

Mitsubishi Electric Air-conditioner Network System Integrated centralized control software

TG-2000A (Ver.4)

Operation Manual (Sales Company)

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This manual refers to Windows® 2000 Professional as Windows 2000, and Windows® XP Professional as WindowsXP.

Microsoft® Excel 2000/XP is referred to as MS-EXCEL2000/XP.

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-About this book-

The sales company edition of this manual covers the functions for the sales company that cannot be described in the TG-2000A instruction manual (Site Adjustment Volume, Management Volume, wide area Mode Volume).
Be careful of handling for confidential data.

1. Safety Precautions

- Please read the Safety Precautions section very carefully before using the unit.
- The safety cautions provided here are very important for your safety. Please observe them at all times.
- The degree of danger involved with incorrect operation of the unit are indicated in this manual using the following symbols.

 WARNING	Incorrect operation could result in death or severe injury.
 CAUTION	Incorrect operation could result in injury or damage to property.

Note:

- Please observe the safety precautions detailed in the installation manuals and operation manuals of the other machines such as computers, peripherals, and air conditioners.

WARNING

Read the installation manuals and operation manuals for the computer, peripherals and other machines.

Improper operation could result in fire or damage to the computer or peripherals.

Read the installation manual and operation manual for the air conditioner controller.

Improper operation could result in fire or damage to the air conditioner controller.

CAUTION

Do not use the product for any other purpose.

This product is for use with the Mitsubishi Electric Building Air Conditioning Control System. Do not use it with any other air conditioning control system or for any other application. Doing so may cause the unit to malfunction.

Warning to all sales companies and agents (User Agreement)

This document is a contract between the sales company, agent, and Mitsubishi Electric Corporation. By using this TG-2000A application and support tool, you agree to the following conditions and are considered a user.

- Mitsubishi Electric is not responsible to sales companies and agents for any collateral, secondary, or special damage. Mitsubishi Electric is not responsible for any rights claimed by a third-party.

Safety Guidelines for the Computer Running the TG-2000A (Summary)

(1) Selecting a Computer

Selecting a desktop

- Depending on the function, it is recommended to use a desktop as opposed to a laptop computer as there is a tendency for heat to build up in a laptop.

Computer based UPS recommended

- It is recommended to use a UPS to protect data from momentary power outages or power cuts. It is particularly recommended to employ a UPS when using power apportioning billing.

Use a computer/operating environment with specifications capable of running the TG-2000A function.

- Run the function using the specified OS. There is a possibility that the function cannot be used when running an OS other than specified.
- Use a business model computer. There are cases when it is not possible to install or run the application with other applications on a computer or laptop intended for personal use.

(2) Precautions for General Usage

Do not place the computer in any of the following locations.

- An error or accident may occur when using in the following environments.
A place where there is: a lot of dust, a likelihood of shock or vibration, instability, a heater or speaker nearby, direct exposure to sunlight, a likelihood of dropping, a possibility that the computer may be exposed to moisture or high temperature, or where it may be exposed to sudden temperature fluctuations or heat.

Ensure to read the computer/peripheral instruction manual.

- A fire or accident may occur due to improper use of the equipment.

Avoid covering the computer or AC adapter with a cloth or blanket, or locating them on or near a heater.

- There is a possibility of internal temperature build-up, fire or burning under the above situations.

Do not close the lid when using a laptop.

- There is a possibility of an internal temperature build-up, fire or burning. Use in an area with sufficient ventilation.

Cut the power or disconnect the power cable immediately if smoke, or an abnormal smell or noise emanates from the computer.

- Using the computer in the above circumstances may result in fire, burning, or electric shock. Please consult the maker of the equipment/computer.

Do not touch the computer air vent.

- The air emitted by the ventilator is hot and may result in burning if exposed to the skin.

Use the hard disk, floppy disk, or CD media as indicated.

- Do not expose the hard disk, floppy disk, or CD to shock or vibration during use.
- Do not cut the power or reboot the computer while the hard disk, floppy disk, or CD is in use.
- Always turn OFF the power when moving the computer.

Do not tamper with the computer fan.

- Tampering with the computer fan may result in a temperature build-up, fire, or accident.

(3) Other Precautions

Precautions relating to the computer and peripheral equipment

- Please consult the maker regarding damage to the computer or peripheral equipment. We will not be held responsible for damage occurring at the user's site.

2. System Requirements

2.1 Requirements (For initialization)

We recommend the following software and hardware when using this application.

Item	Requirement	Recommended
CPU	Pentium II 350 MHz or faster	Pentium III 500 MHz or faster
RAM	128 MB or more 256MB or more if running Windows XP	256 MB or more recommended
HDD	6 GB or more	
Resolution	1024 × 768 or higher, high color (16bit) or more	
Serial port	1	Required for set up of the RS-485 watt-hour meter
OS	Windows XP Professional Windows 2000 Professional Service pack 2 or later	English version only * Computer must support each OS.
Other	MS-EXCEL 2000/XP	Necessary when converting characters to multilingualism

Note:

- Indicates the specifications necessary to set the TG-2000A initial information, and may be different from the actual operating conditions. **There are no site installation usage conditions.**
- Refer to the Operation Manual (Site Adjustment) for the site installation usage conditions (recommended system). Also refer to the relevant instruction manual for the precautions.

2.2 Compatible Units

The TG-2000A has two main functions: air conditioner controller and cost accounting. However, not all functions are available with all air conditioners. (○ : supported, △ : Certain restrictions apply, × : Not supported)

Model \ Function	Control/Maintenance	Billing (With WHM)	Billing (Without WHM)
Y series	○	○ (In block units) *1	○ (In block units) *1
Y series (Cooling Only)	○	○ (In block units) *1	○ (In block units) *1
SuperY series	○	○ (In block units) *1	○ (In block units) *1
R2 series (Big-R2)	○	○ (In block units) *1	○ (In block units) *1
WR2 series	○	○ (In block units) *1	○ (In block units) *1
Multi S series	○	○ (In block units) *1	○ (In block units) *1
LOSSNAY	○ (Adapter required)	△ (A separate watt hour meter is required. Billing is done with watt-hour units)	×
OA Processing unit	○	△ (Billing is possible only when used with IC attributes. When done individually with watt-hour units, billing is for FAN only.) *2	△ (Billing is possible only when used with IC attributes.) *2
"A" control type	○ (Adapter required)	△ (A separate watt hour meter is required. Billing is done with watt-hour units)	×
"K" control type	○ (Adapter required) *3	△ (A separate watt hour meter is required. Billing is done with watt-hour units)	×

*1: Not applicable to some older models.

*2: When used with IC attributes, it becomes the same as an indoor unit and billing is possible. When billing is done with watt-hour units, it is for FAN only. Billing for outdoor units is not possible.

*3: This does not include "K" control type LOSSNAY.

2.3 Restrictions

The following restrictions apply to the TG-2000A application.

(1) System configuration limits

	Number of units	Notes
G-50A	40 units	Use Ver. 2.51 or later.
Indoor unit	Max. 50 units / G-50A	Max 2000 units (including all IC, KIC, AIC, LC, and FU)
General equipment (PLC)	Max. 32 units / PLC	Up to a maximum of 640 units (20 general equipment control PLCs) *1
General equipment (IC I/O signal)	Max. 350 units / G-50	Up to a maximum of 2000 units *2
Meter	Max. 32 units / PLC	Up to a maximum of 640 units (5 electric power pulse count PLCs)

IC: Indoor unit, LC: Lossnay, FU: OA Processing unit, KIC: "K" controller indoor unit, AIC: "A" controller indoor unit

*1 It is only possible to connect a maximum of 32 general equipment units for each PLC for general equipment. The general equipment No.1** - 1-32 described in section 8.7.4. Even if 33-100 is selected, it cannot be used due to the constraint on the PLC for general equipment.

*2 A maximum of 350 general equipment units can be connected to IC I/O signal for each G-50. A maximum of 2000 general equipment units that connect to the IC I/O signal can be controlled using Integrated software TG-2000A.

The following combinations of the TG-2000A and the G-50A are possible.

		TG-2000A		Note
		Ver. 2.00	Ver. 4.10 or higher	
G-50A	Ver. 1.**			
	Ver. 2.1*	V	V	
	Ver. 2.30	V	V	
	Ver. 2.31	V	V	* Supports billing function
	Ver. 2.40	V	V	
	Ver. 2.50	*1	V	* Supports energy saving and peak cut functions * Compatible with the set temperature range limit function
	Ver. 2.51	*1	V	
	Ver. 2.60	*1	V	Support for auto-changeover, night mode function, and IC I/O signal general equipment
	Ver. 2.70	*1	V	* Multi-language support
	Ver.2.71 or later	*1	V Ver.4.70 or later	* Compatible with the set temperature range limit function * Recommended

*1: When using G-50A software version 2.50 or later, it is necessary to use TG-2000A software version 4.10 or later. Version 2.00 of the TG-2000A software will not operate properly.

(2) Group setting restrictions

Item	Restrictions	Notes
Remote controls	2 per group	* Other remote controls besides M-NET type will not work
Number of indoor units connected to a group	1 to 16	* IC, KIC, AIC or LC cannot be used within the same group. It is not possible for group settings to span G-50A
Number of SC and RC connected to a group	4 per group	* The number of G-50A is not included
Groups per floor	Max. 50 groups per floor	

SC: System controller, RC: Remote controller

(3) Charge (billing) restrictions

The air conditioning cost calculation method use by this unit is the Mitsubishi proprietary general electric power apportioning method. (including counts by meter for gas, electricity, etc.)

For this reason, **it may not be usable for all instances of trade or verification (by quantity), due to varying laws in different countries, as well as other possible circumstances.**

Please check the relevant laws and regulations of the country where the unit will be used, and use the unit in ways that will not violate them. Mitsubishi Electric will not be held responsible for any damages suffered.

Air conditioning costs incurred in connection with the use of the unit are subsumed within the fees charged to tenants by building owners. We recommend that owners and tenants execute a separate contract, or come to a similar agreement, to the effect that air conditioning costs (which are not charged based on electrical metering) will be collected in the form of usage fees, to be pro-rated in accordance with the manner in which the air conditioners are used (including emergency support for breakdowns).

1. Watt-hour meters will not be used to measure all air conditioner electrical supply points.
2. The unit cannot be used for applications demanding calculation methods that would involve installing watt-hour meters on all air conditioners.
3. The system estimates pro rata electrical use by air conditioners, and thus, cannot be used for proof of transactions.
4. Air conditioning usage fees may vary according to operating load on air conditioners, even though the running time may be the same.
5. When connecting one or more units to a watt-hour meter, differences may result from the division of the total electrical use thus measured. Calculations are made by dividing equally, with more than one air conditioner being treated as a single unit for these purposes.
6. The air conditioners are being supplied with electricity even when they are not running, and thus, usage fees will be charged even if the air conditioners are not in use.
7. If computers, G-50s, or PLCs break down, assistance will be provided primarily through past pro rata average rates.
8. Readings of watt-hour and gas meters are taken in pulses, with performance and precision dependent on the meters themselves. Therefore, under on circumstances do we accept any responsibility.

When address change is accompanied by a system change and an increase in the number of air conditioners, charge apportionment may also be affected. Obtain the building owner's approval before making any changes. Please contact MITSUBISHI ELECTRIC CORPORATION AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS for the contents of the affect.

(4) Charge System with WHM connection

The charge function can be used with either an RS-485 watt-hour meter or a pulse output watt-hour meter.

Watt-hour meter	Description	Note
RS-485	1. Use only the RS-485 watt-hour meter unit specified. 2. Requires use of a serial port to connect to a PC. 3. Requires use of a converter to connect the RS-485 to the RS-232C. 4. Can be connected to up to 30 watt-hour meters. 5. Peak cut function is not available.	Identical to TG-2000A version 2
Pulse (*2)	1. The specified PLC is required. 2. Optional PLC software is required. 3. Up to 32 watt-hour meters can be connected to a single PLC. 4. Use of a 0.01 to 1 kWh/pulse watt-hour meter is recommended (*1). 5. Can also be used with a peak cut function. 6. Can be used with pulse-output meters (*2).	Supportable on TG-2000A Ver.4.10 or higher version

*1: Although the use of 10 kWh/pulse is possible, the resultant decrease in meter accuracy makes such usage inadvisable.

*2: The unit may be usable in some instances with gas, electricity, or water meters with pulse transmitters attached. For the TG-2000A, five additional models of meter are available, including electricity 1 and 2, gas, water, and caloric, above and beyond the air conditioning watt-hour meter. Billing units (unit price) can be configured on a per type, but not a per meter, basis.

(5) Energy saving/peak cut functions

* Faults of any sort that may result when using the peak cut function, including but not limited to electrical usage exceeding levels covered by contractual agreements due to such causes as control settings or breakdowns in G-50A or PLC units, are not covered by warranty. Use of the system assumes agreement with this condition.

* Control units for energy saving /peak cut functions equate to control blocks and outdoor units of G-50A unit size or less.

* A given G-50A monitors only one watt-hour meter for purposes of peak cut function control, and thus, the setting can be different for each G-50A.

It is not possible to connect more than one watt-hour meter to a given air conditioner that is managed by a given G-50A.

(6) Set Temperature Range Limitation Function

This function is only available with the ME remote control system, not the MA remote control system. Only the ME remote control and personal browsers will work with set temperature range limitation.

	Applicable remote controller type	Set temperature range limit
ME Remote controller	PAR-F27MEA-E	Partially supported *1
	PAR-F27MEA-F	Supported
ME Simple remote controller	PAC-SE51CRA-E	Not supported
	PAC-SE51CRA-F	Supported

*: In the case of TG-2000A Ver4.70,G-50A Ver2.71system

*1: ME remote controller PAR-F27MEA-E can only set the lower limit of the Cool (Dry) mode operation and the upper limit of the Heat Mode operation.

The type of ME remote controllers can be found on the packing label or on the label on the back of the remote controller cover, and the type of ME simple remote controller can be found on the packing label or on the rating plate.

(7) Use with General equipment

Breaks in wiring between PLC and General equipment, as well as PLC breakdowns, may result in situations where general equipment cannot be monitored or operated. Please be aware that we cannot be held responsible under any circumstances, regardless of what manner of fault may occur. We recommend using circuit that will allow emergency response in case of breakdown.

(8) TG-2000A usage environment

Do not use other applications with the PC that runs the TG-2000A program.

It may cause faulty operation. Therefore, use the PC exclusively for the TG-2000A program.

* Please see "Safety Guidelines for the Computer Running the TG-2000A (Summary)" in Chapter 1.

(9) Using the TG-2000A

* With TG-2000A, it is possible to select "Activate (always running)" or "Deactivate (run only when necessary)" for "Always connected to G-50A system" function.

* When "Activate" is selected, it is essential that the power supply to the computer is left on so that the integrated software TG-2000A can run 24 hours a day. (Ensure that power options such as the "System standby" and "Hibernate" functions are not enabled so as not to end the program.)

* If any of the following functions are being used, select "permanent operation" for TG-2000A.

Charge function (when "Activate" is selected in "Always connected to G-50A system" function), trend function, peak cut function
If TG-2000A ends, it will not be possible to collect data and perform the calculation for the charge function nor will it be possible to collect data and perform automatic output for the trend function.

* When using the following functions, TG-2000A must be running continuously over the switching period, beginning two days prior and ending the day after.

Charge function seasonal rate and summer time

* If "Activate" is selected, the following functions will be fully automated. If "Deactivate" is selected, these functions will be semi automated. ("Always connected to G-50A system" of charge function)

- Data collection for charging
- Calculation of meters and adjustment
- Automatic output of adjustment results

* While TG-2000A is not running, G-50 and PLC errors cannot be detected.

While the G-50 or PLC is experiencing a fault, not running or switched off, the data necessary for charging cannot be collected and the scheduling operation for air conditioners and general units cannot be performed. It is recommended you routinely check to establish whether units are operating normally or operating with errors.

* When using the following functions, TG-2000A must be running continuously over the switching period, beginning two days prior and ending the day after.

Charge function seasonal rate and summer time

(10) Computer (PC)

We cannot be held responsible under any circumstances for computer malfunctions or crashes etc., even if the cause can be traced to the TG-2000A.

(11) Wide area mode

* With the wide area mode, because there is not a permanent connection, the following functions cannot be used.

- Permanent connection charge function
- Automatic output function related
- Trend function (includes the energy saving status monitor)

* Unlike standard mode, in wide area mode, communication processing for startup with G-50A is performed in the background enabling monitoring and operation.

* For wide area mode use, choose a high performance computer with plenty of memory.

2.4 Other Devices

Other devices specified or recommended for use with the TG-2000A are listed below. (*1)

Name	Manufacturer	Model	Notes
Printer	(None specified)	(None specified)	Supports a page printer only (runs under Windows2000/XP)
Watt hour meter (RS-485) (*2)	① Northern Design (Electronics) Ltd. ② Elcomponent Limited ③ CIRCUTOR ④ elcontrol energy	① POWER RAIL 323 + OPTION Module ② AEM31D/485 ③ CVN-BC-ITF- RS485-C2 ④ ED39din 485	Only supports RS-485 output of the specified model and manufacturer
RS-232C/RS- 485 converter	(None specified)	(None specified)	Necessary when measuring the electric power. Ex) B&B Electronics Model 485DRJ Black Box Model IC520A-F or IC108A * Regarding watt hour meter ②, the converter from the manufacturer may also emit light.
PLC (Q series) * For electric amount count software	Q33B Q02CPU Q61P-A1/A2 QJ71E71-100 QX40 Q2MEM-8MB	mitsubishi ELECTRIC	A maximum of 16 watt-hour meters can be connected to a single QX40 unit. A maximum of 32 watt-hour meters can be connected to two QX40 units. * PLC software is stored in Q2MEM-8MB.
Watt-hour meter (pulse output)	(None specified)	(None specified)	Use of a 0.01 to 1 kWh/pulse watt-hour meter is recommended.
PLC (Q series) * PLC for general equipment software (Ver.1 series)	Q33B Q02CPU Q61P-A1/A2 QJ71E71-100 QX40 QY40P Q2MEM-8MB	mitsubishi ELECTRIC	A maximum of 8 general equipment can be connected. Only monitor and operate functions. * PLC software is stored in Q2MEM-8MB.
PLC (Q series) * PLC for general equipment software (Ver.2 series)	Q33B (Q35B,Q38B,Q312B) Q02HCPU Q61P-A1/A2 QJ71E71-100 QX40 QY40P Q2MEM-8MB	mitsubishi ELECTRIC	A maximum of 32 general equipment can be connected. * PLC software is stored in Q2MEM-8MB.
UPS (Uninterruptable power supply)	(None specified)	(None specified)	Installation is recommended to prevent destruction or loss of billing and other data. (Any type suitable for use with computers)

*1: When using designated or recommended hardware, performance and precision will depend on the hardware in question.
Mitsubishi Electric cannot be held responsible under any circumstances, even those involving designated hardware.

*2: Performance and precision are dependent on the watt-hour meter or CT used, as well as their placement, and may vary as a result.

3. This Manual and Master CD

3.1 Items Covered by This Manual

The sales company edition of this manual covers the functions for the sales company that cannot be described in the TG-2000A instruction manual.

The following three functions are for the sales company:

- Pre-initialization
- Multilingualism setting
- Function options setting

3.2 Precautions

(1) Handling of this manual and the master CD

This manual and the master CD describe the functions for the sales company, and contains passwords and other secret information. **Be sure that it is not given to the user.**

(2) Database

The TG-2000A database file contains system configuration, schedule, and charge data. Therefore, be sure that erroneous running does not overwrite the database.

(3) Password

There are three kinds of passwords. Two of them can be changed. Be sure to manage the passwords so that they are not leaked to a third-party.

Item	Contents	Initial value	Remarks
Initialization password	Permits manipulation of all initial screen items.	SYSTEM	Changeable
Maintenance password	Permits only modification of the initial screen maintenance group part and own password. Used as the password for the cost setting on the control screen.	Maintenance	Changeable
Initial screen master password	Permits manipulation of the entire initialization screen. (Password as master key)	* Separate. Please contact us.	Fixed
Sales company function options setting password	Permits switching to the function options setting screen. (See section 6 for more information.)	TG2000ASYSTEMV04	Fixed

3.3 Requests

(1) Project management

Manage the TG-2000A project information.

(2) Database backup

Always back up the initial settings and other database files after TG-2000A test running is complete and the system is in the actual operating system setting state. This facilitates recovery work when the PC fails and so forth.

Also when performing a TG-2000A version upgrade, always backup the database file beforehand.

* The database can be backed up using part of the pre-initialization method.

(3) Technical sheet

Information related to the TG-2000A system not covered in the instruction manual is issued as technical sheets. Use the instruction manual together with the technical sheets.

3.4 Master CD

The TG-2000A master CD is for the sales company. Information, etc. for the sales company is also mentioned. Therefore, handle it with care. Information, etc. for the sales company are stored in the following folder:

Folder: [Melco(Confidential)] folder

File: ReadmeSell.txt, etc.

CD-ROM directory structure

readme.txt. CD-ROM directory configuration and setup precautions.

\Setup Setup

\Verup Version upgrade

\Manual Instruction manuals (Site Adjustment, Management)

\Tool Charge calculation tool, Trend display tool

\Melco(Confidential) Sales company instruction manual and multilingualized file, etc.

Maintenance tip

- When copying the CD for the user, copy the following files and folders:

- \readme.txt

- \Setup

- \Verup

- \Tool

- \Manual

- **Manage the files in the [Melco (Confidential)] folder so that they are not given to the user.**

4. Initialization Prior Implementation

This section describes how to set the TG-2000A system configuration and other initial information in advance and carry it to the site.

4.1 What is Pre-initialization?

TG-2000A system initialization can be performed in an office and the initially set information taken to the site on CD-R and FD and loaded into the site PC. Initializing the project system information in an office in advance like this is called “pre-initialization”.

4.2 Pre-initialization Operation

(1) Preparations and confirmations

Before pre-initialization, carry out the following confirmations and preparations:

	Item	Contents	Remarks
1	Software	TG-2000A	Must be set up. For the TG-2000A Set up, refer to the Site Adjustment manual.
2	PC	See Chapter 2.1.	*Must be English OS environment.

(2) Pre-initialization

Perform initialization at the object site.

[Procedure]

1) Start the TG-2000A program

To perform pre-initialization, start the TG-2000A program.

2) Initialize each function

Set the system configuration and functions matched to the site.

* Refer to the instruction manual (Site Adjustment) for the initialization procedure.

3) Quit the TG-2000A program

At the end of initialization, quit the TG-2000A program at the initial screen.

* To modify a database file, always quit the TG-2000A program.

4) Select the “detach” icon

Double-click the detach icon on the desktop. The DOS window opens and processing is performed so that the database files can be accessed. At the end of processing, the DOS window closes automatically.

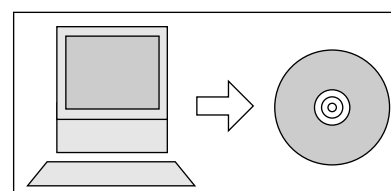
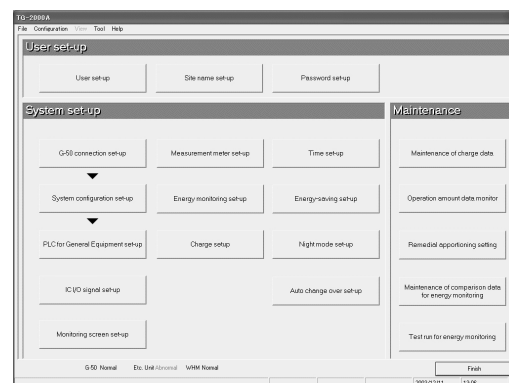
5) Copy “MJ310G.***” to CD-R

Copy the pre-initialized file (MJ310G.***) to CD-R from the following folder:

Folder	C:\Mssql7\data\
Filename	MJ310G.ldf
	MJ310G.mdf

6) Select the “attach” icon

Double-click the attach icon on the desktop. The DOS window opens and processing is performed so that files can be used as a database. At the end of processing, the DOS window closes automatically.



Maintenance tip

- Always implement attach after copying and pasting the database files. If attach is not implemented, the TG-2000A program will not run normally.
- When handling database files, it is important to note that the wide area mode database is incompatible with the standard mode database.

Note:

- CD-R is mentioned as the media used, but FD can also be used. However, for FD, a compression and splitting tool must be used.
- These database files can be carried to the site together with multilingualized database files. See section 5.
- See section 6 for function options setting for sales companies.
- In wide area mode, the database file name and the name of the folder containing the file will be different. Please see Appendix 2 for details.

4.3 Pre-initialization Precautions and Supplemental Items

Precautions

- (1) Database backup
 - Always back up the initialization information database file in the actual operating system setting state.
- (2) "MJ310G.***" database
 - The "MJ310G.***" database files store the charge data and abnormality historial data, besides the initialization data.

Supplemental items

- (1) Initial database copying method

This method is set from the initial database for each new project. It overwrites the data by copying the database files from the TG-2000A master CD-R. This is method is virtually the same as the method described in section 5.4 (1). The procedure is described below.

 - 1) Start and quit the TG-2000A program.
 - 2) Select the "detach" icon.
 - 3) Copy the database files from the CD-R.

Filename	MJ310G.lbf
	MJ310G.mdf
 - 4) The property of the copied files is opened, and "Read-only" is removed.
 - 5) Select the "attach" icon.
- (2) TG-2000A automatic startup deletion

When the PC starts, the TG-2000A starts automatically, but can be changed so that it does not start automatically. However, deletion of automatic starting applies only to the PC used in pre-initialization. Never use it with the site PC.

 - 1) Delete TG-2000A from the startup menu.
- (3) FD recording media use

The FD capacity is too small to store the database files and other data. Copy the data to an FD compressed and split using a compression tool (WINZIP, etc.). At the copy destination, recombine and decompress the files using a compression tool.
- (4) Database backup

The initialization and other database files can be backed up in the state in which the TG-2000A test running is complete and the system is in the actual operating system setting state. The backup method is almost the same as the method described in section 5.4 (1). The procedure is described below. However, since the file capacity is large, when using FD recording media, a compression tool or similar software is necessary.

 - 1) Start and quit the TG-2000A program.
 - 2) Select the "detach" icon.
 - 3) Copy the database files.

Filename	MJ310G.lbf
	MJ310G.mdf

※ For FD, copy the database files to an arbitrary folder. Compress and split the database files with a compression tool and copy the compressed files to FD.

 - 4) Select the "attach" icon.
 - 5) Reboot the PC and start the TG-2000A program.

- (5) Other Databases

The TG-2000A databases are used in the following applications:

	Database Name	Usage	Notes
1	MJ310G.***	System assembly, billing system, history, other data	To be backed up
2	MJ310GK.***	Model data	
3	MJ310GL.***	Display character data	Multi-language support
4	MJ310GT.***	Trend data	
5	MJ310GM.***	Incoming mail data information	

Note:

- In wide area mode, the database file name and the name of the folder containing the file will be different only for "MJ310G.***". Please see Appendix 2 for details.

4.4 About the Floor Screen Size

In regard to the floor screen and the sub screen, it is possible to draw them beforehand by using an application other than MS Paint. However, the image must be in “bmp” format with “.bmp” at the end of the file name.

The size and file name of each screen must comply with the specifications below.

Screen		Size	File Name	Notes
Floor Screen		Width 1000, height 575 (pixels)	Floor***.bmp (***: 001~099)	The file must be in C:\TG2000\Floor
Sub Screen	4 division	Width 174, height 100 (pixels)	BaseFloor****.bmp (****: 1001~1099)	The file must be in C:\TG2000\Floor
	6 division	Width 261, height 100 (pixels)	BaseFloor****.bmp (****: 2001~2099)	

Note:

- After running the TG-2000A setup, copy the file to the specified folder.
- If you copy the file from a CD-R or similar, open the file's properties and deselect “read-only”.
- In wide area mode, the name of the folder containing the database file will be different. Please see Appendix 2 for details.

5. Multilingualize Setting

This section describes how to change English characters displayed on the TG-2000A screens and outputs to multilingual characters (Your language).

However, only characters that use the English alphabet can be changed. TG-2000A setup uses English notation.

Note:

- See Appendix 1 for how to upgrade from older versions of the TG-2000A multi-language tool.

5.1 Setup

(1) Setup preparations and confirmations

To set up the multilingualize tool, carry out the following preparations and confirmations:

	Item	Contents	Remarks
1	Software	MS-EXCEL2000/XP TG-2000A	Must be set up. For the TG-2000A Set up, refer to the Site Adjustment manual.
2	PC	See section 2.1.	*Must be English OS environment.

(2) Setup

[Procedure]

1) Copy the "TgExportV470.xls" file

Use Explorer to copy the "TgExportV470.xls" file from the TG-2000A CD-ROM to a PC arbitrary folder.

For example, create a Folder with the path name c:\TgWork\, and copy the file to it.

2) Remove "Read-only"

The property of the copied "TgExportV470.xls" file is opened, and "Read-only" is removed.

5.2 Multilingualize Setting

(1) Setting preparations and confirmations

Before using the multilingualize tool, carry out the following preparations and confirmations:

Step	Item	Contents	Remarks
1	TG-2000A startup	After starting the PC, confirm that the TG-2000A program started.	To initiate MSDE service
2	TG-2000A quit	Quits the TG-2000A program.	

(2) Multilingualize tool starting and setting

[Procedure]

1) Open the "TgExportV470.xls" file

Use MS-EXCEL2000/XP to open an arbitrary "TgExportV470.xls" file copied with Explorer.

2) Select the sheet

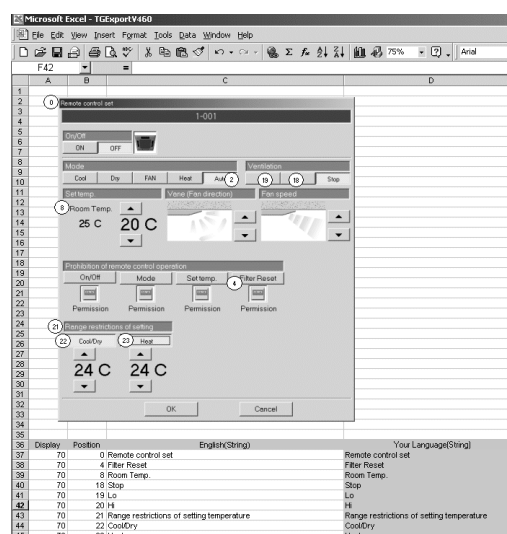
Display the screens and English spelling and new spelling for each sheet. Select the sheet of the screen you want to change.

Note:

- Some sheets do not have a screen display.

3) Change the string

Correct to the spelling you want to change with the Your Language field. The Your Language field is displayed in light blue.



Maintenance tips

- Only English alphabet characters can be used.
- The number of characters that can be displayed is limited, and is different for each display location.
- Please use the control character of a red character as it is.

4) Select the "HOME" sheet

After multilingualizing all the screen sheets, select the "HOME" sheet.

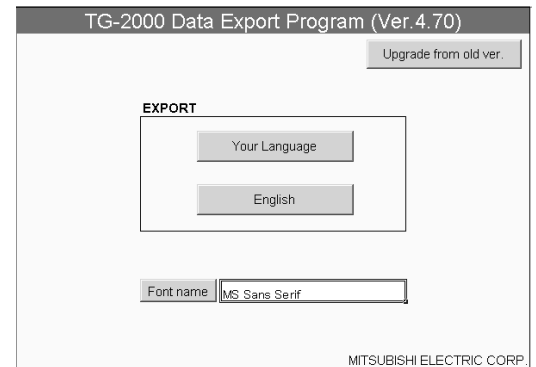
5) Click the "Your Language" button

Click the "HOME" sheet "Your Language" button. The multilingualized characters are output to the database.

✳ The filename is "MJ310GL.***".

6) Store and close the "TgExportV470.xls" file

Since multilingualization is complete, save the "TgExportV470.xls" file and quit MS-EXCEL2000/XP.



Note:

- Once multilingualized, repeated use is possible. See section 5.4 for more information.
- For language editing only, a PC on which the TG-2000A program is not installed can also be used. For database output, the TG-2000A program must be installed.

5.3 Multilingualization Precautions

(1) Usable language

Only English alphabet can be used. Other characters cannot be used. If other characters are used, the display will be incorrect.

(2) Number of characters limit

The number of characters that can be displayed at each display location on the screen is limited. The number of characters that can be displayed depends on the characters used.

(3) Screen display confirmation

Always check all the screens for character display problems at the multilingualization database. When the number of display characters is large and characters are lost, use the multilingualization tool again to make corrections.

(4) OS language environment

Use the English version of the OS environment. Characters other than English cannot be handled and the display will be incorrect.

5.4 Operation

Every object can be operated from the PC by using a multilingualized file. There are the following two operating methods:

(1) Using a database

This method copies the database files to the site PC and reflects them in multilingualization.

The following describes the materials required and the operating procedure:

[Materials required]

- CD-R (recording media)
- CD-R writeable memory device

Operation in an office

[Procedure]

1) Start the TG-2000A program

Start the TG-2000A program to initiate MSDE service.

✳ If the TG-2000A program is already started, or starts after the OS starts, it does not have to be restarted.

2) Quit the TG-2000A program

Quit the running TG-2000A program.

✳ To modify a database file, always quit the TG-2000A program.

3) Select the "detach" icon

Double-click the detach icon on the desktop. The DOS window opens and processing is performed so that the database files can be accessed. At the end of processing, the DOS window closes automatically.

✳ Enters the state in which the database can be copied.

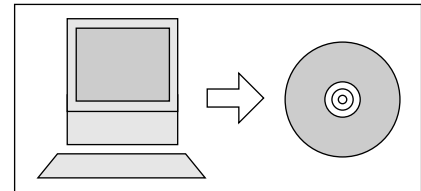


4) Copy & paste "MJ310GL.***" to CD-R

Copy the multilingualized reflected file (MJ310GL.***) from the following folder:

Folder	C:\Mssql7\data\
Filename	MJ310GL.ldf
	MJ310GL.mdf

Next, paste into the folder to be pasted.



5) Select the "attach" icon

Double-click the attach icon on the desktop. The DOS window opens and processing is performed so that the files can be used as a database. At the end of processing, the DOS window closes automatically.

✱ Returns to the state in which the database can be used.



Operation at the site

[Procedure]

1) Start the TG-2000A program

Start the TG-2000A program to initiate MSDE service.

✱ If the TG-2000A program is already started, or starts after the OS starts, it does not have to be restarted.

2) Quit the TG-2000A program

Quit the running TG-2000A program.

✱ To modify a database file, always quit the TG-2000A program.

3) Select the "detach" icon

Double-click the detach icon on the desktop. The DOS window opens and processing is performed so that the database files can be accessed. At the end of processing, the DOS window closes automatically.

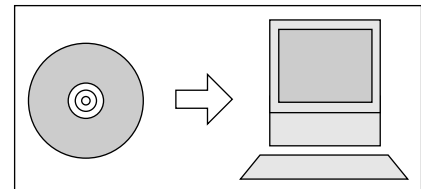
✱ Enters the state in which copying at the database is possible.



4) Copy & paste "MJ310GL.***" to CD-R

Copy the multilingualize reflected file (MJ310GL.***) to the following folder:

Copy folder	C:\Mssql7\data\
Filename	MJ310GL.ldf
	MJ310GL.mdf



5) Check the file properties

Check that the "read-only" attribute of the copied file is off.

If it is set to "read-only", remove the check mark.

6) Select the "attach" icon

Double-click the attach icon on the desktop. The DOS window opens and processing is performed so that files can be used as a database. At the end of processing, the DOS window closes automatically.

✱ Enters the state in which the database can be used.



7) Reboot the PC

Reboot the OS to restart the TG-2000A program. TG-2000A starts automatically.

Maintenance tip

- After copying and pasting database files, always implement attach. If attach is not implemented, the TG-2000A program will not run normally.

Note:

- CD-R is mentioned as the recording media, but FD can also be used. However, for FD, a tool that can compress and split files must be used.
- These files can be carried to the site together with the pre-initialized database files. See section 4 for more information.
- The file copied from CD-R will be read-only. Remove the read-only attribute.

(2) Using multilingualization tool

This method reflects database files in multilingualization using the “TgExportV470.xls” file multilingualized at the site PC. The method is almost the same as that described in section 5.2.

The following describes the materials required and the operating procedure.

[Materials required]

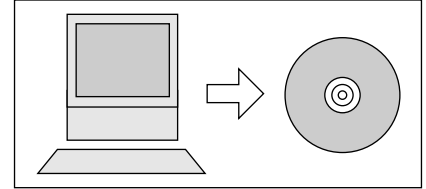
- MS-EXCEL2000/XP application
- CD-R (recording media)
- CD-R writable memory device

Operation in an office

[Procedure]

1) Copy “TgExportV470.xls” to CD-R

Copy & paste “TgExportV470.xls” reflected in multilingualization to CD-R.
Filename TgExportV470.xls



Operation at the site

[Procedure]

1) Start the TG-2000A program

Start the TG-2000A program to initiate MSDE service.

※ When the TG-2000A program was already started, or starts after the OS starts, it does not have to be restarted.

2) Quit the TG-2000A program

Quit the running TG-2000A program.

※ To modify a database file, always quit the TG-2000A program.

3) Copy “TgExportV470.xls”

Copy the “TgExportV470.xls” file stored on CD-R to a PC arbitrary folder.

4) Open the “TgExportV470.xls” file

Use MS-EXCEL2000/XP to open an “TgExportV470.xls” file arbitrarily copied with Explorer.

※ Place MS-EXCEL into the state that permits use by setup in advance.

5) Select the “HOME” sheet

Select the “HOME” sheet.

6) Select the “Your Language” button

Click the “HOME” sheet “Your Language” button. The multilingualized character contents are output to the database.

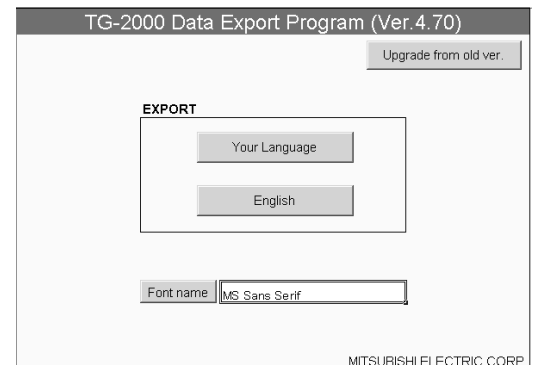
7) Close and delete the “TgExportV470.xls” file

Quit MS-EXCEL2000/XP, and delete the “TgExportV470.xls” file arbitrarily copied with Explorer.

※ When MS-EXCEL2000/XP was temporarily set up, uninstall it.

8) Reboot the PC

To restart the TG-2000A program, reboot the OS. TG-2000A starts automatically.



Maintenance tip

- When using MS-EXCEL2000/XP, always provide and use a software license.

Note:

- When temporarily installing MS-EXCEL2000/XP, always uninstall it after the end of work.
- CD-R is mentioned as the recording media, but FD can also be used. However, for FD, a tool that can compress and split files must be used.
- The files can be taken to the site together with the pre-initialized database files. See section 4 for more information.

6. Program Function Options Setting

6.1 Description of This Function

This function can remove display of the following functions from the initial setting screen and user setting screen. Setting of functions can be customized for each object.

Function	Contents	Remarks
Charge function	Displays the air-conditioning charge or ratio result for each block and watt hour meter.	
General PLC functions	Used to monitor and operate general equipment (PLC). Select this function when using a general PLC.	* Requires separate general use control software.
IC I/O signal function	Used to monitor and operate general equipment (IC I/O signal)	
Energy saving function	Used to control temperature shift, thermo off, and other energy-saving settings.	* Not available when peak cut function is operating.
Peak cut function	Peak cut control is used to change control settings based on power level as well as to monitor the watt-hour meter connected to the PLC.	* Includes energy-saving function.
Trend function	Display trend history of data such as peak-cut status, power level, suction temperature, temperature settings, On/Off status or mode.	* Automatically selected when peak cut function is operating.
Night mode function	By setting the start and end times of night mode, it is possible to run specified outdoor units at night time in night mode.	* This can be set for each outdoor unit.
Auto-changeover function	Able to switch automatically between cooling and heating according to the difference between the setting temperature and the intake temperature. This function is also valid for models that support manual switching.	

Note:

- The initial value is set to all [No function (OFF)].
- Functions can be made optional by using this function.
- When upgrading from version 2.00 on a system with meter function, the meter function remains in effect even after the upgrade.

6.2 Setting Screen Switching

Function options setting screen switching

The following describes how to switch the function options setting screen from the TG-2000A started state.

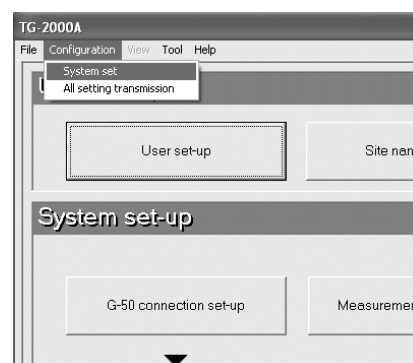
[Procedure]

1) Select Configuration - System Set from the menu bar

Click Configuration on the Management screen menu bar. The password confirmation screen opens.

2) Enter the password

Enter password at the password confirmation screen, and click the OK button. The initial screen opens.



Switching screen to options setting

Note:

- The password initial value is "SYSTEM". The password can also be changed.

3) Select Configuration - System Set from the menu bar

Click Configuration on the initial screen menu bar, and select System Set. The password confirmation screen opens.

4) Enter the password

Enter password at the password confirmation screen, and click the OK button.



Password entry screen

Note:

- The password is "TG2000ASYSTEMV04". Manage the password carefully.

The options setting screen opens.

6.3 Options Selection Setting

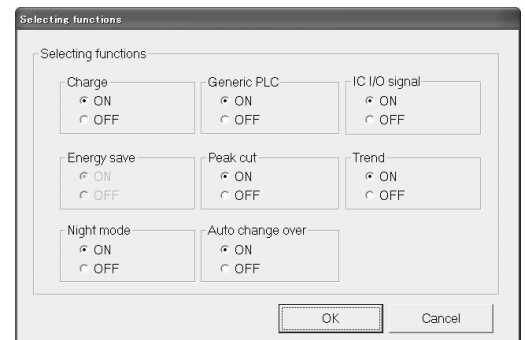
The following describes how to set this function

[Procedure]

1) Select the functions option button

Select the following function settings with the Option button:

- Change (Energy monitoring) function
- General PLC functions
- Energy saving function
- Peak cut function
- Trend function
- Night mode function
- Auto-changeover function
- IC I/O signal function



Function options setting screen

6.4 Ending This Function

Ending options setting

The following describes how to end this function.

[Procedure]

1) Click the OK button

At the end of options setting, click the OK button. The display returns to the initial screen.

- OK : Reflects the set contents and returns to the initial screen.
- Cancel : Returns to the initial screen without reflecting the changes.

Appendix 1 Upgrading to the “TgExportV470.xls” Multi-language Tool

This chapter explains how to upgrade the older version of the multilingualization.

Note:

- This upgrade is necessary when “Your Language” in an older version of the multilingualization tool that came with TG-2000A has been edited.

Older Versions of the Multilingualization Tool

“TgExportV2.xls”, “TgExportV4.xls”, “TgExportV2.xls”, “TgExportV430.xls”
“TgExportV440.xls”, “TgExportV450.xls”, “TgExportV460.xls”

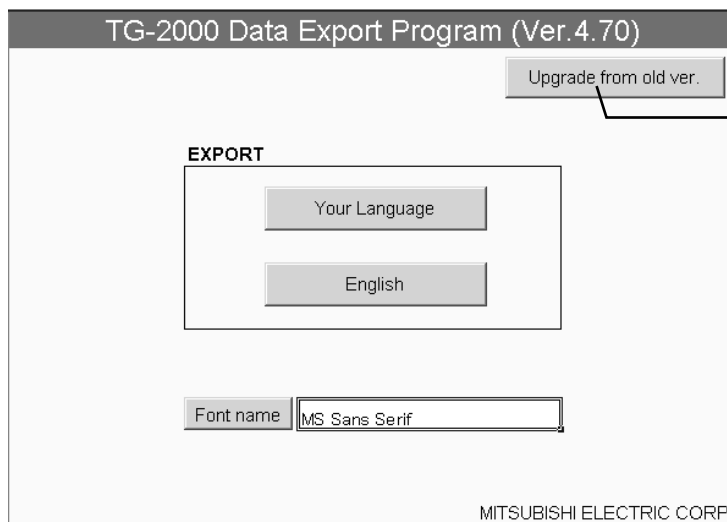
- It is not necessary to perform this upgrade if you are using the multi-language tool “TgExportV470.xls” for the first time after installing TG-2000A version 4.70. Use the “TgExportV470.xls” file as is. (Refer to chapter 5)

1. Preparation

Items required to perform upgrade

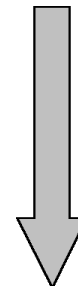
- Older version of multilingualization tool "TgExportV***.xls"
(The one that came with the older version of TG-2000A that has been used as a multilingualization tool.)
- TgExportV470.xls

2. How to Upgrade



Upgrade button

Click on this button to upgrade from “TgExportV2.xls” or “TgExportV4.xls” or “TgExportV430.xls” or “TgExportV440.xls” or “TgExportV450.xls” or “TgExportV460.xls”



[Procedure]

1. Open the “TgExportV470.xls” file

Use MS-EXCEL2000/XP to open an “TgExportV450.xls” file.
Enable macro when prompted to display the Dialog box shown above.

2. Click the “Upgrade from old ver.” Button

The Open File Dialog box opens.

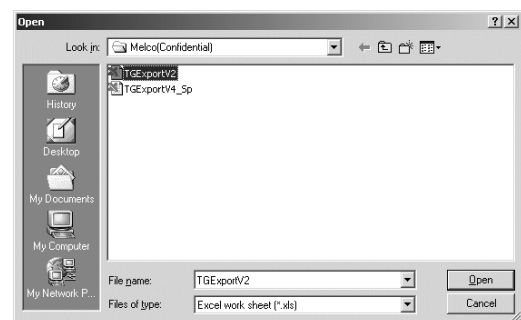
3. Select the files to which multi-language support was applied under previous versions of the system, and choose “Open.”

The upgrade begins and the Please Wait Dialog box is displayed.

4. Click the OK button

Once the Upgrade is Completed Dialog box appears, click the OK button.

5. Save the “TgExportV470.xls” file



Note:

- After upgrading, create a new multi-language section.
- There are add-on portions to the existing sheet portions, including new sheets. Make sure to check all sheets for this reason.

Appendix 2 Wide Area Mode Database Operations

This section describes the method used when copying databases and the folders for saving floor screen data in wide area mode.

Note:

- It is important to note that the wide area mode database data is incompatible with the standard mode database data.

1. Pre-initialization Method for Wide Area Mode

[Procedure]

- 1) Install TG-2000A for wide area mode on the office PC.
- 2) Using the office PC, start up the site change tool.
- 3) Register the site.
- 4) Start up wide area TG-2000A.
- 5) Register the data in wide area TG-2000A.
Set the system configuration and functions etc required for this site.
* Refer to the instruction manual (Site Adjustment Volume) for the initialization procedure.
- 6) Quit wide area TG-2000A.
- 7) Quit the site change tool.
- 8) Copy all the data inside the folder (C:\program files\tg2000\ (site name).
("Floor" folder, BMP files inside "Floor" folder and "MJ310G_R.dat")

2. Wide Area Mode Database Copying Method

[Procedure]

- 1) Quit wide area TG-2000A on the site PC.
- 2) Use the site change tool to register the site.
Use the same site name that was registered in step 3 of the above procedure "Pre-initialization method for wide area mode".
- 3) Quit the site change tool.
- 4) Save the data brought from the office in the following folder (overwrite existing data).
C:\program files\tg2000\ (site name)
- 5) Start the site change tool.
- 6) Start wide area TG-2000A.
Check that it is possible to access the site.

3. Folders for saving floor screen data

The floor screens are saved in the folders described below. When copying or overwriting this data, ensure that the Remote TG-2000A and the site change tool have been quit.

Screen	Screen Folder location
Floor screen	C:\program files\tg2000\ (site name) \Floor
Sub screen	C:\program files\tg2000\ (site name) \Floor

Note:

- If an extra folder has been created for the purpose of categorization, this folder is included in "(site name)".

