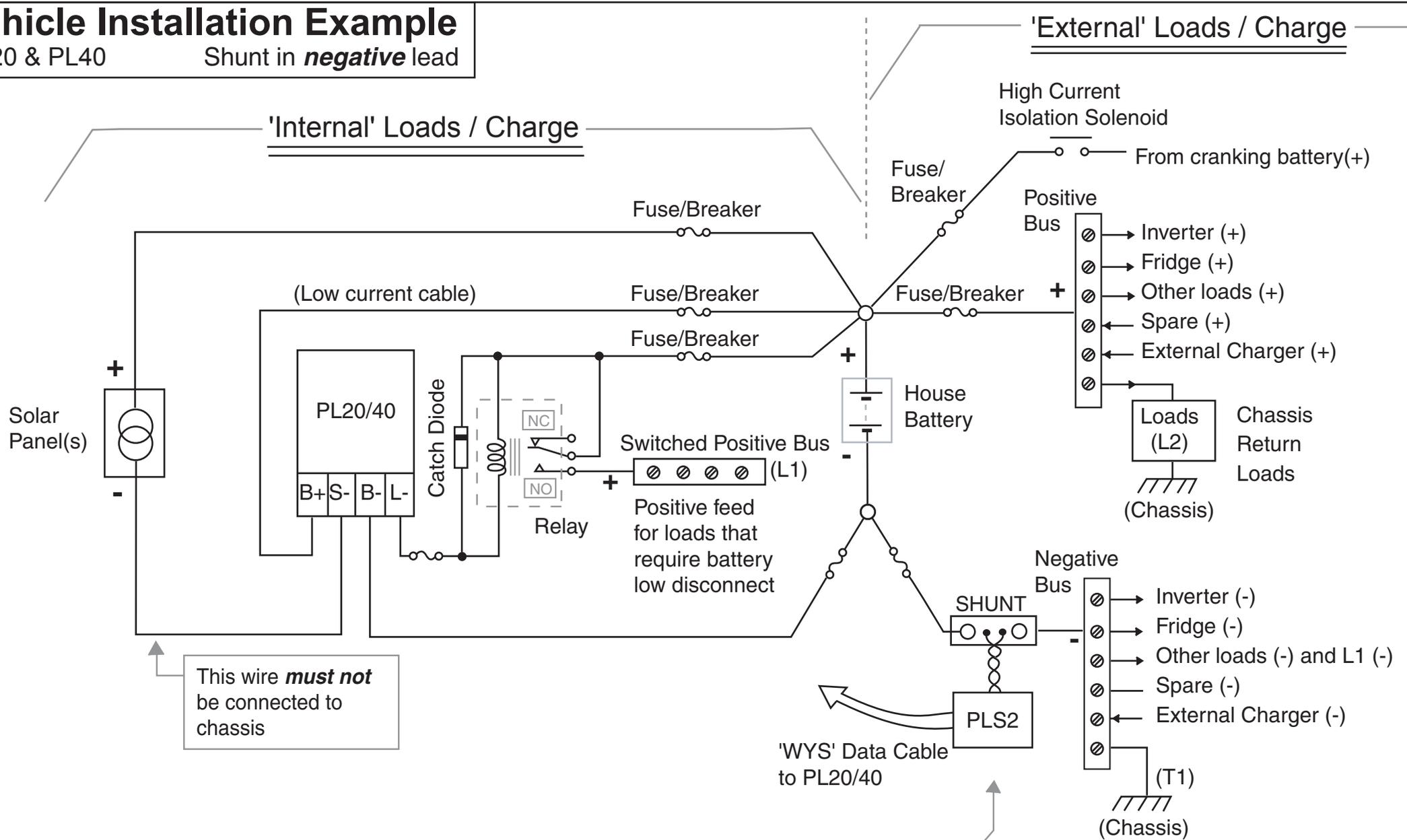


# Vehicle Installation Example

PL20 & PL40

Shunt in *negative* lead



This wire **must not** be connected to chassis

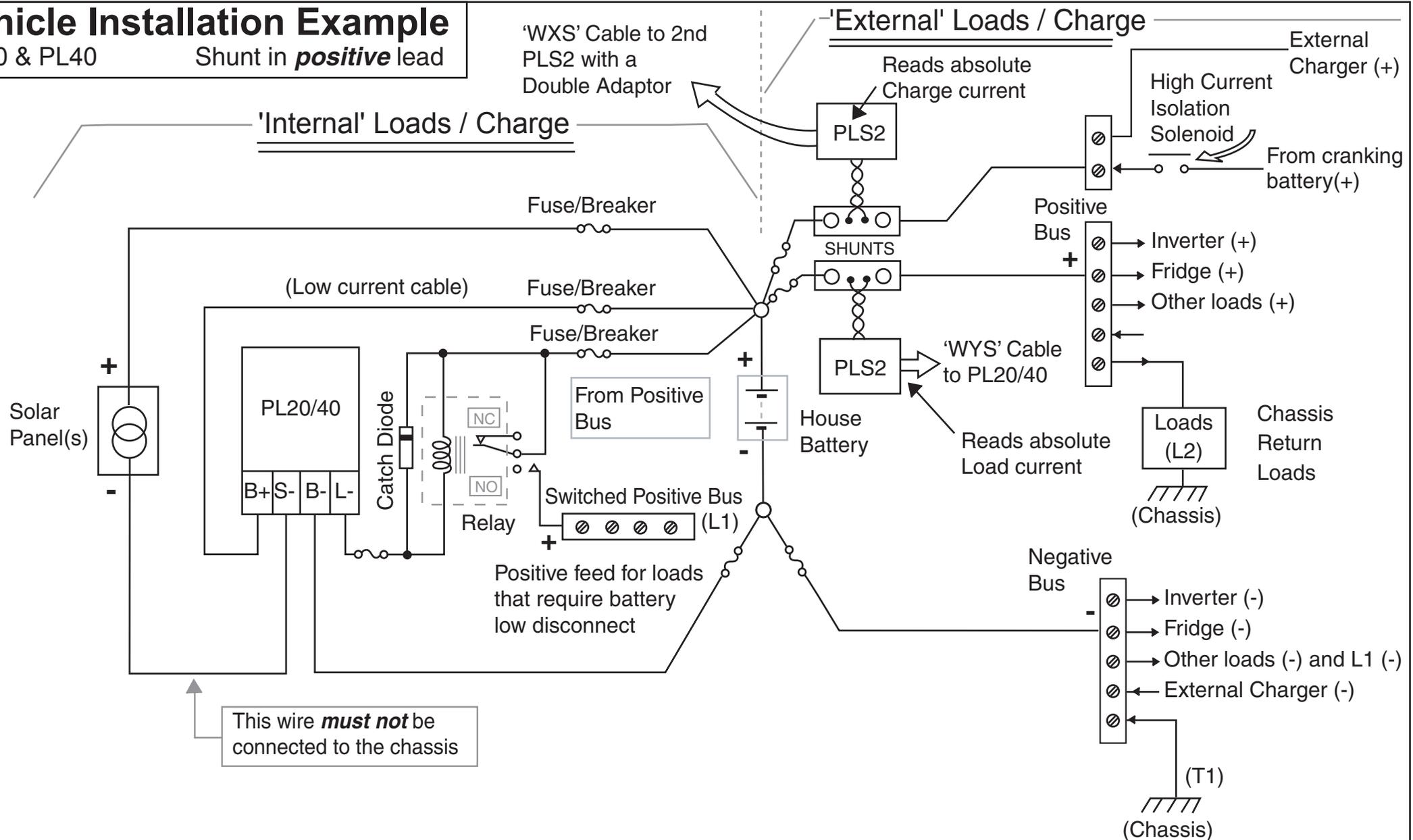
NOTE: Shunt reads 'balance' of load /charge current, since some external charge current may be 'taken' by load and not go through shunt.

This diagram is for reference only. Wiring and fuses etc. must be installed as specified by the relevant Australian Standards.

# Vehicle Installation Example

PL20 & PL40

Shunt in **positive** lead



This wire **must not** be connected to the chassis

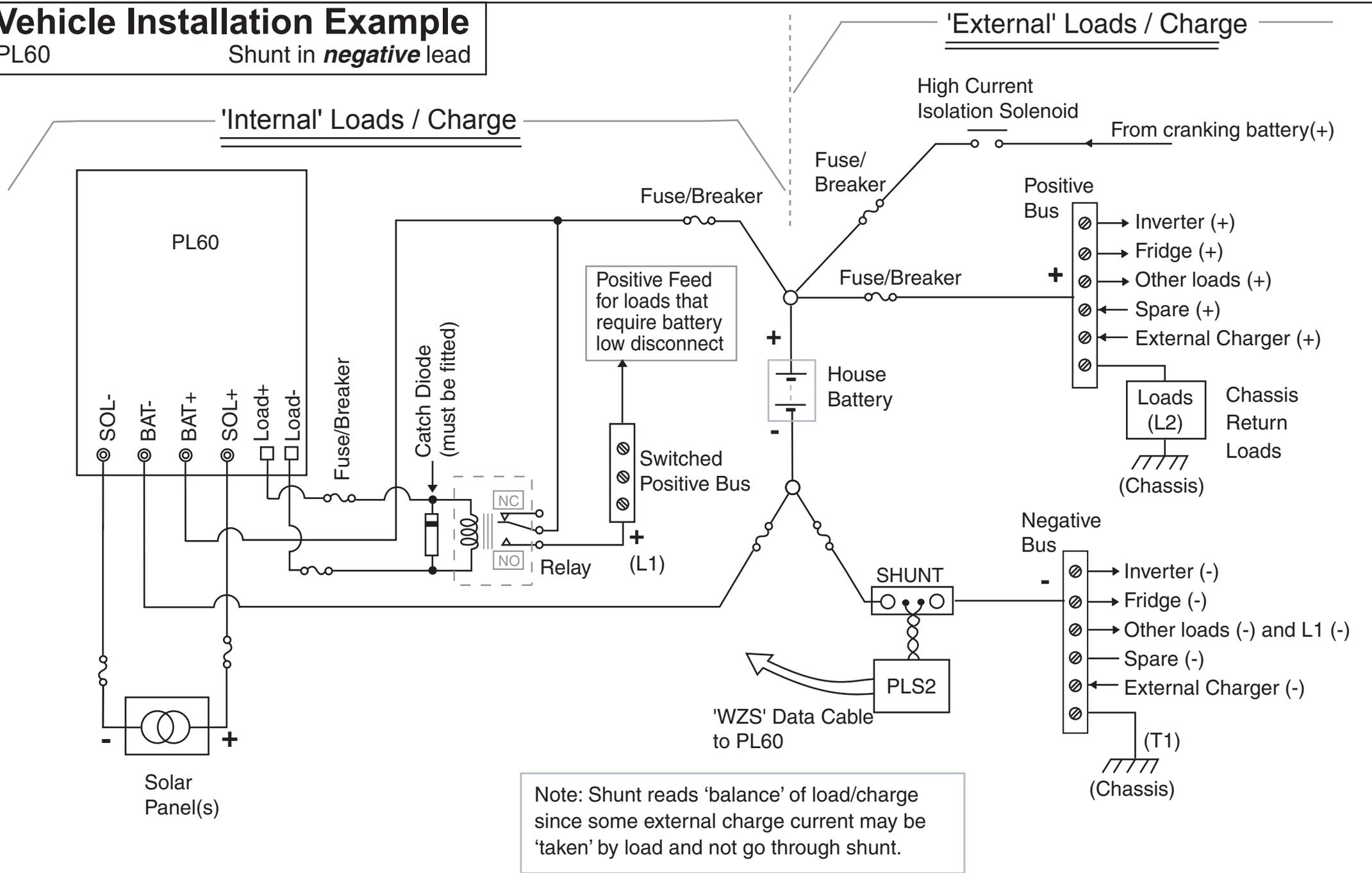
This diagram is for reference only. Wiring and fuses etc. must be installed as specified by the relevant Australian Standards.

**Note:**  
 This configuration gives absolute external charge current reading in CHRG / CEXT screen and absolute external load current reading in LOAD / LEXT screen

# Vehicle Installation Example

PL60

Shunt in *negative* lead



Note: Shunt reads 'balance' of load/charge since some external charge current may be 'taken' by load and not go through shunt.

This diagram is for reference only. Wiring and fuses etc. must be installed as specified by the relevant Australian Standards.

# Vehicle Installation Example

PL60

Shunt in **positive** lead

'WXS' Cable to 2nd PLS2 with a Double Adaptor

'External' Loads / Charge

External Charger (+)

'Internal' Loads / Charge

Reads absolute Charge current

High Current Isolation Solenoid

From cranking battery(+)

Fuse/Breaker

PLS2

SHUNTS

Positive Bus +

Inverter (+)

Fridge (+)

Other loads (+)

PL60

Catch Diode

NC

NO

From Positive Bus

Switched Positive Bus (L1)

House Battery

'WXS' Cable to PL60

Reads absolute Load current

Loads (L2)

Chassis Return Loads

(Chassis)

Positive feed for loads that require battery low disconnect

Negative Bus -

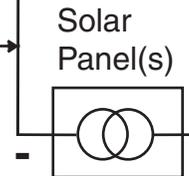
Inverter (-)

Fridge (-)

Other loads (-) and L1 (-)

External Charger (-)

(T1)  
(Chassis)



Fuse/Breaker

This wire **must not** be connected to the chassis

Note:

This configuration gives absolute external charge current reading in CHRG / CEXT screen and absolute external load current reading in LOAD / LEXT screen

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This diagram is for reference only. Wiring and fuses etc. must be installed as specified by the relevant Australian Standards.

## Vehicle Installation Example Notes

1. The negative wire from the solar panel(s) **must not** be connected to the chassis, as this will bypass the regulator and overcharge the batteries.
2. The sum of internal and external charge currents will show up in the CHRG screen.
3. Solar charge current is measured internally by the PL regulator as it goes between the Sol- and Bat- terminals, and can be seen in the CHRG -> CINT screen.
4. **If the expected charge current is showing up incorrectly in the LOAD screen, or an expected load current is showing up incorrectly in the CHRG screen, then you need to swap the wires over at the green terminal block of the PLS2 (shunt adapter input from shunt).**
5. Do not use the load terminal (L-) for switching loads directly since you can't guarantee that the load terminal will be able to switch off the connected loads, because any of the loads could be touching the chassis and still create a circuit to 'ground' eg. some fridge's chassis are connected to the -ve power lead and could touch the vehicle chassis (the L- terminal switches in the -ve lead).

If you need low battery disconnect or switching due to a particular programmed event, drive a relay from the load terminal, and use the contacts to switch the positive line to the load(s).

If the load terminal is not used, the protection 'catch' diode can be omitted.

6. The shunt/PLS2 can be placed in either the negative or positive bus line. The negative bus is preferred as this will not cause a hazard should the shunt be accidentally shorted to the chassis.
7. If only one PLS2 is used, and there are both external load sources and external charge sources, the current shown will be the balance of current from/into the house battery ie. some of the charge current will go directly to supplying the load and therefore not go through the shunt.  
CHRG and LOAD screens will show the total load and charge currents as 'seen' by the house battery (net load/charge, not gross load/charge). This setup will still give accurate amp-hour monitoring for correct State of Charge (SOC) display as the amp-hours IN and amp-hours OUT are still correct from the house batteries perspective.
8. If real-time absolute (gross) external load and charge current monitoring is required then a 2<sup>nd</sup> shunt/PLS2 will be required, and the shunts will need to be placed inline with the positive bus (since many charge sources are chassis returned). One Shunt/PLS2 should be used for external loads, the other should be used for external charge sources. An additional WXS cable and RJ11 double adapter will be required to connect the 2<sup>nd</sup> PLS2 into the system. This setup will also give accurate amp-hour monitoring for correct State of Charge (SOC) display, and will show real-time gross (absolute) charge / load currents (as opposed to just the balance of charge/load currents).  
NOTE: When using 2 x PLS2 units, one must be set to **Master** and the other must be set to **Slave**.
9. Connection from the negative bus to the chassis (T1 in diagram) is only required if:
  - (i) Chassis return loads are to be connected, and or
  - (ii) Charging from the cranking battery is required.
10. Current through chassis return loads (L2 in diagram) can be measured as long as the negative bus is tied to the chassis (T1 in diagram). Typical chassis return loads could be panel mounted stereos, radio communication equipment, chassis connected lights, etc.
11. Alternator/House battery charging can be achieved by switching the cranking battery positive to the house battery positive terminal with a high current switch or contactor. The negative bus must be tied to the chassis (T1 in diagram). Automatic operation can be achieved by using a high current contactor connected to energise when the vehicle is running.