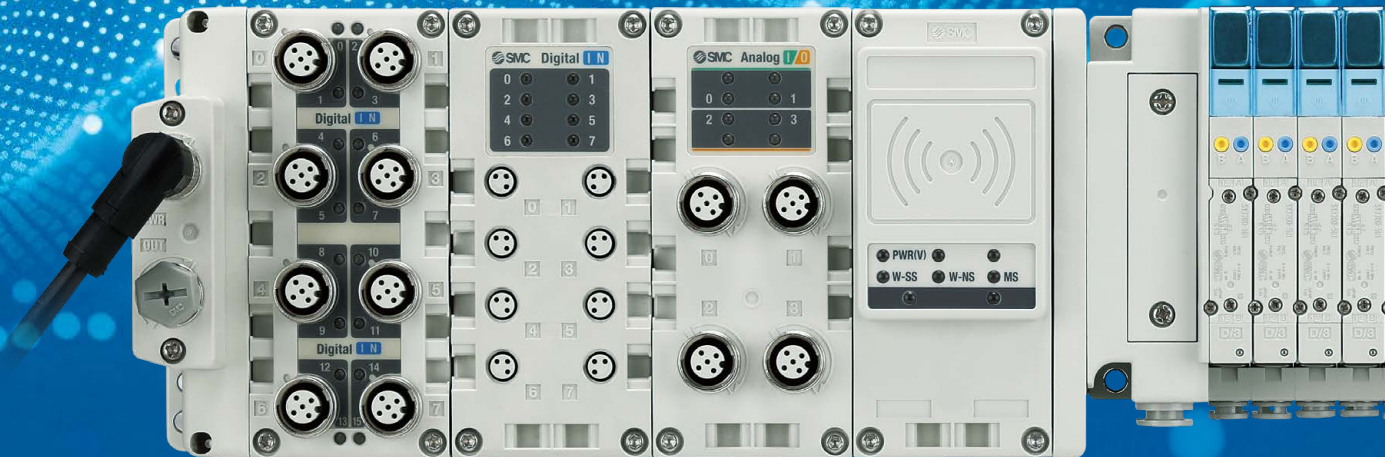


# Remote I/O, goes to “Wireless”



**EXW1/EX600-W Series**

# Do you have any of these

## Issues with fixed parts



- Cost of **long wiring** lengths such as conveyors
- Too much wiring time in **shielded spaces**
- Wiring work at **high locations** (or places)
- Cluttered work environment with **lots of wires**
- Cable **deterioration** in chemical environments, etc.
- Additional costs for sensors in energy **visualization**

## Issues with moving parts

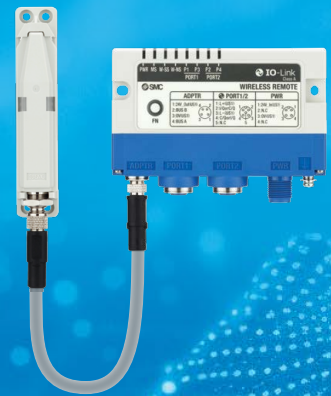


- Failure with couplings in **tool changer**
- **Cable** damage due to accidental pulling or bending
- Not enough contact points to **add sensors** to robots
- Unable to install communication wiring to **AGV's** for additional I/O
- **Rotating devices** require frequent maintenance due to many consumable parts.
- Difficulty on repairing broken wires in **cable carriers**
- Mass-production machines require lots of **wiring**.

# SMC wireless systems create solutions to all of these issues

Solving wireless concerns while avoiding radio interference and coexisting with existing wireless devices.

Compact



## Feature 1 Will easily coexist with other wireless devices

- Checks for interference from other wireless devices before transmitting a signal.



- High security through encryption

- Remote high-speed connection

Start of communication in as little as 250 ms  
\* Depends on the communication environment

- Able to check the wireless status via LED and Internet



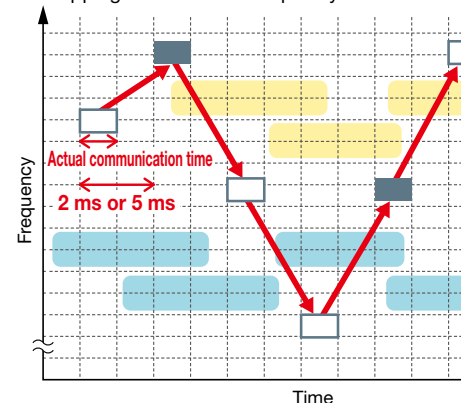
## Feature 2 Reduces wireless stable wireless

- Frequency hopping

SMC's proprietary protocol reduces radio interference by continuing communication while changing frequencies.

- Frequency channel selection (F.C.S)

Hopping with selected frequency channel





# issues/concerns?

Concerns existing for both wired and wireless sensors

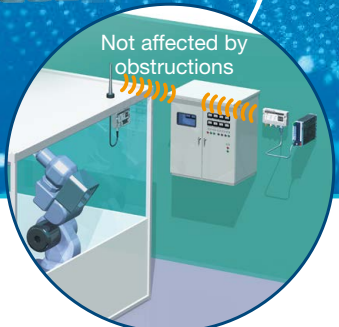
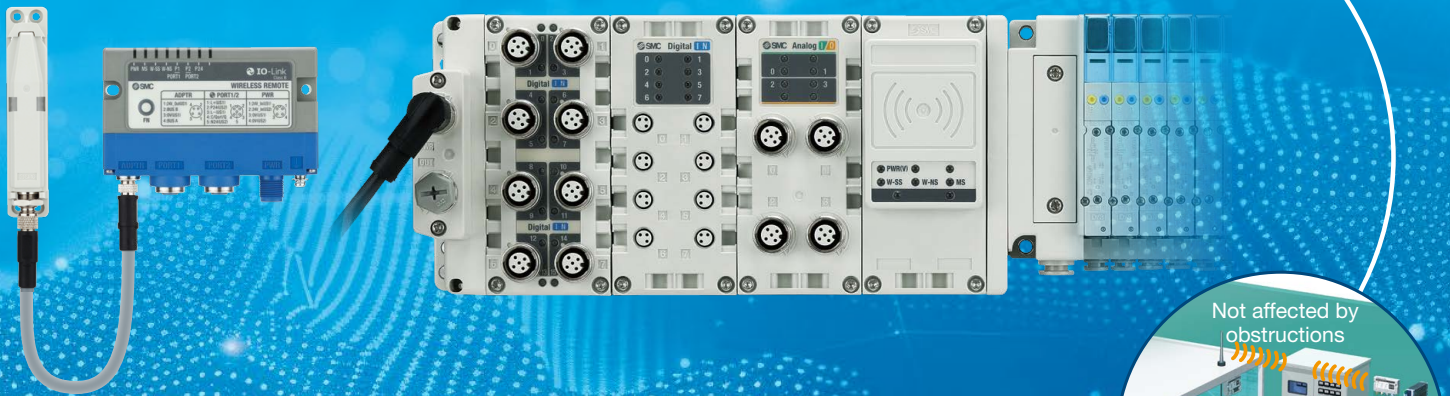
## Concerns on to the “wireless” factory



- If possible to coexist with existing wireless devices?
- If not interfere with existing wireless devices?
- Network security
- Status of communication
- **Disconnection of wireless communication**
- Network quality/stability on **Wireless LAN or Bluetooth®**
- **Noise** from power supply or welding machines
- **Various obstructions** that may affect the wireless communication in the factory

Type

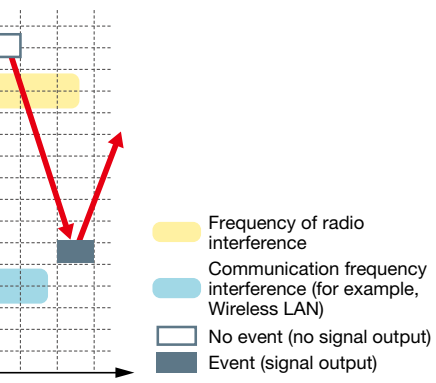
Modular Type



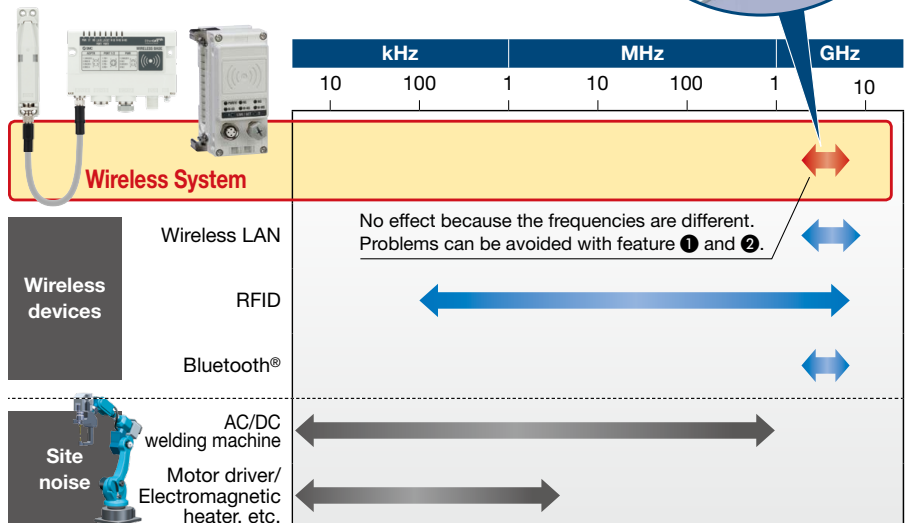
interference and creates a environment within the factory.

### Event communication system

Wireless communication is performed only when there is an update of information from sensors, reducing the number of radio wave transmissions and minimizing interference with other wireless devices.



### Feature ③ SMC's proprietary wireless method, different from Wireless LAN, etc.



#### Trademarks

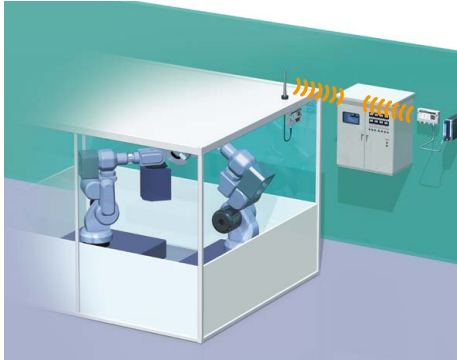
The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc.

# Examples of solutions using devices

## Issues resolved with fixed parts

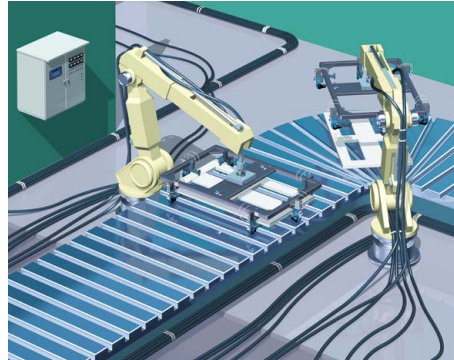
### Wiring in “hard to access” area

- Wireless communication eliminates the need for wiring in shielded spaces where wiring is difficult.



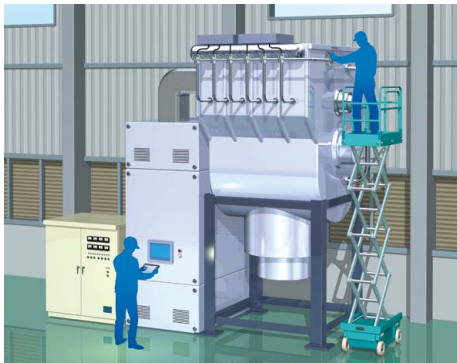
### Cable reduction

- Transform a cluttered environment with wires into a clean wireless environment



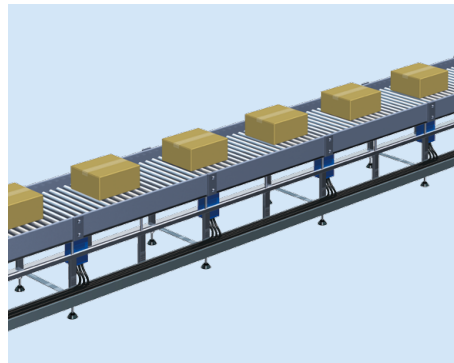
### Work in high locations

- Wiring is no longer necessary in high locations due to wireless communication.



### Shorter wiring runs

- Long-distance wiring, such as cabling in conveyor machines, becomes unnecessary with wireless connection



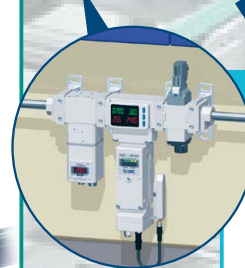
### Reduce maintenance hours

- No wiring required for mass-production machines or when reinstalling equipment.



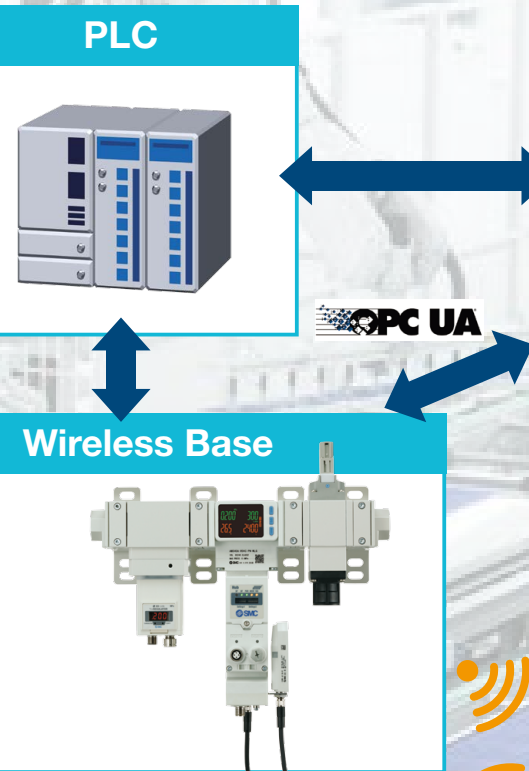
### Reduced possibility of wiring deterioration

- No need to worry about cable deterioration due to wear from cable carriers or exposure to chemical sprays, etc.





# Wireless Remote I/O



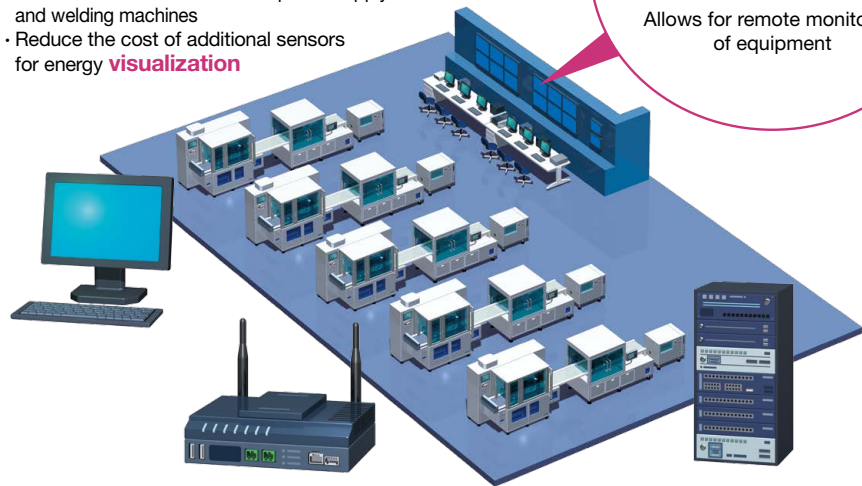
## Issues resolved by going wireless

### Centralized monitoring allows for...

- Able to **coexist with other wireless devices**
- Completely separate communication from **Wireless LAN and Bluetooth®**
- **Avoid electrical noise** from power supply cables and welding machines
- Reduce the cost of additional sensors for energy **visualization**



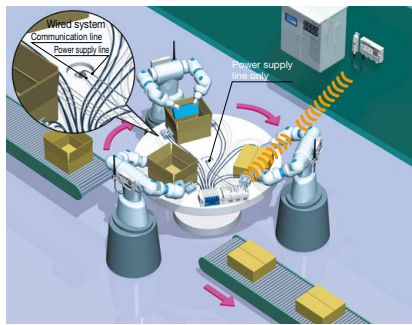
Allows for remote monitoring of equipment



## Issues with moving parts

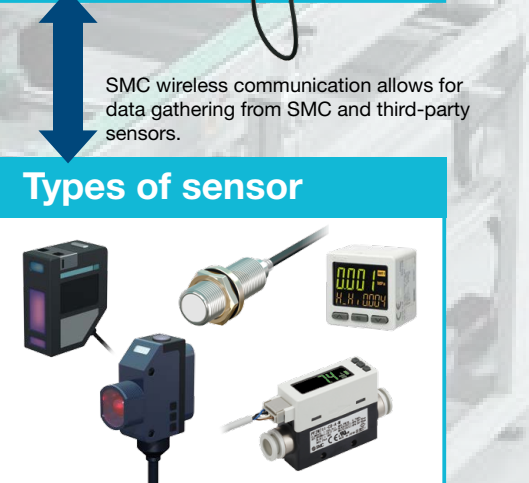
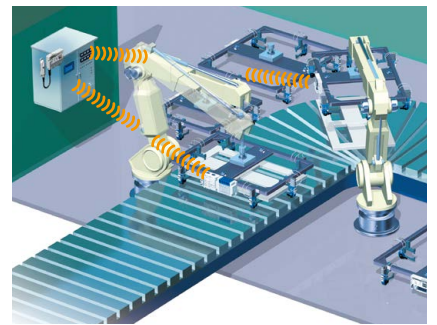
### Rotary table / cable carrier transport

- Reduced coupling problems with rotating parts
- No broken wires with less cable carriers



### Tool Changer

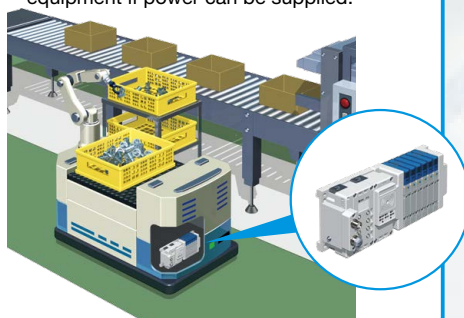
- High-speed communication and quick start-up
- Connection problems to be eliminated



SMC wireless communication allows for data gathering from SMC and third-party sensors.

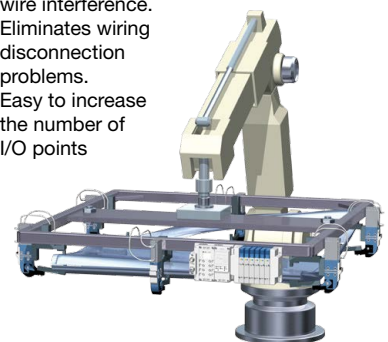
### AGV

- Wireless communication can be implemented in AGV's and other moving equipment if power can be supplied.



### Robot

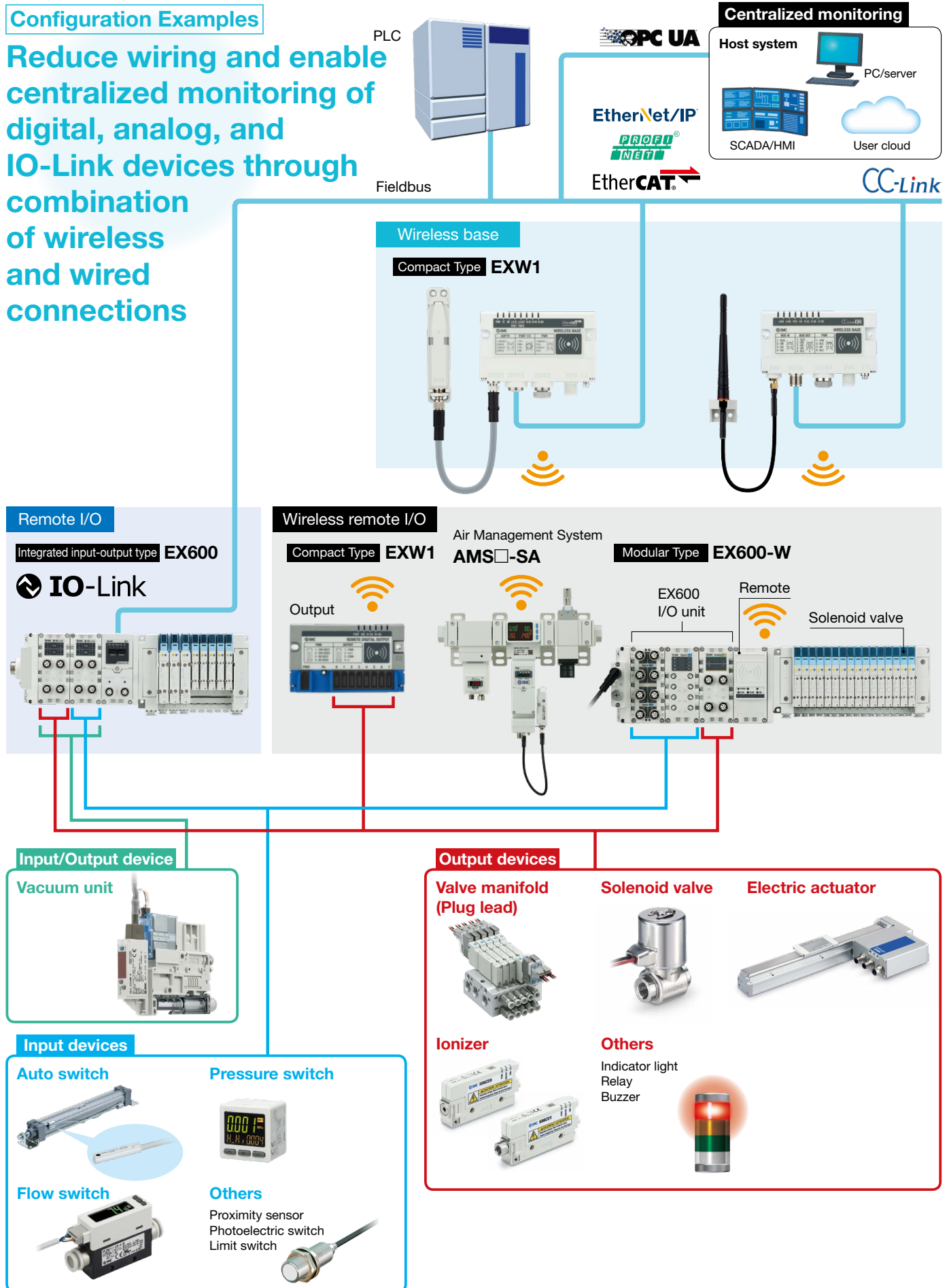
- Teaching operation becomes easier without wire interference.
- Eliminates wiring disconnection problems.
- Easy to increase the number of I/O points



# SMC Digital Architecture

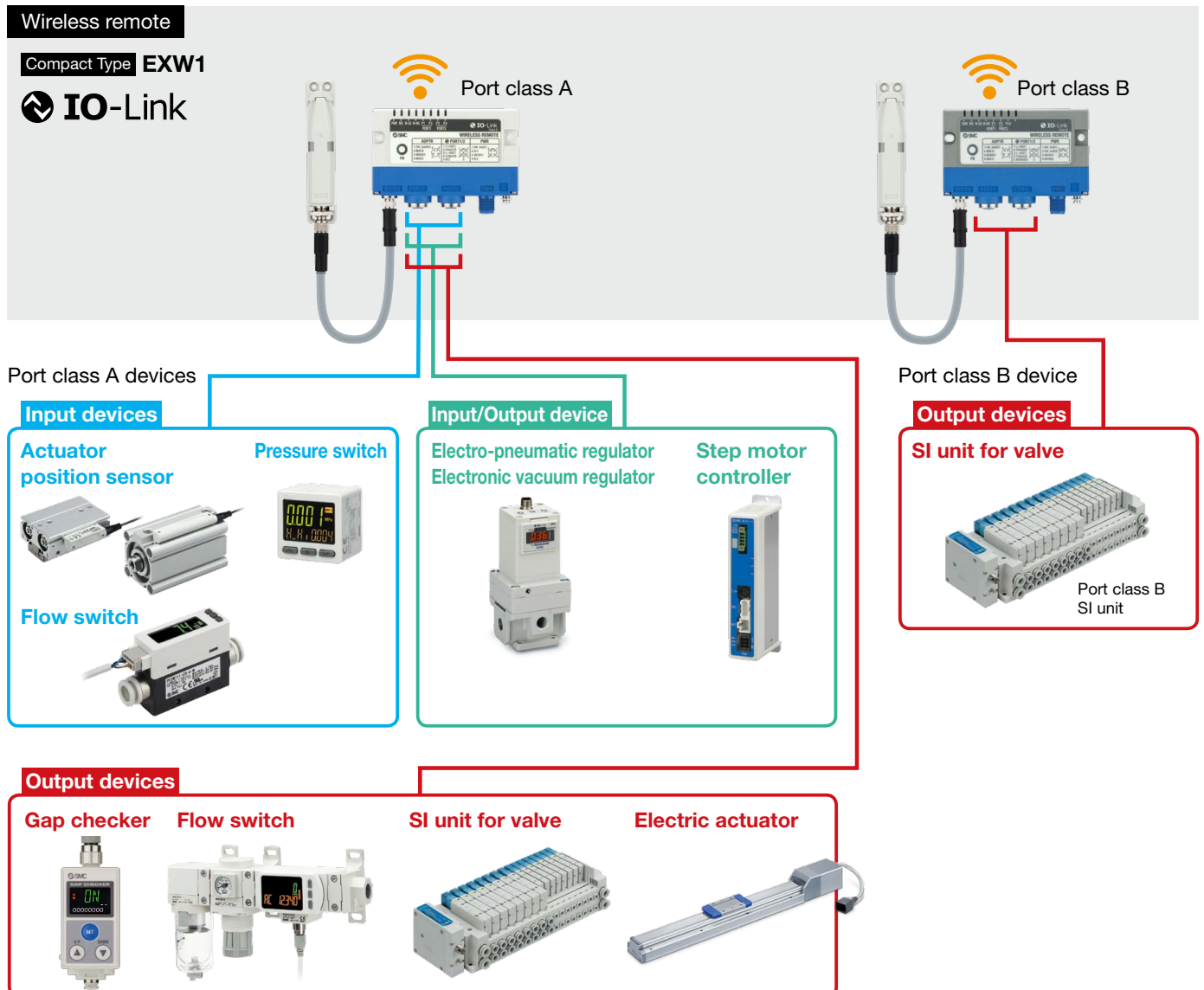
## Configuration Examples

Reduce wiring and enable centralized monitoring of digital, analog, and IO-Link devices through combination of wireless and wired connections



# The compact type EXW1 and modular type EX600-W can be used in combination.\*1

\*1 When used in combination, the communication speed and response time are limited to the specifications of the EX600-W. (See the sample system configuration.)



# SMC Digital Architecture

## Wireless System EXW1/EX600-W Series

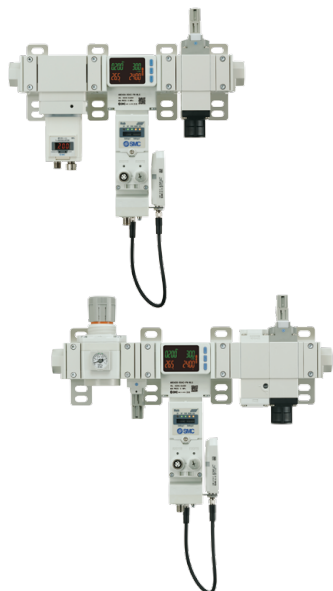


- Noise resistance  
Uses the 2.4 GHz ISM frequency band  
Frequency hopping: Every 2 ms (Fastest)
- Communication cables not required  
Reduced wiring work, space, and cost  
Minimized disconnection risk
- Provides communication stability in FA environments
- Modular connection is possible. (EX600-W)
- High security thanks to unique encryption  
Communication distance: Max. 100 m

Series	Enclosure	Communication protocol	Applicable valve
<b>EXW1</b>	IP20/IP67	EtherNet/IP™ PROFINET OPC UA CC-Link EtherCAT DeviceNet® IO-Link*	—
<b>EX600-W (Remote)</b>	IP67 equivalent		JSY1000, 3000, 5000 SY3000, 5000, 7000 (Plug-in) SV1000, 2000, 3000 S0700 (IP40) VQC1000, 2000, 4000, 5000

\* Excludes EX600-W

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



- Air consumption: Up to 62% reduction  
Monitors the equipment standby state (when production is stopped) and automatically reduces the pressure.  
Reduces unnecessary air consumption
- Compatible with OPC UA  
Direct connection enables easy data communication.
- Compatible with wireless systems  
Communication cables not required  
High security thanks to unique encryption  
Communication distance: Max. 100 m
- IO-Link compatible

Series	Size	Port size	Flow capacity L/min	Communication protocol	Output data
Electro-pneumatic regulator type <b>AMS20A/30A/40A/60A</b>	20 30 40 60	1/8, 1/4, 3/8, 1/2, 3/4, 1	5 to 500 10 to 1000 20 to 2000 40 to 4000	PROFINET EtherNet/IP™ EtherCAT OPC UA	Instantaneous flow Accumulated flow Pressure Fluid temperature Various sensor information transmitted via IO-Link Diagnostics.
Regulator type <b>AMS20B/30B/40B/60B</b>	20 30 40 60	1/8, 1/4, 3/8, 1/2, 3/4, 1	5 to 500 10 to 1000 20 to 2000 40 to 4000	PROFINET EtherNet/IP™ EtherCAT OPC UA	Instantaneous flow Accumulated flow Pressure Fluid temperature Various sensor information transmitted via IO-Link Diagnostics.

### Trademark

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.  
EtherNet/IP® is a registered trademark of ODVA, Inc.

**⚠ Safety Instructions** Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.