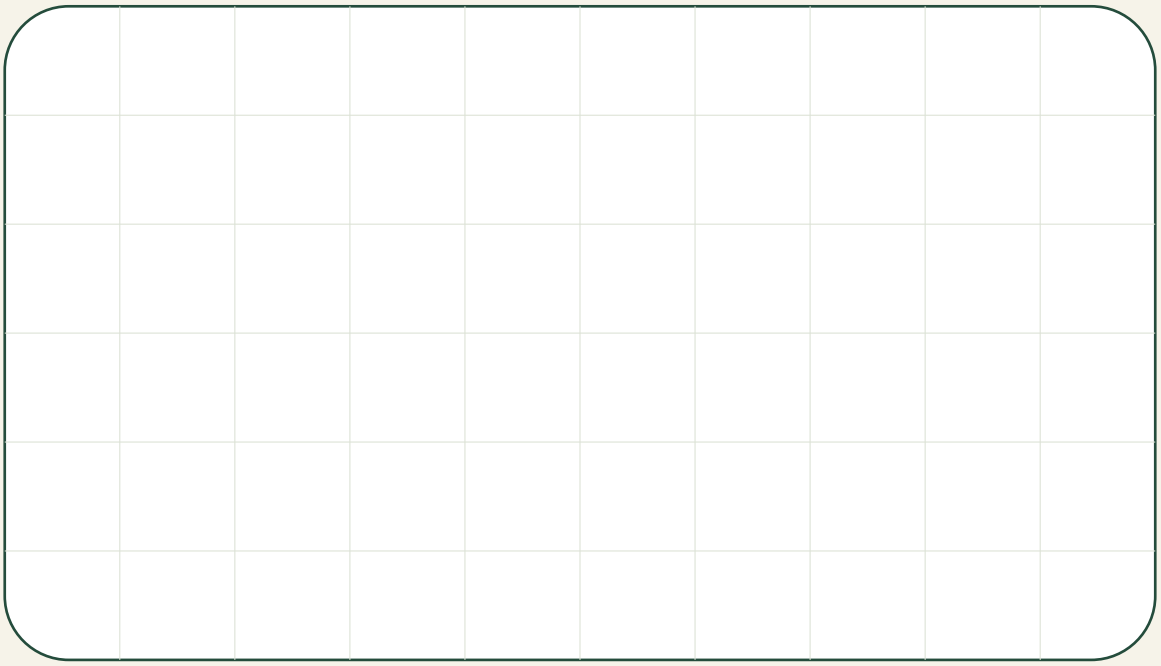
Roof measuring and mounting

Do this early: settle the roof layout and approved penetration locations before insulation and ceiling lining hide the inside.

Record actual dimensions in millimetres. This blank sketch is not to scale and contains no recommended drilling locations.

FRONT - mark which end of your sketch this represents



Draw rooflights, opening lids, ribs, rack feet, panel outlines and cable entry.

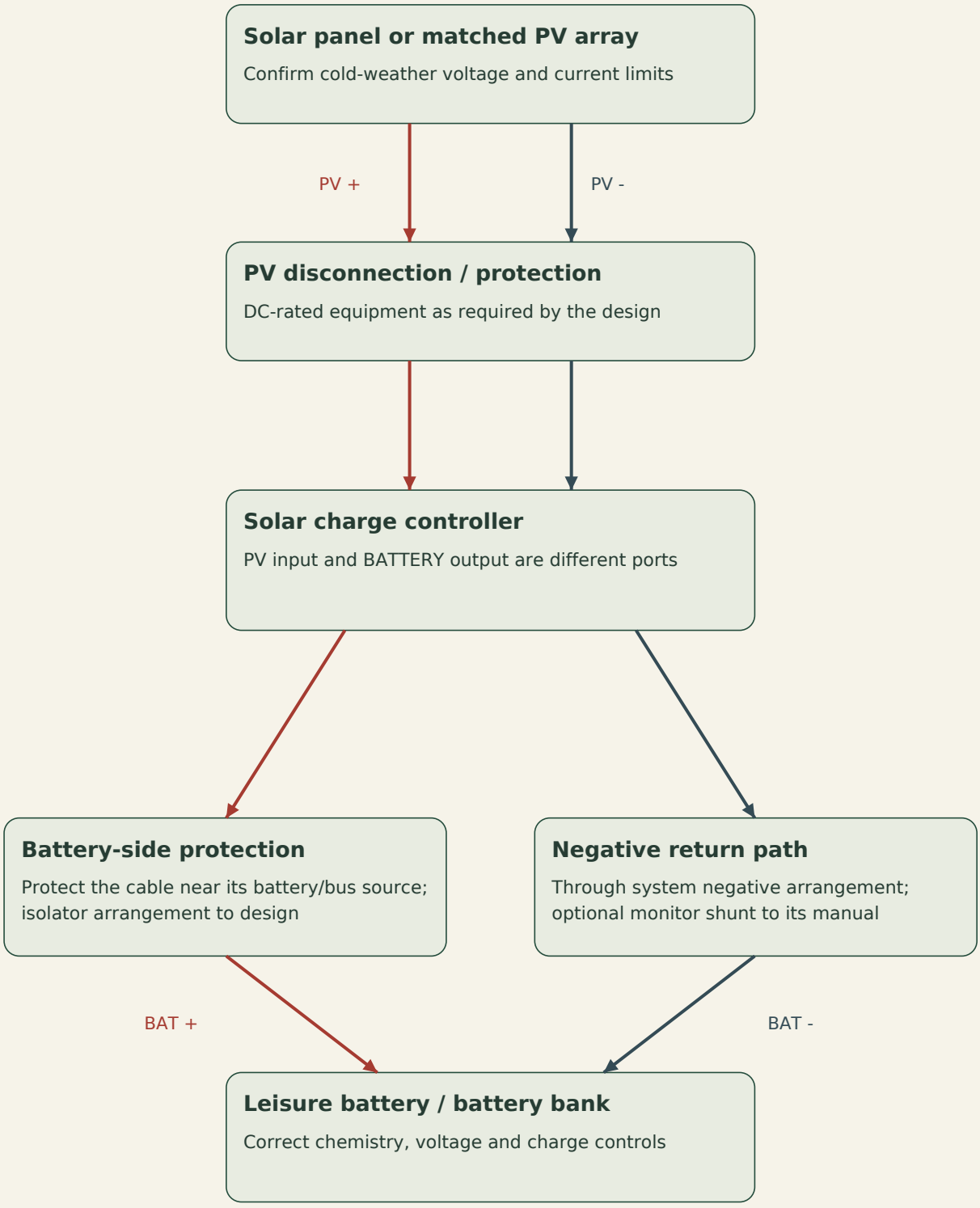
Van / year / roof type	
Panel model and actual outside length x width	
Mounting footprint, cable exit and service space	
Roof opening / fixing locations approved by	

Before any cut: inspect both sides; confirm the actual vehicle body guidance and no-drill areas; agree mounting loads, support and sealing. Do not drill ribs or structural members to make a panel fit. Roof access needs suitable equipment; do not assume the roof skin supports a person.

Bonded feet, rails and mechanical fixings need different designs. Record the approved method, surface preparation and cure/fastener requirements. There is no universal hole size, bead pattern, roof gap or screw count in this pack.

Solar to battery: connection map

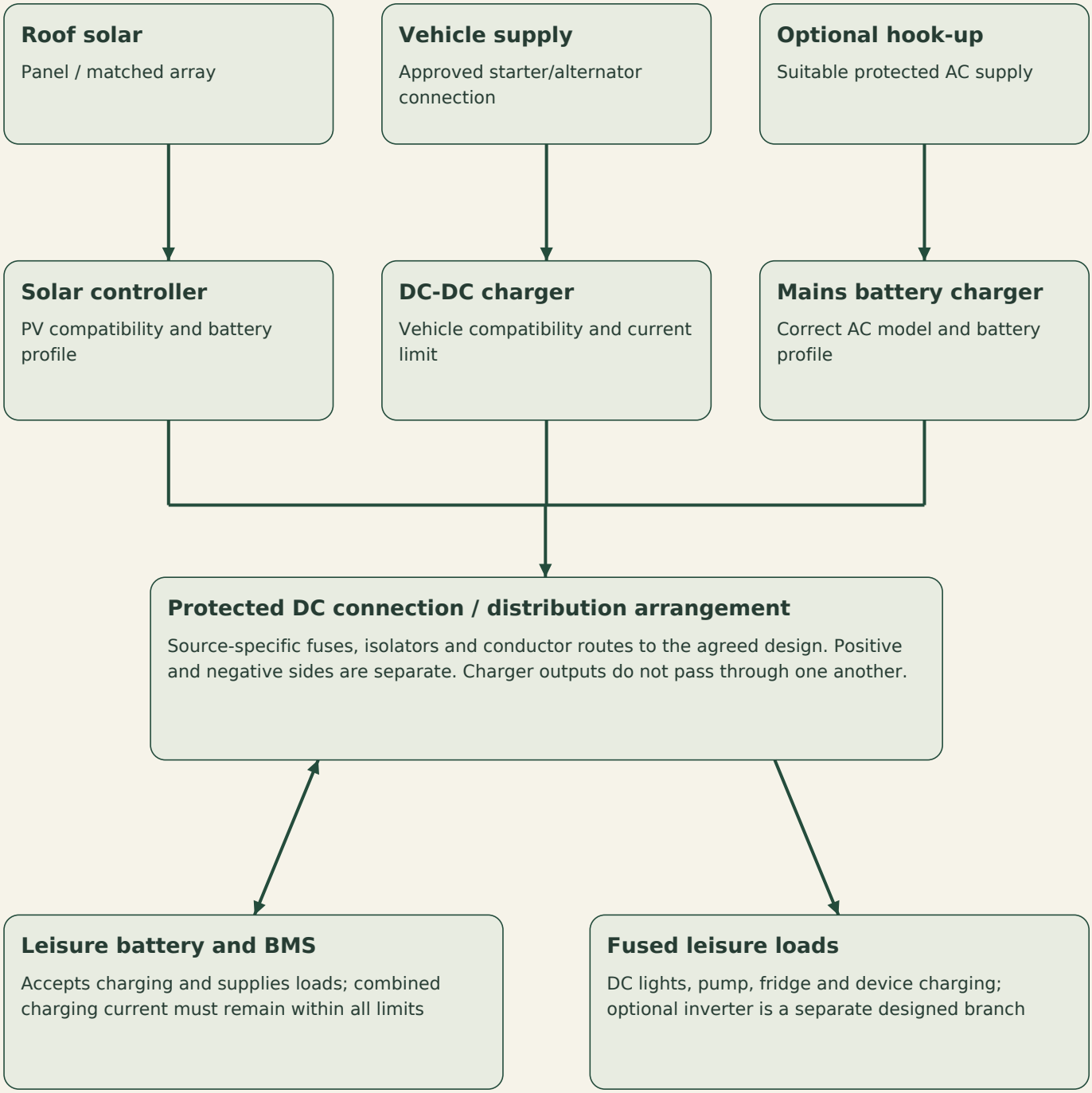
Conceptual single-controller branch. The lines identify separate electrical paths; they do not specify terminals, cable sizes, fuse values or energising order.



Additional details to resolve: frame/chassis bonding, BMS signals, sensing, connector compatibility, isolation of every source, conductor protection and device-specific commissioning. Solar can remain energised in daylight. Never connect a panel directly to a leisure battery.

The whole charging system

Energy-flow overview. Each arrow represents a system path, not an individual wire. Negative returns, bonding and control wiring must be designed separately.

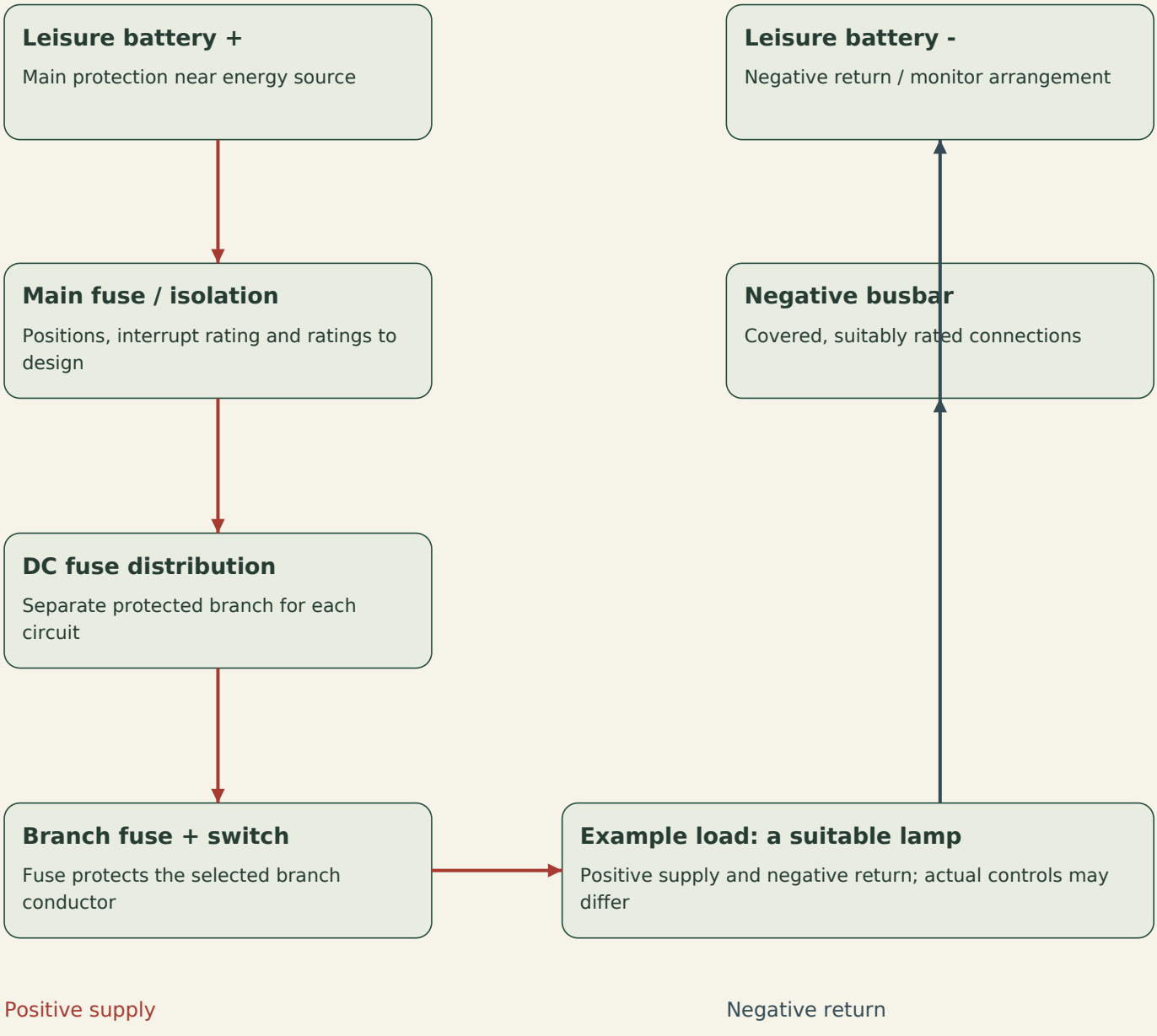


Use only the sources your build needs. A combined solar/DC-DC product may replace two separate charger boxes, following its own manual. BMS control, shared settings and low-temperature charging limits must cover every source. Hook-up or inverter integration needs competent design and verification.

The battery isolator is not proof that all sources are dead. Record a system-specific shutdown and testing procedure. No direct starter-to-leisure battery link is implied.

Typical 12 V load branch

Conceptual DC distribution circuit. This is separate from a 230 V circuit. It is not a ready-to-wire installation drawing.



A fuse is not chosen from the appliance wattage alone. Cable routing, length, temperature, grouping, allowable voltage drop, device requirements and fault-current capability all matter. A larger fuse does not cure an overloaded or faulty circuit.

Do not route an inverter or other high-current load through a small lighting fuse board or a controller load terminal unless the actual equipment and design expressly allow it. Chassis bonding, disconnect arrangements and any shunt wiring are outside this simplified branch map.

Your equipment and circuit worksheet

Print and complete with the actual product data and installer. Blank fields are unresolved checks, not assumed values.

Vehicle / year / body reference	
Battery model, chemistry and system voltage	
Battery permitted charge current / temperature	
Panel model, count, dimensions and weight	
PV arrangement / cold Voc / current check	
Solar controller model and limits	
DC-DC model / vehicle supply approval	
Mains charger model / supply arrangement	
Maximum combined charging current	
Mounting method / approved instructions	

Circuit schedule - add a separate row for each source and each load

Circuit / source	Run / return	Cable / route	Fuse / isolation	Design checked by

Run / return means the relevant conductor route lengths, not just a straight-line distance. Record the applicable sizing method, cable type, protection interrupt capacity, terminals and torque requirements in the final design documents.

Checks, handover and instructions

Keep this pack with the product manuals, finished wiring diagram and actual installation records. It does not certify a roof mount or electrical installation.

Roof work

Mounting and entry locations checked on both sides; no structural/no-drill conflict; corrosion protection, sealing and required cure completed; mount restraint and leak checks recorded.

Electrical design

All sources and loads accounted for; cable/protection schedule complete; PV limits checked for cold conditions; battery and BMS compatibility confirmed.

Commissioning

Correct isolation, polarity, connection order, torque, settings and tests taken from the exact manuals. Each charging source checked independently and together where intended.

Handover

Circuit labels, source shut-down procedure, access photographs, battery settings, roof inspection routine and installation verification supplied.

Primary instructions consulted

Vehicle conversion guidance

Sika adhesive selection and substrate preparation

Victron SmartSolar MPPT installation example

Victron Orion XS instructions

Victron Wiring Unlimited

Current wiring-regulations guidance

These are reference starting points. Select the current manuals for the exact van, panel, mounts, roof-entry fittings, chargers and battery. The diagrams are original CamperSteps teaching illustrations; no manufacturer drawing has been copied.