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National Grid

Schedule of Site Commissioning Tests

SCT 20.12.15

Issue 1

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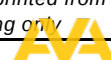
SCHWEITZER SEL 321-2 Distance Protection with Integral Signalling

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NATIONAL GRID

SCHEDULE OF SITE COMMISSIONING TESTS

SCT 20.12.15 SCHWEITZER SEL 321-2 DISTANCE PROTECTION WITH INTEGRAL SIGNALLING

Station:

Circuit:

Relay Function:

National Grid Contract Number:

Contractor:

Contractor's Number:

NOTE: All tests contained within this SCT are to be carried out in accordance the corresponding sections contained within SCT 0.1 - Guidance Notes for Site Commissioning Tests on Protection, Measuring, Control, Alarm and Indication Equipment.

SCHWEITZER SEL 321-2 DISTANCE PROTECTION WITH INTEGRAL SIGNALLING

1 GENERAL DATA

1.1 Relay Information

Part Number:		
Serial Number:		
Power Supply:		Vac/dc
		Watts
Logic Input:		Vdc
System Phase Rotation:		
Nominal Secondary Input Voltage ($V_L - N$):		Vac
Nominal Secondary Input Current:		Amps
System Frequency:		Hz
Firmware Identifier (FID from Event Report):		
Application Scheme or TGN(E)62 reference:		
Tripping Supply:		Vdc

1.2 Local Primary System Diagram



1.3 Circuit Parameters

CT Ratio (CTR):	/	
VT Ratio (PTR):	/	
Line Length (LL):		km
Line Voltage:		kV

Primary Impedances:

Positive Sequence Z_1 :	+ j	Ω
Zero Sequence Z_0 :	+ j	Ω

1.4 Mode of Operation

Plain:	
Accelerated (PUTT):	
Blocked (DCB):	

Mirrored Bits options:

Integral Protection Signalling:	
Integral Intertripping (DTT):	

OFF-LOAD TESTS

2 MECHANICAL INSPECTION

CAUTION: Use electrostatic precautions. The equipment contains components sensitive to electrostatic voltage discharge.

When working on the equipment with the front cover removed, the work surfaces and personnel must be properly grounded to prevent damage to the components.

- 2.1 Ensure that all transit packaging etc is removed.
- 2.2 Confirm that relay corresponds to relevant general arrangement drawing and relay case is earthed
- 2.3 Check fuses, or MCBs, and links for compliance to standard and rating.
- 2.4 Inspect each module for signs of damage and ensure that all units and auxiliary relays are present, fully inserted and correctly located, in accordance with the apparatus list and product specification.

3 CALIBRATED TEST EQUIPMENT

3.1 Record of Calibrated Test Equipment used during Commissioning

	Manufacturer and Type	Serial No.	Date last calibrated	Date next calibration due
Secondary Injection Test Set				
Insulation Resistance Tester				
Ammeter or Multimeter				
Voltmeter or Multimeter				
Timer				
Others (state function)				

3.2 Other Test Equipment

PC running Windows 95 or higher with HyperTerminal programme.

4 WIRING

The tests below should be performed on all wiring where the cubicle has been wired on site and on any connections made at the site.

4.1 Insulation Tests on General and Cubicle Wiring

(See SCT 20.4.1)

4.2 Relay Connections and Cubicle Wiring Checked To:

Schematic Diagram Number & Revision

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Wiring Diagram Number & Revision.....

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5 INITIAL CHECKS

5.1 Check that the A.C. current and voltage ratings and the rated frequency are correct.

5.2 Before energisation, check the auxiliary supply voltage is as stated on the rating plate and is connected with the correct polarity.

5.3 Before energisation, check that the relay inoperative alarm contact, output 12, is closed.

5.4 On application of the auxiliary supply voltage to the relay, check that the front panel LEDs (except for the "EN" LED), and the LCD backlight illuminate. After a couple of seconds the front panel LEDs extinguishes, the "EN" LED illuminates and "EN" appears in the LCD display

5.5 Check that the relay inoperative alarm contact, output 12, is open.

6 REQUIRED RELAY SETTINGS

When commissioning an SEL 321 relay for the first time, the engineer should allow an hour to familiarise himself/herself with the menu and the commands.

All configuration and settings may be made in three ways:

- (a) Via Front Panel User Interface, using the relay keypad and LCD.
- (b) Via a PC connected to the front serial port 3 or either of the rear serial ports 1 and 2, if they are available. The SEL 5010 Relay Assistant Software will enable you to download a setting file on a disk, which has been preloaded with the required configuration and settings.
- (c) Via a PC connected as in (b) but running in HyperTerminal. This communication enables settings and configurations to be viewed/changed, events captured and the relay targets interrogated.

