

# Variable Speed Drives with Efficient Motor Control



The return on investment is very quick, usually between 9 and 24 months!



**Schneider**  
Electric

**Telemecanique**

Altivar 21 / Altivar 61

'The perfect balance between control and energy savings'

Besides renewable or alternative energies, there are now numerous solutions to encourage more economical use of energy. Speed control would appear to be just such an opportunity for all players in the construction, industrial or infrastructure sectors. It is in applications such as pumping, ventilation and compression that speed control can generate huge savings in energy consumption. These applications are found in industry as well as the construction and infrastructure sectors (tunnels, car parks, hospitals, shopping malls, offices). When centrifugal pumps, fans or rotary compressors are fitted with variable speed drives, savings in energy costs of between 15 and 50% are achieved, depending on the installation.

## The problem with motors...

### Fact...

Electric motors use approximately two thirds of the electricity used within industry. In the UK alone some 10 million motors consume £4 billion worth of electricity. Many motors run far less efficiently than they should, so there is large scope for savings.

### Part of the Solution...

Use variable speed drives from Senate Electrical whenever there is a requirement for reducing motor speed.

### Savings...

Savings can be as much as 60% of energy, for instance a pumping application. Applied to a 90kW motor in continuous duty, this means £23,000 per year in saved energy.



This new generation of variable speed drives is characterised by the extent of its power range, a feature that enables control of asynchronous motors. Its advanced functions combined with exceptional performance provide an ideal solution to meet the requirements for all your industrial pump and fan requirements.

#### ATV 21 Range

Ideal for HVAC pumps and fans

Non-enclosed

Part No.	Description	Code
ATV21HU075N4	0.75kW 3PH HVAC DRIVE	2380
ATV21HU15N4	1.5kW 3PH HVAC DRIVE	2381
ATV21HU22N4	2.2kW 3PH HVAC DRIVE	2382
ATV21HU30N4	3.0kW 3PH HVAC DRIVE	2383
ATV21HU40N4	4.0kW 3PH HVAC DRIVE	2384

\* Larger sizes available

Enclosed

Part No.	Description	Code
ATV21WU075N4	0.75kW 3PH ENCLOSED DRIVE	2380
ATV21WU15N4	1.5kW 3PH ENCLOSED DRIVE	2381
ATV21WU30N4	3.0kW 3PH ENCLOSED DRIVE	2383
ATV21WU40N4	4.0kW 3PH ENCLOSED DRIVE	2384

\* Larger sizes available

#### ATV 61 Range

Ideal for industrial pumps and fans

Non-enclosed

Part No.	Description	Code
ATV61H075N4	0.75kW 3 PHASE DRIVE	2380
ATV61HU15N4	1.5kW 3 PHASE DRIVE	2381
ATV61HU22N4	2.2kW 3 PHASE DRIVE	2382

\* Larger sizes available



# Commercial & Industrial Metering



Since 2006 legislation has required automatic meter reading and data collection facilities for all new commercial buildings over 1000m<sup>2</sup>.



## Part L2 Metering

Compliance with certain aspects of the Building Regulations Part L2 has required the engineering and installation of meters to gather energy usage data.

Merlin Gerin has launched its solution to the problem by offering its IsoBar 4c 3 phase split metering lighting and power B type distribution boards with inbuilt meters and communications options.

The Building Regulations Part L2 a and b demand sufficient facilities to account for 90% of each fuel type by end use category.

The new IsoBar 4c gives metering of total load plus separate metering of section 2. All control wiring current transformers and protection for meters are included and fitted, with outputs wired to terminals.

For remote data collection and communications, an Ethernet gateway and DC power supply can be supplied for retro-fit.

The Power quality meters themselves are the state of the art PM750MG models with both pulsed output and Modbus communications.

IsoBar 4c distribution boards have the option to be supplied with extension enclosures for the fitting of surge protection and remote switching.

For split metering units the IsoBar 4c 125 or 250A boards come with a unique new split busbar for lighting and power - in three combinations of 12/8, 14/6, 16/4 - but a single overall isolation device.

Standard incomers can be used together with split earth bars for ease of wiring. Like all IsoBar 4c boards, there is an individual unique outgoing MCB connection slider; units are designed manufactured and tested to BS EN 60439 1 and 3; ingress protection is to IP3X to BS EN 60529; voltage rating is 400/415V; and the cable capacity of neutral and earth bars is 25mm<sup>2</sup>



The IsoBar 4c 3 phase split metering lighting and power B type distribution boards with inbuilt meters and communications options.

## Optional Retrofit Metering

Kits available for both Lighting and Power



There is a new and growing market for metering products/solutions driven by Part L2 of the Building Regulations and the high cost of energy

**If you can't measure it, you can't improve it**

Lord Kelvin  
1824-1907

## Panel and Distribution Boards

MCCBs, MCBs,  
RCBOs & RCDs



A complete range of 3 phase panel and distribution boards including fully metered options. Available from all major manufacturers.

# Wireless Energy Monitor



During field trials in the product development phase, some users reportedly achieved savings of an impressive 25%



## Efergy e<sup>2</sup>

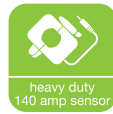
**EATON** efergy e<sup>2</sup>

The Real Time Display (RTD) Wireless Electricity Monitor helps reduce electricity consumption in the home and work place by enabling you to see exactly how much you are spending through an easy to read portable display unit. By seeing the immediate impact in pence per hour of replacing standard light bulbs with low energy ones, switching off unnecessary devices throughout the home/office, etc you are naturally motivated to save energy.

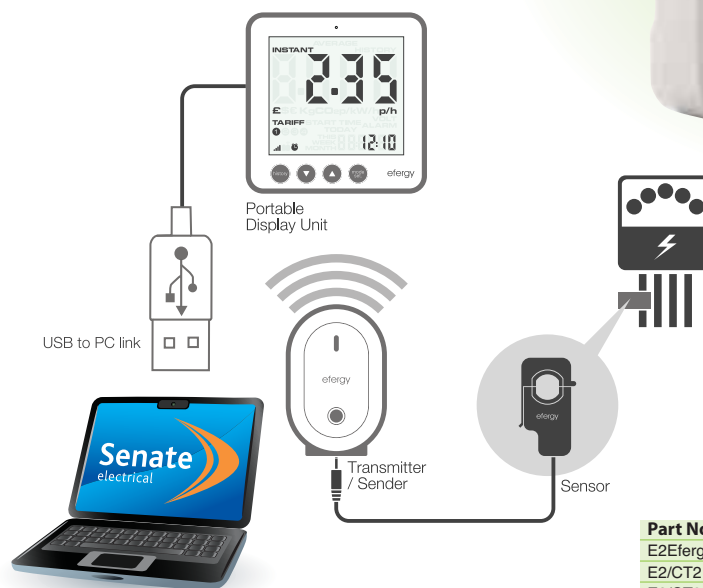


## Key Feature!

You can track your CO<sub>2</sub> emissions & calculate the carbon footprint generated by your energy usage.



### HOW IT WORKS



Part No.	Description	Code
E2Efergy	LCD + USB RTD	2303
E2/CT2	2 sensor 3 Phase Kit upto 60A	2304
E2/CT3	3 sensor 3 Phase Kit upto 140A	2304

### Compatible

Suitable for use with clip-on sensor.

### Easy to Install

Designed to be installed either by consumer or professional.

### Flexible

Valid for single & dual tariff.

### Easy to Understand

Clear and simple graphical display.

### Simultaneous Information

Average daily (energy & costs) instant information (power & costs), historical consumption (energy, costs and CO<sub>2</sub> emissions).

### Discover

- How much electricity is being used at any given moment
- The total amount of money being spent on electricity
- The difference in electricity consumption by turning on and off various appliances
- How much money can be saved by reducing usage

### Understand

- Daily average consumption
- Saving of 5%-20% off typical energy consumption
- Consumption history
- Carbon Footprint

### Specification

Model Name:	efergy e2
Frequency:	433.52MHz
Transmission Time:	6s. 12s. or 18s.
Transmission Range:	40m-70m
Sensor Voltage Range:	110V-300V
Measuring Current:	50mA - 95A
Accuracy:	<8%
Memory:	64K
Power:	3xAAA Batteries

\* Includes desktop software for PC and USB link



senate.co.uk/ecolinks

efficient energy  
through technology.....

**efergy**



**Senate**  
electrical  
Best to go Green