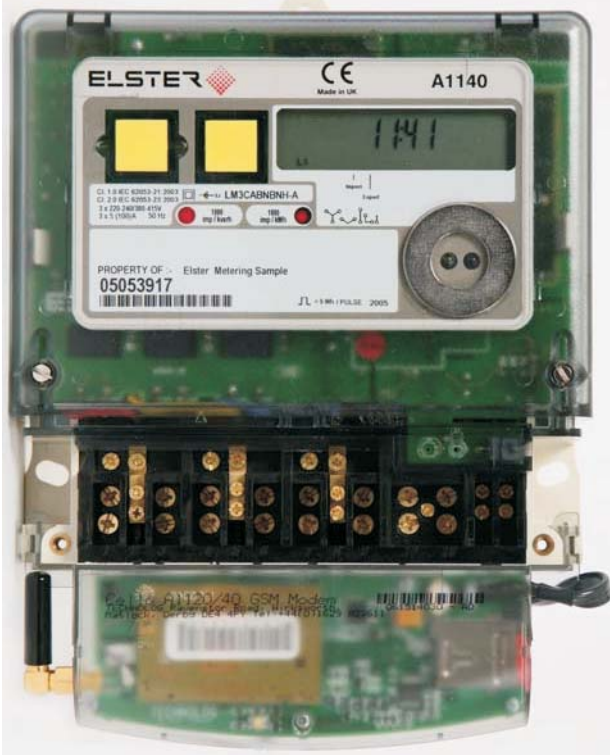




TECHNOLOG

Cello A1120/40

The Intelligent GSM Modem for Elster A1120 & A1140 Electricity Meters



Technolog's GSM Modem fitted to the base of an Elster A1140 Meter

(Terminal cover is removed to show the modem and antenna)

OVERVIEW

Cello is a family of low-power GSM products for the monitoring and remote reading of gas, water and electricity meters.

Working closely with Elster Metering, Technolog has developed an intelligent GSM modem for the A1120 and A1140 electricity meters.

The modem is housed in a carrier that is fitted under the meter terminal cover. A small stub antenna which connects to the modem is also located under the terminal cover. This arrangement is less susceptible to damage and tampering and avoids the need for external cabling and fixings.

The *Cello* modem has embedded firmware which supports the A1120/40 communication protocol. This enables local communications between the meter and the modem and advanced features such as inbound modes of operation, display of GSM signal strength on the meter's LCD and automatic transfer of meter details to the data collector when the meter is energised.

The *Cello* GSM modem is included in the UK's *Energy Technology Product List*. This means that it meets the energy saving criteria of the Government's *Enhanced Capital Allowance Scheme* so that profitable UK companies can claim 30% of the product's cost including installation

MODES OF OPERATION

Data Call (CSD): This is the traditional method of remote data collection from electronic meters. The meter is polled from the host computer and the modem is used to link the meter to data collection software. This is an outbound mode of operation that is compatible with any data collection software (e.g. MV90) that supports the A1120/40 protocol.

GPRS: The *Cello* modem regularly establishes a GPRS connection with the host computer. There are then two methods of collecting data from the meter. The first relies upon the data collection software supporting the A1120/40 meter protocol and the data is collected using the protocol over IP. The second method is proprietary to Technolog and is compatible with Technolog's own data collection services.

SMS: This is an inbound mode of operation in which the *Cello* modem interrogates the meter at regular intervals, for example daily, and transmits the information using SMS. Technolog has developed techniques for compressing relatively large amounts of data into a single text message. For example, several registers and daily 30 minute profile data can usually be compressed into one SMS.

Future Product Feature - Local Communication: A low power, short range, mesh radio is to be incorporated in the *Cello* GSM modem family. This will allow any pulse output meters (e.g. gas and water meters) within the range of the radio to be remotely read via the *Cello* modem in the electricity meter.

Technolog Limited • Ravenstor Road • Wirksworth • Matlock • Derbyshire • DE4 4FY • United Kingdom

Tel: +44 (0) 1629 823611 • Fax: +44 (0) 1629 824283

Email: technolog@technolog.com • www.technolog.com



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Meter Interface and Compatibility

Power Source:	Powered by the meter, RJ12 connector
Power Required:	500mA at 5V (min)
Compatible Meters (direct connection under the terminal cover):	Elster A1120 and A1140
Modem:	
Frequency (MHz):	900/1800
Modes of Operation:	CSD (data call) up to 9600 bps SMS MO and MT GPRS class 8
Antenna Connector:	SMA standard, with stub antenna
Transmit Power:	2W for GSM900, 1W for GSM1800

General Specifications and Features

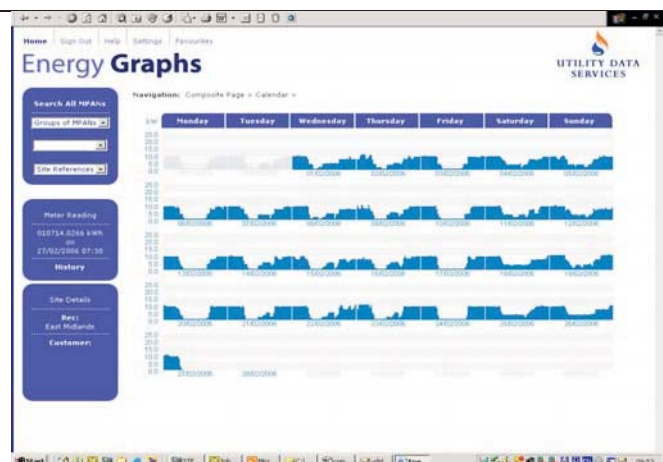
Serial Port:	RS232
Software:	Over the air programmable (OTAP)
SIM Interface:	3V SIM card
SIM Card Holder:	Integral with latch
Design Life:	10 years plus
Indicator:	Tri-colour LED indicator for modem status and signal strength
Operating Temperature (Deg. C):	-20 to +55
Dimensions (mm):	L 162, W 69, H 30
Weight (g):	74 (excluding antenna)

Data Collection, Energy Management and Web Services

Technolog's Message Service Centre is designed to collect meter reading data from gas, water and electricity meters and export data to customers.

The Message Service Centre has direct links to several GSM networks which enables reliable and efficient data collection.

The data can be exported in standard formats such as CSV and D0010. In addition, the data can be presented on Technolog's Energy Graphs website for analysis by energy managers.



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