



**MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.**

Name of Office	: 400KV R.S O&M Dn. Karad.
Office Address	: Administrative Building, Ground Floor, Vijaynagar, Post – Supane, Tal – Karad Dist – Satara, Pin No.415114
Contact No.	: 02164-255182 Fax. No. 02164-255182
Email ID	: ee3130@mahatransco.in
Website	: www.mahatransco.in.

**EE/400KV RS O&M/DN/KRD/T/No. 303**

**Date : 05.06.2023**

**(E-ENQUIRY)**

**Subject :-E-Enquiry for supply of Trip Supervision Relay (TSR) for different bays at 400KV RSKarad.**

Dear Sir,**No index entries found.**

Sealed & superscripted offer are invited for above subjected work and as per Schedule 'A'. The Bidder's are requested to quote their reasonable rates for the above subjected work on or before **Dtd.12.06.2023 upto 18:00 Hrs.** at the following address **Office of The Executive Engineer 400 KV RS O&M Dision, Administrative Building, Ground Floor, Vijaynagar, Post-Supane, Tal.-Karad Dist.- Satara, Pin No.415114.** OR can mail on e-mail ID : **ee3130@mahatransco.in** within due date & time. The terms & conditions are as follows.

**TERMS & CONDITIONS :**

- 1. NAME AND SCOPE OF WORK:-**Supply of Trip Supervision Relay (TSR) for different bays at 400KV RS Karad. The details specifications are mentioned in Schedule 'A'.
- 2. PRICE:-**The rates quoted should be firm & price variation will not be applicable at any cost.
- 3. DUE DATE :-** The quotation completed in all respect, duly sealed & super scribed should be submitted to this office either in person/post on or before **Dtd.12.06.2023 upto 18:00 Hrs** positively.
- 4. DOCUMENTS TO BE SUBMITTED ALONG WITH OFFERS :-** Please submit the following documents along with offer :
  1. Valid OEM (i.e.ABB Ltd.) Authorisation letter for said supply of material or equivalent.
  2. Income Tax Return for Last 02 Financial years.
  3. Registration under PAN & GST
  4. Registration under Bombay Shop & Establishment Act/NOC from local Grampanchayat.
- 5. QUOTED RATES :-** The quoted rates should include the cost of all taxes. The taxes will be clearly mentioned, & if the taxes are not clearly mention, then it will be presumed that the rates are inclusive of all taxes.
- 6. VALIDITY OF OFFER :-**The offer should be valid for acceptance for a period of **90 days** from the due date of Enquiry.

7. **GST:-**The prevailing rates of the GST will be applicable to this order.
8. **INCOME TAX & OTHER TAXES :-** Income tax & other taxes as applicable as per the rules & prevailing rates will be deducted from the contractor's bill.
9. **EXECUTION OF WORK :-** In the event of the offer being accepted in the whole, the successful bidder shall execute the order immediately as per the order schedule within the time specified in the work order.
10. **DELIVERY :-** You are requested to deliver the material at 400KV RS Karad Vijaynagar Tal.Karad Dist.Satarawithin **8-10 weeks**after receipt of the supply order.The supply order will be issued through e-mail as well as RPAD.
11. **GUARANTEE :-** The material supplied should be guaranteed for **one year**& its period is from the date of receipt of the material supplied. The defective/faulty material will have to be replace/ repair, by the bidder at his own cost immediately after receipt of intimation from this office.
12. **SECURITY DEPOSIT :-** Every bidder whose offer is accepted either in whole or in part must deposit security amount **within 07 days** from the date of issue of the work order, by way of security for the due and proper fulfilment of his contract by DD or Cash payable to the office of the Superintending Engineer MSETCL EHV (O&M) Circle, Vijaynagar Karad. The Bank Guarantee of any nationalized bank will be accepted against Security Deposit. Security Deposit Payable @**10.00%** of the amount of the order.
13. **FREIGHT & INSURANCE :-** F&I should be quoted distinctly, if any. Otherwise it will be presume that the same are included in Ex-work price.
14. **TRANSPORTATION: -** The necessary & required transportation of the materials will be done at bidder cost. No any transport facility for the material/labour will be provided by MSETCL (by this office).
15. **BILLS :-**You will have to submit the bills in triplicate to this office as per the specifications mentioned in Schedule-‘A’. The bills submitted should be in the name of Office of the **Executive Engineer, 400KV RS (O&M) Dn. Karad (GST No.27AAECM2936N1Z2)**at 400KV RS Karad.

After duly recorded by the concerned authority i.e.Addl.EE 400KV RS Karad the same will be reflected subject to availability of funds at Circle office.Please quote your GST No. & SAC Code for supply & service availed by you on bill for smooth payment. The necessary documents required are as follows :

  - a. Tax invoice along with valid GST No.
  - b. Delivery challan
  - c. Warranty certificate.
16. **PAYMENT :-** 100% payment will be made against Tax Invoice submitted by bidder **within 45 days**after deducting necessary taxes & duties as per Govt. Rule either by Cheque or NEFT/RTGS.
17. **PENALTY :-** If the supplied is not completed within the stipulated time period the penalty will be charged as per prevailing rates i.e.**1% of order value per deled week**, maximum upto 10% of the total order value.

18. **DISCARDED OFFER CONDITIONS:-**The company reserves to itself the right to reject any or all offers which does not confirm to any of the conditions.
19. Undersigned reserves the right to accept any quotation or to reject/accept all the quotation without assigning any reason.
20. **JURISDICTION :-** In case of dispute, if any, the legal /differences arises, that will be subjected to jurisdiction of Karad court only.

Thanking you,

**Yours faithfully,**

**Sd/-**

**(C.L.Bharamgunde)**

**Executive Engineer**

**400KV RS (O&M) Dn. Karad.**

**Encl.:-** Schedule 'A'.

[Company]



**MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.  
400KV RS (O&M) DN.VIJAYNAGAR KARAD**

**(SCHEDULE 'A')**

**Subject:- Supply of Trip Supervision Relay (TSR) for different bays at 400KV RS Karad.**

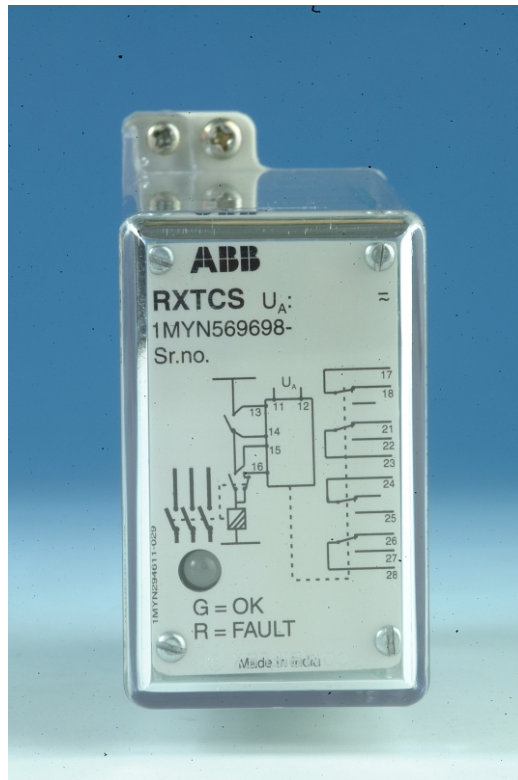
Sr. No.	Particulars	HSN Code	Unit	Qty.	Rate per unit in Rs.	Applicable rate of GST in %	Amount in Rs.
1	Supply of Trip Supervision Relay (TSR) for different bays at 400KV RS Karad with following specifications. Operating DC Voltage : 220V No. of Contacts : 1NO + 1NC + 2CO LED flag Green for Healthy & Red for Faulty. Make :- ABB Model No.:- RXTCS Article No.:- 1MYN569698-G	85364900	Nos.	25	---	---	---
2	<b>The dimension for 01 unit of TSR case size are as follows :</b> Height = 60mm, Width = 40mm & Depth= 130mm						

**NOTE :-** The detail technical Annexure is enclosed herewith.

**(C.L.Bharamgunde)**

**Executive Engineer  
400KV RS (O&M) Dn.Karad.**

# Trip circuit supervision relay Type RXTCS



## Features

- Continuous supervision of complete trip circuit independent of the circuit breaker position.
- Detects faults in the supervised circuits, such as loss of voltage, circuit breakage, contact degeneration in connections and resistivity increases in wires, contacts and coils
- Low-level measuring current enables application in sensitive or high resistance circuits
- Operation delayed to avoid spurious signals, for instance, on circuit breaker operation
- Operation indication by a single dual colour LED
- Complete range of rated voltages either ac or dc
- Galvanic isolation is possible between auxiliary source and supervised circuit
- Very low burden on auxiliary source

## Application

In a protection system the tripping of circuit breaker is crucial. Should an interruption occur in a trip circuit a possible network fault would not be disconnected and the fault would have to be cleared by another protection upstreams in the power system. The supervision function is particularly important when there is only one tripping coil and CB tripping is vital, for instance, for generator circuit breakers or other important circuit breaker in distribution networks. The supervision relay type RXTCS is intended for a continuous supervision of circuit breaker trip circuit and gives an alarm for loss of auxiliary supply, faults on the trip-coil or its wires independent of the breaker

position, faults on the breaker auxiliary contacts and faults in the supervision relay itself.

## Description

The supervision relay RXTCS is designed to be used for the supervision of trip circuits and other important control and monitoring circuits. Block diagram of the relay is shown in Fig. 1. The supervision function is based on low-level ( $\sim 3$  mA) current injection principle. The injected current is sensed by two opto-couplers. The supervision function in three steady states of circuit breaker-trip circuit can be seen from fig.2, 3 and 4. In normal condition the indicator LED glows green and output relays are in picked-up condition. If in the event of a fault, the measuring current goes below the operating value of the relay (0.3 - 0.7 mA) or completely stops flowing, the supervision relay operates (drops-off) after a delay of 0.6 sec and the indicator LED turns red. The supervision relay, for its functioning requires an auxiliary voltage (ac or dc) of rated value to be connected to the terminals 11 and 12. This voltage can be the same as that of the supervised circuit or it could be a separate source with same magnitude (ac or dc). Should a fault occur in the auxiliary voltage supply the LED does not glow and the output relay drops off. Relays with differing rated voltage for supervision circuit and auxiliary supply can be supplied as special execution.

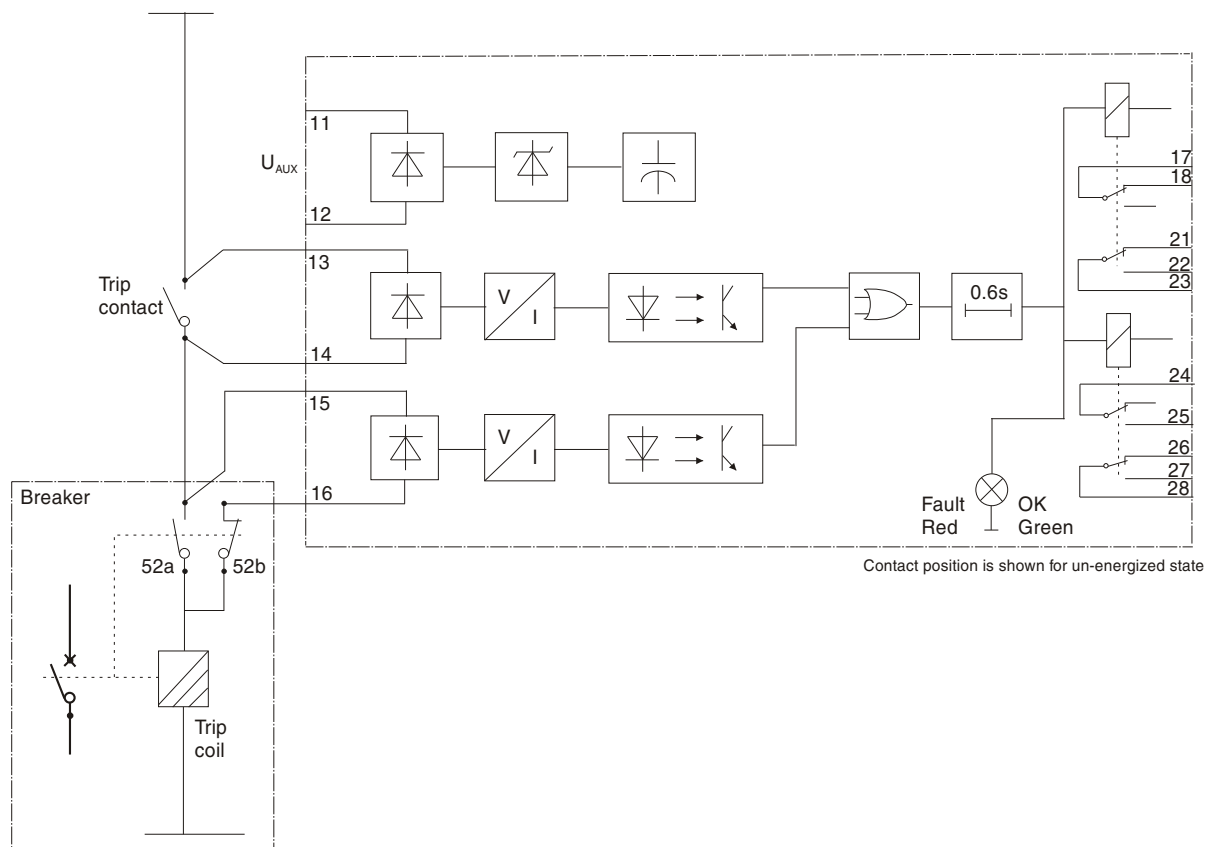


Fig. 1. Block diagram of RXTCS relay.

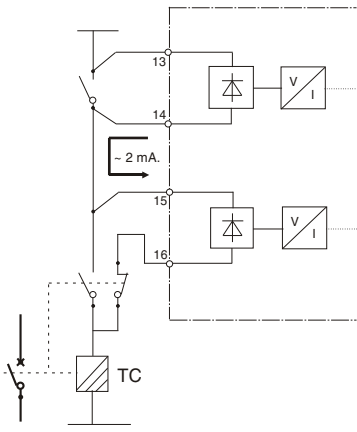


Fig. 2. Supervision in Pre-close condition

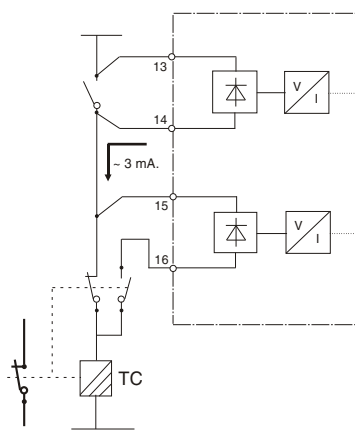


Fig. 3. Supervision in Post-close condition

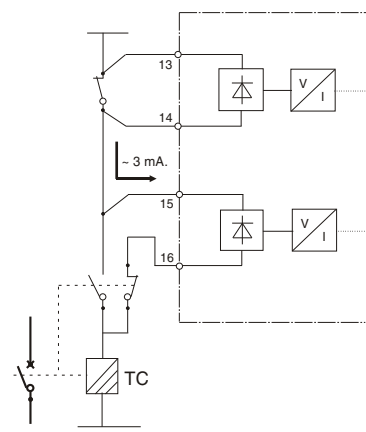


Fig. 4. Supervision with latched trip relay

## Technical data

### Energizing quantities, rated values and limits

Rated Voltage of supervised and auxiliary circuit $U_{AUX}$	:	24,30,48,110-125,220-250,V ac or dc
Operative voltage range	:	80-110% of rated $U_{AUX}$
Permitted ambient temperature range	:	0° C to +55° C
Pick-up & Drop-off current at rated voltage $U_{AUX}$ & 25° C	:	0.3-0.7 mA
Operate (Drop-off) time at rated voltage $U_{AUX}$ & 25° C	:	0.6 - 0.7 sec.
Burden at rated voltage		24      30      48      110      125      220      250
Auxiliary circuit (W)		1      1.3      1.4      2      2.5      2.7      3.5
Supervision circuit (W)		0.08    0.08    0.15    0.25    0.32    0.54    0.7
Mechanical durability	:	1 Million switching operation and 200 Draw-out/plug-in operation
Weight	:	0.25 Kg

### Contact data

Contact configuration (self reset)	:	1 N/O +1 N/C +2C/O
Max voltage within a contact system	:	250 V dc / ac
Rated current	:	5 A.
Make and carry for 0.5 s	:	10 A
Make and carry for 3.0 s	:	8 A
Breaking capacity for dc with circuit time-constant L/R $\leq$ 40 ms, at 48/110/220 Vdc	:	1A/0.25A/0.15A
Electrical endurance tested according to IEC 255-23	:	10,000 operations, at 110 V dc, 0.35A resistive, 360 op/hr

### Electrical tests

Temperature-rise; Tested acc. to IEC 255-6	:	Enclosure, pcb relays, heat dissipating components
Insulation resistance; Tested acc. to IEC 255-5	:	>100 M Ohm at 500 V dc
Dielectric; Tested acc. to IEC 255-5	:	2,0 kV, 50 Hz, 1 min
Impulse; Tested acc. to IEC 255-5	:	5 kV, 1,2/50us, 0,5J
1 MHz burst disturbance test acc. to IEC 255-22-1	:	Class III
- common mode	:	2,5 kV, 1 MHz, 400 pls/s
- differential mode	:	1 kV, 1 MHz, 400 pls/s

## Technical data (Cont)

Electrostatic discharge test acc. to IEC 255-22-2	: Class III
- contact discharge	: 6 kV, 150 pF/330 ohm
- air discharge	: 8 kV, 150 pF/330 ohm
Fast transient disturbance test	
acc. to IEC 255-22-4	: Class IV
- common mode	: 4 kV, 5/50 ns, 5kHz, Rs = 50 ohm
Surge immunity test acc. to IEC 255-22-5	Class III
- common mode	: 2 kV, 1,2/50 us, Rs = 10 ohm
- differential mode	: 1 kV, 1,2/50 us, Rs = 2 ohm

## Environmental tests

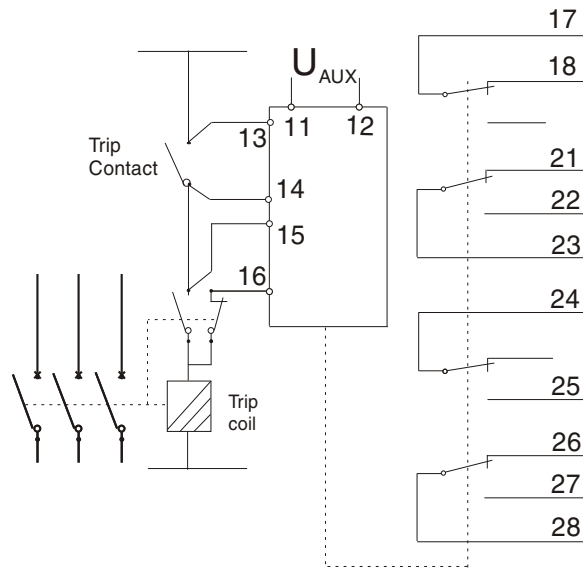
Vibration response and endurance	
Tested acc. to IEC 255-21-1	: Class I, 10.....150Hz
Shock response and endurance	
Tested acc. to IEC 255-21-2	: Class I, 11 ms
Dry heat; test acc. to IEC 68-22-2	: +55° C / +70° C
Dry cold; test acc. to IEC 68-2-1	: -10° C / -25° C
Damp heat (cyclic - 12+12 Hr)	: 12 Hr/55° C + 12 Hr/25° C x 6 days at 95% RH
test acc. to IEC 68-2-30	

## Ordering details:

Relay type	Contact	Rate voltage	Article no
RXTCS	1N/O+1N/C+2C/O	24	1MYN569698-A
		30	1MYN569698-B
		48	1MYN569698-C
		110-125	1MYN569698-E
		220-250	1MYN569698-G

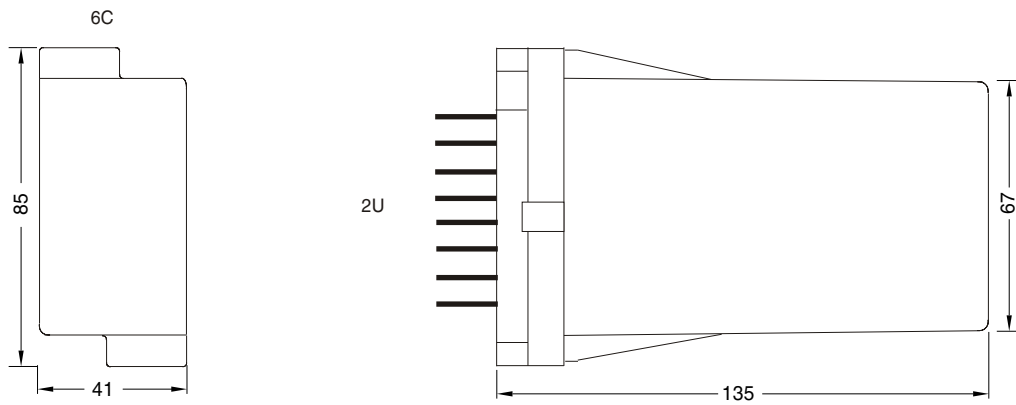


## Connection diagram and Contact configuration



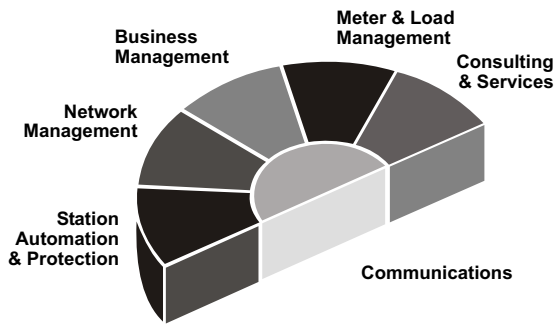
Contact position is shown for un-energized state

## Dimensions



**References** Connection and installation components in COMBIFLEX  
Relay mounting systems

1MRK 513 003-BEN  
1MRK 514 001-BEN



**Panorama is the standard for a comprehensive range of integrated solutions for efficient and reliable management of power networks. Using innovative information technology, Panorama delivers total control of the power process, from generation to consumption. The Panorama standard covers six application areas, each offering specific solutions.**



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