

LoRaWAN Ex d Tilt Sensor



Smart Agriculture, Smart Building, Smart City, Smart Facility, Smart Farm, Smart Factory

SKU: WSLRWEX-AG

LoRaWAN Ex d TILT SENSOR WSLRWEX-AG

LoRaWAN



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Safe Zone

Hazardous Zones

WSLRWEX-AG is a LoRaWAN Tilt Sensor with Ex d explosion-proof approval and comes with inclinometer which can be used to measure tilt angles X, and Y of any object such as a Tower, Building, Tree, Electricity Tower, Telecom Tower, Bridges... With Ultra-low Power design and smart firmware allow the sensor can last up to 10 years with 01 x C-type battery (depends on configuration). The sensor will transmit data in kilo-meters distance to the LoRaWAN gateway, any brand on the market. For LoRaWAN connectivity, it supports global frequency bands EU868, IN865, RU864, KR920, AS923, AS923-2, AU915, US915.

Applications

Facility Monitoring, Flood Monitoring, Infrastructure Monitoring, Level Monitoring, Machine Health Monitoring, Safety Monitoring, Tilt Monitoring

Notes For Applications

- This AG tilt sensor measures the static tilt angle of the static object vs. the Gravity direction. Please do not use it for other angle measurements.
- It measures the static tilt angle of stationary objects or slow-moving objects such as Tree, Bridge, Pole, Tower, Crane, and Building...
- It does not measure the tilt angle of a quick-moving object like construction equipment...

LoRaWAN Communication
LoRaWAN Specification V1.0.3

10-Year battery
Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allows the sensor can last up to 10 years with a single battery C

High Precision Tilt Measurement
Advanced Accelerometer to deliver high accuracy and stable measurement of Tilt angles.

Ex d Zones 1-2-21-22
Ex d approval for installation in Zone 1, Zone 2 or Safe Zone

TILT MONITORING ON ONSHORE OIL RIG



WSLRWEX-AG-H2.JPG

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Specification

| | |
|------------------------------|--|
| Tilt Sensor | Built-in advanced accelerometer to deliver tilt angle measurement of XYZ for AG-01 version, XY for AG-03 version |
| Tilt Measurement range | ±90° for AG-01 version ±30° for AG-03 version |
| Tilt Resolution | ±0.01° for AG-01 version ±0.001° for AG-03 version |
| Tilt Repeatability | ±0.075° for AG-01 version ±0.010° for AG-03 version |
| Tilt Temperature Drift | ±0.2° per 10°C for AG-01 version (when installation X~0° and Y~0°) |
| Sensor sampling rate | 1Hz max (recommend for Solar powered version) |
| COMMUNICATION | |
| SF Factors | SF7~SF12 |
| Antenna | External antenna |
| Power Supply | Primary batteries 01 x C size 3.6VDC (battery not included) or Solar Panel with Rechargeable batteries 1 x C size (not included) |
| RF Frequency and Power | 860~930MHz, 14~20 dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915 |
| Protocol | LoRaWAN Class A V1.0.3 |
| Data sending modes | interval time, alarm and manually triggering by magnetic key |
| Alarm function | for X-axis and Y-axis only |
| Housing | Cast aluminum, IP66 |
| Ex Certification | IMQ 14 ATEX 005 X, TÜV CY 18 ATEX 0206158 X |
| Hazardous Protection Marking | ATEX II 2G Ex db IIC T4 Gb and ATEX II 2D Ex tb IIIC T135°C Db |
| Standards | IEC EN 60079-0, IEC EN 60079-7 and IEC EN 60079-31 |
| Applicable Zones | Zone 1 & 2 gas hazardous areas Zone 21 & 22 hazardous areas which contain conductive combustible dust |
| Ambient working temperature | -40~85°C (use with SAFT LS26500) |
| Size Net weight | H145xW100xD73 (not including antenna)/ ≈1500g |
| Mounting type | Wall mount |

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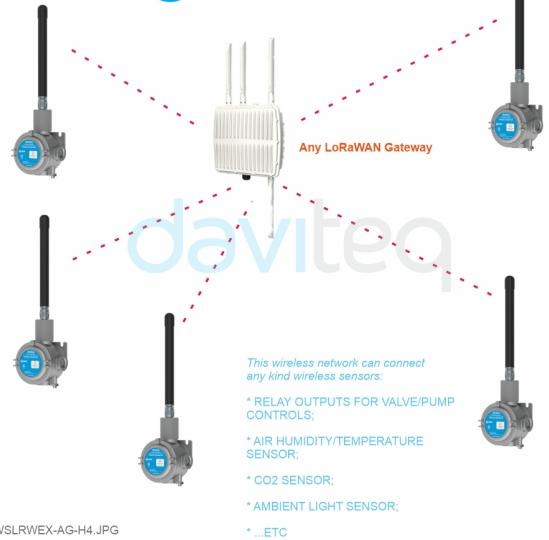
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TILT MONITORING ON OFFSHORE OIL RIG



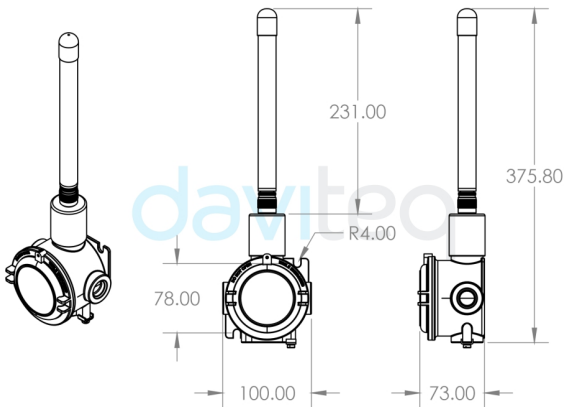
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LoRaWAN NETWORK



WSLRWEX-AG-H4.JPG

DIMENSION DRAWING OF SENSOR NODE (Unit: mm)



WSLRWEX-AG-H5.JPG

RECOMMENDED BATTERIES FOR LoRaWAN SENSOR

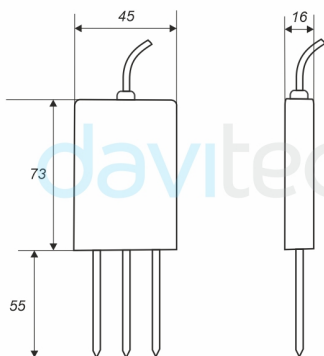
LS 26500 Lithium battery



-60°C..+85°C working temperature
 Low self-discharge rate
 7.7 Ah Capacity

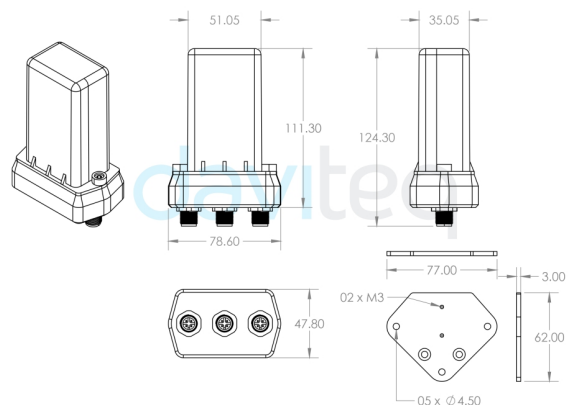
WSLRWEX-AG-H6.JPG

DIMENSION DRAWINGS OF SENSOR (Unit: mm)



WSNB-SMT-H7.JPG

DIMENSION DRAWING OF DEVICE (Unit: mm)



WSNB-SMT-H8.JPG

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RECOMMENDED BATTERIES

E91 AA Alkaline battery



L91 AA Lithium battery



-18 .. + 60 oC working temperature

10-year shelf life

3000 mAH Capacity

Price: 1X

-40 .. + 60 oC working temperature

20-year shelf life

3500 mAH Capacity

Price: 3.5X

WSNB-SMT-H9.JPG

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Ordering Information

| ITEM CODE | DESCRIPTIONS |
|---------------|---|
| WSLRWEX-AG-03 | LoraWAN Ex d approved Tilt Sensor, XY Tilt measurement, 0.01 Repeatability, Single 3.6V Battery, -30°~30°, IP66 |

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