

Document Title : **Schedule Of Technical Requirement (STR)FOR
(Relays)****GOVERNMENT OF INDIA****Ministry of Railways****Schedule Of Technical Requirement (STR)****FOR****(Relays)****Research Designs & Standards Organisation
Manak Nagar Lucknow – 226 011**

Approved by	Sr. Executive Director / Signal
Signature	

JE/SSE/Signal	Director / Signal
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DOCUMENT DATASHEET

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Title of Document STR for relays No SIQ/0420		
Authors: Name: A.K.Singh Designation: Director / Signal-VIII, RDSO, Lucknow		
Approved by: Name: Shri Sandeep Mathur Designation: Executive Director (Co-ord.) / Signal, RDSO, Lucknow		
Abstract This document defines STR for Relay		

<u>Version</u>	<u>Chapter/ Annexes</u>	<u>Amendments</u>	<u>Issue date</u>
Ver. 0.0		First issue: SIQ/0420	04/11/2003
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RELAYS

List of specifications for various types of Relays

S. No.	Item Description	Specification No.
1.	RELAYS – ‘Q’ SERIES ECR (M TO C CONTACT)	BRS : 941 & 942
2.	RELAYS – ‘Q’ SERIES NEUTRAL LINE	BRS : 930A & 931A
3.	RELAYS – 3 POSITION DC POLARISED	IRS : S 31/80
4.	RELAYS – ECRs (M TO M CONTACT)	IRS : S 46 with amendment-1 & Firms Specification
5.	RELAYS – NEUTRAL LINE (M TO M CONTACT)	IRS : S 46 with amendment-1 & Firms Specification
6.	RELAYS – NEUTRAL LINE SHELF TYPE	BS : 1659/50 upto amendment no. 3
7.	RELAYS – SPECIAL TYPE	BRS : 930, 932A, 933A, 934A, 935A, 937A, 943, 960 etc
8.	RELAYS – TRACK PLUG IN TYPE 9 & 4 OHM	BRS : 938A, 939A, 966 & APPENDIX ‘F2’
9.	RELAYS – TRACK SHELF TYPE	BS : 1659/50 upto amendment no. 3

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SIGNALLING RELAYS

I. ESSENTIAL PLANT & MACHINERY REQUIRED FOR PRODUCTION

1. ~~Universal lathe machine~~ Computer Numerical Control(CNC) Machine and Other equipments of machine shop (In house/Outsourced)
2. ~~Drilling machine~~ Electrically Operated Bench Drilling machine
3. ~~Distilled water plant~~ Three stage Distilled water plant with minimum 1 litre/hr capacity
4. PLC Based Injection moulding machine (Medium duty-hydraulic)
5. Temperature controlled ~~oven~~ Chamber
6. Electroplating plant (In house/Outsourced)
 - a) Magnetic separator
 - b) Passive plant
 - c) Bright dipping plant
 - d) Lacquering plant
 - e) Pickling & degreasing plant
 - f) Polishing/Buffering machine
7. Soldering machine with timer
8. Coil Winding Machine
9. Ultrasonic vacuum degreasing/cleaning plant
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 EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE

1. Voltmeter of accuracy class 0.5 of IS 1248
2. Insulation tester, 500V DC
3. Ammeter of accuracy class 0.5 of IS 1248
4. Digital bounce/time interval meter
5. High voltage break down tester, upto 5KV AC
6. DC regulated power supplies
7. Registration and code checking jig
8. Digital multimeter, Min. 4 ½ digit
9. Digital micro ohm meter
10. 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

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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 callipers
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.**
25. **All measuring equipment shall be compatible to work with PC/Micro-processor based test set ups.**

Note :-

- i) **This STR shall be applicable to all new vendors applying for registration for all relay items.**
- ii) **All existing approved manufacturers shall be advised for implementation of new STR.**
- iii) **A reasonable period for compliance shall be six months from date of issue of STR.**
- iv) **Except item no.1 and 6 of plant and machinery all other items are mandatory to be in house.**

III. Copy Holder :- ED/QA-
DSIG-IV
DIR/SIG-VIII

Note :-

1. Plant, machinery and testing equipments given above are only indicative. All necessary plant and machinery of adequate capacity and testing equipments as necessary to manufacture the product as per RDSO specification and drawings and to ensure quality shall be provided.
2. Outsourcing, if any, of any component/ sub assembly shall be indicated in the 'Quality Assurance Plan' and approval of RDSO, Lucknow shall be obtained. Outsourcing of a vital component/ sub assembly shall be from ISO-9000 certified manufacturer. In case of outsourcing, the ultimate responsibility to ensure quality, reliability and compliance of RDSO specification & drawings for the outsourced component/ sub assembly shall be of the vendor of the Relays and all necessary tests and checks shall be done by him to ensure the same. Sampling plan and

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details of tests and checks proposed to be conducted by him on outsourced components/sub-assembly shall be indicated in the QAP. Proper test record with traceability to the final product shall be maintained. ISO certificate of outsourced firm should be included in QAP

In case manufacturing of some component/ sub assembly is outsourced, plant & machinery as required for manufacturing of that component/ sub assembly may be considered optional for the vendor applying for registration/ approved by RDSO.

3. Audit of the manufacturing process of outsourced component/ sub assembly in the manufacturing premises shall be carried out by the vendor of the Relay once a year and report submitted to Director/QA/RDSO. Duly qualified persons having knowledge of the outsourced manufacturing process shall be deputed for audit. Proper audit record shall be maintained.
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.
5. This STR shall be applicable to all new vendors applying for registration.

All existing approved vendors shall be advised for implementation of new STR. A reasonable period for compliance shall be Six months from Issue of STR.

DRAFT

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