



No.: RDSO-QAST0LKO(MISC)/4/2019-O/o AIE/QA/SnT/HQ/RDSO

Dated: 23.12.2025

Through Email

All Zonal Railways (as per distribution list in Annexure-I)
All Relay OEM's (as per distribution list in Annexure-II)

Sub: Uploading of STR for Signaling Relays STR SIQ 420 ver 1.2 on the RDSO website and UVAM Item Master

Ref: 1. STR for Signaling Relays SIQ/0420 Version: 1.0
2. Clause 4.6.2 of Document No: QO-D-8.1-2 Version No:2
3. SIG Decontrol Policy letter No RDSO-QAST0LKO(MISC)/4/2019 dated 04.09.2025
4. This office letter even no. dated 20.11.2025 along with revised relay STR SIQ/0420 Draft Version: 1.1 D2

Vide letter under ref 3 revised relay STR -SIQ/0420 Final Draft Version: 1.1 D2 was uploaded on the RDSO public website on dated 20.11.2025 for Comments/Suggestions by all Stake holders.

Based on the suggestions from stakeholder, reasoned documents has been created as outlined in clause-4.4 of QO-D-8.1-2 Version No:2.2. Accordingly, final STR SIQ/0420 Draft Version: 1.2 has been prepared. Approval of competent Authority has been obtained for the same.

All existing signalling relay vendors and vendor under registration would be required to comply the final revised STR within one year i.e. by 04.09.2026 since the issuance of the SIG Decontrol policy letter dated-04.09.2025 vide ref 3 above.

STR verification for the existing signalling relay vendors and vendor under registration for compliance of revised STR would be required after the completion of due date or early if required by firm under the clause 4.12 of QO-D-8.1-2 Version No:2.2.

The final STR of Signalling Relays SIQ/0420 Version: 1.2 is being uploaded on RDSO website as well as UVAM Item master for further usage by all stake holders.

Digitally Signed by Ved
Prakash

Date: 23-12-2025 18:37:38

Reason: Approved

(Ved Prakash)
Jt.Director Signal-I

Annexure-I

Copy:

1.	GM(S&T)	प्रि.सी.एस.टी.ई.:
(i)	Central Rly., Mumbai, CST – 400001	मध्य रेलवे, मुंबई सी.एस.टी. – 400 001
(ii)	Western Rly, Churchgate, Mumbai – 400020	पश्चिम रेलवे, चर्च गेट, मुंबई – 400 020
(iii)	Eastern Rly., Fairlie Place, Kolkata 700001	पूर्व रेलवे, फेयरली प्लेस, कोलकाता – 700 001
(iv)	South Eastern Rly., Garden Reach, Kolkata	दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता – 700 043
(v)	Northern Rly. Baroda House, New Delhi- 110001	उत्तर रेलवे, बड़ौदा हाउस, नयी दिल्ली – 110 001
(vi)	North Eastern Rly., Gorakhpur- 273012	पूर्वोत्तर रेलवे, गोरखपुर – 273 012
(vii)	North East Frontier Rly., Maligaon, Guwahati	पूर्वोत्तर सीमान्त रेलवे, मालीगांव, गुवाहाटी – 781 011
(viii)	Southern Rly. Park Town, Chennai – 600003	दक्षिण रेलवे, पार्क टाउन, चेन्नई – 600 003
(ix)	South Central Rly., Secunderabad – 500371	दक्षिण मध्य रेलवे, सिकंदराबाद – 500 371
(x)	East Central Railway, Hajipur	पूर्व मध्य रेलवे, हाजीपुर
(xi)	East Coast Railway, Rail Vihar BDA Rental Colony, Chandrasekharpur, Bhubneshwar	पूर्व तटीय रेलवे, रेल विहार बी.डी.ए. रेंटल कालोनी, चन्द्रशेखरपुर, भुवनेश्वर – 751 023
(xii)	North Central Railway, Subedaarganj, Pryagraj.	उत्तर मध्य रेलवे, सुबेदारगंज, प्रयागराज
(xiii)	North Western Railway, Jaipur – 300206	उत्तर पश्चिम रेलवे, जयपुर – 300 206
(xiv)	South Western Railway, Club Road, Keshavpur, Hubli - 23.	दक्षिण पश्चिम रेलवे, क्लब रोड केशवपुर, हुबली – 23
(xv)	West Central Railway, Annex Building, Opp Indira Market, Jabalpur-482068	पश्चिम मध्य रेलवे, एनेक्स भवन, जबलपुर – 482 068
(xvi)	South East Central Railway, R.E. Office Complex, Bilaspur – 495004	दक्षिण पूर्व मध्य रेलवे, आर.ई. ऑफिस कॉम्प्लेक्स, बिलासपुर – 495 004

Annexure II

1. SIGNAL AND TELECOMMUNICATION WORKSHOP SOUTHERN RAILWAY-COIMBATORE
2. Signal Workshop, Gorakhpur
3. CENTRAL RAILWAY-MUMBAI
4. M/s AEW TECHNOLOGIES LLP-HOWRAH
5. M/s ARECA EMBEDDED SYSTEMS PRIVATE LIMITED-HYDERABAD
6. M/s BG LI IN ELECTRICALS LIMITED-AURANGABAD
7. M/s BROADWEB TECHNOLOGIES PVT LTD-HOWRAH
8. M/s CG POWER AND INDUSTRIAL SOLUTIONS LIMITED-MUMBAI.
9. M/s DEMSON AND CO-CHENNAI
10. M/s DIGITAL COMMUNICATION AND CONTROL PVT LTD-KOLKATA
11. M/s ELDYNE ELECTRO SYSTEMS PRIVATE LIMITED-KOLKATA
12. M/s ELECTROTECNICA SYSTEMS PRIVATE LIMITED-HOWRAH
13. M/s HYTRONICS ENTERPRISES-HYDERABAD
14. M/s INTEGRA ENGINEERING INDIA LTD-HALOL
15. M/s ORIENT RELAY AND EQUIPMENTS-KOLKATA
16. M/s ULTRA ELECTRONICS PRIVATE LIMITED-KOLKATA
17. M/s WESTINGHOUSE SAXBY FARMER LIMITED-KOLKATA
18. M/s COSINE COMMUNICATIONS AND ELECTRONICS PVT LTD-HYDERABAD
19. M/s DEVIAN ELECTRONICS PRIVATE LIMITED-DELHI
20. M/s ELECTROSTAR RAILCON TECHNOLOGIES PRIVATE LIMITED-KOLKATA
21. M/s GENEXT TECHNOLOGIES-HOWRAH
22. M/s JMV LPS LIMITED-NOIDA
23. M/s KDP MICRO POINT PRIVATE LIMITED-KOLKATA
24. M/s NARAYANI AUTOMATIONS LLP-KOLKATA
25. M/s NEO 4D ELECTRONICS SYSTEMS PRIVATE LIMITED-HYDERABAD
26. M/s ROYAL ELASTOMERS PRIVATE LIMITED-HOWRAH
27. M/s WESVY ELECTRICALS PRIVATE LIMITED-HOWRAH
28. M/s KAYNES TECHNOLOGY INDIA-MYSORE
29. M/s CEMFIS INDIA PRIVATE LIMITED-VISAKHAPATNAM

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Document Title: Schedule Of Technical Requirement (STR) for Signaling Relays.				

RESEARCH DESIGNS & STANDARDS ORGANISATION
MANAK NAGER, LUCKNOW – 226011



सत्यमेव जयते

Schedule Of Technical Requirement (STR) for Signaling Relays

Document No- SIQ/0420

Version: 1.2

AKHILESH KUMAR TRIPATHI	AMIT KUMAR YADAV	VED PRAKASH	Printed:
Prepared By: JE/D/S&T	Checked By: ADE/Signal-VIII	Checked and issued by: Joint Director/Signal-I	Page 1 of 8

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DOCUMENT DATA SHEET	
Designation: Document No- SIQ/0420	Version-1.2
Title of Document: Schedule Of Technical Requirement (STR) for Signaling Relays	
Prepare By: Name: Shri Akhilesh Kumar Tripathi Designation: JE/D/S&T	
Checking By: Name: Shri Amit Kumar Yadav Designation: ADE/Signal-VIII/RDSO	
Checking and Issuing By: Name: Shri Ved Prakash Designation: Joint Director/Signal-I/RDSO	
Reviewed By: Name: Shri Vinay Prajapati Designation: ED/Signal-I/RDSO	
Approved By: Name: Shri Prashant Kumar Varma Designation: Principal ED/S&T/RDSO	
Abstract: This document defines the Schedule of Technical Requirement (STR) for Signaling Relays	

AMENDMENTS:

STR No.	Version	Amendment	Amendment details	Effective date
SIQ/0420	0.0	First	---	04/11/2003
SIQ/0420	1.0	Second		16.10.2024
SIQ/0420	1.1 D1	Draft	Issued for comments	19.09.2025
SIQ/0420	1.1 D2	Final Draft	Issued for comments	20.11.2025
SIQ/0420	1.2	Third		As signed

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List of specifications for various types of Relays

SN	Item Description	Specifications
1	RELAYS--Universal Plug-in type AC Lamp Proving Relay (M-to-C Contact) for LED Signal Lamp	BRS:941A, STS/E/RELAYS/AC LIT LED SIGNAL/09-2002, Amend. -1
2	Relays - 'Q' Series Neutral Line (ACI & NON-ACI)	BRS:930 & BRS:931A
3	Relays--Plug in Type, Track Relay 9 & 4 Ohm (ACI & Non-ACI)	BRS: 938A, 939A, 966 & Appendix F2
4	Relays--Special Type (Metal-to-Carbon)	BRS: 930, 931A, 932A, 933A, 934A, 935A, 937A, 943, 960 & RDSO/SPN/84 ver.2.0 Amend. -1
5	Relays - Neutral Line (Metal-to-Metal Contact) (ACI & Non-ACI)	IRS:S-46 Amend. -1 & firm's Spec.
6	Relays -3-Position DC Polarized (Metal to Metal)	IRS:S-31/80 (Amend. -1)
7	Relays - Special Type (Metal to Metal)	IRS:S-46 Amend. -1 & Firm's Spec.
8	Relay - Metal to Metal 110V AC LED ECR for LED Signal Lamp	IRS:S-46 Amend. -1 & STS /E / Relays /AC Lit LED Signal/09-2002 with Amend. No. 1
9	Relays--Point Contactor Unit	IRS:S-46 Amend. -1 & Firm's Spec.
10	Key Lock Checking Relay with D.C. Neutral Relay, (A.C. Immunised / Non A.C Immunised) for Railway Signalling Purposes	RDSO/SPN/219/2016 Ver 1.0 with Amendment-1

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I. Essential Plant & Machinery Required For Production

1. Computer Numerical Control (CNC) Machine and Other equipments' of machine shop (In house/Outsourced)
2. Electrically Operated Bench Drilling Machine
3. Three stage Distilled Water Plant with minimum 1 liter/hour capacity for Metal to Carbon relay
4. PLC Based Injection Moulding Machine (Medium duty-hydraulic) (In house/Outsourced)
5. Temperature controlled Chamber 125 liters, -25⁰C to+ 150⁰C.
6. Electroplating set-up (In house/Outsourced)
 - a) Magnetic separator
 - b) Passive plant
 - c) Bright dipping plant
 - d) Lacquering plant
 - e) Pickling & degreasing plant
 - f) Polishing/Buffing machine
 - g) Electroplating plant
7. Temperature Controlled Soldering & de-soldering Station.
8. Coil Winding Machine.
9. Ultrasonic vacuum degreasing/cleaning plant for Metal to Carbon Relay.
10. Jigs & fixtures.
11. Special tools, torque-wrench, torque drivers etc.
12. Air-conditioned space for final assembly & testing of relays.
Remaining working space including store shall be dust free

II. Essential Testing Equipment's required for Quality Assurance of Relays and Silver Impregnated Graphite (SIG) contacts

Part-A: T&P Item for Relays

1. Digital Voltmeter of Min. 4 ¹/₂ Digit.
2. Digital Insulation tester, 500V DC.
3. Digital Ammeter of Min. 4 ¹/₂ Digit.
4. Digital bounce/time interval meter.
5. Digital High voltage break down tester, up to 5KV AC.
6. Digital DC regulated power supplies.
7. Registration and code checking jig.

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8. Digital multimeter, Min. 4 ½ digit.
9. Digital micro-ohm meter.
10. Digital Contact resistance measurement set up.
11. Test panel for AC immunity test.
12. Test panel for non-overlapping bridging test.
13. Non-weld ability test set up (Not applicable for M to C relay).
14. Thickness tester to check the thickness of Electro plating & surface coating.
15. Variable voltage Auto-transformer (VARIAC).
16. GO & NOGO gauges.
17. Tension Gauges.
18. Feeler Gauge.
19. Pressure Gauge.
20. Digital micrometer.
21. Digital Vernier calipers.
22. Suitable high efficiency LED indication panel for all configuration.
23. Endurance Test facility in a separate room.
24. Automatic test set up with auto record/print facility for measurement of important electrical parameters.

Part-B: T&P items for SIG contacts (Applicable for Metal to Carbon relays only)

1. Monopan Digital Chemical Balance 0-200 grams with an accuracy of 1%.
2. Laboratory apparatus for carrying out chemical analysis (Burette, Pipetteflask, test tubes, China dishes, sprit lamp, stand, platinum cup etc.
3. Microscope/Magnascope for visual inspection.
4. Crushing strength measuring apparatus range upto 2000 Kg/cm. (motor operated) with digital display.
5. VPN hardness tester including attachment for Micrographic study and photo .micrographics.
6. Contact resistance measurement set-up.
7. Digital Vernier caliper, Digital Micrometer, gauges, GO and NOGO gauges.
8. Surface finish checking set up.
9. Set Up to carry out non-weldability and solderability test.
10. Set up to determine water soluble impurities.

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III. General requirements for the facility used for relay manufacturing

1. Air-conditioned space for entire assembly & testing of relays and SIG contacts.
2. Linear assembly line with minimum movement of sub assembly components for the relays.
3. Minimum 15 minutes time shall be given to final assembler for proper assembly of each relay. Production capacity of the firm shall be decided in line to the deployment of final relay assembler.
4. Three stage testing that includes manual testing at two level i.e. two different person followed by final testing for recording electrical parameters measurable via automatic test set-up as provisioned in T&P Item Part A/24 .

IV. Notes

1. Plant, machinery and testing equipment's given above are only indicative. All necessary plant and machinery of adequate capacity and testing equipment's as necessary to manufacture the quality product as per RDSO specification & drawings shall be provided.
2. Outsourcing of any item related to 1,4 & 6 of Essential Plants and Machinery under section-I shall be from valid ISO certified sources and indicated in the 'Quality Assurance Plan' and approval of RDSO, Lucknow shall be obtained. Except item no.1, 4 and 6 of plant and machinery under section-I, all other items mentioned under section I & II (part A & B) are mandatory to be in-house.

In case of outsourcing, the ultimate responsibility to ensure quality, reliability and compliance of RDSO specification & drawings for the outsourced components shall be of the Relays vendor and all necessary tests and checks shall be done by him to ensure the same. Sampling plan and details of tests and checks proposed to be conducted by him on outsourced components shall be indicated in the QAP. Proper test record with traceability to the final product shall be maintained.

3. Audit of the manufacturing process of outsourced component in the manufacturing premises shall be carried out by the vendor of the relays at least once a year and report submitted to Executive Director/QA/RDSO field unit. Proper audit record shall be maintained by the firm. Audit of the manufacturing process of outsourced

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component in the manufacturing premises can also be carried out by the RDSO if desire.

4. Checks and tests shown in the Quality Assurance Flow Charts are only indicative. All necessary checks and tests, as necessary to ensure quality shall be carried out at every stage of manufacturing and proper record of all checks and tests shall be maintained. Outsourced process should be clearly marked in the process flow chart in QAP.
5. All existing vendor and vendor under registration shall comply to the revised STR within 01 year since the issuance of the SIG Decontrol policy letter dated 04.09.2025.
6. Relay manufacturers including Railway workshops preferably to have In-house quality checks for SIG contacts at existing premises in separate room. However, firms are permitted to have facilities spread in more than one place provided they are under the same ownership with same name. These locations shall be termed as Ancillary units. Details of In-house quality checks and the details of ancillary units shall be made part of the QAP.
7. T&P item under Section II Part-B shall be exclusively used for the testing of the SIG contact only.

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QUALITY ASSURANCE FLOW CHART FOR SIGNALLING RELAYS

