# Wireless and batteryless limit switches OsiSense XCKW

# Catalogue



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# Wireless and batteryless limit switches OsiSense XCKW

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## Selection guide

## **Limit switches**

**OsiSense XCKW** Wireless and batteryless limit switches

ktuator type  Metai end plunger  Seel roller plunger  Thermoplastic roller  Seel roller plunger  See roller  See roler  See roller  See roller  S	tadio transmission  Transmission protocol  ZigBee® Green Power at 2.4 GHz (IEEE 802.15.4)    Maximum range  100 m in free field. 300 m with a relay antenna in free field. 25 m when the receiver is placed in a metal enclosure.    Transmission power  3 mW    Activation time  2 ms    Transmission time  < 2 ms    Sertifications and directives  Product certifications    Product certifications  FCC (USA), IC (Canada), RCM (Australia)    Idechanical haracteristics  Mechanical life    Maximum tripping force  50 N    Materials  Plastic bodies and heads    Invironment  Ambient air temperature    Operation: -25+ 55°C Storage: -40+ 70°C    Degree of protection  IP 66 and IP 67 conforming to EIX/IEC 60947-5.1 and IEC 61000-4-3 a 30 /m from 80 to 2700 MHz, conforming to EIX/IEC 61947-5.1 and IEC 61000-4-3 a 30 /m from 80 to 2700 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-3	Product type		Transmitters: plung	er head and rotary head	a limit switches			
adio transmission  Transmission protocol  ZigBee® Green Power at 2.4 GHz (IEEE 802.15.4)    Maximum range  100 m in free field.  300 m with a relay antenna in free field.    25 m when the receiver is placed in a metal enclosure.  3mW    Activation time  2 ms    Transmission time  2 ms    Transmission time  2 ms    Product certifications  Product certifications    Radio approvals  FCC (USA), IC (Canada), RCM (Australia)    echanical arracteristics  Maximum operating rate    Maximum ripping force  50 N    Materials  Plastic bodies and heads    vitronment  Ambient air temperature    Operation: -25+ 55°C    Berge of protection  IK 05 conforming to EN/IEC 60529    Degree of protection  IK 05 conforming to EN/IEC 60100-4-2    Invitronment  Belctrostatic discharges    BkV (air) and 6 kV (contact) conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, EN 301-489-3    Radiated emissions  Conforming to standards EN 300-440-1 and EN 300-440-2	adio transmission  Transmission protocol  ZigBee® Green Power at 2.4 GHz (IEEE 802.15.4)    Maximum range  100 m in free field. 300 m with a relay antenna in free field. 25 m when the receiver is placed in a metal enclosure.    Transmission power  3 mW    Activation time  2 ms    Transmission time  < 2 ms    artifications  Product certifications    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e    Radio approvals  FCC (USA), IC (Canada), RCM (Australia)    echanical directives  Mechanical life    Maximum operating rate  3600 operating cycles    Maximum tripping force  50 N    Materials  0.5 N.m    Plastic bodies and heads    vironment  Ambient air temperature    Operation: -25+ 55°C    Storage: -40+ 70°C    Degree of protection  IP 66 and IP 67 conforming to EN/IEC 60529    ectromagnetic fields  8 kV (air) and 6 kV (contact) conforming to EN/IEC 61000-4-2    10 Vim from 80 to 2000 MHz, conforming to EN/IEC 61000-4-2    10 Vim from 80 to 2000 MHz, and alistance of 20 n, conforming to IEC 61000-4-3, EN 301-489-3    Radiated emissions  Conforming to standards EN 300-440-1 and EN 300-440-2			(1) (r)	er»		era Maria		
Maximum range    100 m in free field. 300 m with a relay antenna in free field. 25 m when the receiver is placed in a metal enclosure.      Transmission power    3 mW      Activation time    2 ms      Transmission time    2 ms      Transmission time    2 ms      Product certifications ad directives    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Product certifications    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical maracteristics    Mechanical life      Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature      Operation: -25+55°C Storage: -40+70°C    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 61000-4-2      Ion Win from 80 to 2000 MHz, conforming to EC 61000-4-3, Electromagnetic fields    8kV (air) and 6 kV (contact) conforming to EC 61000-4-3, EN 301-489-1 and EN 301-489-3      Vim from 80 to 2000 MHz, and a di	Maximum range    100 m in free field. 300 m with a relay antenna in free field. 25 m when the tree ceiver is placed in a metal enclosure.      Transmission power    3 mW      Activation time    2 ms      Transmission time    2 ms      Transmission time    2 ms      Product certifications and directives    Product certifications      Product certifications    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical aracteristics    Mechanical life      Maximum operating rate    3600 operating cycles      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: - 25 + 55°C Storage: - 40 + 70°C      Degree of protection    IK 65 conforming to EN/IEC 60024-2      orgene of protection    IK 05 conforming to EN/IEC 6000-4-2      orgene of protection    IK 05 conforming to EN/IEC 6100-4-2      Degree of protection    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-3. 3 V/m from 80 to 2200 MHz, and a distance of 20 m, conforming to IEC 61000-4-3. 3 V/m from 80 to 2200 MHz, and a distance of 20 m, conforming to IEC 61000-4-3. 3 V/m from 80 to 2200 MHz and a distance of 20 m, conforming to IEC 61000-4-3. 3 V/m from 80 to 2200 MHz and a dist	ctuator type		Metal end plunger	Steel roller plunger		Steel roller lever		
Maximum range    100 m in free field. 300 m with a relay antenna in free field. 25 m when the receiver is placed in a metal enclosure.      Transmission power    3 mW      Activation time    2 ms      Transmission time    2 ms      ertifications nd directives    Product certifications      Enclosure    Radio approvals      Echanical haracteristics    Mechanical life      Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N      Maximum tripping force    50 N      Maximum tripping force    Operation: -25+55°C Storage: -40+70°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      IK 05 conforming to EN/IEC 61000-4-2    10 V// from 80 to 2000 MHz, conforming to EC 61000-4-2      In Viron magnetic fields    8kV (air) and 6 kV (contact) conforming to EC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz and a distance of 20 m,	Maximum range    100 m in free field. 300 m with a relay antenna in free field. 25 m when the the receiver is placed in a metal enclosure.      Transmission power    3 mW      Activation time    2 ms      Transmission time    2 ms      ertifications end directives    Product certifications      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical haracteristics    Mechanical life      Maximum ripping force    50 N      Materials    9 Plastic bodies and heads      nvironment    Ambient air temperature      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Isectromagnetic compatibility (EMC); Radiated emissions    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2 10 V/m from 80 to 2000 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2000 MHz and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 t	adio transmission	Transmission protocol	ZigBee <sup>®</sup> Green Powe	r at 2.4 GHz (IFFF 802 1	5.4)			
Transmission power    3 mW      Activation time    2 ms      Transmission time    < 2 ms	Transmission power    3 mW      Activation time    2 ms      Transmission time    2 ms      ertifications in directives    Product certifications      EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical haracteristics    Mechanical life      Maximum operating rate    3600 operating cycles      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature      Operation: -25+ 55°C Storage: -40+ 70°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      IK 05 conforming to EN/IEC 50102      Rectoragnetic compatibility (EMC)    Electromagnetic fields      adiated emissions    8 kV (air) and 6 kV (contact) conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 S/m from 80 to 2000 MHz, conforming to IEC 61000-4-3 3 S/m from 80 to 2000 MHz, conforming to IEC 61000-4-3 3 S/m from 80 to 2000 MHz, conforming to IEC 61000-4-3 3 S/m from 80 to 2000 MHz, conforming to IEC 61000-4-3 3 S/m from 80 to 2000 MHz, and a distance of 20 m, conforming to IEC 61000-4-3 3 S/m from 80 to 2000 MHz, conforming to IEC 61000		a second and a second	100 m in free field. 300 m with a relay an	100 m in free field. 300 m with a relay antenna in free field.				
Transmission time    < 2 ms	Transmission time    < 2 ms		Transmission power						
Product certifications    Product certifications    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical arracteristics    Mechanical life      Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      IP 66 conforming to EN/IEC 50102    IK 05 conforming to EN/IEC 61000-4-2      sty of the fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to EN/IEC 61000-4-3, SV/m from 80 to 2000 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to EN/IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to EN/IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to EN/IEC 61000-4-3, SV/m from 80 to 2000 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz, conforming to IEC 61000-4-3, SV/m from 80 to 2000 MHz, and EN 301-489-1 and EN 301-489-1	ertifications nd directives    Product certifications    EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical maracteristics    Mechanical life      Maximum operating rate    3600 operating cycles      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature      Operation: -25+ 55°C Storage: -40+ 70°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 6000-4-2      To V/m from 80 to 2000 MHz, conforming to IEC 61000-4-2      Iectromagnetic    8 kV (air) and 6 kV (contact) conforming to EIC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 2000 MHz, conforming to EIC 61000-4-3 3 SV m from 80 to 200		Activation time	2 ms					
EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical naracteristics    Mechanical life    400,000 operating cycles      Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads      Invironment    Ambient air temperature    Operation: - 25+ 55°C Storage: - 40+ 70°C    Operation: - 25+ 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529    IEC 61000-4-2      It K 05 conforming to EN/IEC 50102    8 kV (air) and 6 kV (contact) conforming to EN/IEC 61000-4-2      It worms 80 to 2700 MHz, conforming to EN/IEC 6104-7-5-1 and IEC 61000-4-3, 3 V/m from 80 to 2700 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, 3 V/m from 80 to 2700 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, SV/m from 80 to 2700 MHz, and e M 30-440-1      Readiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2	EAC, e    EAC, e      Radio approvals    FCC (USA), IC (Canada), RCM (Australia)      echanical arracteristics    Mechanical life      Maximum operating rate    3600 operating cycles      Maximum tripping force    50 N      Materials    Plastic bodies and heads      nvironment    Ambient air temperature      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 60529      Itectromagnetic fields    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Ompatibility (EMC)    Electromagnetic fields      Radiated emissions    Conforming to standards EN 300-440-1      Conforming to standards EN 300-440-1    XCKW131      XCKW101    XCKW102    XCKW131		Transmission time	< 2 ms					
echanical haracteristics    Mechanical life    400,000 operating cycles      Maximum operating rate    3600 operating cycles per hour      3600 operating cycles per hour    3600 operating cycles per hour      Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads    0peration: -25+ 55°C      Norment    Ambient air temperature    Operation: -25+ 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Iectromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Image: Fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, S V/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-1 and EN 301-449-3      Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2	echanical haracteristics    Mechanical life    400,000 operating cycles      Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: - 25+ 55°C Storage: - 40+ 70°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      SkV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Io V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, 3 V/m from 80 to 2000 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, S V/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, S V/m from 80 to 2700 MHz, and a distance of 20 m, conforming to IEC 61000-4-3, S V/m from 80 to 2700 MHz, and EN 300-440-1      eferences    XCKW101    XCKW102    XCKW131    XCKW133		Product certifications		MC 2004/108/EC dired	ctive, R&TTE 1999/5/E	C directive,		
haracteristics    Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: - 25+ 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IV 65 conforming to EN/IEC 50102      lectromagnetic ompatibility (EMC)    Electrostatic discharges      B kV (air) and 6 kV (contact) conforming to EN/IEC 61900-4-2      10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and 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	haracteristics    Maximum operating rate    3600 operating cycles per hour      Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: -25+55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Ik 05 conforming to EN/IEC 50102    Ik 05 conforming to EN/IEC 61000-4-2      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-2      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-2      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-2      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-3      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-2      Image: end protection    Ik 05 conforming to EN/IEC 61000-4-3      Image: end protection    Ik V (air) and 6 kV (contact) conforming to EN/IEC 61000-4-3      Image: end protection    Ik V (air) and 6 kV (contact) conforming to EC 61000-4-3      Image: end protection    Ik V (air) and 6 kV (contact) conforming to IEC 61000-4-3      Image: end protection    Ik V (air) and 6 kV (contact) conforming to IEC 61000-4-3      Image: end protectifieds    Image: end protection <td></td> <td>Radio approvals</td> <td colspan="6">FCC (USA), IC (Canada), RCM (Australia)</td>		Radio approvals	FCC (USA), IC (Canada), RCM (Australia)					
Maximum tripping force    50 N    0.5 N.m      Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: - 25 + 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Image: Lectromagnetic ompatibility (EMC)    Electrostatic discharges      8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, 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	Maximum tripping force  50 N  0.5 N.m    Materials  Plastic bodies and heads    nvironment  Ambient air temperature  Operation: -25+55°C    Degree of protection  IP 66 and IP 67 conforming to EN/IEC 60529    Degree of protection  IK 05 conforming to EN/IEC 50102    Image: Additional and the add to be additional and the addition of the additional and the additional additin additin additional additional additional additional additionaddi		Mechanical life	400,000 operating cy	cles				
Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: - 25+ 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Iectromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Iectromagnetic fields    0 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-3      Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2	Materials    Plastic bodies and heads      nvironment    Ambient air temperature    Operation: $25+55^{\circ}C$ Storage: $40+70^{\circ}C$ Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Iectromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Iectromagnetic fields    3 kV (air) and 6 kV (contact) conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and 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      eferences    XCKW101    XCKW102    XCKW131    XCKW133		Maximum operating rate	3600 operating cycles per hour					
Invironment    Ambient air temperature    Operation: - 25+ 55°C Storage: - 40+ 70°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Ilectromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Ilectromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, 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	Ambient air temperature    Operation: - 25+ 55°C      Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Electromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, SV/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-3      Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2      XCKW101    XCKW102    XCKW131      XCKW133		Maximum tripping force	50 N		0.5 N.m			
Storage: - 40+ 70°C      Degree of protection      Degree of protection      IP 66 and IP 67 conforming to EN/IEC 60529      IK 05 conforming to EN/IEC 50102      IEctromagnetic ompatibility (EMC)      Electromagnetic fields      Adiated emissions      Conforming to standards EN 300-440-1 and EN 300-440-2	Storage: -40+70°C      Degree of protection      Degree of protection      IP 66 and IP 67 conforming to EN/IEC 60529      IK 05 conforming to EN/IEC 50102      Bectromagnetic ompatibility (EMC)      Electrostatic discharges      Electromagnetic fields      Number of protection      Bectromagnetic fields      Bectromagnetic fields      Bectromagnetic fields      Radiated emissions      Conforming to standards EN 300-440-1 and EN 300-440-2      XCKW101    XCKW102      XCKW131    XCKW133		Materials	Plastic bodies and he	ads				
Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Electromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      ID V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, 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	Degree of protection    IP 66 and IP 67 conforming to EN/IEC 60529      Degree of protection    IK 05 conforming to EN/IEC 50102      Electromagnetic ompatibility (EMC)    Electrostatic discharges      Electromagnetic fields    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, SV/m from 80 to 2700 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      XCKW101    XCKW102    XCKW131      XCKW133    XCKW134	nvironment	Ambient air temperature						
Interformagnetic compatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Interformagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3, SN 301-489-3      Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2	lectromagnetic ompatibility (EMC)    Electrostatic discharges    8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2      Image: Description of the state of the s		Degree of protection						
ompatibility (EMC)    Electromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3      3 V/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-3      Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2	ompatibility (EMC)    Electromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, 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 <b>XCKW101 XCKW102 XCKW131</b>		Degree of protection	IK 05 conforming to E	N/IEC 50102				
Dempatibility (EMC)    Electromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3      3 V/m from 80 to 2700 MHz and a distance of 20 m, 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	compatibility (EMC)    Electromagnetic fields    10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, 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      XCKW101    XCKW102    XCKW131    XCKW133	ectromagnetic	Electrostatic discharges	8 kV (air) and 6 kV (c	ontact) conforming to IEC	61000-4-2			
Radiated emissions      Conforming to standards EN 300-440-1 and EN 300-440-2	Radiated emissions    Conforming to standards EN 300-440-1 and EN 300-440-2      eferences    XCKW101    XCKW102    XCKW131    XCKW133		<b>_</b>	10 V/m from 80 to 20 3 V/m from 80 to 270	00 MHz, conforming to E 0 MHz and a distance of 2	N/IEC 61947-5-1 and IE			
eferences XCKW101 XCKW102 XCKW131 XCKW133			Radiated emissions			N 300-440-2			
	ages 8	References		XCKW101	ХСКW102	XCKW131	XCKW133		
	tages 8								

(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the houried washe
 (2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Characteristics and the second second

Sensors

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Variable length thermoplastic roller lever (1)

Variable length steel roller lever (1)

ZigBee® Green Power at 2.4 GHz (IEEE 802.15.4)

100 m in free field.

300 m with a relay antenna in free field.25 m when the receiver is placed in a metal enclosure.

3 mW

2 ms

< 2 ms

EN/IEC 60947-5, EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, EAC, e

FCC (USA), IC (Canada), RCM (Australia)

400,000 operating cycles

3600 operating cycles per hour

0.5 N.m

Plastic bodies and heads

Operation: - 25...+ 55°C Storage: - 40...+ 70°C

IP 66 and IP 67 conforming to EN/IEC 60529

IK 05 conforming to EN/IEC 50102

8 kV (air) and 6 kV (contact) conforming to IEC 61000-4-2

10 V/m from 80 to 2000 MHz, conforming to EN/IEC 61947-5-1 and IEC 61000-4-3 3 V/m from 80 to 2700 MHz and a distance of 20 m, conforming to IEC 61000-4-3, EN 301-489-1 and EN 301-489-3

Conforming to standards EN 300-440-1 and EN 300-440-2

XCKW141	ХСКW143	XCKW139	ХСКW149	XCKW159

Elastomer roller lever,

Ø 50 mm

Variable length elastomer

roller lever, Ø 50 mm (1)

Round thermoplastic

rod lever, Ø 6 mm (2)

8

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## Selection guide (continued)

# **Limit switches**

OsiSense XCKW Wireless and batteryless limit switches

Product type		Receivers for wireless	radio communication				
Maximum number of	transmitters	2	32	32			
Number and type of o	utputs	2 PNP outputs	4 PNP outputs	2 relays C/O type outputs			
Radio transmission	Transmission protocol	ZigBee <sup>®</sup> Green Power at	2.4 GHz (IEEE 802.15.4)				
	Maximum range		100 m in free field. 300 m with a relay antenna in free field. 25 m when the receiver is placed in a metal enclosure.				
	Response time	< 30 ms					
Certifications and directives	Product certifications and radio approvals	EN/IEC 60947-5-1 e		EN/IEC 60947-5, UL 508, CSA C22.2 no. 14, CCC, GOST EMC 2004/108/EC directive, R&TTE 1999/5/EC directive, FCC, RSS, C-Tick, ANATEL, SRRC, e			
Power supply	Nominal supply voltage	24 V ⊂ (-15+ 15%)		24240 V a /c (-10+ 10%)			
Output characteristics	Nominal current and voltage	0.2 А/24 V с		0.3 A/48 V C 3 A/120 V a conforming to IEC 60947-5-1 3 A/250 V a conforming to UL 508 and CSA C22.14			
Environment	Ambient air temperature	Operation: - 25+ 55°C Storage: - 40+ 70°C					
	Degree of protection	IP 20 conforming to EN/IEC 60529	IP 20 conforming to E	N/IEC 60529			
References		XZBWR2STT24	ZBRRC (1)	ZBRRD (1)			
Pages		9					
		(1) Schneider Electric pro	duata				

Telemecanique Sensors

Access points for wireless and bat	teryless limit switches	Accessories		
		Relay antenna	External antenna for ZBRN1 and ZBRN2	Communication module for ZBRN1
60	60	-	-	-
Ethernet Modbus/TCP communication protocol	Communication via Modbus serial link 2 RS485 ports	-	-	-
ZigBee® Green Power at 2.4 GHz (IEI	EE 802.15.4)	ZigBee® Green Power at 2	.4 GHz (IEEE 802.15.4)	-
100 m in free field 300 m with a relay antenna in free fiel 25 m when the receiver is placed in a		300 m maximum depending on environment	100 m in free field	-
< 30 ms		-	-	-
EN/IEC 60947-5, UL 508, CSA C2 EMC 2004/108/EC directive, R&T FCC, RSS, C-Tick, ANATEL, SRR	TE 1999/5/EC directive,	ССС, CSA, C-Tick, GOST, UL 508, BT 2006/95/EC, е	-	CSA, UL 508, UL 873, UL 60730-1, BTL, ⊖
24240 V a /c (-10+ 10%)		24240 V a /c	-	-
-	-	-	-	-
Operation: - 25+ 55°C Storage: - 40+ 70°C		Operation: - 25+ 55°C Storage: - 40+ 70°C	-	Operation: - 20+ 65°C Storage: - 25+ 70°C
IP 20 conforming to EN/IEC 60529		IP 65 conforming to EN/IEC 60529 IK 05 conforming to EN/IEC 50102	-	IP 20 conforming to EN/IEC 60529
ZBRN1 (1)	ZBRN2 (1)	ZBRA1 (1)	<b>ZBRA2</b> (1)	ZBRCETH (1)
10		11		

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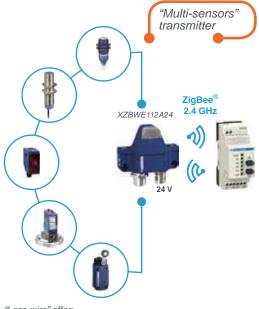


### **Limit switches** OsiSense XCKW Wireless and batteryless limit switches

### OsiSense XCKW

Wave generated automatically without a battery 2.4 GHz 2.4 GHz XCKW

Wireless offer: one-way **pulsed** transmission



"Less-wire" offer: two-way **continuous** transmission

No battery to replace, recycle or recharge Telemecanique Sensors has expanded its offer of wireless products with the launch of a range of limit switches based on an automatic radio wave generator system.

This range includes transmitters and receivers which 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 OsiSense XCKW offer can be used to find the position of an item or part of a machine remotely, without a wired connection. The transmitter is equipped with a "dynamo" generator which 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 metres away.

There are therefore no batteries, as the system is self-powered.

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.

Thanks to this technology, the industrial applications field has diversified and now meets the requirements of machine manufacturers in terms of flexibility and modularity. It is the ideal product for confirming the position of a part remotely after a manual operation by an operator (1).

OsiSense XCKW wireless limit switches are therefore particularly suitable (2) for:

- b automatic doors
- b expandable conveyors
- b wheel chocks for lorries
- b rotary machines
- b turntables

Reminder: With the XZBWE112A24 multi-sensors transmitter, our "less-wire" offer allows continuous communication between the transmitter and the receiver.

NB: Receivers can be actuated by Schneider Electric's OsiSense XCKW limit switches or ZBpRTAp pushbuttons.

### **Simplified installation**

- > Faster installation: no wiring between the limit switch and the receiver.
- No configuration necessary, thanks to the Plug and Play ready-to-use solution.
  Freedom of movement around the machine or process, in order to detect parts
- that are moving or difficult to access.

### **Reduced maintenance**

- > No battery maintenance required.
- > Optimum availability of control functions.
- Minimal post-installation maintenance (no need for periodic retightening of contact terminal connections, no cables to be replaced or repaired).

(1) The operating speed must be faster than 10 mm/s.

- (2) OsiSense XCKW wireless and batteryless limit switches are not suitable for hoisting applications or dangerous machines.
  - For these applications and machines, OsiSense XC Standard cabled switches are ideal. Please contact our Customer Care Centre.



General presentation (continued)

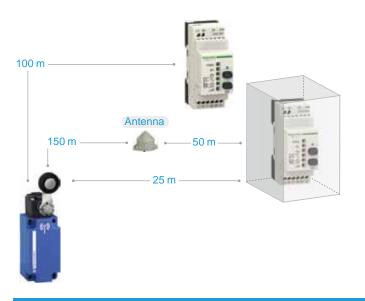
### **Limit switches**

OsiSense XCKW Wireless and batteryless limit switches

### Improved performance

#### A relay antenna to increase the signal range

- > Range of 300 metres, in free field, using an external relay antenna.
- Range of 200 metres when the receiver is installed in a metal enclosure, using an external relay antenna.
- > Range of 100 metres in free field.
- > Range of 25 metres when the receiver is installed in a metal enclosure (1).



#### Open protocols for easy integration

#### Large I/O capacity

- > The offer includes a receiver that can manage up to 60 transmitters. The signals received are converted to communication protocols.
- The proposed access points can be connected to an automation platform by either Modbus RS485 serial link or Modbus/TCP protocol.



(1) The distances stated may vary depending on the environment.

Simple to order, with ready-to-use packs



### Description, references

### Limit switches **OsiSense XCKW** Wireless and batteryless limit switches





#### "Components" offer

The OsiSense XCKW offer is available as separate parts and consists of:

- b 9 wireless and batteryless limit switches, consisting of a plastic body and an actuator head taken from existing ranges (OsiSense XCKS and OsiSense XCKM).
- $b\ \textbf{3}\ \textbf{receivers},$  which can be programmed using buttons on the front face.
- v with 2 contact relay outputs, 24...240 V a /c.
- $\vee\,$  with 2 or 4 PNP transistor outputs, 24 V  $_{C}$  .

b 2 access points which provide network connectivity openness by operating as an intermediate device between the transmitter and the PLC. The access point receives radio signals from the OsiSense XCKW limit switches and converts them to communication protocols.

The access point is connected to the PLC using:

- v an Ethernet Modbus/TCP communication protocol, for **ZBRN1**.
- v a Modbus RS485 serial link communication, for **ZBRN2**.

#### b accessories:

- $\vee$  1 active relay antenna to boost the signal when the receiver is in a metal enclosure or to get round obstacles in the case of a complex installation.
- v 1 external antenna for entry points ZBRN1 or ZBRN2 to increase the range.
- v 1 communication module for Ethernet Modbus/TCP network.

#### Ready-to-use pack offer

To make it easier to install OsiSense XCKW switches, ready-to-use packs are also available

The transmitter (limit switch) and receiver are factory-paired.

Each pack contains:

- b a limit switch
- ∨ a version with steel roller plunger
- ∨ a version with plastic roller lever

b a receiver with 2 relay outputs

References		
Limit switches		
Actuator type	Reference	Weight kg
Metal plunger	XCKW101	0.210
Steel roller plunger	XCKW102	0.220
Thermoplastic roller lever	XCKW131	0.240
Steel roller lever	XCKW133	0.245
Variable length thermoplastic roller lever	XCKW141	0.260
Variable length steel roller lever	XCKW143	0.265
Elastomer roller lever, Ø 50 mm	XCKW139	0.220
Variable length elastomer roller lever, Ø 50 mm	XCKW149	0.270
Round thermoplastic rod lever, Ø 6 mm	XCKW159	0.230







XCKW159

XCKW139

XCKW101

XCKW102



XCKW131



XCKW141





XCKW133

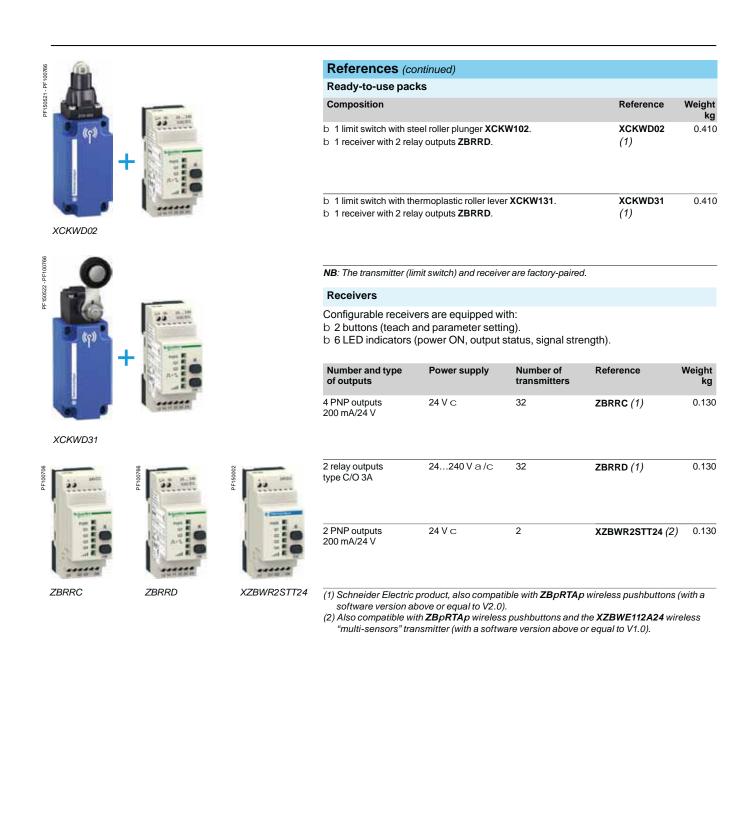




### References (continued)

# **Limit switches**

OsiSense XCKW Wireless and batteryless limit switches



### Description, references (continued)

### **Limit switches** OsiSense XCKW Wireless and batteryless limit switches Network access points

#### Description

#### Standard access point with communication module

Access point **ZBRN1** has an empty slot for the **ZBRCETH** communication module to support Modbus/TCP protocol.

This communication module has 2 standard Ethernet RJ45 connectors that provide connectivity for daisy chain operation and daisy chain loop operation (when used with Schneider Electric ConneXium Ethernet switches) and thus avoids the use of a hub or an external switch.

#### Access point for Modbus serial link protocol

Access point **ZBRN2** has 2 embedded RS485 connectors that avoid the use of an external hub for an RS485 serial link connection. The supported bps are 2400 bps, 4800 bps, 9200 bps, 9600 bps, 38,400 bps, and 115,200 bps.

#### References

Access points					
Description	Data function	Output type	Receiver voltage	Reference	Weight
			v		kg
Configurable access points equipped with: - 7-segment display - jog dial - 8 LED indicators (power ON, function modes, communication	Set/Reset	2 RS485 connectors that provide Modbus RS485 serial link connectivity	24240 a /c	<b>ZBRN2</b> (1)	0.270
status, signal strength) - external antenna connector and protective cap - for 60 transmitters max.	Set/Reset	1 slot for communication module <b>ZBRCETH</b> (to be ordered separately)	24240 a/c	ZBRN1 (1)	0.270

(1) Schneider Electric product, also compatible with **ZBpRTAp** wireless pushbuttons (with a software version above or equal to V1.5).





ZBRN1

### References (continued)

# **Limit switches**

References

Communication module for access

Modbus/TCP protocol with embedded

web pages, available in 5 languages, for configuration, monitoring and diagnostics

Description

point ZBRN1

OsiSense XCKW Wireless and batteryless limit switches Accessories

Modbus/TCP network communication module



ZBRCETH



Relay antenna			
Use	Description	Reference	Weight kg
Increases the distance between the limit switches and the receivers	24240 V a /c 5 m cable 1 power ON LED 2 reception/ transmission LEDs	<b>ZBRA1</b> (2)	0.200
External antenna			
Use	Description	Reference	Weight kg
Connected to access point (ZBRN1 or ZBRN2) to increase the transmission distance	2 m cable 1 RF connector	<b>ZBRA2</b> (1)	0.040

Communication

2 RJ45 connectors

for daisy chain or

daisy chain loop

operation

port

Reference

ZBRCETH (1)

Weight

kg

0.044

(1) Schneider Electric product.

(2) Schneider Electric product, also compatible with **ZBpRTAp** wireless pushbuttons.





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