Model C2371A Teleterm W3 "ISA100Wireless" Interface

ISA100Wireless Radio Protocol Interface Node

DATASHEET

- Network all your serial devices over a secure wireless network
- Compatible with ISA100.11a wireless standard
- Also supports a wide range of radiation monitor makes and types, both new and old
- Eliminates costly network cable installation
- Allows mobile monitoring of any serial device
- 200m typical line-of-sight range. (50m in densely built up areas)
- Up to 500 devices on the wireless network
- Redundant network options available
- LED indication of device communications

Features

- **Compact design to fit alongside most devices**
- **RS232/RS485 serial interface**
- **Built in support for a wide range of radiation monitor types**
- **9-30Vdc powered**
- **ISA100.11a Wireless Network compatible**
- **Housing protected to IP55**

Overview

The Teleterm W3 ISA100Wireless Interface Node provides a convenient means to network all your serial devices over an ISA100 wireless network.

Attach a Teleterm W3 to each serial device and transmit monitor readings and alarms wirelessly to your control centre to eliminate costly installation network cabling and allows for mobile monitoring.

Supports serial devices and a wide range of Radiation Monitors

The Teleterm W3 has a standard RS232/RS485 serial communications link that can be connected to Radiation Monitors or any instruments utilising standard Modbus or any other serial protocols on request. It is supplied with built in support for a wide range of monitors including models from Canberra, Lab-Impex Systems / Ultra Electronics. (See the list of supported radiation monitors in the Specifications). If your monitor is not listed, consult with your Omniflex representative for availability.

ISA100.11a wireless network

ISA100Wireless is an international standard (IEC 62734), and is an open wireless network that is scalable, reliable and secure.

ISA100 comes with "IPv6" addressability which makes it the only industrial network protocol compatible with the **"Internet of Things".**

ISA100 operates over the 2.4GHz ISM (non-domestic) band using the widely supported IEEE802.15.4 radio standard. This means no special licencing is required to operate an ISA100 wireless network.

Being an industry standard network, the Teleterm W3 can be used with any ISA100 compatible Wireless Access Point (WAP) to connect your monitors to your central monitoring and control system. The ISA100 wireless standard integrates high level cyber security features to ensure data integrity, confidentiality and authenticity.

Simple configuration

The Teleterm W3 comes preloaded with support for a range of radiation monitors as well as serial Modbus, allowing a minimum of configuration to connect a radiation monitor to the wireless network.

Fully configurable using Omniset. Two steps for configuration - **Step 1:** Configure the ISA100 network parameters. **Step 2:** Set the serial interface or radiation monitor type and respective parameters.

ISA100 network topology

There are two network topologies supported by ISA100. Star network topology, where every monitor is in range of a Wireless Access Point; and mesh topology where monitors out of range of the network access point pass their data on to other monitors to relay that data back to the Wireless Access Point.

Supports "DuoCast" which allows network redundancy.

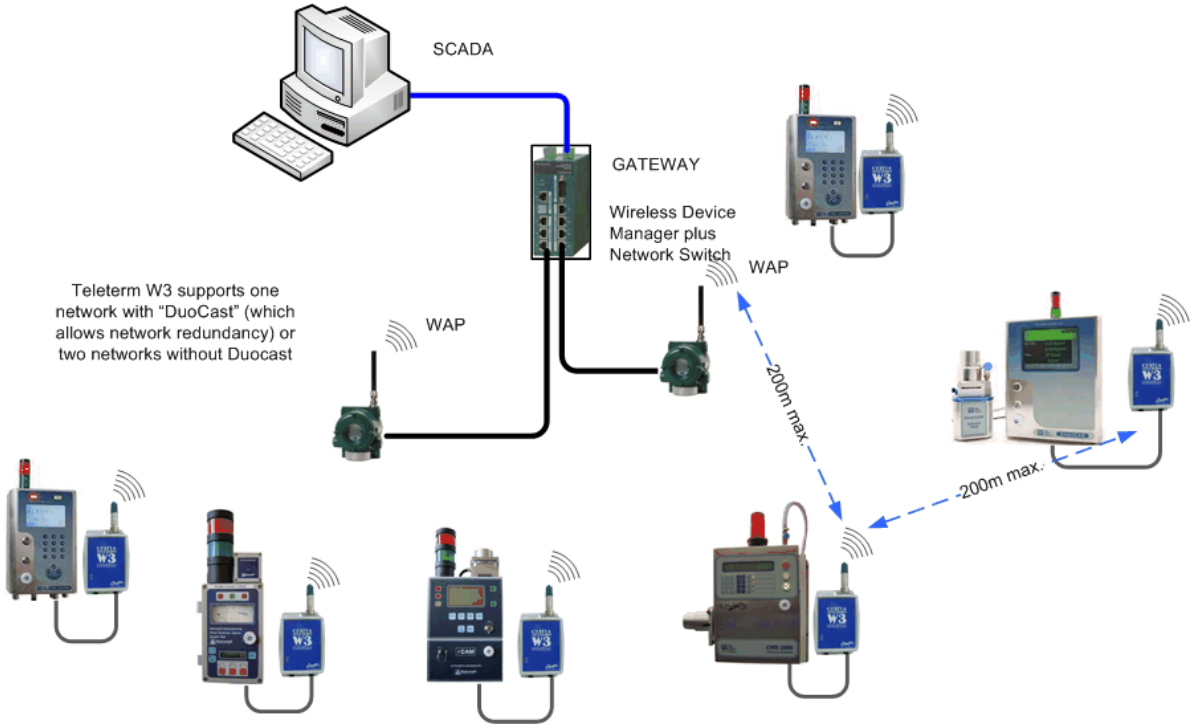
Consult your ISA100 network installer for the most appropriate configuration for your network. Often a simple site survey is required to determine the possible locations for ISA100 network nodes

Update rate

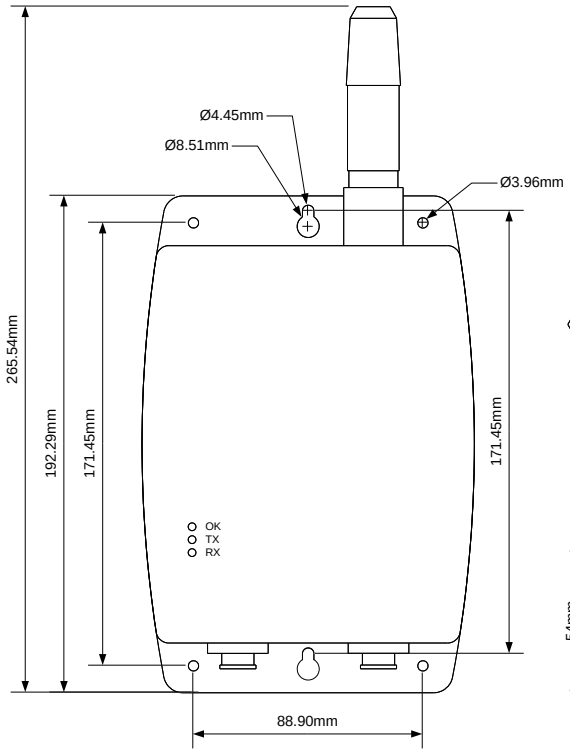
The update rate of data on the ISA100 network can be adjusted from 8 to 3600 seconds. A faster update rate reduces the number of devices that may be connected to a single network.

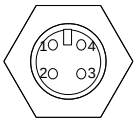
The Teleterm W3 is shipped with a default update rate of 8 seconds, which allows up 500 devices to be connected to the ISA100 wireless network.

Typical ISA100Wireless Layout of Radiation Monitoring Applications

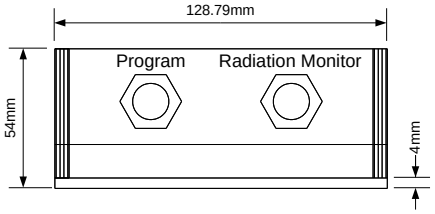


Mechanical Details





1	9-30Vdc
2	Gnd
3	Data+
4	Data-



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Specifications

Power Supply Required (often supplied from monitor)

Voltage	9-30Vdc
Current	70mA maximum at 9Vdc 25mA maximum at 24Vdc

LED Indicators

OK LED (Green)	Powered on
TX LED ((Red)	Data transmitting on monitor port
RX LED (Yellow)	Data receiving on monitor port

Wireless Interface

Wireless Standard	ISA100.11a (IEEE802.15.4)
Data Rate	250kbps
Frequency Band	2400-2483.5MHz ISM (license free)
Radio Security Encoding	AES 128 bits
RF Transmit Power	12dBm (EIRP)
Antenna	2dBi (Omni directional)
Update Period	8 to 3600 s [factory set to 8s]

Serial Interface

Type	2-wire RS485/ RS232 (configurable) Modbus or other serial protocols on request
Baud Rate	300 – 38 400 baud
Maximum cable length	1200m (4000ft) in RS485 mode 30m (100ft) in RS232 mode
Connection	IP55 Connector on base of housing

Supported Radiation Monitors

Canberra AB96 Alpha and/or Beta Monitor
Canberra iCAM Alpha and/or Beta Monitor
Canberra G64 Gamma Monitor
Ultra Electronics / Lab Impex Systems CMS2000 MK6 Alpha and/or Beta Monitor
Ultra Electronics / Lab Impex Systems CMS Gamma Monitor
Ultra Electronics / Lab Impex Systems SmartCAM 47
Others may be available on request

Range

Up to 200m in open space and 50m in built up areas

Data Content

Maximum No. of Registers	16
Typical Data Sent	Identification Tag Radiation Level Alarm States Units of Measurement Air Flow (not continuous)

Environment

Operating Temperature	0 to +60°C (+32°F – 140°F) at continuous full load
Storage Temperature	-10°C – 70 °C (+14°F – 158°F)
Humidity	0-100% RH

Housing

Width	129mm (5 .079”)
Height	265mm (10.433”) (including antenna) 193 mm (7.598”) (excluding antenna)
Depth	54mm (2.126”)
Degree of Protection	IP55

Weight

Unpacked	570gm (20.10oz) approx.
Packed	670gm (23.63oz) approx.

Compliance to Standards

Safety	EN60950-1 (Indoor/Outdoor use)
Emissions	EN61326-1 Class A Table 2, EN55011 Class A
Immunity – ESD	IEC 61000-4-2:1995, level 3
Immunity – RF Fields	IEC 61000-4-3:1995, level 3
Immunity – Fast Transients	IEC 61000-4-4:1995 2 kV – DC power port 1 kV – other input/output lines

Ordering Information

ORDER CODE	DESCRIPTION
C2371A	Teleterm W3 ISA100Wireless Radio Protocol Interface Node