REG-D BATTERY REPLACEMENT

Warning! As part of this procedure, make sure all the parameters and data from the REG-D have been backed up before power is removed. All data will be lost!

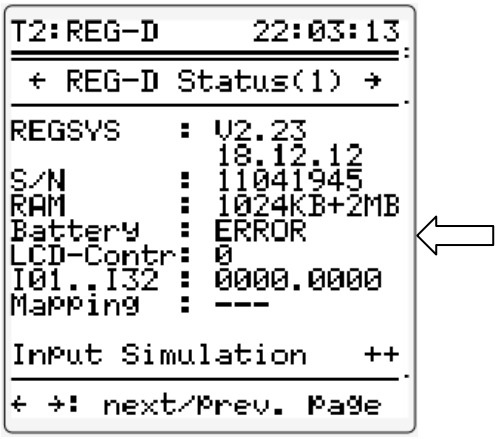
If you are unsure about backing up your data or any part of this procedure, please contact HV Power for assistance.

General:

It is recommended that the battery is replaced as part of a maintenance routine every 6 to 10 years. The REG-D battery maintains internal clock and settings/memory when the REG-D is not powered by its normal auxiliary power input. While a new battery has a capacity sufficient to retain this information for many years (even in a REG-D without external power), a 6-10 year replacement is recommended.

The battery status is monitored within the REG-D:

- The battery status can be monitored directly by its own SCADA point. This point operates when the battery voltage falls below 20%, giving plenty of time for a battery replacement to be scheduled. This datapoint, known as Error Status 8, is found at RPS3 243 bit 7, or RPS4 219 bit 7.
- Battery status can be also monitored via the LCD display (Setup 6 -> status)



- If the battery does fail then the Status LED will extinguish and the “Life” status contact will operate.

IMPORTANT:

Should a battery fail while in service, settings must be backed up **PRIOR** to powering the REG-D down, or they will be lost.

If battery replacement is near due, and the REG-D is going to be powered down for an extended time, replace the battery at the start of the shutdown.

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Battery Replacement Procedure:

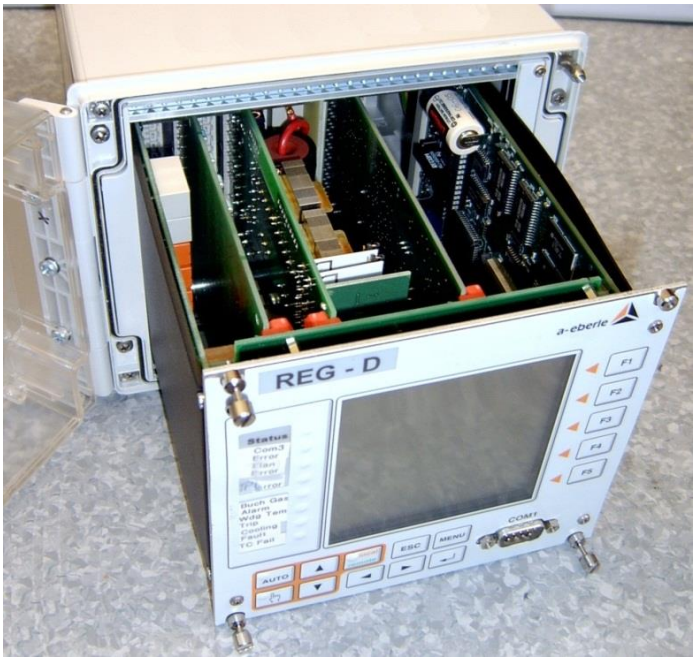
1. Make control/scheme safe for REG-D to be powered down and removed from service.
2. Save all REG-D data and parameters:
   - Use WinREG REGPara to extract and store settings
   - If REG-D is optioned with TMM (Transformer Temperature Monitoring), also use WinREG TM to save these settings
   - Use Update32 to back up any site specific H-code (REG-L)
   - Write down any analogue input calibration factors (menu General 3 > Actual Value Correction), as these will not be backed up with the settings

Optional

- Use WinREG Collector to extract and save recorder files
- Use WinREG Service to extract and save tap statistics

Note that the comms card (if fitted) is essentially a separate device and so does not need to be backed up

3. Isolate any Transformer Trip outputs (e.g. Transformer Temperature Monitoring top oil temperature trip etc).
4. Remove the REG-D from its case. If necessary, this can be done "hot" as the CT inputs have auto shorting terminals in the back of the case. Loosen the four corner screws on the front of the REG-D and slide the electronics forward as shown below, to remove it completely from its case:



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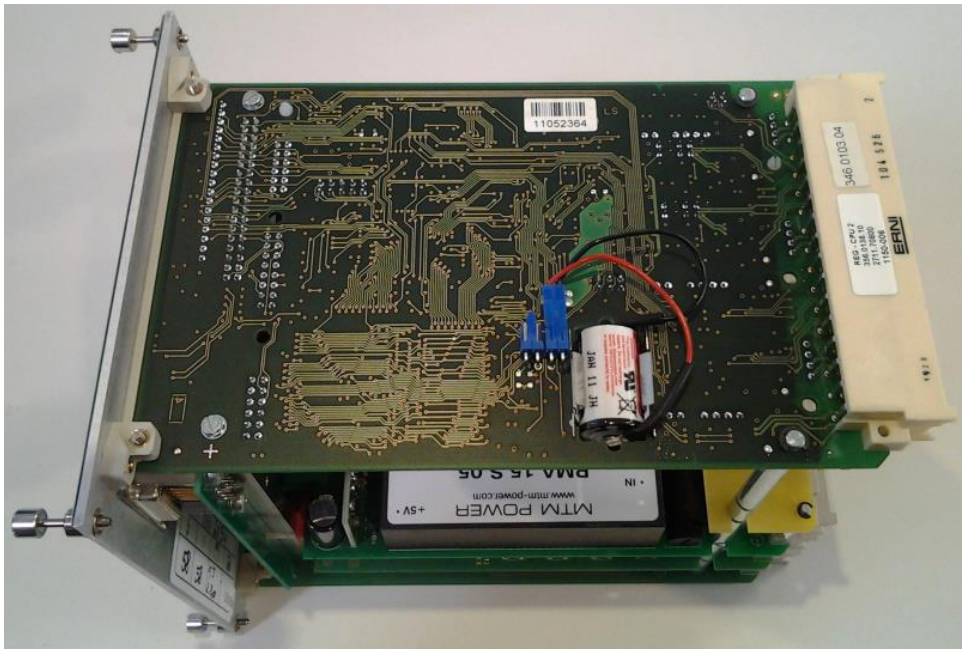
5. Remove the covering name plate by loosening the four screws as shown below:

6. Depending on the age of the REG-D, one of the following battery design evolutions will then be found:

   A. In REG-Ds being supplied since May 2014, the battery is no longer necessary for maintaining the non-volatile memory and has even been done away with completely!

   B. For some years before that, the dual plug-in battery connection was used:



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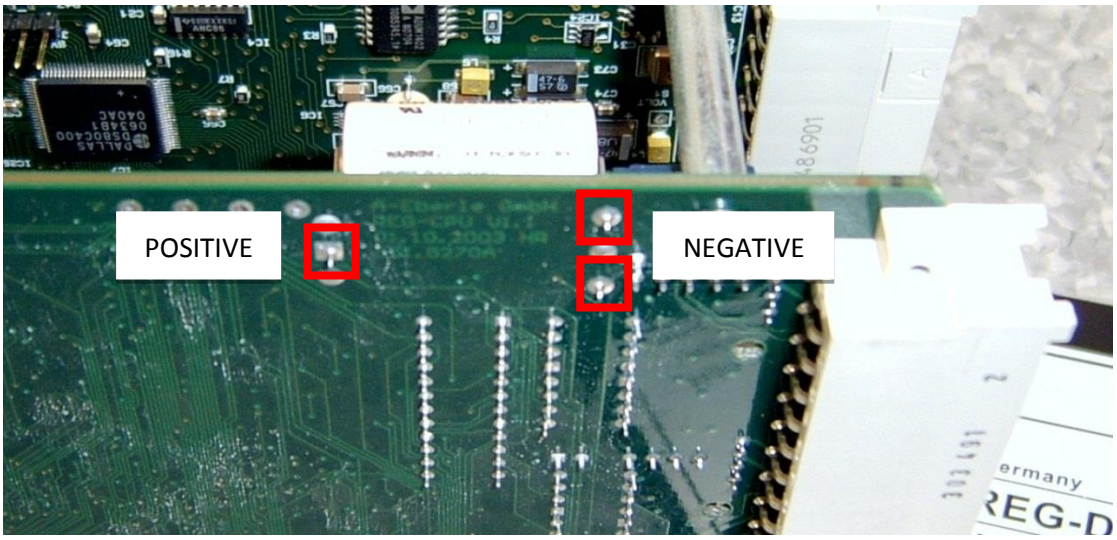
In this case, it is recommended that the new battery be plugged in first, then the old battery be removed. If the old battery still had some life left in it, this will negate the need to reload settings etc, since there would have been a constant voltage applied. WinREG has a compare function for checking the success of this operation before the REG-D is put back into service.

C. In slightly older REG-Ds, there is only a single plug, so the battery is simply swapped out and the settings reloaded.

D. In older still REG-Ds, the batteries were soldered into place, as shown below:



Carefully unsolder the battery from the board. Take note that there is one pin to be unsoldered on one side of the battery and *one or two* pins on the other side, as shown above.
The newer batteries have only two pins, in which case the **NEGATIVE** terminal of the new battery may be soldered to *either* of the places on the right hand side in the figure above.
CHECK BATTERY POLARITY!!

7. Reassemble, return to case and apply power to REG-D
8. Check battery status (Setup 6 -> Status)
9. Reload settings as necessary
10. Return unit to service (restoring trip output if isolated in step 3), ensuring correct regulation and SCADA functions are restored.

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