ADVANCED AND EVER ADVANCING **MITSUBISHI ELECTRIC**

MITSUBISHI

PROGRAMMABLE CONTROLLERS
MELSEC-F

HARDWARE MANUAL

FX2N-64DP-M Profibus-DP Master Block

FX2N

Foreword

- This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of the FX2N-64DP-M Profibus-DP Master Block. It should be read and understood before attempting to install or use the unit.

- Further information can be found in the FX2N Series Hardware Manual, FX Series Programming Manual II, MELSEC ProfiMap Configuration System for Open Networks Software Manual and manual of Profibus-DP slave units.

- If in doubt at any stage of the installation of FX2N-64DP-M Profibus-DP Master Block always consult a professional electrical engineer who is qualified and trained to the local and national standards which apply to the installation site.

- If in doubt about the operation or use of FX2N-64DP-M Profibus-DP Master Block please consult the nearest Mitsubishi Electric distributor.

- This manual is subject to change without notice.

MITSUBISHI

FX2N-64DP-M Profibus-DP Master Block

Hardware Manual

Manual number : JY992D82901

Manual revision : D

Date : March 2001

MITSUBISHI

Guidelines for the Safety of the User and Protection of the FX2N-64DP-M Profibus-DP Master Block.

This manual provides information for the use of the FX2N-64DP-M Profibus-DP Master Block. The manual has been written to be used by trained and competent personnel. The definition of such a person or persons is as follows:

a) Any engineer who is responsible for the planning, design and construction of automatic equipment using the product associated with this manual, should be of a competent nature, trained and qualified to the local and national standards required to fulfill that role. These engineers should be fully aware of all aspects of safety with regards to automated equipment.

b) Any commissioning or service engineer must be of a competent nature, trained and qualified to the local and national standards required to fulfill that job. These engineers should also be trained in the use and maintenance of the completed product. This includes being completely familiar with all associated documentation for said product. All maintenance should be carried out in accordance with established safety practices.

c) All operators of the completed equipment should be trained to use that product in a safe and co-ordinated manner in compliance to established safety practices. The operators should also be familiar with documentation which is connected with the actual operation of the completed equipment.

Note : The term 'completed equipment' refers to a third party constructed device which contains or uses the product associated with this manual.

MITSUBISHI

Note's on the Symbols Used in this Manual

At various times through out this manual certain symbols will be used to highlight points of information which are intended to ensure the users personal safety and protect the integrity of equipment. Whenever any of the following symbols are encountered its associated note must be read and understood. Each of the symbols used will now be listed with a brief description of its meaning.

Hardware Warnings

1) Indicates that the identified danger **WILL** cause physical and property damage.

2) Indicates that the identified danger could **POSSIBLY** cause physical and property damage.

3) Indicates a point of further interest or further explanation.

Software Warnings

4) Indicates special care must be taken when using this element of software.

5) Indicates a special point which the user of the associate software element should be aware.

6) Indicates a point of interest or further explanation.

MITSUBISHI

- Under no circumstances will Mitsubishi Electric be liable responsible for any consequential damage that may arise as a result of the installation or use of this equipment.

- All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.

- Owing to the very great variety in possible application of this equipment, you must satisfy yourself as to its suitability for your specific application.

Table of Contents

1.   Introduction

1.1   Features of the 64DP-M

The FX2N-64DP-M Profibus-DP Master Block (hereafter called "64DP-M") is a "Class 1" master for the Profibus-DP network (hereafter called "Profibus-DP"). The FX2N series programmable controller by connecting 64DP-M can read input data from the Profibus-DP slave (hereafter called "DP-slave"), and write output data to the DP-slave.

- Controlled maximum slaves:
  A 64DP-M can control a maximum of 60 slaves using repeaters on the DP-network.
  For system configuration of the Profibus-DP, refer to section 1.3.

- Configuration setting:
  Configuration of the 64DP-M can be set easily by MELSEC ProfiMap configuration software (V3.00 or more). For MELSEC ProfiMap configuration software (hereafter called "ProfiMap), refer to MELSEC ProfiMap Configuration System for Open Networks Software Manual.

- Communication:
  The 64DP-M supports 9.6k, 19.2k, 93.75k, 187.5k, 500k, 1,500k, 3M, 6M and 12Mbps.
  The 64DP-M can be connected to a Profibus-DP by a standard 9-pin D-SUB connector and shielded twisted pair cable complying with EN50170. See chapter 2.

- Global control:
  The 64DP-M supports Sync global control, Unsync global control, Freeze global control and Unfreeze global control.

◆ MITSUBISHI

1.2 External Dimensions and Each Part Name

Dimensions: mm (inches)   MASS (Weight): Approx. 0.4kg (0.88 lbs)
Accessory: Special block No. label

Figure 1.1: External Dimensions
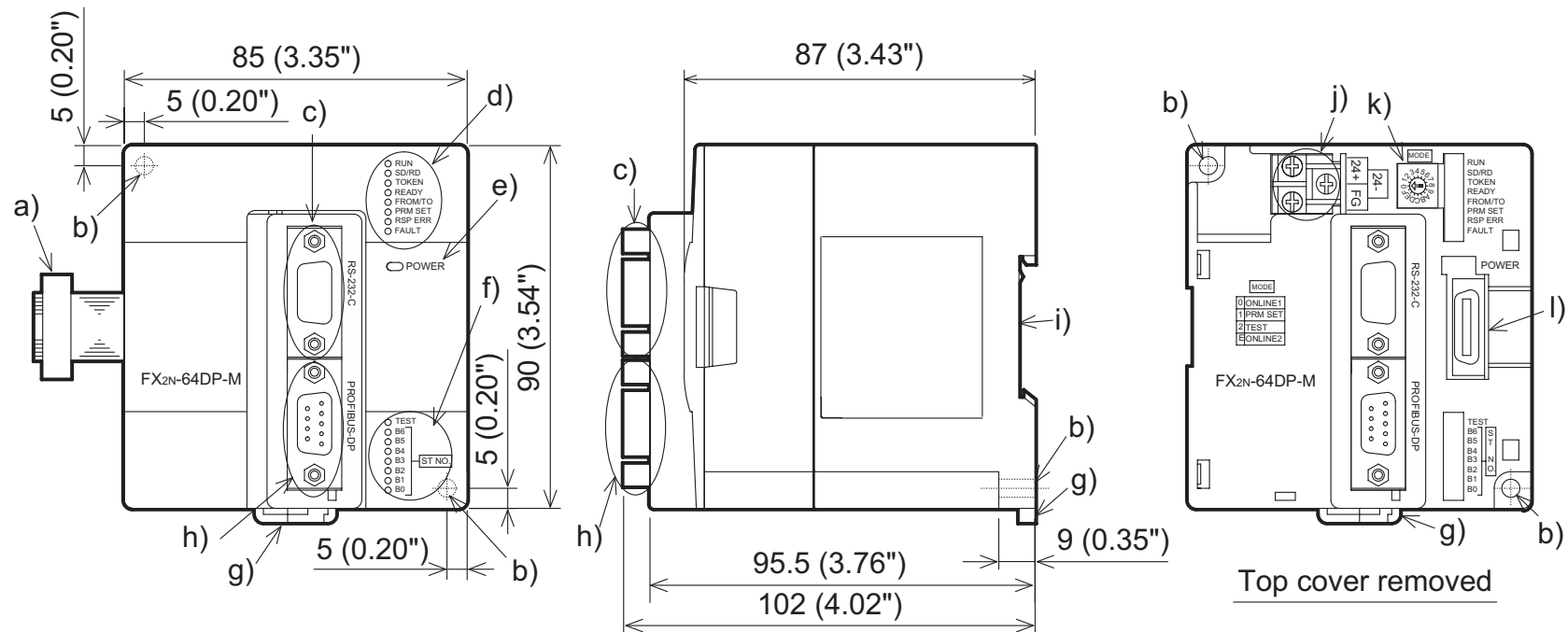
a) Extension cable

b) Direct mounting hole (2-$\varnothing$4.5 (0.18"))

c) RS-232C port (9-pin D-SUB Connector: #4-40unc inch screw thread)
The cable connecting between 64DP-M and personal computer is Blue ProfiCab cable.
For Blue ProfiCab, refer to MELSEC ProfiMap Configuration System for Open Networks
Software Manual.

d) Status LEDs

Table 1.1:　Status LEDs

LED Name	Description
RUN LED	ON: During normal operation OFF: Error
SD/RD LED	Flashes during communication with slave on the Profibus network. The flashing interval is the time interval of the bus parameter's Data Control Time.
TOKEN LED	ON when token is maintained.
READY LED	ON when the Profibus-DP network subscription preparation is completed and during subscription.
FROM/TO LED	ON when a FROM/TO instruction from the programmable controller is operating.
PRM.SET LED	ON (PARAMETER SET) when in the parameter setting mode. When flashing during operation, the parameter is not written.
RSP ERR LED	ON when a communication error occurs.
FAULT LED	ON when an error occurs.

e) POWER LED:　ON when 24V DC power is supplied form the external power supply or
FX2N series PLC.

◢◣ MITSUBISHI

f) TEST LED and STATION LED

Table 1.2:   TEST LED and STATION LED

LED Name	Description
TEST LED	ON when self-diagnosis mode is executing.
STATION LED	Displays the station address (Binary) during normal operation. Displays the test type during self-diagnosis mode. (B0 ~ B6)

g) Hook for mounting DIN rail

h) Profibus-DP communication port
   (9-pin D-SUB Connector: #4-40unc inch screw thread)

i) Groove for mounting DIN rail (DIN 46277<DIN rail width: 35mm (1.38")>)

j) DC power supply terminals (screws terminal: M3)

k) Mode setting switch (Default setting: "0") For mode, refer to Chapter 4.

Table 1.3:   Mode Switch

| Switch No.	Mode
0	ONLINE1 (Normal service mode)
1	PRM SET (Parameter setting mode)
2	TEST (Self diagnostic mode)
E	ONLINE2 (Extended service mode)
3 ~ D, F	Cannot use

l) Extension port

1.2.1   Pin Configuration of Profibus-DP Communication Port

The connector is a 9-pin D-SUB (#4-40unc inch screw thread) type, the pin configuration is shown below.

Figure 1.2: Pin Layout of Profibus-DP Communication Port

● Assigned
○ Not assigned
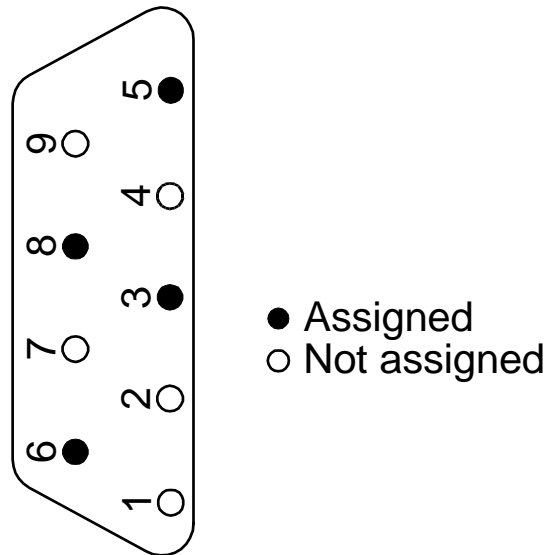
Table 1.4: Profibus-DP Communication Port Pin Configuration

Pin No.	Signal Name	Meaning
3	RXD/TXD-P	Receive/transmit-Data-P
5	DGND	Data Ground
6	VP	Voltage-Plus
8	RXD/TXD-N	Receive/transmit-Data-N
1, 2, 4, 7, 9	NC	Pin not assigned

▲ MITSUBISHI

1.3　System Configuration

1.3.1　Applicable Profibus-DP Network

Note;

- The maximum number of slaves that can be connected to a 64DP-M is 60.

- Number that can be connected for 1 segment
  Masters + slaves + repeaters $\leq$ 32 units

- Number of units that can be connected to the entire network using repeaters.
  Masters + slaves $\leq$ 126 units

- Communications can be conducted via a maximum of 3 repeaters from an arbitrary master or arbitrary slave to an arbitrary master or arbitrary slave. However, the whole network can contain more than 3 repeaters. (See note above.)

Note;

When using a slave with expansion diagnostic information of more than 32 bytes, the network will be limited. Maximum expansion diagnostic information data length is the smaller of the value obtained from a slave address by the following equation or 244 bytes.

Maximum expansion diagnostic information data length (bytes)
$$= [12600 \div N^{*1} - 10] \text{ or } [244]$$

*1 The value of N is the smaller of the value obtained by the following equation or 300.

$$N = [(\text{Max. slave address value} - \text{Min. slave address value} + 1) \times 5] \text{ or } [300]$$

Note:

It is not possible to communicate normally with the slave when the maximum diagnosis information data length (Max_Diag_Data_Len) has been decided by the slave's GSD file is larger than the value obtained by the above expression.
In this case, please try the following things.

1) Make the slave address consecutive number if possible.

2) Change setting so that this value may become small if the maximum diagnosis information data length on the slave side can be set.

3) Reduce connected number of the slave.

⚠ MITSUBISHI

Figure 1.3: Example System Configuration
<Connecting 1 Master (class 1) on the Profibus-DP Network>
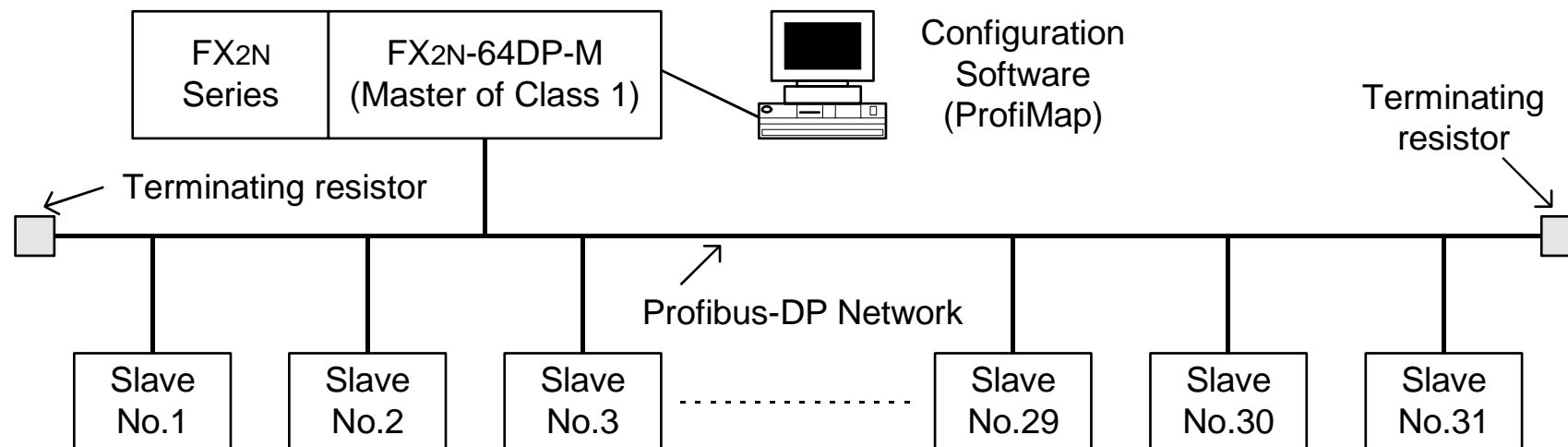
*1 In this system configuration, this 64DP-M can connect maximum 31 slaves. As the total units (masters + slaves + repeaters) is 32 units when DP-network is 1 segment.

△ MITSUBISHI

1.3.2   Applicable Programmable Controller

For setting up a system, the 64DP-M can be connected directly to the FX2N series programmable controller's extension port, or to any other extension unit / block's right side extension port.

The 64DP-M occupies 8 points of I/O on the FX2N's expansion bus. The 8 points can be allocated from either inputs or outputs. The maximum I/O for a FX2N system is 256 I/O.

Table 1.5:   Applicable Programmable Controller

Programmable Controller Type	Version
FX2N series	From first product (All versions)

MENO

2.   Wiring and Mounting

Caution

1) Do not lay signal cable near to high voltage power cable or house them in the same trunking duct. Effects of noise or surge induction may occur. Keep signal cables a safe distance of more than 100 mm (3.94") from these power cables.

2) Ground the shield wire or the shield of a shielded cable at one point on the programmable controller. Do not, however, ground to the same point as high voltage lines.

3) Terminal screws of the 64DP-M are M3 (0.12"), therefore crimp style terminals (see drawing) suitable for use with these screws should be fitted to the cable for wiring.

Figure 2.1: Crimp Terminals

For M3 (0.12")   For M3 (0.12")

6.2 mm (0.24")   6.2 mm (0.24")
or less   or less

4) The terminal tightening torque is 0.5 ~ 0.8 N·m. Tighten securely to avoid malfunction.

5) Cut off all phases of power source before installing / removing or performing wiring work on the master in order to avoid electric shock or damage of product.

6) Replace the provided terminal cover before supplying power and operating the unit after installation or wiring work, in order to avoid electric shock.

⬥ **MITSUBISHI**

2.1 Mounting

2.1.1 Arrangements

The 64DP-M connects on the right side of an FX2N series main unit or extension unit/block (including special function blocks). For further information of mounting arrangements, refer to the hardware manual of the associated main unit.

2.1.2 Mounting

The mounting method of the 64DP-M can be DIN rail mounting or direct wall mounting.

1) DIN rail mounting

   a) Align the upper side of the DIN rail mounting groove of the 64DP-M with a DIN rail[*1] (①), and push it on the rail(②). See Figure 2.2.

   b) When removing the 64DP-M from the rail, the hook for DIN rail is pulled (③), and the 64DP-M is removed (④). See Figure 2.2.

   *1 Uses DIN 46277 <35mm (1.38")>

Figure 2.2: Attach to DIN Rail and Remove from DIN Rail
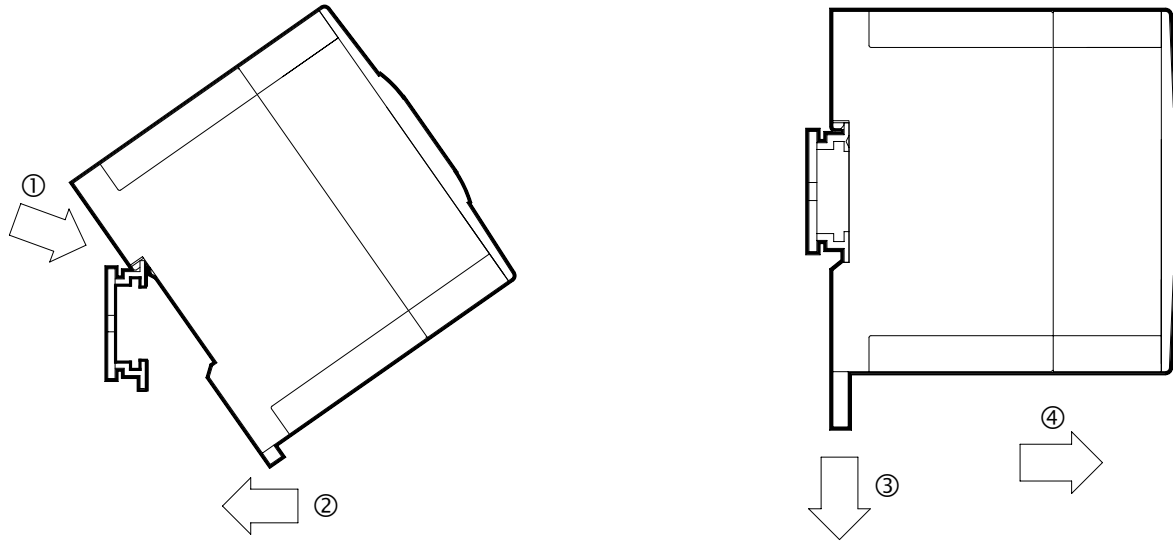
2) Direct mounting to back walls

The 64DP-M can be mounted with an M4 screws by using the direct mounting holes. An interval space between each unit of 1 ~ 2 mm is necessary.

2.2   Wiring

2.2.1   Wiring of Power Supply

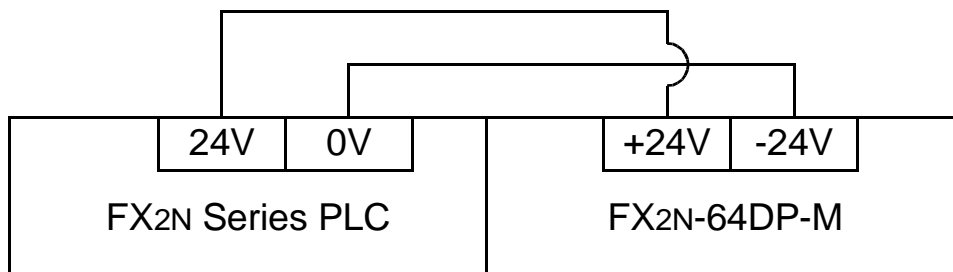The 64DP-M needs power to be supplied from an FX2N series PLC or external power supply.
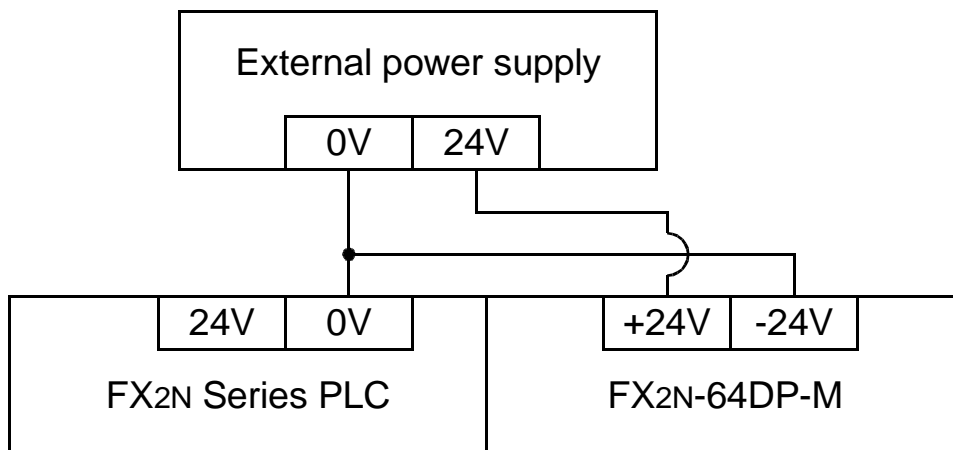
Caution

When the 64DP-M is supplied with 24V DC from external power supply, it needs to be started up at the same time as the FX2N series PLC. If this external power supply is late to start up, FX2N series PLC could be down.

Figure 2.3: Power Supply From PLC

Figure 2.4: Power Supply From External Power Supply

2.2.2 Wiring of Profibus-DP

To connect the 64DP-M to a Profibus-DP network use only the Profibus connectors and shielded twisted-pair cable complying with EN50170. For Profibus connectors see the Profibus connector's manual.

Figure 2.5: Wiring

External power supply or
the service power supply of PLC

For Profibus connection,
refer to Figure 2.6.

Shielded twisted-pair
cable complying with
EN50170 to Profibus-DP
network

| FG | +24 | -24 |

RS-232C port
for connecting
configuration software
(ProfiMap)

FX2N-64DP-M
Profibus-DP Master
Block

Grounding plate

Grounding
resistance of
100 Ω or less
(Class D)

For noise prevention please attach at least 50 mm
(1.97") of the twisted-pair cable along the
grounding plate to which the ground terminal is
connected.

Figure 2.6: Profibus Connection

Shielded twisted-pair cable of
Profibus-DP network

FX2N-64DP-M Profibus-DP
Master Block
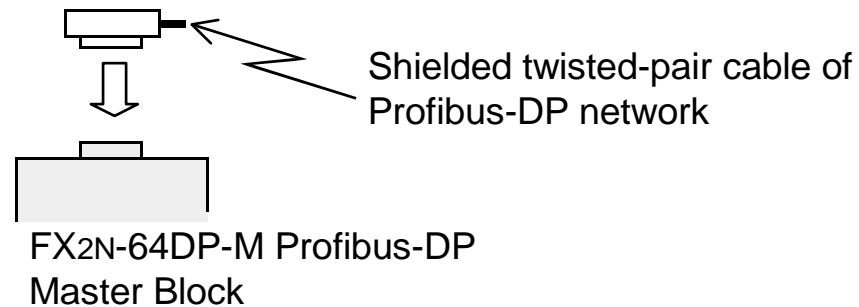
2.2.3   Terminating Resistor

The units at each end of the Profibus-DP network must have a terminating resistor. This will either be in the master or slave unit or in the Profibus connector.

However, the 64DP-M does not have a terminating resistance built-in.

MEMO

3.   Specifications

3.1   General Specifications

Table 3.1:   General Specifications

Items	Description
General specifications excluding Dielectric Withstand Voltage	Same as those of the main unit
Dielectric Withstand Voltage	500 V AC > 1 min., tested between DC power supply terminals and earth
Complies With	UL508

3.2   Power Supply Specifications

Table 3.2:   Power Supply Specifications

Items	Description
External Power Supply	250 mA at 24 V DC
Internal Power Supply	30 mA at 5 V DC supplied via extension cable

3.3   Performance Specifications

Table 3.3:   Performance Specifications

Item		Specifications	
Transmission Type		Bus network	
Unit type		Profibus-DP master Class 1	
Transmission Data (Maximum Exchanged Data Length)		ONLINE1(Normal service mode): 32 bytes / slave ONLINE2(Extended service mode): 244 byte/slave	
Maximum Number of Repeaters / Network		3 units	
Maximum Number of Stations / Segment		32 stations (See Note 1)	See Note 1
Maximum Number of Slaves / Master		60 slaves (See Note 1)	
Number Connection of Nodes (Number of Repeaters)		32, 62 (1), 92 (2), 126 (3) (See Note 1)	
Supported Baud Rates (bps) and Bus Length	9.6k, 19.2k, 93.75k	1,200 m (3,937') / segment	See Note 2
	187.5k	1,000 m (3,281') / segment	
	500k	400 m (1,312') / segment	
	1.5 M	200 m (656') / segment	
	3M, 6M, 12M	100 m (328') / segment	

 MITSUBISHI

Table 3.3: Performance Specifications

Item		Specifications
PNO ID		F264 H
Connector	RS-232C	Port for download configuration (9 pin D-SUB Connector: #4-40unc inch screw thread)
	Profibus-DP Network	Port for Profibus-DP network (9 pin D-SUB Connector: #4-40unc inch screw thread)
Synchronization		Synchronization, unsynchronization, freeze and unfreeze modes shall be supported.
Terminal Resistor		Not built in.
Number of occupied I/O points		8 points taken from the programmable controller extension bus (can be either input or output)
Applicable Programmable Controller		FX2N Series

Table 3.3:   *Performance Specifications*

Item		Specifications
LED indicators	POWER LED	ON when 24V DC power is supplied form the PLC or external power supply.
	RUN LED	ON: During normal operation OFF: Error
	SD / RD LED	Flashes during communication with slave on the Profibus network. The flashing interval is the time interval of the bus parameter's Data Control Time.
	TOKEN LED	ON when token is maintained.
	READY LED	ON when the Profibus-DP network subscription preparation is completed and during subscription.
	FROM/TO LED	ON when a FROM/TO instruction from the programmable controller is operating.
LED indicators	PRM.SET LED	ON (PARAMETER SET) when in the parameter setting mode. When flashing during normal operation, the parameter is not written.
	RSP ERR LED	ON when a communication error occurs.
	FAULT LED	ON when an error occurs.
	TEST LED	ON when self-diagnosis is executing.
	STATION LED	Displays the station address during normal operation.(Binary) Displays the test type during a self-diagnosis. (B0 to B6)

Note 1;

When using a slave with expansion diagnostic information of more than 32 bytes, the network will be limited. Maximum expansion diagnostic information data length is the smaller of the value obtained from a slave address by the following equation or 244 bytes.

Maximum expansion diagnostic information data length (bytes)

$$= [12600 \div N^{*1} - 10] \text{ or } [244]$$

*1 The value of N is the smaller of the value obtained by the following equation or 300.

N = [(Max. slave address value - Min. slave address value + 1) $\times$ 5] or [300]

It is not possible to communicate normally with the slave when the maximum diagnosis information data length (Max_Diag_Data_Len) has been decided by the slave's GSD file is larger than the value obtained by the above expression.
In this case, please try the following things.

1) Make the slave address consecutive number if possible.

2) Change setting so that this value may become small if the maximum diagnosis information data length on the slave side can be set.

3) Reduce connected number of the slave.

Note 2;

Length that the bus can be expanded by using repeaters.

Maximum Bus Length = ("Number of repeaters" + 1) $\times$ "Bus Length / segment"

Table 3.4: Maximum Bus Length and Baud Rate

Baud Rate (bps)	Maximum Bus Length			
	No repeater	1 repeater	2 repeaters	3 repeaters
9.6k, 19.2k, 93.75k	1,200 m (3,937')	2,400 m (7,874')	3,600 m (11,811')	4,800 m (15,748')
187.5k	1,000 m (3,281')	2,000 m (6,562')	3,000 (9,843')	4,000 m (13,123')
500k	400 m (1,312')	800 m (2,625')	1,200 m (3,937')	1,600 m (5,249')
1.5 M	200 m (656')	400 m (1,312')	600 m (1,969')	800 m (2,625')
3M, 6M, 12M	100 m (328')	200 m (656')	300 m (984')	400 m (1,312')

4.   Mode and Displayed Station Address

4.1   Mode

The 64DP-M has 4 modes, decided by the mode setting switch. For setting instructions, refer to subsection 4.1.2.

Table 4.1:   Mode

| Mode	Description
ONLINE 1 (Normal service mode)	64DP-M can exchange 32 bytes/slave.
ONLINE 2 (Extended service mode)	64DP-M can exchange 244 byte/slave.
PRE SET (Parameter Setting mode)	This mode is used for setting the parameter.
TEST (Self Diagnostic mode)	This mode is used for checking hardware of 64DP-M. For self test, refer to subsection 5.3.

4.1.1   Mode Setting Switch

The mode is decided by the mode setting switch. Default setting is "0" (Online 1 mode).
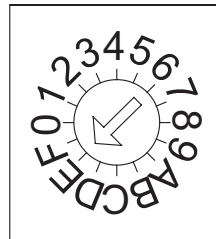
Caution

When changing the Mode, the power supply of the PLC and 64DP-M should be OFF.
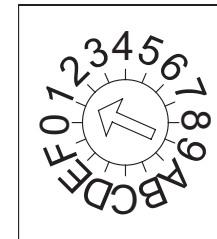
Figure 4.1: Mode Switch
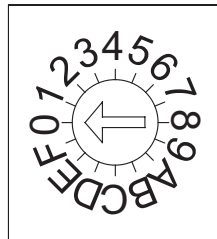
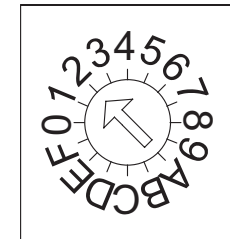| ONLINE 1 | ONLINE 2 | PRE SET | TEST |
| (Normal Service Mode) | (Extended Service Mode) | (Parameter Setting Mode) | (Self Diagnostic Mode) |

Table 4.2:   Mode Switch

Mode Switch Positions	Mode
0	ONLINE 1 (Normal Service mode)
1	PRE SET (Parameter Setting mode)
2	TEST (Self Diagnostic mode)
E	ONLINE 2 (Extended Service mode)
3 ~ D, F	Cannot use

▲ MITSUBISHI

4.2 Displayed Station Address

The station address set by parameter is displayed by the STATION LEDs when 64DP-M is in ONLINE 1 mode. The station address is displayed by the STATION LED (B0-B6) in binary. The parameter is set by configuration software (ProfiMap). For the ProfiMap configuration software, please see the MELSEC ProfiMap Configuration System for Open Networks Software Manual.

Example

When station address is 10, display is as follows.

Figure 4.2: Example Displayed Station Address
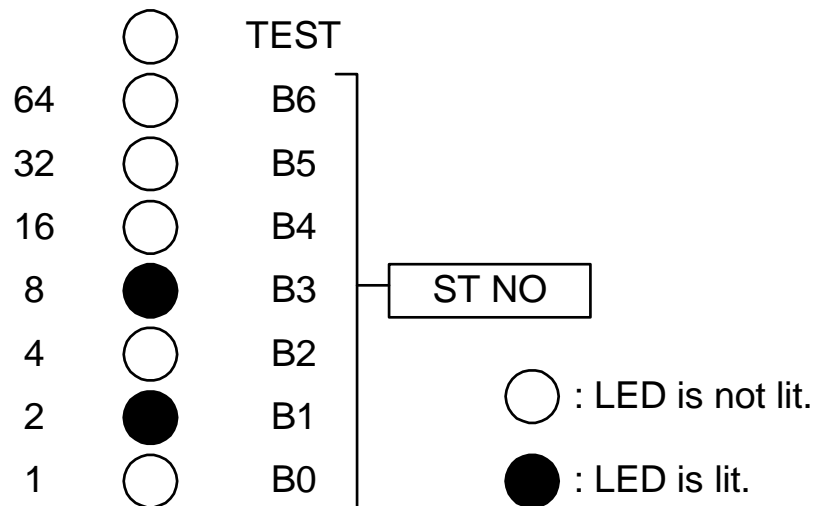
MEMO

5.   Diagnostics

If the 64DP-M does not see to operate normally, check the following items.

5.1   Preliminary Checks

1) Check "POWER LED"

   If "POWER LED" is OFF, check the wiring of the 24V DC power supply, and check whether the 24V DC voltage source capacity is sufficient.

2) Check "RUN LED"

   If "RUN LED" is OFF, check status of the Exchange Start Request (BFM #2 Bit0). If this bit is OFF, turns this bit to ON.

3) Check "FAULT LED"

   If "FAULT LED" is OFF, check the diagnostic information in the Communication Trouble Area (BFM #2140 ~ #2179). For diagnostic information, refer to section 4.12.

4) Check the wiring and connection for the Profibus-DP

   If the wiring and connection for the Profibus-DP is incorrect, correct wiring and connection.

5) Check the system configuration and parameter of the 64DP-M for the Profibus-DP

   If the system configuration of Profibus-DP is not corresponding to parameter of the 64DP-M, match them.

6) Check the error of the PLC.

   If the FROM/TO instruction error occurs at this instruction for the 64DP-M in the PLC, operate correctly this instruction.

5.2   Check the Status of the LEDs for the 64DP-M

1) POWER LED check

Table 5.1:   POWER LED Check

State	Description
Lit	The 24V DC power supply (PLC or external power supply) is correctly supplied.
Unlit	Check wiring of power supply, and check whether the 24V DC voltage source capacity of 24V DC power supply.

2) RUN LED check

Table 5.2:   RUN LED Check

State	Description
Lit	Normal Operation
Unlit	The watchdog timer timed out. Please contact a service representative.

3) SD/RD LED check

Table 5.3:   SD/RD LED Check

State	Description
Lit	If 64DP-M is the exchange start processing or exchange stop processing status, this state of LED is normal operation. However, when 64DP-M exchange to slave(s), check parameter setting of slave in 64DP-M.
Flashing	64DP-M exchanges data to the slave(s).
Unlit	64DP-M does not exchanges data to the slave(s). Check correctly state of the Exchange start end flag (BFM #0 bit 0).

4) TOKEN LED check

Table 5.4:   Token LED Check

State	Description
Lit	64DP-M is in operation mode 0 or E.
Flashing	64DP-M is in operation mode 0 or E with a multi master configuration.
Unlit	64DP-M is in not operation mode 0 or E. Check mode switch, wiring, address setting about duplicate address, and if the HSA exceeds the network maximum station Number.

5) RADY LED check

Table 5.5:   RADY LED Check

State	Description
Lit	64DP-M is in operation mode 0 or E. If it is not in these mode, please contact a service representative.
Unlit	64DP-M is not operation mode 0 or E. If it is in these mode, please contact a service representative.

6) FROM/TO LED check

Table 5.6:   FROM/TO Check

State	Description
Lit	BFM in 64DP-M is accessed from PLC.
Unlit	BFM in 64DP-M is not accessed from PLC. Please check program about FROM/TO instruction.

7) PRM. SET LED check

Table 5.7:   PRM. SET LED Check

State	Description
Lit	64DP-M is in operation mode 1.
Flashing	When this LED is flashing in operation mode 1, there is not parameter in 64DP-M. Please write parameter to 64DP-M.
Unlit	64DP-M is in operation mode 0 or E.

8) RSP ERR LED check

Table 5.8:   RSP ERR Check

State	Description
Lit	64DP-M is fault when exchange data to slave. Check diagnostic information. For diagnostic information, refer to section 4.12.
Unlit	64DP-M is normal operation.

9) FAULT LED check

Table 5.9:   FAULT LED Check

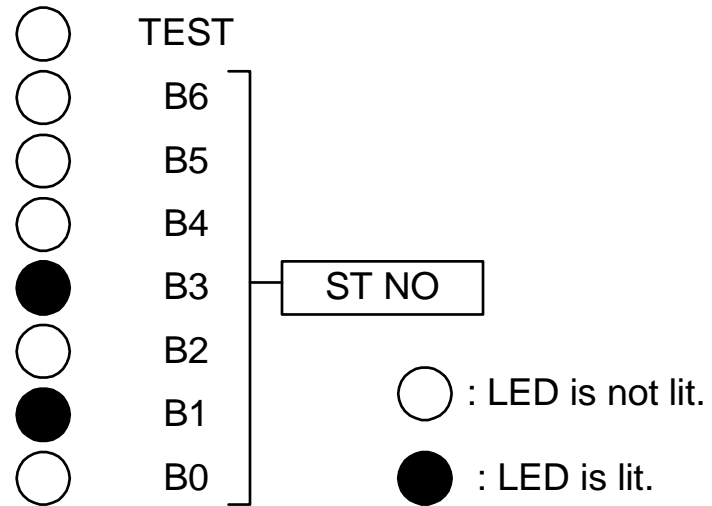| State	Description
Lit	1) When exchange start request flag (BFM #2 bit 0) is turned OFF to ON, check parameter about following points. • There is no active slave on the network. • There is slave station of same as master station address. 2) In other case, please contact a service representative.
Unlit	64DP-M is normal operation.

5.3   Self Diagnostic of the 64DP-M

When setting the self diagnostic mode (The mode switch in position "2".), TEST LED and ST NO LED will be lit as shown in the following table. When the test result is normal, these tests are repeated in order of a -e). If an error is detected, then the LED status at the time the error occurs for that test will be displayed. If error state is displayed, please contact a service representative.

Table 5.10: Self Diagnostic

Items			LED State							
Description		Order	TEST	B6	B5	B4	B3	B2	B1	B0
MPU test	During test	a)	●	○	○	○	○	○	●	●
	Error	-	●	●	○	○	○	○	●	○
Timer test	During test	b)	●	○	○	○	○	●	○	●
	Error	-	●	●	○	○	○	●	○	○
Interrupt test	During test	c)	●	○	○	○	○	●	●	●
	Error	-	●	●	○	○	○	●	●	○
DRAM test	During test	d)	●	○	○	○	●	○	●	●
		e)	●	○	○	○	●	●	○	●
	Error	-	●	●	○	○	●	●	●	○

○: This LED is not lit.   ●: This LED is lit.

![Mitsubishi logo] **MITSUBISHI**

Figure 5.1: LED Location

MEMO

Appendix A:
Further Information Manual List

Table A-1:   Further Information Manual List

Manual name	Manual No.	Description
FX2N Series Programmable controllers Hardware Manual	JY992D66301	This manual contents expiantions for wiring, installation and specification, etc. about FX2N Series programmable controller.
FX0N-32NT-DP Profibus-DP Interface Unit User's Manual	JY992D61401	This manual contents expiantions for wiring, installation, specification and allocation BFM's, etc. about FX0N-32NT-DP Profibus-DP Interface Unit.
FX2N-32DP-IF Profibus-DP Interface Unit Hardware Manual	JY992D77101	This manual contents expiantions for wiring, installation and specification, etc. about FX2N-32DP-IF Profibus-DP Interface Unit However, this hardware manual's text is already contained in this user's manual.
FX2N-32DP-IF Profibus-DP Interface Unit User's Manual	JY992D79401	This manual contents expiantions for wiring, installation, specification and parameter, etc. about FX2N-32DP-IF Profibus-DP Interface Unit However, this hardware manual's text is already contained in this user's manual.

Table A-1:   Further Information Manual List

Manual name	Manual No.	Description
FX2N-64DP-M Profibus-DP Master Block User's Manual	JY992D88001	This manual contents expiantions for wiring, installation, specification and allocation BFM's, etc. about FX2N-64DP-M Profibus-DP Master Block. However, this hardware manual's text is already contained in this user's manual.
MELSEC ProfiMap Configuration System for Open Networks Software Manual	-	This manual contents expiantions for MELSEC ProfiMap Configuration System for Open Networks Software.

MEMO

MITSUBISHI

MEMO

HARDWARE MANUAL

FX2N-64DP-M Profibus-DP Master Block

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: MITSUBISHI DENKI BLDG MARUNOUCHI TOKYO 100-8310 TELEX: J24532 CABLE MELCO TOKYO
HIMEJI WORKS: 840, CHIYODA CHO, HIMEJI, JAPAN

JY992D82901D
(MEE)

Effective MAR. 2001
Specification are subject
to change without notice.