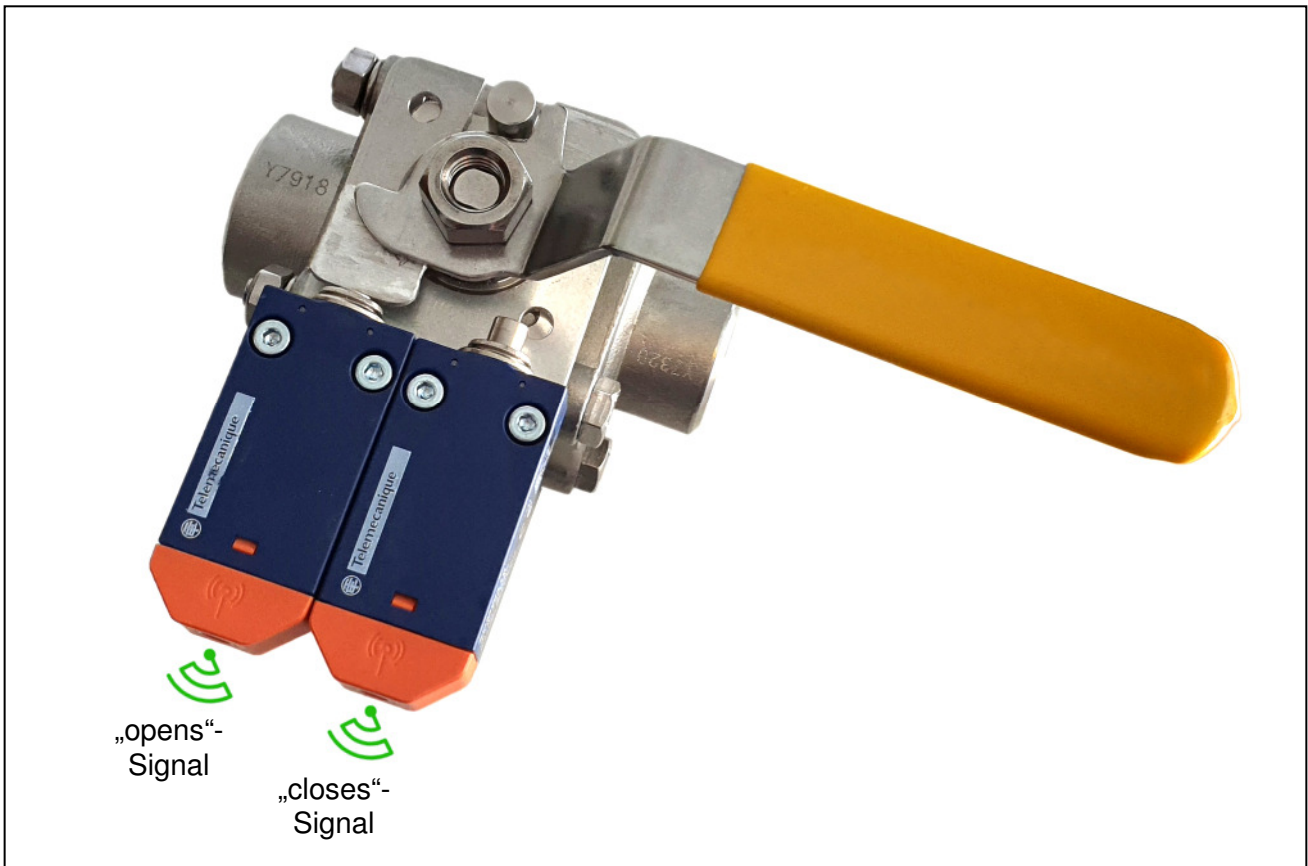## Wireless and Batteryless Limit Switches for Valves by Schneider Electric

Schneider electric has expanded its offer of wireless products with the launch of two ranges of limit switches based on an automatic radio wave generator system. These ranges include transmitters and receivers that communicate via 2.4 GHz radio transmission. There is no need to use batteries, as the radio pulse is emitted while the actuator moves. Operation is therefore one-way towards the receiver. The XCKW and XCMW offers can be used to determine the position of any type of valve. The transmitter is equipped with a "dynamo" generator that converts the mechanical energy produced by the actuator movement to electrical energy. A radio-encoded message (2.4 GHz ZigBee® protocol) is then sent, by a single pulse, to one or more receivers located several dozen meters away. The system is self-powered, which means no batteries are needed. Each transmitter has a unique identification code, which enables optimum management of each one. To incorporate this code, a simple teach sequence should be performed on the receiver using 2 buttons on the front face.

FEATURES

- For On/Off manual valves
- For valves pneumatically or electrically actuated.
- Easy mounting thanks to several type of heads (plunger, roller, variable length roller, …)
- 2.4 GHz ZigBee® protocol

- Two designs available:
  - Industrial format EN 50041
  - Miniature format
- One way pulse transmission
- Environment friendly, no battery maintenance required

Schneider Electric

GENERAL CHARACTERISTICS

Radio transmission	Transmission protocol	ZigBee® Green Power at 2.405 GHz (Channel 11, IEEE 802.15.4)
	Maximum range	100 m in free field 300 m with a relay antenna in free field
	Transmission power	3 mW
	Activation time	30 ms
	Transmission time	< 7 ms

Certifications and directives	Product certifications	EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, CE
	Radio approvals	FCC (USA), IC (Canada), RCM (Australia)

Mechanical characteristics	Mechanical life	400,000 operating cycles
	Maximum operating rate	3,600 operating cycles per hour
	Maximum tripping force	13 N for XCMW series / 50 N for XCKW series
	Materials	Plastic bodies, metal heads

Environment	Ambient air temperature	Operation: -25…+55 ℃ Storage: -40…+70 ℃
	Degree of protection	IP65 for XCMW series / IP67 for XCKW acc. to EN/IEC 60529
	Degree of protection	IK04 for XCMW series / IK05 for XCKW acc. to EN/IEC 50102

Electromagnetic compatibility (EMC)	Electrostatic discharge	8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2
	Electromagnetic fields Test level: 1 V/m	Test condition: from 2,000 to 2,700 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3
	Test level: 3 V/m	Test condition: from 1,400 to 2,000 MHz, conforming to IEC 61000-4-3, EN 301-489-1, and EN 301-489-3
	Test level: 10 V/m	Test condition: from 80 to 1,000 MHz, conforming to IEC 61000-4-3, EN 301-489-1, and EN 301-489-3
	Radiated emissions	Conforming to standards EN 300-440-1 and EN 300-440-2

RECEIVERS AND ACCESSORIES

Several receivers are available, from 2 to 60 Limit switches inputs, with PNP relay outputs or Ethernet Modbus/TCP or Modbus Serial Link 2xRS485 ports

Relay antenna to extend up to 300 m signal range can be added to the receiver.

For more details on receivers please refer to catalogue DIA4ED2150902EN and to XCKW and XCMW product specifications from Schneider Electric website.