

Ref:	NR/SMTH/Part/02
Issue:	13
Date:	02 December 2023
Compliance date:	02 March 2024

NR/L3/SIG/11231

NR/SMTH/Part/02

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of Network Rail.
© Copyright 2023 Network Rail.

Uncontrolled copy once printed from its electronic source.

Published and Issued by Network Rail, 2nd Floor, One Eversholt Street, London, NW1 2DN.




NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part/02		
Index – Forms and Templates		
Issue No: 13	Issue Date: 02/12/2023	Compliance Date: 02/03/2024


INDEX

Number	Subject
Form 01	Cable Core Temporary Label
Form 02	Maintenance Test Plan List (including G130 Test Plans)
Form 04	Balise – Certificate of Conformity
Form 06	Point Permutation Chart: One Point End
Form 07	Point Permutation Chart: Two Point Ends
Form 08	Point Permutation Chart: Three Point Ends
Form 09	Point Permutation Chart: Four Point Ends
Form 10	Point Permutation Chart: Five Point Ends
Form 11	Point Permutation Chart: Six Point Ends
Form 12	Train Protection Warning System (TPWS) Failure Report Form
Form 13	Wrong Side Failure or Incident Check Sheets
Form 14	Intermittent / Obscure Failure Check Sheets
Form 15	Wire Count Grid Sheet - Bus Bar and Terminal Wire
Form 16	Wire Count Grid Sheet – BR930 Series Relay Base
Form 17	Wire Count Grid Sheet - Cable Core
Form 18	Wire Count Grid Sheet – Multipurpose
Form 19	Cable Function Test Planning Sheet
Form 20	Wire Count Grid Sheet - WAGO Terminations
Form 21	Signal Failure and Incident Testing: Obscuration Diagram

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/01		
Cable Core Temporary Label		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Cable Core Temporary Label NR/SMTH/Part02/Form/01 	
PART A	
Circuit	
Strap From	
Strap To	
Date	
Signature	
Name	
Company	

Cable Core Temporary Label NR/SMTH/Part02/Form/01 	
PART B	
Strap Information	
Location	
Situation	
Strap From	
Strap To	
Reason	
Signature	
Name	
Company	

END

Issue No: 01

Issue Date: 04/09/2021

Compliance Date: 04/12/2021

PLACE / PROJECT / STAGE: _____

MAINTENANCE TEST PLAN LIST NUMBER: _____ **CONTROLLING SIGNAL BOX(ES):** _____

Name	Company	Position / Role	Signature	Date
PREPARED BY:				
CHECKED BY:				
APPROVED BY:		Responsible Signal Engineer		

Location / Relay Room	Affected Equipment (Identity and Type)	Work Description	Test Plan Number	Installer	Tester	Tester Identity / Signature	Time / Date

NR/L3/SIG/11231 Signal Maintenance Testing Handbook			
NR/SMTH/Part02/Form/02			
Maintenance Test Plan List (including G130 Test Plans)			
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021	

PLACE / PROJECT / STAGE: _____

MAINTENANCE TEST PLAN LIST NUMBER: _____ **CONTROLLING SIGNAL BOX(ES):** _____

Test Equipment Type	Serial Number	Test Equipment Type	Serial Number	Test Equipment Type	Serial Number	Test Equipment Type	Serial Number	
Activity		Details / Records				(Lead) Tester Identity / Signature		Time / Date
Alteration to the listed work		Details Agreed & Authorised by:						
Disconnections to remain after work. Applied & checked, see NR GI B002. <i>Copy of RT3187 to be attached</i>		Equipment List		Disconnection detail if not stated on separate list				
System restored to its normal (quiescent) state.		Straps accounted for (GI U034)						
		Systems reset						
		Sequential controls reset						
All Testing completed		All Test Plan Slips Complete						
		Incomplete tests recorded and protection stated						
Test Plan Record Slips submitted to Signalling Manager/Lead Tester		Records submission method						
Equipment Security		All Doors Secured & Locked						
Signalling offered / entered (delete as required) for Entry into Operational Service		(Lead) Tester Name:						
Comments: <i>(continue on a separate sheet if required)</i>								

It is the responsibility of the SMTH Tester / G110 Tester / G110 Lead Tester to check that this Test Plan List has all the required signatures. If the Test Plan does not have all the signatures, then the final SMTH Tester / G110 Tester / G110 Lead Tester must complete / arrange for the testing to be completed or arrange protection.

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/04		
Balise – Certificate of Conformity		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Positioning Form Number		Version	
Balise Data File Number		Version	
Balise Serial Number			
Balise Group ID (BG)		Location of Balise	
Position in BG		ELR	
Balise Label ID		Line Name	
Application Code		Direction of BG Normal or Reverse	
Installation record check list - Insert a tick if correct (To be completed by Programmer)	Installation record check list – Insert a tick if correct (for use by Installer)		
Balise Correctly Labelled		Balise Correctly Labelled	
Label Included for Bracket		Label Included for Bracket	
Label Included for Cable (If Applicable)		Label Included for Cable (If Applicable)	
Positioning Record Included		Positioning Record Included	
Positioning Record Number Matches the Number Recorded Above		Positioning Record Number Matches the Number Recorded Above	
Name of Programmer		Name of Installer	
Name of Verifier		Name of Tester	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/06		
Point Permutation Chart: One Point End		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	Tick
01	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/07		
Point Permutation Chart: Two Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	End 02	Tick
01	0	0	
02	0	1	
03	1	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/08		
Point Permutation Chart: Three Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	End 02	End 03	Tick
01	0	0	0	
02	0	0	1	
03	0	1	0	
04	0	1	1	
05	1	0	0	
06	1	0	1	
07	1	1	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/09		
Point Permutation Chart: Four Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	End 02	End 03	End 04	Tick
01	0	0	0	0	
02	0	0	0	1	
03	0	0	1	0	
04	0	0	1	1	
05	0	1	0	0	
06	0	1	0	1	
07	0	1	1	0	
08	0	1	1	1	
09	1	0	0	0	
10	1	0	0	1	
11	1	0	1	0	
12	1	0	1	1	
13	1	1	0	0	
14	1	1	0	1	
15	1	1	1	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/10		
Point Permutation Chart: Five Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	End 02	End 03	End 04	End 05	Tick
01	0	0	0	0	0	
02	0	0	0	0	1	
03	0	0	0	1	0	
04	0	0	0	1	1	
05	0	0	1	0	0	
06	0	0	1	0	1	
07	0	0	1	1	0	
08	0	0	1	1	1	
09	0	1	0	0	0	
10	0	1	0	0	1	
11	0	1	0	1	0	
12	0	1	0	1	1	
13	0	1	1	0	0	
14	0	1	1	0	1	
15	0	1	1	1	0	
16	0	1	1	1	1	
17	1	0	0	0	0	
18	1	0	0	0	1	
19	1	0	0	1	0	
20	1	0	0	1	1	
21	1	0	1	0	0	
22	1	0	1	0	1	
23	1	0	1	1	0	
24	1	0	1	1	1	
25	1	1	0	0	0	
26	1	1	0	0	1	
27	1	1	0	1	0	
28	1	1	0	1	1	
29	1	1	1	0	0	
30	1	1	1	0	1	
31	1	1	1	1	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/11		
Point Permutation Chart: Six Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Signal Box:		Loc/Equip. Room:	
Point No:		Date:	
Comments:			

No.	End 01	End 02	End 03	End 04	End 05	End 06	Tick
01	0	0	0	0	0	0	
02	0	0	0	0	0	1	
03	0	0	0	0	1	0	
04	0	0	0	0	1	1	
05	0	0	0	1	0	0	
06	0	0	0	1	0	1	
07	0	0	0	1	1	0	
08	0	0	0	1	1	1	
09	0	0	1	0	0	0	
10	0	0	1	0	0	1	
11	0	0	1	0	1	0	
12	0	0	1	0	1	1	
13	0	0	1	1	0	0	
14	0	0	1	1	0	1	
15	0	0	1	1	1	0	
16	0	0	1	1	1	1	
17	0	1	0	0	0	0	
18	0	1	0	0	0	1	
19	0	1	0	0	1	0	
20	0	1	0	0	1	1	
21	0	1	0	1	0	0	
22	0	1	0	1	0	1	
23	0	1	0	1	1	0	
24	0	1	0	1	1	1	
25	0	1	1	0	0	0	
26	0	1	1	0	0	1	
27	0	1	1	0	1	0	
28	0	1	1	0	1	1	
29	0	1	1	1	0	0	
30	0	1	1	1	0	1	
31	0	1	1	1	1	0	
32	0	1	1	1	1	1	

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/11		
Point Permutation Chart: Six Point Ends		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

No.	End 01	End 02	End 03	End 04	End 05	End 06	Tick
33	1	0	0	0	0	0	
34	1	0	0	0	0	1	
35	1	0	0	0	1	0	
36	1	0	0	0	1	1	
37	1	0	0	1	0	0	
38	1	0	0	1	0	1	
39	1	0	0	1	1	0	
40	1	0	0	1	1	1	
41	1	0	1	0	0	0	
42	1	0	1	0	0	1	
43	1	0	1	0	1	0	
44	1	0	1	0	1	1	
46	1	0	1	1	0	0	
46	1	0	1	1	0	1	
47	1	0	1	1	1	0	
48	1	0	1	1	1	1	
49	1	1	0	0	0	0	
50	1	1	0	0	0	1	
51	1	1	0	0	1	0	
52	1	1	0	0	1	1	
53	1	1	0	1	0	0	
54	1	1	0	1	0	1	
55	1	1	0	1	1	0	
56	1	1	0	1	1	1	
57	1	1	1	0	0	0	
58	1	1	1	0	0	1	
59	1	1	1	0	1	0	
60	1	1	1	0	1	1	
61	1	1	1	1	0	0	
62	1	1	1	1	0	1	
63	1	1	1	1	1	0	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/12		
Train Protection Warning System (TPWS) Failure Report Form		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

	TPWS FAILURE REPORT FORM	Thales Form Ser. No. Thales Use Only
--	-------------------------------------	---

Contact Name:		Contact Tel:	
Company:		Email:	
Address:		Date:	

Site Details							
Site Common Name:							
Signal / PSR / Buffer Stops Name:							
Site Ref / ELR							
Failed Function:	TSS - ND		TSS - OD		OSS - ND		OSS - OD

Please indicate which lights were on when found

Initial Findings			
Was fault indicated to the Signaller?	Y	N	
Was fault found during maintenance service?	Y	N	
Cable length from TPWS to OS Arming Loops		M	
Cable length from TPWS to OS Trigger Loops		M	

○	Power On
○	Loops Active
SIM	

○	Power On
○	Main Sig.
○	Sub Sig / Supp
○	Fault
OSM / TSM <small>(please circle one)</small>	

Weather Conditions (During Investigation)				
Cold		Mild		Hot
Raining		Overcast		Dry
Was there condensation in TPWS enclosure?	Y	N		

Baseplate or Trackside Enclosure			
Serial No.		Part No.	

S/N	
P/N	

S/N	
P/N	

Test	Last Recorded Value	Current Value	Units
Supply Voltage			Vrms
Main signal input voltage when signal at red			Vrms
Sub signal input voltage when lit (if installed)			Vrms
Overspeed Arming loop voltage at terminal rail			Vrms
Overspeed Arming loop frequency at terminal rail			kHz
Overspeed Arming loop signal strength from loop			mVrms
Overspeed Trigger loop voltage at terminal rail			Vrms
Overspeed Trigger loop frequency at terminal rail			kHz
Overspeed Trigger loop signal strength from loop			mVrms
Train Stop Arming loop voltage at terminal rail			Vrms
Train Stop Arming loop frequency at terminal rail			kHz
Train Stop Arming loop signal strength from loop			mVrms
Train Stop Trigger loop voltage at terminal rail			Vrms
Train Stop Trigger loop frequency at terminal rail			kHz
Train Stop Trigger loop signal strength from loop			mVrms

Fault Code from Fault Flow Chart:		FRAME Report No:	

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Includes:	Wrong Side Failure or Incident
Excludes:	Intermittent or obscure failures

General

These check sheets shall be used in conjunction with the Wrong Side Failure Test Guides in [NR/SMTH/Part/08](#) of this standard. This form is generic for failure and incident testing on all equipment types, information shall be filled in as directed in the Wrong Side Failure Test Guides notes.

Test plan / certificates SFI/01-01 to SFI/01-13 are to be used for all signalling wrong side failures and serious incidents **except** signal / level crossing lamps and damaged / defective telephones.

All signal boxes, equipment/relay rooms, trackside apparatus cases, and sites where investigations have been identified shall be entered on each test plan / certificate.

If extra sheets are required for a particular step, the number should be recorded above.

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-01	MASTER TEST PLAN / INDEX
------------------	---------------------------------

Test Plan Produced By (Level 1)	
Checked by (Level 2 or 3)	

Place	
Signal Box	
Date	
Time	
FMS No.	
Test Guide No.	
Weather Conditions	
Details of Incident / Failure	

Certificates (General)		No. of Sheets	Name	Signature	Date
SFI/01-02	Authority Levels				

Certificates (Level 1)		No. of Sheets	Name	Signature	Date
SFI/01-03	Equipment Identity				
SFI/01-04	Additional Information				
SFI/01-05	Non Destructive Tests				
SFI/01-06	Destructive Tests				
SFI/01-07	Other Considerations				
SFI/01-08	Records & Notes				
SFI/01-09	Cable Test Plan				
SFI/01-10	Additional Testing				

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Certificates (Level 2)		No. of Sheets	Name	Signature	Date
SFI/01-11	Information Checklist				
SFI/01-12	Level 2 Report				

Certificates (Level 3)		No. of Sheets	Name	Signature	Date
SFI/01-13	Level 3 Report				

SFI/01-02	AUTHORITY LEVELS
------------------	-------------------------

FMS No.		Test Guide No		Sheet of	
----------------	--	----------------------	--	-----------------	--

Enter details of all testers and authorised persons who have signed / initialled the test certificates, escalated testing levels, and offered equipment back to service.

Level 1			
Grade/Position	Name	Signature	Initials

Level 2			
Grade/Position	Name	Signature	Initials

Level 3			
Grade/Position	Name	Signature	Initials

Details of Person Offering Equipment for Return to Service				
Name	SFI Level	Date	Time	Signature

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01- 03	EQUIPMENT IDENTIFICATION
-------------------	---------------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

List all relevant equipment and sites visited during the investigation. Initial each 'Test(s) Completed' box on completion of the test. Where an item is not applicable to the investigation put a cross though that box, do **not** leave it blank.

Equipment Identity	1	2	3	4	5	6	7
Signal Box Name(s)							
Test(s) Complete							
Equipment Room Name(s)/Number(s)							
Test(s) Complete							
Apparatus Case Number(s)							
Test(s) Complete							
Track Circuit Number(s)							
Test(s) Complete							
Signal Number(s)							
Test(s) Complete							
Route Indicator Identity							
Test(s) Complete							
Point Number(s)							
Test(s) Complete							
AWS Number(s)							
Test(s) Complete							
TPWS Number(s)							
Test(s) Complete							

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Equipment Identity	1	2	3	4	5	6	7
Level Crossing Name(s)							
Test(s) Complete							
Cable Identities							
Test(s) Complete							
Miscellaneous Equipment #1							
Test(s) Complete							
Miscellaneous Equipment #2							
Test(s) Complete							

Miscellaneous Equipment #1 Identity	
Miscellaneous Equipment #2 Identity	

Signal Aspect Sequence Test							
Signal From							
Signal To							
Test Complete							

Signals shall not be disconnected to protect the portion of line affected by the failure or incident unless requested by Network Rail operations staff and then only if this request is additionally authorised by the SFI Level 2 person.

S&T staff shall advise the Signaller of the protection required to confirm that the risks associated with the reported WSF or incident are minimised.

List as follows the signals that are to be maintained at danger by the Signaller to protect the portion of line affected by the failure or incident.

Signals Maintained at Danger by the Signaller			

Signaller Advised at:							
Signal Box		Time		Date		By (Initials)	

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-04	ADDITIONAL INFORMATION
------------------	-------------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

List applicable details of additional information that might be of use to other persons involved with the investigation of the failure/incident (if none or not applicable, state so in the box).

Signallers Name	
Drivers Name & Depot	
Train Type & Reporting Number	
Train Operating Company	
Details of any other Train Movements	
Other Witness Name(s) and contact Details	
Details of Non Standard Operations Procedures	
Details of any Ongoing Engineering Work	
Details of any Ongoing Signalling Work	
Any Other Details that might have Relevance (e.g. temporary cable core diversions, relay contact diversions, rodent infestation etc)	

NR/L3/SIG/11231 Signal Maintenance Testing Handbook

NR/SMTH/Part02/Form/13

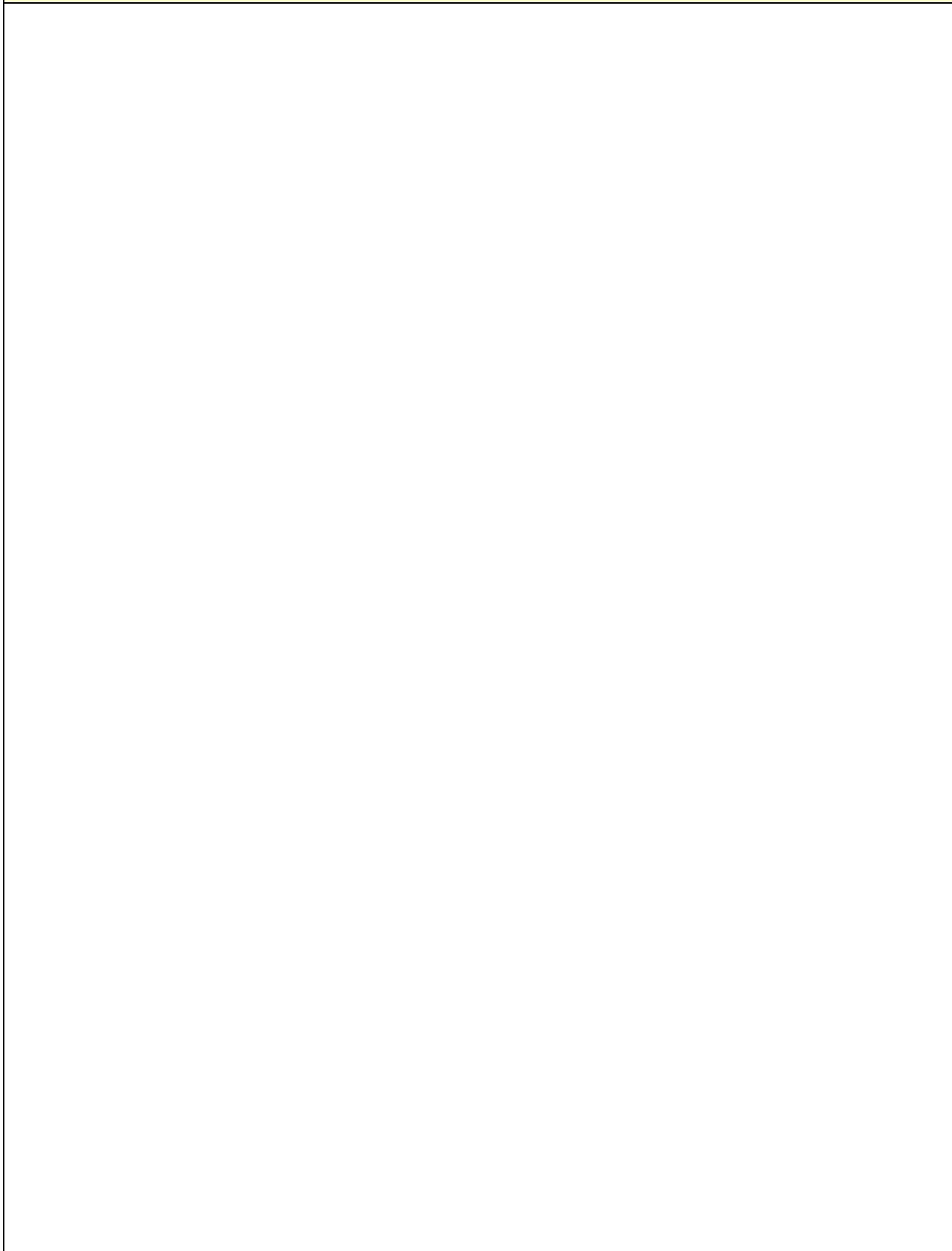
Wrongside Failure or Incident Check Sheets

Issue No: 01

Issue Date: 04/09/2021

Compliance Date: 04/12/2021

Site Sketch



NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-05	NON DESTRUCTIVE TESTS
------------------	------------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Initial each box on completion of the applicable step. If a step is not applicable to the investigation, enter 'N/A' in that box. Boxes shall not be left blank.

Where applicable, enter the relevant response to a specific item on sheet SFI/01-09.

Step	Location or Equipment Identities					
N01						
N02						
N03						
N04						
N05						
N06						
N07						
N08						
N09						
N10						
N11						
N12						
N13						
N14						
N15						
N16						
N17						
N18						
N19						
N20						
N21						
N22						
N23						
N24						
N25						
N26						
N27						
N28						
N29						

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Step	Location or Equipment Identities					
N30						
N31						
N32						
N33						
N34						
N35						
N36						
N37						
N38						
N39						
N40						
N41						
N42						
N43						
N44						
N45						
N46						
N47						
N48						
N49						
N50						
N51						
N52						

Level 2 Authorisation to Proceed to Destructive Tests					
Name		Date		Time	

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-06	DESTRUCTIVE TESTS
------------------	--------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Initial each box on completion of the applicable step. If a step is not applicable to the investigation, enter 'N/A' in that box. Boxes shall not be left blank.

Where applicable, enter the relevant response to a specific item on sheet SFI 08

Step	Location or Equipment Identity					
D01						
D02						
D03						
D04						
D05						
D06						
D07						
D08						
D09						
D10						
D11						
D12						
D13						
D14						
D15						
D16						
D17						
D18						
D19						
D20						
D21						
D22						
D23						
D24						
D25						
D26						
D27						
D28						
D29						
D30						

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-07	OTHER CONSIDERATIONS
------------------	-----------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Initial each box on completion of the applicable step. If a step is not applicable to the investigation, enter 'N/A' in that box. Boxes shall not be left blank.

Where applicable, enter the relevant response to a specific item on sheet SFI/01-08

Step	Location or Equipment Identity					
O01						
O02						
O03						
O04						
O05						
O06						
O07						
O08						
O09						
O10						

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-08	RECORDS & NOTES
------------------	----------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Record all items identified in the guide steps where records are required (e.g. voltages, values etc). Items of equipment that have been replaced and/or sent away for specialist investigation should also be identified. Also, record all information where the guide step asks you to 'Note'. Any additional information you think might assist with the review of the failure/incident should also be noted here.

Step	Note

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-09	CABLE TEST PLAN
------------------	------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Initial and date the relevant section on completion of the cable test.
 Each cable section shall be treated as an ‘affected length’
 Results shall be recorded on record card NR/SMS/T054/RC/01.

Cable Type	Cable Identity	Start (From)	Finish (To)	Initials	Date

Comments

Notes:
 Cable type should state if tail or lineside.
 Cable identity should state cable number (if any) or number of cores.

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-10	ADDITIONAL TESTING
------------------	---------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Where a situation requires additional testing over and above the steps in this test plan, or additional steps have been requested by an SFI level 2/3 or other authorised person (e.g. HSE) details of these should be recorded below.

Additional Testing		
Name	Signature	Date

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-11	INFORMATION / DATA / REPORTS CHECKLIST
------------------	---

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Note that some failures/incidents might not require all the reports etc listed, if not required write 'N/A' in the box.

The relevant SMTH log sheets should also be included in these reports.

Information / Data / Report Type	Requested		Received	
	Date	Initials	Date	Initials
Signallers Report				
Drivers Report				
Guards Report				
Signal Box Shift Manager Report				
Network Rail Daily Log				
Apparatus Case/Equipment Room Record Card				
Busbar Record Cards				
Track Circuit Record Cards				
Signal Lamp Voltage Record Card				
FPL Record Card				
British Transport Police Report				
Witness Statement(s)				
Data Logger Media (Instead Type)				
Data Logger Media (PC Type)				
SSI Logger Media				
IECC Logger Media				
Telephone Voice Recorder Media				
DOO Recorder Media				

Additional Reports / Comments on Reports, Data or Information

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-12	LEVEL 2 REPORT
------------------	-----------------------

Fault No		Test Guide No		Sheet of	
-----------------	--	----------------------	--	-----------------	--

Fault Details	
Place	
Signal Box	
Date	
Time	
Weather Conditions	

Summary of Fault or Problem Found

Name	Signature	Date

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/13		
Wrongside Failure or Incident Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/01-13	LEVEL 3 REPORT
------------------	-----------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Fault Details	
Place	
Signal Box	
Date	
Time	
Weather Conditions	

Report Review

Recommendations

Name	Signature	Date

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Includes:	Intermittent or obscure failures
Excludes:	Wrongside failure or incident

General

These check sheets shall be used in conjunction with the Intermittent or Obscure Failure Guides ([NR/SMTH/Part09](#)) of this standard. This form is generic for failure and incident testing on all equipment types, information shall be filled in as directed in the Intermittent or Obscure Failure Guides chosen.

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/02-01	MASTER TEST PLAN / INDEX
------------------	---------------------------------

Test Plan Produced By	
Grade	
Team	

Place	
Signal Box	
Date	
Time	
FMS No.	
Test Guide No.	
Weather Conditions	
Details of Failure	

Sheets	No. of Sheets	Name	Signature	Date
SFI/02-02		Equipment Identity		
SFI/02-03		Additional Information		
SFI/02-04		Guide Steps		
SFI/02-05		Records & Notes		

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/02-02	EQUIPMENT IDENTIFICATION
------------------	---------------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

List all relevant equipment and sites visited during the investigation. Initial each 'Test(s) Completed' box on completion of the test. Where an item is not applicable to the investigation put a cross though that box, do not leave it blank.

Equipment Identity	1	2	3	4	5	6	7
Signal Box Name(s)							
Test(s) Complete							
Equipment Room Name(s)/Number(s)							
Test(s) Complete							
Apparatus Case Number(s)							
Test(s) Complete							
Track Circuit Number(s)							
Test(s) Complete							
Signal Number(s)							
Test(s) Complete							
Route Indicator Identity							
Test(s) Complete							
Point Number(s)							
Test(s) Complete							
AWS Number(s)							
Test(s) Complete							
TPWS Number(s)							
Test(s) Complete							

NR/L3/SIG/11231 Signal Maintenance Testing Handbook

NR/SMTH/Part02/Form/14

Intermittent/Obscure Failure Check Sheets

Issue No: 01 Issue Date: 04/09/2021 Compliance Date: 04/12/2021

Equipment Identity	1	2	3	4	5	6	7
Level Crossing Name(s)							
Test(s) Complete							
Cable Identities							
Test(s) Complete							
Miscellaneous Equipment #1							
Test(s) Complete							
Miscellaneous Equipment #2							
Test(s) Complete							

Miscellaneous Equipment #1 Identity	
Miscellaneous Equipment #2 Identity	

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/02-03	ADDITIONAL INFORMATION
------------------	-------------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

List applicable details of additional information that might be of use to other persons involved with the analysis of the failure (if none or not applicable, state so in the box).

Signallers Name	
Drivers Name & Depot	
Train Type & Reporting Number	
Train Operating Company	
Details of any other Train Movements	
Other Witness Name(s) and contact Details	
Details of Non Standard Operations Procedures	
Details of any Ongoing Engineering Work	
Details of any Ongoing Signalling Work	
Any Other Details that might have relevance (e.g. temporary cable core diversions, relay contact diversions, rodent infestation etc)	

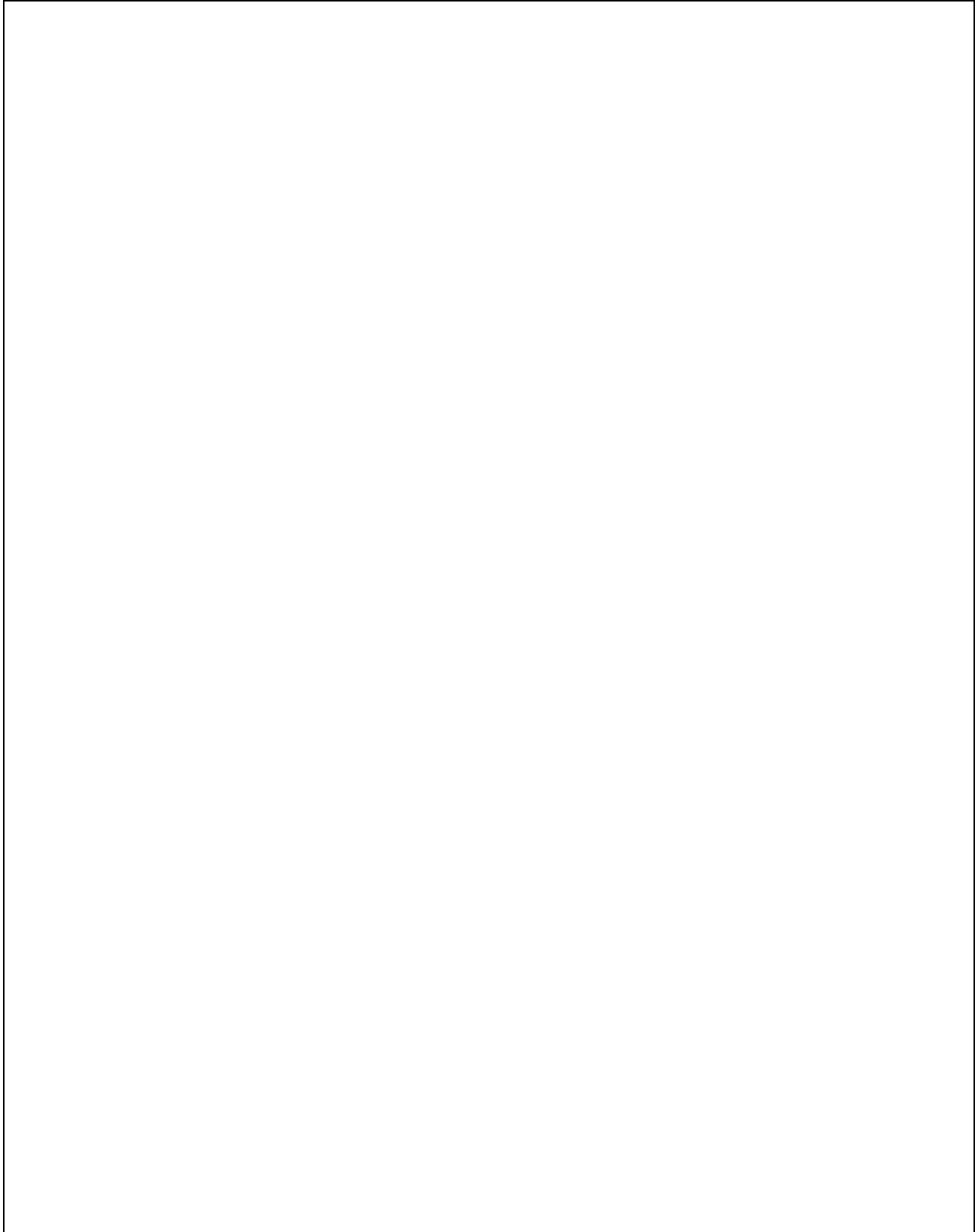
NR/L3/SIG/11231 Signal Maintenance Testing Handbook

NR/SMTH/Part02/Form/14

Intermittent/Obscure Failure Check Sheets

Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021
--------------	------------------------	-----------------------------

Site Sketch



NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

SFI/02-04	GUIDE STEPS
------------------	--------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Initial each box on completion of the applicable step. If a step is not applicable to the investigation, enter 'N/A' in that box. Boxes must not be left blank.

Where applicable, enter the relevant response to a specific item on sheet SFI/02-05.

Step	Location or Equipment Identity					
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						

Step	Location or Equipment Identity					
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/14		
Intermittent/Obscure Failure Check Sheets		
Issue No: 01	Issue Date: 04/09/2021	Compliance Date: 04/12/2021

Step	Location or Equipment Identity					
66						
67						
68						
69						

SFI/02-05	RECORDS & NOTES
------------------	----------------------------

FMS No		Test Guide No		Sheet of	
---------------	--	----------------------	--	-----------------	--

Record all items identified in the guide steps where records are required (e.g. voltages, values etc). Items of equipment that have been replaced and/or sent away for specialist investigation should also be identified. Also, record all information where the guide step asks you to 'Note'. Any additional information you think might assist with the review of the failure/incident should also be noted here.

Step	Note

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/15		
Wire Count Grid Sheet - Bus Bar and Terminal Wire		
Issue No. 02	Issue Date: 04/06/2022	Compliance Date: 03/09/2022

Signal Box:		Loc / Equip. Room:	
Bus Bar / Terminal ID:			
Date:		SMTH Log Sheet No:	
Name:		Signature	

	Terminal	Termination	Analysis	Diagram
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/15		
Wire Count Grid Sheet - Bus Bar and Terminal Wire		
Issue No. 02	Issue Date: 04/06/2022	Compliance Date: 03/09/2022

Completion Guidance:

Column Heading	Action required
Terminal	Comfirm terminal number.
Termination	Observe the number of wires/cable cores connected on the termination point and record this figure.
Analysis	Check the cable analysis and record the number of wires/cable cores shown as being connected to the termination point.
Diagram	Check the diagrams and record the number of wires/cable cores shown as being connected to the termination point.

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/16		
Wire Count Grid Sheet – BR930 Series Relay Base		
Issue No. 02	Issue Date: 04/06/2022	Compliance Date: 03/09/2022

Signal Box:		Loc/Equip. Room:	
Relay:		Position:	
Function Left:		Function Right:	
Date:		SMTH Log Sheet No:	
Name:		Signature	

Relay Spade ID				Relay Spade ID				Relay Spade ID				Relay Spade ID			
Termination				Termination				Termination				Termination			
Analysis				Analysis				Analysis				Analysis			
Diagram				Diagram				Diagram				Diagram			
A1				B1				C1				D1			
A2				B2				C2				D2			
A3				B3				C3				D3			
A4				B4				C4				D4			
A5				B5				C5				D5			
A6				B6				C6				D6			
A7				B7				C7				D7			
A8				B8				C8				D8			
R1												R2			
R3												R4			

Completion Guidance:

Column Heading	Action required
Relay Spade ID	Confirm the numbering.
Termination	Observe the number of wires/cable cores connected on the termination point and record this figure.
Analysis	Check the cable analysis and record the number of wires/cable cores shown as being connected to the termination point.
Diagram	Check the diagrams and record the number of wires/cable cores shown as being connected to the termination point.

END

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/17		
Wire Count Grid Sheet – Cable Core		
Issue No. 03	Issue Date: 04/03/2023	Compliance Date: 03/06/2023

24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Completion Guidance:

Column Heading	Action required
Terminal	Confirm the terminal number.
Core Number	Record the cable core number.
Termination	Observe the number of wires/cable cores connected on the termination point and record this figure
Analysis	Check the cable analysis and record the number of wires/cable cores shown as being connected to the termination point.
Diagram	Check the diagrams and record the number of wires/cable cores shown as being connected to the termination point.

END

Cable Function Test Planning Sheet

Issue No: 01 Issue Date: 04/06/2022 Compliance Date: 03/09/2022

Cable ID: **Cable Size:** **Cable From:** **Cable To:** **Date:**

Cable Core	First Function*	Location of First Function	Polarity at First Function	First Fuse, Link or Terminal	Location of First Fuse, Link or Terminal	Controlling Device	Location of Controlling Device	Final Function	Location of Final Function
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						
			+ve:						
			-ve:						

*Note. For polarity change circuits there may be two Final Functions

NR/L3/SIG/11231 Signal Maintenance Testing Handbook		
NR/SMTH/Part02/Form/20		
Wire Count Grid Sheet – WAGO Terminals		
Issue No. 01	Issue Date: 04/06/2022	Compliance Date: 03/09/2022

24									
25									
26									
27									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									

Completion Guidance:

Column Heading	Action required
Terminal	Confirm the terminal number.
Termination	Observe the number of wires/cable cores connected on the termination point and record this figure.
Analysis	Check the cable analysis and record the number of wires/cable cores shown as being connected to the termination point.
Diagram	Check the diagrams and record the number of wires/cable cores shown as being connected to the termination point.

END

Signal Identity:		Signal Box or Control Point:	
Line:		Direction:	
Name:		Date/Time:	

