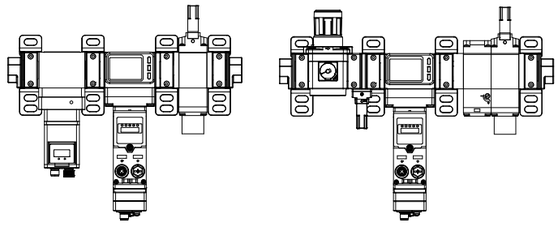
ORIGINAL INSTRUCTIONS

Instruction Manual
Air Management System
Series AMS20 / AMS30 / AMS40 / AMS60



The intended use of the Air Management System is to monitor, control and display flow, pressure and temperature information while connected to a communications protocol.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) *1), and other safety regulations.

*1) ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots -Safety. etc.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.
- This product is class A equipment intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted or radiated disturbances.

⚠ **Caution**	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning**	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger**	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

⚠ Warning

- **Always ensure compliance with relevant safety laws and standards.**
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.
- **Do not disassemble, modify (including changing the printed circuit board) or repair.**
  An injury or failure can result.
- **Do not operate the product outside of the specifications.**
  Fire, malfunction or damage to the product can result.
- **Do not use in an environment where flammable, explosive or corrosive gases are present.**
  Otherwise fire, explosion or corrosion may occur. The product is not designed to be explosion proof.
- **Do not use the product with flammable fluid.**
  Fire or an explosion can result.
- **If using the product in an interlocking circuit:**
  Provide a double interlocking system, for example a mechanical system.
- **Check the product for correct operation.**
  Otherwise malfunction can result, causing an accident.
- **Do not touch the terminals and connectors while the power is on.**
  Otherwise electric shock, malfunction or product damage can result.
- To obtain information about this product, please contact SMC.

2 Specifications

2.1 Air Management System (AMS##A series)

Model number		AMS20A	AMS30A	AMS40A	AMS60A
Components	Standby E/P regulator	ITV2050 -20	ITV2050 -30	ITV3050 -40	ITV3050 -60
	Air Management Hub	EXA1-20	EXA1-30	EXA1-40	EXA1-60
	Residual Pressure Relief Valve	VP346E	VP546E	VP746E	VP946E
Piping ports		1/8, 1/4	1/4, 3/8	3/8, 1/2	3/4, 1
Applicable fluid		Air			
Rated flow range		5 to 500 L/min	10 to 1000 L/min	20 to 2000 L/min	40 to 4000 L/min
Operating fluid temperature		0 to 50 °C			
Proof pressure		1.0 MPa			
Rated max. pressure		0.8 MPa			
Supply pressure range		0.3 to 0.8 MPa			
Setting pressure range		0.2 to 0.7 MPa			
Standby pressure range		0.2 to 0.4 MPa			
Power supply voltage		24 VDC ±10%			
Current consumption		500 mA max.			
Input and Output		DI x 2 / DI, DO / IO-Link, DI			
Enclosure (IP rating)		IP65 (only applicable to electrical parts)			

2.2 Air Management System (AMS##B series)

Model number		AMS20B	AMS30B	AMS40B	AMS60B
Components	Standby regulator	AR20S-D	AR30S-D	AR40S-D	AR50S-D
	AMS Hub	EXA1-20	EXA1-30	EXA1-40	EXA1-60
	Residual Pressure Relief Valve	VP346E	VP546E	VP746E	VP946E
Piping ports		1/8, 1/4	1/4, 3/8	3/8, 1/2	3/4, 1
Applicable fluid		Air			
Rated flow range		5 to 500 L/min	10 to 1000 L/min	20 to 2000 L/min	40 to 4000 L/min
Operating fluid temperature		0 to 50 °C			
Proof pressure		1.0 MPa			
Rated maximum pressure		0.7 MPa			
Supply pressure range		0.3 to 0.7 MPa			
Setting pressure range		0.2 to 0.4 MPa			
Power supply voltage		24 VDC ±10%			
Current consumption		400 mA max.			
Input and Output		DI x 2 / DI, DO / IO-Link, DI			
Enclosure (IP rating)		IP65 (only applicable for electrical parts)			

2 Specifications (continued)

2.3 Air Management Hub (EXA1-#)

Model				EXA1-20	EXA1-30	EXA1-40	EXA1-60
Applicable fluid				Air *1			
Operating fluid temperature				0 to 50 °C			
Flow	Rated flow range (L/min)			5 to 500	10 to 1000	20 to 2000	40 to 4000
	Accumulated flow range			0 to 9,999,999,990 L			
	Minimum resolution	Instantaneous flow		1 L/min		2 L/min	
		Accumulated flow		10 L			
	Accuracy			±3.0% F.S.			
	Repeatability			±1.0% F.S.			
	Pressure characteristics			±5.0% F.S. (0 to 1.0 MPa, 0.5 MPa standard)			
	Temperature characteristics			±5.0% F.S. (at 0 to 50 °C, 25 °C standard)			
	Units			L/min, CFM (ft³/min)			
Pressure	Rated pressure range			0.0 to 1.0 MPa			
	Proof pressure			1.5 MPa			
	Accuracy			±3.0% F.S.			
	Repeatability			±1.0% F.S.			
	Temperature characteristics			±5.0% F.S. (0 to 1.0 MPa, 0.5 MPa standard)			
	Units			MPa, kPa, kgf/cm², bar, psi			
Temperature	Rated temperature range			0.0 to 50.0 °C			
	Accuracy *2			±2.5 °C (flow range 10 to 100%)			
	Units			°C, °F			
Electrical	Power supply voltage			24 VDC ±10%			
	Current consumption			400 mA or less			
	Protection			Reverse protection, Current Limit			
	Indicators			LED and LCD			
Input / Output	User configurable port	Number of free ports		1			
		Configuration		Digital Input (x2), Digital Input and Output, IO-Link and Digital Input.			
		Port Specifications	IO-Link	Version	V1.1		
				Port class	Class A		
				Communication Speed	COM1 (4.8 kBaud) COM2 (38.4 kBaud) COM3 (230.4 kBaud) Automatically switches depending on the connected device.		
				Max. process data size	Input: 16 bytes / Output: 16 bytes (per port)		
				Supply current	0.3 A max.		
			Input	Input type	PNP input		
				Rated input current	Pin2: 2.5 mA typ. Pin4: 5.8 mA typ.		
				ON voltage	13 V or more		
				OFF voltage	8 V or less		
			Output	Output type	PNP output		
				Load current	0.25 A max.		
				Comms. error	HOLD / CLEAR		
	Input / Output for AMS function	Input/Output for standby E/P regulator		IO-Link			
		Output for standby regulator / Output for Residual Pressure Relief Valve		PNP output			
		Input for standby Input for isolation		Input type	PNP input		
				Rated input current	Pin2: 2.5 mA typ., Pin4: 5.8 mA typ.		
				ON voltage	13 V or more		
				OFF voltage	8 V or less		
				Supply current	0.3 A max.		

2 Specifications (continued)

2.3 Air Management Hub (EXA1-#) continued

Model		EXA1-20	EXA1-30	EXA1-40	EXA1-60
Indicator		LED, LCD			
Environment	Enclosure (IP rating)	IP65 (electrical parts only) Conforms to IEC60529			
	Operating / storage temperature range	Operation: 0 to 50 °C, Storage: -10 to 60 °C (no condensation or freezing)			
	Ambient Humidity	35 to 85% RH			
	Pollution degree	3			
	Installation location	Indoors			
Functions		IO-Link Unit Pressure detection Flow detection Temperature detection Air Management System functions -Auto Standby [Logic] -Auto Isolation [Logic] -Machine Input signal			
Connectors		PSU (M12, A-coded) IO-Link (M12, A-coded) Wireless Adaptor (M8) PROFINET/ EtherNet/IP™/ EtherCAT (M12, D-coded)			

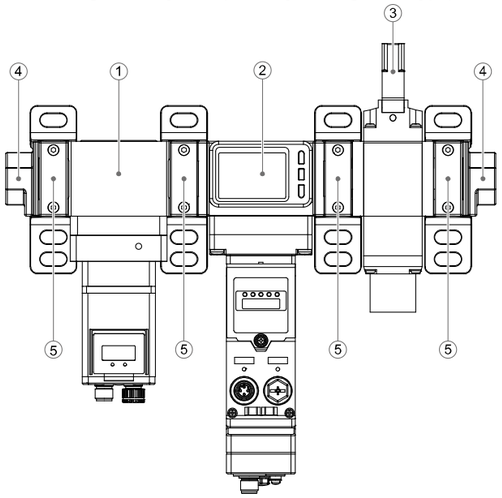
2.4 Communication specifications

Model	EXA1-##-PN	EXA1-##-EN	EXA1-##-EC
Number of communication ports	2 ports		
Protocol	PROFINET IO (Conformance Class C)	EtherNet/IP™ (Conformance version: composite11)	EtherCAT® (Conformance test record V.2.3.0)
Communication Speed	100 Mbps		
Communication method	-	Full duplex / Half- duplex	-
Configuration file *3	GSDML file	EDS file	ESI file
Occupation area (Number of Inputs / outputs)	Max. (406 byte/198 byte)		
IP address setting range	-	Through DHCP server: Optional address	-
Device information	-	Vendor ID: 7 (SMC Corporation) Device type: 12 (Communication Adapter) Product code: 263	-
Web server	Supported		Supported (using EoE) *4
OPC UA	Supported		Not supported

*1: Air quality grade is ISO 8573-1:2010 [4:6:-].
*2: When flow range is less than 10%, the temperature accuracy is -2.5 to 7.5 °C.
*3: The configuration file can be downloaded from the SMC website (https://www.smcworld.com).
*4: EtherCAT communication is established and the PLC / controller must also support EoE (Ethernet over EtherCAT).

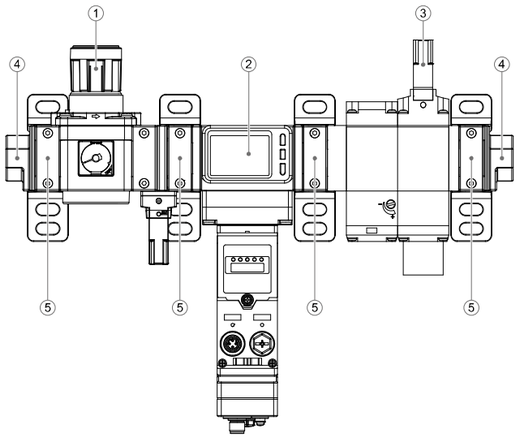
3 Names of Individual parts

3.1 Air Management System (Standby E/P regulator type)



No.	Name	Function
1	Standby E/P regulator	Control air pressure according to electrical signals from the Air Management Hub.
2	Air Management Hub	Manage Air Management System devices, communication to upper level and digital input module signals from external devices.
3	Residual Pressure Relief Valve	According to commands from the Air Management Hub, stop providing pressure and exhaust outlet pressure.
4	Piping adapter	Adapters for piping connection.
5	Spacer with bracket	Bracket to connect each module of the air management system and for installation.

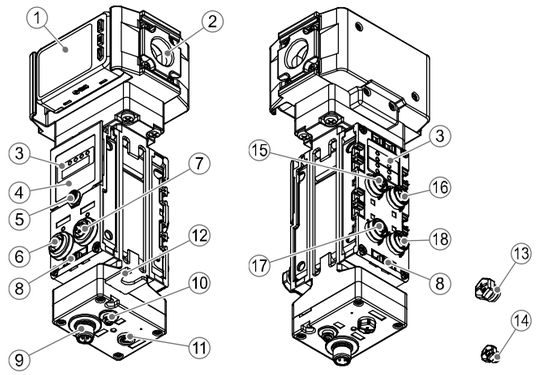
3.2 Air Management System (Standby regulator type)



No.	Name	Function
1	Standby regulator	Control air pressure manually.
2	Air Management Hub	Manage Air Management System devices, communication to upper level and digital input module signals from external devices.
3	Residual Pressure Relief Valve	According to commands from the Air Management Hub, stop providing pressure and exhaust outlet pressure.
4	Piping adapter	Adapters for piping connection.
5	Spacer with bracket	Bracket to connect each module of the air management system and for installation.

3 Names of Individual parts (continued)

3.3 Air Management Hub (EXA1-#)



No.	Part	Description
1	Display	Please refer to the following page for details.
2	Piping port	For piping connections.
3	LED display	Displays the Air Management Hub status.
4	Display cover	Display cover for switch setting.
5	Display cover screw	Screw to secure the display cover.
6	Connector PORT1 (IN ∗)	Connector for Industrial Ethernet input.
7	Connector PORT2 (OUT ∗)	Connector for Industrial Ethernet output
8	Marker groove	Groove for identification marker such as input/output signal name or unit address.
9	Connector (Power)	Connector for power supply.
10	FE terminal	Terminal to connect FE to Ground.
11	Wireless adaptor connector	To connect Wireless adaptor.
12	Wireless adaptor bracket	To mount wireless adaptor.
13	Seal cap (1 pc.)	For all unused M12 connectors.
14	Seal cap (1 pc.)	For all unused M8 connectors.
15	Connector (PORT1)	Connector for Residual Pressure Relief Valve.
16	Connector (PORT2)	Connector for Standby E/P regulator or Standby regulator.
17	Connector (PORT3)	Connector for Standby / Isolation signal.
18	Connector (PORT4)	Connector for external I/O device or IO-Link device.

∗: For EtherCAT

4 Installation

4.1 Installation

⚠ Warning

- Do not install the product unless the safety instructions have been read and understood.
- Use the product within the specified operating pressure and temperature range.

4.2 Environment

⚠ Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact in excess of the product's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

4 Installation (continued)

4.3 Mounting

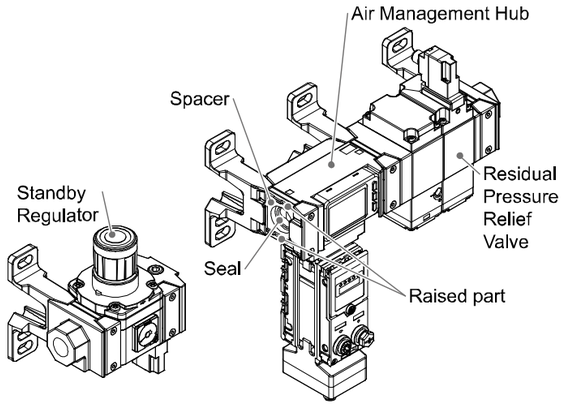
- Never mount the product in a location where it will be used as a mechanical support.
- Mount the product so that the fluid flows in the direction indicated by the arrow on the side of the body.
- Avoid mounting the product with the display facing upward.
- Do not mount the product upside down.
- The monitor with integrated display can be rotated. Rotating the display with excessive force will damage the end stop.

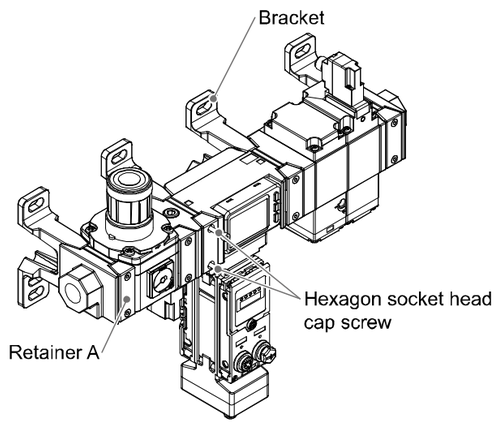
4.4 Piping

⚠ Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port.
- Fit the raised part of the spacer to the recessed part (groove for the raised part) of the product.
- Temporarily tighten the retainer A with two hexagon socket head cap screws.
- Tighten the two hexagon socket head cap screws evenly with a hexagonal wrench.
- Refer to the table below for the required tightening torque.

Applicable model	Hexagon wrench socket nominal size	Tightening torque
AMS20	2 mm	0.36 ±0.036 N•m
AMS30	3 mm	1.2 ±0.05 N•m
AMS40		
AMS60	4 mm	2.0 ±0.1 N•m





5 Wiring

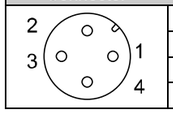
5.1 Wiring

⚠ Caution

- **Do not perform wiring while the power supply is ON.**
- **Confirm proper insulation of wiring.**
- **Do not route wires and cables together with power or high voltage cables.**
  The product can malfunction due to interference of noise and surge voltage from power and high voltage cables. Route the wires of the product separately from power or high voltage cables.
- If a commercially available switching power supply is used, be sure to connect the Functional Earth (FE) terminal to Ground. If the product is connected to the commercially available switching power supply, switching noise will be superimposed and the product specifications will not be satisfied. In that case, insert a noise filter such as a line noise filter/ ferrite between the switching power supplies or change the switching power supply to the series power supply.

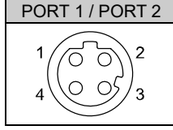
(1) Power Connector

M12 4-pin A-coded (Plug) connector used for the connection between the Air Management Hub and a power supply (see section 3 item 9).

Connector	Pin No.	Signal	Details
	1	DC(+)	24 VDC
	2	NC	Not Connected
	3	DC(–)	0 V
	4	NC	Not Connected

(2) Communication Connector

M12 4-pin D-coded (socket) connector port for Industrial Ethernet communication or access to the integrated Web server (see section 3 item 6 and 7).

Connector PORT 1 / PORT 2	Pin No.	Signal
	1	TX+
	2	RX+
	3	TX–
	4	RX–

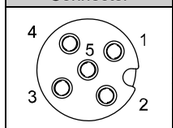
5.2 Connection to devices

Refer to the following instructions when device installation / replacement is required.
The AMS components and signals connect to the four connectors (PORT 1 to 4) on the rear of the Air Management Hub.
All connections are M12 5-pin A-coded connectors. The following table shows the functions of each port.

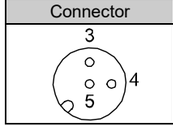
PORT	Function
1	Connection to Residual Pressure Relief Valve
2	Connection to Standby regulator
3	Digital input signals for standby and isolation
4	External I/O device (DIO or IO-Link)

(3) Connection to Residual Pressure Relief Valve

PORT1 (VP) – M12 5-pin A-coded (socket) connector for cable to residual pressure relief valve (see section 3 item 15).

Connector	Pin No.	Signal	Details
	1	NC	Not connected
	2	NC	Not connected
	3	0 V	0 V
	4	Output	Output
	5	NC	Not connected

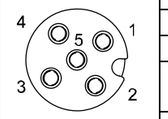
Connector on relief valve (VP) side: M12 3-pin A coded (plug)

Connector	Pin No.	Signal	Details
	3	0 V	0 V
	4	+	Input
	5	FE	Ground

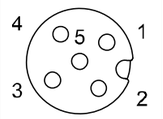
5 Wiring (continued)

(4) Connection to Standby Regulator

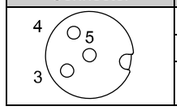
PORT2 (ITV / AR) – M12 5-pin A-coded (socket) connector for cable to residual pressure relief valve (see section 3 item 16).

Connector	Pin No.	Signal	Details
	1	24 V	24 VDC: Output
	2	NC	Not Connected
	3	0 V	0 V
	4	C/Q	ITV: IO-Link ARS: Output
	5	NC	Not Connected

Connector on E/P Regulator (ITV) side: M12 5-pin A coded (plug)

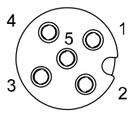
Connector	Pin No.	Signal	Details
	1	24 V	24 VDC: INPUT
	2	NC	Not connected
	3	0 V	0 V
	4	C/Q	IO-Link
	5	NC	Not connected

Connector on Regulator (AR) side: M12 3-pin A coded (plug)

Connector	Pin No.	Signal	Details
	3	0 V	0 V
	4	C/Q	Input
	5	NC	Not connected

(5) Connection to Digital input signal for Standby and Isolation

PORT3 (Standby and Isolation signals – M12 5-pin A-coded (socket) connector for cable to standby and isolation signals (see section 3 item 17). This connection is according to the user's equipment.

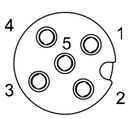
Connector	Pin No.	Signal	Details
	1	24 V	24 VDC: Output
	2	IN2	Input for Isolation
	3	0 V	0 V
	4	IN1	Input for Standby
	5	NC	Not connected

Details of Inputs for isolation

Normally Open / Closed	Input	Status
NC	24 V	Supply
	0 V	Exhaust
NO	24 V	Exhaust
	0 V	Supply

(6) Connection to External I/O device (DIO or IO-Link)

PORT4 (user configurable port – M12 5-pin A-coded (socket) connector. This port can be configured by the user for digital inputs / outputs / IO-Link master (see section 3 item 18).

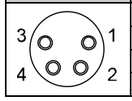
Connector	Pin No.	Signal	Details
	1	24 V	24 VDC: OUTPUT
	2	I/Q	Digital Input
	3	0 V	0V
	4	C/Q	IO-Link, Digital input (PNP) Digital output (PNP) *
	5	NC	Not Connected

*: Can be changed by setting parameters.

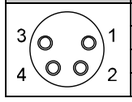
5 Wiring (continued)

(7) Connection to Wireless adaptor

M8 4-pin A-coded (socket) ADPTR connector for wireless adaptor if a wireless system is required (see section 3 item 11).

Connector	Pin No.	Signal	Details
	1	24 V	24 VDC (US1): Output
	2	Internal Bus B	Internal Bus B
	3	0 V	0 V (US1)
	4	Internal Bus A	Internal Bus A

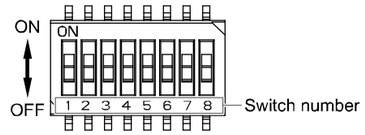
Connector on Wireless adaptor side: M8 4-pin A coded (plug)

Connector	Pin No.	Signal	Details
	1	24 V	24 VDC (US1): Input
	2	Internal Bus B	Internal Bus B
	3	0 V	0 V (US1)
	4	Internal Bus A	Internal Bus A

6 Settings

6.1 DIP Switch settings

The hardware setting of the Air Management Hub is configured using Setting1 DIP switch 1 to 4 under the display cover (see section 3 item 4). Loosen the display cover screw and open the display cover using a flat head screwdriver.



Refer to the following table to set the DIP switches.

AMS	Switch Position	Switch Number 1	2	3	4
		Communication Method	Regulator Type	NO / NC	Wireless Pairing Mode
Base type	OFF	Industrial Ethernet	AR	NC	Refer to Wireless Network Configuration
	ON	OPC UA *1	ITV *2	NO	
Remote type	OFF	Wireless Remote	AR	NC	
	ON	Standalone	ITV *2	NO	

*1: Not applicable to EXA1-##-EC (EtherCAT).
*2: If ITV#050-IL#-#-#-X399 is not connected, wireless communication and the product does not work.
*3: Switch Numbers 1 to 3 must be set with the power supply OFF.
*4: Use an insulated flat-blade screwdriver for switch settings.

6.2 Configuration

The Air Management Hub (Base type) has a web server which is used for configuration and maintenance.
To access the web server, connect a PC to the network and enter the Air Management Hub IP address into the web browser.

6.3 Wireless Configuration

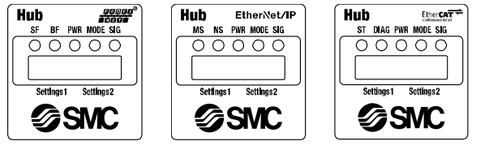
The Air Management Hub can be configured to make a wireless network. Connecting a wireless adapter (EXW1-A11N-X1) to the M8 "ADPTR" port of the AMS (see section 3 item 11) will allow wireless communication.

Each of the AMS devices must be set to pairing mode.
Starting with Setting1 DIP switch 4 in the OFF position, perform the sequence ON >> OFF >> ON. The SF/MS/ST and BF/NS/DIAG/SA LEDs of each device will flash red. Configure using the webserver.

For further information about the setting and configuration of this product, please refer to the operation manual on the SMC website (URL: https://www.smcworld.com) or contact SMC.

7 LED Indicators

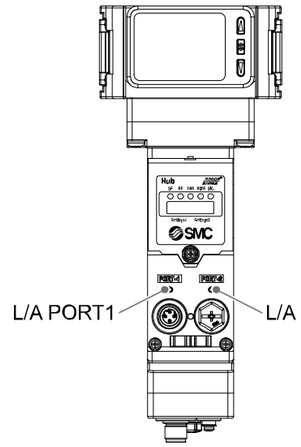
7.1 Air Management Hub (Base type)



LED	LED colour	PROFINET	EtherNet/IP™	EtherCAT
		Operation		
SF MS ST	OFF	Normal operation or power supply is OFF.	Power supply is OFF.	Communication "INIT" state or power OFF.
	Orange flashing	• Node flashing test command received. • Internal communication error in wireless adaptor.	-	-
	Green ON	-	Normal operation.	Communication "OPERATIONAL" state.
	Green flashing	• Power supply voltage is abnormal. • Short circuit of power supply in input or output port. • Excessive I/O setting of inputs / outputs.	Connection is not established.	• Communication "PRE-OPERATIONAL" state. • Communication " SAFE-OPERATIONAL " state.
	Red flashing	Pairing mode. (synchronized with BF)	• Power supply voltage is abnormal. • Short circuit of power supply in input or output port. • Excessive I/O setting of inputs / outputs. • Internal communication error in wireless adaptor. • Pairing mode. (synchronized with NS)	• Communication setup error or invalid configuration. • EtherCAT state changed locally in Base unit due to error. • Communication error (application watchdog timeout). • Pairing mode (synchronized with DIAG).
	Red ON	Unrecoverable error detected (e.g. Hardware failure).		
BF NS DIAG	OFF	Communication established.	-	No communication error.
	Green ON	OPC UA mode operating.	Communication is established.	-
	Green flashing	-	Communication is not established.	• Power supply voltage is abnormal. • Short circuit of power supply in input or output port. • Excessive I/O setting of inputs / outputs.
	Red flashing	Paring mode (synchronized with SF).	• Communication timeout. • Pairing mode (synchronized with MS).	Pairing mode (synchronized with ST).
	Red ON	• AMS Hub not connected to PLC. • Incorrect device name. • Incorrect IP address or not configured. • Incorrect GSDML file. • Configuration mismatch between PLC and actual connection.	Duplicated IP addresses are detected.	Non-restorable error is detected (e.g. Hardware failure).

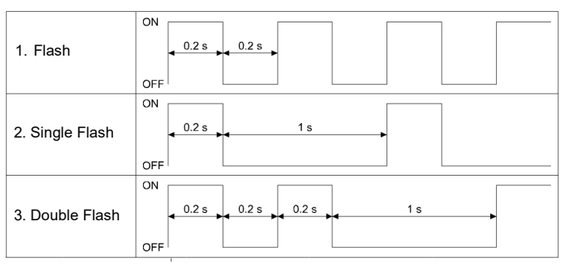
7 LED Indicators (continued)

LED	LED colour	PROFINET	EtherNet/IP™	EtherCAT
		Operation		
PWR	OFF	No power supplied.		
	Green flashing	Power supply voltage is abnormal.		
	Green ON	Power supply voltage is within the specification.		
MODE	OFF	Initialization in progress.		
	Green ON	Operation mode.		
	Green flashing	Waiting for standby signal.		
	Orange ON	Standby mode.		
	Orange flashing	Isolation mode.		
SIG	OFF	No signal received.		
	Green flashing	Input port short circuit.		
	Green ON	Standby input signal ON.		
	Orange flashing	Isolation input signal ON.		
	Orange ON	Standby and Isolation inputs are both ON.		



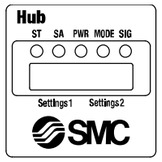
LED	LED colour	Operation
L/A PORT 1	OFF	PORT 1: No Link, No Activity.
	Green ON	PORT 1: Link, No Activity.
	Green flashing	PORT 1: Link, Activity.
L/A PORT 2	OFF	PORT 2: No Link, No Activity.
	Green ON	PORT 2: Link, No Activity.
	Green flashing	PORT 1: Link, Activity.

7.2 LED flashing pattern (EtherCAT)



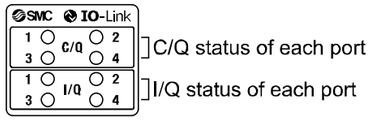
7 LED Indicators (continued)

7.3 Air Management Hub (Remote type)



LED	LED colour	Operation
ST	OFF	Normal operation or the power supply is OFF.
	Green flashing	• Power supply voltage is abnormal. • Short circuit of output ports or 24 V port.
	Red flashing	Pairing mode (synchronized with SA).
	Red ON	Component failure inside the AMS Hub.
SA	OFF	Standalone mode.
	Green ON	Wireless mode.
	Red flashing	Pairing mode (synchronized with ST).
PWR	OFF	Power not supplied.
	Green flashing	Power supply voltage is abnormal.
	Green ON	Power supply voltage is within the specification.
MODE	OFF	Initialization in progress.
	Green ON	Operation mode.
	Green flashing	Waiting for standby signal.
	Orange ON	Standby mode.
	Orange flashing	Isolation mode.
SIG	OFF	No signal received.
	Green flashing	Input port short circuit.
	Green ON	Standby input signal is ON.
	Orange flashing	Isolation input signal is ON.
	Orange ON	Standby and Isolation inputs are both ON.

7.4 Air Management Hub (Port status)



PORT1 (VP)

LED	LED colour	Operation
VP (CQ_1)	OFF	Output signal OFF.
	Orange ON	Output signal ON.
	Red ON	Short circuit detected.

PORT2 (ITV / ARS)

LED	LED colour	Operation
ITV/ARS (CQ_2)	OFF	Output signal OFF.
	Orange ON	Output signal ON (AR).
	Green flashing (1 Hz)	IO-Link device not connected.
	Green flashing (2 Hz)	• Connected device matching error. • Device process data mapping error. • Data storage writing error.
	Green ON	IO-Link device in communication.
	Red ON	Short circuit detected (24 V or C/Q).

PORT3 (Standby signal)

LED	LED colour	Operation
Standby Signal (CQ_3)	OFF	Input signal OFF.
	Orange ON	Input signal ON.
	Red ON	Short circuit detected (24 V).

7 LED Indicators (continued)

PORT3 (Isolation signal)

LED	LED colour	Operation
Isolation Signal (IQ_3)	OFF	Input signal OFF.
	Orange ON	Input signal ON.

PORT4 (IO-Link)

The C/Q_4 LED status varies depending on the setting of Pin No.4 (disabled, IO-Link communication, digital I/O) of port 4.

Pin function	LED colour	Operation
Deactivated (Port disabled)	OFF	Port disabled.
	Red ON	Short circuit detected (24 V).
IO-Link (IO-Link communication)	Green flashing (1 Hz)	IO-Link device disconnected.
	Green flashing (2 Hz)	• Connected device matching error. • Device process data mapping error.
	Green ON	IO-Link device communicating.
	Red ON	Short circuit detected (24 V or C/Q).
DI (Digital input)	OFF	Input signal OFF.
	Orange ON	Input signal ON.
	Red ON	Short circuit detected (24 V).
DO (Digital output)	OFF	Output signal OFF.
	Orange ON	Output signal ON.
	Red ON	Short circuit detected (24 V or C/Q).

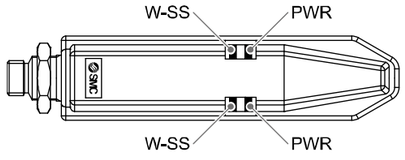
The I/Q_4 LED displays the status of Pin No.2 (Digital input) of each IO-Link port of PORT4.

Pin function	LED colour	Operation
DI (Digital input)	OFF	Input signal OFF.
	Orange ON	Input signal ON.

C/Q_4 and I/Q_4 common

Pin function	LED colour	Operation
Condition of all pins	Red / Green flashing alternately	Internal memory error.

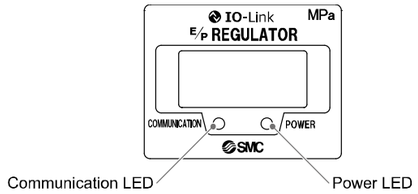
7.5 Wireless Adaptor



LED	LED colour	Operation
PWR	Green ON	Power US1 (Control) ON.
	Red ON	Unrecoverable error is detected.
	OFF	US1 (for control) power supply is OFF.
W-SS	Green ON	The level of received radio wave strength is 3.
	Green flashing (1 Hz)	The level of received radio wave strength is 2.
	Green flashing (2 Hz)	The level of received radio wave strength is 1.
	Orange flashing	No Remotes are connected.

7 LED Indicators (continued)

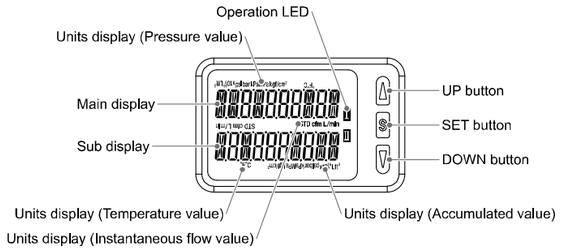
7.6 Standby E/P Regulator (ITV)



LED	LED colour	Operation
Power LED	Green ON	Normal operation.
	Green flashing	Communication system error.
	OFF	Internal memory error/No power supplied.
Communication LED	Green ON	IO-Link communication not established.
	Green flashing	IO-Link communication established.
	OFF	No power supplied.

8 LCD Display

8.1 LCD Display on the Air Management Hub



Item	Description
Main display	Displays the instantaneous flow rate, pressure value and error codes. (2 colour display)
Operation LED	Indicates the OUT output status. When the output is ON: LED is ON.
Sub display	Displays the accumulated flow, temperature value, set value, and peak/ bottom value when in measurement mode.
UP button	Selects the mode and the display shown on the Sub display, or increases the set point.
SET button	Press this button to change the mode and to set a value.
DOWN button	Selects the mode and the display shown on the Sub display, or decrease the set point.
Units display (Instantaneous flow)	Indicates the flow measurement units currently selected.
Units display (Accumulated value)	Indicates the flow measurement units currently selected.
Units display (Pressure value)	Indicates the pressure units currently selected.
Units display (Temperature value)	Indicates the temperature units currently selected.

9 How to Order

To obtain the How to Order information about this product, please refer to the operation manual on the SMC website (URL: https://www.smcworld.com) or contact SMC.

10 Outline Dimensions (mm)

To obtain the Outline Dimensions of this product, please refer to the operation manual on the SMC website (URL: https://www.smcworld.com) or contact SMC.

11 Maintenance

11.1 General Maintenance

Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.
- Remove condensate periodically.
  If condensate enters the secondary side, it can cause operating failure of pneumatic equipment.
- Do not use solvents such as benzene, thinner etc. to clean the product. This may damage the surface of the body or erase the markings on the body.
  Use a soft cloth to remove stains.
  For heavy stains, use a damp cloth that has been soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.
- How to reset the product after a power cut or when the power has been unexpectedly removed
  The settings of the product are retained from before the power cut or de-energizing.
  The output condition also recovers to that before the power cut or de-energizing, but may change depending on the operating environment. Therefore, check the safety of the whole system before operating the product.

12 Limitations of Use

12.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

13 Product disposal

This product should not be disposed of as municipal waste. Check your local regulations and guidelines to dispose of this product correctly, in order to reduce the impact on human health and the environment.

14 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor / importer.

SMC Corporation

URL: https://www.smcworld.com (Global) https://www.smceu.com (Europe)
SMC Corporation, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan

Template DKP50047-F-085M