

Cello XO

A Universal Solution to Remote Monitoring of Networks



TECHNOLOG

The Cello XO offers a range of build options and additional features that increase the capabilities of GSM data logging.

Whilst maintaining the key features of Cello, including long battery life, efficient use of GSM/SMS and high reliability, the following additional options are available:

Signal Inputs

Two flow inputs

Two flow inputs and one pressure sensor

Two flow inputs and two pressure sensors

Eight universal inputs and two outputs

The addition of a second pressure channel is invaluable for monitoring Pressure Reducing Valves (PRVs) and Pressure Sustaining Valves (PSVs).

Pressure Sensors

Internal pressure sensors are the most popular, lowest cost option. However, *external pressure sensors* avoid the risk of frost damage and are particularly useful if Cello is installed away from the water main. For example, external pressure sensors may be considered if Cello is to be installed in an above ground kiosk.

Antenna

The *internal antenna* provides excellent performance in underground chambers and is the most popular option. However, in a minority of cases, it can be useful to mount the antenna in an alternative location to the Cello, therefore an *external antenna* can be specified.



Standard Cello Features

- Self powered for over 5 years
- Nationwide wireless coverage
- On-demand data retrieval option
- Compatible with Technolog's PMAC software
- Sophisticated alarm dial-out regime
- Signal strength survey mode
- Totally portable: no mains power or telephone line connections



Technical Specifications

Inputs	Channel 1 - absolute pressure (optional) Channel 2 - flow Channel 3 - flow Channel 4 - absolute pressure (optional)
Pressure Sensors	Integral or external
Pressure Inputs	Input range 0-100 m or 0-200 m Operating temperature range: +1°C to +20°C (water) Accuracy/resolution: $\pm 0.5\%$ of range Pressure port: standard quick-fit male probe
Flow Inputs	Pulses counted over and recorded at preset intervals
GSM Modem	Frequency: 900 MHz (Vodafone, O2), 1800 MHz (Orange, T-Mobile), 1900 MHz
Antenna	Integral or external

General Specifications

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/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, user exchangeable Battery Life: Typically 5 years depending on mode of use Internal back up cell maintains logging and local communications when main battery pack is discharged
Recording	Recording interval: Programmable between 1 second and 1 hours Data storage: Rotating store, or store until full
Alarm Dial-Out	High/low alarms independently programmable on each channel. Continuous, time window and profile modes of operation. Option to update data more frequently after an alarm
Environmental	Operating temperature: -20°C to +50°C Protection classification: IP68, submersible to 1 metre
Connectors	Military specification, conforming to MIL-C-26482