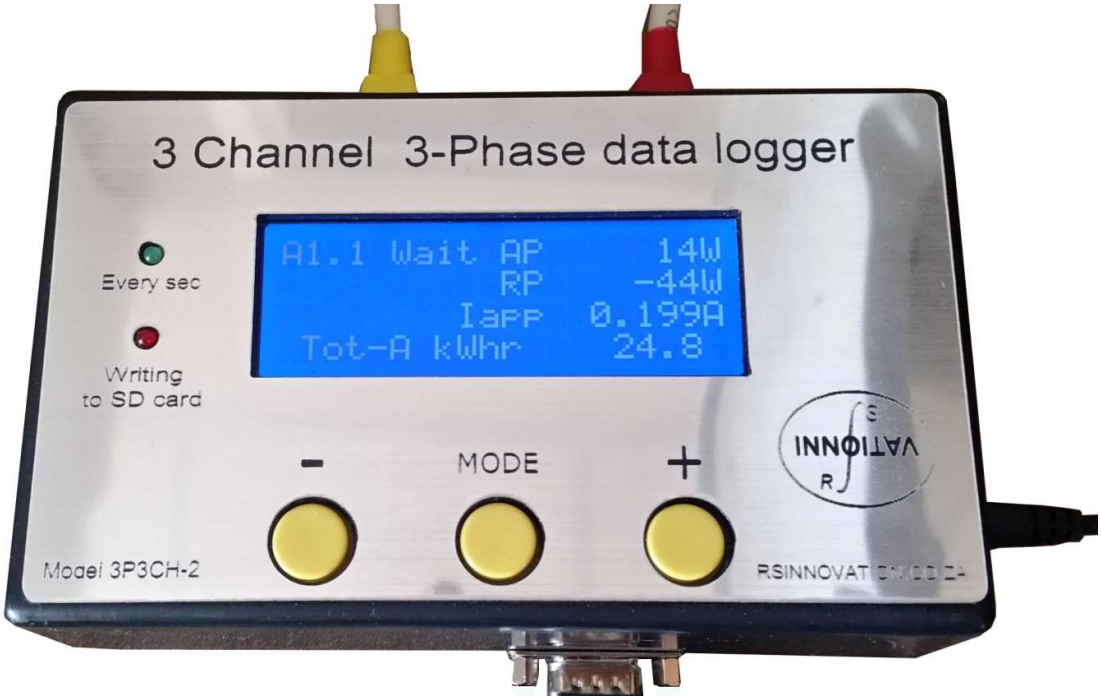


RS Innovation has designed a state-of-the art electronic system which can monitor the energy consumption on every connected circuit breaker of a distribution board. A split-core current transformer or current clamp is simply clipped around each cable to be monitored. The system is thus easily connected to a live DB.

The above system can monitor 9 single phase channels or 3 poly-phase channels. It measures both active and reactive energy.

The system has 2 modes of operation: SETUP mode and LOGGING mode.

In SETUP mode, the system shows active power, reactive power, apparent current and power factor. In LOGGING mode, the system shows active power, reactive power, apparent current and total active energy used since the start, as shown in the picture above.

The system will read the power usage as fast as every second and store the data on a micro-SD card. Each sample is time-stamped by means of a real-time-clock. When performing an electrical audit, it is advisable to leave the system connected for a couple of days, to get a good average of the client's consumption profile. The data is stored in a .CSV file format which is easily opened by Microsoft Excel and transformed into a graph within seconds. A new file is created for every day.

When equipped with an optional GPRS unit, an email with a summary consumption overview will be sent every hour, or every 3, 6, 12 or 24hrs. The real-time clock will synchronise itself with the cell tower clock when an email is being send, thereby eliminating drift and the need to set the clock manually.

Custom solutions are possible. The system can, for example, be equipped with temperature sensors (thermocouple K-type or a PT100). This enables analysis of systems which make use of heaters during manufacturing. Examples: geyser installations, processing tanks etc. Or report the operating temperature of systems in remote locations. DC voltages and currents can also be measured.

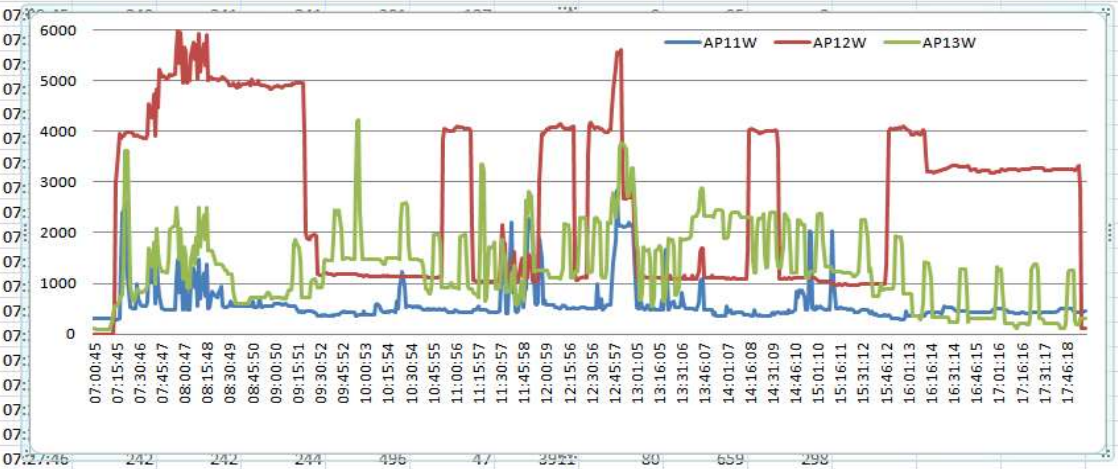
The equipment is easy to operate and has no batteries. When the power is ON, the system logs. When the power goes off, the system stores the current vital data and makes a log of when the power went OFF. When the power comes back on, the system continues logging.

Excel data and graphs

Just a few clicks on the mouse button will give you graphs like the one shown below.

This is real data from a factory using 3-phase motors. It can be seen that the phases are totally unbalanced. It shows the aircons switching on and off and heavy duty welding equipment is used (red phase).

--Time--	V1	V2	V3	AP11W	RP11W	AP12W	RP12W	AP13W	RP13W
07:00:45	240	242	241	302	-119	-1	0	101	23
07:01:45	240	241	240	302	-122	-1	0	101	23
07:02:45	240	241	241	300	-123	-1	0	99	19
07:03:45	239	241	241	300	-126	-1	0	94	9
07:04:45	239	239	241	300	-127	-1	0	95	8
07:05:45	238	239	240	299	-126	-1	0	93	8
07:06:45	240	241	241	300	-125	-1	0	95	9
07:07:45	240	241	242	302	-125	-1	0	95	9
07:08:45	240	241	241	301	-126	-1	0	94	9
07:28:46	242	242	243	498	47	3911	80	743	341
07:29:46	242	244	244	989	42	3929	90	897	436
07:30:46	242	242	244	692	65	3919	80	859	387



Emails

From: info@lifestyleprojects.co.za
To: rudyspies@gmail.com
Cc:
Subject: RS Innovation FROM BWC85

"Thu-30/08/2018 from RS Innovation datalogger located at: BWC85"
"Sent via Cell-C, SIM card 27625296901. Data left: 54.80 MB"

kWhr	AE11	RE11	VAMax11	AE12	RE12	VAMax12	AE13	RE13	VAMax13
HR00	0.6	0.0	554	1196	0.5	0.3	532	1168	0.1
HR01	0.6	0.0	554	1196	0.4	0.4	532	1168	0.1
HR02	0.6	0.0	554	1196	0.4	0.4	532	1168	0.0
HR03	0.6	0.0	554	1196	0.4	0.3	532	1168	0.1
HR04	0.6	0.0	554	1196	0.5	0.4	532	1168	0.0
HR05	0.7	0.0	554	1196	0.5	0.3	532	1168	0.1
HR06	0.6	0.0	554	1196	0.4	0.4	532	1168	0.1
HR07	0.6	0.0	554	1196	0.6	0.3	532	1168	0.0
HR08	0.7	0.0	554	1196	0.4	0.4	532	1168	0.0
HR09	0.9	0.0	554	1196	0.6	0.3	532	1168	0.0

Our current transformers

Small split core: CT-A 80A

Small clamp: CT-C 200A

Large split core: CT-B 220A

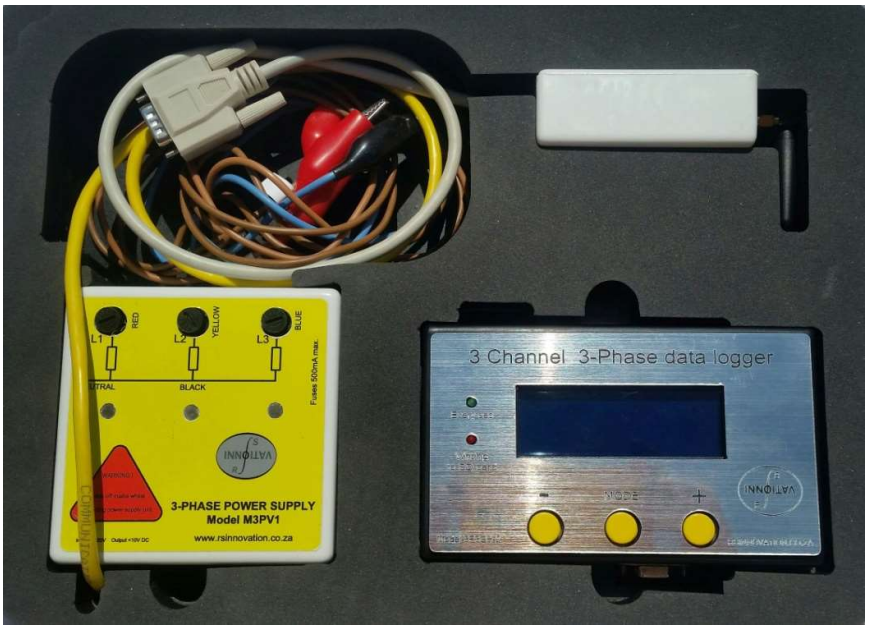
Large clamp: CT-D 800A



Specifications Data Logger

Power supply:	210 to 250V, 10W
Operating temperature:	5 to 50°C
Sampling time:	1s to 60s
Voltage measurement:	TRUE-RMS 180 to 250V, better than 1%
Current measurement:	0.1A to 800A, better than 1.5%
Power measurement:	better than 2%
Real time clock accuracy:	100ppm which translates to better than 8.6s per day. Accumulative drift eliminated when used with a GPRS unit.
Data storage:	micro SD card in SD card holder. When sampling at 60s (recommended for best accuracy), a 16G card can hold enough data to log for 140 years!
Computer interface:	USB-2 (not required for operation)

Packaging


3 Channel 3-Phase data logger
3-PHASE POWER SUPPLY
Model M3PV1
www.rsinnovation.co.za
RED
YELLOW
BLUE
BLACK


Innovative Electronic
Equipment Solutions
www.RSinnovation.co.za