

DMS Interface Commissioning Manual

Model: DMS504B51
DMS504B71

	Mar. 01, 2010	
	Conversion table was added	K. Matsuura K. Matsuura K. Wada

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Content

	Items	Page	Remarks
1	Procedure for commissioning		
2	Setting the service PC		
3	Connection to service PC and start		
4	Operation check		
5	Binding work		
6	LED Indication		
7	Terminal resistance		
8	Appendix 1 Service PC Command Function		
9	Check list		
10	Troubleshooting		
11	Celsius-Fahrenheit Conversion Table		

Foreword

Before using DMS Interface, it is necessary to commission before starting normal operations.

■ Preparation of test

[What to be prepared]

- (1) PC: 1 unit
- (2) RS232C Cross cable: 1 (same as the one used for intelligent Touch controller)
- (3) VT terminal emulation software (Hyperterminal, Tera Term, etc.): One set

■ Specifications of Devices

Item	Specifications	
Model	DMS504B51	DMS504B71
Dimensions	168 (W) x 260 (H) x 50 (D) mm	
Weight	1.5 kg	
Power source	Single phase AC100~240V 50/60Hz	Single phase AC24V 60Hz
Power consumption	Max. 5W	
Operable temperature range	-10 to 50 °C	
Storage temperature range	-20 to 60 °C	
Humidity	Up to 95% (No condensation)	
Installation	Mounted to indoor distribution board	
LonWorks®	FT- x 1 (Free topology 78Kbps)	
Contact input	Forced OFF x 1 (A/Cs en bloc)	

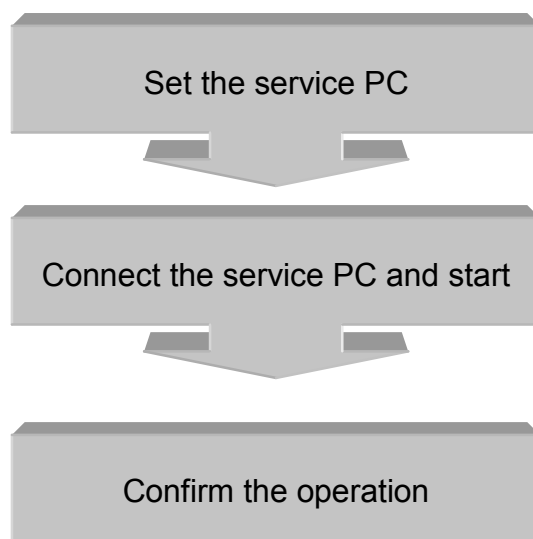
1. Procedure for commissioning

The procedure for commissioning DMS Interface is shown below:



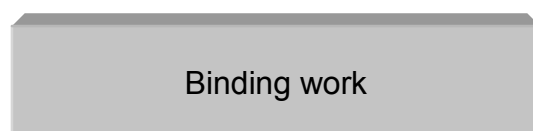
**Make sure that the battery switch is turned ON (see the figure in P.13).
If it is cut OFF, turn it ON. (see the installation manual)**

The work to be carried out by the service department



The work to be carried out by Network Integrator (NI)

Note: This is not a work to be carried out by the service department.



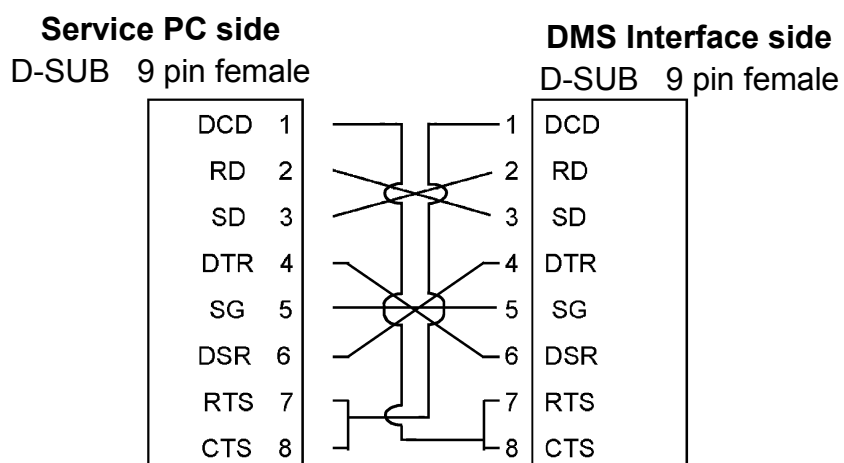
2. Setting the Service PC

2.1 Communication specification

Communication interface	RS232C
Transmission speed	9600bps
Synchronization system	Start-Stop synchronization
Communication control procedure	
Transmission code	8 bit + Non-parity + 1 Stop-bit
Connector	D-SUB 9 pin Female — Female

2.2 RS232C Cable Connecting diagram

Use the cables shown below:



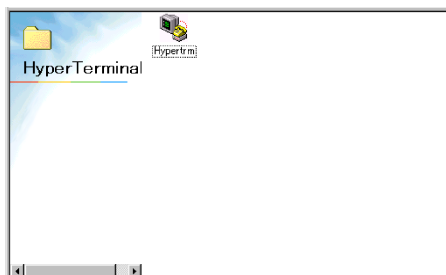
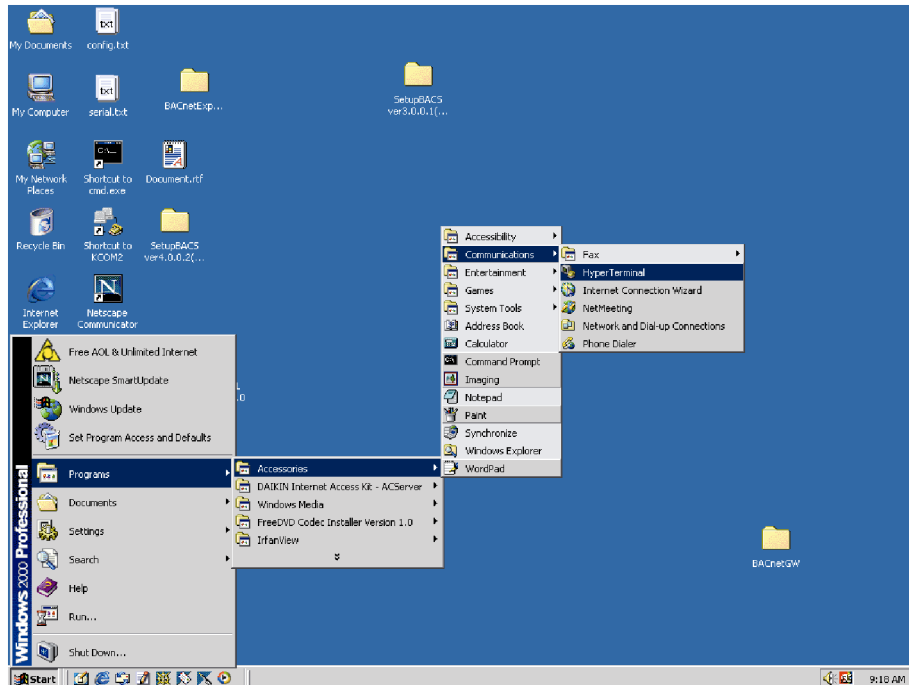
[For reference]

To be used for commissioning of intelligent Touch controller
The cable RS232C is usable.

Example of usable communication cable)
Sanwa Supply Ltd.
Cable RS232C
KRS-403XF-07K
Cross cable 0.75 mm,

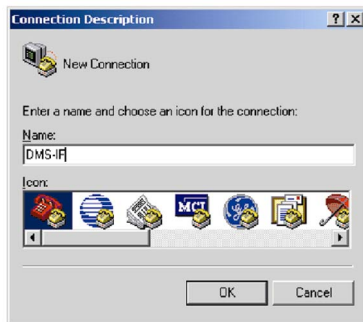
2.3 Hyperterminal (VT terminal emulation) setting

(1) Select [Start]—[Program]—[Accessory]—[Communication]—[Hyperterminal].



(2) Double-click Hypertrm.

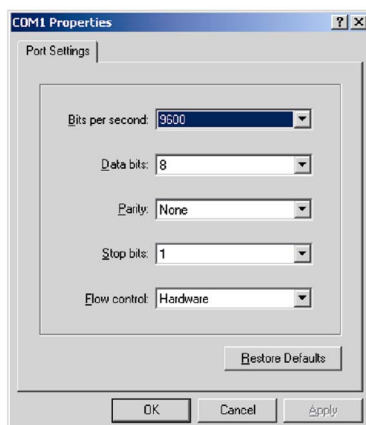




(3) Enter DMS Interface.

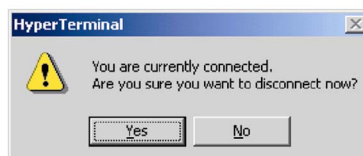


(4) Set the connection method to "Com1" and press the key OK.

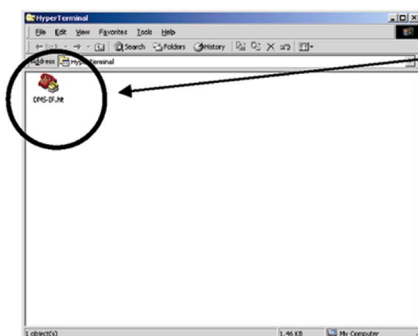


(5) Set the port as shown left and press the key OK

```
bit/sec      : 9600
data bit     : 8
parity       : none
stop bit     : 1
flow control: hardware
```



(6) When the hyperterminal ends, select "Yes"



(7) Double-click the icon [DMS IF]

The next start is OK by just double-clicking the icon [DMS IF].

3. Connection to service PC and start

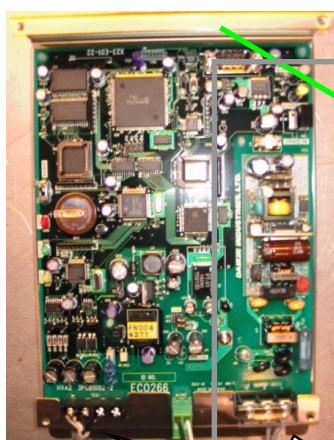
3.1 Wiring

Connect as shown below.

DMS Interface (CN7)

[Caution]

1. Make sure to cut off the power supply to the equipment before opening the upper cover.
2. Make sure to connect the service PC before turning on the power supply to the equipment.
3. Do not touch the control PCB except for the connectors, since the PCB might be damaged by static electricity.
4. To avoid electric shock, do not touch the high voltage side.



Cross cable RS232C (9pin female-9pin female)

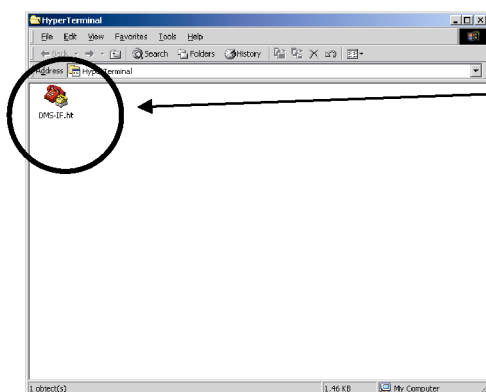


PC (VT terminal emulation software is necessary.)

To avoid electric shock, give caution to high voltage side

3.2 Starting hyperterminal

(1) Select [Start]—[Program]—[Accessory]—[Communication]—Hyperterminal].



(1) Double-click the icon [DMS IF].

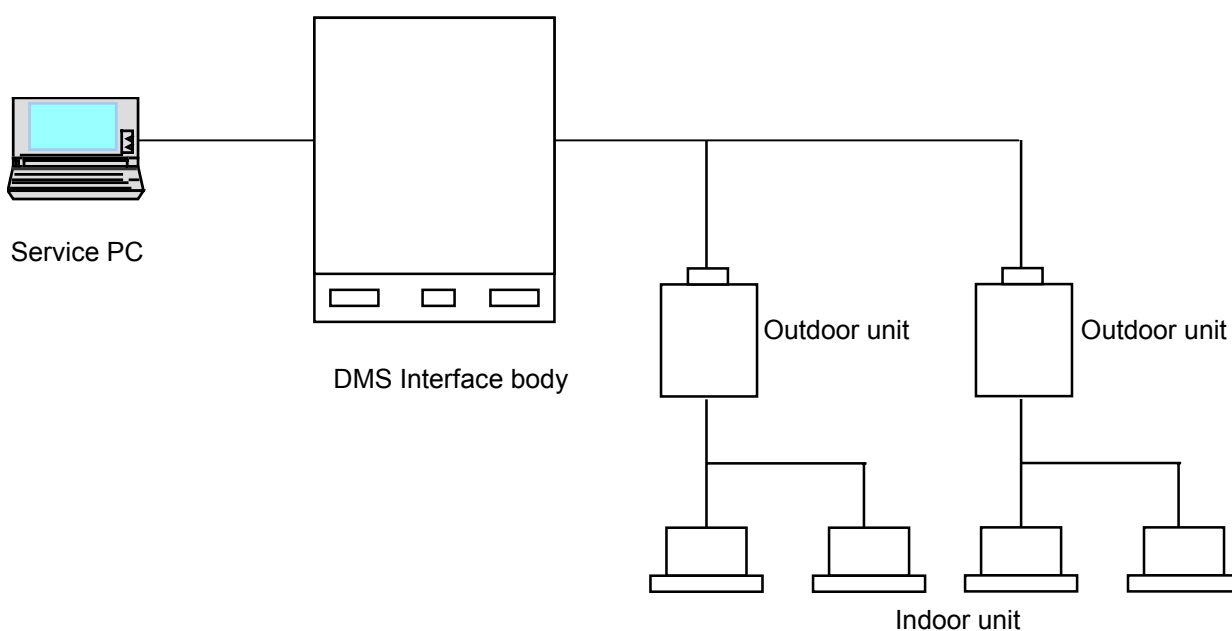
4. Operation check

Carry out ON/OFF operation of each connected indoor unit and check if each indoor unit operates or stops as instructed. If it does, the unit is normal.

[Check point]

1. Check if ON/OFF of all the connected indoor units can be operated from DMS Interface or not.

By carrying out this check, it is possible to check if the centralized addresses of the indoor units are correctly set or not.



Caution: If the ON/OFF operation of the air conditioner is carried out by the service PC and if this air conditioner is to be monitored by the service PC, the monitoring must be initiated one minute or more after the ON/OFF operation. It is because the DMS Interface retains the instructed value for one minute after the ON/OFF operation and then responds. After one minute elapses, it responds to the actual operating conditions collected through the DIII network.

4.1 Check the status of DIII Network



After the hyperterminal rises, press any key.
If the key is pressed, prompt **LONGW>** appears.
(If the key H is pressed, it indicates command help.)

LONGW> **Press C DIII-NET check**

LONGW> (C)heck D3-NET Interface

OK : D3 Master/Slave setting
OK : D3 Address setting
OK : D3 Pole detection (photo coupler)

Indication when master duplication error occurs
Error MA : Duplicate D3 master
Correct the Master/Slave connector and
Restart LON Gateway

Indication when D3 address duplication occurs
Error MC : Duplicate D3 address
Correct the address and
Restart LON Gateway

Indication when D3 polar decision error occurs
(photo coupler error)
Error M1 : D3 Pole Error
Check the photo coupler

LONGW>

- (1) Enter C
- (2) Confirm that the results are all OK

Note) In case of NG, see the left

4.2 Indoor unit operation

LONGW> **Press S AC ON/OFF command**

LONGW> (S)et AC : ON or OFF

Which AC do you wish to set? [1-64] Enter **1 (+Enter)**

Enter 1 (ON) or 0 (OFF) for AC13 Enter **1 (+Enter)**

Set 1 AC13 ON Complete (No.1 unit operation command)

- (1) Enter S
- (2) Enter the indoor unit No. you wish to ON/OFF
- (3) Enter "1" for ON
Enter "0" for OFF
- (4) Confirm that the designated unit operates ON and OFF as indicated.
- (5) Carry out the above work to all the connected units.

[Caution]

The relation between the indoor unit No. to be entered and the centralized address is as follows:

Indoor unit No.	Centralized address	Indoor unit No.	Centralized address
1	1-00	33	3-00
...	...	...	...
16	1-15	48	3-15
17	2-00	49	4-00
...	...	...	...
32	2-15	64	4-15

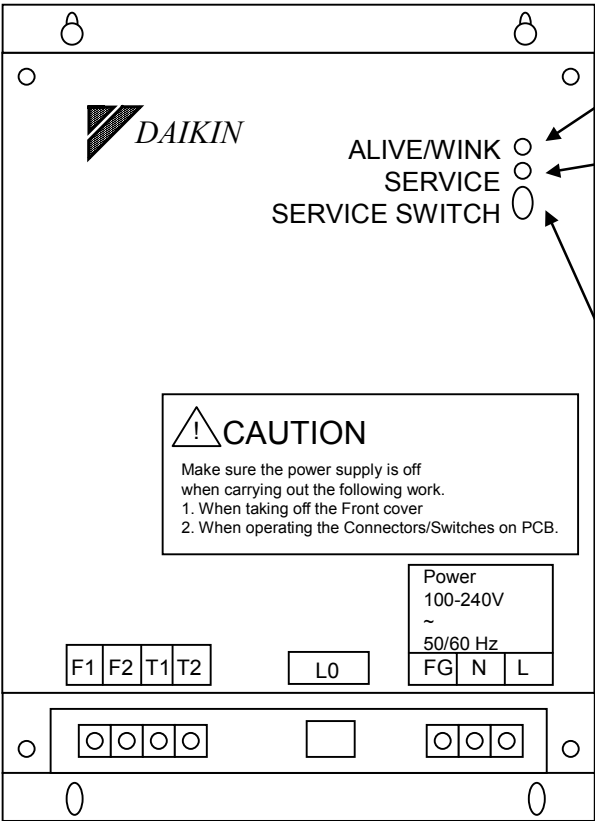
5. Binding work

This work is to be carried out by NI and not by the service department.

[Outline]

The binding work is a work to set what kind of equipment is connected to LONWORKS® network.

6. LED Indication



ALIVE/WINK LED
MICROCOMPUTER NORMAL LED
When in normal operation, it flashes in 0.4 sec cycles

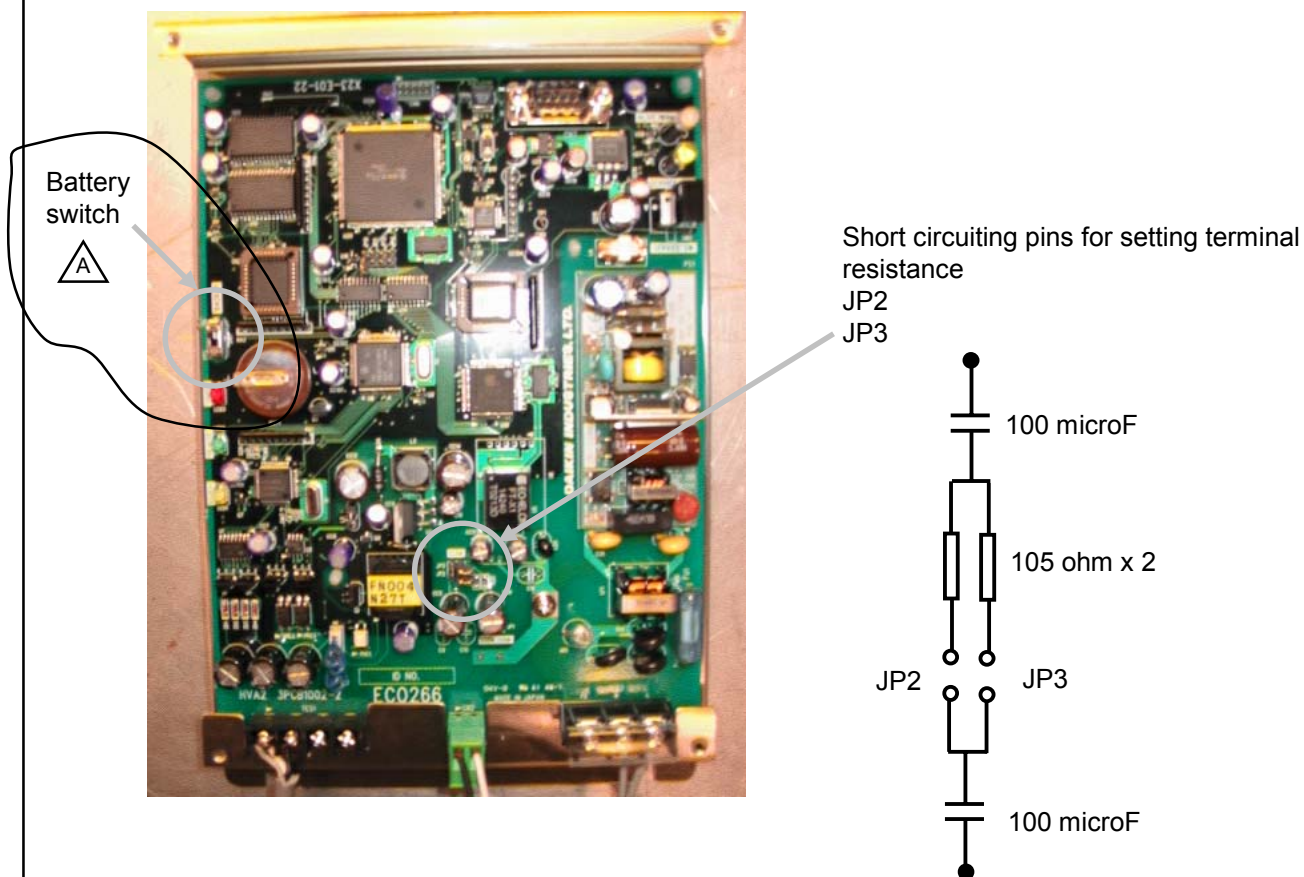
SERVICE LED

LED	Details
OFF	During normal operation
Flashes	The bind data set by NI has disappeared due to some reason. Note) NI needs to redo the bind work.
OFF	While the service switch is being pushed, it flashes. (if let go, LED turns OFF.) Even if the switch is not being pushed, if LED turns ON, the body is malfunctioning. Note) Replace the body.

When NI carries out the binding work, this switch must be pushed.

7. Terminal resistance

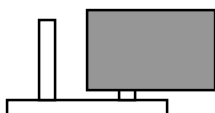
This setting is to be carried out only when it is requested by NI.
When no request is made, it is not required to carry out the setting.



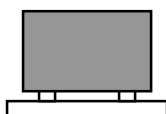
— Terminal resistance circuit —

7.1 How to set terminal resistance

The status of short circuiting socket without terminal resistance (the status when shipped out of the factory)



The status of short circuiting socket with terminal resistance



Note) If the terminal resistance is 105 ohms,
set the short circuiting socket only to JP2 as shown left.

Note) If the terminal resistance is 52.5 ohms,
set the short circuiting socket to both JP2 and JP3 as shown left.

8. Appendix 1 Service PC Command Function

(1) Check the D3 NET status: C command

Indicate the 3 kinds of status values related to D3 NET which are detected when the power supply is turned ON or when restarted.

- * D3 master duplication error
- * D3 address duplication (existence of equipment having centralized address 0x04 as same as DMS Interface)
- * D3 polar decision error (photo coupler error)

(2) AC ON-OFF command : S command

After designating the AC No. [1-64], issue ON or OFF command.

(3) Monitor the ON-OFF status of AC : G command

After designating the AC No. [1-64], indicate the current ON-OFF status.

(4) DMS Interface restart command : R command

Restart DMS Interface.

(5) Indication of Neuron ID : N command

Indicate the ID of mounted Neuron Chip.

(6) Indication of Version No. : V command

Indicate the software version No.

(7) Indication of Log : L command

Indicate the Log of past 31 cases which software recorded.

(8) Indication of Help : H command

Indicate the command list.



☆ Examples of operation

LONGW> (H)elp with commands

Press H Command list

H -- (H)elp with commands.
 C -- (C)heck D3-NET Interface.
 S -- (S)et AC : ON or OFF.
 G -- (G)et AC Status : ON or OFF.
 R -- (R)estart LON Gateway.
 N -- Print (N)euron ID.
 V -- Print (V)ersion Number.
 L -- Print (L)ogs.

LONGW> (C)heck D3-NET Interface

Press C Check the D3 NET status

OK : D3 Master/Slave setting.
 OK : D3 address setting.
 OK : D3 Pole detection (photo coupler).

Indication of Master duplication error

Error MA : Duplicate D3 master.
 Correct the Master/Slave connector
 and Restart LON Gateway.

Indication of D3 address duplication error

Error MC : Duplicate D3 address.
 Correct the address
 and Restart LON Gateway.

Indication of D3 polar decision error (photo coupler error)

Error M1 : D3 Pole Error.
 Check the photo coupler.

LONGW>

☆ Operation example (continued)

LONGW> (R)estart LON Gateway **Press R** Restart DMS IF
 Are you sure to restart LON Gateway? Hit Y or [N]:Y **Press Y**
 Again, Restart LON Gateway, OK? Hit Y or [N]: **Press Y** again
 DMS IF restart at this point

Indication of cancellation while processing

LONGW> (R)estart LON Gateway
 Are you sure to restart LON Gateway? Hit Y or [N]:N
 Not restart LON Gateway.
 LONGW> (R)estart LON Gateway
 Are you sure to restart LON Gateway? Hit Y or [N]:Y
 Again, Restart LON Gateway, OK? Hit Y or [N]:N
 Not restart LON Gateway.
 LONGW>

LONGW> (S)et AC : ON or OFF **Press S** AC ON-OFF command
 Which AC do you wish to set? [1-64] Enter : **13 (+Enter)**
 Enter 1(ON) or 0(OFF) for AC:13 Enter : **1 (+Enter)**
 set AC13 ON Complete (No.13 Operation command)
 LONGW> (G)et AC Status : ON or OFF **Press G** Monitoring of AC status
 Which AC do you wish to see? [1-64] Enter : **13 (+Enter)**
 AC 13 is ON state **Press N** Indication of NeuronID
 LONGW> Print (N)euron ID
 NID is 0:a2:3:36:1:0 **Press V** Indication of version
 LONGW> Print (V)ersion Number
 Ver.is 1.00 **Press L** Indication of Log
 LONGW> Print (L)ogs
 0Day 00:00:00 from Start: Info : LON Gateway Started OK
 0Day 00:08:03 from Start: Info : Restarted by Service Man
 ⋮ (Indication of 31 cases)
 NO DATA
 Running time is 98Day 12:34:21 from Start (Elapsed time from the latest restart)
 LONGW>

☆ The list of recorded sentences in LOG

Information

"Info : LON Gateway Started OK"	Start LON Gateway
"Info : Restarted by Service Man"	DMS IF is restarted by serviceman PC
"Info : Found MIP reset"	NeuronChip is initiated from LON network
"Info : miRESET Sent OK"	Initiated NeuronChip
"Info : miFLUSH_CANCEL Sent OK"	Started NeuronChip
"Info : Reopened network driver"	Reopened Interface for use in LON i/f

Error information

"Error MA : Duplicate D3 master."	D3 Master duplication error
"Error MC : Duplicate D3 address."	D3 Address duplication (0x04) error
"Error M1 : D3 Pole Error."	D3 Pole judgement error (photo coupler error)
"Error : D3 Send Timeout."	D3 Transmission of time out error
"Error : D3 Send buffer Full."	D3 Transmission of buffer full error
"Error : H8Comm: Packet length Error"	D3 There is an error in receiving packet size
"Error : NvCP on BBRAM. Checksum Error"	There was an error in configuration parameter on nonvolatile memory
"Error : NvConfig on BBRAM. Checksum Error"	There was an error in bind information on nonvolatile memory
"Error : LDBUF Overflow"	Lon->D3 notification overflowed from buffer
"Error : Could not reopen network driver"	Could not reopen Interface for use in LON i/f

9. Check list

Test No.	Items	Indication of results	Decision	Criteria
	• Check the DIII NET status • Issue C command. No error in indication is acceptable • Confirm AC ON-OFF • Issue AC operation command (S command) and operate the corresponding indoor unit Note) To be carried out by each connected indoor unit.			All indication shall be OK Confirm with all the indoor units

10. Troubleshooting

No.	Items	Check point	Measures
1	SERVICE LED flashes	Is the backup battery effective switch turned ON?	Information on settings related to LONWORKS® network has disappeared. After setting the switch to effective, request NI to redo the binding work.
2	SERVICE LED lights up	—	It is a failure of hardware. Replace the body.
3	While checking the DIII NET status, the following error was indicated. Error MA : Duplicate D3 master. Error MC : Duplicate D3 address. Error M1 : D3 Pole Error.	Master duplication error It occurs when used together with the other centralized equipment. There are multiple units of centralized equipment with connectors for setting centralized masters. D3 address duplication error Are multiple DMS Interface mounted on DIII NET? Is intelligent manager mounted on DIII NET? D3 Pole decision error	As for the equipment with connectors for setting the centralized master, the number allowed to exist on the DIII NET is no more than one. Remove all the connectors except for DMS Interface for setting the centralized masters from the centralized equipment (It is necessary to reset the power supply of all the centralized equipment) Note) If the centralized equipment with a function to calculate the power rates (such as intelligent Touch controller) is used together, set this equipment to become the centralized master. The equipment shown left cannot be used together. Confirm which equipment can be used together for centralization. Check to be sure that voltages at the DIII Net terminals (F1 and F2) fall in the range of 16VDC±15%. If the voltages are 0V, there may be a short circuit in the DIII Net communication cable. Check for the communication cable. It is an error of control PCB. Replace the body.



11. Celsius-Fahrenheit Conversion Table

Celsius to Fahrenheit: $F = (9/5) C + 32$

Fahrenheit to Celsius: $C = (F - 32) * 5/9$

Fahrenheit	Celsius
14	-10.0
15	-9.4
16	-8.9
17	-8.3
18	-7.8
19	-7.2
20	-6.7
21	-6.1
22	-5.6
23	-5.0
24	-4.4
25	-3.9
26	-3.3
27	-2.8
28	-2.2
29	-1.7
30	-1.1
31	-0.6
32	0.0
33	0.6
34	1.1
35	1.7
36	2.2
37	2.8
38	3.3
39	3.9
40	4.4
41	5.0
42	5.6
43	6.1
44	6.7
45	7.2
46	7.8
47	8.3
48	8.9
49	9.4
50	10.0
51	10.6
52	11.1
53	11.7
54	12.2
55	12.8
56	13.3
57	13.9
58	14.4
59	15.0

Fahrenheit	Celsius
60	16.0
61	16.1
62	16.7
63	17.2
64	17.8
65	18.3
66	18.9
67	19.4
68	20.0
69	20.6
70	21.1
71	21.7
72	22.2
73	22.8
74	23.3
75	23.9
76	24.4
77	25.0
78	25.6
79	26.1
80	26.7
81	27.2
82	27.8
83	28.3
84	28.9
85	29.4
86	30.0
87	30.6
88	31.1
89	31.7
90	32.0

Fahrenheit	Celsius
91	32.8
92	33.3
93	33.9
94	34.4
95	35.0
96	35.6
97	36.1
98	36.7
99	37.2
100	37.8
101	38.3
102	38.9
103	39.4
104	40.0
105	40.6
106	41.1
107	41.7
108	42.2
109	42.8
110	43.3
111	43.9
112	44.4
113	45.0
114	45.6
115	46.1
116	46.7
117	47.2
118	47.8
119	48.3
120	48.9
121	49.4
122	50.0