



by **Schneider** Electric

SMC Corporation

Air Management System

AMS20/AMS30/AMS40/AMS60

Sample Project File Ver.1.01

Technical Guide

## Revision History

Revision No.	Date	Descriptions
01	10/10/2025	New

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For details on the settings, refer to:

"PFxx-OMA1007 Operation Manual Air Management System AMS20/AMS30/AMS40/AMS60",  
 "DOC1069997 Operation Manual Compact Wireless Base EtherNet/IPTM EXW1-BENAC1",  
 from SMC Corporation.

-The documentation mentioned above, along with AMS-related materials, is available from the following website:

<<https://www.smcworld.com/en-jp/>>

To obtain additional documentation, please contact SMC Corporation as needed.

# 1. Overviews

This sample project file is designed to connect the Air Management System (AMS) models AMS20/AMS30/AMS40/AMS60, manufactured by SMC Corporation, with ST6000 series. By using this project file, users can visualize the Air consumption reduction effects when utilizing the AMS.

The main features are as follows.

- Estimated reduction can be calculated based on Air consumption and AMS operating status.
- Estimated reduction can be converted and displayed in terms of CO<sub>2</sub> and Monetary value.
- Air consumption and Estimated reduction can be visualized using pie charts.
- A time-series bar graph can be used to compare energy-saving mode usage versus without energy-saving mode.
- Instantaneous flow rate and Pressure can be displayed in a trend graph.
- Air consumption, Instantaneous flow rate, Pressure, AMS status, and other data can be exported to a CSV file (USB storage).
- Stand-by and Isolation signals can be output to the AMS remote.

# 2. Notes

1. The intellectual property rights for the files provided by Schneider Electric Japan Holdings Ltd. belong to us.
2. Downloaded files and the data extracted from those files are no guarantees of our product specifications. Please be aware of this fact.
3. The liability for use of this service lies with the customer.
4. In any case, this is not intended as a warranty for any work for a system that makes use of the data on these screens.
5. This program is available only for the ST-6500WA (WSVGA: 1024 x 600).
6. Any modifications made to this service by a customer are entirely at the responsibility of the customer.
7. Please be aware that we cannot respond to any inquiries for the purpose of modifying these data.
8. The content and information in the data on these screens and documentation are subject to change without prior notification.

# 3. Restrictions

This screen data is taken from a sample project file that demonstrates representative features and functions of the ST6000 Series. When using the sample project file, be sure to reference our product manual or the connection device manual, including the usage restrictions and safety precautions. In addition, please be aware that we are unable to accept responsibility for damage arising from reasons that cannot be attributable to us, loss of customer opportunity or profit arising from the malfunction of our product, damage arising from special circumstances regardless of whether or not we had foreknowledge of those circumstances, secondary damage, compensation for accidents, damage to our products, or other business-related guarantees.

## 4. How to use this project file

When using this project file (henceforth known as “the file”), be sure to confirm the following details:

- 1) When using the file as-is  
Confirm the communication settings.  
When using this file as-is, transfer it in GP-Pro EX to a display console with a touch panel.  
When connecting, refer to section “5Device Configuration” of this Manual for Use.  
Refer to sections “5-5Communication Cable” for networking cables and “5-6Communication Settings” for communication settings of this Manual for Use.
- 2) Changing addresses  
When changes are made to the address of a connection device that has been configured on the screen, it will not operate properly.  
Do not make changes to these addresses.

## 5. Device Configuration

### 5-1. System Configuration

The HMI and AMS are connected using the configuration shown below.

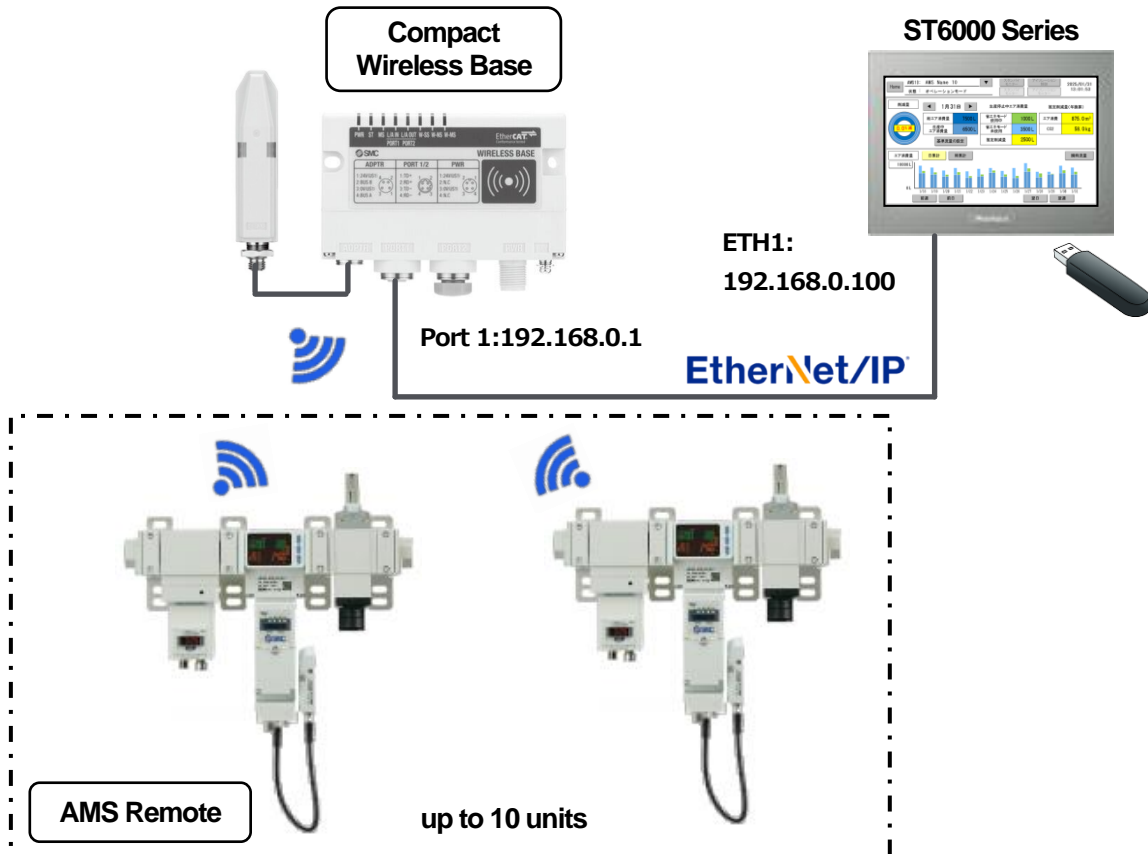


Figure 5-1-1 System configuration.

- \* In this project file, one compact wireless base can be connected to up to 10 AMS remote-type units.
- \* For details, please refer to the product catalog or hardware manual.
- \* For specific configuration settings and operational details of the connected devices, please refer to the instruction manuals for each device.
- \* To use the CSV export function in this project, a USB storage is required.
- \* The IP addresses shown in the diagram is examples. Please configure the IP addresses according to your actual system setup.
- \* For instructions on how to set IP addresses or enter offline mode, please refer to the link below.

Reference): M.4.1 Assigning an IP address to the Display  
[https://www.pro-face.com/otasuke/files/manual/gpproex/new/refer/gpproex.htm#t=mergedProjects%2Fmaintenance%2Fmaintenance\\_pr\\_ipaddress.htm](https://www.pro-face.com/otasuke/files/manual/gpproex/new/refer/gpproex.htm#t=mergedProjects%2Fmaintenance%2Fmaintenance_pr_ipaddress.htm)  
 Reference): M.1.2 Entering Offline Mode  
[https://www.pro-face.com/otasuke/files/manual/gpproex/new/refer/gpproex.htm#t=mergedProjects%2Fmaintenance%2Fmaintenance\\_ov\\_goingoffline.htm](https://www.pro-face.com/otasuke/files/manual/gpproex/new/refer/gpproex.htm#t=mergedProjects%2Fmaintenance%2Fmaintenance_ov_goingoffline.htm)

## 5-2. Display with Touch Panel

### 5-2-1. Target HMI Devices

The following shows the display device types for use with this sample project file.

The module name below is the module selecting on GP-Pro EX

(Note) This project file is intended exclusively for the ST-6500WA.

Please note that other models are not supported.

Table 5-2-1 Target HMI Devices

Series	Unit / Display Module	Target project module
ST6000 Series	ST-6200 WA	
	ST-6400 WA	
	ST-6500 WA	OK
	ST-6600 WA	
	ST-6700 WA	
	ST-6300T	
	ST-6500T	

### 5-2-2. Options

Use the options (from Schneider Electric Japan Holdings Ltd.) shown below, if necessary.

#### (1) USB Options

The following table lists the available USB options

Table 5-2-2 USB Options

No.	Name	Model	Descriptions
1	USB transfer cable	PFXZUSCBMB2	Cable for transferring screen data from a PC (USB Type A) to this product (USB micro-B)
2	USB cable (5m)	FP-US00	Used for connecting peripherals. (host/slave)
3	USB Front Cable (1m)	CA5-USBEXT-01	An extension cable that installs the USB port to the front face of the operation panel.

#### (2)USB Storage

In this project file, USB storage can be used to save data and to back up or restore various types of data\*1.

When using USB storage, please use commercially available USB storage devices.

Be sure to refer to the list of verified USB storage devices on Schneider Electric Japan Holdings Ltd.'s website before use.

\*1: Project files, SRAM data

Table 5-2-3 Recommended Specifications for USB Storage

No.	Name	Model	Descriptions
1	USB Storage	Any	File System: FAT32 Maximum Capacity: 32 GB

## 5-3. Software

Table 5-3-1 Software

No	Manufacturer	Name of articles	Model	Descriptions
1	Schneider Electric Japan Holdings Ltd.	GP-PROEX	PFXEXEDV40	Ver.4.09.600 or later

\*1: This project file uses the indirect address specification feature for switches and lamps, and therefore cannot be used with versions earlier than Ver. 4.09.600.

Please update your screen editor software to Ver. 4.09.600 or later before using this project file.

## 5-4. Connection Devices

Table 5-4-1 Connection Devices

No	Manufacturer	Name	Model	Note
1	SMC Corporation	Air Management System	AMSxx-xxx-SA-xLx-x	*1, *2
2	SMC Corporation	Compact Wireless Base EtherNet/IP	EXW1-BENAC1	*2

\*1: The applicable models are SA (standalone) type. This project file supports connection of up to 10 units.

\*2: For details on model numbers and the equipment required to connect AMS to a compact wireless base—such as wireless adapters—please refer to the catalogs and manuals provided by SMC Corporation.

## 5-5. Communication Cable

Table 5-5-1 Communication Cable

No	Manufacturer	Name	Model	Note
1	SMC Corporation	Communication Cable	EX9-ACxx0EN-PSRJ	M12 Plug - RJ45



5-6. Communication Settings

5-6-1. GP-Pro EX Communication Settings

Device/PLC

[Add Device/PLC](#) [Delete Device/PLC](#)

Device/PLC 1

Summary

Manufacturer

ODVA

Series

EtherNet/IP Explicit Messaging

Port

Ethernet (TCP)

Text Data Mode

2

[Change](#)

Communication Settings

Port No.

1024

☒ Auto

Timeout

3

(sec)

Retry

0

Wait To Send

0

(ms)

Default

Device-Specific Settings

Allowable Number of Devices/PLCs

32

[Add Device](#)


[Increase Allowable Number of Devices/PLCs](#)

Add Indirect Device

No.


Device Name

Settings



1

PLC1



IP Address=192.168.000.001,Enable Implicit Messagin




Figure 5-6-1 GP-Pro EX Communication Settings

5-6-1-1. Communication Settings

Table 5-6-1 Communication Settings Set Value

Item	Range	Initial Setting
Port No	1024 - 65535	1024
Auto allocation	OFF - ON	ON
Timeout	1 - 127	3
Retry	0 - 255	0
Wait To Send weight	0 - 255	0

5-6-1-2. Individual Device Settings

(1) Configuration Tab

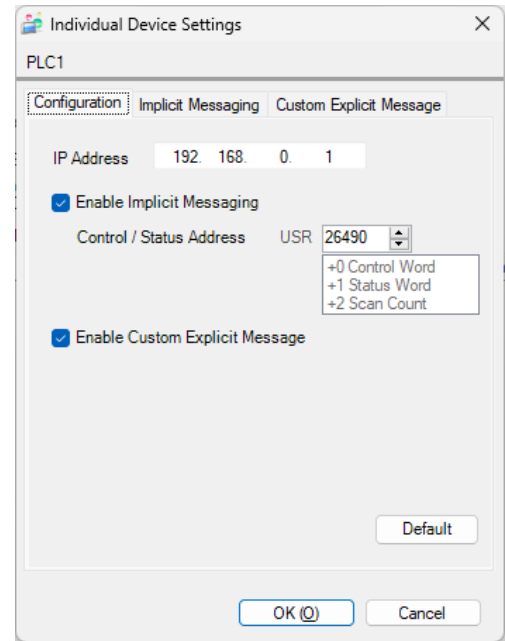


Figure 5-6-2 Configuration

Table 5-6-2 Configuration Set Value

Item	Initial Setting
IP Address	192.168.0.1
Enable Implicit Messaging	ON
Control / Status Address	26400
Enable Custom Explicit Messaging	ON

(2) Implicit Messaging Tab

Individual Device Settings

PLC1

Configuration | **Implicit Messaging** | Custom Explicit Message

Connection: Input/Output

		Size (8-Bit)	Assembly Instance	Address
Input	(T->O)	384	100	USR 26000
Output	(O->T)	384	150	USR 26500
Configuration	(O->T)	0	0	USR 0

Requested Packet Interval: 100 10ms - 10000ms

Byte Order in 16-Bit Word: H/L

☒ Use Unicast Connection

O->T Format: 32-bit Header

T->O Format: Modeless

Import from EDS File

OK (O) Cancel

Figure 5-6-3 Implicit Messaging

Table 5-6-3 Implicit Messaging Set Value

Item		Initial Setting
Connection		Input/Output
Input	Size [8-Bit]	384
	Assembly Instance	100
	Address	26000
Output	Size [byte]	384
	Assembly Instance	150
	Address	26500
Configuration	Size [byte]	0
	Assembly Instance	0
	Address	0
Byte Order in 16-Bit Word		H/L
O->T Format		32bit Header
T->O Format		Moderss

### (3) Custom Explicit Messaging Tab

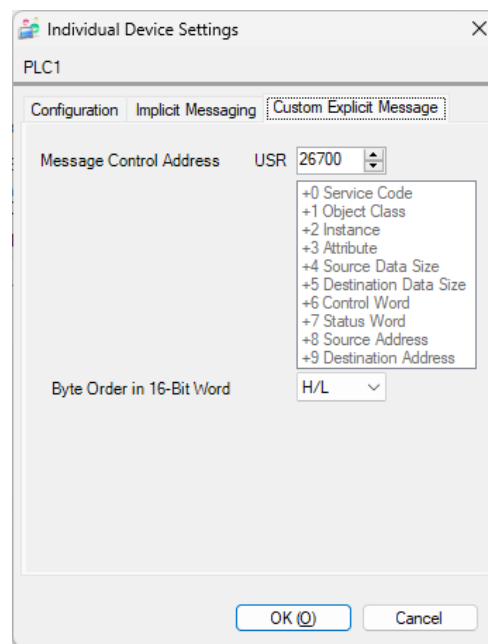


Figure 5-6-4 Custom Explicit Messaging

Table 5-6-4 Custom Explicit Messaging Set Value

Item	Initial Setting
Message Control Address	26700
Byte Order in 16-Bit Word	H/L

#### 5-6-1-3. Indirect Device Settings

This project file does not support the indirect device configuration feature. Please do not perform operations to add indirect devices.

## 5-6-2. Communication Settings for connection devices

This project file connects to the compact wireless base via EtherNet/IP. Please note that it does not communicate directly with the AMS.

Communication settings for the compact wireless base should be configured using the “SMC Wireless System I/O Configurator (NFC version).”

For further details, please refer to the manuals provided by SMC Corporation and our device connection manual (ODVA EtherNet/IP Explicit Messaging).

### 5-6-2-1. Ethernet setting parameters

No changes are required for the Ethernet setting parameters.

Table 5-6-5 Ethernet setting parameters

Classification	Parameter name		Set value	Remark
Ethernet setting	(1)	IP address type	Manual	
	(2)	IP address	192.168.0.1	
	(3)	SUBNET MASK	255.255.255.0	
	(4)	Default gateway	0.0.0.0	
	(5)	Auto MDI/MDI-X	Auto	
	(6)	Duplex	Full Duplex	
	(7)	Communication speed	Auto	

### 5-6-2-2. System setting parameters

Please change the settings for the following items:

- (1) System Input Size: 384 bytes
- (2) System Output Size: 384 bytes

Table 5-6-6 System setting parameters

Classification	Parameter name		Set value	Remark
System Setting	(1)	I/O mapping	Fixed	
	(2)	System input size	3072 points / 384byte	Change Required
	(3)	System output size	3072 points / 384byte	Change Required
	(4)	Diagnostic allocation	Advanced	Cannot Be Changed
	(5)	Max. Remote units	15 Remotes	
	(6)	Time of Wireless communication timeout	500 msec	
	(7)	Power Transmission Level	High	
	(8)	Wireless signal	Active	
	(9)	Protocol	V.2.0	
	(10)	Time Information	-	
	(11)	Synchronize time	-	

### 5-6-2-3. Pairing settings

Perform pairing according to the number of AMS units to be connected.

## 6. Screen Configuration

### 6-1. Screen types

This project file provides the following nine types of functional screens.

Table 6-1-1 Screen types

Screen Title	Screen Image	Functionality
[B0001] Title		<ul style="list-style-type: none"> <li>• Switch display language</li> <li>• Check version</li> <li>• Automatically transition to another screen after 5 seconds</li> </ul>
[B0100] AMS List		<ul style="list-style-type: none"> <li>• Display list of connected AMS units</li> <li>• Show connection status of each AMS</li> <li>• Select AMS unit for detailed view</li> </ul>
[B0200] Air consumption Monitor		<ul style="list-style-type: none"> <li>• Display Air consumption and reduction amount of selected AMS</li> <li>• Convert air reduction to CO<sub>2</sub> and cost, and display</li> <li>• Show Air consumption trend of selected AMS</li> <li>• Display operating status of selected AMS</li> <li>• Switch operating status of selected AMS</li> </ul>
[B0201] Air consumption Monitor (Total)		<ul style="list-style-type: none"> <li>• Display total Air consumption and reduction of all connected AMS units</li> <li>• Convert total air reduction to CO<sub>2</sub> and cost, and display</li> <li>• Show total Air consumption trend of all connected AMS units</li> </ul>
[B0300] Instantaneous Flow Trend		<ul style="list-style-type: none"> <li>• Display instantaneous flow and pressure of selected AMS</li> <li>• Set/reset reference flow of selected AMS</li> <li>• Show connection status of selected AMS</li> <li>• Display operating status of selected AMS</li> <li>• Switch operating status of selected AMS</li> <li>• Pause/resume CSV output</li> </ul>
[B0041] Common Settings		<ul style="list-style-type: none"> <li>• Set conversion coefficients for reduction display</li> <li>• Set sampling interval for trend data</li> <li>• Enable/disable CSV output of trend data</li> <li>• Switch display language</li> <li>• Enable/disable button operations</li> <li>• Enable/disable Monetary value</li> </ul>

Screen Title	Screen Image	Functionality
[B0042] Individual Settings		<ul style="list-style-type: none"> <li>• Set display name for each AMS</li> <li>• Select type of Isolation signal input for each AMS</li> </ul>
[B0043] Time Settings		<ul style="list-style-type: none"> <li>• Set the time of the display unit</li> </ul>
[B0044] Data Clear		<ul style="list-style-type: none"> <li>• Clear all data stored in the display unit</li> <li>• Clear measurement data stored in the display unit</li> </ul>

## 6-2. Screen Transitions

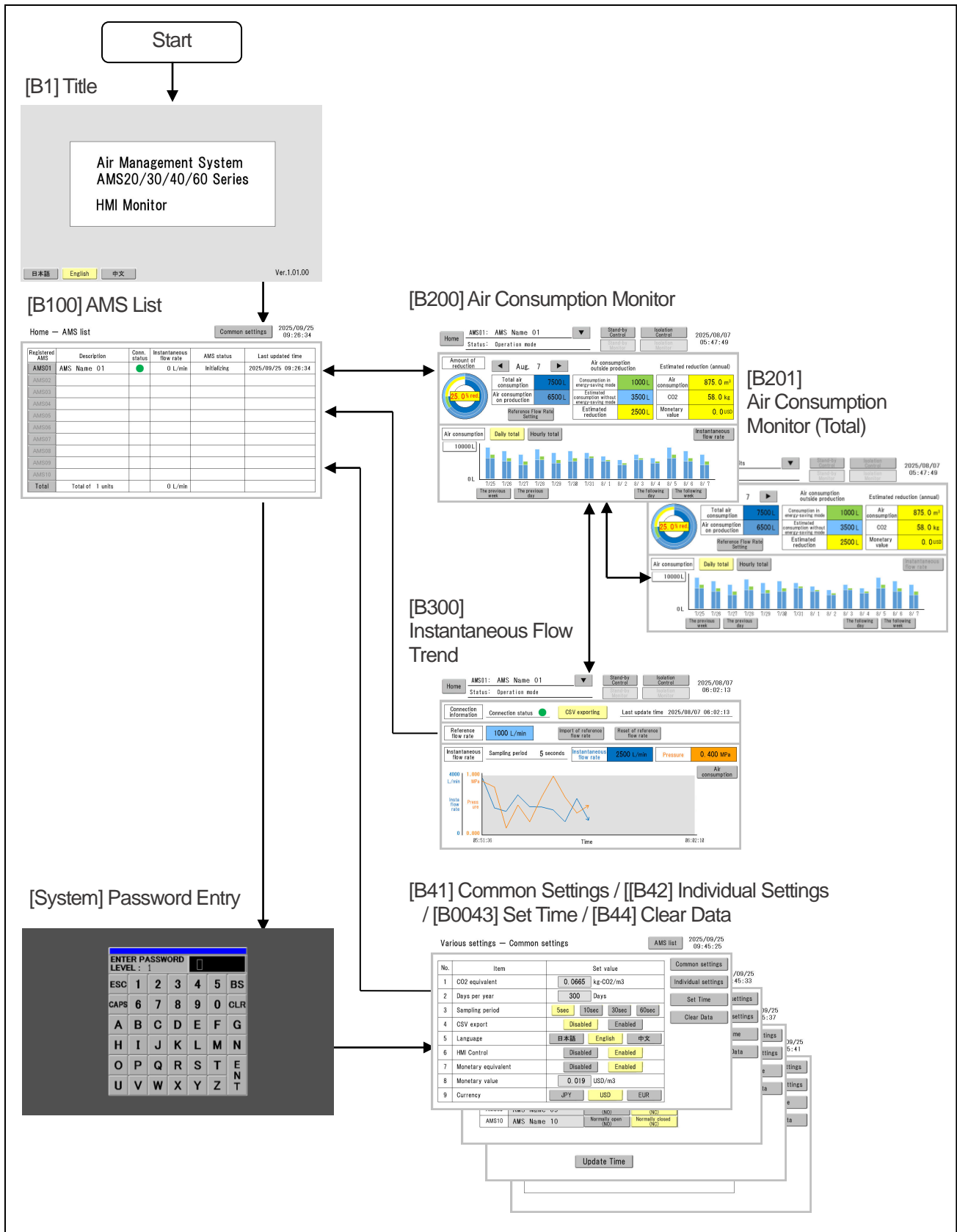


Figure 6-2-1 Screen Transitions



# 7. Screen Specifications

All screens in this project file are locked by the system. If you attempt to edit them, a dialog will appear indicating that editing is not possible. Screens displayed in red in the screen list cannot be edited.

## 7-1. Title



Figure 7-1-1 Screen Image

Table 7-1-1 Component Descriptions

No.	Item	Component	Description
1	Ver.	Data Display	Displays the version of the project data.
2	Language Switch	Switch	Selects the display language. The displayed language changes according to the selected option.
3	Timer Process	D-Script	Automatically transitions to the next screen 5 seconds after display.

## 7-2. AMS List

Home — AMS list

Common settings

2025/09/25  
09:26:34


Registered AMS	Description	Conn. status	Instantaneous flow rate	AMS status	Last updated time
AMS01	AMS Name 01		0 L/min	Initializing	2025/09/25 09:26:34
AMS02					
AMS03					
AMS04					
AMS05					
AMS06					
AMS07					
AMS08					
AMS09					
AMS10					
Total	Total of 1 units		0 L/min		

Figure 7-2-1 Screen Image

Table 7-2-1 Component Descriptions

No.	Item	Component	Description
1	AMS Selection.	Switch	Pressing this switch transitions to the Air consumption Monitor screen for the selected AMS. Switches for AMS units not registered to the wireless base are shown as disabled.
2	Name	Data Display	Displays the name of each AMS as registered in the individual settings. "Total" shows the number of AMS units paired with the wireless base. Names of AMS units not registered to the wireless base are not displayed.
3	Connection Status	Lamp	Displays green while the connection between the HMI ↔ wireless base ↔ AMS is established. Displays gray when a communication error occurs. Status of AMS units not registered to the wireless base is not shown.
4	Instantaneous Flow	Data Display	Displays the current instantaneous flow value of each AMS. "Total" shows the sum of instantaneous flow values of all AMS units. Values for AMS units not registered to the wireless base are not displayed.
5	AMS Status	Lamp	Displays the operating status of each AMS. Status of AMS units not registered to the wireless base is not displayed.
6	Last Update Time	Data Display	Displays the most recent time data was successfully retrieved from each AMS. Times for AMS units not registered to the wireless base are not displayed.
7	Common Settings Switch	Switch	Pressing this switch opens the password entry screen. The common settings screen will not be displayed unless the correct password is entered. The password is "9999" and can only be changed in the drawing software.

### 7-3. Air consumption Monitor / Air consumption Monitor (Total)

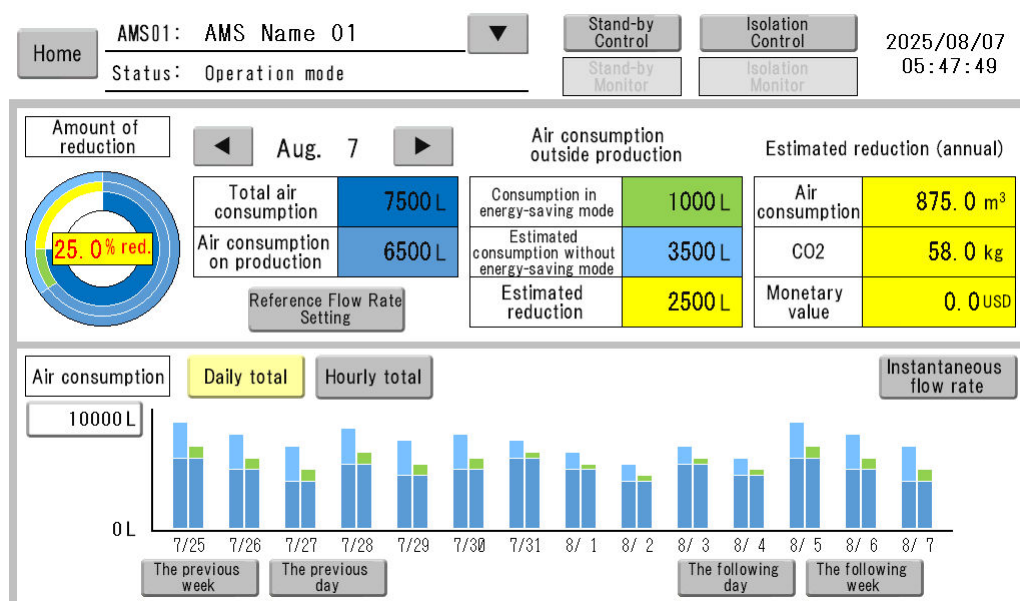


Figure 7-3-1 Screen Image

Table 7-3-1 Component Descriptions

No.	Item	Component	Description
1	Home	Switch	Pressing this switch transitions to the AMS List screen.
2	Name	Data Display	Displays the name of the currently selected AMS. If 'Total' is selected, the total number of AMS units registered to the wireless base is displayed.
3	Name ▼	Switch	Pressing this switch opens a window to select an AMS. Selecting an AMS updates the displayed content accordingly.
4	Status	Lamp	Displays the operating status of the currently selected AMS. If 'Total' is selected, AMS status is not displayed.
5	Stand-by Control	Switch / Lamp	If the lamp is off and the switch is pressed, a confirmation window for Stand-by ON appears. Pressing OK sends a Stand-by signal to the selected AMS. If the lamp is on and the switch is pressed, a confirmation window for Stand-by OFF appears. Pressing OK stops the Stand-by signal. While the Stand-by signal is active, the switch lights up yellow. This switch is disabled if HMI control is disabled in common settings or if 'Total' is selected.
6	Isolation Control	Switch / Lamp	If the lamp is off and the switch is pressed, a confirmation window for Isolation ON appears. Pressing OK sends an Isolation signal to the selected AMS. If the lamp is on and the switch is pressed, a confirmation window for Isolation OFF appears. Pressing OK stops the Isolation signal. While the Isolation signal is active, the switch lights up yellow. This switch is disabled if HMI control is disabled in common settings or if 'Total' is selected.
7	Stand-by Monitor	Lamp	Displays the Stand-by signal status of the selected AMS. If 'Total' is selected, it always shows OFF.
8	Isolation Monitor	Lamp	Displays the Isolation signal status of the selected AMS. If 'Total' is selected, it always shows OFF.

No.	Item	Component	Description
9	Air consumption	Data Display	Displays the following types of Air consumption for the selected AMS: - Total Air consumption: From 0:00 to current time - Air consumption on production: When AMS is not in Stand-by/Isolation - Consumption in energy-saving mode: When AMS is in Stand-by/Isolation - Estimated consumption without energy-saving mode: Estimated using reference flow during Stand-by/Isolation - Estimated Reduction: Difference between consumption without and with energy-saving mode
10	Estimated Reduction (Annual)	Data Display	Displays the result of multiplying the Estimated reduction for the displayed date by preset coefficients: - Air consumption: Estimated reduction x Days per year - CO <sub>2</sub> : Air consumption (Annual) x CO <sub>2</sub> equivalent - Monetary value: Air consumption (Annual) x Monetary value (only shown if Monetary equivalent is enabled in common settings)
11	Reduction Pie Chart	Graph	Displays Air consumption values in a pie chart with three layers: - Outer Ring (Dark Light Blue): Air consumption on production (Light Blue): Air consumption without energy-saving mode - Middle Ring (Dark Light Blue): Air consumption on production (Green): Air consumption in energy-saving mode (Yellow): Estimated reduction - Inner Ring (Blue): Total Air consumption
12	Reduction ◀ ▶	Switch	Pressing this switch changes the display date of the reduction data by one day. The date of the Air consumption trend bar graph also changes accordingly.
13	Trend Bar Graph	Graph	Displays a bar graph comparing Consumption in and without energy-saving mode. Can be switched between daily and hourly totals: - Daily Total: 14 days of stacked bars - Hourly Total: 24 hours of stacked bars Note: Data is displayed sequentially by time. Data during power outages is missing. Hourly graphs may not display correctly after power loss.)
14	Daily / Hourly Total	Switch	Pressing this switch toggles the Air consumption trend bar graph: - Daily Total: Switch from hourly to daily view - Hourly Total: Switch from daily to hourly view. If the date is more than 9 days ago, it automatically updates to 9 days ago.
15	Previous Week / Day / Next Week / Day	Switch	Pressing these switches changes the display date of the Air consumption trend graph. The reduction display date also changes accordingly.
16	Trend Bar Graph Scale	Data Display	Entering a value here changes the maximum value of the Air consumption trend bar graph for the selected AMS. Valid ranges: - Daily Total: AMS01-AMS10: 0 to 5,760,000 L Total: 0 to 57,600,000 L - Hourly Total: AMS01-AMS10: 0 to 240,000 L Total: 0 to 2,400,000 L
17	Instantaneous Flow Reference Setting	Switch	Pressing this switch transitions to the Instantaneous Flow Trend screen. If 'Total' is selected, the switches are disabled.

## 7-4. Instantaneous Flow Trend

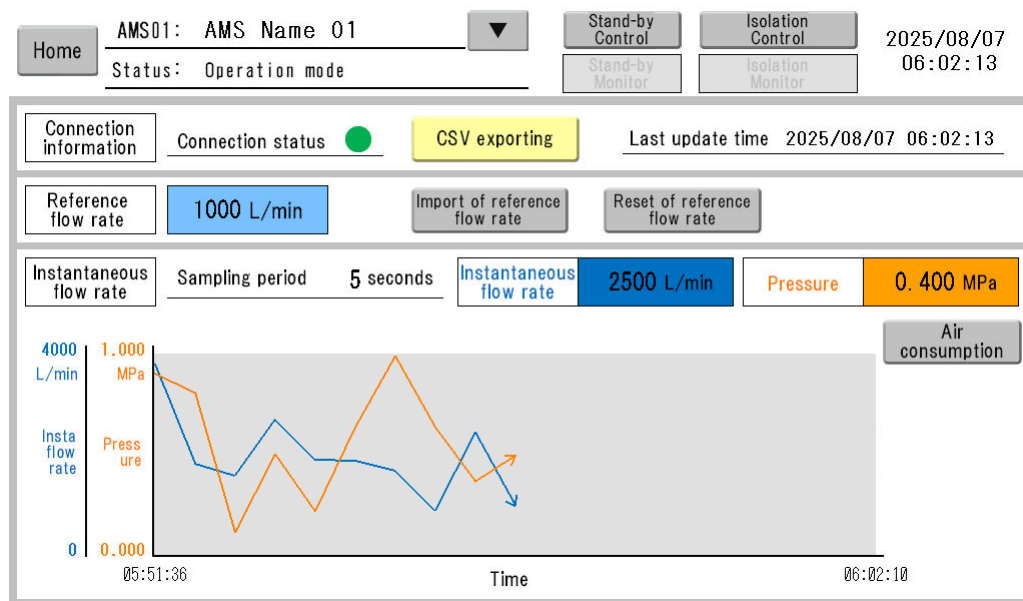


Figure 7-4-1 Screen Image

Table 7-4-1 Component Descriptions

No.	Item	Component	Description
1	Home	Switch	Pressing this switch transitions to the AMS list screen.
2	Name	Data Display	Displays the name of the currently selected AMS.
3	Name ▼	Switch	Pressing this switch opens a window to select an AMS. Selecting an AMS updates the displayed content.
4	Status	Lamp	Displays the operating status of the currently selected AMS.
5	Stand-by Control	Switch / Lamp	If the lamp is off, pressing the switch opens a confirmation window for Stand-by ON. Pressing OK sends a Stand-by signal to the selected AMS. If the lamp is on, pressing the switch opens a confirmation window for Stand-by OFF. Pressing OK stops the Stand-by signal. The switch lights yellow while the Stand-by signal is active. This switch is disabled if HMI control is disabled in common settings.
6	Isolation Control	Switch / Lamp	If the lamp is off, pressing the switch opens a confirmation window for Isolation ON. Pressing OK sends an Isolation signal to the selected AMS. If the lamp is on, pressing the switch opens a confirmation window for Isolation OFF. Pressing OK stops the Isolation signal. The switch lights yellow while the Isolation signal is active. This switch is disabled if HMI control is disabled in common settings.
7	Stand-by Monitor	Lamp	Displays the Stand-by signal status of the currently selected AMS.
8	Isolation Monitor	Lamp	Displays the Isolation signal status of the currently selected AMS.
9	Connection Status	Lamp	Displays green when connection between Display ↔ Wireless Base ↔ AMS is established. Displays gray when a communication error occurs.
10	CSV Output	Switch / Lamp	If CSV output is enabled in common settings and a USB storage is connected, instantaneous flow trend data is saved to a CSV file. The lamp lights during output. Pressing the switch while the lamp is on opens a confirmation window to pause output. Pressing OK pauses output and allows USB removal. Pressing the switch while paused resumes output.

No.	Item	Component	Description
11	Last Update Time	Data Display	Displays the latest time data was successfully retrieved from the selected AMS.
12	Reference flow rate	Data Display	Displays the Reference flow rate captured via the capture switch. You can also manually input a pre-measured Reference flow rate. Used to calculate Consumption without energy-saving mode. The value is used immediately and does not affect past data.
13	Import of reference flow rate	Switch	Pressing this switch opens a confirmation window. Pressing OK, saves the current instantaneous flow value.
14	Reset of reference flow rate	Switch	Pressing this switch opens a confirmation window. Pressing OK, resets the reference flow rate to zero.
15	Sampling Interval	Data Display	Displays the sampling interval specified in the common settings screen.
16	Trend Graph	Trend Graph	Displays the trend of instantaneous flow and pressure of the selected AMS. The display period is Sampling Interval x 720 points. The maximum values of instantaneous flow rate and pressure that can be displayed are fixed as follows. - Instantaneous Flow: 4000 L/min - Pressure : 1.000 MPa.
17	Air consumption	Switch	Pressing this switch transitions to the Air consumption Monitor screen.

## 7-5. Common Settings

Various settings — Common settings

AMS list 2025/09/25 09:45:25

No.	Item	Set value
1	CO2 equivalent	0.0665 kg-CO2/m3
2	Days per year	300 Days
3	Sampling period	5sec 10sec 30sec 60sec
4	CSV export	Disabled Enabled
5	Language	日本語 English 中文
6	HMI Control	Disabled Enabled
7	Monetary equivalent	Disabled Enabled
8	Monetary value	0.019 USD/m3
9	Currency	JPY USD EUR

Common settings  
Individual settings  
Set Time  
Clear Data

Figure 7-5-1 Screen Image

Table 7-5-1 Component Descriptions

No.	Item	Component	Description
1	AMS List	Switch	Pressing this switch transitions to the AMS list screen.

No.	Item	Component	Description
2	CO2 equivalent	Data Display	Enter the CO2 equivalent to convert Air consumption reduction to CO2 reduction. The CO2 value of the Estimated reduction (Annual) displayed on the Air consumption Monitor screen will change according to the input.
3	Day per year	Switch	Enter the Day per year to convert daily recorded Air consumption reduction to annual values. The Air consumption, CO2, and Monetary value of the Estimated reduction (Annual) displayed on the Air consumption Monitor screen will change according to the input.
4	Sampling Interval	Switch	Select the sampling interval for trend graphs and CSV output. The sampling interval for the instantaneous flow trend graph and CSV output will change according to the selection.
5	CSV Output	Switch	When enabled, data retrieved from AMS will be periodically saved to a CSV file.
6	Language	Switch	Select the display language. The displayed language will change according to the selection.
7	HMI Control	Switch	When enabled, switches for Stand-by and Isolation control on screens such as the Air consumption Monitor become operable.
8	Monetary equivalent	Switch	When enabled, the Monetary value of the Estimated reduction (Annual) will be displayed on the Air consumption Monitor screen.
9	Monetary value	Switch	Enter the Monetary value to convert Air consumption reduction to Monetary value. The Monetary value of the Estimated reduction (Annual) will change according to the input.
10	Currency	Switch	Select the Currency to be displayed in Monetary value. The Currency displayed in the Monetary value of the Estimated reduction (Annual) on the Air consumption Monitor screen will change according to the input. The Currency display of the Monetary value on this screen will also change accordingly.
11	Common Settings	Switch	Pressing this switch transitions to the Common Settings screen.
12	Individual Settings	Switch	Pressing this switch transitions to the Individual Settings screen.
13	Time Settings	Switch	Pressing this switch transitions to the Time Settings screen.
14	Data Clear	Switch	Pressing this switch transitions to the Data Clear screen.



## 7-6. Individual Settings

Various settings — Individual settings

AMS list

2025/09/25  
09:45:33

AMS No.	Description	Isolation input signal	
AMS01	AMS Name 01	Normally open (NO)	Normally closed (NC)
AMS02	AMS Name 02	Normally open (NO)	Normally closed (NC)
AMS03	AMS Name 03	Normally open (NO)	Normally closed (NC)
AMS04	AMS Name 04	Normally open (NO)	Normally closed (NC)
AMS05	AMS Name 05	Normally open (NO)	Normally closed (NC)
AMS06	AMS Name 06	Normally open (NO)	Normally closed (NC)
AMS07	AMS Name 07	Normally open (NO)	Normally closed (NC)
AMS08	AMS Name 08	Normally open (NO)	Normally closed (NC)
AMS09	AMS Name 09	Normally open (NO)	Normally closed (NC)
AMS10	AMS Name 10	Normally open (NO)	Normally closed (NC)

Common settings

Individual settings

Set Time

Clear Data

Figure 7-6-1 Screen Image

Table 7-6-1 Component Descriptions

No.	Item	Component	Description
1	AMS List	Switch	Pressing this switch transitions to the AMS list screen.
2	Name	Data Display	Enter the name of the equipment/process where the AMS is installed. The entered name will be reflected in the AMS name displayed on screens such as the Air consumption Monitor.
3	Isolation Input Signal	Switch	Select the type of Isolation signal for the connected AMS. The type of Isolation signal output to each AMS will change according to the selected option.
4	Common Settings	Switch	Pressing this switch transitions to the Common Settings screen.
5	Individual Settings	Switch	Pressing this switch transitions to the Individual Settings screen.
6	Time Settings	Switch	Pressing this switch transitions to the Time Settings screen.
7	Data Clear	Switch	Pressing this switch transitions to the Data Clear screen.



## 7-7. Set Time

Various settings — Set Time

AMS list 2025/09/25 09:45:37

Year 25 ▲▼

Month 09 ▲▼

Day 25 ▲▼

Hour 09 ▲▼

Minute 45 ▲▼

Second 35 ▲▼

Common settings

Individual settings

Set Time

Clear Data

Update Time

Figure 7-7-1 Screen Image

Table 7-7-1 Component Descriptions

No.	Item	Component	Description
1	AMS List	Switch	Pressing this switch transitions to the AMS list screen.
2	Year	Data Display / Switch	Enter the year to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 0 to 99.
3	Month	Data Display / Switch	Enter the month to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 1 to 12.
4	Day	Data Display / Switch	Enter the day to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 1 to 31.
5	Hour	Data Display / Switch	Enter the hour to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 0 to 23.
6	Minute	Data Display / Switch	Enter the minute to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 0 to 59.
7	Second	Data Display / Switch	Enter the second to set the time. Pressing the ▲▼ switch increments/decrements the value by 1. Direct input is also possible. Input range: 0 to 59.
8	Update Time	Switch	Pressing this switch updates the system time of the display unit to the entered time. If an invalid date is entered, the date will not be reflected correctly (e.g., June 31, 2025).
9	Common Settings	Switch	Pressing this switch transitions to the Common Settings screen.

No.	Item	Component	Description
10	Individual Settings	Switch	Pressing this switch transitions to the Individual Settings screen.
11	Time Settings	Switch	Pressing this switch transitions to the Time Settings screen.
12	Data Clear	Switch	Pressing this switch transitions to the Data Clear screen.

## 7-8. Clear Data

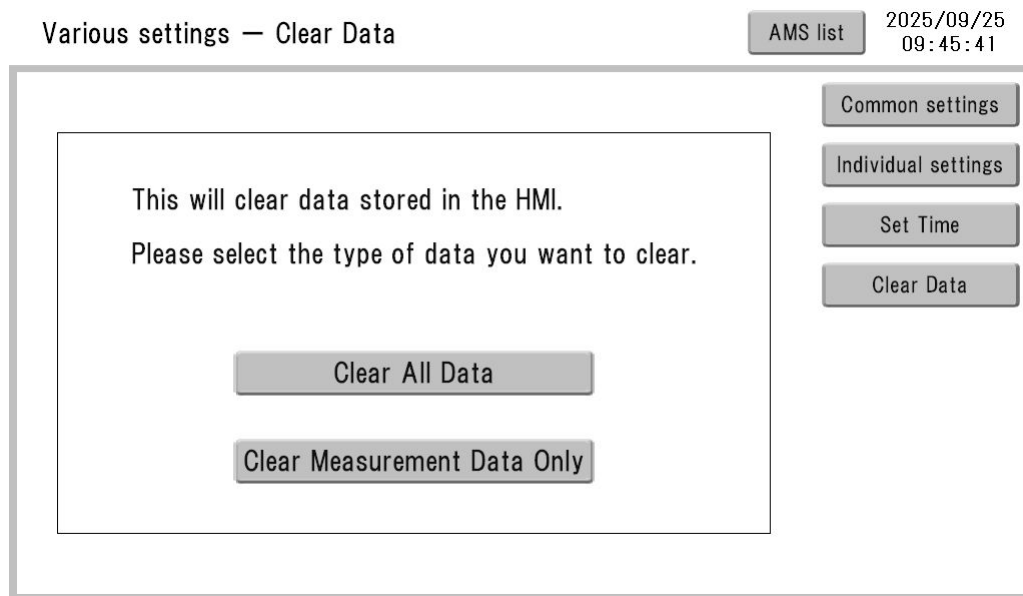


Figure 7-8-1 Screen Image

Table 7-8-1 Component Descriptions

No.	Item	Component	Description
1	AMS List	Switch	Pressing this switch transitions to the AMS List screen.
2	Clear All Data	Switch	Displays a confirmation window. Pressing the 'Clear All Data' switch clears the following data stored in the display unit: - Common and individual settings - Reference flow and max values of Air consumption trend graphs - Stand-by and Isolation signal outputs - Logging data (excluding CSV output) - Daily cumulative trend graph data - Hourly cumulative trend graph data After clearing, a restart prompt appears. Pressing the restart switch restarts the display unit.

No.	Item	Component	Description
3	Clear Measurement Data Only	Switch	Displays a confirmation window. Pressing the 'Clear Measurement Data Only' switch clears the following data stored in the display unit: - Stand-by and Isolation signal outputs - Logging data (excluding CSV output) - Daily cumulative trend graph data - Hourly cumulative trend graph data After clearing, a restart prompt appears. Pressing the restart switch restarts the display unit.
4	Common Settings	Switch	Pressing this switch transitions to the Common Settings screen.
5	Individual Settings	Switch	Pressing this switch transitions to the Individual Settings screen.
6	Time Settings	Switch	Pressing this switch transitions to the Time Settings screen.
7	Data Clear	Switch	Pressing this switch transitions to the Data Clear screen.

## 7-9. Precautions for Use

The following precautions apply when using this connection device sample (cockpit parts):

- (1) This connection device sample is designed on the assumption that the display unit is continuously powered.  
If the power is turned off around the "00 minutes" mark of any hour, data may not be saved correctly, and the hourly cumulative trend graph may not display properly.  
If, after restarting the power, the measurement date or the hourly cumulative trend graph is not displayed correctly, please consider performing a data clear.
- (2) The accumulated flow recorded while communication between the display unit and the AMS remote is disconnected will be added to the "Air consumption During Production" once communication is restored.  
However, if the accumulated flow during the disconnection exceeds 5,760,000 L, it will be considered abnormal and will not be added.

## 8. Other Display Unit Settings

### 8-1. System Settings

The items used in the system settings are listed below.

#### 8-1-1. Display Unit - Remote Viewer - FTP Settings

In this project file, the following settings have been configured to make it easier to retrieve the output CSV files.

Table 8-1-1 FTP Settings

Use FTP.	Destination	Folder	Use Status Address
Enabled	USB Storage	Blank (root)	Disabled

### 8-2. Common Settings

The items used in the common settings are listed below.

For detailed configuration instructions, please refer to the GP-Pro EX Reference Manual.

#### 8-2-1. Sampling Settings

In this project file, the following sampling groups are used.

Please do not change these settings, as doing so may lead to malfunction.

Table 8-2-1 Sampling Settings

Group No.	Comment	Word Count	Execution Condition	Count	Description
1	Instantaneous flow rate	80	Bit ON	720	Used for trend graph and CSV output settings
2	Hourly total	64	Bit ON	216	Used for hourly total bar graph settings
3	Instantaneous flow rate	80	Bit ON	720	Used for trend graph and CSV output settings

#### 8-2-2. Security Settings

In this project file, the "Edit Parameters" and "Prohibit Parameter Writing" functions are used.

Please change the password settings as needed.

##### 8-2-2-1. Password Settings

The password used in this project file is shown below.

Table 8-2-2 Password Settings

Level	Password
1	9999

### 8-2-2-2. Extended Settings

The extended settings are shown below.

Table 8-2-3 Extended Settings

Group	Item	Setting Value	Remarks
Cancel Password Notification Bit	Enable Notification Bit	Disabled	
	Notification Bit Address	-	
Clear Security Level	Clear Security Level	Enabled	
	Timer	5 min	
Action on Screen Change	Security Level Behavior	Input Password When Level Increases	

### 8-2-2-3. Security Level List

The list of Security Levels used in this project file is shown below.

Table 8-2-4 Security Level List

Screen No.	Security Level	Title
B0041	1	Common Settings
B0042	1	Individual settings
B0043	1	Set Time
B0044	1	Clear Data

### 8-2-3. Time Schedule

This project file uses the following Time Schedule settings.

Please do not change these settings, as doing so may lead to malfunction.

Table 8-2-5 Sampling Settings

No.	Action Mode	Action Address	Time Type	Start Time	Day of the Week	Remarks
1	Bit Set	LS305100	Constant	23:59:57	Daily	
2	Bit Set	LS305101	Constant	00:00:00	Daily	
3	Bit Set	USR0319400	Constant	00:00:10	Daily	
4	Bit Set	USR0319501	Constant	01:00:10	Daily	
5	Bit Set	USR0319501	Constant	02:00:10	Daily	
6	Bit Set	USR0319501	Constant	03:00:10	Daily	
7	Bit Set	USR0319501	Constant	04:00:10	Daily	
8	Bit Set	USR0319501	Constant	05:00:10	Daily	
9	Bit Set	USR0319501	Constant	06:00:10	Daily	
10	Bit Set	USR0319501	Constant	07:00:10	Daily	
11	Bit Set	USR0319501	Constant	08:00:10	Daily	
12	Bit Set	USR0319501	Constant	09:00:10	Daily	
13	Bit Set	USR0319501	Constant	10:00:10	Daily	

14	Bit Set	USR0319501	Constant	11:00:10	Daily	
15	Bit Set	USR0319501	Constant	12:00:10	Daily	
16	Bit Set	USR0319501	Constant	13:00:10	Daily	
17	Bit Set	USR0319501	Constant	14:00:10	Daily	
18	Bit Set	USR0319501	Constant	15:00:10	Daily	
19	Bit Set	USR0319501	Constant	16:00:10	Daily	
20	Bit Set	USR0319501	Constant	17:00:10	Daily	
21	Bit Set	USR0319501	Constant	18:00:10	Daily	
22	Bit Set	USR0319501	Constant	19:00:10	Daily	
23	Bit Set	USR0319501	Constant	20:00:10	Daily	
24	Bit Set	USR0319501	Constant	21:00:10	Daily	
25	Bit Set	USR0319501	Constant	22:00:10	Daily	
26	Bit Set	USR0319501	Constant	23:00:10	Daily	

## 8-2-4. Text Table Settings

Table 8-2-6 Text Table Settings

	Item Name	Set Value
Text Table	Usage Range	8001-8500
Change Language	Enable Language Change Feature	Enabled
	Switch Control Address	USR29508
	Initial Table	Table 2
Select Table	Table 1	Japanese
	Table 2	ASCII
	Table 3	Chinese (Simplified)

## 8-2-5. Global D-Script Settings

This project file uses the following Global D-Scripts.

Please do not change these settings, as doing so may lead to malfunction.

Table 8-2-7 Global D-Script Settings

ID	Item Name	Trigger Condition
0	HMI Startup Process	On Project Startup
1	Continuous Process	When Bit is ON (LS203800)

## 8-2-6. Extended Script Settings

This project file uses extended scripts.

Please do not change these settings, as doing so may lead to malfunction.

## 8-2-7. User-Defined Functions

This project file uses the following user-defined functions.

Please do not change these settings, as doing so may lead to malfunction.

Table 8-2-8 User-Defined Functions

Script Type	Function Name	Purpose
D-Script	fn_ClearDayTotal	Clears area for daily total bar graph
D-Script	fn_ClearHourTotal	Clears area for hourly total bar graph
D-Script	fn_CopyDayTotal	Copies data for daily total bar graph
D-Script	fn_CopyHourTotal	Copies data for hourly total bar graph
D-Script	fn_GraphDayTotal32	Displays daily total bar graph
D-Script	fn_GraphHourTotal32	Displays hourly total bar graph
D-Script	fn_GraphReduction32	Displays reduction pie chart
D-Script	fn_UpdateHourTotal	Updates current value of hourly total data
D-Script	GD_fn_SaveCSV	Saves logging data to CSV
Extended Script	EX_Calc_Consumption	Calculates Air consumption
Extended Script	EX_Calc_ElapsedTime	Calculates elapsed time
Extended Script	EX_Calc_EstConsumpt	Calculates Estimated reduction amount
Extended Script	EX_Calc_Sub_NoCarry	Performs 32-bit subtraction
Extended Script	EX_Calc_Total	Calculates total value
Extended Script	EX_fn_EthernetIP	Retrieves EtherNet/IP data
Extended Script	EX_fn_FileRename	Renames file name
Extended Script	EX_fn_Logging	Retrieves logging data
Extended Script	EX_fn_RecDayTotal	Saves daily total data
Extended Script	EX_fn_RecHourTotal	Saves hourly total data
Extended Script	EX_Sub_Date2String	Converts date to string
Extended Script	EX_Sub_DateTime2Str	Converts date and time to string
Extended Script	EX_Sub_Month2String	Converts year and month to string

## 9. Address maps

### 9-1. List of internally-used addresses

In this project file, all USR devices on the display unit are reserved.  
For the LS area, LS5000 to LS8999 are available for use.

Table 9-1-1 USR Device

Range	Description
00000 - 00999	Area for Header
01000 - 01999	Area for AMS List
02000 - 02999	Reserved
03000 - 03999	For Reduction Display
04000 - 06999	For Daily Total Bar Graph
07000 - 09999	For Hourly Total Bar Graph
10000 - 25999	Work Area for Graph Data Loading
26000 - 26799	EtherNet/IP Communication Area
27000 - 27999	Area for Saving Air consumption Graph
28000 - 29999	Backup Area

Table 9-1-2 LS Device

Range	Description
0000 - 0019	HMI System Area
0020 - 0999	Reserved
1000 - 2031	User-Defined Functions
2032 - 2096	HMI System Area
2097 - 2999	Reserved
3000 - 3999	Work Memory for Extended Scripts
4000 - 4499	Work Memory for Screens
4500 - 8999	Available Area
9000 - 9999	HMI System Area



## 9-2. Variables List

This project file uses the following variables.  
Please do not modify or delete them.

Table 9-2-1 Internal Variables

Variable Name	Type	Array Size
r_ReductionDay	Real Variable	-
r_co2Eq	Real Variable	-
r_jpnEq	Real Variable	-
r_usdEq	Real Variable	-
r_eurEq	Real Variable	-
r_yearEq	Real Variable	-
r_temp	Real Variable	5
r_ReductionCO2	Real Variable	-
r_ReductionJPN	Real Variable	-
r_ReductionUSD	Real Variable	-
r_ReductionEUR	Real Variable	-
r_ReductionYear	Real Variable	-
i_ReductionDay	Integer Variable	-
i_co2Eq	Integer Variable	-
i_jpnEq	Integer Variable	-
i_usdEq	Integer Variable	-
i_eurEq	Integer Variable	-
i_yearEq	Integer Variable	-
i_temp	Integer Variable	5
i_ReductionCO2	Integer Variable	-
i_ReductionJPN	Integer Variable	-
i_ReductionUSD	Integer Variable	-
i_ReductionEUR	Integer Variable	-
i_ReductionYear	Integer Variable	-