Technical Specifications

CSO Probe specification

Input	Ultrasonic level measurement
Range	0.2 to 3m
Accuracy	+/-10mm
Temperature Sensor	Integrated, for temperature compensation of speed of sound
Beam Angle	12° at -3 dB boundary
Intrinsic Safety	Certified Intrinsically Safe
	Sira 12ATEX2007X – Ex ia IIC T4 (Ta= -20 to +60 Deg. C.)
	IECEx SIR 12.0001X - Ex ia IIC T4 (Ta= -20 to +60 Deg. C.)
Environmental	Operating temperature: -20°C to +60°C / Ingress protection classification: IP68 (1m / 24 hours)
Dimensions (mm)	CSO Monitor: 217(h) x 82(w) x 88(d)

Cello I.S. Mk. 2 specification

GSM Modem	Quad band: 900MHz, 1800 MHz / 850MHz, 1900MHz. Integral antenna
Data transmission	SMS or GPRS. 15mins, 30mins, 1 hour, 1 day, 1 week or monthly at programmable date and time
Serial Port	Type: Full duplex, asynchronous
	Data rate: 1200, 2400, 4800, 9600 bps
Memory	Type: Solid state, non-volatile
	Size: 128K, allocatable between channels as required (max 64K per channel)
Clock	Type: Crystal controlled calendar clock with leap year adjustment
	Accuracy: 100 seconds per month maximum error over operating temperature range
	Synchronisation: Option to synchronise clock to GSM network
Supply Type	Internally powered by a single lithium battery pack.
	Battery life: Typical battery life 5 years depending on mode of use (15 minute logging rate / daily transmission)
Recording	Recording interval: programmable between 1 minute and 1 hour
	Data storage: Rotating store, or store until full
Alarm Dial-Out	High/low threshold and profile alarms
	Option to update data on alarm and more frequently thereafter
Environmental	Operating temperature: -20°C to +60°C / Ingress protection classification: IP68 (1m / 24 hours)
	Certified Intrinsically Safe
Intrinsic Safety	SIRA 06ATEX2010X - EEx ia IIC T4 (Ta=-20 to +60 Deg. C.) or EEx ia IIC T3 (Ta= -20 to +60 Deg. C.)
	IECEx SIR 06.0003X - Ex ia IIC T4 (Ta= -20 to +60 Deg. C.) or Ex ia IIC T3 (Ta= -20 to +60 Deg. C.)
Dimensions	Cello: 205(h) x 140(w) x 150(d)

Cello CSO - GSM Ultrasonic Level Recorder

For further information contact:

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Cello CSO - GSM Ultrasonic Level Recorder

At a Glance

- Proven GSM battery powered data logger technology (Cello)
- Proven ultrasonic level sensing technology (Siemens Milltronics)
- Simple and easy to install
- Fully certified for explosive atmospheres (ATEX)
- Remote alarms
- "Data on the web" option
- Self powered for > 5 years
- IP68 logger and sensor
- WITS compatible version

Applications

- Sewer overflow recording
- Open channel flow measurements
- Reservoir overflow monitoring
- River/reservoir levels
- Flood warning
- Sewer surveys

Cello is a family of GSM data logging devices for water, gas and electricity applications. Over 250,000 of Cellos have been installed throughout the world, and Cello has become a veritable standard for remote monitoring.
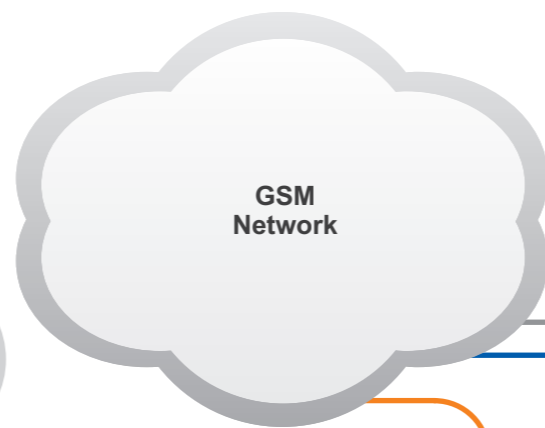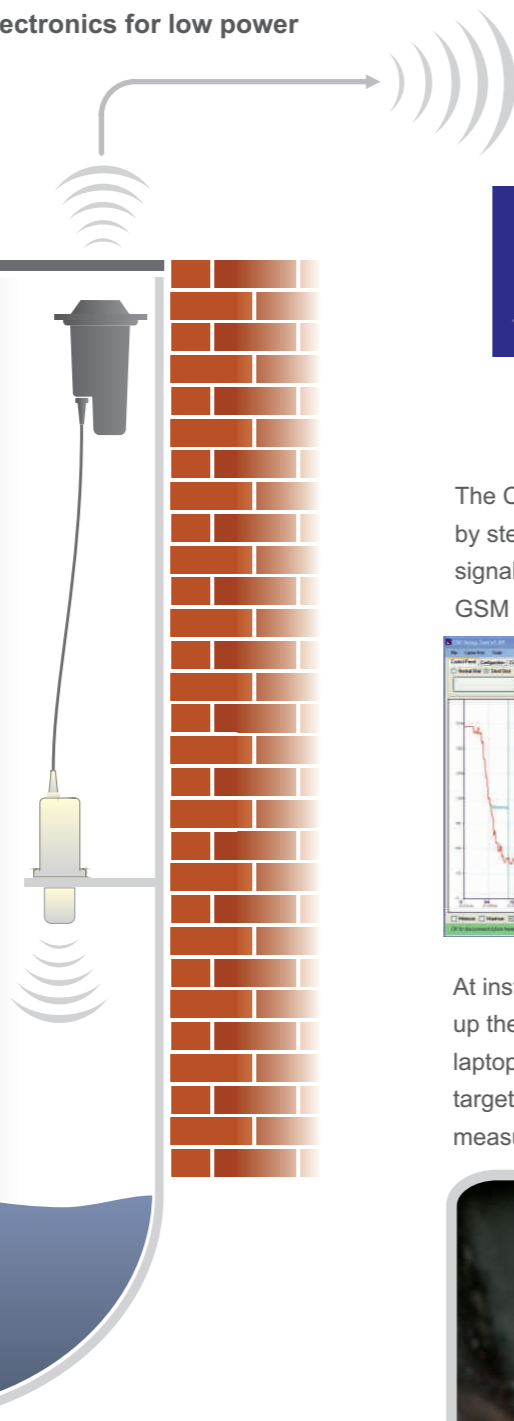
Siemens Milltronics is a recognised manufacturer of level sensors. The Cello ultrasonic level sensor utilises patented technology from The Probe. This results in reliable level measurement with optimised electronics for low power consumption and serial communications with the Cello GSM Level Recorder.

GSM Network

The Cello CSO Level recorder has sophisticated alarm regimes for detecting and immediately signalling abnormal conditions. These include high & low alarms levels as well as profile alarms. The Cello also reports in-situ signal strength, GSM network errors and low battery levels

The Cello CSO Level Recorder has a custom designed antenna which improves signal sensitivity in underground locations. It records the level readings from the ultrasonic level sensor at regular intervals (1 to 60 minutes) and sends them to the host computer via SMS or GPRS at a user selectable frequency (typically once a day, once a week or once a month)

The Cello powers the ultrasonic level sensor and communicates with it via a smart serial communication protocol. This renders the system more reliable than conventional analog output sensors.

The ultrasonic level sensor can be installed near the target level to be measured. The sensor electronics are encapsulated to withstand harsh environments, including flooding.
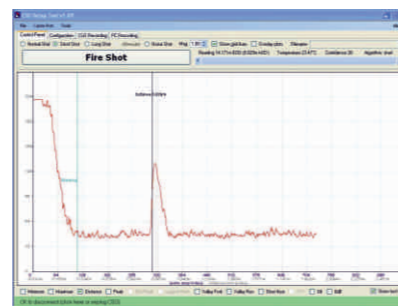
The ultrasonic level sensor uses patented algorithms to reliably determine the time required for the incident soundwave to reflect back onto the sensor. The sensor also compensates for speed of sound change with temperature. The intelligent electronics within the sensor optimises the measurement process for minimal power consumption.

CELLO WIZARD

The Cello is easily set up using the step by step installation Wizard. This includes signal strength test so that the strongest GSM network may be selected.

At installation time, the installer can set up the ultrasonic level sensor using his laptop, visualise the echoes from the target, and select the most appropriate measurement algorithm.

SMS

GPRS

Utility Data Services

Corporate LAN

Web PMAC

Pocket PDA

Text message

Emails
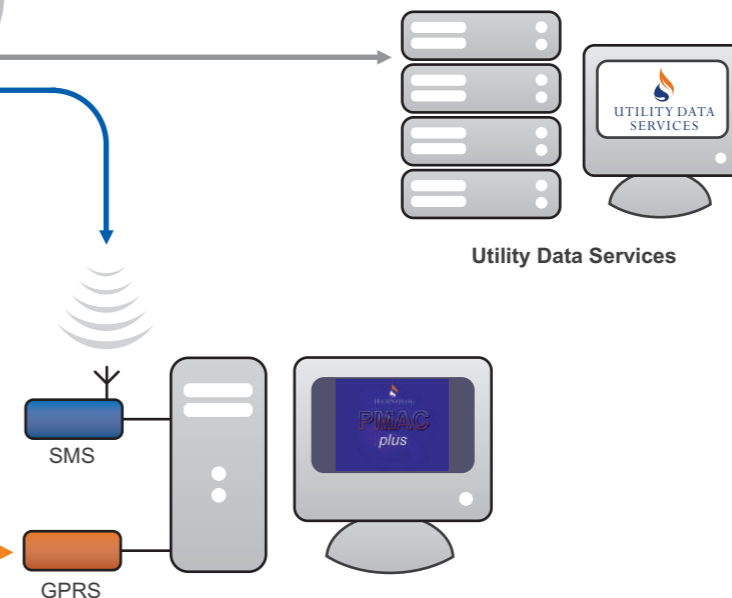
Data sent by Cello can be collected via several methods, including:

Technolog's proprietary software installed onto a local host PC

Technolog's software provides powerful tools for graphing, analysing and exporting data into other formats, including facilities to securely share and transfer data between one server and another over an IP or dial-up connection.

Technolog's resilient twin data centre

Technolog's data centre uses direct links with the UK GSM operators. Data is securely stored and then passed onto the user's corporate network or made available via the web.

Alarms from the Cello Level Recorders in the field can be re-transmitted to the relevant field support staff by text message or emails.

Cello CSO - GSM Ultrasonic Level Recorder

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