

# A1120/40

## Programmable Electronic Polyphase Meter



### Innovative Metering Solutions...

#### Features

- Accuracy – kWh Class 1 or Class 2  
kvarh Class 2 or Class 3
- Modular design to allow future upgrades
- Comprehensive tariff structure
- Instrumentation
- Large digit (9.8mm) display
- IEC 62056-21 communications port
- Internal clock with battery back-up
- 15 year product life
- Extensive security data
- High security, compact design
- 12kV impulse withstand
- Double insulated, polycarbonate case
- Compact design
- IP53 in accordance with IEC 60529:1989

#### Options

- kWh export, kvarh and kVA
- CT or Direct connected
- Serial communications
- Load profiling (A1140)
- Read without power (using replaceable battery)
- English or OBIS descriptors
- Terminal cover removal detection switch
- Main cover removal detection or CT ratio programming switch
- SO pulsed output (IEC 62053-31)
- Terminal cover with cut-out

The A1120/40 has been designed to meet the changing needs of the Electricity supply industry.

The meter offers a 'modular' solution for remote communications, allowing the meter to be integrated into an AMR system at any time. Flexibility in communications provides the Utility with the means to use the most cost effective communications method. The serial port provides power for a modem removing any requirement for external connections. The modem fits neatly under the terminal cover providing a high degree of protection against fraud or tampering.

Communications are provided via the optical (IEC 62056-21) port and are supported by data stream mode, allowing fast reading of meter data. The A1140 permits up to 90 days of load profile data to be collected in less than 30 seconds. The RJ11 socket provides optional serial communications allowing remote access to the same data. The serial port can be multi-dropped, allowing access to up to 10 meters from a single communications device. A further option allows a pulsed output to be transmitted via the meters' auxiliary terminals.

The meter is available in a number of variants that measure combinations of active, four quadrant reactive energy and kVA. Two customer defined registers can be used to summate energy from any like unit registers. Instrumentation quantities are available to aid installation. These can be included in the display sequence.

The meter offers extensive security data which includes a programming log with user ID. Further security can be provided as an option with terminal cover and main cover removal detection. As an alternative option, the latter detection switch can be used instead to allow the CT ratio to be changed.

The liquid crystal display has large characters that can be viewed from a wide angle. The display sequence is programmable and is supported by two modes of operation, default and utility. Displayed information can use English descriptors or OBIS (Object Identification System) codes.

Main meter variants are configured at manufacture. Power Master Unit software provides a user-friendly Windows™ graphical interface for programming the meter and reading meter data.

Meters can be supplied to meet kWh accuracy Class 1 or 2 requirements and are approved to EN 62053-21, kvarh is to EN 62053-23 Class 2 or 3. The meter has an ingress protection rating of IP53 to IEC 60529:1989.

## Display

The A1120/40 can be configured by the customer to display English descriptors or OBIS identification codes.



## Communications

Local: IEC 62056-21

Remote: Optional RS232

Fast data collection using Data Stream Mode, 90 days data in 30 seconds



## Tariff Structure

- 8 Time-of-use (TOU) registers
- 4 Maximum demand registers
- 48 Switching times
- 12 Seasons
- 24 Change of season dates
- 32 Exclusion dates
- 13 End of billing dates

Independent day of week control  
Daylight saving  
Deferred tariff

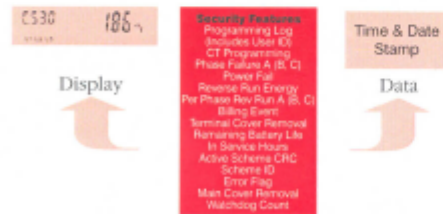
## Data Storage (A1140)

300 days of half hour data for one channel  
Programmable integration period  
Four channels of load profile storage

## Security

The A1120/40 offers high security with many useful security features. The meter stores all registration and configuration data to non-volatile memory.

Recordable security features are illustrated below.



## Meter Variants

- Import Wh
- Import Wh, Q1 and Q4 varh
- Import Wh, Q1 and Q4 varh, Import VAh
- Import/Export Wh
- Import/Export Wh, Q1, Q2, Q3, Q4 varh
- Import/Export Wh, Import/Export VAh
- Import/Export Wh, Q1, Q2, Q3, Q4 varh, VAh x 2

## Optional Module Housing

The module housing allows the functionality of the meter to be extended in the future. It is simple to install and is securely locked into place. It has been designed not to interfere with the installation wiring and fits neatly under the terminal cover.



## Communications

The module can house a variety of communications solutions allowing the Utility to employ the most cost effective communications method.

## Battery

The module can house a 9V PP3 battery to support read without power. This enables the following to be read:

- Data via the optical port
- LCD data, initiated by presses of the display pushbutton

## System Connections

3 Element Meters	3 phase 4 wire 3 phase 3 wire 2 phases of a 3 phase 4 wire 2 phase 3 wire 1 phase 3 wire 1 phase 2 wire
2 Element Meters	3 phase 3 wire

## Technical Data

Current Range	Direct connected 5 - 100A CT operated 1 - 2A, 5 - 10A
Voltage Range	220 - 240V (L-N) or 380 - 415V (L-L)
Frequency	50 or 60Hz
Burden	0.8W, 1.3VA burden/phase (max)
Voltage Circuits (230V)	4VA @ 100A/phase (max)
Current Circuits	4VA @ 100A/phase (max)
Insulation	4kV RMS 50Hz
Impulse Withstand	12kV 1.2/50µs 40 ohm source
Display LCD	9.8 x 3.5mm characters High contrast, wide angle
Baud Rates	2400, 4800 or 9600
Product Life	15 years
Temperature	-25° to +65° C (operational range) -25° to +85° C (storage)
Humidity	Annual mean 75% (for 30 days spread over one year, 95%)
SO Pulse Width	10 to 250ms
Wh/pulse	1, 2, 4, 5, 10, 20, 25, 40, 50, 100
Dimensions	233mm(high) x 174mm(wide) x 50mm(deep)
Weight	940 grams
Specifications	kWh Class 1 or 2 EN 62053-21:2003 kvarh Class 2 or 3 EN 62053-23:2003
Case	IP53 to IEC 60529:1989