# Quick Guide Air Management System Monitoring Tool

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1. Int	roduction	4
1.1.	Hardware and software requirements	4
1.2.	Software install	6
2. Wo	orking Principle	9
2.1.	AMS device IP address	9
2.2.	Switch configuration	9
2.3.	Connect/Disconnect to AMS OPC UA Server	10
2.4.	Graph	11
2.5.	Logging	13
2.6.	Web Server access	15
3. Da	ta visualization sections	15



## 1. Introduction

This quick guide describes the use and configuration of the Air Management System (here after describes as AMS) data Monitoring tool(here after describes as the tool).

#### 1.1. Hardware and software requirements

The hardware necessary for the operation of the tool consists of a PC with Windows operating system, an AMS base device of any size supplied by SMC and an Ethernet cable to connect both systems.

This is application software that runs on a PC. The following operating systems are supported: Windows® 11 (64 bit) Windows® 10 (64 bit)

\*Recommended PC resolution to use: 1920 x 1080 or 16/9 (100% in text and application size). The resolution of this version of the software is not adaptive.

This software is applicable to the following OPC UA<sup>™</sup>-supported products: EXA1-\*\*-PN-\*\* EXA1-\*\*-EN-\*\*



#### System overview

This software is used by connecting the PC on which this software is installed and the OPC UA<sup>™</sup>-supported product with an Ethernet cable. It is advised to use an Ethernet cable that is suitable for the OPC UA<sup>™</sup>-supported product. For details about the Ethernet cables , please refer to the operation manual for the OPC UA<sup>™</sup>-supported product being used.



Figure 1 – System overview



Document Number: DOC1069762-3

#### 1.2. Software install

To use this software, it must be installed on a PC. Download the file below from the SMC website.

#### AirManagementSystem\_MonitoringTool\_en.msi

Once downloaded, click the file to start the installation, and the window below will appear. Then, click "Next" to move to the next step.



Figure 2 – Setup Wizard

The following window will appear. Read the License Agreement and if you agree to the terms of the agreement, select "I accept the agreement" and click the "Next" button.



Figure 3 – License Agreement



When the following window appears, select the folder in which this software is to be installed and click the "Next" button.

AirManagementSystem_MonitoringTool Setu	ip	_		>
Destination Folder				5
Click Next to install to the default folder or click	Change to choo	ose another.		C
Install AirManagementSystem_MonitoringTool to	:			
C:¥Program Files¥AirManagementSystem_Moni	toringTool¥			
Change				
			-	

Figure 4 – Destination Folder

You will then be given the option to create a desktop shortcut and a start menu shortcut. Tick the box to create the shortcuts and click the "Next" button.

🛃 AirManagementSystem_MonitoringTool Setup	×
Shortcuts	
Select shortcuts to create.	
Create desktop shortcut(s)	
Create start menu shortcut(s)	
Back	ext Cancel

Figure 5 – Shortcuts



The software is now ready for installation. Click the "Install" button to begin the installation.



Figure 6 – Start installation

When the following window appears, click "Finish" to complete the installation.







## 2. Working Principle

This section will explain the different steps for the correct operation of the tool with the AMS base devices.

#### 2.1. AMS device IP address

The first step for using the tool is to assign an IP address to the AMS device,

in order to provide an IP address to the OPC UA server to which the software is going to connect (OPC UA client).

SMC IP Address Setting Tool (EX9–ZSW–IPC1) can be available to allocate IP address to AMS.

#### 2.2. Switch configuration

So that the control of the Isolation, Standby and F-Standby forcing variables can be carried out from the software via OPC-UA, switch 1 must be configured to ON.



Refer to the flowing table to set the DIP switches.

		Switch Number					
	Switch	1	2	3	4		
Position		Communication Method	Regulation Type	NO/NC	Wireless Pairing Mode		
Design from the second	OFF	Industrial Ethernet	ARS	NC	Refer to Wireless		
Base type	ON	OPC UA*1	ITV *2	NO	Network		
Demoto time	OFF	Wireless Remote	ARS	NC	Configuration		
Remote type	ON	Standalone	ITV *2	NO	(page 45)		

Figure 8 – Switch configuration

Power cycle is required for AMS once the switch configuration have been changed. This allows to take control of these AMS variables from the Control section. \*Controls are disabled when connected with Anonymous

	Hub EtherNet/IP
Isolation	MS NS PWR MODE SIG
✓ Standby	
F-Standby	Settings1 Settings2
Standby	SMC

Figure 9 – Control section



\*If the only purpose is to visualize variables and log or graph them, but have the control externally via PLC, switch 1 must be OFF.

In order to be able to write to the Isolation, Standby and F-Standby variables, the writing of these variables will have to be enabled. To do this, access the Web server, the OPC UA Tag section:

	WCh	Tag name	I/O typ	e	Offset [byte]	Size [bit]	Position [bit]	Data type	Endian	Write enable	Buffer enable		*
J↓	-	AMS00_EX_DI	In	~	29	8	0	UINT8 🗸	Little 🗸			Remove	J
J↑	-	AMS00_EX_P4_PDin	In	~	30	128	0	UINT8 V	Little 🗸			Remove	J.
$\downarrow\uparrow$	-	AMS00_Standby	Out	~	0	1	0	BOOL 🗸	Little 🗸			Remove	j
J↑	-	AMS00_ForcedStandby	Out	~	0	1	1	BOOL ~	Little 🗸			Remove	J
$\downarrow\uparrow$	-	AMS00_VP_ITV_NC	Out	~	0	1	2	BOOL ~	Little 🗸			Remove	J
$\downarrow\uparrow$	-	AMS00_VP_ITV_NO	Out	~	0	1	3	BOOL 🗸	Little 🗸			Remove	<b>.</b>
							Ex;	port tag file		eset tag	🖉 Write t	ag	

Figure 10 – Web server OPC UA Tag section

First click on the write enable box in the variables indicated in the image and after click on Write tag.

### 2.3. Connect/Disconnect to AMS OPC UA Server

In order to connect or disconnect to the AMS OPC UA server, it must select the OPC UA Server button from the main menu.

l lí		Graph	WebS.	About
	SERVER	and croper		

Figure 11 – OPC UA Server button

A pop up window will appear in which you can select the previously configured AMS IP address. The allowed range is 0.0.0.0 to 255.255.255.255.

To start communication, press the connect button. If you are already connected and want to disconnect, click on the disconnect button.

To connect with Anonymous, check Anonymous Logins and press the connect button. \*If the connection fails with a different specification, the AMS requires a power cycle.



P ADDRESS	
Expertise -	Passion - Automation
	192.168.0.1
	The acceptable range is 0.0.0.0 to 255.255.255 Anonymous Login
	Expertise – Passion – Automation

Figure 12 – Connect/Disconnect window

Once connected, the following messages will appear.



Figure 13 – Connected message

## 2.4. Graph

To proceed to graphing, press the Graph button in the main menu.



For the graph settings, there is the possibility of configuring the logging sampling period and the measurement time. The graph will begin with the Start Graph button and will end with Stop Graph.



SMC.				
			GRAPH SI	ETTINGS
Expertise – Passion – Auto	omation			
SAMPLING PERIOD (SEC)	1 🔻	MEASUREMEN	IT TIME (MIN)	10 💌
Start Grap	лh		Stop G	raph
			mation	
			mation	

Figure 15 – Start/Stop Graph

The graph will represent the values of Temperature (C), Pressure (MPa), Instantaneous Flow (L/min), and the states of Isolation, Standby and F-Standby.



Once start or stop Graph, the following messages will appear.





Figure 17 – Graph start/stop messages

## 2.5. Logging

To proceed to data logging, press the logging button in the main menu.



Figure 18 – Logging button

For data logging, there is the possibility of configuring the logging sampling period. The logging will begin with the Start Logging button and will end with Stop Logging.

P LOGGING	>
Expertise – Passion – Automation	LOG SETTINGS
SAMPLING PERIOD (SEC)	1
Start Logging	Stop Logging
Expertise – Passion – A	Automation

Figure 19 – Start/Stop logging

Select the path where you want to locate your data file. Don't write a name.



#### Document Number: DOC1069762-3

🕌 Enter file pat	th (without name)					×
Look <u>I</u> n:	Desktop		•		<b>–</b> 1 88	
ConeDrive			Network			
📑 z4t7			!!!!124581417	0		
📑 This PC			!!!!!337389053	7		
🗂 Libraries		CX-One Introduction Guide Library				
SD Card (E:)		T YE_Applications				
TOSHIBA EXT (F:)			IBM System i	Access para	Window	s 🚍
😂 USB Drive (J:)			!!!!124581417	0		
4						
Folder <u>n</u> ame:	C:\Users\z4t7\Desktop					
Files of <u>Type</u> :	All Files					-
				Select	Cano	el

Figure 20 – Enter file path

After that, select the file name.

File name	×
Enter file name:	

Figure 21 – Enter file name

The logging will be done in a .txt file in the following format.





Once start or stop logging, the following messages will appear.



Message:Connected to the OPC UA server.Date:2024-01-29 03:32:38 Message:Data logging started.Date:2024-01-29 04:39:51 Message:Data logging finished.Date:2024-01-29 04:39:58 Message:Data logging started.Date:2024-01-29 04:40:47 Message:Data logging finished.Date:2024-01-29 04:40:52

Figure 23 – Data logging start/stop messages



Document Number: DOC1069762-3

#### 2.6. Web Server access

The device's Web Server can be accessed from the app by selecting the WebS. button.

SERVER	Gra	oh 📔 🖬	Logging	WebS.	About
JERVEN				2004110495	•

Figure 24 – Web Server button

# 3. Data visualization sections

In the central part of the interface are the different data visualization sections.

Control		Port 3: Digita	l Inputs				
Isolation	Hub EtherNet/IP MS NS PWR MODE SIG		0	Connect	or Pin No	. Details	Statu
		0.0			1	24 V (out)	
Standby		00	-	4 05 0	1 2	Isolation	HIGH
		E		000	3	0 V	
F-Standby	Settings1 Settings2	00	2	300	2 4	Standby	HIGH
	6010	OFT	0		5	NC	
Dicelar		Port 3 P	Port 4	knort			
Display		Port 3 F Port 4: Gener Process data	Port 4 ral IO-Lir Pin 2	Pin 4			
Display		Port 3 P Port 4: Gener Process data Standard VO:	Port 4	Pin 4 OFF			
		Port 3 P Port 4: Gener Process data Standard VO: LSB	Port 4 ral IO-Lin Pin 2 OFF	Pin 4 OFF out process d	ata: [HEX]		MSE
Display		Port 3 F Port 4: Gener Process data Standard VO: LSB 21 50	Port 4 ral IO-Lir Pin 2 OFF	Pin 4 OFF Out process d	ata: [HEX] 00	0	MSE
Display		Port 3 F Port 4: Gener Process data Standard VO: LSB 21 50 0 0	Port 4 ral IO-Lir Pin 2 OFF	Pin 4 OFF out process d 0 0	ata: [HEX] 0 0 0 0	0	MSE 0 0
Display		Port 3 F Port 4: Gener Process data Standard VO: LSB 21 50 0 0 LSB	Port 4 ral IO-Lir Pin 2 OFF Ins 0 0 0	Pin 4 OFF out process d 0 0 tput process	ata: [HEX] 0 0 0 0 jata: [HEX]	0	MSE 0 0 MSE
Display		Port 3 F Port 4: Gener Process data Standard VO: LSB 21 50 0 0 LSB 0 0	Port 4 ral IO-Lin Pin 2 OFF Int 0 0 0 0 0	Pin 4 OFF out process d 0 0 tput process 0	ata: [HEX] 0 C 0 C data: [HEX] 0 C	0	MSE 0 0 MSE

Figure 25 – Data visualization sections

Control section: Allows the user to view the AMS Status and control Isolation, Standby and F-Standby signals in real time.

Display section: Allows the user to view the values of temperature, pressure, instantaneous flow and accumulated flow in real time.

Port 3 Digital Inputs section: If port 3 is being used for control via digital signals, allows the user to view the pin status.

Port 4 General IO/Link port: If an IO-Link device is connected to port 4 of the AMS, the inputs (blue bytes) and outputs (green bytes) can be read using the following section. The values of pins 2 and 4 can also be displayed if they are used as digital signals.

