



Pert EMD — User Manual

Monitor your solar and grid energy in real time

Manual version 1.1 · for app version 2.0.0 · Pert-EMD-User-Manual.pdf

Pert EMD connects to your PERT-EMD smart energy meters and shows exactly how your home or business uses, generates, imports and exports electricity — live, and over time.

You will need: a PERT-EMD meter installed by your electrician, a 2.4 GHz Wi-Fi network, and a Pert account. The app is available for Android and iPhone.

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1. Getting started

Signing in

1. Open **Pert EMD**.
2. Enter the **email address** and **password** for your Pert account.
3. Tap **Sign in**. Your meters load automatically.

Use the eye icon in the password box to check what you typed. You stay signed in between sessions — you only need to sign in again if you sign out.

Forgot your password?

1. Tap **Forgot password** on the sign-in screen.
2. Enter your account email. We send a **reset code** to that address.
3. Enter the code and choose a new password.

For your security the code expires, and after **5 incorrect attempts** you must request a new one.

Which meters you see

You only see meters that have been shared with your account. If a meter is missing, ask whoever manages it to share it with your email (see *Share Device* in Settings).

2. Dashboard — your energy right now

The Dashboard is the home screen. At the top you'll see your **meter name** and a status line: **Live** with the last sync time, or **Offline** if the meter has stopped reporting.

Tap the device chip to switch between meters if you have more than one.

The energy flow

- **HOME IS USING** — the power your property is consuming right now, in kW.
- **Solar** — what your panels are generating.
- **Grid** — an arrow shows the direction: ↓ **importing** from the grid, or ↑ **exporting** back to it.
- **Load** — total consumption (calculated automatically).

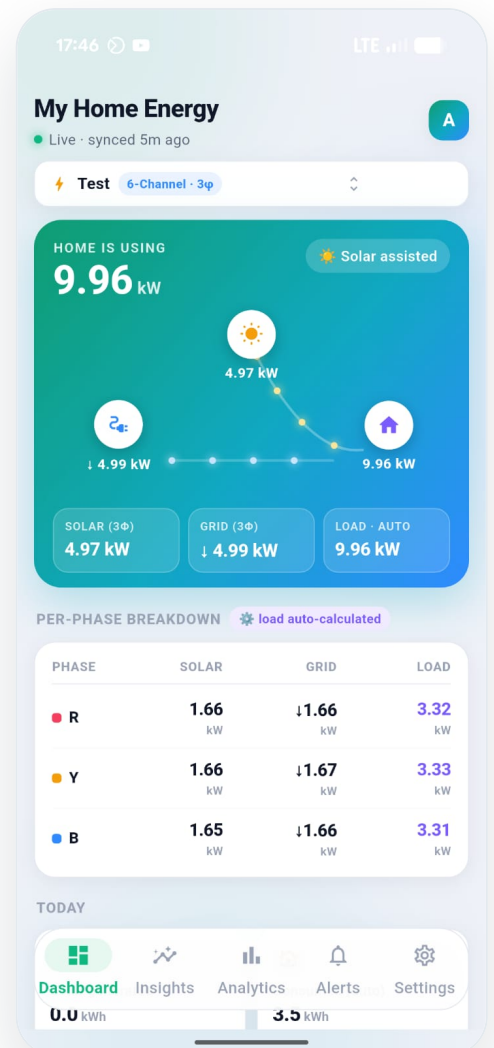
Per-phase breakdown

For three-phase meters, a table shows solar, grid and load for each phase (**R**, **Y**, **B**) so you can spot an unbalanced load.

Today

Cards show today's totals — **Solar generated**, **Consumed**, **Grid import** and **Grid export** — each with its value in kWh and in your currency, based on the tariff you set.

Power quality shows live voltage, frequency, power factor and temperature.



Dashboard — live flow and today's totals

Pull down on the Dashboard to refresh immediately. If the meter goes offline, the app dims the figures and tells you the time they were last updated, so you never mistake old values for live ones.

3. Insights — savings and bill forecast

Insights turns your data into plain-language advice.

- **Savings & Impact** — money saved by your solar today, this month and this year, plus the CO₂ avoided.
- **Bill Forecast** — your projected bill for the current billing cycle, based on usage so far.
- **High Grid Usage** — flags when you're drawing more from the grid than usual.
- **Low Solar Efficiency** — warns if your panels are producing below what's expected for your plant size (often a sign they need cleaning).
- **Daily Snapshot** — a simple import / export / solar / consumption summary.

Tap **Share report** to send a summary to someone else.



Insights — savings, forecast and tips

4. Analytics — usage over time

The Analytics tab ("Electric statistics") shows history as a bar chart with a table below.

Choose what to view

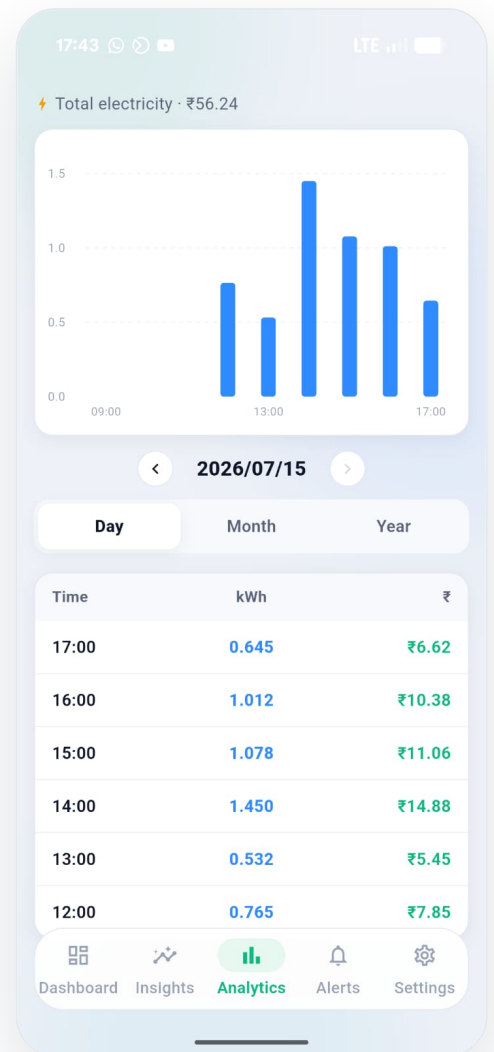
Four buttons across the top:

Consumption	Total electricity your property used
Solar	Energy your panels generated
Import	Energy drawn from the grid
Export	Energy sent back to the grid

Choose the period

Switch between **Day**, **Month** and **Year**. Use the arrows either side of the date to step backwards and forwards, or tap the date itself to jump to a specific one.

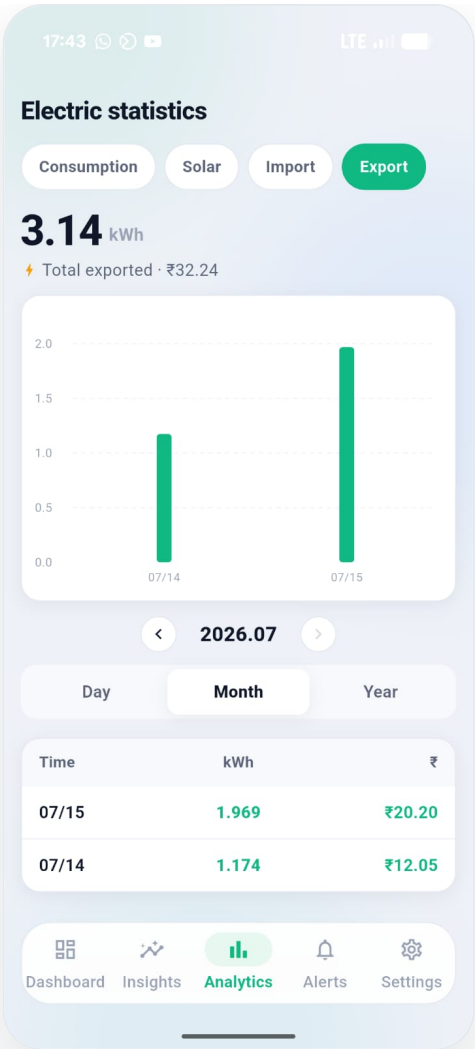
The figure at the top is the total for the selected period, with its cost or earnings beside it. The table lists each hour, day or month with kWh and value.



Day view — hour by hour

Here the **Export** tab is selected with the **Month** period, showing how much energy was sent back to the grid on each day of the month and what it earned.

Any combination works — for example *Solar + Year* to compare your generation month by month across the year.



Export — monthly view

5. Alerts

Pert EMD watches your meters continuously and tells you when something needs attention. Alerts appear in the **Alerts** tab and, if you allow notifications, arrive on your phone.

5.1 The Alerts tab

Alerts are listed newest first and grouped by day. Each one gives a plain-language explanation, the time it happened, and the meter it came from — useful when you have several meters.

- **Clear all** — empties the list.
- **Filter** (icon, top right) — narrow the list down.

5.2 Turning alerts on

Go to **Settings** → **tap your meter** → **Alerts**. Each alert has a switch, and tapping it opens its settings. They are grouped into:

- **Essential** — the six most people want on.
- **Advanced** — six more for detailed monitoring.

Solar alerts only appear if your meter measures solar.

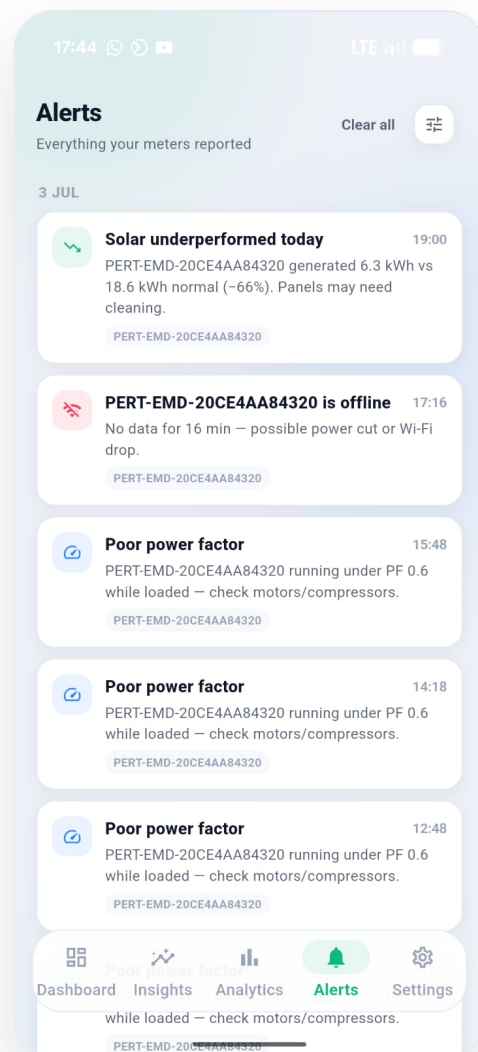
5.3 Quiet hours

Quiet hours stop alerts disturbing you overnight. You set **one window per meter** and it applies to every alert for that meter — the default is **22:00 to 06:00**. Alerts are still recorded in the Alerts tab; they just don't notify during the window.

Example: with quiet hours 22:00–06:00, a voltage dip at 02:00 is recorded and waiting for you in the morning, but your phone stays silent.

5.4 Repeat limit

Each alert waits **60 minutes** before it can fire again, so one ongoing problem doesn't flood you with notifications.



Alerts — everything your meters reported

5.5 Essential alerts

Device Offline

Your meter has stopped reporting — usually a power cut or Wi-Fi drop.

No data for	15 min (range 5–1440)
Notify when back online	On — also tells you when it recovers

Example: if your Wi-Fi blips briefly, raise this to 30 minutes to avoid false alarms. You'll get "no data for 30 min", then a second message when the meter returns.

Daily Spend Limit

Today's electricity cost has crossed the budget you set.

Daily budget	₹200 (range ₹1–1,00,000)
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Example: at a tariff of ₹10/kWh, a ₹150 budget alerts you once you pass roughly 15 kWh in a day — early enough to postpone the washing machine.

Bill Forecast

Your projected bill for this billing cycle has crossed a threshold.

Monthly threshold	₹3,000 (range ₹1–10,00,000)
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Example: set ₹2,500 and you'll hear mid-month if you're on track to exceed it, with time left to cut back rather than a surprise at the end.

Solar Inverter Down (solar meters only)

No solar generation at all during daylight — often a tripped inverter.

Daylight window	09:00 to 16:00
Confirm after	30 min (range 5–240) — avoids false alarms from passing cloud

Example: if the inverter trips at 11:00 you're told by 11:30, instead of discovering a lost day of generation that evening.

Meter Reset Detected

The meter's energy counters went backwards — a reboot, or possible tampering.

Minimum drop	0.5 kWh (range 0.1–1000)
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Example: raise it to 2 kWh if small readings jitter is triggering occasional alerts.

Phantom Load

Overnight standby usage is creeping above your normal — something has been left running.

Above normal by	50 % (range 10–500)
Ignore below	0.15 kWh (range 0–10) — stops tiny loads triggering it

Example: if your usual overnight draw is 0.4 kWh, at 50 % you're alerted when it exceeds 0.6 kWh — typically a geyser, pump or AC left on.

5.6 Advanced alerts

Voltage Alert

Supply voltage has gone too high or too low on any phase — a risk to your appliances.

High voltage limit	250 V (range 200–300)
Low voltage limit	195 V (range 100–240)

Example: for sensitive equipment, tighten the band to 240 V / 200 V so you hear about swings earlier.

Solar Underperformance (solar meters only)

Generation is well below your own recent normal — usually dirty panels or new shading.

Shortfall	30 % (range 5–95)
Baseline period	14 days (range 3–60)

Example: if your 14-day average is 18 kWh/day, a 30 % shortfall alerts you on any day below about 12.6 kWh. Cloudy spells can trigger it — widen to 40 % during monsoon.

Export Stopped (solar meters only)

Your panels are generating, but almost nothing is reaching the grid.

Export drop	95 % (range 50–100)
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Example: catches an export relay or grid-tie fault where solar still looks fine but you have silently stopped earning from export.

Meter Over-Temperature

The meter itself is running hot — check ventilation and connections.

Warning temperature	60 °C (range 40–100)
Critical temperature	75 °C (range 50–120)

Example: in a sealed outdoor enclosure, lower the warning to 50 °C for earlier notice.

Overload / Low Power Factor

Sustained heavy current, or a poor power factor — meaning you draw more current than the work being done requires.

Current threshold	25 A (range 1–200)
Power factor below	0.8 (range 0.1–1.0)

Example: on a 25 A circuit set 20 A for early warning before the breaker trips. A persistently low power factor usually points to motors or compressors needing attention.

Peak-Hour Usage

You used more than your limit during expensive evening peak hours.

Peak window	18:00 to 22:00
Usage limit	5 kWh (range 0.5–100)

Example: on a time-of-day tariff, set 3 kWh to nudge heavy jobs — laundry, water heating, EV charging — outside the peak window.

6. Settings

Open **Settings** from the bottom bar. It has four areas: **Devices**, **Device setup**, **Preferences** and **Support**.

6.1 Devices

Every meter you have access to is listed with a live **ONLINE** / **OFFLINE** badge, its name, and a type badge (*Home*, *Single Phase Solar* or *6-Channel · 3φ*). Tap a meter to open its settings. **Add Device** at the top adds a new meter (section 7).

6.2 Device tariff

Your electricity rate per unit (kWh). **Every money figure in the app is calculated from this** — today's cost, earnings from export, the bill forecast and your savings.

Choose **Use account default** to apply one rate across all your meters, or set a different rate for an individual meter.

Example: with the tariff set to ₹10.26/kWh, 4.1 kWh of grid import shows as about ₹42 on the Dashboard. If your rate changes, update it here and every figure follows automatically.

6.3 Solar plant size

Your installed solar capacity in **kW**, set per meter. The app uses it to judge whether your panels are producing what they should, which drives the *Low Solar Efficiency* insight.

Example: for a 10 kW plant the app expects a certain monthly output; if actual generation falls far below, Insights flags it and suggests a panel clean or checkup.

6.4 Solar investment

What your solar system cost, plus its **install date**. The app measures your accumulated savings against this so you can follow payback progress.

Example: enter ₹6,00,000 with the install date and your savings are tracked against that figure over time.

6.5 Setup type — how the meter is wired

This tells the app what each channel is measuring, so readings are labelled correctly. There are three types:

Home Monitoring (3-channel)	Channels A/B/C measure phases R, Y and B of your incoming supply. Best for tracking overall usage, peaks and phase balance. No solar flow diagram.
Single Phase Solar (3-channel)	Channel A → grid , B → solar , C → load , all on one phase. Gives the full energy-flow view with import, export and self-use.
6-Channel · Solar + Grid (auto-detected)	A–C measure grid on R/Y/B and D–F measure solar on R/Y/B; your load is calculated automatically per phase. Detected automatically — you never pick this one.

Only the two 3-channel types can be selected. Change the setup type **only** if your wiring actually changes — choosing the wrong one makes solar, grid and load readings appear in the wrong places.

6.6 Alerts

Opens the alert settings for this meter — every alert, its thresholds and quiet hours. See **section 5** for the full list and examples.

6.7 Share Device

Give someone else access to this meter by entering their **Pert account email**. They then see the meter when they sign in on their own phone.

Example: share a meter with your electrician so they can check power quality remotely, or with a family member so everyone can follow solar production. The person needs an existing Pert account using that email address.

6.8 Preferences

Profile	Your account details.
Monthly goal	Set a target for the month and the app tracks you against it. Tap Remove goal to clear it. <i>Example:</i> set a goal to cut usage 10 % versus last month, then follow progress as the month goes on.
Billing cycle	The day of the month your bill starts, so forecasts line up with your real bill rather than the calendar month. <i>Example:</i> if your provider bills the 5th to the 4th, set day 5 — the Bill Forecast then covers exactly that period.

6.9 Support

Help Guide	Setup and usage instructions.
About	App version information — useful when contacting support.
Sign Out	Signs this account out on this phone. Your meters and settings stay safe on the server and return when you sign back in.

7. Adding a new meter

New meters are set up over **Bluetooth**, then connected to your Wi-Fi.

1. Go to **Settings** → **Add Device**.
2. Allow the permissions the app asks for. On Android this includes *Nearby devices* and *Location*; on iPhone, *Bluetooth*. (Location is required by Android purely to find nearby Bluetooth devices — the app never collects your location.)
3. On the meter, **hold the setup button until the LED blinks red**.
4. Keep the phone close. The meter appears under **Meters found** — tap it.
5. The meter scans for Wi-Fi networks and lists them. Choose your **2.4 GHz** network (tap *Join another network...* to type a hidden name).
6. Enter the Wi-Fi password and tap **Connect meter**.
7. When you see **Device added**, the meter is connecting. The LED turns **green** once it is online, and data appears on the Dashboard shortly after.

Your Wi-Fi password goes straight from your phone to the meter over Bluetooth. It is never stored on our servers.

PERT-EMD meters connect to **2.4 GHz** Wi-Fi only. If your router broadcasts 2.4 GHz and 5 GHz under the same name, you may need to temporarily separate them during setup.

8. When your meter goes offline

Meters lose their internet connection from time to time — a router reboot, a broadband fault, a power cut. This section explains exactly what happens to your data, and what you need to do about it (almost always: nothing).

8.1 How you'll know

The Dashboard status line changes from **Live** to **Offline · last sync <time>**, the live figures are dimmed, and a banner tells you the values on screen are the last known ones and when they were recorded. In Settings, the meter's badge switches from ONLINE to OFFLINE. If you have the **Device Offline** alert enabled (section 5), you also get a notification.

The dimming is deliberate: it means you can never mistake an old reading for a live one.

8.2 What happens to your data

Two different things happen, and the difference matters:

Live readings (updated every 5 minutes)	Not recorded for the outage. The moment-by-moment power figures — the energy-flow diagram, per-phase breakdown and power quality — only exist while the meter is connected. There will be a gap in that fine detail for the period it was offline.
Hourly energy totals (your actual consumption)	Kept safely on the meter and uploaded later. Once an hour the meter writes its energy readings to its own internal memory. It keeps doing this the whole time it is offline, and sends everything it missed as soon as it reconnects.

In other words: **you don't lose your consumption history, your totals or your bill accuracy** — only the live 5-minute detail for the time it was disconnected.

8.3 When it reconnects

Everything happens automatically — there is no button to press:

1. The status returns to **Live** and the Dashboard starts updating again.
2. The meter uploads the hours it stored while offline. A short outage fills in almost immediately; a long one is sent in batches and may take a few minutes to finish.

3. **Analytics** fills in the missing hours and days, and your **daily/monthly totals, savings and bill forecast correct themselves** to include the recovered energy.

Example: a meter that lost its connection overnight and came back the next morning uploaded roughly a full day of missed hourly records within a few minutes of reconnecting — after which its history and monthly totals were complete again.

8.4 How long a meter can stay offline

The meter stores up to **60 days** of hourly records. Reconnect within that window and nothing is lost. If it stays offline longer than 60 days, the oldest hours are gradually overwritten by newer ones, so the very earliest part of a very long outage may be missing.

8.5 Power cuts are different from internet outages

Internet or Wi-Fi outage (meter still powered)	The meter keeps measuring and storing normally. Everything is recovered on reconnect.
Power cut (meter has no power)	The meter cannot measure while it is off — but during a power cut there is no supply to measure either, so there is normally nothing missing. Its stored history and cumulative totals are retained and it resumes automatically when power returns.

8.6 If your phone has no internet

The app reads your data from the cloud, so it needs a connection to show new figures. This is separate from the meter being offline — your meter carries on recording regardless. Reconnect your phone and pull down on the Dashboard to refresh.

8.7 When to actually worry

An occasional brief outage is normal. Investigate if a meter stays offline for more than a few hours: check that it has power (its LED should be lit), that your Wi-Fi is working, and that the router hasn't changed name or password. If the Wi-Fi details have changed, set the meter up again using **Add Device** (section 7).

9. Troubleshooting

Meter shows Offline	Check the meter has power and your Wi-Fi is working. It reconnects automatically, and your hourly energy totals are stored on the meter meanwhile and uploaded when it returns — see section 8 .
No meters found during setup	Make sure the LED is blinking red and the phone is close. Check Bluetooth is on — and on Android, that Location is on too. Tap Rescan ; the app retries several times before giving up.
Wi-Fi list is empty	Move the meter nearer your router and rescan. Only 2.4 GHz networks appear.
Meter rejects the Wi-Fi password	Re-enter it carefully (it is case sensitive) and confirm the network is 2.4 GHz.
Costs look wrong	Check Device tariff in Settings — every money figure is calculated from it.
Solar shows 0 while panels are producing	Solar figures come from the meter's solar channels. If live power shows but the daily total stays at zero, ask your installer to verify the solar CT wiring.
Not receiving notifications	Allow notifications for Pert EMD in your phone settings, and check the alerts are enabled for that meter under Settings → device → Alerts .

10. Support

We're happy to help.

- Email: support@pert.me
- Support phone: +91 7075 01 02 03
- Web: pert.me
- Privacy policy: pert.me/emd-privacy-policy.html
- Delete your account: pert.me/emd-account-deletion.html

When contacting us, please include your **meter ID** (shown on the device card in Settings) — it helps us find your system quickly.

Pert EMD User Manual · Pert Infoconsulting Pvt Ltd, Hyderabad · Screens shown are examples and may differ slightly with your meter type and app version.