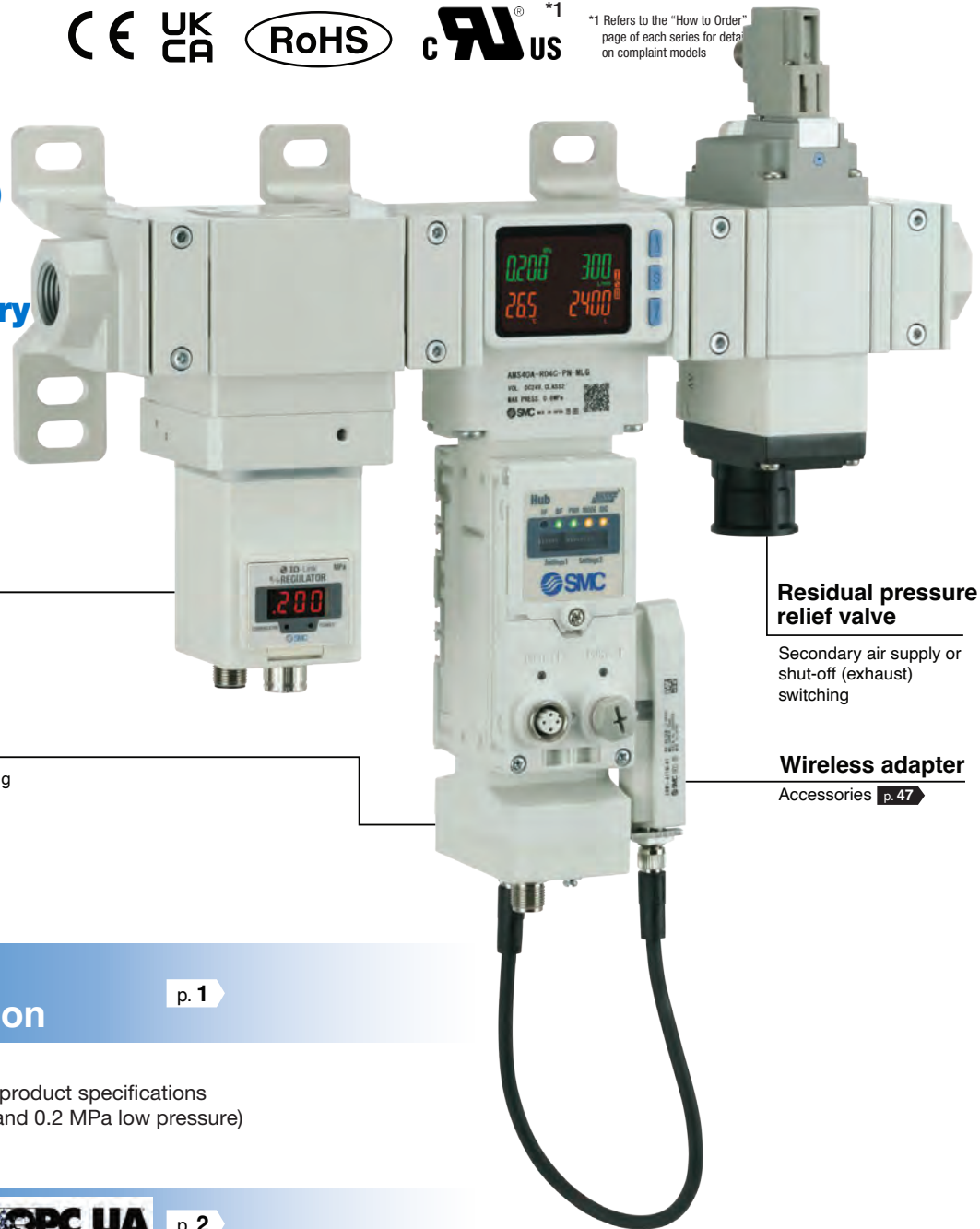




*1 Refers to the "How to Order" page of each series for details on complaint models

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

Air management hub

Flow rate, pressure, and temperature sensing
Communication function

Residual pressure relief valve

Secondary air supply or shut-off (exhaust) switching

Wireless adapter

Accessories [p.47](#)

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  [p. 2](#)

Direct connection enables data communications.
Compatible with  **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. [p. 56](#)
 - Without residual pressure relief 3-port solenoid valve specification (-X101)
 - Without standby regulator specifications (-X102)

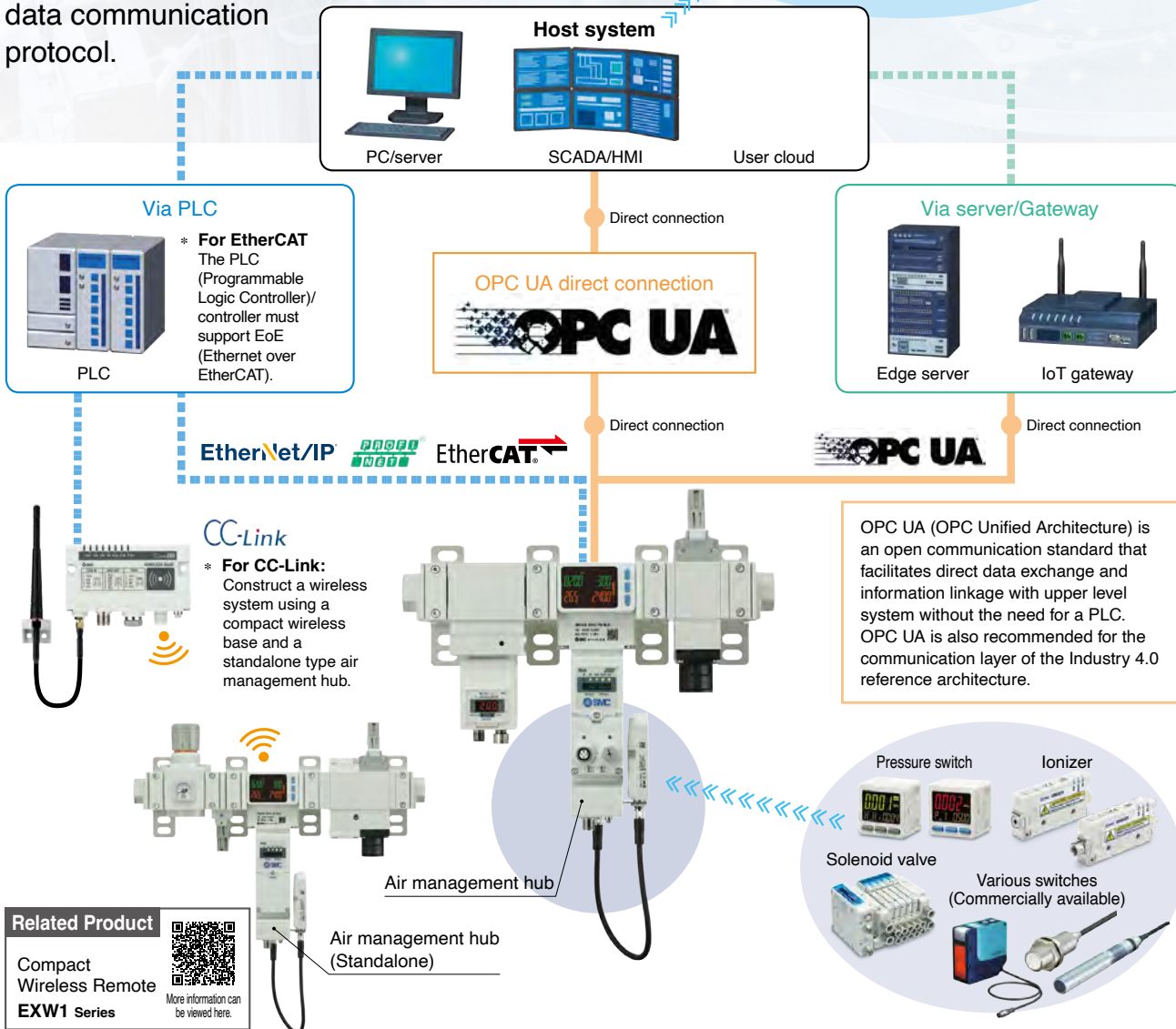
AMS 20/30/40/60 Series

Visualization of production equipment status and trends for condition based maintenance

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

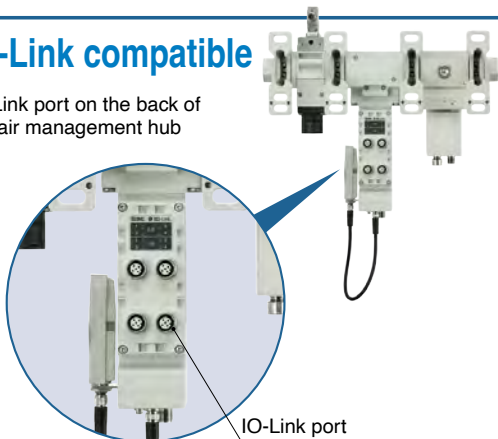


Equipment status can be monitored from another location or from outside the office.



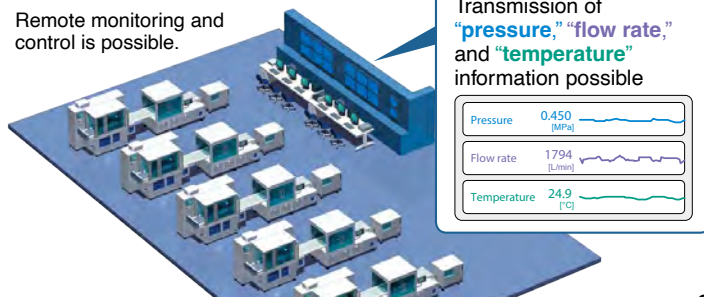
IO-Link compatible

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



Examples of IoT applications with Air Management System

Remote monitoring and control is possible.

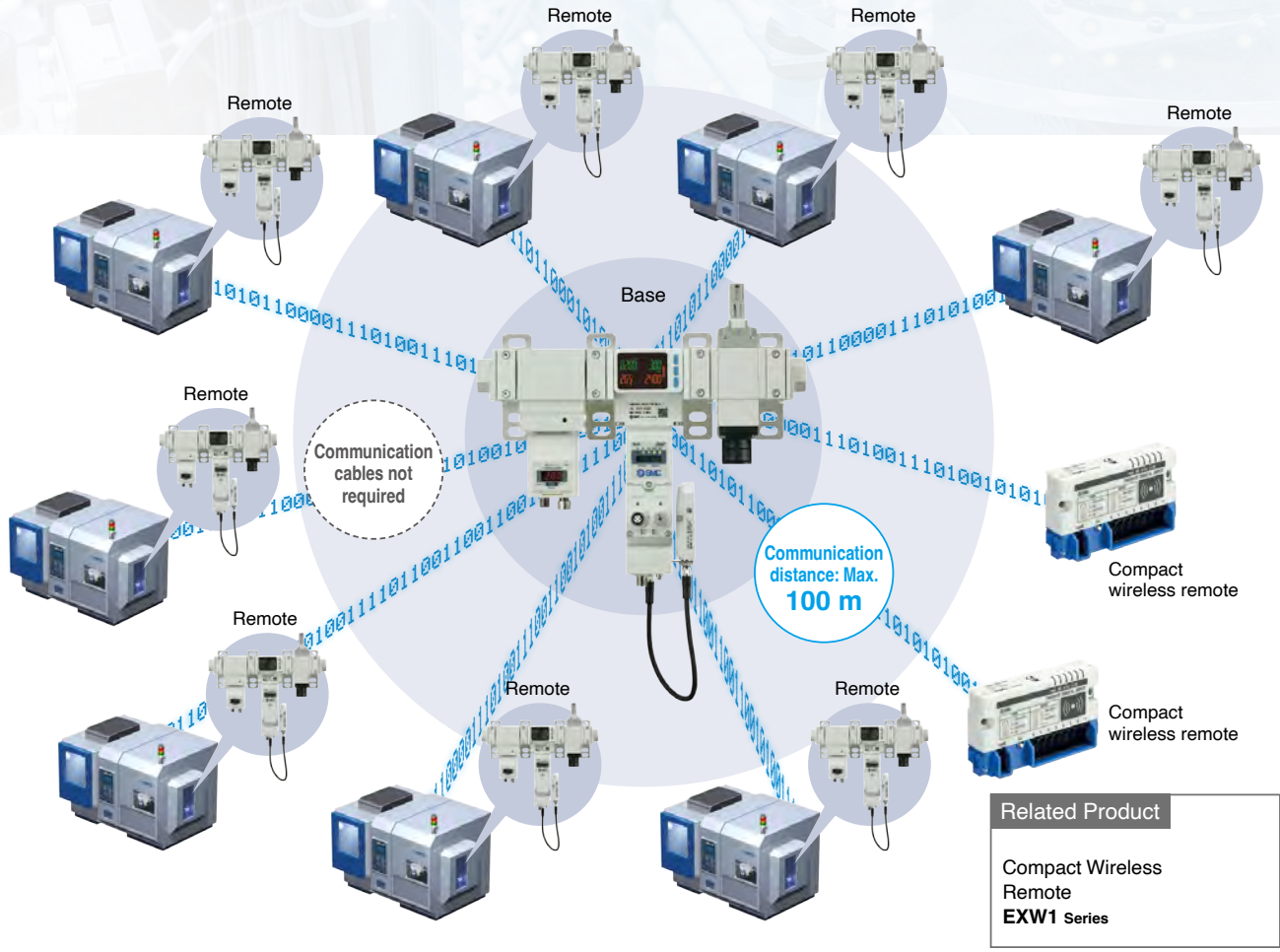


Easy Scalability Within the SMC Digital Architecture

Compatible with SMC wireless systems*1

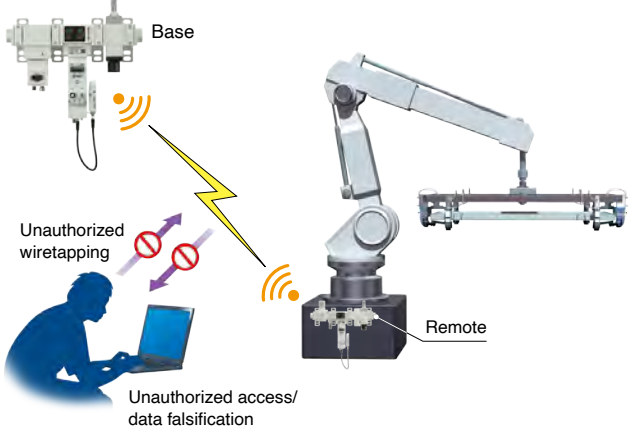
*1 When connecting a wireless adapter (sold separately)

- 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)



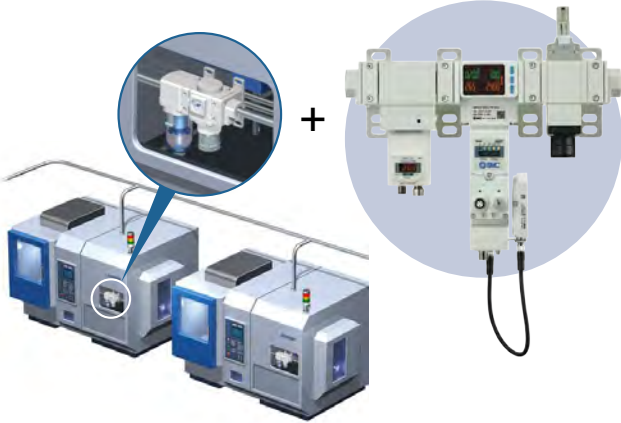
High security using encryption

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.



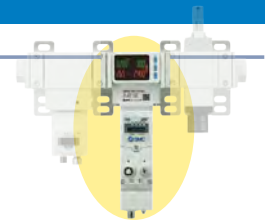
System Configuration

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

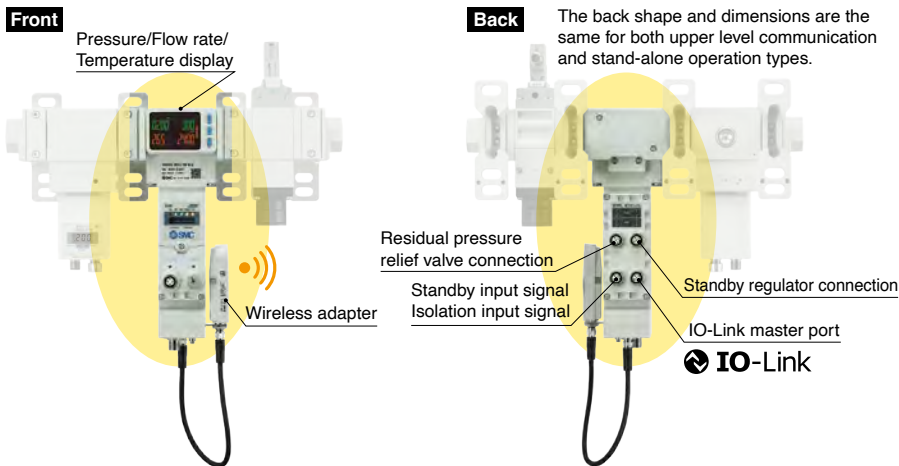
Components

Air Management Hub

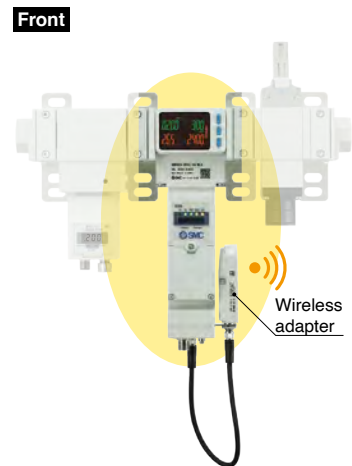
When connected to a wireless adapter, it has the ability to communicate with upper level system and wireless communication. Standby regulator and residual pressure exhaust valve are connected to control the air management system.



Upper Communication Type



Stand-alone Operation Type



- Industrial Ethernet

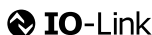


- Data communication protocol



* Not compatible with EtherCAT

- IO-Link master function



- Wireless base function
(When wireless adapter is connected)

- Wireless remote function
(When wireless adapter is connected)

Trademark

EtherNet/IP® is a registered trademark of ODVA, Inc.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Components

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
- Pressure display, etc.

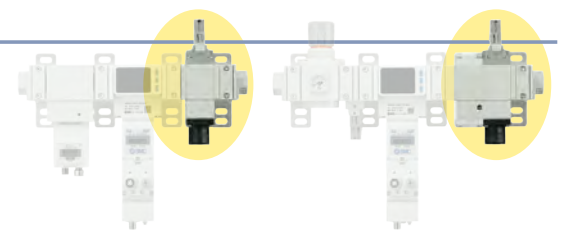
Regulator Type (ARS series/For the AMS20B/30B/40B/60B series)



- 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.

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**Air Management System
Electro-Pneumatic Regulator Type
AMS20A/30A/40A/60A Series**

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Regulator Type
AMS20B/30B/40B/60B Series**

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EXA1 Series**

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**Standby Electro-Pneumatic Regulator
ITV2050 to 3050-X399**

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**Standby Regulator
AR20S to 50S Series**

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**Residual Pressure Relief 3-Port Solenoid Valve
VP346E/546E/746E/946E-X660/X661**

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AMS20A/30A/
40A/60A

AMS20B/30B/
40B/60B

EXA1

ITV2050 to 3050
-X399

AR20S to 50S

VP346E/546E/746E/
946E-X660/X661

Accessories

Made to
Order

Related
Products

Specific Product
Precautions

Air Management System

Electro-Pneumatic Regulator Type

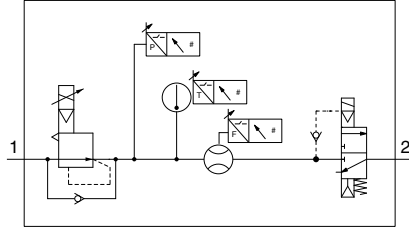
AMS20A/30A/40A/60A Series



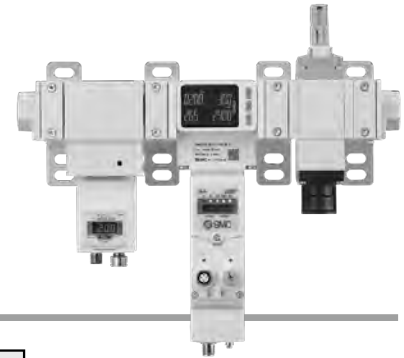
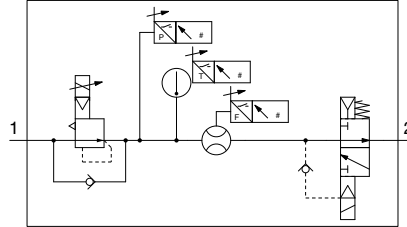
RoHS

Symbol

N.C.



N.O.



How to Order

AMS **40** **A** - **F** **04** **C** - **PN** - **MLG** -

①

②

③

④

⑤

⑥

⑦



Made to Order
p. 56

X101	Without residual pressure relief 3-port solenoid valve
X102	Without standby regulator

		Symbol	Description	①				
				Body size				
				20	30	40	60	
②	Pipe thread type	R	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
		H	Without attachments	●	●	●	●	
		+						
③	Port size	01	1/8	●	—	—	—	
		02	1/4	●	●	—	—	
		03	3/8	—	●	●	—	
		04	1/2	—	—	●	—	
		06	3/4	—	—	—	●	
		10	1	—	—	—	●	
		00	Without attachments	●	●	●	●	
		+						
④	Electro-Pneumatic regulator, Residual pressure relief 3-port solenoid valve	N.O./N.C.	C	N.C. (Normally closed)	●	●	●	●
			D	N.O. (Normally open)	●	●	●	●
		+						
⑤	Air management hub	Protocol	SA	Standalone (When wireless adapter is connected*3: Wireless remote)	●	●	●	●
			PN	PROFINET, OPC UA (When wireless adapter is connected*3: Wireless base)	●	●	●	●
			EN	EtherNet/IP™, OPC UA (When wireless adapter is connected*3: Wireless base)	●	●	●	●
			EC	EtherCAT*4 (When wireless adapter is connected*3: Wireless base)	●	●	●	●
		+						
⑥	Electro-Pneumatic regulator, Air management hub	Unit	K*1	EXA1/ITV: Units selection function	●	●	●	●
			M*2	EXA1/ITV: SI units only	●	●	●	●
		+						
⑦	Residual pressure relief 3-port solenoid valve	Manual override	G	Non-locking push type	●	●	●	●
			E	Push-turn locking type (Manual)	●	●	●	●

*1 Applies to overseas destinations only

*2 Fixed units Instantaneous flow: L/min
Accumulated flow : L
Pressure : kPa, MPa
Temperature : °C

*3 The wireless adapter is sold separately. (Refer to page 48.)

*4 EtherCAT is not compatible with OPC UA. In addition, the PLC (Programmable Logic Controller)/controller must support EoE (Ethernet over EtherCAT).

* The connection cable for the standby electro-pneumatic regulator/residual pressure relief valve is connected.

Air Management System Regulator Type

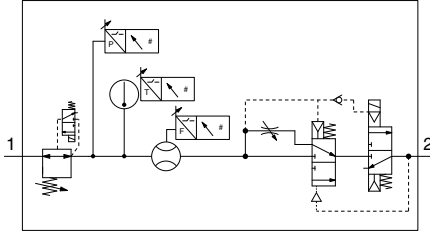


RoHS

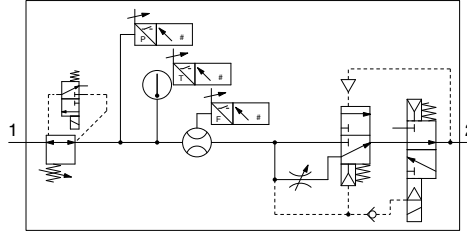
AMS20B/30B/40B/60B Series

Symbol

N.C.



N.O.



How to Order

AMS **40** B - **F** **04** **C** - **PN** - **M** **L** **G** -

1

2

3

4

5

6

7



Made to Order
p. 56

X101	Without residual pressure relief 3-port solenoid valve
X102	Without standby electro-pneumatic regulator

	Symbol	Description	1			
			Body size			
			20	30	40	60
2 Pipe thread type*1	R	Rc	●	●	●	●
	N	NPT	●	●	●	●
	F	G	●	●	●	●
+						
3 Port size	01	1/8	●	—	—	—
	02	1/4	●	●	—	—
	03	3/8	—	●	●	—
	04	1/2	—	—	●	—
	06	3/4	—	—	—	●
	10	1	—	—	—	●
	00	Without attachments	●	●	●	●
+						
4 Regulator, Residual pressure relief 3-port solenoid valve	N.O./N.C.	C	N.C. (Normally closed)			
		D	N.O. (Normally open)			
+						
5 Air management hub	Protocol	SA	Standalone (When wireless adapter is connected*4: Wireless remote)			
		PN	PROFINET, OPC UA (When wireless adapter is connected*4: Wireless base)			
		EN	EtherNet/IP™, OPC UA (When wireless adapter is connected*4: Wireless base)			
		EC	EtherCAT*5 (When wireless adapter is connected*4: Wireless base)			
+						
6 Regulator, Air management hub	Unit	K*2	Pressure gauge: MPa/psi dual scale, EXA1: Units selection function			
		M	Pressure gauge in SI units: MPa, EXA1: SI units only*3			
+						
7 Regulator/Residual pressure relief 3-port solenoid valve	Manual override	G	Non-locking push type			
		E	Push-turn locking type (Manual)			

*1 For port size "00", specify thread type of the standby regulator (ARS).

*2 Applies to overseas destinations only

*3 Fixed units
Instantaneous flow: L/min
Accumulated flow : L
Pressure : kPa, MPa
Temperature : °C

*4 The wireless adapter is sold separately. (Refer to page 48.)

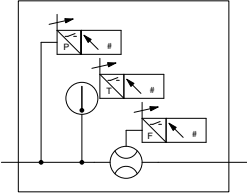
*5 EtherCAT is not compatible with OPC UA. In addition, the PLC (Programmable Logic Controller)/controller must support EoE (Ethernet over EtherCAT).

* The connection cable for the standby electro-pneumatic regulator/residual pressure relief valve is connected.

Air Management Hub

EXA1 Series

Symbol



How to Order

EXA1 - **40** - **SA** - **M** L

①
②
③

		Symbol	Description	①			
				Body size			
				20	30	40	60
				For AMS20	For AMS30	For AMS40	For AMS60
②	Protocol	SA	Standalone (When wireless adapter is connected*3: Wireless remote)	●	●	●	●
		PN	PROFINET, OPC UA (When wireless adapter is connected*3: Wireless base)	●	●	●	●
		EN	EtherNet/IP™, OPC UA (When wireless adapter is connected*3: Wireless base)	●	●	●	●
		EC	EtherCAT*4 (When wireless adapter is connected*3: Wireless base)	●	●	●	●
+							
③	Unit	K*1	Units selection function	●	●	●	●
		M*2	SI units only	●	●	●	●

*1 Applies to overseas destinations only

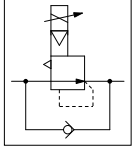
*2 Fixed units Instantaneous flow: L/min, Accumulated flow: L, Pressure: kPa/MPa, Temperature: °C

*3 The wireless adapter is sold separately. (Refer to page 48.)

*4 EtherCAT is not compatible with OPC UA. In addition, the PLC (Programmable Logic Controller)/controller must support EoE (Ethernet over EtherCAT).

Standby Electro-Pneumatic Regulator ITV2050 to 3050-X399

Symbol
N.C./N.O.



How to Order

For AMS20A **ITV2050-IL 20-1-K-X399**

For AMS30A **ITV2050-IL 30-1-K-X399**

For AMS40A **ITV3050-IL 40-1-K-X399**

For AMS60A **ITV3050-IL 60-1-K-X399**

① ② ③

① Applicable AMS□A size

20	For AMS20A
30	For AMS30A
40	For AMS40A
60	For AMS60A

② Type of actuation

1	Normally closed
2	Normally open*2

③ Pressure display unit

K	Units selection function
M	SI units only*6

Specifications

Applicable AMS series		AMS20A	AMS30A	AMS40A	AMS60A
Min. supply pressure		Set pressure +0.1 MPa			
Max. supply pressure		0.8 MPa			
Set pressure range (Rated)*1		0.005 to 0.7 MPa			
Power supply	Voltage	24 VDC ±10%			
	Current consumption	0.12 A or less			
Communication	Protocol	IO-Link			
	Version	VERSION 1.1			
	Communication speed	230.4 kbps (COM3)			
	IO-Link port	CLASS A			
	IO-Link type	Device			
Linearity		±1% F.S. or less*4			
Repeatability		±0.5% F.S. or less			
Sensitivity		0.2% F.S. or less			
Temperature characteristics		±0.12% F.S./°C or less			
Output pressure display	Accuracy	±2% F.S. ±1 digit or less			
	Min. unit*5	3 digits MPa: 0.001, 2 digits MPa: 0.01, kgf/cm ² : 0.01, bar: 0.01, psi: 1, kPa: 1			
Ambient and fluid temperatures		0 to 50°C (No condensation)			
Enclosure		IP65			
Weight (Without accessories)		727 g	780 g	1320 g	1640 g

*1 This product does not exhaust by itself. It is not possible to decrease the output pressure with this product alone. (Except when supply pressure is shut off)

*2 In the case of the normally open specification, the output pressure is the supply pressure minus 0.1 MPa or more when the product is turned off.

*3 This product will reduce output pressure to 0.005 MPa or less if the secondary side output is present when supply pressure is shut off.

*4 Since this product does not exhaust by itself, it does not meet product specifications if there is no pressure drop or overshoot.

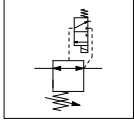
*5 If the unit is fixed to SI, only MPa or kPa will be displayed.

*6 For use in Japan, the product fixed to SI unit must be used to comply with the new Measurement Act.

*7 This product is for AMS20A/30A/40A/60A only. Do not use for any other application.

Standby Regulator AR20S to 50S Series

Symbol



How to Order



AR **30** S - **03** E - Y **15V**

① ② ③ ④ ⑤

	Symbol	Description	① Body size			
			20 For AMS20B	30 For AMS30B	40 For AMS40B	50 For AMS60B
② Pipe thread type	Nil	Rc	●	●	●	●
	N	NPT	●	●	●	●
	F	G	●	●	●	●
+						
③ Port size (Screws are IN side only.)	02	1/4	●	—	—	—
	03	3/8	—	●	—	—
	04	1/2	—	—	●	—
	10	1	—	—	—	●
+						
④ Pressure gauge	Unit	Nil	Name plate and pressure gauge in SI units: MPa			
		Z	Name plate: MPa, Pressure gauge: MPa/psi dual scale			
+						
⑤ Pilot valve	Manual override	Nil	Non-locking push type			
		E	Push-turn locking type (Manual)			

AMS20A/30A/
40A/60A

AMS20B/30B/
40B/60B

EXA1

ITV2050 to 3050
-X399

AR20S to 50S

VP346E/546E/746E/
946E-X660/X661

Accessories

Made to Order

Related Products

Specific Product Precautions

Specifications

Model	AR20S	AR30S	AR40S	AR50S
Port size	1/4	3/8	1/2	1
Fluid	Air			
Ambient and fluid temperatures	0 to 50°C			
Proof pressure	1.05 MPa			
Max. operating pressure	0.7 MPa			
Set pressure range	0.2 to 0.4 MPa			
Regulator exhaust construction	Non-relieving type			
Pilot valve exhaust method	Individual exhaust			
Lubrication	Not required			
Impact/Vibration resistance*1	150/30 m/s ²			
Enclosure	IP65 (Electrical equipment part only)			
Weight	0.30 kg	0.49 kg	0.77 kg	1.49 kg

*1 Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

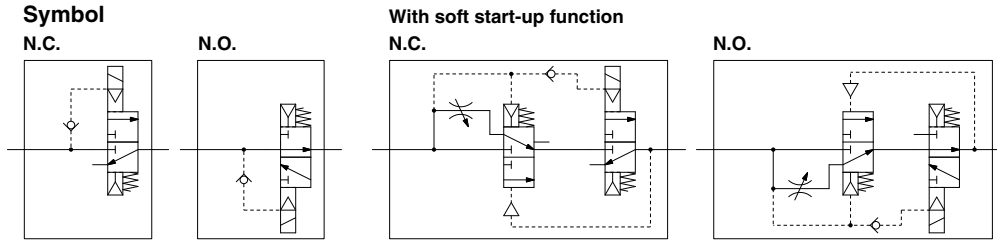
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. The test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Pilot Valve Solenoid Specifications

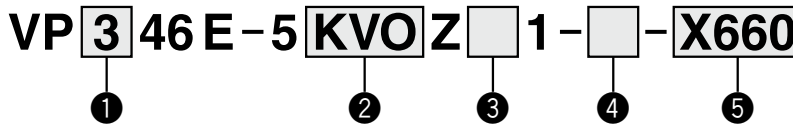
Coil rated voltage	24 VDC
Allowable voltage fluctuation	±10% of the rated voltage
Power consumption	0.4 W
Surge voltage suppressor	Diode
Indicator light	LED
Electrical entry	M12 connector
Standards	CE/UKCA marking, UL (CSA)

Residual Pressure Relief 3-Port Solenoid Valve

VP346E/546E/746E/946E-X660/X661



How to Order



1 Series

3	For AMS20	VP300
5	For AMS30	VP500
7	For AMS40	VP700
9	For AMS60	VP900

2 M12 connector

	Pin assignment	Series			
		VP300	VP500	VP700	VP900
KO	Without connector	—	—	—	●
KVO	Without connector	●	●	●	—

3 Manual override

Nil	Non-locking push type
E	Push-turn locking type (Manual)

4 Soft start-up function

Nil	None
S	With soft start-up function

5 Type of actuation

X660	N.C. (Normally closed)
X661	N.O. (Normally open)

Specifications

Model	VP346E	VP546E	VP746E	VP946E	
Fluid	Air				
Type of actuation	N.C. (X660)/N.O. (X661)				
Operating pressure range	0.2 to 0.7 MPa				
Ambient and fluid temperatures	-10 to 50°C (No freezing)				
Max. operating frequency*1	VP(3,5,7)46E	5 Hz			
	VP946E	1 Hz			
Manual override	Non-locking push type Push-turn locking type (Manual)				
Pilot exhaust	Individual exhaust				
Lubrication	Not required				
Impact/Vibration resistance*2	150/30 m/s ²				
Enclosure	IP65 (Electrical equipment part only)				
Weight	None	210 g	340 g	710 g	1410 g
	With soft start-up function	310 g	600 g	1260 g	2300 g

*1 Excludes the type with a soft start-up function

*2 Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. The test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

* This valve is a large flow rate pilot-operated solenoid valve. If the operating pressure falls below 0.2 MPa due to a pressure drop caused by insufficient air supply, it may not be able to switch properly.

Solenoid Specifications

Coil rated voltage	24 VDC
Allowable voltage fluctuation	±10% of the rated voltage
Power consumption	0.4 W
Surge voltage suppressor	Diode
Indicator light	LED
Electrical entry	M12 connector

AMS20A/30A/
40A/60A

AMS20B/30B/
40B/60B

EXA1

ITV2050 to 3050
-X399

AR20S to 50S

VP346E/546E/746E/
946E-X660/X661

Accessories

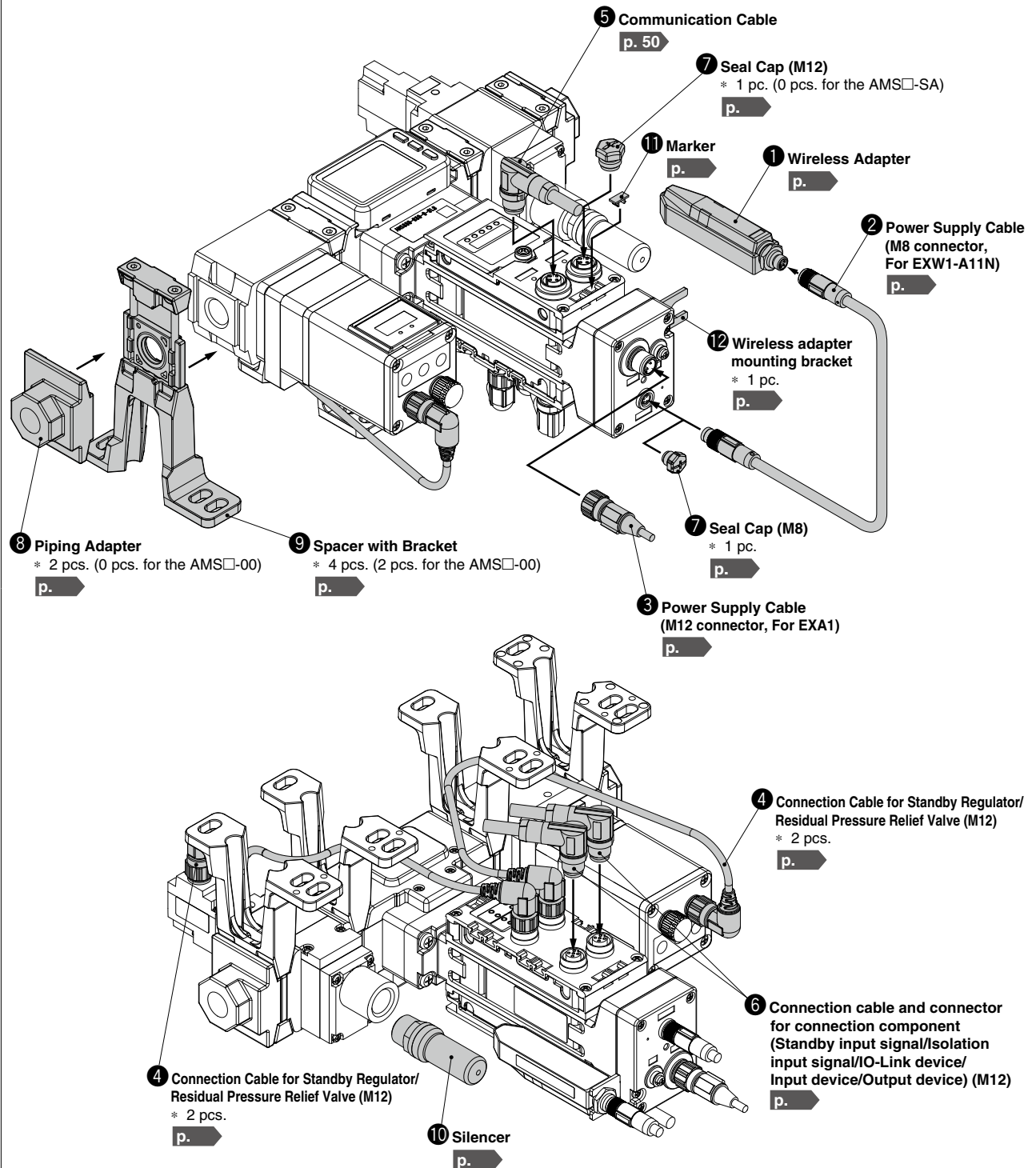
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Related
Products

Specific Product
Precautions

AMS20/30/40/60 Series Accessories

List of Accessories



* The number of pieces included for the AMS model

AMS20/30/40/60 Series

Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.



1 Without Residual Pressure Relief 3-Port Solenoid Valve Specification

Symbol
X101

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

AMS A - - - L G - X101

For "How to Order," refer to page 7.

Combination of a standby regulator and an air management hub

AMS B - D - - L - X101

For "How to Order," refer to page 13.

2 Without Standby (Electro-Pneumatic) Regulator Specification

Symbol
X102

Combination of an air management hub and a residual pressure relief 3-port solenoid valve

AMS A - - - L - X102

For "How to Order," refer to page 7.

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

AMS B - - - L - X102

* Port size: For the "00" type without attachments, the pipe thread type is fixed as "R."

For "How to Order," refer to page 13.

AMS20A/30A/
40A/60A

AMS20B/30B/
40B/60B

EXA1

ITV2050 to 3050
-X399

AR20S to 50S

VP346E/546E/746E/
946E-X660/X661

Accessories

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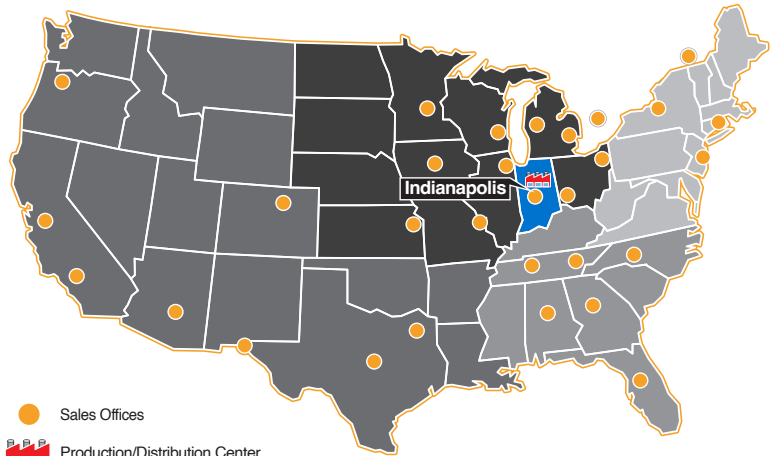
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