

TMAS Data Logger

For Smart Sensor Network Applications

TMN-52

Overview

TMN-52 is a long life battery powered data logger, work on low power WAN network such as RF Mesh, NB-IOT, LoRAWAN etc. It allow connections of many sensor types, with data logging and periodic reporting capabilities, to support many mission critical smart applications, such as Smart environmental monitoring, Smart sewer monitoring, Smart farming, Smart metering etc., target at utility provider, city developer and governmental agencies etc.

The logger is ported. It is intrinsically safe, water, dust and humidity proof, for installation in the hazardous, outdoor or harsh and enclosed environment. It can be maintenance free for many years.

The logger accept wide range of sensors, e.g. dry contact, pulse count, 0-5V, 4-20mA SDI-12, I2C bus etc (model dependent) The sensor data are read and logged into the internal non-volatile memory at the pre-configured sampling rate. Upon scheduled submission, the device will push data to data center via WiSUN mesh network. Device allow alarm threshold setting for real time alarm reporting. The sampling and reporting interval are configurable. The periodic reporting will also serve the purpose of health reporting to data center. The device can be configured via a contactless IR optical probe, or wireless update via TMAS cloud.



Applications

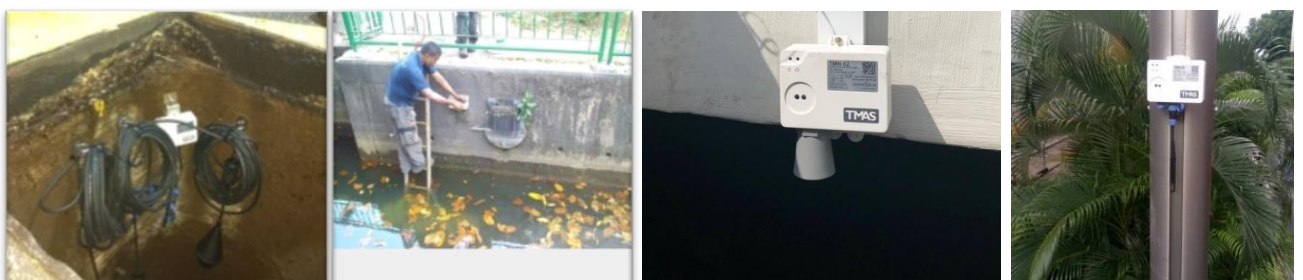
The diagram illustrates the Flood Monitoring application. On the left, a TMN-52 device is mounted on a vertical pole. It is connected to a 'Weight' sensor and a 'Float Sensor' submerged in water. A label indicates 'Mounting for length adjustment'. Below this, another TMN-52 device is shown with an 'Ultrasonic' sensor, with a 'Range: 0.2m to 10m' indicated. Both devices are connected to a central 'TMAS Cloud' icon. On the right, the TMAS Cloud interface is shown with a map of Singapore and a data graph.

Flood Monitoring

The diagram illustrates the Environmental Monitoring application. A TMN-52 device is connected to three sensors: a 'Rainfall' sensor (a small cup), an 'Air Temperature/Humidity' sensor (a probe), and a 'Soil Moisture/Temperature' sensor (a probe in the ground). The device is connected to a central 'TMAS Cloud' icon. On the right, the TMAS Cloud interface is shown with two data graphs.

Environmental Monitoring

Canal and Sewer Manhole Environment



TMAS Data Logger

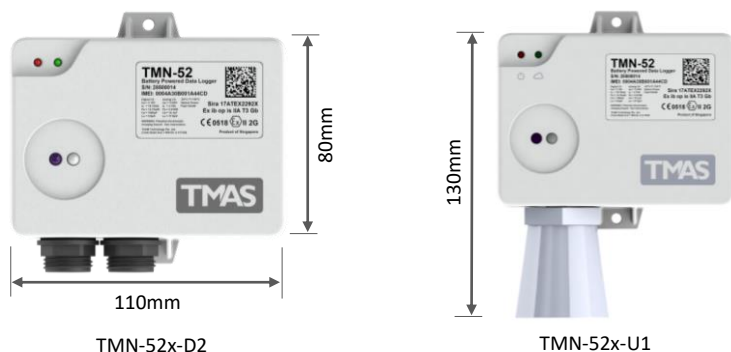
For Smart Sensor Network Applications

TMN-52

| Model | TMN-52X-D2 | TMN-52X-U1 | TMN-52X-S3 |
|----------------------------------|---|--|---|
| I/O Interface | | | |
| Input Type | 2x DI (NC/NO configurable) | Ultrasonic level sensor integrated | 3x SDI-12 sensor bus |
| Optical Interface | 1x Configuration Port in accordance with IEC62056-21 | | |
| LED Indications | 1x Red LED for Power and Alarm Indication 1x Green LED for Network Indication | | |
| Inputs Sensitivity | 0-255mSec (Alarm / Pulse width verification time) | | |
| Sampling Rate | 10sec / 1min / 10 min / 1 hour | | |
| Network | | | |
| Module | Option of ITRON Milli5 (RF Mesh) / Gemalto ENS22 (NB-IOT) / Microchip RN2903A (LoRAWAN) | | |
| Antenna | Internal 2dBi Antenna | | |
| Submission Rate | 10 min / hourly / 6 hourly / daily Note: Setting also depends on sampling rate and acceptable battery life | | |
| Power Specifications | | | |
| Battery | 3.6V 17AH, type D Cell Lithium Batteries | | |
| Battery Life (Typical) | 15 years (Daily report) | 5 years (10 min sample, hourly report) | |
| Mechanical Specifications | | | |
| Operating Temperature | 0 to +50°C | | |
| Dimension (Enclosure) | 110 x 80 x 40 mm | | |
| Weight | 480g | | |
| Intrinsic Safety * | Ex ib op is IIA T3 Gb | | |
| Water/Dust (IEC60529) | IP68 | IP67 | IP68 |
| Applications | | | |
| | Sewer Monitoring | Flood Monitoring Water level Monitoring | Environmental, Water Quality Agriculture |

Note: Specifications are subject to changes without notice. *: Model dependent

Mechanical Dimension



Ordering Info: TMN-52X-YY

| | Network | From | Module |
|---------|---------|-----------|---------|
| X=blank | UMTS | Gemalto | EHS5-E |
| X=N | NB-IOT | Gemalto | ENS22 |
| X=S | RF Mesh | Itron | Milli5 |
| X=L | LoRAWAN | Microchip | RN2903A |



2 Kaki Bukit Ave 1, #05-04. Singapore 417938
Tel: 65-67461930 Fax: 65-67461938.
URL: <http://www.tcam.com.sg>
Email: enquiry@tcam.com.sg

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