



Expertise – Passion – Automation



Less is definitely more

Fieldbus wireless system

EX600-W Series

Fieldbus wireless system

EX600-W Series



- ▶ **Less cables & connectors, less installation & maintenance, less breakage & disconnection risk.**
Less – Wireless system
- ▶ **Achieve totally reliable, noise-resistant communication** – Frequency hopping and data encryption in the 2.4 GHz ISM band
- ▶ **Put it to work anywhere** – Suitable for any application
- ▶ **Introduce flexibility in your machines**
– Simple layout modification & quick connection.

RoHS



EX600-WEN1
EX600-WPN1
Wireless master unit



EX600-WSV1
Wireless slave unit

Main features

- ▶ **Two SI units:** wireless master SI unit, wireless slave SI unit.

Wireless master unit

- One unit to control the entire wireless network
- EtherNet/IP™ and PROFINET compatible
- Max. 1280 inputs/1280 outputs
- Maximum number of slaves that can be connected to one master with no need for communication cables:
 - 127 for EtherNet/IP™
 - 31 for PROFINET

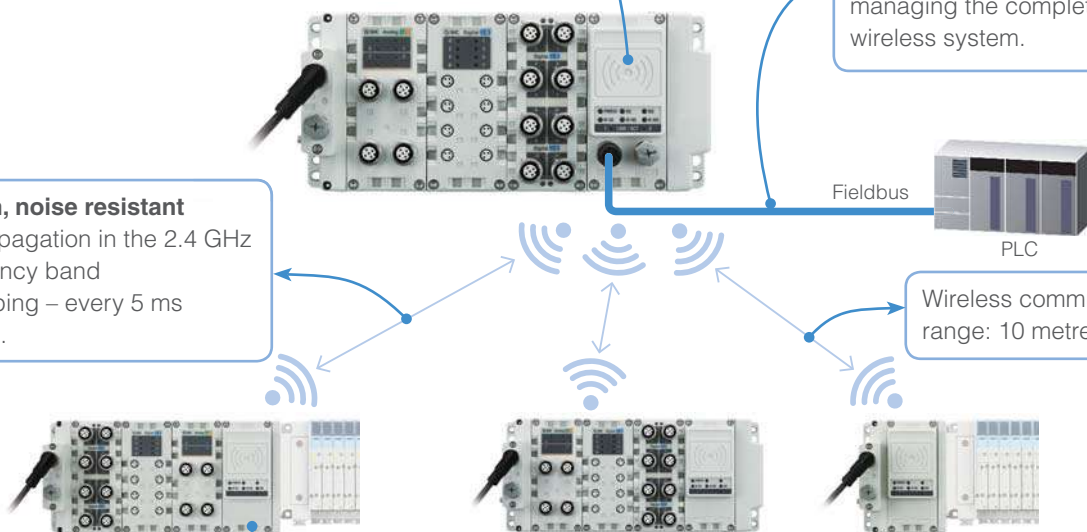
Decentralised system, point-to-multipoint communication

- Only one IP address for managing the complete wireless system.

Wireless system, noise resistant

- Radio wave propagation in the 2.4 GHz ISM high frequency band
- Frequency hopping – every 5 ms
- Data encryption.

- Wireless communication range: 10 metres.



Wireless slave unit

Management of analogue, digital and pneumatic product.

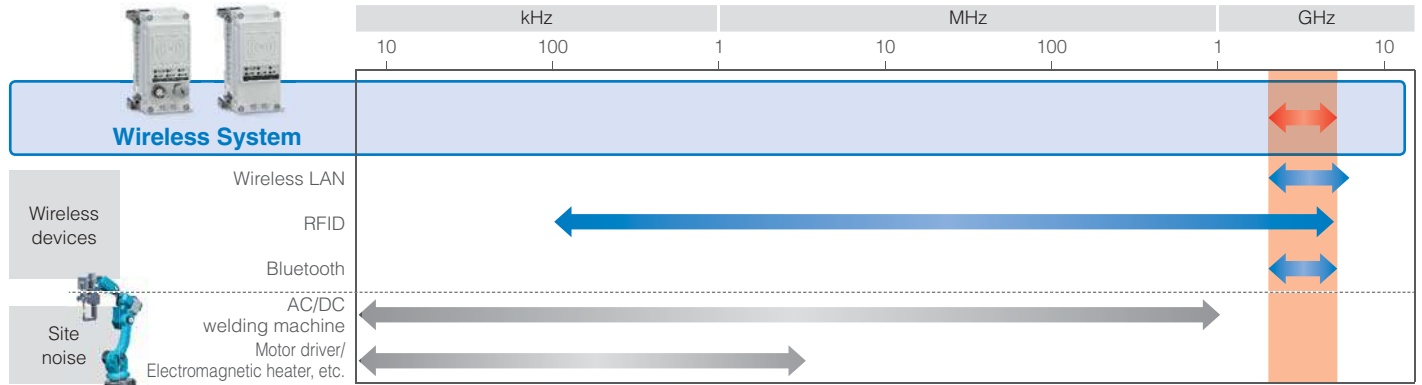


▶ **Applicable valve series: SY, SV, S0700, VQC**

▶ **Interchangeability maintained**

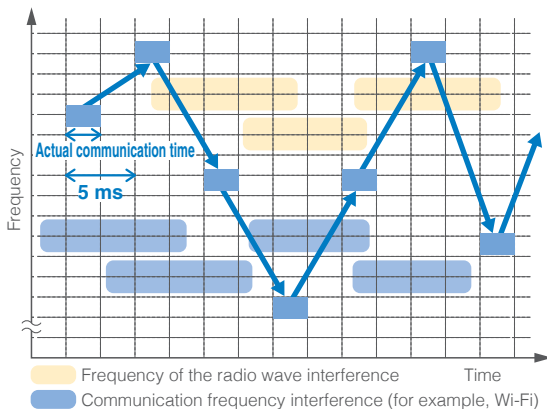
Connection interchangeability between EX600 series conventional SI units is maintained.

▶ **Radio wave propagation in the 2.4 GHz ISM high frequency band**

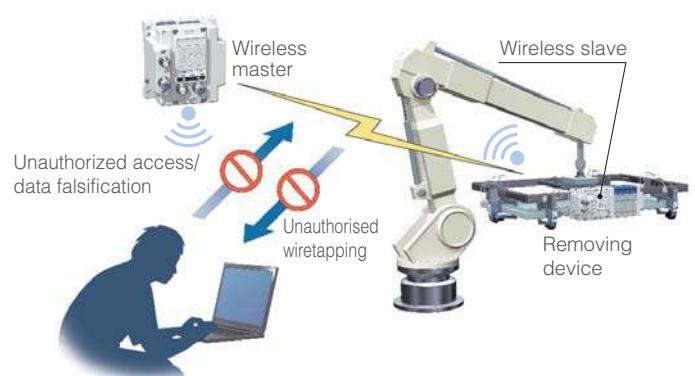


ISM (Industrial, Scientific and Medical) is a frequency band reserved for non-commercial use for industrial, scientific and medical purposes.

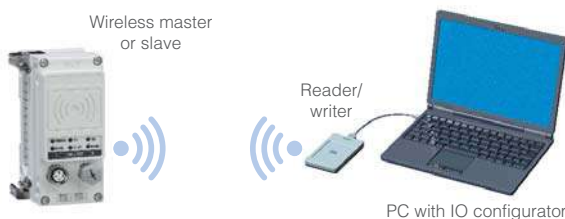
▶ **Frequency hopping (FHSS) every 5 ms** – this technology prevents interferences from other wireless devices.



▶ **Data encryption** – Unauthorised access from the outside is prevented providing the system with high security.



▶ **Wireless parameters setting** and adjustment by using a reader/writer contactless communication tool and an I/O configurator (SMC setting software).



▶ **Webserver function**, communication status can be managed wirelessly:

- Monitor of the slave communication status - the wireless system connection can be monitored during operation according to the diagnostic data
- Download of the communication status by a PC – possible to view log file which show the communication status (number of retries or received radio wave intensity).

How to order

SI unit

EX600-W EN 1

① SI unit

Symbol	Specifications	Note
EN	Wireless master unit	For EtherNet/IP™
PN	Wireless master unit	For PROFINET
SV	Wireless slave unit	—

② Output type

Symbol	Specifications
1	PNP
2	NPN

Digital input unit

EX600-DX P D
① ②

① Input type

Symbol	Description
P	PNP
N	NPN

② Number of inputs and connector

Symbol	No. inputs	Connector
B	8 inputs	M12 connector (5 pins) 4 pcs.
C	8 inputs	M8 connector (3 pins) 8 pcs.
D	16 inputs	M12 connector (5 pins) 8 pcs.
E	16 inputs	D-sub connector (25 pins)
F	16 inputs	Spring type terminal block (32 pins)

Analogue input unit

EX600-AX A
①

① Number of input channels and connector

Symbol	No. input channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs.

Digital output unit

EX600-DY P B
① ②

① Output type

Symbol	Description
P	PNP
N	NPN

② Number of outputs and connector

Symbol	No. outputs	Connector
B	8 outputs	M12 connector (5 pins) 4 pcs.
E	16 outputs	D-sub connector (25 pins)
F	16 outputs	Spring type terminal block (32 pins)

Analogue output unit

EX600-AY A
①

① Number of output channels and connector

Symbol	No. output channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs.

Digital input/output unit

EX600-DM P F
① ②

① Input/output type

Symbol	Description
P	PNP
N	NPN

② Number of inputs/outputs and connector

Symbol	No. inputs	No. outputs	Connector
E	8 inputs	8 outputs	D-sub connector (25 pins)
F	8 inputs	8 outputs	Spring type terminal block (32 pins)

Analogue input/output unit

EX600-AM B
①

① Number of input/output channels and connector

Symbol	No. input channels	No. output channels	Connector
B	2 channels	2 channels	M12 connector (5 pins) 4 pcs.

End Plate (D side)

EX600-ED 2 - 2
① ②

① Power supply connector

Symbol	Power supply connector	Specifications
2	M12 (5 pins) B-coded	IN
3	7/8 inch (5 pins)	IN
4	M12 (4/5 pins) A-coded ¹⁾	IN/OUT
5	M12 (4/5 pins) A-coded ¹⁾	IN/OUT

1) The pin layout for "4" and "5" pin connector is different.

② Mounting method

Symbol	Description	Note
—	Without DIN rail mounting bracket	—
2	With DIN rail mounting bracket	For SV, S0700, VQC series
3	With DIN rail mounting bracket	For SY series

1) When the end plate (U side) is used, the symbol for the mounting method must be the same as the D side.

End Plate (U side)

EX600-EU 1 - 2
① ②

① Specifications

Symbol	Specifications
1	Waterproof cover

② Mounting method

Symbol	Description	Note
—	Without DIN rail mounting bracket	—
2	With DIN rail mounting bracket	For E600-ED□-2
3	With DIN rail mounting bracket	For E600-ED□-3

1) When the end plate (D side) is used, the symbol for the mounting method must be the same as the U side.

* For specifications of the input/output units, please refer to the EX600 fieldbus system catalogue at www.smc.eu.

Specifications

Wireless master unit: EX600-WEN□/EX600-WPN□

Item		EX600-WEN□	EX600-WPN□	
EtherNet/IP™ communication	Communication protocol	EtherNet/IP™ (Conformance test version: Composit 12)	PROFINET IO	
	Transmission medium (cable)	Standard Ethernet cable (CAT5 or higher, 100BASE-TX)		
	Communication speed	10 Mbps/100 Mbps	100 Mbps	
	Communication method	Full duplex/Half duplex	Full duplex	
	Configuration file	EDS file ¹⁾	GSDML file ¹⁾	
	IP address setting	Manual/BOOTP, DHCP	— (From PLC)	
	Device information	Vendor ID: 7 (SMC Corp.) Device type: 12 (Communication adaptor) Product code: 186	Vendor ID: 131 Station Type (=Device type): EX600 Device ID (=Product code): 16	
	Topology	Star, bus, ring (DLR), line, tree	Star, ring, line, tree	
	Applicable functions	QuickConnect™ DLR Web server	Fast Start Up (FSU) Media Redundancy Protocol (MRP) Web server	
Wireless communication	Protocol	SMC original protocol (SMC encryption)		
	Radio wave type (spread)	Frequency Hopping Spread Spectrum (FHSS)		
	Frequency	2.4 GHz (2403 to 2481 MHz)		
	Number of frequency channels	79 ch (Bandwidth: 1.0 MHz)		
	Communication speed	250 kbps		
	Communication distance	10 m (Depending on the operating environment)		
	Radio Law certificate	Japanese radio law (Japan), RE (EU ²⁾), FCC (USA)		
Electrical	For control/ input (US1)	Power supply voltage	24 VDC ±10 %	
		Current consumption	150 mA or less	
	For output (US2)	Power supply voltage	24 VDC ±10 %	
		Max. supply current	4 A	
Input/Output	Number of inputs	System input size	Max. 1280 points together with the registered slave units	
		Input size	Max. 128 points (increase or decrease by 16 points)	
	Number of outputs	System output size	Max. 1280 points together with the registered slave units	
		Output size	Max. 128 points (increase or decrease by 16 points)	
	Analogue input/output	AD refresh time	0.1/0.2/0.5/1/2/5/10/30/60 s	
		DA refresh time	0.1/0.2/0.5/1/2/5/10/30/60 s	
	Valve output	Output type	EX600-WEN1: Source/PNP (-COM) EX600-WEN2: Sink/NPN (+COM)	EX600-WPN1: Source/PNP (-COM) EX600-WPN2: Sink/NPN (+COM)
		Number of outputs	Max. 32 points (0/8/16/24/32 points)	
		Connected load	Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC)	
	Number of slave units connected	Max. 127 units (0/15/31/63/127 units)	Max. 31 units (0/15/31 units)	
Number of connected EX600 I/O units	Max. 9 EX600 series I/O units (I/O = 128. I/O above 128 cannot be recognised.)			
General	Enclosure		IP67 equivalent (with manifold assembled)	
	Ambient temperature	Operating	-10 to +50 °C	
		Storage	-20 to +60 °C	
	Ambient humidity		35 to 85 % RH (No condensation)	
	Withstand voltage		500 VAC for 1 minute between external terminals and metallic parts	
	Insulation resistance		10 MΩ or more (500 VDC between external terminals and metallic parts)	
	Standards		CE marking, RoHS compliant	
	Weight		300 g	
NFC communication ³⁾	Communication standard		ISO/IEC14443B (Type-B)	
	Frequency		13.56 MHz	
	Communication distance		Up to 1 cm	

1) The configuration file can be downloaded from the SMC website: <http://www.smc.eu>.

2) Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., Turkey.

3) The NFC communication RFID tag of the 13.56 MHz passive type.

Wireless slave unit: EX600-WSV□

Item		Specifications		
Electrical	For control/ input (US1)	Power supply voltage	24 VDC ±10 %	
		Current consumption	70 mA or less	
	For output (US2)	Power supply voltage	24 VDC ±10 %	
		Max. supply current	4 A	
Input/Output	Number of inputs	Input size	Max. 128 points (increase or decrease by 16 points)	
	Number of outputs	Output size	Max. 128 points (increase or decrease by 16 points)	
	Valve output	Output type	EX600-WSV1: Source/PNP (-COM) EX600-WSV2: Sink/NPN (+COM)	
		Number of valve manifold connections	Max. 32 points (0/8/16/24/32 points)	
		Connected load	Solenoid valve with surge voltage suppressor of 24 VDC and 1.5 W or less (manufactured by SMC)	
	AD/DA refresh time		0.1/0.2/0.5/1/2/5/10/30/60 s ²⁾	
Number of connected EX600 I/O units		Max. 9 EX600 I/O units (I/O = 128. I/O above 128 cannot be recognised.)		
Wireless communication	Protocol		SMC original protocol (SMC encryption)	
	Radio wave type (spread)		Frequency Hopping Spread Spectrum (FHSS)	
	Frequency		2.4 GHz (2403 to 2481 MHz)	
	Number of frequency channels		79 ch (Bandwidth: 1.0 MHz)	
	Communication speed		250 kbps	
	Communication distance		10 m (Depending on the operating environment)	
	Radio Law certificate		Japanese radio law (Japan), RE (EU ¹⁾), FCC (USA)	
General	Enclosure		IP67 equivalent (with manifold assembled)	
	Ambient temperature	Operating	-10 to +50 °C	
		Storage	-20 to +60 °C	
	Ambient humidity		35 to 85 % RH (No condensation)	
	Withstand voltage		500 VAC for 1 minute between external terminals and metallic parts	
	Insulation resistance		10 MΩ or more (500 VDC between external terminals and metallic parts)	
	Standards		CE marking, RoHS compliant	
	Weight		280 g	
NFC communication ³⁾	Communication standard		ISO/IEC14443B (Type-B)	
	Frequency		13.56 MHz	
	Communication distance		Up to 1 cm	

1) Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., Turkey.

2) Varies depending on the wireless communication status and the surrounding environment.

3) The NFC communication RFID tag of the 13.56 MHz passive type.

End plate (D side): EX600-ED2/3/4/5-□

Item		EX600-ED2-□	EX600-ED3-□	EX600-ED4-□/EX600-ED5-□	
Electrical	Connector type	PWR IN	M12 plug, 5-pin	M12 plug, 4-pin	
		PWR OUT	—	M12 socket, 5-pin	
	Rated voltage	Power supply for output	24 VDC +10 %/-5 %, class 2	24 VDC +10 %/-5 %	
		Power supply for control/input	24 VDC ±10 %, class 2	24 VDC ±10 %	24 VDC ±10 % (the power supply for the unit is shut off at 17 V or less)
Rated current	Power supply for output	Max. 2 A	Max. 8 A	Max. 4 A	
	Power supply for control/input	Max. 2 A	Max. 8 A	Max. 4 A	
General	Enclosure		IP67 (with manifold assembled)		
	Withstand voltage		500 VAC for 1 minute (between FE and external terminals)		
	Insulation resistance		10 MΩ or more (500 VDC between FE and external terminals)		
	Ambient temperature	Operating	-10 to +50 °C		
		Stored/Transported	-20 to +60 °C		
	Ambient humidity		35 % to 85 % RH (No condensation)		
	Standards		CE marking, UL (CSA), RoHS compliant	CE marking, RoHS compliant	
Weight		170 g	175 g	170 g	

Accessories

Power supply cable with M12 connector (A-coded)

Part number	Description
EX500-AP010-S	Straight, 1 m
EX500-AP010-A	Angled, 1 m
EX500-AP050-S	Straight, 5 m
EX500-AP050-A	Angled, 5 m
PCA-1401804	SPEEDCON, 1.5 m
PCA-1401805	SPEEDCON, 3 m
PCA-1401806	SPEEDCON, 5 m
PCA-1557769	SPEEDCON, socket-plug connectors, 3 m

Power supply cable with M12 connector (B-coded)

Part number	Description
PCA-1564927	Straight, 2 m
PCA-1564930	Straight, 6 m
PCA-1564943	Angled, 2 m
PCA-1564969	Angled, 6 m

Power supply cable with 7/8 inch connector

Part number	Description
PCA-1558810	Straight, 2 m
PCA-1558823	Straight, 6 m
PCA-1558836	Angled, 2 m
PCA-1558849	Angled, 6 m
PCA-1578078	Field wireable connector, plug
PCA-1578081	Field wireable connector, socket

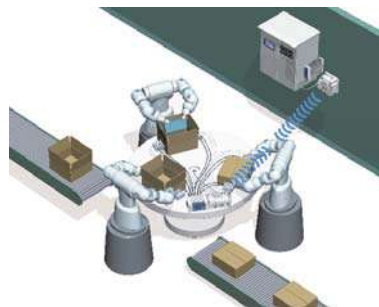
Applications

The EX600-W is ideal for harsh environments and in machines with moving parts, as it allows for avoiding applications with cables and electrical noise issues.

Robots, tool changes



Rotary/indexing tables



Welding environments



Related products



5 port solenoid valve
SY3000/5000/7000 Series



5 port solenoid valve
VQC1000/2000/4000/5000 Series



5 port solenoid valve
S0700 Series



5 port solenoid valve
SV1000/2000/3000 Series

Communication cable with connector

Part number	Description
EX9-AC010EN-PSRJ	M12 - RJ45 connector, 1 m
EX9-AC020EN-PSRJ	M12 - RJ45 connector, 2 m
EX9-AC030EN-PSRJ	M12 - RJ45 connector, 3 m
EX9-AC050EN-PSRJ	M12 - RJ45 connector, 5 m
EX9-AC100EN-PSRJ	M12 - RJ45 connector, 10 m
PCA-1446566	Plug connector
PCA-1446553	Field wireable connector
PCA-1578081	Field wireable connector, socket

End plate

Part number	Description
EX600-ZMA2	For VQC, SV, S0700 series
EX600-ZMA3	For SY series

Valve plate

Part number	Description
EX600-ZMV1	For VQC, SV, S0700 series
EX600-ZMV2	For SY series

Other accessories

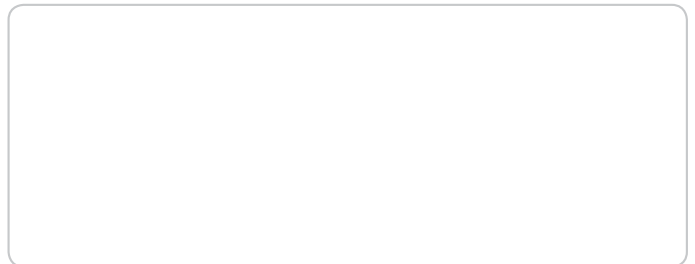
Part number	Description
EX600-ZMB1	Reinforcing brace for direct mounting
EX600-ZMB2	Reinforcing brace for DIN rail mounting
EX9-AWES	Seal cap (10 pcs.) for M8
EX9-AWTS	Seal cap (10 pcs.) for M12



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SMC Corporation

Akihabara UDX 15F, 4-14-1
Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249
Fax: 03-5298-5362



Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc-pneumatics.be	info@smc-pneumatics.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc-dk.com	smc@smc-dk.com
Estonia	+372 6510370	www.smc-pneumatics.ee	smc@smc-pneumatics.ee
Finland	+358 207513513	www.smc.fi	smc-fi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	info@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smc-hellas.gr	sales@smc-hellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smc-pneumatics.ie	sales@smc-pneumatics.ie
Italy	+39 0292711	www.smc-italia.it	mailbox@smc-italia.it
Latvia	+371 67817700	www.smc-lv.lv	info@smc-lv.lv

Lithuania	+370 5 2308118	www.smc-lt.lt	info@smc-lt.lt
Netherlands	+31 (0)205318888	www.smc-pneumatics.nl	info@smc-pneumatics.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 226166570	www.smc.eu	postpt@smc-smces.es
Romania	+40 213205111	www.smc-romania.ro	smcromania@smcromania.ro
Russia	+7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 902184100	www.smc.eu	post@smc-smces.es
Sweden	+46 (0)86031200	www.smc.nu	post@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smc-pneumatik.com.tr	info@smc-pneumatik.com.tr
UK	+44 (0)845 121 5122	www.smc-pneumatics.co.uk	sales@smc-pneumatics.co.uk