RIPON EV

Installer Quick Guide.

Everything you need on site to fit, wire, commission and hand over a RiponEV charger — in the order you'll do it.



MODELS COVERED

RIPON1S-3210A · RIPON1S-3210LCD-A
RIPON1L-3210A · RIPON1L-3210LCD-A
RIPON3S-3210A · RIPON3S-3210LCD-A
RIPON3L-3210A · RIPON3L-3210LCD-A

For qualified electricians only.
Install to BS 7671 (incl. Section 722). Leave the full manual with the homeowner.

Technical support
0203 978 4568

01 Know your unit

Every unit is a wall-mounted Type 2 charger, 6–32A adjustable, with Type A 30mA + 6mA DC leakage detection and PEN fault protection built in.

Reading the model code

RIPON1S-3210LCD-A

- **1 or 3 = phases** — 1 = 7.4kW · 3 = 22kW
- **S or L = outlet** — S = socket · L = tethered lead
- **LCD = display** — No LCD = LED ring only



S – Socket (untethered)
Customer uses their own Type 2 cable. Neat, nothing hanging off the wall.



L – Tethered lead
Cable fixed to the unit. Leave room beside it for the cable holder.

Key specs

Spec	Single phase (1S / 1L)	Three phase (3S / 3L)
Supply	1P+N+PE, 220–240V 50/60Hz	3P+N+PE, 380–415V 50/60Hz
Max output	7.4kW (32A)	22kW (32A per phase)
Shell entry hole (bottom)	Φ24mm	Φ28mm
Size (H × W × D)	330 × 200 × 122mm	
Ingress protection	Enclosure IP65 · connector/socket IP54	
Built-in protection	Type A 30mA + 6mA DC, PEN fault, earth check, over/under voltage, over current, over temperature	
Comms	Wi-Fi (Tuya Smart app) · Ethernet for OCPP 1.6J · 4G on SIM models	
Operating range	−25°C to 50°C · 3–95% humidity · below 2,000m	
Certification	CE, UKCA · EN 61851, EN 62196	

Check the box, the site and the customer's Wi-Fi before drilling anything — most callbacks start here.

In the box

Charger + fixing bracket (fitted together)	Installation template	4 × plugs Φ6×30 4 × screws ST4.2×32	Elbow wrench
Cable gland	Sealing rubber (OCPP / DLB)	CT wire terminal (DLB models)	Wiring cap

Not in the box — order separately if needed: 400A CT clamp (group mode), group-management connectors, shielded twisted pair.

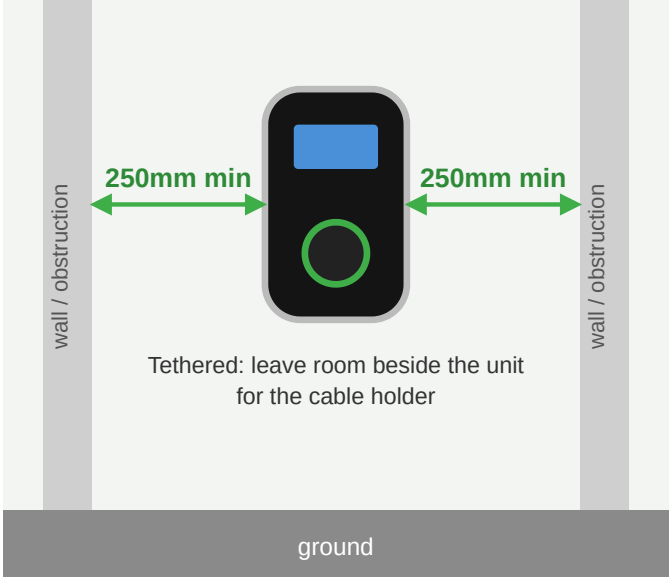
Site checks

- [ ] Model on the rating label matches the order; no transit damage
- [ ] Supply matches the unit (230V single / 400V three phase)
- [ ] Solid wall that takes the weight; fixings suit it
- [ ] Out of vehicle impact zones and walkways — no trip hazard from the lead
- [ ] Sheltered from direct rain where possible; never dusty, flammable or explosive atmospheres
- [ ] **Wi-Fi:** phone held at the charger position shows 2+ bars. If not, quote a booster or repeater now

Tools

Tape, pencil, drill, Phillips + flat screwdrivers, hole saws **Φ18 / Φ24 / Φ28mm**, gloves, multimeter.

Clearances

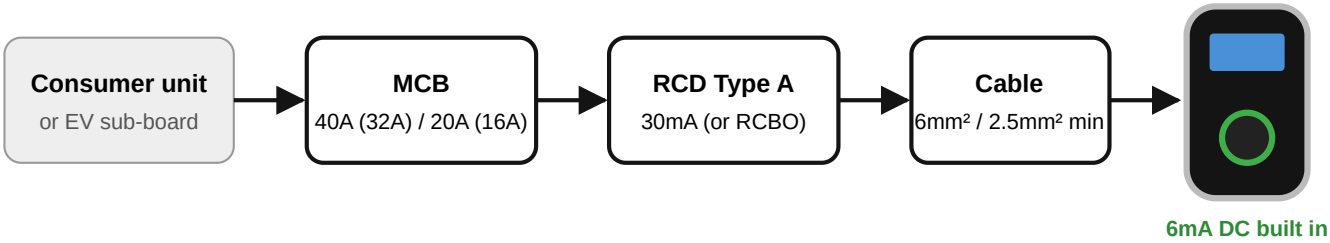


Keep at least 250mm clear either side for fitting and future maintenance.

03 Protection & DIP switch

SET BEFORE YOU POWER UP

Give the charger its own MCB and Type A RCD (or RCBO), then set the DIP switch to match the breaker and cable — with the power off.



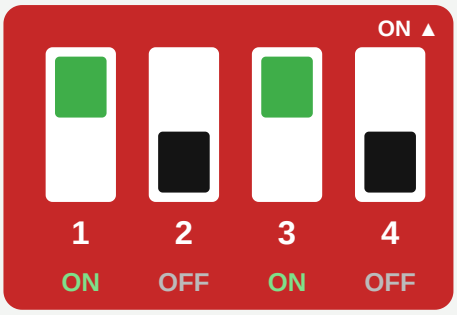
Type A is enough — the charger has 6mA DC detection on board, so a Type B RCD is not needed.

DIP switch settings POWER OFF

Units leave the factory already set as below — but always check before you power up. The 4-way DIP switch is on the power board inside the front shell.

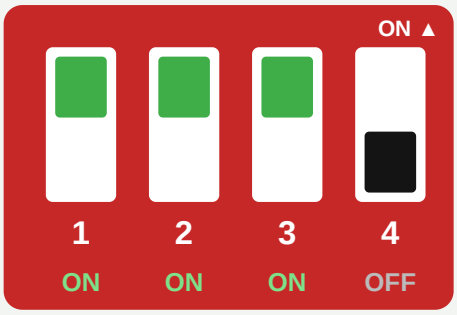
Untethered (socket) — 1S / 3S

1 ON · 2 OFF · 3 ON · 4 OFF



Tethered (lead) — 1L / 3L

1 ON · 2 ON · 3 ON · 4 OFF



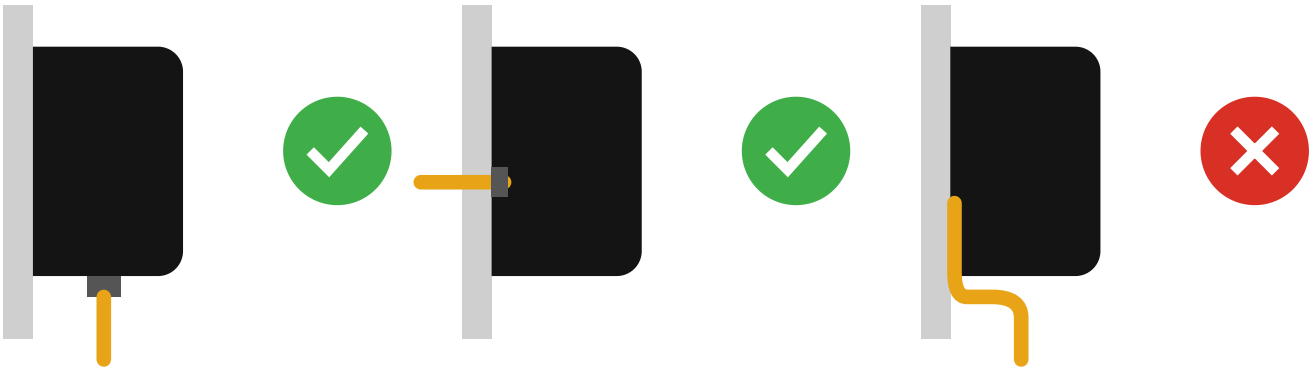
Switch	Untethered	Tethered	What it sets
1	ON	ON	Output current: ON = 32A (40A breaker, 6mm² min)
2	**OFF**	**ON**	Outlet type — the only difference between the two
3	ON	ON	Earth check — leave ON
4	OFF	OFF	Leave OFF

- Confirm in the app: Settings → **Dip switch status** should read the same as the board.
- 16A circuits only (20A breaker, 2.5mm² min): switch 1 OFF. Everything else stays as above.
- The app's current limit (6–32A) can't go above the DIP setting. App earth monitoring (GNDON) needs switch 3 ON.

Cable sizes are the manufacturer's minimum only. Size the circuit for run length, installation method, grouping and volt drop to BS 7671. A DIP setting above the cable or breaker rating can overheat the supply cable.

04 Mounting & cable entry

Bottom entry with the supplied gland is the best option; rear entry is fine with the sealing rubber; looping a bottom cable round the back is prohibited.



Mode 1 – Bottom
Best choice · gland · Φ24 / Φ28mm

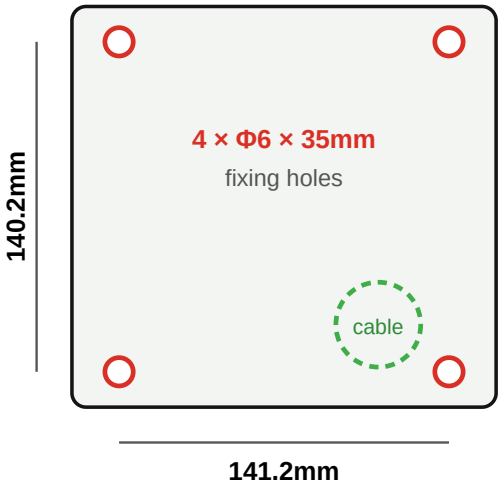
Mode 2 – Rear
Sealing rubber · Φ18mm shell hole

Mode 3 – Not allowed
Bottom cable run up behind the unit

Step by step

1. Remove the **4 bracket screws (a)** and separate the bracket. Keep the screws.
2. Remove the **6 shell screws (b)**. Lift the front off carefully — it's tethered to the board by a cable.
3. If the terminal block has dropped off the DIN rail in transit, clip it back on.
4. Hold the template **level**; mark the 4 bracket holes (plus the cable hole for Mode 2).
5. Drill **Φ6mm × 35mm**. Plug, then fix the bracket with ST4.2 × 32 screws — fully tight or the shell won't seat.
6. Mode 2: drill the wall cable hole (max Φ24mm) and smooth the edge.
7. Drill the shell entry hole to the exact size. Deburr, keep clear of internal wiring, clear all debris.
8. **Mode 1:** fit gland body + gasket, lock with the nut, feed cable through the pressing head, trim, tighten. Keep the seal ring in.
9. **Mode 2:** poke the centre of the sealing rubber, push it in at an angle so the groove seats — one conductor per hole. Fix the rear shell to the bracket and seal the back opening.

Bracket template

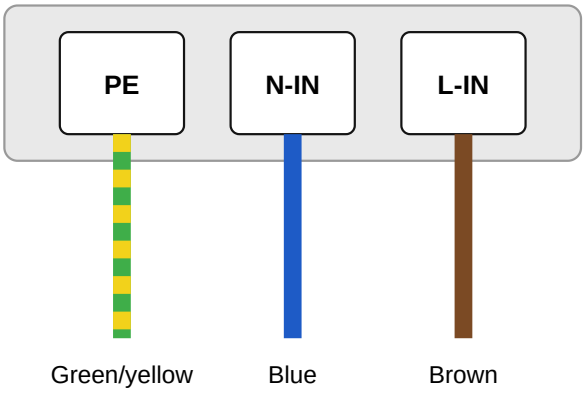


Mode 2 cable hole centre is 24.5mm in from the right-hand bottom fixing.

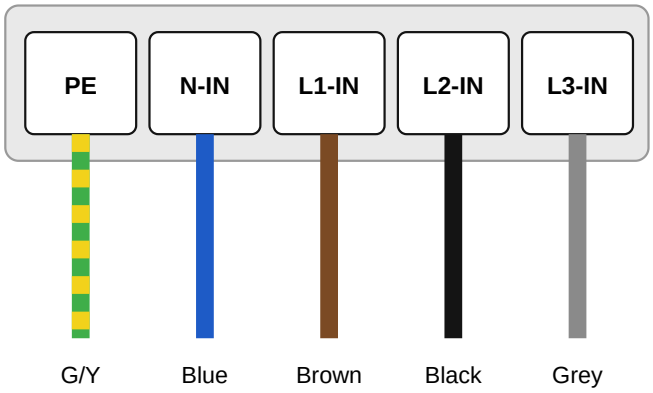
IP rating depends on you: supplied gland or sealing rubber only, deburred holes, and the front seal strip seated in its groove.

Only the supply side is yours to terminate — the output to the socket or lead is factory-wired, but check every terminal is tight anyway.

Single phase (1S / 1L)



Three phase (3S / 3L)



Supply core	Single phase terminal	Three phase terminal
Brown	L-IN	L1-IN
Black	—	L2-IN
Grey	—	L3-IN
Blue	N-IN	N-IN
Green/yellow	PE	PE

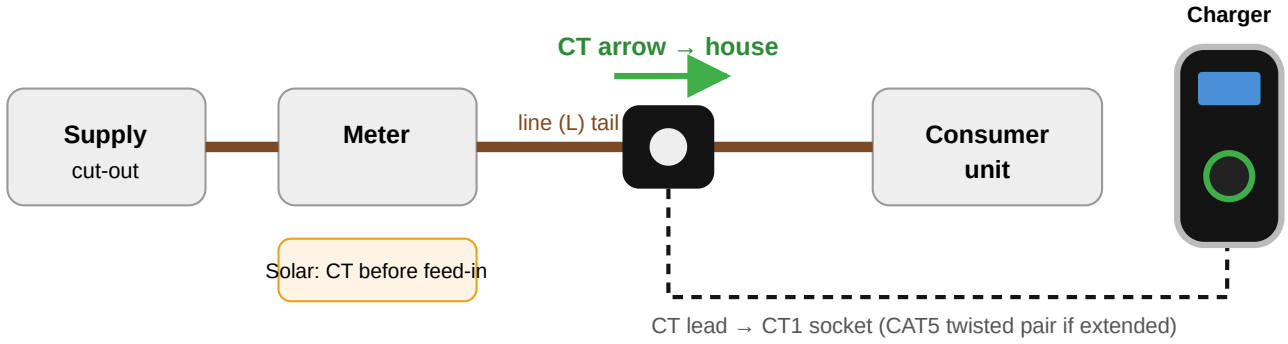
Closing up

1. Strip and dress conductors neatly — no stray strands, no strain on terminals.
2. Check **all** terminations, factory ones included, for anything loosened in transit. That's on the installer.
3. Clear debris, then check the seal strip is seated in the front-shell groove.
4. Refit the front shell with its original 6 screws (elbow wrench if no driver).
5. Screw the unit back onto the bracket with the original 4 screws.
6. Run a finger round the shell join. **No gap** — a gap means the IP rating is gone.

06 Load balancing & OCPP

CT, network and group cables all enter through the Φ18mm base hole (35mm up, 100mm in) with the sealing rubber — one cable per hole.

Dynamic load balancing — where the CT goes



1. Clamp around the **line** tail only — one conductor per CT. Three phase: CT1 on L1, CT2 on L2, CT3 on L3.
2. Arrow on the CT pointing from supply towards the house.
3. Crimp the CT leads to the CT terminal and plug into the CT socket.
4. In the app set **DLB** to the main fuse rating (60 / 80 / 100). Factory default is 60A.

Solar ECO mode: starts when export exceeds 8A, then follows export minus 2A. Without solar it only gives 6A.

CAT5 cores per CT wire	Max extension
2	100m
3	500m
4	750m

Extend CT leads with CAT5 twisted pair only, joined by crimp, screw terminal or solder. **Never** mains cable, bell wire, speaker cable or lever clamps.

OCPP back office (Ethernet / 4G)

1. Standby (blue): hold the button **10s** until two beeps. Power off.
2. Laptop → board Ethernet socket with a straight RJ45 lead. Power on; wait for **yellow**.
3. Laptop static IP `192.168.1.26`, mask `255.255.255.0`, gateway `192.168.1.1`. No DNS.
4. Browse to `192.168.1.30`. Enter ChargeID (≤32 chars), Server URL (≤100) and APN for 4G. Submit.
5. Power off, swap the laptop for the router lead (or fit the SIM), power on.

Quicker: set IP(URL) and ID in the app (Settings), then power-cycle.

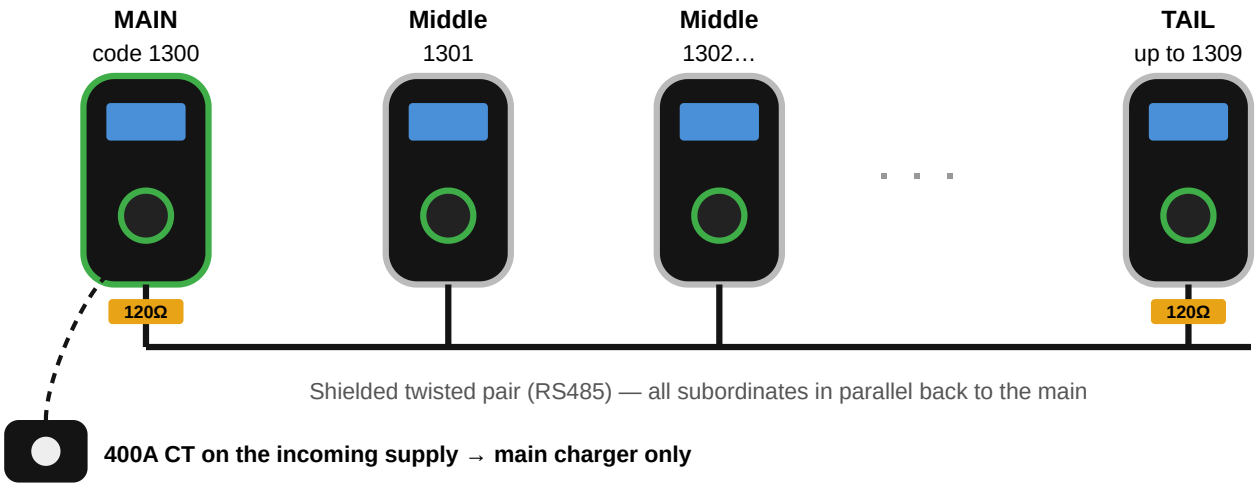
Gotchas

- URL must end in `/` — e.g. `wss://server.com/`
- Never fit a SIM and network cable together — it beeps and fails
- Ethernet port is for OCPP only, not the app

07 Group management

UP TO 10 CHARGERS ON ONE SUPPLY

One main charger reads a 400A CT and shares the supply across up to nine subordinates, linked on RS485 — terminating resistors on the first and last units only.



Wiring the group

1. Clip the terminal block onto the rail; plug the tie line into the RS485 socket.
2. **Main + tail:** crimp the 120Ω resistor and tie line into the block marked "First / Last".
3. **Middle units:** tie line only — never fit a resistor.
4. Drill the Φ18mm base hole; fit the sealing rubber, one cable per hole, unused holes left intact.
5. Main: CT lead into CT socket and twisted pair into the block. Subordinates: twisted pair only.
6. Press the terminal button, insert the wire, release. **Continuity-test with a multimeter.**

App codes (Charging pile LAN address)

Unit	Code
Main charger (with CT)	**1300**
Subordinates	**1301 – 1309**
Single home charger (not grouped)	**1555**

Solar ECO mode can't be used with group management. Any other code is invalid.

08 Commission & hand over

POWER UP, PAIR, TEST

> **Power up, test and certify, pair the app on the customer's phone, run the app RCD test — and leave nothing half-configured.**

What the lights mean



Self-check
Red/blue/green cycling



Standby
Blue solid



Car connected
Blue flashing



Charging
Green solid



Stopped remotely
Green flashing (app/OCPP)



Config mode
Yellow solid



Over temperature
Red solid



Fault / E-stop
Red flashing (see p.10)

1 · Power up & test

1. Confirm earthed and shell fully closed.
2. Switch on: lights cycle, then **solid blue**.
3. Test and certify to BS 7671; complete the EIC.

2 · Pair the app (Tuya Smart)

1. Customer installs **Tuya Smart** and registers (phone or email).
2. Car **unplugged**. Hold the button 10s — two beeps.
3. Phone beside the charger, Wi-Fi + Bluetooth + location on → **Add Device**.
4. Enter home Wi-Fi. Won't join? Use the **2.4GHz** network.
5. First screen shows the off-peak schedule — tap **Accept**.

3 · App settings checklist

- [ ] **Current setting** 6–32A, at or below DIP. Enter it once or the value is invalid
- [ ] **DLB** = main fuse rating (if CT fitted)
- [ ] **RCD Test** → wait for "Pass" → tap Reset
- [ ] **RFID** card numbers bound (RFID models)
- [ ] **LAN address** 1555 for a single home unit

Button shortcuts (standby)

5 presses	Plug-and-charge on (starts when car connects)
5 presses in P&C	Toggles randomised delay (≤600s) — **leave on**
1 press charging	Stops and releases the connector
Hold 10s	Wi-Fi reset / config mode

4 · Handover

- Show start/stop, schedule and charging record (button-started sessions don't log).
- Schedules need hours set, or they default to 1 minute.
- Share Device for household members. Leave the full manual; advise annual inspection.

> **For any fault: unplug the car and power-cycle first. If it comes back, work through the first check, then call RiponEV technical on 0203 978 4568.**

Key: ● = fast flash ▬ = slow flash. The app also shows the fault name on its home screen.

Red pattern	Fault	First check
●●●●●●● ▬ 7 + 1	**Earth fault**	Earth continuity, DIP switch 3, supply earthing arrangement
●●● ▬ 3 + 1	**Leakage current**	Car-side fault or cable damage, then the upstream RCD
●● ▬ 2 + 1	**Over current**	App current setting vs DIP vs breaker
●●● ▬ ▬ 3 + 2	**Under voltage**	Volt drop, cable size, loose terminal
●●●● ▬ 4 + 1	**Over voltage**	Supply voltage, neutral integrity
● ▬ ▬ 1 + 2	**CP fault**	Connector seating, car communication, try another car
●●●●●● ▬ ▬ 6 + 2	**Welded relay**	Replace the unit — don't keep resetting
●●●●●● ▬ ▬ ▬ 6 + 3	**Electronic lock**	Plug fully home, obstruction in the socket lock
●●● ▬ ▬ ▬ 3 + 3	**General fault**	Power-cycle; read the fault name in the app
● ▬ 1 + 1	**Emergency stop**	Released from the button — press to clear / restart
▬▬▬ solid	**Over temperature**	Direct sun, enclosure ventilation, loose terminal heating up

Common callbacks

Symptom	Usual cause
Won't pair to app	Weak Wi-Fi (needs 2+ bars at the unit), 5GHz network, or car left plugged in
"Meter communication fault" in app	CT plug not seated, wrong socket, or poor extension joint
Beeping on OCPP unit	SIM and Ethernet both fitted
Only charging at 6A	ECO mode on without solar, or current setting never entered
Won't start charging	Manual mode off and not enabled from app/RFID, or waiting on schedule / randomised delay
RFID won't restart after a stop	Normal — unplug and reconnect the car, then tap again

The factory manual is generic; these are the UK points that decide whether an install passes.

Requirement	What it means on site
BS 7671 Section 722	Applies to every install. Built-in PEN fault protection means an earth electrode isn't normally needed on TN-C-S — confirm in your design.
RCD type	Type A 30mA is acceptable thanks to the built-in 6mA DC detection. Type B not required.
Smart Charge Points Regulations 2021	Keep the default off-peak schedule (no charging 8–11am and 4–10pm weekdays unless the user overrides) and leave the randomised delay on.
DNO	Notify for every install. A 22kW three-phase unit will usually need approval before connection.
Part P	Notify through your scheme (NAPIT, NICEIC etc.) and issue the EIC.
Grants (OZEV / WCS)	Photograph the unit, rating label, DIP setting, CT and protective devices for the claim pack.
Maintenance	No need to open the unit for routine care. Wipe with a damp cloth; no pressure washers. Annual electrical inspection with results recorded.

On-site sign-off

- [ ] DIP switch matches breaker and cable
- [ ] All terminations tight, factory ones included
- [ ] Gland / sealing rubber fitted, shell closed with no gap
- [ ] Tests complete, EIC issued
- [ ] Photos taken: unit, label, DIP, CT
- [ ] App paired, current and DLB set
- [ ] App RCD test passed and reset
- [ ] Off-peak default and randomised delay on
- [ ] Customer shown the app; full manual left on site
- [ ] Warranty registered (scan the QR below)

RIPON EV

TECHNICAL SUPPORT

0203 978 4568

Ripon EV, trading as Ripon Group Ltd
Mabgate Business Centre, 93–99 Mabgate, Leeds LS9 7DR

3-year warranty
Register the charger at handover — scan, or visit **riponev.co.uk/warranty-registration**

This quick guide supports — and does not replace — the full product manual or BS 7671. Installation must be carried out by a qualified electrician. Dispose of old units through a WEEE-compliant collection point.