



REPAIR-OR-REPLACE DECISION GUIDE

For Industrial Electronics
Drives • PLCs • HMIs •
Control Boards • Power Supplies

Unplanned electronic failures can halt production and force quick decisions. This guide helps maintenance and reliability teams determine whether to repair or replace a failed electronic component based on quantifiable data: cost, lead time, reliability, and repair viability. Use this worksheet during failure analysis or downtime reviews to record findings, compare options, and make a confident decision supported by evidence.

Work through the steps in order. Each step collects the data you need to reach a clear, defensible conclusion in Step 6. Fill in each field directly in this document or print and complete it by hand.

STEP 1: IDENTIFY THE COMPONENT

List the failed equipment and its basic details.

Component Type	Manufacturer/Model	Serial Number	Age (Years)	Application or Process Criticality (High / Medium / Low)

STEP 2: ASSESS THE FAILURE

Record the nature and severity of the failure.

Question	Response	Notes
Is the failure intermittent or total?		
Is there visible physical damage (burn marks, cracked board, corrosion)?		
Has this component failed before?		
Does the failure appear localized or systemic (affecting multiple units)?		

STEP 3: EVALUATE LEAD TIME

Compare repair and replacement timelines to understand downtime impact.

If the repair turnaround is shorter than OEM delivery, repair is often the best operational choice.

Option	Estimated Lead Time (days)	Source/Supplier	Downtime Cost Per Day
OEM Replacement			
Qualitrol International Repair Service			

STEP 4: ESTIMATED COST

Compare financial impact and warranty coverage.

Repairs are generally recommended when the repair cost is less than 60 percent of the replacement cost and downtime recovery is faster.

Option	Estimated Cost
OEM Replacement	
Qualitrol International Repair Service	

STEP 5: CHECK REPAIR VIABILITY

Answer the following questions to assess whether repair is technically feasible and reliable.

“Yes” answers in the first four rows increase the likelihood that repair is the right choice. If environmental or repeated failures are noted, review the root cause before reinstalling the unit.

Question	Yes/No	Notes
Is the component still physically intact (no catastrophic board damage)?		
Are replacement parts and schematics available?		
Is the unit obsolete or no longer supported by the OEM?		
Is the component critical to production or safety?		
Are there known environmental causes (heat, vibration, contamination)?		

STEP 6: MAKE THE DECISION

Use the following logic table to interpret your findings from Steps 1–5.

Condition	Recommended Action	Rationale
Replacement lead time is longer than repair lead time	Repair	Faster return to service
Repair cost is less than 60 percent of replacement cost	Repair	Economically justified
Component is obsolete or no longer supported	Repair	Only practical solution
Physical condition is repairable (no catastrophic damage)	Repair	Refurbishment likely successful
Failure has recurred within 6 months of prior repair	Replace	Indicates degradation beyond economical repair
Replacement cost is less than 40 percent higher than repair cost and downtime risk is low	Replace	New unit offers better long-term reliability
Multiple identical components failing	Replace or investigate root cause	Possible system-wide issue
Internal board burned, cracked, or corroded beyond safe repair	Replace	Repair not reliable or safe

QUICK DECISION RULE

Repair if:

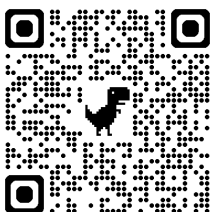
1. The unit is not physically destroyed.
2. Repair costs less than 60 percent of replacement.
3. Repair turnaround is faster than OEM delivery.
4. The part is obsolete or critical to production.

Replace if:

1. Repair costs exceed 60 percent of replacement.
2. The unit has failed multiple times recently.
3. OEM replacement is readily available with short lead time.
4. The unit shows catastrophic or unsafe damage.

STEP 7: FINAL DECISION SUMMARY

Evaluation Category	Summary / Notes
Lead Time Comparison	
Cost Comparison	
Criticality to Production	
Repair Viability	
Final Action (circle one)	Repair Replace Send for Evaluation
Authorized By	
Date	



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