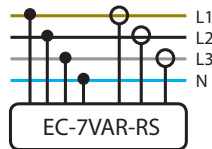


## Electrocorder Model: EC-7VAR-RS Dual Range



Three voltage channels  
600Vac

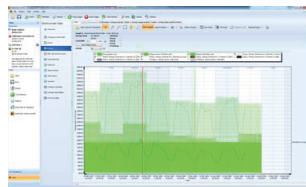
Three current channels  
c/w selectable range;  
400Aac or 3kAac

One Power Factor (Cos  $\Phi$ ) channel; phase angle  
between L1 and A1

Rogowski coils fit round  
140mm diameter cables

Complete with Electrosoft  
energy analysis software

Sealed to IP43 as  
standard, available as  
IP65/NEMA 12/4



Records voltage up to 600Vac and loads up to 3kAac per phase

Data stored in non-volatile memory

Memory capacity of 32,000 (True RMS) values per channel  
(10bit), up to 300 days continuous recording

User selectable averaging period, 2 seconds to 60 minutes

Accuracy:-

Voltage generally  $\pm 1\%$  of reading.

Current typically  $\pm 2\%$  of range, within 10% - 90% of  
selected range, otherwise  $\sim 5\%$  of range.

Set includes data logger, Rogowski transducers, voltage leads,  
USB lead, Electrosoft software and carry case

The advantage of the Electrocorder products over most others  
is that our Data Loggers constantly sample information (record-  
ing the Minimum, Maximum and Average reading) over the set  
period, many other products only take 'snap shots' of what is  
going on and can miss 99.9% of the data (between samples) that  
is absolutely critical to your analysis.

The Electrorecorder EC-7VAR is designed to allow electrical engineers to cost effectively monitor single and three phase loads. This product will allow voltage, load and reactive power problems to be highlighted. Electrorecorders are designed to be very cost effective allowing companies to have many, in turn allowing them to quickly deal with issues and complaints, to assess which are real problems to be further investigated, perhaps with more sophisticated data loggers like a Fluke!

Setting up the Electrorecorder EC-7VAR is easy, suitable for technical and non-technical staff, using the supplied (free) Windows software, Electrosoft; All data is included in a database of loggers detailing their dispatch dates, locations and due dates, allowing you to track the location of multiple loggers.

The Electrorecorder range use a constant sampling technique, unlike the single 'snap-shot' reading of competitors. When the Electrorecorders start to record, they sample every input 16 times per 50/60 Hz cycle. At the end of each (user set) averaging period, 3 quantities are saved for each input, the True RMS average, the Max, which is the highest cycle value during the period and the Min, lowest cycle value. This means that it will record all the peaks and troughs which are one cycle or longer.

The voltage, current & PF are stored with dates and times. With the back-up battery, the Electrorecorder can continue to record for weeks or months.

The recorded data is uploaded to a PC via the supplied USB lead. Using Electrosoft, the recorded current levels, with dates and times that can be viewed in both tabular and graphical form, exported to a spreadsheet or saved to file. Graphs can be printed showing the recorded levels and the allowable tolerance bands. These results may then be discussed with the customer.

The EC-7VAR is specifically designed to monitor one, two or three current channels, as well as one, two or three voltage channels plus Power Factor. Power Factor recorded is the phase angle between L1 and A1. The logger needs input signals (L1 voltage and A1 current) of at least 30% of full scale, to be able to give an accurate PF measurement. Accurate PF measurements on very noisy supplies cannot be guaranteed.

The EC-7VAR-RS has two user selectable current ranges of ~5Aac to 400Aac  
~20Aac to 3kAac.

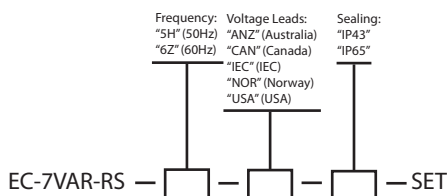
Technical specifications (subject to change without notice)

Recorded values	$V_{avg}$ , $V_{max}$ and $V_{min}$ on 3 channels and $I_{avg}$ , $I_{max}$ & $I_{min}$ on 3 channels
Voltage measurement range (Vrms)	5Vac to 600Vrms (Ph – Ph) or 5V to 350Vrms (Ph – N)
Measurement accuracy	±1% of reading, ±1 Volt. (10 bit) within 100Vac-450Vrms (ph-ph); else ±3%. (50/60Hz ±2%)
Maximum channel input voltage	600Vrms (Ph – Ph), 350Vrms (Ph – N)
Inputs (non-isolated inputs)	Three phase inputs (L1, L2 & L3) & Neutral (N), non-isolated input channels
Input socket types	4mm shrouded 'banana' plugs & sockets, each with insulated crocodile clip
$V_{max}$ , $V_{min}$ , $I_{max}$ & $I_{min}$ time resolution	Always one cycle (50/60 Hz), independent of selected averaging period
Current measurement range (Irms)	RS model is ~4Aac – 400Aac and ~20Aac – 3kAac
Current measurement accuracy	Typically ±%5 of reading (within 10%-90% of range), otherwise 5% of range
Current Input socket types	4mm shrouded 'banana' plugs & sockets, each with insulated crocodile clip
Sampling frequency (all channels)	16 samples per cycle 800Hz @ 50Hz or 960Hz @ 60Hz
Data recorded	Average, max & min voltage & current values and Power Factor during the averaging period
Power Factor range and accuracy (measured on L1 and A1)	Accurate to ~3% between lead 0.5 and 0.5 lag; ~6% between 0.5 and 0.3 lead or lag
Memory capacity & type	384kB able to record 32,000 values per channel/phase . Non-volatile SEEPROM
Memory - averaging period & duration	2 sec to 60 min (2 sec gives 4 hrs logging, 60 min gives up to 300 days logging)
Real-time clock accuracy	Greater than 0.001%
Supplied current sensor	CAT III-1kV or CAT IV-600V, with 140mm aperture
Current sensor dimensions	Lead length 2m/6'6", sensor length 450mm/18" (Open), sensor diameter 140mm/6" (Closed)
Input voltage lead length	Metric 2 metres Imperial/English 6' 6" (6 feet, 6 inches)
Battery life while logging	Possibly unlimited when connected to voltage above ~200V L1 to N.
Battery type	Loggers contains two 9V Alkaline 'PP3' batteries (IEC-6LR61, ANSI/NEDA-1604A)
Communications interface type	USB, optically isolated to 5,2kV
Environmental (temp & sealing)	-10C to +40C or +14°F to +104°F. Sealed to IP43 (Optional IP65, NEMA 12/4)
Dimensions & weight	Metric 190 x 120 x 60mm & 1kg Imperial/English - 7.5" x 5" x 2.5" & 2lb
Standards	Recording - EN50160: 1994. Sensor connection CAT III-1kV or CAT IV-600V. Logger connection CAT III-600V.

Determining product order codes:

To specify your Electrorecorder select various codes and enter into the boxes in order to create a correct product code.

For example: EC-7VAR-RS-5H-IEC-IP43-SET.



Warranty & calibration

Acksen Ltd products carry a \*Lifetime back to base warranty covering manufacturing defects and component failures. Each unit is individually calibrated during testing.

\*Refer to website for full terms and conditions.

Conformity

Emissions EN55022:1994B, (EN50081-1:1992). Immunity EN50082-2:1995, following the provisions of EMC directive 89/336/EEC. Recording std EN50160:1994. LVD 72/23/EEC with respect to EN60065. (IEC-61010). All models certified (light industrial, 3V/m).