PL Memory corruption and possible induced electrical noise

We have seen a small number of installations where we suspect that electrical noise may be getting into the PL regulator and causing memory corruption and/or 'phantom key-presses'.

Possible memory corruption can manifest as:

- Incorrect history values eg. some very high values (255 or 25.5 common).
- Incorrect readings on voltage and current related screens (ie. unit calibration corrupt).

Possible 'phantom key-presses' can manifest as:

- Changes in some memory settings (system voltage 'VOLT' etc). [Extreme cases only].

The most likely entry points for electrical noise are the communications line (WY or WZ cable), and the battery lines in/out of the regulator.

Some customers have had success with the following (**in order of priority**).
If option 1 does not fix the problem, combine option 1 and option 2, etc.

Option #1 *Most important:*

Re-route the WY/WZ cable so it's physically separated from all other cables (even other low voltage cables). If it has to physically cross over any other cables, do this at right angles (perpendicular) to minimise induced electrical noise.

Option #2 (Good option for existing installations)

Use EMI suppression ferrite's at each end of the WY/WZ cable(s) ie. 2 per cable.
Use either the kind you loop the wire through, or the kind that clips over an existing cable.
[Higher priced EMI suppression ferrite's usually indicates a better quality of noise suppression at lower frequencies.]

Option #3 (Good option for existing installations)

Use some loop through or clip on EMI suppression ferrite's on the battery leads going to the regulator **and** on the battery leads going to the inverter/charger.

Option #4 (Use this option first if doing a new installation)

It is advisable to use shielded cable (with the shield only grounded at one end) when installing WY/WZ cables in an electrically noisy environment, or when running a long communications cable to say a PLM (more than a few meters away), or operating in an installation where physical cable separation is not practicable (eg. most motor-home installs).

Option #1 = Shielded Cat5 cable (stranded conductor or solid conductor, but make sure your RJ12 connectors are correct for your type of cable).

Option #2 = Flat line cord (phone), 5 conductor shielded.
Try…Access Communications Pty Ltd, www.accesscomms.com.au, Catalogue number: Y9010.
'Rip-cord' a length of the drain wire out down the side of outer insulation, then trim other wires to required length for insertion into RJ12 plug. Sleave/insulate the drain wire as required up to its termination point.
Make sure your RJ12 connectors are correct for your type of cable ie. solid conductor or stranded conductor.

Option #5

Use some clip on EMI suppression ferrite's on both the phase and neutral leads on the AC side of inverter/charger.