CONNECTIVITY

Thread X3

Broadband IIoT sensor connectivity

Thread X3 is the ideal complement to Loadsensing's solutions portfolio, geared towards customers who need broadband sensor connectivity for high-data rate, high-power, or high-speed industrial project scenarios. It is a fully autonomous sensor connectivity device with optional integrated 4G/LTE cellular modem, wireless mesh networking, and battery pack in a weather resistant enclosure. Each broadband device also serves as a gateway for wireless smart sensors.

MULTIPLE MODES OF COMMUNICATION
with prioritization and intelligent fail-over

WIRELESS MESH
Extend sensor networks with resilient wireless mesh technology

Wireless Gateway
As a wireless gateway, the Thread X3 enables efficient connectionless low-power wide area (LPWA) wireless communication with compatible devices and smart sensors. The interface built on the MQTT-SN standard, provides scalable and secure wireless network management, security, and cloud connectivity.

Intelligent Wireless Networking
Automatic network role detection Gateway, Repeater, or Endpoint.

Adaptive and Resilient
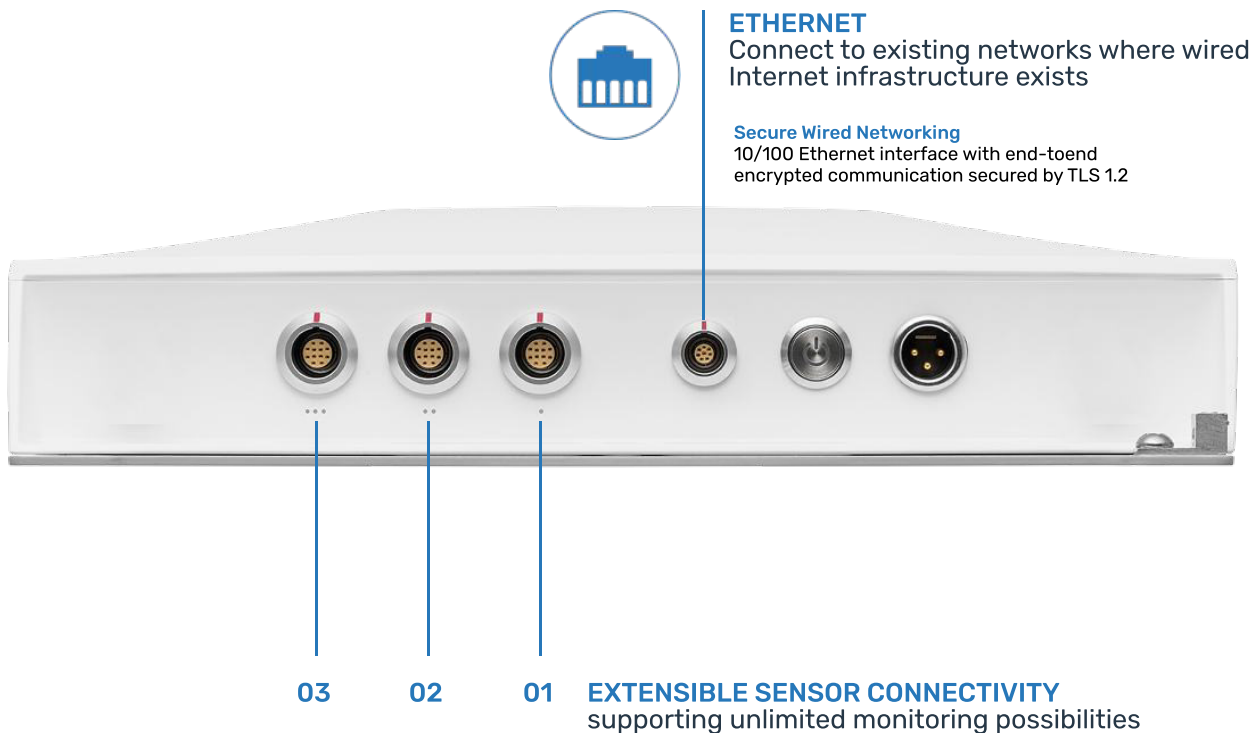Self-forming long-range wireless mesh networking.

CELLULAR
Deploy distributed devices connected to Cellular networks

Globally Compliant Cellular
Operate on 600+ cellular networks across 190 countries. No provisioning or carrier management required.

ETHERNET
Connect to existing networks where wired Internet infrastructure exists

Secure Wired Networking
10/100 Ethernet interface with end-toend encrypted communication secured by TLS 1.2

03   02   01   **EXTENSIBLE SENSOR CONNECTIVITY**
supporting unlimited monitoring possibilities

CONFIGURABLE SENSOR INTERFACES

Dense Sensor Installations
Cost-effectively manage nested sensors. Attach multiplexer (MUX) devices to support up to 128 sensors.

Relay Capabilities
Each device port can output 12V that can be toggled on and off manually, via API integration, by alert trigger, or by recorded flow (flowmeter connected). The 12V output can be used to control a relay (like a solid state relay) or to just provide direct power for a simple audio/visual alarm.

DIMENSIONS

ThreadX3
Powered by Worldsensing

14.96" [38 cm]

12.47" [31.63 cm]

14.76" [37.49 cm]

3.39" [8.61 cm]

TECHNICAL SPECIFICATIONS

MECHANICAL

Dimensions:	14.76 in [37.49 cm] x 12.47 in [31.63 cm] x 3.39 in [8.61 cm]
Weight:	8.6 lbs (3900 grams)
IP-Rating:	66
Humidity:	5 to 95% non-condensing
Operating Temperature:	-40°F to 158°F (-40°C to 70°C)
Wireless Connector:	N-type female coaxial
Cellular Connector:	N-type female coaxial
Network Connector:	Lemo 8-pin
Sensor Connector:	Lemo 12-pin

GENERAL

EMMC Flash Memory:	8 GB

MESH WIRELESS NETWORKING

Mesh Wireless Frequency:	870 MHz	900 MHz LP	900 MHz HP
Mesh Wireless Range:	0.5 miles	3.5 miles	7.5 miles
Output Power:	25mW	250mW	1000mW
RF Data Rate (max):	80 kbps	250 kbps	250 kbps

POWER

Input Voltage:	Nominal voltage 24 VDC, range 15-26 VDC
Power Input:	Up to 2500mA (Charge mode) 200mA RMS (Standard mode) 20mA RMS (Low power mode) @24 VDC
Direct Connect Solar Panel:	Maximum Peak Power (Pmax): 160 W Maximum open circuit voltage (Voc): 22.9 V Optimum operating voltage (Vmp): 20.2 V Maximum operating current (Imp): 7.92 A
Battery	12.8V 9.9AH (126.72Wh) LiFePO4

INTERNAL SENSORS

System Temperature:	-40°F to 158°F (-40°C to 70°C), precision +/- 0.5°F
Barometer:	measurement range 0.26 bars - 1.26 bars, precision 0.00025 bars RMS

WIRED INTERFACES

	Communication	Power
Network I/O:	10/100 Ethernet	None
Sensor I/O:	Interface 01: USB, RS232, RS485, 4-20mA Interface 02: RS232, RS485, 4-20mA Interface 03: RS232, RS485, 4-20mA	12 or 15VDC Out, up to 20 watts

CELLULAR NETWORKING

	4G Bands	3G Bands	2G Bands
North America:	B2[1900], B4[1700], B5[850], B12[700], B13[700], B14[700], B66[1700], B71[600]	B2[1900], B4[1700], B5[850]	-
Europe:	B1[2100], B3[1800], B7[2600], B8[900], B20[800]	B1[2100], B8[900]	GSM900, DCS1800
Australia:	B1[2100], B3[1800], B5[850], B8[900], B9[1800], B18[850], B19[850], B26[850], B28[700]	B1[2100], B5[850], B6[800], B8 [900], B19[800]	GSM850/900, DCS1800, PCS1900
South America:		B1[2100], B2[1900], B4[1700], B5[850], B8[900]	-

W

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United Kingdom   United States   Singapore   Poland

COMPATIBILITY

MANUFACTURER	SENSOR NAME	SENSOR TYPE
Advantech	ADAM 4000 Series	Interface Module
Badger Meter	380 Series BTU Meter M2000 Flowmeter M5000 Flowmeter	BTU Meter Flowmeter Flowmeter
BeadedStream	M-Link Connection for Digital Temperature Cable Recite Connection for Digital Temperature Cable	Temperature Sonde Temperature Sonde
Call & Nicholas	Instruments SlideMinder	Linear Displacement
Campbell Scientific	AVW200 VW Analyzer Module LevelVUEB10 Bubbler Water Content Reflectometer	Interface Module Water level Reflectometer
DGSI	M-Logger for MEMS sensors MEMS Tiltmeter VW Mini-Logger VW V-Logger MEMS IPI EL Beam Sensor	Datalogger Tiltmeter Vibrating Wire datalogger Vibrating Wire datalogger In-place-inclinometer Tiltmeter
DYWIDAG (DSI)	DYNA Force	Elasto-Magnetic Sensor
Euromag International	MC608 Converter	Flowmeter
FloWav	PS1000 SDE	Flowmeter
Geosense	Smartmux Tilt Meter	Interface Module Tiltmeter
Geokon	8960 VW Data Logger	Vibrating Wire datalogger
Gill	Maximet	Weather Station
In-Situ	AquaTROLL 500 Data Logger AquaTROLL 200 Data Logger LevelTROLL Data Logger RuggedTROLL Data Logger	Water quality Water quality Water level Water level
Jewell Instruments	Lily Borehole Tiltmeter Tuff Tilt Tiltmeter	Tiltmeter Tiltmeter
Leica	GNSS System Total Stations Nivel Tiltmeter	GNSS Total Station Tiltmeter
Measurand	ShapeArray (Current Models) ShapeArray XYZ (Older Models)	Shape Array Shape Array

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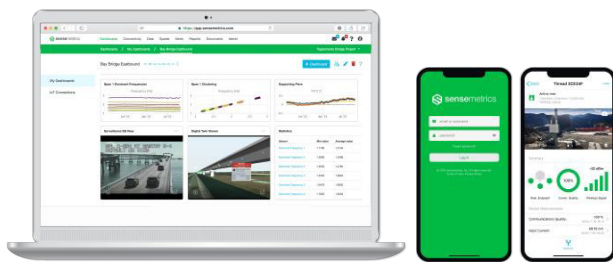| MANUFACTURER	SENSOR NAME	SENSOR TYPE
RocTest	RT-VLOG VW Logger RxTx Remote Reading Pendulum Station	Vibrating Wire Datalogger Pendulum
SLB (Schlumberger)	VDF (AC) Power Houses	Variable frequency drive
Schneider	ALTIVAR 630	Variable frequency drive
Seafloor Systems	Hydrolite Plus Single Frequency Hydrolite Plus Dual Frequency	Single Beam Sonar
Senix	ToughSonic Ultrasonic Distance Sensor	Distance sensor
Solinst	Solinst Levelogger 5	Water level
Somfy	Universal RTS Interface II (URTSI II-16 Channel)	Interface module
Topcon	GNSS AGM-1	GNSS
Turner Designs	C3 Submersible Fluorometer	Fluorometer
Vaisala	AQT530 Air Quality Monitoring Station WXT536 Weather Monitoring Station	Air quality monitor Weather station
YieldPoint	d-Exto Multiple Rod Extensometer d-MPBX Multiple Point Borehole Extensometer	Extensometer Extensometer
YSI	IQ SensorNet VisoTurb®	Turbidity probe

Variable Frequency Drives | Robotic Total Station | Deformation Sensing Arrays (Up to 300 segments) | Imaging Devices | Multi-parameter Weather Stations

WORLD W SENSING

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Bentley®
Advancing Infrastructure

CLOUD-BASED SOFTWARo
- Device configuration and management
- Sensor Integration Builder (SIB) and sensor driver library
- Data visualization and analytics
- Alerts
- Productivity Applications (reports, slope stability, remote sensing, environmental, groundwater management)

MOBILE APP
Commission sensor networks using only your phone. Scan the unique Thread QR code using your phone camera to easily add a Thread device to your account. Instantly access your data from any sensor, anywhere.

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