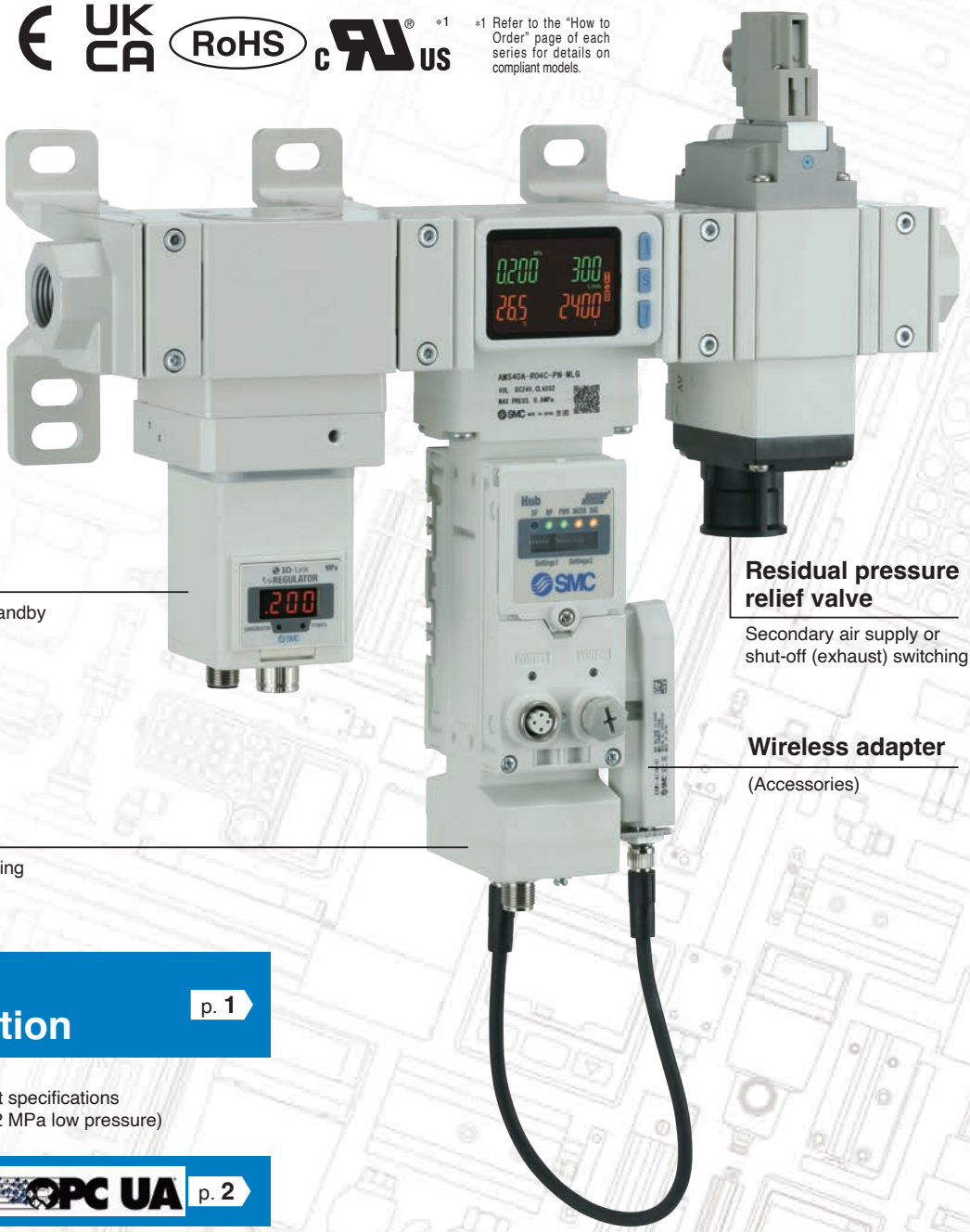
Air Management System

Sustainability - Condition Based Maintenance - Digitilization

*1 Refer to the "How to Order" page of each series for details on compliant models.

Monitors the machine standby conditions (when production stops) and automatically decreases the pressure. **Reduces unnecessary air consumption**



Standby regulator

Switch pressure between operation and standby

Residual pressure relief valve

Secondary air supply or shut-off (exhaust) switching

Wireless adapter

(Accessories)

Air management hub

Flow rate, pressure, and temperature sensing
Communication function

Air consumption: Max. 62%*1 reduction

p. 1

*1 In SMC conditions:
Maximum reduction ratio within product specifications
(at 0.7 MPa operating pressure and 0.2 MPa low pressure)

Compatible with OPC UA

p. 2

Direct connection enables data communications.

Compatible with PROFINET EtherNet/IP and EtherCAT

Compatible with SMC wireless systems

p. 3

Communication cables not required
High security using unique encryption
Communication distance: Max. 100 m

New

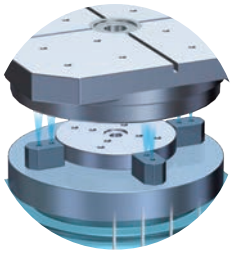
- EtherCAT has been added as a communication protocol.
- Made to order added.
  - Without residual pressure relief 3-port solenoid valve specification (-X101)
  - Without standby regulator specification (-X102)

AMS 20/30/40/60 Series

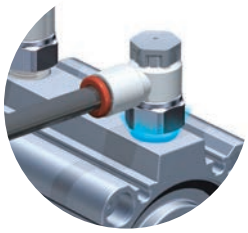
Automation
Controls
Process

NB100-155C

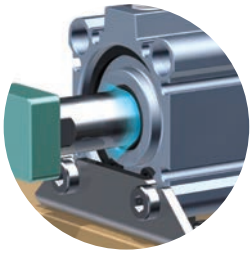
Why not reduce the wasted air generated by your factory equipment?



Blow and purge in equipment standby



Leakage from piping connections due to poor piping installation



Leakage from cylinder due to worn seals

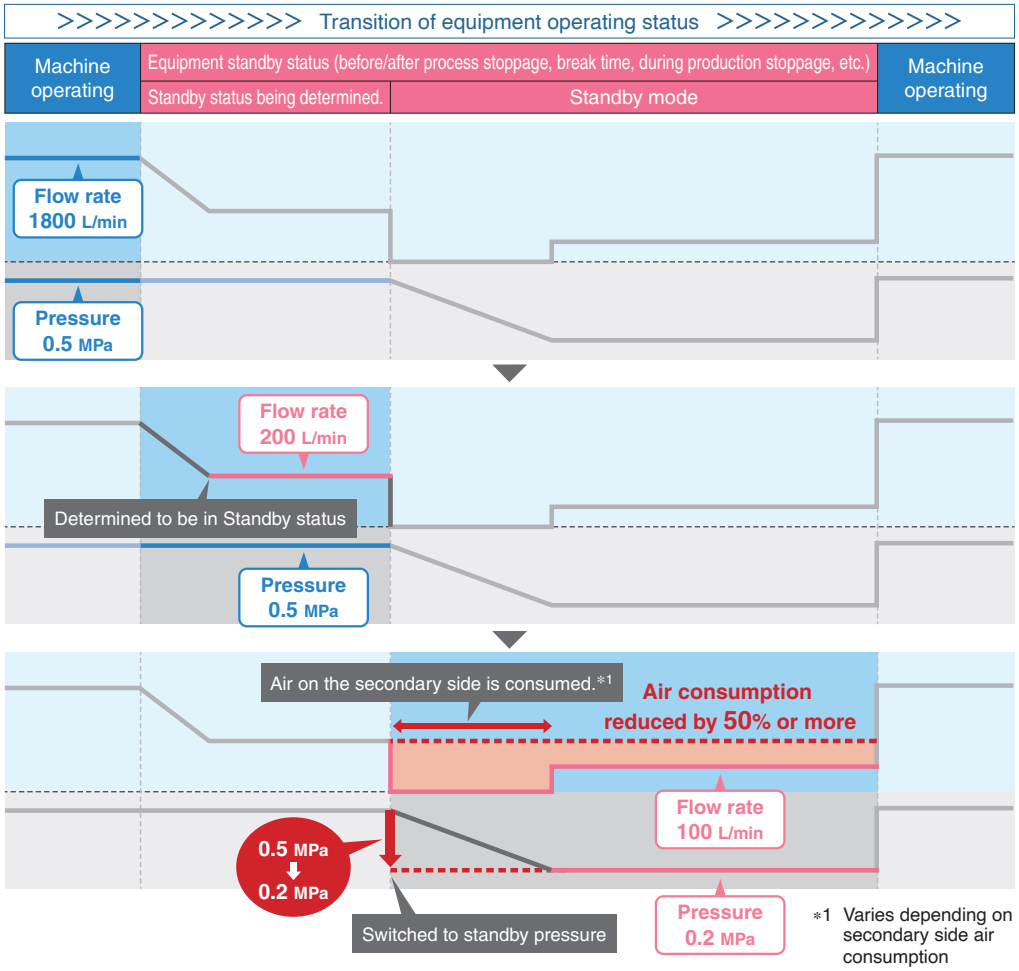
Reduce air consumption by lower pressure during equipment standby Standby mode

Monitoring machine condition

Detects decrease of flow during equipment standby

Provides minimum required pressure during standby to reduce air consumption

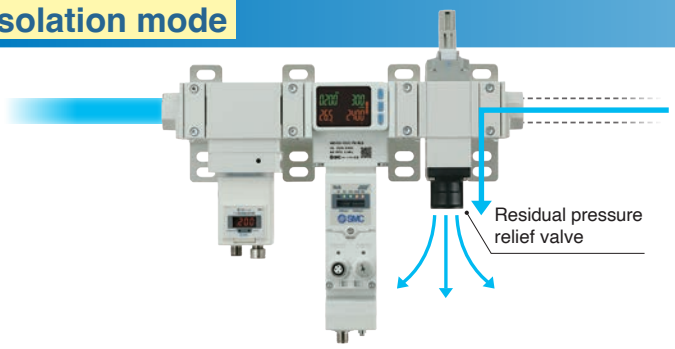
Example Under equipment operating conditions: Pressure 0 . 5 MPa, air consumption 1 8 0 0 L/min and idle air consumption 200 L/min, then Standby Mode can apply low pressure setting 0.2 MPa to equipment.



*1 Varies depending on secondary side air consumption

Reduce air consumption by shutting off valves depending on equipment shutdown conditions Isolation mode

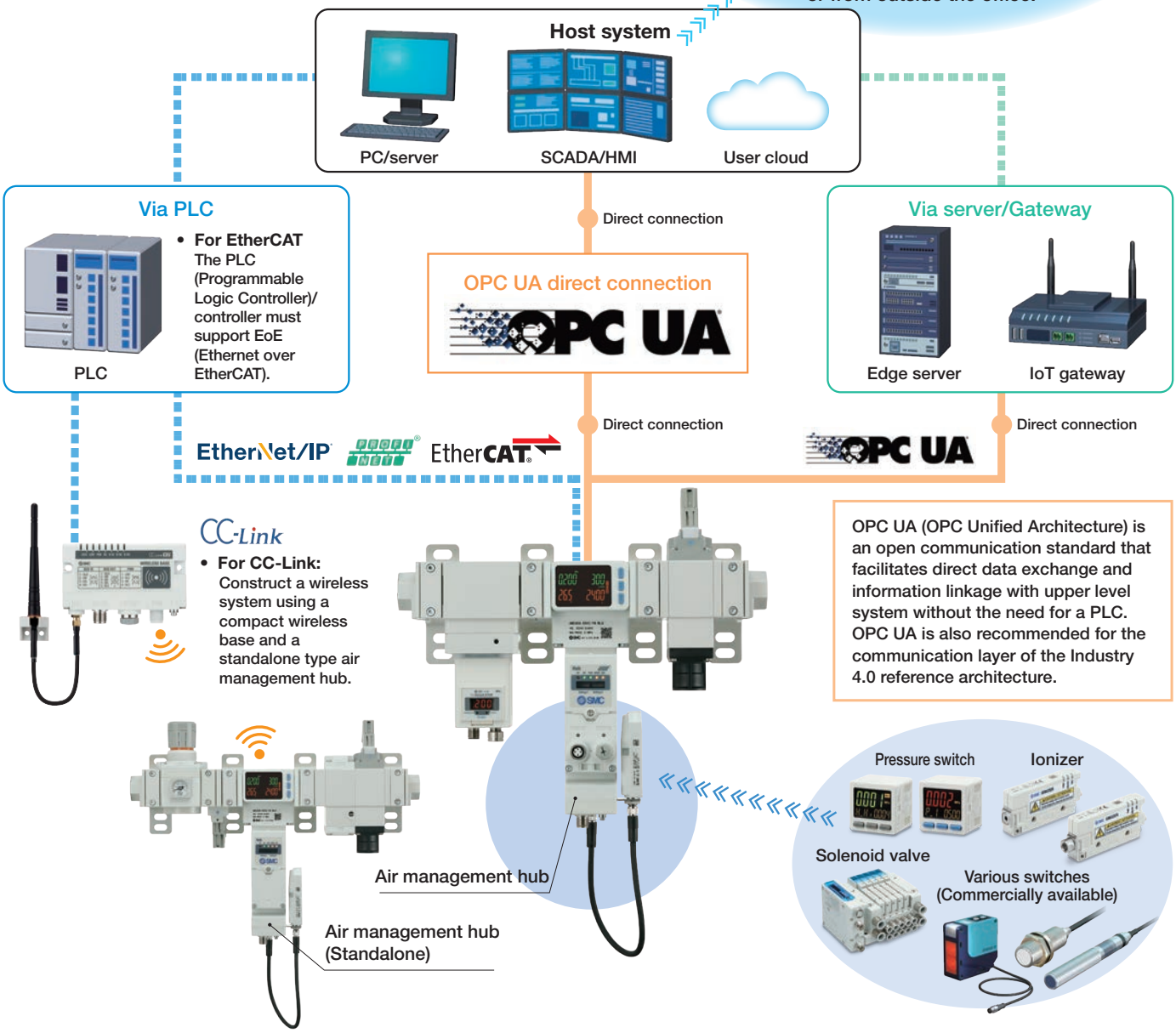
Residual pressure exhaust valve allows further reduction of air consumption by shutting off the air supply.
Automatic isolation mode is also provided that can be turned off after a set time from standby mode.



Visualization of production equipment status

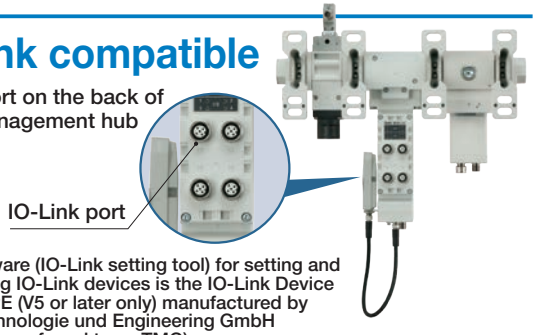
Flow, pressure, temperature, and other sensor information can be communicated to the host system via Industrial Ethernet or the OPC UA data communication protocol.

Equipment status can be monitored from another location or from outside the office.



IO-Link compatible

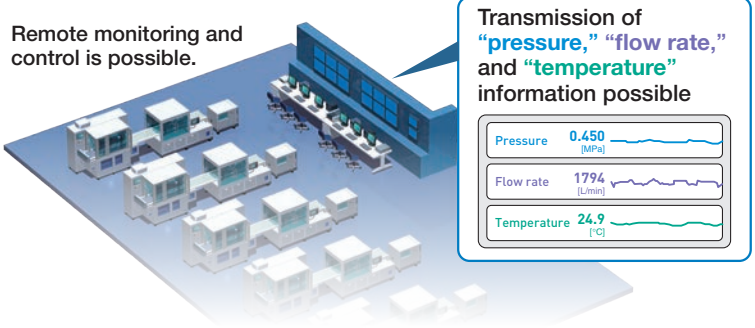
IO-Link port on the back of the air management hub



- The software (IO-Link setting tool) for setting and monitoring IO-Link devices is the IO-Link Device Tool V5-PE (V5 or later only) manufactured by TMG Technologie und Engineering GmbH (hereinafter referred to as TMG). It can be downloaded for free from TMG's website. However, to use it for more than 30 days, a license key for the IO-Link Device Tool is required. (Refer to page 55 for details.)

Examples of IoT applications with Air Management System

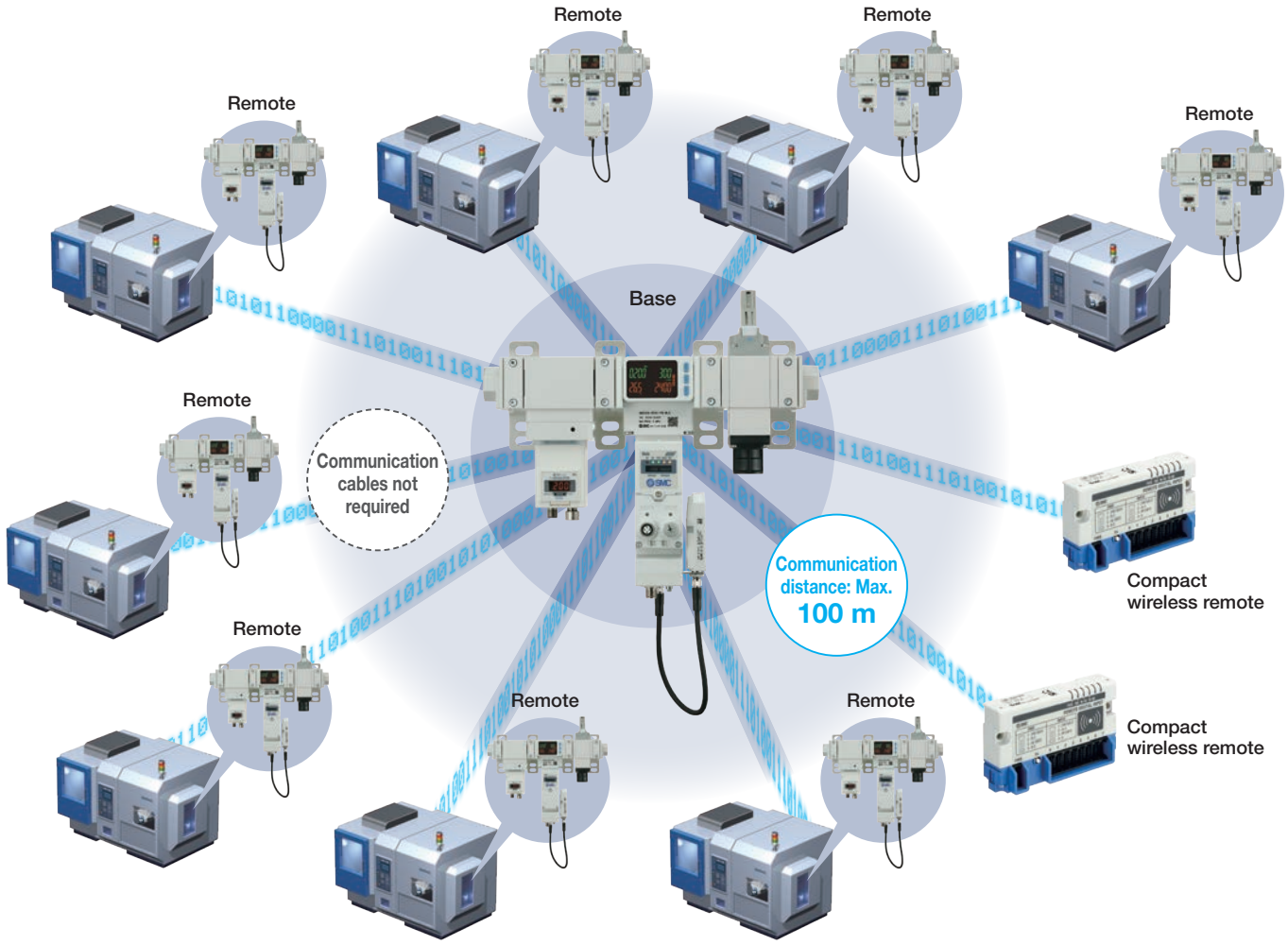
Remote monitoring and control is possible.



Compatible with SMC wireless systems*1

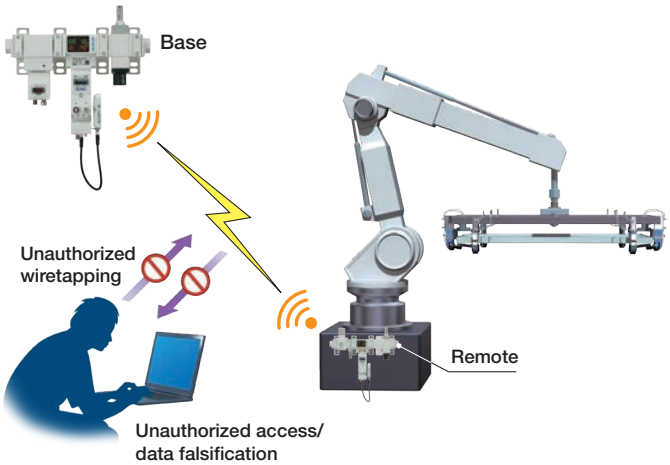
*1 When connecting a wireless adapter (sold separately)

- No communication cable required between the base and remote
  - Reduced wiring work, space, and cost
  - Minimized disconnection risk
- Connectivity to up to 10 remotes (AMS20/30/40/60 or compact wireless module)



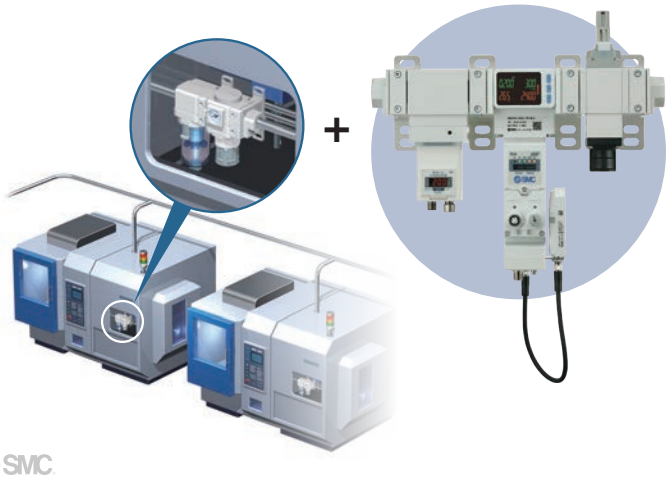
High security using encryption

Unauthorized access is prevented by using data encryption.



Retrofitted to existing equipment

Can be introduced by OPC UA or the wireless system without connecting to a PLC or changing the program.
Modular type F.R.L combination can be connected.



System Configuration

Series	Size	Port size	Flow capacity [L/min]	Communication protocol	Output data
Electro-Pneumatic Regulator Type **AMS20A/30A/40A/60A Series** 	20	1/8 1/4 3/8 1/2 3/4 1	5 10 20 40 500 1000 2000 4000	PROFINET EtherNet/IP™ EtherCAT OPC UA	· Instantaneous flow · Accumulated flow · Pressure · Fluid temperature · Various sensor information transmitted via IO-Link · Diagnosis
	30				
	40				
	60				
Regulator Type **AMS20B/30B/40B/60B Series** 	20				
	30				
	40				
	60				

Made to Order

Without Residual Pressure Relief 3-Port Solenoid Valve (-X101)

Combination of a standby (electro-pneumatic) regulator and an air management hub

- "Standby Mode" as the energy-saving mode
- For the standby electro-pneumatic regulator type, the simple "Isolation Mode" (air shut-off) can be selected.
  - However, it is not possible to shut off the air completely.

Without Standby Regulator (-X102)

Combination of an air management hub and a residual pressure relief 3-port solenoid valve (with soft start-up function)

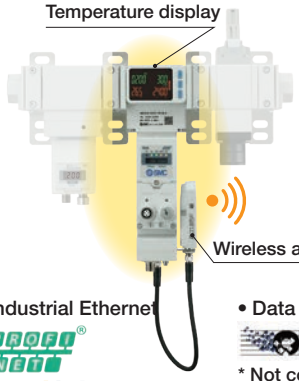
- "Isolation Mode" as the energy-saving mode

Air Management Hub

When connected to a wireless adapter, it has the ability to communicate with upper level system and wireless communication. Standby regulator and residual pressure exhaust valve are connected to control the air management system.

Upper Communication Type

Front



- Industrial Ethernet

PROFINET
EtherNet/IP
EtherCAT

- Data communication protocol

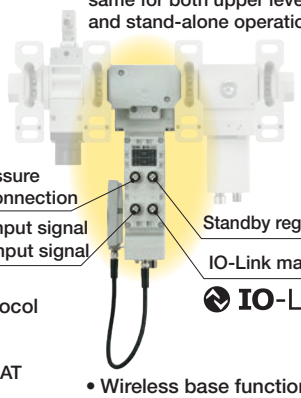
OPC UA

* Not compatible with EtherCAT

- IO-Link master function

IO-Link

Back



The back shape and dimensions are the same for both upper level communication and stand-alone operation types.

IO-Link

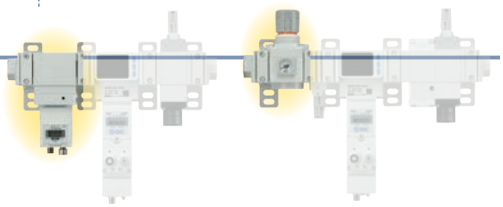
- Wireless base function
(When wireless adapter is connected)

Stand-alone Operation Type

Front

- Wireless remote function
(When wireless adapter is connected)

Standby Regulator



Based on the signal from the air management hub, the operating mode shifts to standby mode and regulates the pressure to the standby pressure.

The non-relief type allows efficient use of air by not exhausting secondary-side air during the standby mode transition.

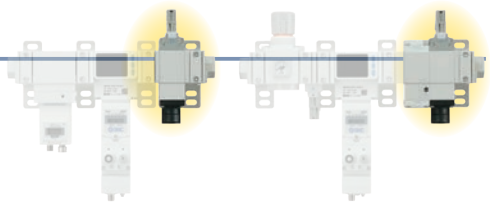
Electro-Pneumatic Regulator Type
(ITV series/For the AMS20A/30A/40A/60A series)

- Remote pressure setting and switching during equipment startup/shutdown
- Select from normally closed or normally open.
- With backflow function
- With pressure ramp up duration setting function
- With a solenoid valve overdrive prevention time setting function

Regulator Type
(ARS series/For the AMS20B/30B/40B/60B series)

- Manual pressure setting and switching during equipment shutdown
(Equipment operating pressure is not changed.)
- Normally open specification
- With backflow function

Residual Pressure Relief Valve



Based on the signal from the air management hub, the operating mode shifts to isolation mode.

Without Soft Start-up Function
(For the AMS20A/30A/40A/60A series)

- Block the air supply to the secondary side.
- Select from normally closed or normally open.

With Soft Start-up Function
(For the AMS20B/30B/40B/60B series)

- Block the air supply to the secondary side.
- Slow air ramp-up when equipment is restarted
- Select from normally closed or normally open.

CONTENTS

Air Management System *AMS20/30/40/60* Series