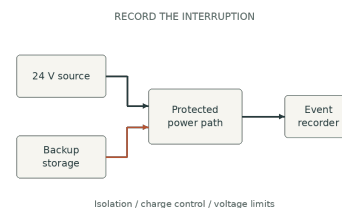


## DC POWER SYSTEMS

# Outage recorder backup

Keep a 24 V recorder running long enough to capture the outage.



CONCEPT SCHEMATIC

Power brief; load profile needed

## THE PROBLEM

A machine event recorder loses its supply at the moment an electrical interruption occurs. A local DC backup could preserve the final events without keeping the whole machine powered. The design must fit a defined load, outage duration, and enclosure.

## SCOPE

- Develop the recorder load profile and compare capacitor and battery storage.
- Size stored energy for conversion losses, voltage limits, and aging allowances.
- Specify source isolation, charge control, protection, and low-voltage shutdown.

## PLANNED DELIVERABLES

- Power budget and storage comparison workbook
- Functional schematic, component criteria, and protection rationale
- Discharge model and low-voltage bench-test procedure

## CONSTRAINTS

### Interface

Nominal 24 V DC; actual input range to be specified

### Load

Recorder only, with measured startup and steady demand

### Duration

Required recording window to be agreed

### Environment

Enclosure space and temperature range to be defined

## VERIFICATION PLAN

### Energy balance

Compare time-domain discharge with an independent energy calculation.

### Worst case

Evaluate peak demand, low charge, temperature, and component tolerances.

### Transfer test

Specify a bench test for dropout, recovery, backfeed, and saved records.

## NEXT STEP

Measure the recorder load and establish the minimum uninterrupted recording time.

This is a low-voltage design brief, not a released circuit. Battery integration, protection, and hardware performance remain to be validated.