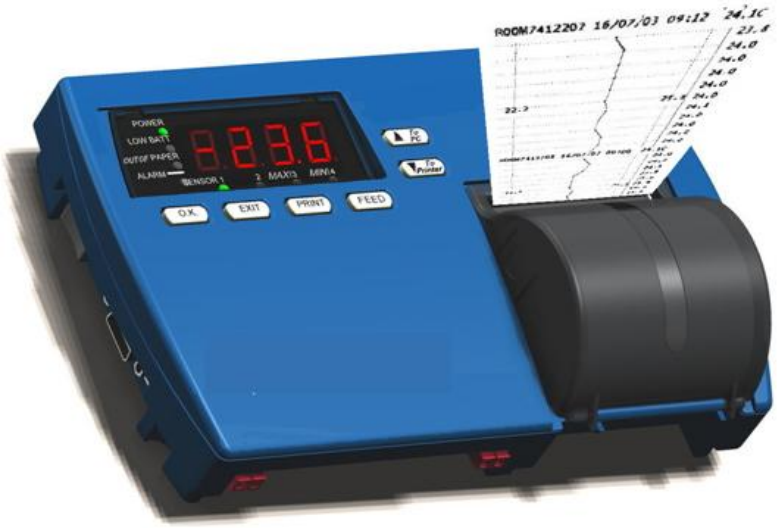
Cellocator Temperature Recorder

Product Overview



Cellocator Division
Pointer Telocation Ltd.

Version 1.1

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POINTER

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1 Introduction

1.1 Overview

The Cellocator Temperature / Humidity Recorder (CTR / CTHR) support up to 4 channels for temperature sensors, temperature and humidity sensors and events (switches) sensors. The Cellocator Temperature Recorder (CTR) enables you to record, save, and print up to 16,200 readings at predefined intervals. The CTR sends the recorded data to the control center application via the Cellocator unit.

The CTR produces an alarm whenever the measured value goes above or below a defined range, or whenever the Event (switch) changes its position. The alarm can be produced immediately when the measured value goes out of the defined range, or after the measured value remains out of range for a certain period of time. The CTR can also send alarms to an external device via a relay contact.

The CTR also provides several printing options including 3 text modes, real time data, alarm, help messages, summary and historical logged information.

The CTR sends the measured data via its RS232 port and through the CTR communication cable to the Cellocator unit RS232 interface. The Cellocator unit transfers the information via the cellular network to the CC application.

For installation, operation and programming of the CTR unit, as well as technical specifications, please refer to the CTR-CTHR user guide.

1.2 Highlights

- Innovative design means a user friendly product
- Up to **4 input channels** of Temperature, Humidity and Events (Switches)
- Monitoring, Logging, Alarms, Exporting data and Printing in real time
- Record in intervals from 1 to 120 minutes, in 1 minute increments
- Over and under alarms plus delay setup (0-120min) for each channel
- Operational by using the 6 function keys
- Printing 1 or 4 Channels full report in 3 text modes, including alarms, plus printing help messages, summary and sorted reports on request
- Exporting real time data thru RS-232 port – No Software needed
- Remote Probes 33’ (10 meters) length, extendable up to 100’
- Data and settings retained after power failure

1.3 Compatibility

The product can be used with any member of the Cello family equipped with an RS232 interface.

1.4 Abbreviations

Abbreviation	Description
CTR	Cellocator Temperature Recorder
CTHR	Cellocator Temperature / Humidity Recorder
CC	Control Center

1.5 References

#	Reference	Description
1	CTR-CTHR User Guide	

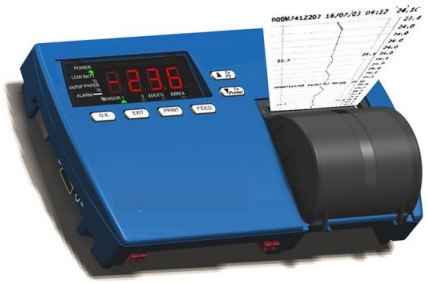
1.6 Revision History

Version	Date	Description
1.0	30/08/2010	1st draft of Product overview
1.1	20/10/2010	The CTR can be used only with Cello family

2 Product Components

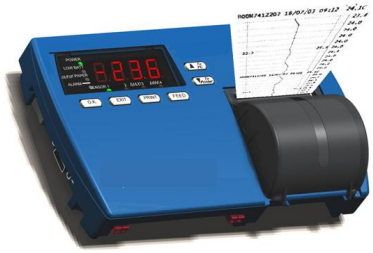
The following tables detail the various components available. The first table contains regular components which have PNs. The second table contains components without PNs, which can be ordered for special projects.

Table 1: CTR components with PN

Name/Part Number	Description	Picture
CTR – Cellocator Temperature Recorder PN 712-20024	Temperature Recorder with display and printer. Supports up to four temperature or switch Probes. The package includes: CTR unit, bracket, CTR probe 10, CSR cable, CTR communication cable, CTR power cable and user guide.	
CTR Communication Cable	Part of the CTR package	
CTR Power Cable	Part of the CTR package	
CTR PROBE 10 PN AR0208	10 meters long Temperature Probe, Sensor dimensions: 6.35x35mm -40 to +130°C	
CTR PROBE 20 PN AR0209	20 meters long Temperature Probe	

CTR Certificate PN AR0210	Calibration certificate for one temperature sensor

Table 2: CTR components without PN

Name	Description	Picture
CTHR – Cellocator Temperature and Humidity Recorder	Temp and Humidity Recorder with display and printer. Supports up to four temperature/humidity or switch inputs. The package includes: CTR unit, bracket, CHTR probe 10, CSR cable, CTR communication cable, CTR power cable and user guide.	
CTHR PROBE 10	Additional 10 meter long Humidity and Temperature Probe, Sensor dimensions: 13x119mm -40 to +85°C, 0 to 100%RH	
CTHR PROBE 25	25 meters long	
CTR PROBE 30	30 meters long Temperature Probe. Sensor dimensions: 6.35x35mm -40 to +130°C	
CSR CABLE	Additional 10 meter long Switch indication cable for CTR and CTHR	
CTR cable extension 10	CTR and CTHR sensor extension 10 meters long	
CTR cable extension 20	20 meters long	

CTR RS232CABLE	RS232 cable, 1.8M long For downloading data to PC	
CTR PAPER	Thermal paper, 2" wide, 40 meters long	
CTR Power Reducer	Power reducer 24 to 12Vdc 1.5A, for Trucks	
CTR IP65 CASE	Safe transparent box, IP65	

3 Application Notes

3.1 Installation

It is recommended to install the CTR using the bracket mounting, allowing easy removal of the CTR for maintenance.

It is recommended to install the CTR on the rear side of the driver cabin next to the driver. In this way the driver will not be distracted by the CTR display and will have to stop the car in order to handle alerts instead of treating the alert while driving.

Refer to the *CTR-CTHR User Guide* for further installation details.

3.2 CTR Programming

It is recommended to disable automatic printing (PrOF) in order to save battery power, especially if the CTR is connected directly to the vehicle battery. If needed, manual printing may be activated.

The CTR must be programmed to send the information to the Control Center application (PCOn).

It is recommended to set the temperature alarms for alerting the driver on temperature violation. The CC application may use different values for prior alert indication.

3.3 Cellocator Unit Configuration

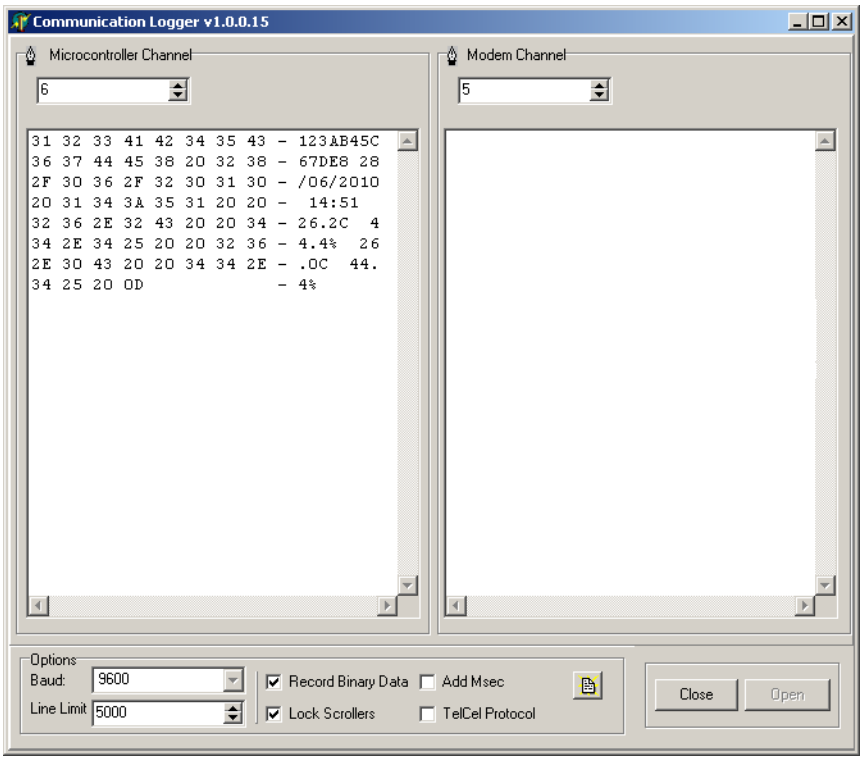
To allow the information received by the RS232 to be sent to the CC application, set the transparent mode parameter to *Enable*.

In order to activate the transparent mode permanently, set the Invert Door parameter to *Not inverted*. In order to switch to programming mode, the door input must be activated.

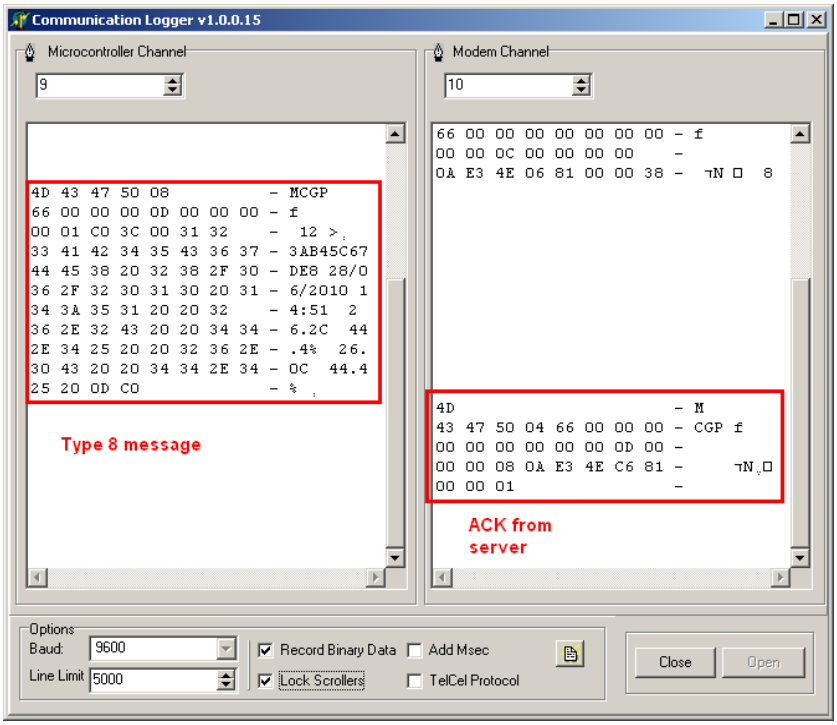
In order to disable the sending of an SMS with the CTR information, set the *Data forwarding from serial port to SMS* and *Active transmissions via SMS* parameters to *Disable*.

3.4 Data Transfer Process

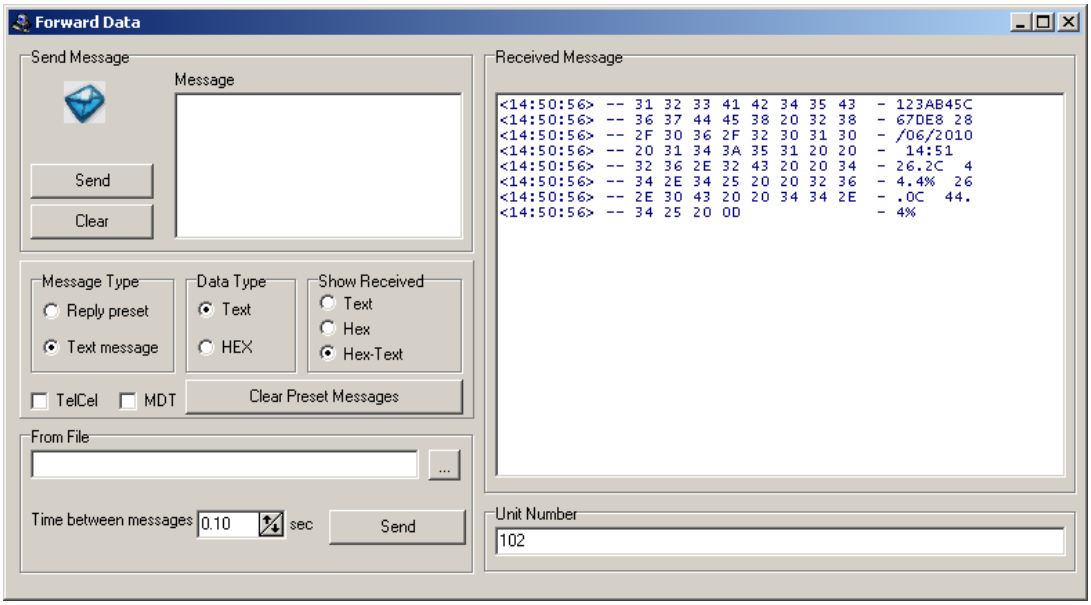
The 60 ASCII characters (bytes) are transmitted via the CTR serial port as shown below:



The data is encapsulated by the Cellocator unit as type 8 message and sent to the CC application, which responds by acknowledgment as shown below:



The data as received by the Communication Center via the cellular network is displayed below:



3.5 CTR Message Format

The CTR message contains 60 ASCII characters according to the following format:

Bytes 0-12 – recording unit ID

Bytes 13- Space

Bytes 14-15 – Date

Bytes 16 – "/" sign

Bytes 17-18 – Month

Bytes 19 – "/" sign

Bytes 20-23 – Year

Bytes 24 – Space

Bytes 25-29 – Time (e.g. `23:12`)

Bytes 30-31 – Space

Bytes 32-35 – channel 1 measurement value

Bytes 36 – Measurement unit (C, F or %)

Bytes 37-38 – Space

Bytes 39-42 – channel 2 measurement value

Bytes 43 – Measurement unit (C, F or %)

Bytes 44-45 – Space

Bytes 46-49 – channel 3 measurement value

Bytes 50 – Measurement unit (C, F or %)

Bytes 51-52 – Space

Bytes 53-56 – channel 4 measurement value

Bytes 57 – Measurement unit (C, F or %)

Bytes 58 – Space

Bytes 59 – Carriage return

The measurement values are:

For temperature - tenth degree. For example: 1234 means 123.4 degrees

For humidity – tenth percentage. For example: 444 means 44.4 percentage.

For switch – on, off.

3.6 Data Lost When Cellular Network Is Unavailable

When a cellular network is unavailable, the Cellocator unit cannot send the received messages from the CTR to the CC application and information might be lost. In order to retrieve the lost information, the *CTR export memory report to the CC application* feature should be activated.