

Protection Relay Test Set Specification Checklist

Use this checklist to convert the protection philosophy and relay fleet into verifiable test-equipment requirements. Evaluate the ordered hardware, software and licences - not headline channel counts.

Project / Site		Document No.	
Panel / Bay		Revision	
Prepared by		Date	
Witnessed by		Status	

1. Application inventory

Status	Checklist item	Evidence / comment
[]	List feeder, transformer, motor, bus, capacitor and interconnection schemes.	
[]	Record CT input type and nominal current: 1 A, 5 A, low-energy analogue or Sampled Values.	
[]	Record VT input type, nominal voltage, residual-voltage method and synchronising sources.	
[]	Identify differential, directional, distance, frequency, autoreclose and breaker-failure functions.	

2. Analogue source requirements

Status	Checklist item	Evidence / comment
[]	State simultaneous current, voltage, VA burden, compliance voltage and phase-angle accuracy.	
[]	Define minimum stable output for sensitive earth-fault and metering tests.	
[]	Separate continuous output requirements from short-duration or paralleled-channel maxima.	

3. Binary and timing requirements

Status	Checklist item	Evidence / comment
[]	Count independent wet/dry binary inputs and outputs.	
[]	Define threshold, debounce, timestamp resolution and permitted uncertainty.	

Status	Checklist item	Evidence / comment
[]	Identify the exact start/stop event for every measured operating time.	

4. Digital-substation scope

Status	Checklist item	Evidence / comment
[]	Verify GOOSE publish/subscribe capability and dataset editing.	
[]	Verify Sampled Values generation, quality simulation and scaling checks.	
[]	Confirm SCL import/export, VLAN priority, PRP/HSR and PTP requirements.	
[]	Confirm packet capture and evidence retention without uncontrolled network bridges.	

5. Evidence and lifecycle

Status	Checklist item	Evidence / comment
[]	Calibration traceability and uncertainty statement available.	
[]	Settings, test-plan and result revisions are controlled.	
[]	Offline operation, licensing, update policy and exportable reports are acceptable.	
[]	Field weight, lead system, connector safety, transport and environmental limits are acceptable.	

6. Acceptance evidence

Status	Checklist item	Evidence / comment
[]	Witness a maximum-burden test.	
[]	Witness a low-current accuracy test.	
[]	Witness an automated multi-element test.	
[]	Where applicable, witness a project-SCL GOOSE/SV interoperability test.	
[]	Record exact hardware, firmware, software and licence configuration.	

Procurement decision and action register

Action ID	Deviation / procurement action	Owner	Due / closed
1			
2			
3			
4			
5			
6			
7			
8			

Overall result	☐ Accepted ☐ Accepted with comments ☐ Rejected
Open actions	
Final approval	Name / signature: _____ Date: _____

Use project-specific standards, approved drawings, settings and manufacturer instructions. This resource does not replace competent engineering judgement or contractual acceptance requirements.