



e-TRACKER_{Mk2}

Descriptive and Application Information

plotting to cut energy bills!

Magnetic Back

RS232 to PC

Multiple Memory Locations

Pulse input. Optical meter reader option

Amps range scaling multiplier

Clip-On CT's

HV Interface

Flexeclamp CT's



USB Port Option



Analysis Software

EV-Trac electrostatic phase identifier

16 day Battery only operation



e-TRACKER
electrical and energy demand profile recorder

- Mains &/or Battery operation
- Volt reference Clip or socket
- Flexeclamp and Clip-on CTs
- Analogue and Pulse input
- Full Graphics report + Excel

SINERGY Ltd
Energy Metering Monitoring & Control
5th Top, ENGLAND
Tel: 01663 764 833
www.sinergy-meters.com

Voltage Clips (Optional use)



SINERGY Ltd Station Rd. Strines
Stockport SK6 7GP England
Tel 01 663 764 833. Fax 01 663 765 885
e-mail: info@sinergy-meters.com
web: www.sinergy-meters.com

connection options

Safe - Practical - Accurate

Use Tracker with it's fused voltage clips for maximum accuracy on all parameters (fig a)

or

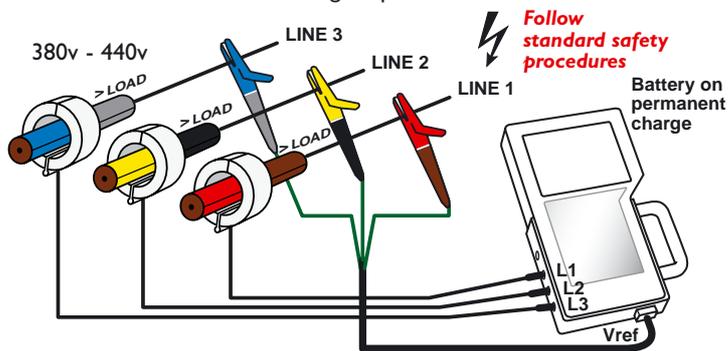
EV-Trac 3 phase volt reference conversion from a single phase socket outlet. (fig b)

or

Battery only operation measuring current and calculating KVA demand profiles. (fig c)

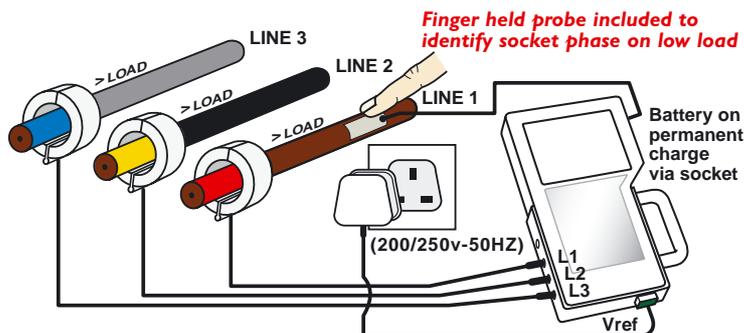
a) 3Ø direct voltage measurement

All CTs to face same way, CT colour must match colour coded voltage clips



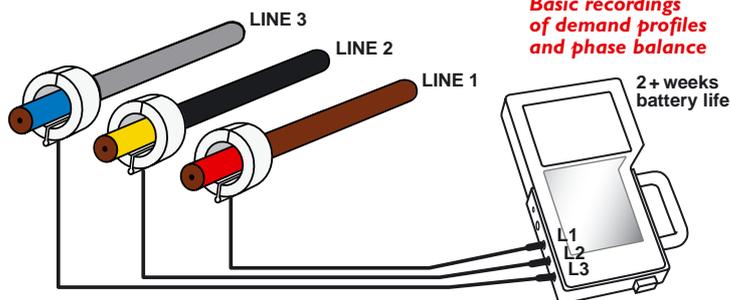
b) 3Ø ev trac voltage pickup

1Ø to 3Ø voltage synthesis

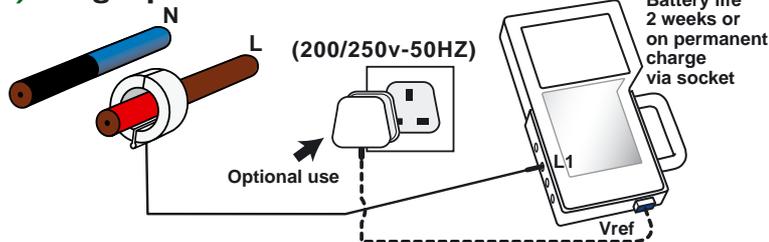


c) 3Ø current recording

with calculated KVA demand profile

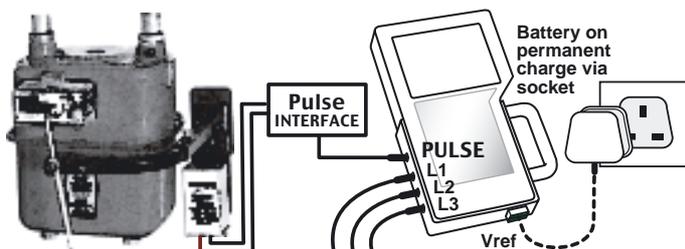


d) Single phase



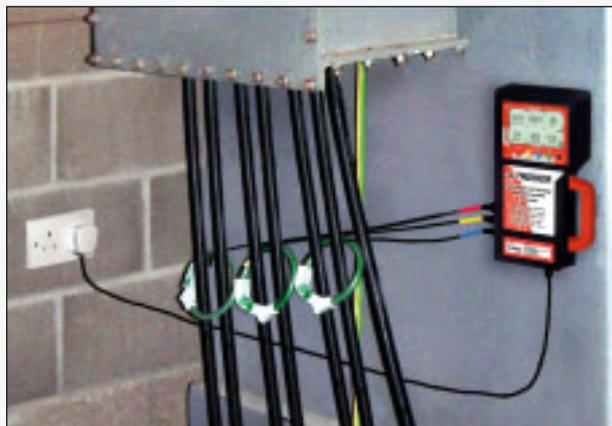
e) Pulse Counter

Magpeye requires separate supply



f) Pulse count + analogue connection

EV-Trac Installation examples



Tracker magnetically clamps to the transformer housing and tracks the voltage at the socket.

The 3 phase vectorial equivalents are calculated then assigned to the appropriate measured current phases, thus maintaining Power Factor accuracy.

Where load current is too low for auto identification, Tracker will request the use of its EV-Trac Probe. This is simply touched to the cable insulation for the display to indicate the phase identity L1, L2 or L3.



Pulse interface (option) The battery operated isolated interface unit enables Tracker to record volt free pulse outputs from water, gas, electricity or optical meter readers, (Magpeye).



The interface may be used at the same time that normal analogue recording is in progress.

The selected integration period must be greater than 1 minute and the same for both pulse and analogue modes.

These diagrams are for illustrative purposes, please refer to the equipment marking and instruction card when fitting

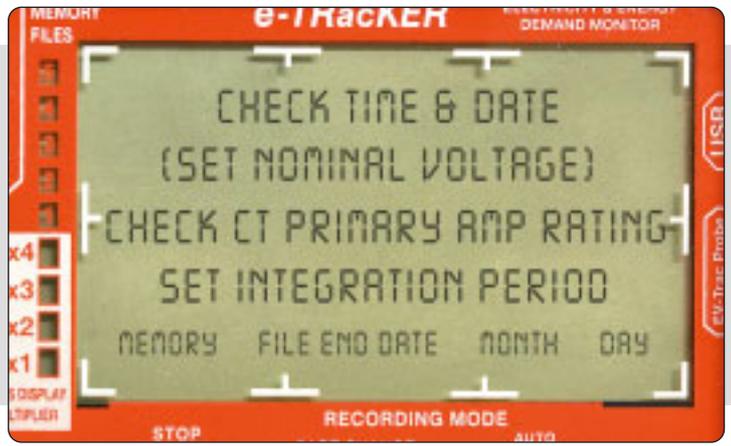
e-Tracker's on-line display

The display is used to check the set up

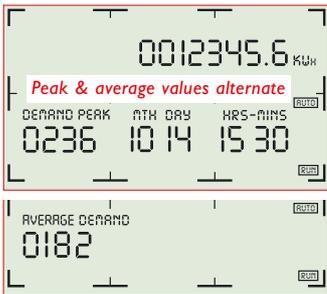


Key CHANGE to alter display value and key ENTER to accept value and proceed

Connect transducers before switch on

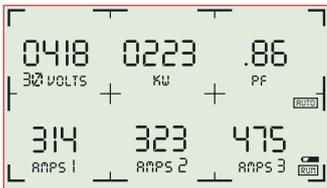


Every Parameter Displayed is Recorded and can be printed



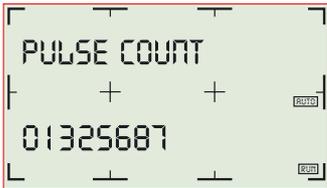
Energy cost savings come most quickly from the elimination of waste. Demand profiles generated by ProTracker-lite software provide the evidence of wastage; this is often defined by excess consumption during periods of non productivity.

Tracker works well as a portable KWh meter with the additional features of time & value indication of peak demand. Average demand is also displayed to enable the calculation of Load Factor. Tracker will monitor the incoming supply to show the pattern of demand over an hour, day, week or month. A pattern helps establish causes of demand excursions and any unauthorised weekend consumption!



Phase current imbalance affects energy costs by increasing temperature losses on neutral or phase cables and distribution transformers.

Poor Power Factor causes higher currents to flow for the equivalent plant energy conversion, compared with unity PF. Tracker will help determine if distribution wiring needs to be re-routed or whether departmental or machine level PF correction would be cost effective.

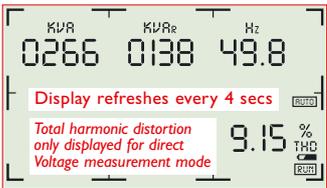


The cost of expanding production or occupancy can be drastically reduced if Tracker proves that the capacity of an existing distribution transformer and cables are adequate.

Tracker's practicality extends down to individual loads. Try relaxing manufacturing controls on temperature, pressure, speed or material specification etc.

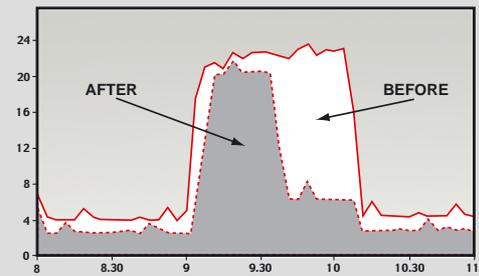
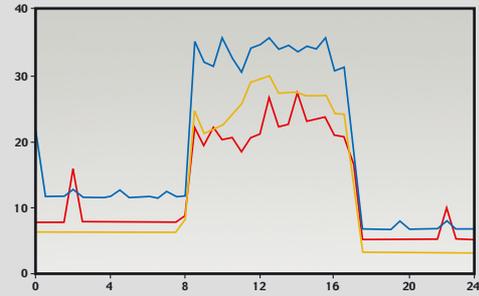
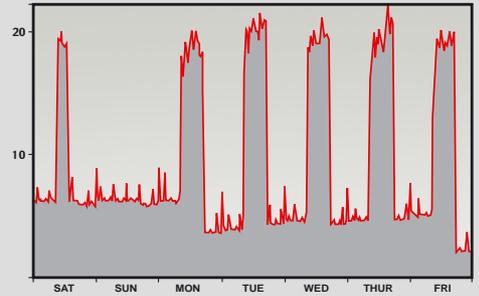
If the ensuing product quality remains acceptable, the reduced count of KWh's will influence whether this relaxation should be permanently adopted.

The overlap print facility helps to prove the saving.

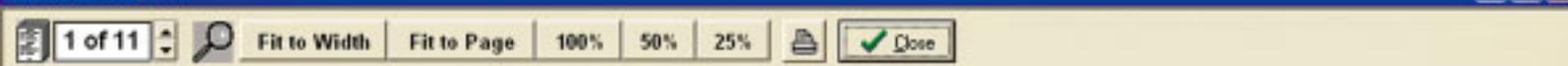


Total Harmonic Distortion has little direct effect on energy costs apart from the tendency to increase neutral currents.

Tracker can indicate values of both neutral currents (An) and THD (to 5th Harmonic).



All Data Report



All Data Report for : Unnamed Survey
Source : WorkshopTWO.IZ

** Values calculated to accuracy allowed by available data

Date/Time	kW	kVA	PF	kVAr	Neutral	Amps (R)	Amps (Y)	Amps (B)	WV** (R)	WV** (Y)	WV** (B)	kVA (R)	kVA (Y)	kVA (B)	Volts (R)	Volts (Y)	Volts (B)	THD (%)
08/09/05 18:00:00	6.30	6.51	0.97	1.06	5.35	9.01	6.45	10.81	2.16	1.52	2.62	2.24	1.57	2.71	248.30	243.60	248.00	1.62 48
08/09/05 18:30:00	5.92	6.03	0.98	1.18	4.58	7.74	6.45	10.31	1.88	1.54	2.50	1.91	1.57	2.55	247.40	243.10	247.10	1.70 50
08/09/05 19:00:00	6.23	6.32	0.99	1.05	6.18	7.73	6.44	11.54	1.88	1.54	2.81	1.91	1.56	2.85	246.90	242.70	246.60	1.70 50
08/09/05 19:30:00	5.80	5.91	0.98	1.14	4.58	7.66	6.39	10.25	1.84	1.51	2.46	1.87	1.54	2.50	244.40	240.30	244.20	1.78 50
08/09/05 20:00:00	5.81	5.92	0.98	1.13	4.47	7.69	6.39	10.17	1.85	1.51	2.45	1.89	1.54	2.49	245.30	241.30	245.10	1.78 50
08/09/05 20:30:00	7.04	7.17	0.98	1.33	8.71	12.63	6.42	10.18	3.06	1.53	2.46	3.11	1.58	2.50	248.20	242.30	246.00	1.71 50
08/09/05 21:00:00	5.94	6.05	0.98	1.15	4.73	7.75	6.44	10.42	1.88	1.53	2.53	1.92	1.56	2.57	247.20	242.70	247.00	1.80 48
08/09/05 21:30:00	6.19	6.28	0.99	1.08	5.90	7.73	6.46	11.35	1.88	1.55	2.76	1.91	1.57	2.80	246.90	242.90	246.80	1.81 50
08/09/05 22:00:00	5.80	5.91	0.98	1.14	4.48	7.67	6.41	10.19	1.84	1.51	2.45	1.88	1.54	2.49	244.80	240.80	244.60	1.78 50
08/09/05 22:30:00	5.80	5.91	0.98	1.14	4.48	7.70	6.39	10.16	1.85	1.51	2.44	1.89	1.54	2.49	245.20	240.60	244.90	1.77 48
08/09/05 23:00:00	5.87	5.98	0.98	1.15	4.49	7.73	6.43	10.22	1.87	1.53	2.47	1.90	1.56	2.52	246.40	242.00	246.30	1.80 48
08/09/05 23:30:00	5.93	6.03	0.98	1.11	5.00	7.69	6.41	10.80	1.85	1.52	2.55	1.89	1.54	2.60	245.30	240.70	245.10	1.81 48

Operational Specifications

ELECTRICAL

Current Input	Clip-On or Flexeclamp CT's, 400mV FS output
Current Range	10A - 3000A IP
Voltage Direct 3Ø	450v L-L 50Hz via voltage Clips
Voltage Direct 1Ø	240v 50Hz via 1Ø socket outlet
Voltage Nominal	Adjustable 1Ø 220v +/- 10%, 3Ø 400v +/-10%
Battery	Rechargeable Cyclon 4v/3AH battery
Charge sources	Integral Charger via voltage connections,
Battery life	Approx 2 weeks recording (current only)
Insulation inc CT's	2.5kV for 1min.
Connection Leads	CT to Plug 1.5m.

ACCURACY

True RMS measurement of voltage & current

Clip-On CT's	+/-1% percentage of reading @25°C for PF -0.7 -1 & 10%-100%IP
Flexeclamp CT's	+/-2% of reading within conditions as above

CONSTRUCTION

Material	ABS case with insulated magnetic mounting panel
Climatic	Oper. Temp -10°C-+50°C, 95% RH, IP30 protection

STANDARDS

Calibration & Safety	IEC 1036 and IEC 61010-1
EMC	EN55022:1994, EN50082 Pt.1 1992

Full instrument Kit comprising:

- e-Tracker with integral EV-TRAC 1Ø-3Ø Voltage reference converter
- Set of 3 F1030 Flexeclamps CT's 1000A/30cm,
- Set of 3 Fused Volt Clips
- Single phase leads, EV-TRAC phase identity probe
- ProTracker Lite report and graphical analysis software
- RS232 comms port and all leads

Kit Weight = 3kg



Options

- Pulse interface, battery operated unit.
- Optical meter reader (Magpeye).
- 0-5A meter CT set 400v or 110v.
- CT sets as table below.

MEMORY SPAN

TRACKER has capacity to store 16000 lines of all parameters, either on one file or as an aggregate total on up to five separate recording files. Recording will stop when the memory is full.

Integration Period Mins.	60	30	20	15	10	5	2	1	0.1(6s)	HI (1 sec)	
Memory Duration Days	666	333	222	166	111	55	22	11	25 hrs	9 hours*	(*V1, V2, V3, I1, I2, I3 only)

BOBBIN, SPRING LOADED CLIP-ON & FLEXECLAMP CT's for use with TRACKER



Types	TB5/50	TB100	TSB50	TC16	TC32	TC48	TC60	TF30-TF100
mm ID/OD	-10/31-	15/36	10/25	16/54	32/72	48/84	60/90	75 ID - 200 ID
IP Amps	5/50	100	50	200	600	1000	1600	500-3kA

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