

CALLSAVE

EV CHARGING BUYING & INSTALLATION CHECKLIST

A practical guide to choosing, sizing and installing 7 kW, 11 kW and 22 kW AC EV chargers — for homes, businesses, fleets and customer-facing sites.

THE FIRST QUESTION: WHAT DOES THE CUSTOMER ACTUALLY NEED?

EV charger selection should start with the vehicle, parking duration, electrical supply, daily driving distance and future demand — not the charger price. A 7 kW charger can be perfect for overnight home charging, while 22 kW can be valuable for businesses where vehicles sit for several hours and the electrical installation can support it.

1. AC charger basics

- AC charging: the charger supplies AC to the vehicle; the vehicle's onboard charger converts it to DC for the battery.
- DC fast charging: conversion is handled by the charging equipment and can deliver much higher power; it is a different project category and requires a different electrical/infrastructure assessment.
- Type 2: the common AC connector standard to specify for modern public/commercial AC charging in South Africa; confirm the vehicle compatibility and whether the EVSE is socketed or tethered.
- Power is not the same as energy: kW is charging power; kWh is energy delivered. A 22 kW charger does not mean every EV will charge at 22 kW.
- The vehicle is the limiter: if the car's onboard AC charger accepts only 7 kW, installing a 22 kW AC EVSE will not make that car charge at 22 kW.

2. The three core Callsave AC packages

CHARGER	ELECTRICAL OUTPUT	TYPICAL USE	CALLSAVE POSITIONING
7 kW	≈230 V single-phase × 32 A	Home, overnight parking, small offices	Best value where vehicles park for many hours
11 kW	≈400 V three-phase × 16 A/phase	Homes with 3-phase, offices, hotels, workplaces	Good balance of speed and electrical demand
22 kW	≈400 V three-phase × 32 A/phase	Hotels, retail, fleets, workplaces, public/customer sites	Premium AC option where longer dwell time and capacity justify it

Important: the current and cable figures above are nominal electrical relationships for planning. Final conductor sizes, breaker ratings, voltage-drop calculations, fault protection, installation method and supply capacity must be designed and verified by a competent electrical professional for the specific site.

3. 7 kW AC CHARGER — CALLSAVE SPECIFICATION

Nominal charging power: 7.0 kW | Typical supply: 230 V single-phase | Nominal current: ≈ 32 A. This is a strong residential and small-business solution when the vehicle remains parked for several hours.

SPECIFICATION	CALLSAVE CHECK
Supply	Single-phase 230 V nominal; verify the actual site supply and allowable voltage range.
Circuit	Dedicated circuit from the distribution board is normally the preferred design approach; do not share with general socket outlets or heavy loads.
Protection	Correct overcurrent protection plus appropriate residual-current protection. The EVSE/installation design must address DC residual-current detection as required by the selected equipment and applicable standards.
Cable	Size from design current, installation method, ambient conditions, grouping, cable length and voltage drop. Do not copy a cable size from another site.
Connector	Type 2 AC connection; choose tethered or socketed based on user experience, vandalism risk and maintenance strategy.
Outdoor rating	For exposed installations, select equipment with an appropriate IP rating, UV/weather resistance and impact protection for the site.
Load management	Recommended where the property has limited spare capacity or multiple EV chargers; dynamic load management can reduce unnecessary peak demand.
Monitoring	For commercial installations: energy metering, session records, remote status and fault alerts are strongly recommended.
Payment	For public/customer charging, consider QR, RFID, card/contactless and/or app-based payment depending on the business model.

7 kW SITE CHECKLIST

- ☐ Confirm single-phase supply and main incomer capacity.
- ☐ Record existing maximum demand where available.
- ☐ Identify distance from DB to charger and cable route.
- ☐ Check whether the property has solar, battery or generator equipment.
- ☐ Check whether charger must operate during load-shedding/outages.
- ☐ Confirm earthing arrangement and existing protection.
- ☐ Confirm whether local authority/distributor approval or registration is required.
- ☐ Confirm final design and CoC responsibilities before installation.

Best fit: overnight charging, residential properties, small offices and workplaces where the vehicle typically remains parked for 6-12+ hours.

4. 11 kW AC CHARGER — CALLSAVE SPECIFICATION

Nominal charging power: 11 kW | Typical supply: 400 V three-phase | Nominal current: ≈ 16 A per phase. It can offer substantially faster AC charging than 7 kW where the vehicle, site supply and installation all support it.

SPECIFICATION	CALLSAVE CHECK
Supply	Three-phase supply required for the typical 11 kW configuration; verify phase availability and phase balance.
Circuit	Dedicated circuit with suitable protection and isolation; coordinate with the main DB and any site energy-management system.
Protection	Select residual-current protection in accordance with the charger manufacturer's requirements and the applicable installation standard; confirm whether the EVSE has 6 mA DC detection.
Cable	Calculate conductor size for design current, installation method, ambient/grouping factors, length and voltage drop. Larger cable may be appropriate for long runs or future expansion.
Load balancing	Strongly consider dynamic load management where the site has other three-phase loads or multiple chargers.
Vehicle compatibility	Confirm that the target EV actually supports 11 kW AC charging. Some EVs accept less; some can accept more.
Monitoring	For Callsave commercial sites, specify energy/session monitoring, remote diagnostics and uptime alerts.
Communications	Ethernet/Wi-Fi/4G/5G depends on the product and site. Choose a reliable communications path for remote support.

11 kW SITE CHECKLIST

- ☐ Confirm three-phase supply is available at the proposed point.
- ☐ Check phase loading and existing maximum demand.
- ☐ Confirm whether the charger needs a neutral connection according to the manufacturer.
- ☐ Check whether other chargers can be added later.
- ☐ Design for future load management rather than adding chargers blindly.
- ☐ Check DB space, isolation and protection coordination.
- ☐ Confirm cable route and voltage drop.
- ☐ Confirm communications coverage at the charger.
- ☐ Confirm vehicle mix and expected AC charging power.

Best fit: homes with three-phase supply, hotels, offices, workplaces and destinations where vehicles stay for roughly 2-8+ hours.

5. 22 kW AC CHARGER — CALLSAVE SPECIFICATION

Nominal charging power: 22 kW | Typical supply: 400 V three-phase | Nominal current: ≈ 32 A per phase. This is a high-power AC installation and should be treated as a serious electrical load, particularly at commercial sites.

SPECIFICATION	CALLSAVE CHECK
Supply	Three-phase supply with sufficient capacity; verify the site's maximum demand and spare capacity before quoting 22 kW.
Circuit	Dedicated circuit and appropriately coordinated protection/isolation. Multiple 22 kW chargers can create a substantial site load.
Protection	Residual-current protection and DC residual-current considerations must follow the selected EVSE and applicable standards. Confirm manufacturer's exact requirements.
Cable	Final cable size must be calculated. For 32 A three-phase charging, cable selection is particularly sensitive to installation method, length, grouping and voltage drop.
Load management	Recommended for commercial sites. Dynamic power sharing can keep total EV demand within a defined site limit.
Vehicle compatibility	Do not market 22 kW as "every EV charges at 22 kW." The vehicle's onboard AC charger determines its actual acceptance rate.
Public use	Consider tethered Type 2, cable management, bollards, lighting, signage, payment and accessible bay design.
Network	For Callsave network sites, specify OCPP-capable hardware where appropriate, remote monitoring, session data and firmware management.

22 kW COMMERCIAL SITE CHECKLIST

- ☐ Confirm transformer/service capacity and maximum demand.
- ☐ Determine whether one or multiple 22 kW chargers will operate simultaneously.
- ☐ Include dynamic load management in the design where appropriate.
- ☐ Check whether the site tariff includes demand-related charges.
- ☐ Check parking layout, reversing/turning space, bay protection and cable reach.
- ☐ Provide suitable signage and lighting.
- ☐ Protect equipment from vehicle impact with bollards where required.
- ☐ Confirm internet/4G/5G communications and remote monitoring.
- ☐ Plan for maintenance access without disrupting customers.
- ☐ Confirm electrical compliance and required approvals/registrations.

Best fit: commercial destinations, hotels, dealerships, workplaces, fleets and customer-facing sites where vehicles remain parked long enough to benefit from high-power AC charging.

6. ELECTRICAL DESIGN & SAFETY CHECKLIST

The charger is only one part of the installation. The electrical infrastructure must be designed around the charger and the site — including protection, earthing, cable routing, fault levels, voltage drop and future expansion.

Before installation

- ☐ Site survey completed by a competent electrical professional.
- ☐ Existing DB and main supply inspected.
- ☐ Maximum demand/load profile reviewed.
- ☐ Available capacity confirmed with the relevant distributor where necessary.
- ☐ Single-line diagram prepared.
- ☐ Protection coordination checked.
- ☐ Earthing and bonding verified.
- ☐ Cable sizing and voltage drop calculated.
- ☐ Short-circuit/fault protection considered.
- ☐ Surge protection requirements considered.
- ☐ Outdoor equipment environmental rating confirmed.
- ☐ Mechanical protection/bollards considered.
- ☐ Charger mounting and foundation/structure confirmed.
- ☐ Isolation/emergency procedures defined.

During installation

- ☐ Correct cable identification and labelling.
- ☐ Correct gland entries and weather sealing.
- ☐ Torque settings followed for terminations.
- ☐ Cable routes protected from impact and excessive heat.
- ☐ Charger mounted level and securely.
- ☐ Protective devices match the approved design and manufacturer requirements.
- ☐ Communications cable/SIM/network installed and tested.
- ☐ No unauthorised modifications to charger electronics.

Commissioning & handover

- ☐ Electrical tests completed and recorded.
- ☐ Charger starts/stops correctly.
- ☐ Test vehicle successfully charges.
- ☐ Emergency stop/isolation function verified where fitted.
- ☐ Residual-current protection tested as required.
- ☐ Energy meter/session data verified.
- ☐ Remote monitoring tested.
- ☐ Firmware/software version recorded.
- ☐ User/payment flow tested for public sites.
- ☐ CoC and relevant documentation handed to the client.
- ☐ Equipment manuals and warranty documents handed over.
- ☐ Client shown how to isolate, reset and report faults.

COMPLIANCE NOTE

South African electrical installations should be completed by appropriately competent/registered electrical professionals, with a valid Certificate of Compliance where required. The Department of Employment and Labour has specifically reminded businesses and contractors that installations must comply with applicable legislation and that registered contractors must only issue CoCs after proper inspection and testing. [\[cite turn0search4\]](#)

EV charging equipment is covered by the SANS/IEC 61851 family and related connector/vehicle-interface standards. South Africa has issued and updated standards in this area, so Callsave should specify the applicable current edition and manufacturer compliance documentation for each charger rather than relying on generic “CE marked” claims alone. [\[cite turn0search25 turn0search26 turn0search28\]](#)

7. CALLSAVE EV CHARGER SALES & SITE ASSESSMENT SHEET

Use this page during a customer/site visit. It converts a charger enquiry into a proper technical and commercial assessment.

CUSTOMER / SITE	_____
SITE TYPE	☐ Home ☐ Office ☐ Hotel ☐ Garage ☐ Retail ☐ Fleet ☐ Other
CHARGER	☐ 7 kW ☐ 11 kW ☐ 22 kW ☐ Multiple chargers
VEHICLE(S)	_____
DAILY TRAVEL	_____ km/day
PARKING TIME	☐ <2h ☐ 2-4h ☐ 4-8h ☐ Overnight
SUPPLY	☐ Single-phase ☐ Three-phase ☐ Unknown
MAIN SUPPLY	_____ A / _____ kVA
EXISTING SOLAR	☐ Yes ☐ No Size: _____ kWp
BATTERY	☐ Yes ☐ No Size: _____ kWh / _____ kW
DISTANCE DB→CHARGER	_____ m
FUTURE CHARGERS	☐ None ☐ 2 ☐ 3+ Planned quantity: _____
NETWORK	☐ Standalone ☐ Wi-Fi ☐ Ethernet ☐ 4G/5G ☐ OCPP/CPMS
PAYMENT	☐ Free ☐ QR ☐ RFID ☐ Card/contactless ☐ App

CALLSAVE RECOMMENDATION

Recommended charger: _____ Quantity: _____ Estimated installation: R_____ Electrical upgrade: R_____ Solar/battery option: R_____ Monitoring/payment: R_____ Estimated total: R_____

Why this system?

CALLSAVE QUALITY STANDARD

- Design before supply: no charger should be sold solely on the customer's requested kW rating.
- Verify the vehicle: actual charging power depends on the vehicle's onboard charger for AC charging.
- Verify the site: supply capacity, maximum demand, cable route and protection determine installation feasibility.
- Design for tomorrow: where practical, leave a pathway for additional chargers, solar, battery storage and smart load management.
- Make support part of the product: monitoring, fault alerts, maintenance and clear customer handover protect the Callsave reputation.

CALLSAVE SOLAR & EV CHARGING SOLUTIONS

From home charging to commercial charging hubs — design the energy system around the customer, the vehicle and the site.

Technical disclaimer: This guide is a sales and pre-assessment checklist, not a substitute for a site-specific electrical design. Final cable sizes, breaker/RCD selection, earthing, protection, voltage drop, fault levels, supply upgrades, approvals and compliance documentation must be determined by the appropriately qualified/registered professional and the applicable current standards, manufacturer instructions and electricity distributor requirements.