



REMOTE MONITORING SPECIALISTS

INSTALLATION GUIDE

Teleterm Silent Sentry
Model C2330B

The TELETERM 'Silent Sentry' is a state-of-the-art Remote SMS Alarm Monitor capable of monitoring a wide range of input types and sending SMS Alarm and status messages upon detection of an alarm condition.

The Silent Sentry is equipped with 12 direct Binary or Analogue Inputs, plus a Modbus port allowing alarms from a variety of sources to be monitored.

Up to 64 different SMS messages can be sent. The Silent Sentry can be configured for up to 10 SMS message recipients, each in one of three escalating priority groups. This allows messages to be sent to a selected group of recipients, and if not acknowledged within a set time, then sent to the second group of recipients, and if still not acknowledged, then sent to the third group

of recipients.

The addition of a regular update message capability ensures the ability of the Silent Sentry to react to alarms when they occur.

The Silent Sentry is easily configurable by the user, using the free Omniset configuration software. Using Omniset PRO, the Silent Sentry can even be configured remotely over the GSM/CDMA network.

The Silent Sentry can be connected to your existing alarm annunciator system and can even be used to remotely acknowledge alarms using your mobile phone.

The Silent Sentry provides an easy solution to remotely monitoring your alarms or even send the Silent Sentry an SMS to read a value or control an output.

Application Examples

- Remote Site Monitoring
- Environmental & Effluent Monitoring
- Facilities Management
- Computer Rooms
- Small Sub-station Monitoring
- Utilities Monitoring

Features

- Receive Text Message Alerts on your phone
- Monitor Digital or Analog Inputs
- Send up to Recipients
- Acknowledge Alarms remotely or have them escalate to other mobiles
- Send up to 64 different messages
- "On-Demand" messages allow remote monitoring & control



Getting Started

Thank you for choosing the Teleterm Silent Sentry from Omniflex for your remote communication needs.

To configure your Silent Sentry, use our Omniset software which can be downloaded from the Omniflex website at www.omniflex.com.

If you haven't registered on the website, you will need to register to download this software. Register to download this software for free. Once the registration is complete, download the software from <http://www.omniflex.com/dsview.php?hid=CC001A>.

We recommend that you read the User Manual to get best results from your Silent Sentry which can also be downloaded from the website at: <http://www.omniflex.com/dsview.php?hid=C2330B>.

Quick Start Guide

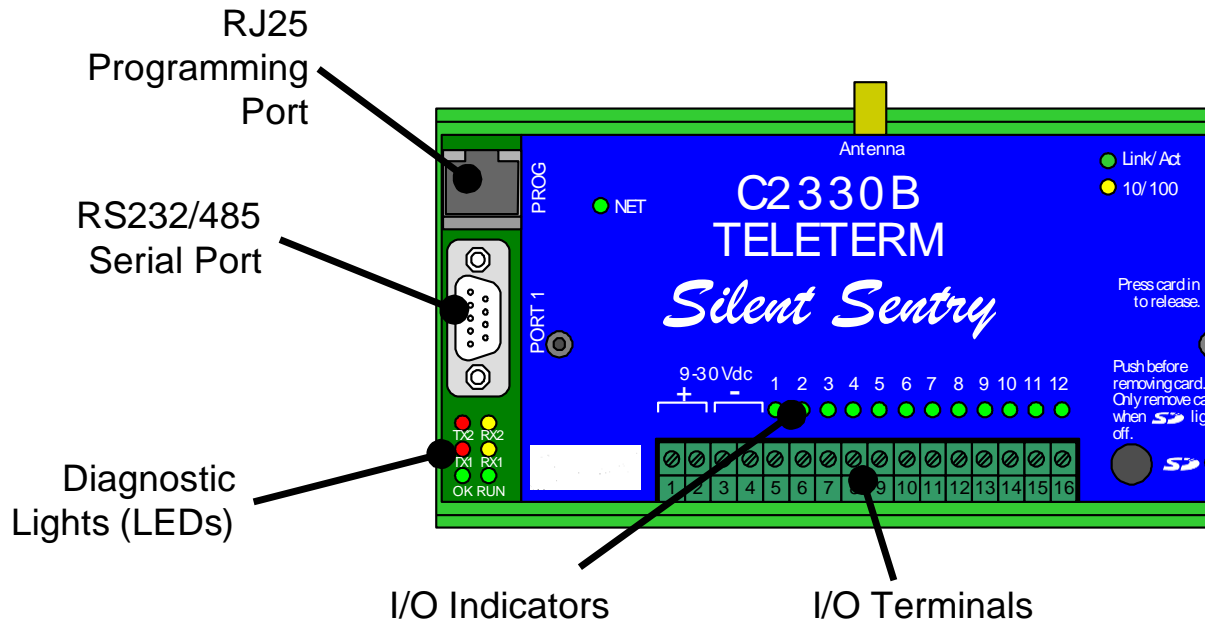
Follow these simple steps to get started using your M3 in the shortest possible time.

1. Mount the Silent Sentry in a suitable location
2. Remove the top blue cover using the Allen key provided, and insert the SIM card (not supplied). Ensure that the SIM card holder is properly closed. (See the User Manual for more detailed instructions.)
3. Replace the top blue cover.
4. Connect the stub antenna supplied. Do not over tighten. Finger tight is quite acceptable.
5. Power up the unit (9-30Vdc).
6. Once you have downloaded the Omniset software, install the software on to a PC equipped with a serial port (or USB to serial port converter).
7. Register the Omniset software and once it has been registered and the template library updated, plug in the programming cable supplied, then press File>Connect... from the Omniset menu.
8. Omniset will read the product information from the Silent Sentry and load the correct template for the product.
9. Enter in a Mobile Number for Recipient 1.
10. Check that input 1 is configured as a digital input, and that Message 1 is configured to your satisfaction.
11. Energise input 1 and you should be sent an SMS.

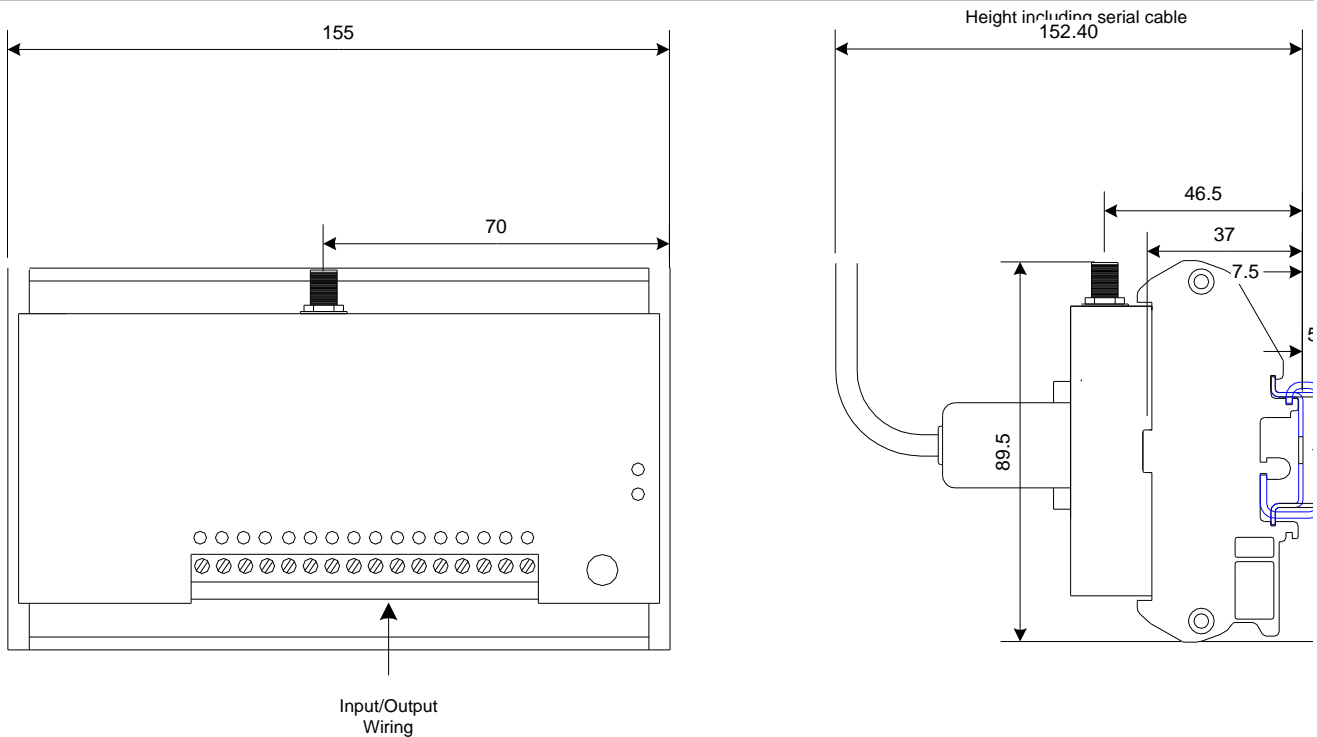
Remember to download the User Manual for more details of the important features of the product from <http://www.omniflex.com/dsview.php?hid=C2330B>.

Technical support is available by email at techsupport@omniflex.com or contact your local supplier.

General Layout



Mechanical Dimensions



Input/Output Configurable Options

The Silent Sentry is equipped with 12 versatile input/output points (I/O points or IOP's). Each I/O point can be individually configured from the options given in the following table:

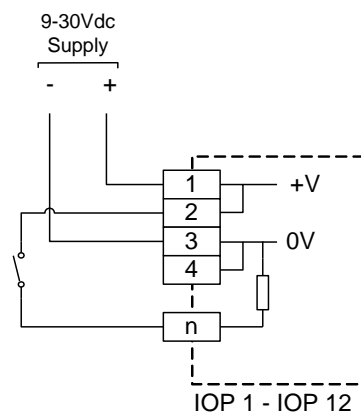
I/O Point	Terminal No.	Digital Input	Analogue Input	Digital Output
1	5	Yes	0-30Vdc	Yes
2	6	Yes	0-30Vdc	Yes
3	7	Yes	0-5Vdc	Yes
4	8	Yes	0-5Vdc	Yes
5	9	Yes	0-5Vdc	Yes
6	10	Yes	0-5Vdc	Yes
7	11	Yes	0-5Vdc	Yes
8	12	Yes	0-5Vdc	Yes
9	13	Yes	0-5Vdc	Yes
10	14	Yes	0-5Vdc	Yes
11	15	Yes	0-30Vdc	-
12	16	Yes	0-30Vdc	-

Note 1: See the "Specifications" section of this document for detailed specifications of each I/O point option.

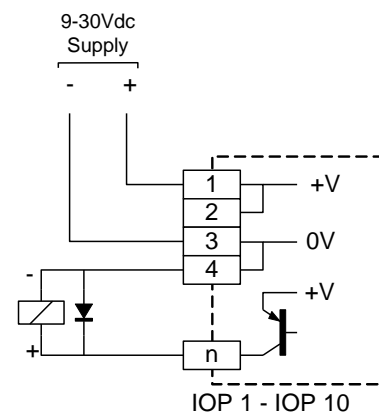
Note 2: All 0-30V analogue inputs have increased resolution over the range 0-6V (equivalent to the 0-5V inputs).

Note 3: All Digital Inputs can be configured as Pulse Counters or Hours Counter.

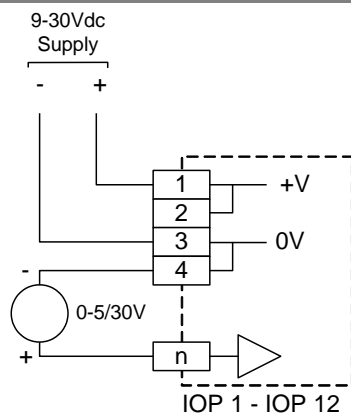
Note 4: All Digital Outputs can be configured as Pulse outputs (normally ON or normally OFF).



DIGITAL INPUTS



DIGITAL OUTPUTS



ANALOGUE INPUTS

Specifications Common to all Models

SMS Messages

SMS MESSAGES	
Number of messages	64 messages can be stored in the Silent Sentry. Each message can be triggered by a different event.
Message Format	Messages are formatted as follows:
Line 1:	ID + Common Text (per Silent Sentry) (up to 40 characters) ID is a message ID number to uniquely identify each message sent.
Line 2:	Specific Message Text (up to 40 characters)
Line 3:	Date and Time
Example:	23 Pump Station P1051 Sump Level High 26/7/05 14:53:41
SMS MESSAGE RECIPIENTS	
Number of Recipients (Mobile Phone numbers)	Maximum of 10
Number of phone digits	Maximum of 18 per number
SMS RECIPIENT PRIORITIES	
Number of priority levels	3
Method of priority	By time delay. Upon detection of an event, the Silent Sentry will immediately send the relevant message to all priority 1 recipients. If no acknowledgment is received within the user specified time, then the

	Silent Sentry will send the same message to all priority 2 recipients. If still no acknowledgement is received, then the message is sent to all priority 3 recipients.
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HOLD OFF TIME PROTECTION

To ensure that an errant process alarm does not send SMS messages too often, it is possible to set a Hold Off time for all messages. Once a message has been sent to all recipients, the message will not be sent again for at least the duration set in the Hold off time setting.

SMS ALARM ACKNOWLEDGMENT

Method	All outstanding Alarms in the Silent Sentry can be acknowledged by sending an SMS to the Silent Sentry with the words "Ack" or "Yes" in the message.
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MAXIMUM SMS MESSAGES PER HOUR

As further protection against an abnormally high SMS bill for any reason, the Silent Sentry can be set to only send up to a maximum number SMS messages per hour. This guarantees the maximum size of your SMS bill regardless of the status of your equipment being monitored.

DAILY SMS UPDATE

The Silent Sentry can be configured to send a daily fixed message at a specified time of the day. This message ensures that the system is still alive, even in the absence of any alarm messages needing to be sent. The recipients of this message can be individually selected.

Network Communication Specifications

Note: All SIM cards are 1.8V/3V SIM compatible

Approvals common to all : GCF-CC, PTCRB-Planned, R&TTE (CE), FCC/IC, A-Tick, JPA-Planned, Telstra, NTT DoCoMo, AT&T planned

Model C2330B-141 LTE (EMEA) Version

Channels	LTE Cat 1 (4G) B1/B3/B7/B8/B20/B28A
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Model C2330B-151 LTE-M (Multi Region) Version

Bands	LTE Cat-M1 (5G) B1/B2/B3/B4/B5/B8/B12/B13/B20/B25/ B26/B28/B66/B85
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Model C2330B-142 LTE (AU/NZ) Version

Bands	LTE Cat1 (4G) B1/B3/B5/B7/B28
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Input/Outputs

All M3 RTU's have 12 Input/Output Points (IOP configurable in software as analogue or digital, inputs or outputs. (See the table above for a matrix of available functions on each I/O Point.)

As a Digital Input (IO Points 1 to 12)

Type	Current Sink (Switch to +V to operate)
Input Impedance	5 kOhms nominal.
Input OFF Condition	Input < 2Vdc
Input ON Condition	Input > 3Vdc
Functions	Software selectable as: ON/OFF Input Counter Input (counts rising edge pulses) Hours Input (counts hours while input is on to resolution of 0.01 hours).

As a Digital Output (IO Points 1 to 10)

Type	Voltage Source (Solid State Switch to +V)
ON State Rated Current	< 100mA continuous maximum per output < 200mA peak (<10ms) max, per output < 500mA total for all outputs simultaneously
ON State Volt Drop	< 3V at maximum rated load
OFF State Rated Leakage Current	< 0.1mA at maximum supply voltage

Serial Port

Type	Asynchronous serial port
Protocols	Supports the following protocols as standard: <ul style="list-style-type: none"> • Conet/s • Modbus ASCII (Master or Slave) • Modbus RTU (Master or Slave).
Baud Rate	300 – 38,400 baud.
Maximum cable length	15 meters (50ft) in RS232 mode 1200m (4000ft) in RS485 mode*
Connection	9 pin sub-miniature DB9 (male).
RS232/422/485	Selected by the wiring to the DB9 connector

Functions	Software selectable as: ON/OFF ON Pulse (configurable 10ms – 300s) OFF Pulse (configurable 10ms = 300s)
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As an Analogue Input (I/O Points 1,2, 11, 12)

Type	Voltage Input referenced to 0V supply.
Range	0-30Vdc (software configurable to smaller ranges such as 1-5Volts)
Accuracy	< 0.15% of reading +6mV from 0 to 5.5V < 0.15% of reading +30mV from 5.5 to 30V
Resolution	6mV from 0 to 5.5 Volts nominal (10 bits) 33mV from 5.5 to 30Volts nominal (10 bits)

As an Analogue Input (I/O Points 3 to 10)

Type	Voltage Input referenced to 0V supply.
Range	0-5.5Vdc (software configurable to smaller ranges such as 1-5Volts)
Accuracy	< 0.25% of reading +6mV
Resolution	6mV nominal (10 bits)

Pin	Communication Standard	
	RS232	RS485*
1	Do not connect	Rx Data + (In)
2	Rx Data (In)	Rx Data – (In)
3	Tx Data (Out)	Do not connect
4	Do not connect	Tx Data+ (Out)
5	Ground	Ground
6	Do not connect	Vcc
7	RTS (Out)	Do not connect
8	CTS (In)	Do not connect
9	Do not connect	Tx Data – (Out)

* Tx+ and Rx+ (pins 1 and 4) need to be connected together as do Tx- and Rx (pins 2 and 9) when using RS485 2-wire.

General Specifications

Power Requirements		Weight	
Power Supply Voltage	9 – 30Vdc (ripple < 5%)	Packed/Unpacked	350gm/250gm approx.
Average Current	2.7 Watt peak(excluding I/O) 1 Watt typical		
User Configuration		Compliance with Standards	
Configuration Software	Omniset Configuration Utility (free download from website www.omniflex.com)	Safety	EN 60950
Advanced User Programming	Advanced customisation of the product is possible using the built in EziForth Programming Language. Consult the factory for your application.	Emissions	EN 55011, Group I, Class A
		Immunity – ESD	IEC 61000-4-2:2001, level 3
		Immunity – RF Fields	IEC 61000-4-3:2003, level 3
		Immunity – Fast Transients	IEC 61000-4-4:2004 2 kV – DC power port 1 kV – input/output lines
Environmental Conditions			
Storage Temperature	-25°C – 85 °C (-13°F – 185°F)		
Operating Temperature	-10°C – 60 °C (+14°F – 140°F)		
Full GSM Spec. compliance	-10°C – 50 °C (+14°F – 122°F)		

Ordering Information

ORDER CODE	DESCRIPTION
C2330B-1410	Teleterm Silent Sentry 4G (EMEA)
C2330B-142	Teleterm Silent Sentry 4G (AU/NZ)
C2330B-151	Teleterm Silent Sentry LTE-M (5G Multi-region)
NOTE	
All Teleterm Silent Sentry's supplied with the following: <ul style="list-style-type: none"> • Internal network modem • External stub antenna • Serial programming cable 	
ACCESSORIES	
M1831A	Serial Programming cable (as a spare)

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