

A1700

Input/Output



The Power to Change...

Module Types

Four Input Module

Features

- Inputs for creation of end of billing and/or end of integration period
- Inputs from external meters
- Programmable scaling factor
- Records input pulse or engineering units
- Three customer defined registers
- Input circuit detection without use of external power
- Battery backed
- Pulse collection continues when power to meter is removed
- Class II isolation from meter

Four Output Relay Module

Features

- Re-transmit pulses from energy registers, customer defined registers or any time of use register
- Programmable output pulse value
- Provide indication of billing reset, rising demand alarm, end of integration period, time of use register active and alarms
- Class II isolation from meter

Options

- Three solid-state relays and one 5A relay
- Four solid-state relays

The modular design of the A1700 meter allows the systems performance to be enhanced by the introduction of an input module or an output module. These modules plug into the I/O module slot which is accessed by simply removing the meter terminal cover. Modules can be retrofitted without breaking the meter certification seal or removing power from the meter.

By installing an input module, existing A1700 installations can be upgraded to provide load profile data for external meters such as gas, water or electricity. Up to four inputs provide a cost-effective solution for multi-utility metering. The customer defined registers combine module inputs with the A1700 internal registers. This allows kWh total import, kWh total export or any of the four quadrant registers to be summated with any similar input.

The output module can be fitted in addition to the A1700 meters internal relays, providing a total of eight outputs. Two versions of the output module are available. MODVAB provides three solid state relays and one 5A relay for controlling an external load or contactor. MODVAC has four solid state relays. The solid state relays allow the A1700 to be integrated into an existing energy management system by providing the energy manager with any measured data from the meter. The re-transmission of the end of billing and end of integration period from the meter ensures the systems are synchronised. A demand alarm can be used to indicate that a programmed threshold has been exceeded.



Input Module

Four inputs

Input Types:

- Volt free contact
- Transistor switch

Registration Input

Each input has a cumulative register which can have an initial offset and scaling value to ensure it matches the external meter. The register can be viewed on the meter display.

An input can be used to source the cumulative, demand, load profile, tariff, customer defined register or to be retransmitted via a relay. The scaling factor is programmable. To record the pulse count, set the scaling factor to one.

Customer Defined Registers

Customer defined registers can be used in tariff structures or load profiling.

Examples of the A1700 customer defined register configurations are shown below.

- Summate two module inputs (Input 1 + Input 3)
- Summate a module input with a A1700 meter register (Input 2 [kWh] + A1700 import kWh register)

Load Profile

At the end of an integration period, the contents of each rising demand, can be transferred to create a load profile record.

In the event of a power outage the module stores 30 minute data for a period of 48 hours. Data is transferred to the meter when power is restored.

Technical

Voltage rating 27V d.c. max
 Current rating 10mA max (input active)
 Pulse width 20ms min, 200ms max
 Pulse rate 4Hz max

Output Module Types

MODVAB

- Three solid state relays
- One 5A relay

MODVAC

- Four solid state relays

Relay Functions

Re-transmit pulses from:

- kWh total import/export
- kvarh lagging/leading, import/export
- Three customer defined registers
- kVAh
- Input register
- Any time of use register

The re-transmission rate and pulse width are programmable.

Indication of:

- End of billing
- End of Integration period
- Time of use active indication
- Rising demand alarm
- Meter powered
- Alarm monitoring, any combination of:

Option board error	Battery fail
Battery elapsed warning	Meter-fault
Reverse run warning	Over-current
Phase failure	Partial demand
Meter comms event	Time/date changed

Technical

Solid state relays:

Voltage rating 240V a.c.
 Current rating 100mA

High rating relay:

Voltage rating 240V a.c.
 Current rating 5A

Isolation Levels

Isolation to protective Class II (all modules).



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EMS/A1700I.0/2.2004