 The 6 bit : 1 : gate block 0 : normalcy
 The 5 bit : 1 : EEPROM abnormal 0 : normalcy
 The 4~1 bit : Reservation
 The 0 bit : 1 : operation 0 : stop

* 7 : mon6

Self-diagnostic function setting								I/O characteristic change (Function No.)							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~9 bit : Reservation
 The 8 bit : 1 : Yes (Standard setting) 0 : Release
 The 7~0 bit : 0 0 0 0 0 0 0 0 : Function No. 0 (Standard setting)
 .
 .
 0 0 0 0 0 1 1 1 : Function No. 7

© When monitor value lead mode is set (Case of UF3)

Date Name	Parameters	Minimum Unit	Date Length	Data Range	
mon0	State display • Start/Stop		4byte	0:stop 1:operation	* 6
mon1	U-phase out current	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 8
mon2	V-phase out current	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 8
mon3	W-phase out current	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 8
mon4	U-phase out voltage	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 9
mon5	V-phase out voltage	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 9
mon6	W-phase out voltage	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 9
mon7	Out power	0.1%	4byte	0 ~ 125.0% / 0 ~ Rating*1.25	* 10
mon8	Soft start time	0.1S	4byte	0 ~ 99.9S	* 2
		1.0S		100.0 ~ 300.0S	* 2
mon9	Delay time	0.1S	2byte	0 ~ 3.0S	* 3
	Period time	0.1S	2byte	1.0 ~ 3.0S	* 3
mon10	Self-diagnostic function setting		2byte	0:Release 1:Yes	* 7
	I/O characteristic change (Function No.)		2byte	Function No. 0 ~ 7	* 7
mon11	Current limit	1%	2byte	50 ~ 110%	* 5
	Heater disconnecting amount	1%	2byte	8 ~ 50%	* 5

* 8 : mon 1 ~ 3

Out current															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~12 bit : 0000 : Out current by means of conversion board (Option)
 0100 : Out current by means of internal CT

The 11~0 bit : Out current
 0~125.0% (0~4E2H)

* 9 : mon 4 ~ 6

Out voltage															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~12 bit : 0000 : Out voltage by means of conversion board (Option)
 0100 : Out voltage by means of supply voltage and gate output
 1100 : Converter board (Option) by the unknown value of the out voltage without

The 11~0 bit : Out voltage
 0~125.0% (0~4E2H)
 However, the 15~12 bit 1100 if the out voltage is uncertainty

* 1 0 : mon7

Out power															
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

The 15~12 bit : 0 0 0 0 : Out power by means of conversion board(Optional)
 1 1 0 0 : Converter board (Option) by the unknown value of the out power without

The 11~0 bit : Out power
 0~125.0% (0~4E2H)
 However, the 15~12 bit 1100 if the out power is uncertainty

◎ When set value lead mode is set

By setting to the read mode, the value of set0~set8 can be read when mon0~mon8 is read.

Date Name	Parameters	Minimum Unit	Date Length	Data Range	
mon0	State display · Start/Stop		4byte	0:stop 1:operation	* 6
mon1	Control signal	0.1%	4byte	0 ~ 100.0%	
mon2	Manual(upper limit) signal	0.1%	4byte	0 ~ 100.0%	
mon3	Lower point(lower limit) signal	0.1%	4byte	0 ~ 100.0%	
mon4	Grade signal	0.1%	4byte	0 ~ 100.0%	
mon5	Soft start time	0.1S	4byte	0 ~ 99.9S	* 2
		1.0S		100.0 ~ 300.0S	* 2
mon6	Delay time	0.1S	2byte	0 ~ 3.0S	* 3
	Period time	0.1S	2byte	1.0 ~ 3.0S	* 3
mon7	Self-diagnostic function setting		2byte	0: Release 1: Yes	* 7
	I/O characteristic change (Function No.)		2byte	Function No. 0 ~ 7	* 7
mon8	Current limit	1%	2byte	50 ~ 110%	* 5
	Heater disconnecting amount	1%	2byte	Case of UF1 5 ~ 50% Case of UF3 8 ~ 50%	* 5

(b) Positive acknowledgement reception

① Function

Response when the sequencer receives data from US properly and there is no data from sequencer to the UF-unit.

② Received data

「ACK」

ACK : Acknowledge Code ASCII character code 06H

(c) Negative acknowledgement reception

① Function

Response when the sequencer finds abnormality (parameter errors, etc) in data from the UF-unit and there is a communication error.

② Received data

「NAK」

NAK : Negative Acknowledge Code ASCII character code 1 5 H

(d) End of transmission

① Function

$[^A C_K]$ After receives, $[^A C_K]$ is transmitted when there is no data for transmission.

$[^E O_T]$ After transmits, the transmission to the sequencer is put into the state of the prohibition.

② Received data

$[^E O_T]$

E O T : End of Transmission Code ASCII character code 0 4 H

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

If set the communication, the signal display panel priority settings "2" should be set to change.
 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) Change display-mode

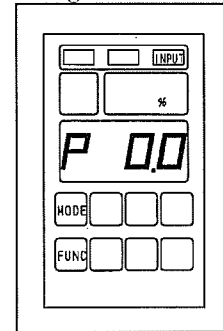
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 4.1-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 4.1-1



(2) Chang the display item

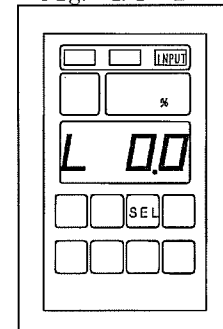
If the [SEL] key is pressed down, the display content is switched.

Press the [SEL] key twice, 4-digit display on the left is the display to "L". (Fig. 4.1-2)

When the "L" does not show, press "SEL" key a few times.

The set values display the set values in the set-mode is currently set.

Fig. 4.1-2



(3) Check set-mode of Lower point(lower limit)signal priority setting

If the [SEL] key is pressed while the [FUNC] key is being pressed down, the display switches the lower point (lower limit)signal priority setting of set-mode.

4 digit display on the left is the display to "LS".

Please check with that. (Fig. 4.1-3)

At this time, the right 1 digit display represents the set-mode. (Table 4.1-1)

Fig. 4.1-3

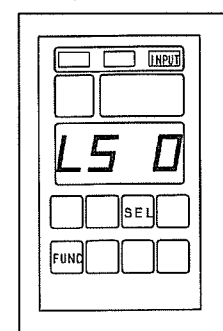


Table 4.1-1

Display	Set-mode
L S 0	Setting the set-values from Lower point (lower limit)signal of input (terminal VL2)
L S 1	Setting the set-values from the display panel
L S 2	Setting the set-values from UF-RS485

(4) Change in set-mode of Lower point(lower limit)signal priority setting

Fig. 4.1-4

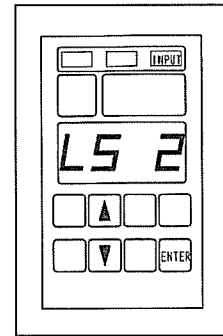
When set in the UF-RS485, the left one digit display 4 digit [2], please check to see.

When the set values do not display to "2", "2" settings are set using the [▲] or [▼] key.

Then, [ENTER] please press. (Fig. 4.1-4)

Change lights from blink, the setting is completed.

Once configure the set-mode. Also remembers the set-mode turned off power.



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

Table 4.1-2, by changing the settings on the display panel signal priority, UF-RS485 can change the signal settings.

Table 4.1-2

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

5. SETTING COMMUNICATION CONDITIONS

The standard communication conditions are as below. (Table 5-1)

Table 5-1

Parameters	Specifications
Communication system	Synchronous start-stop system (Full-duplex)
Communication speed	9600bps
Start bit	1bit
Data length	8bits
Parity	Even number parity
Stop bit	1bit
Error detection	Vertical parity and horizontal parity
Signal mode	According to RS-485 standard

The setting change for communication conditions can be done by the use of the display panel. How to change this setting, please refer to the following contents

5.1 How to set the transmission speed of communication

The transmission speed of the communication can be set by the use of the display panel. Initially, the transmission rate has been set 9,600 bps (Initial setting 5).

Setting Value	Transmission Speed
1	600bps
2	1,200bps
3	2,400bps
4	4,800bps
5	9,600bps
6	14,400bps
7	19,200bps
8	28,800bps
9	31,250bps

(1) Change display-mode

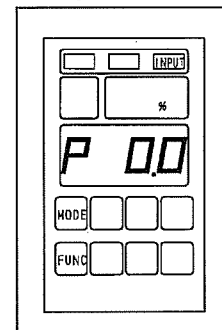
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.1-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.1-1

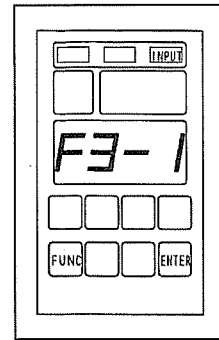


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.1-2)

Fig. 5.1-2

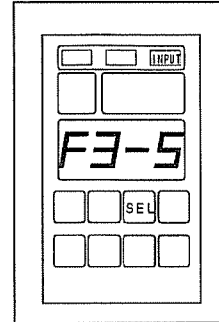


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.1-3)

Fig. 5.1-3



(4) Check the transmission speed of communication

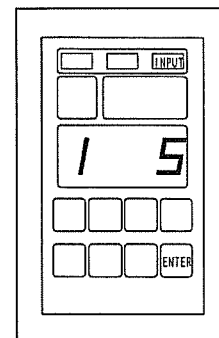
If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication.

The left one digit display 4 digit [1], the left 2-3 digit display blank, please check to see. (Fig. 5.1-4)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the transmission speed of communication.

Fig. 5.1-4



(5) Change the transmission speed of communication

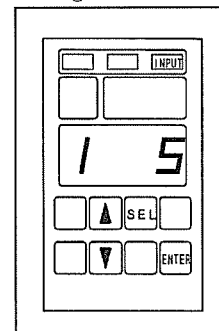
Initially, the transmission rate has been set 9,600 bps (Initial setting 5).

After setting the desired set values to the transmission speed of communication working in key, [ENTER] key please. (Fig. 5.1-5)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.1-5



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the transmission speed of communication for the changed set values.

In display of the transmission speed of communication,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display .

if the [SEL] key is pressed, switches to the next display the transmission mode of communication.

5.2 How to set the transmission mode of communication

The transmission mode of communication can be set by the use of the display panel.

Initially, transmission mode of communication (data format) has been set data length 8 bits, parity even parity, stop bits 1 bit (Initial setting 3).

Setting Value	Data Length	Parity	Stop Bit
1	8	None	1
2	8	Odd number	1
3	8	Even number	1
4	8	None	2
5	8	Odd number	2
6	8	Even number	2

(1) Change display-mode

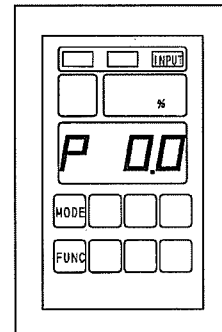
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.2-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.2-1

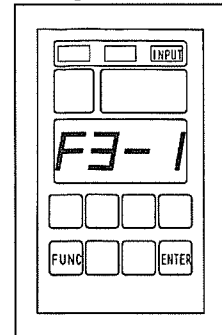


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.2-2)

Fig. 5.2-2

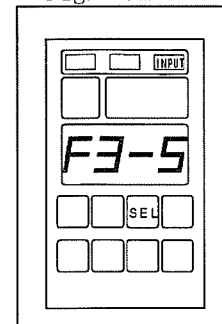


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.2-3)

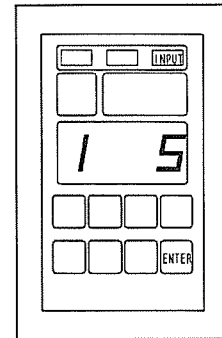
Fig. 5.2-3



(4) Change the display settings of communication parameters

If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication. (Fig. 5.2-4)

Fig. 5.2-4



(5) Check the transmission mode of communication

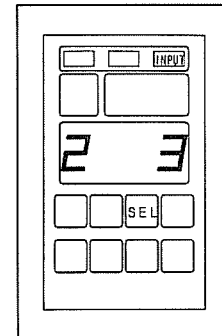
If the [SEL] key is pressed down once, the display content is switched to the display of the transmission mode of communication.

The left one digit display 4 digit [2], the left 2-3 digit display blank, please check to see. (Fig. 5.2-5)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the transmission mode of communication.

Fig. 5.2-5



(6) Change the transmission mode of communication

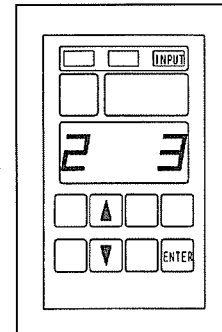
Initially, transmission mode of communication (data format) has been set data length 8 bits, parity even parity, stop bits 1 bit (Initial setting 3).

After setting the desired set values to the transmission mode of communication working in key, [ENTER] key please. (Fig. 5.2-6)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.2-6



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the transmission mode of communication for the changed set values.

In display of the transmission speed of communication,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display .

if the [SEL] key is pressed, switches to the next display the addition of CR code of communication text.

5.3 How to the addition of CR code of communication text

Addition of CR code of communication text can be set by the use of the display panel.

Initially, addition of CR code of communication text has been set not added as the terminator of the message(Initial setting 0).

Setting Value	Features
0	The CR code is not added as the terminator of the message. (usually)
1	The CR code is added as the line terminator of the message.

(1) Change the display-mode

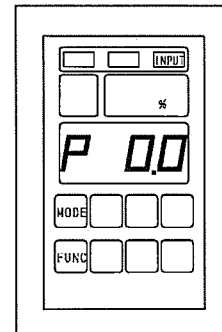
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.3-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.3-1

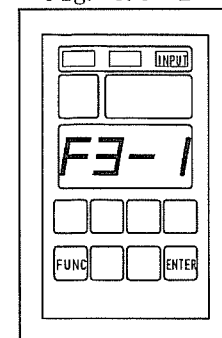


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.3-2)

Fig. 5.3-2

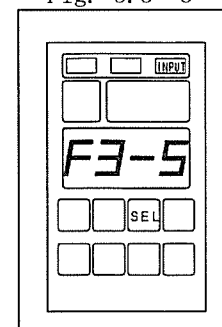


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.3-3)

Fig. 5.3-3

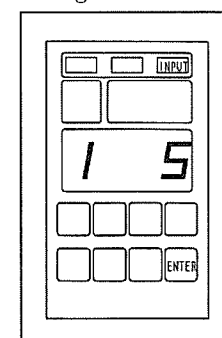


(4) Change the display settings of communication parameters

If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication.

(Fig. 5.3-4)

Fig. 5.3-4



(5) Check the addition of CR code of communication text

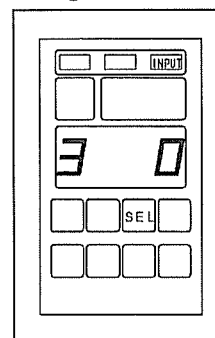
If the [SEL] key is pressed down twice, the display content is switched to the display of the addition of CR code of communication text.

The left one digit display 4 digit [3], the left 2-3 digit display blank, please check to see. (Fig. 5.3-5)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the addition of CR code of communication text.

Fig. 5.3-5



(6) Change the addition of CR code of communication text

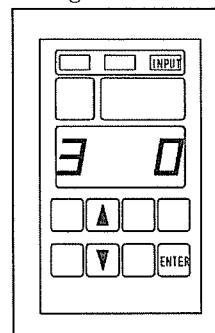
Initially, addition of CR code of communication text has been set not added as the terminator of the message (Initial setting 0).

After setting the desired set values to the addition of CR code of communication text working in key, [ENTER] key please. (Fig. 5.3-6)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.3-6



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the addition of CR code of communication text for the changed set values.

In display of the addition of CR code of communication text,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display.

if the [SEL] key is pressed, switches to the next display the BCC check of reception text.

5. 4 How to the BCC check of reception text

BCC check of reception text can be set by the use of the display panel.

Initially, the confirmation operation of BCC has been set not done(Initial setting 1).

Setting Value	Features
0	The confirmation operation of BCC is not done.
1	The confirmation operation of BCC is done. (usually)

(1) Change display-mode

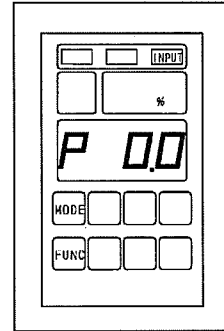
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.4-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.4-1

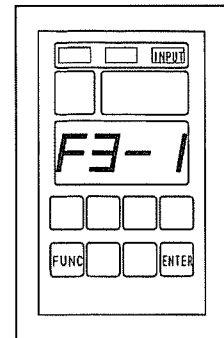


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.4-2)

Fig. 5.4-2

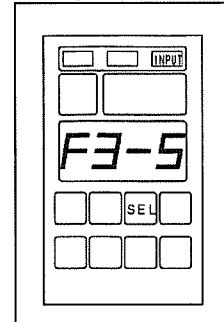


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.4-3)

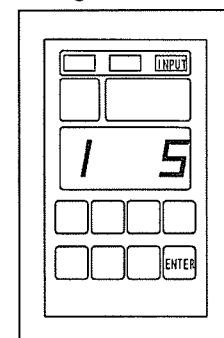
Fig. 5.4-3



(4) Change the display settings of communication parameters

If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication. (Fig. 5.4-4)

Fig. 5.4-4



(5) Check the BCC check of reception text

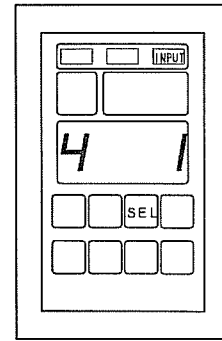
If the [SEL] key is pressed down three times, the display content is switched to the display of the transmission mode of communication.

The left one digit display 4 digit [4], the left 2-3 digit display blank, please check to see. (Fig. 5.4-5)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the BCC check of reception text.

Fig. 5.4-5



(6) Change the BCC check of reception text

Initially, the confirmation operation of BCC has been set not done (Initial setting 1).

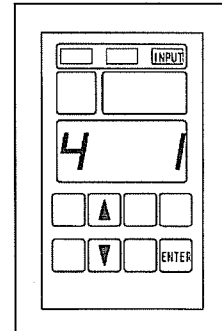
After setting the desired set values to the BCC check of reception text working in key, [ENTER] key please.

(Fig. 5.4-6)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.4-6



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the BCC check of reception text for the changed set values.

In display of the BCC check of reception text,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display .

if the [SEL] key is pressed, switches to the next display the time of reception time-out.

5.5 How to the time of reception time-out

Time of reception time-out can be set by the use of the display panel.

Initially, the time of reception time-out has been set 500mS(Initial setting 50).

Setting Value

10 ~ 999 (unit 10mS)

(1) Change display-mode

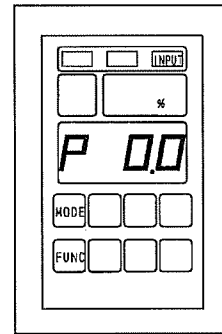
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.5-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.5-1

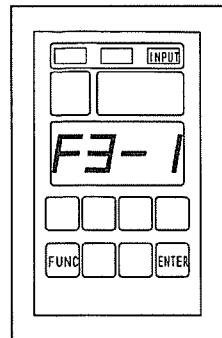


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.5-2)

Fig. 5.5-2

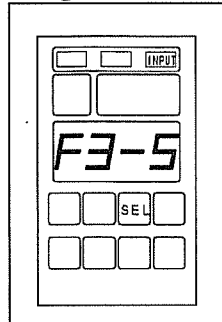


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.5-3)

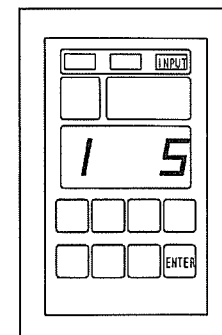
Fig. 5.5-3



(4) Change the display settings of communication parameters

If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication. (Fig. 5.5-4)

Fig. 5.5-4



(5) Check the time of reception time-out

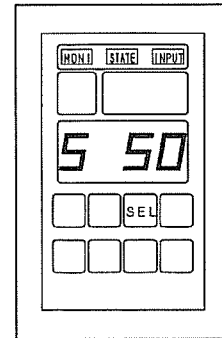
If the [SEL] key is pressed down four times, the display content is switched to the display of the addition of CR code of communication text.

The left one digit display 4 digit [5], please check to see. (Fig. 5.5-5)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the time of reception time-out.

Fig. 5.5-5



(6) Change the time of reception time-out

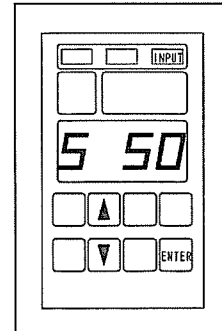
Initially, the time of reception time-out has been set 500mS(Initial setting 50).

After setting the desired set values to the time of reception time-out working in key, [ENTER] key please. (Fig. 5.5-6)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.5-6



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the time of reception time-out for the changed set values.

In display of the time of reception time-out,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display .

if the [SEL] key is pressed, switches to the next display the transmission waiting time.

5.6 How to the transmission waiting time

Transmission waiting time can be set by the use of the display panel.
Initially, the transmission waiting time has been set 0mS(Initial setting 0).

Setting Value

0 ~ 999 (unit 1mS)

(1) Change display-mode

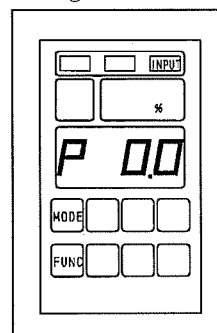
If the [MODE] key is pressed while the [FUNC] key is being pressed down, the display mode is switched.

Press several times, the display-mode of display panels show "INPUT". (Fig. 5.6-1)

"MONI" mode if you are viewing, press twice.

"STATE" mode if you are viewing, press once.

Fig. 5.6-1

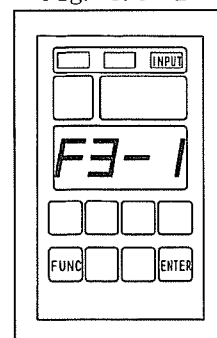


(2) Change in input mode

If the [ENTER] key is pressed while the [FUNC] key is being pressed down, the display content is switched to sub-mode.

Pressing once, the display is specialty monitor display "F3-1" of the sub-mode. (Fig. 5.6-2)

Fig. 5.6-2

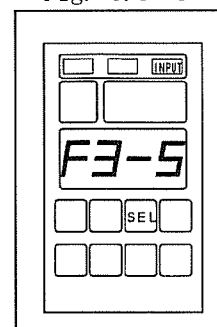


(3) Change in special monitor display

If the [SEL] key is pressed down, the specialty monitor display is switched.

Press four times, the display is specialty monitor display "F3-5" of the sub-mode. (Fig. 5.6-3)

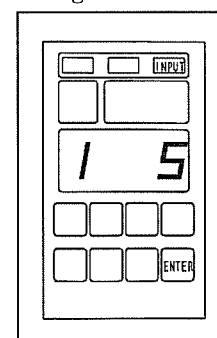
Fig. 5.6-3



(4) Change the display settings of communication parameters

If the [ENTER] key is pressed down, the display content is switched to the setting change display for communication. (Fig. 5.6-4)

Fig. 5.6-4



(5) Check transmission waiting time

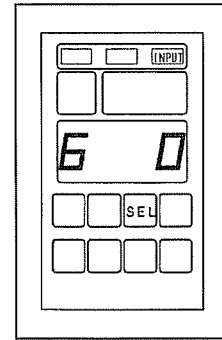
If the [SEL] key is pressed down five times, the display content is switched to the display of the transmission mode of communication.

The left one digit display 4 digit [6], please check to see. (Fig. 5.6-5)

If are different, (1) from Section Please try again.

Right one digit display 4 digit represents the set values of the transmission waiting time.

Fig. 5.6-5



(6) Change the transmission waiting time

Initially, the transmission waiting time has been set 0mS(Initial setting 0).

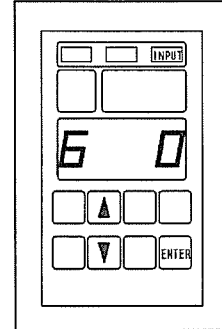
After setting the desired set values to the transmission waiting time working in key, [ENTER] key please.

(Fig. 5.6-6)

Change lights from blink, the setting is completed.

Once configure the set values. Also remembers the set values turned off power.

Fig. 5.6-6



In order to reflect the changed set values, once turned off the control power, and please turned on.

By the control power turn on/off, switches to the transmission waiting time for the changed set values.

In display of the transmission waiting time,

if the [MODE] key is pressed while the [FUNC] key is being pressed down, return to the special monitor display .

if the [SEL] key is pressed,

the UF1 unit, for internal display, and press SEL again, return to the beginning of the transmission speed of communication.

the UF3 unit, return to the first display the transmission speed of communication.

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The specifications of this product described in this INSTRUCTION MANUAL may, incident to any improvement in the product, be subject any change without prior notice.

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