



**MORMUGAO PORT TRUST**  
**ENGINEERING (MECHANICAL) DEPARTMENT**  
**ELECTRICAL HEADLAND SECTION**

**CME/ELC/W-8/2021/**

**04.10.2021**

**Sub: Testing and Calibration of HT panel mounted protection relays**

**Ref: Budgetary Quotation No. CME/XEN(E)/HL/ W-8/21/B1**

Mormugao Port Trust intends to carry out testing and calibration of HT panel mounted protection relays installed at Port area. As such Kindly furnish the budgetary quotation for the same (Scope of work enclosed as Annexure-1 and Price Schedule enclosed as Annexure-2):-

Your budgetary quotation should reach to this office on 13.10.2021.

Thanking you,

Yours sincerely,

**EXECUTIVE ENGINEER (E-HL)**

**1. SCOPE OF WORK**

1. Scope of Work for testing and calibration of HT panel mounted protection relays.
  - a. Testing & calibration of Over current / Earth Fault / Transformer protection auxiliary relays of analog / digital type relays at different substations of Port area.
  - b. Testing & calibration of all the relays with reference to different plug settings/ time settings to the desired operation at our site. The secondary output of the current transformers is 5A/1A.
  - c. In case of the analog relays, each relay element consists of over current relay and earth fault relay. These relays are in operation in HT panels of the respective substations. In the event of relay calibration, contractor shall carry out the work on site and should ensure the normal operation of the respective breakers shall not be affected. As such, detailed schedule of work/ Bar chart with dates to be submitted for prior approval of the Port authorities before carrying out the work to ensure work goes on smoothly without affecting normal operations.
  - d. Makes of relays available are as follows: English Electric / Schneider / Areva / Alstom / Easun Reyrolle / Siemens / Megawin / Jyoti Limited, etc.
  - e. All necessary test/master kits is under Contractor scope. Necessary calibration certificate for the primary equipment accuracy with due validity to be submitted before starting testing and calibration of relay at site.
  - f. Any costs towards errors or damages to the existing equipment while carrying out the work will be recovered or made good by the contractor.
  - g. Upon completion of the calibration, calibration test report in triplicate shall be submitted indicating the serial numbers of relays (within 15 days after completing calibration). Calibration sticker shall be placed on the equipment front face indicating the vendor name and date of calibration.
  - h. Port reserve the right to add/delete some of relays for testing and calibration. Payment for the same will be done item wise on prorata basis.
  - i. The Testing & calibration of relay to be carried out to the satisfaction of the Engineer in charge. Any additional charges borne by the contractor due to errors/delays in calibration and testing is to contractor's account.

**PRICE SCHEDULE (BILL OF QUANTITIES)**

NAME OF WORK: **Testing and Calibration of HT panel mounted Protection relays**

Sr. No	Description	Unit	Qty	Rate/Month /Unit(Rs.)		GST %	Amount (Rs.)
				In Fig	In Words		
A	B	D	E	F	G	H	I=E x F
1	Testing & Calibration of Solid State IDMTL Over Current Relay, Type JTRSA 240, (Electro-mechanical)	No.	1				
2	Testing & Calibration of Tripping Relay, Type VAJ (English Electric), Sr. no. M870549 (Electro-mechanical)	No.	1				
3	Testing & Calibration of Percentage Differential Relay Type DDT, (English Electric), (Electro-mechanical)	No.	2				
4	Testing & Calibration of IDMT Over Current Relay RSA 410 B, (Jyoti Limited), (Electro-mechanical)	No.	9				
5	Testing & Calibration of Time Overcurrent Relay RSA 410 B, (Jyoti Limited), (Electro-mechanical)	No.	4				
6	Testing & Calibration of Time Delay ON RT 210, (Jyoti Limited), (Electro-mechanical)	No.	2				
7	Testing & Calibration of Auxiliary Relay Type VAA, (English Electric), (Buchholz Alarm & Buchholz Trip) (Electro-mechanical)	No.	3				
8	Testing & Calibration of IDMT Earth Fault Relay RSA 410 B (Jyoti Limited) (Electro-mechanical)	No.	5				
9	Testing & Calibration of Overcurrent Relay Type TJM 10 Relay (IDMT Phase Fault) (Easun Reyrolle) Sr. no. HR882701 (Electro-mechanical)	No.	1				
10	Testing & Calibration of Auxiliary Relay (Transformer Faults) Type B33X6 (Easun Reyrolle) Sr. no. HR0042722 (Electro-mechanical)	No.	1				
11	Testing & Calibration of Back Up Earth Fault Relay IDMTL Earth Fault Relay Type 2TJM10 (Easun Reyrolle) Sr. no. HR0014326 (Electro-mechanical)	No.	1				

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12	Testing & Calibration of Restricted Earth Fault Relay Type 4B3 (Easun Reyrolle) Sr. no. HR0042720 (Electro-mechanical)	No.	1				
13	Testing & Calibration of Lockout Relay Type B24 (Easun Reyrolle) Sr no. HR0042725 (Electro-mechanical)	No.	1				
14	Testing & Calibration of Auxiliary Relay HT Sequential/Emergency Trip Type B33X2 (Easun Reyrolle) Sr no. HR0042727 (Electro-mechanical)	No.	1				
15	Testing & Calibration of MiCOM P121 B00F111 (Alstom) o/c & e/f (Digital)	No.	7				
16	Testing & Calibration of Overcurrent Relay (Inverse), Type CDG (English Electric), (Electro-mechanical)	No.	4				
17	Testing & Calibration of Instantaneous Earth Fault Relay, Type CDG (English Electric), (Electro-mechanical)	No.	2				
18	Testing & Calibration of MiCOM P111 (Over Current + Earth Fault Relay), (Digital).	No.	7				
19	Testing & Calibration of Numerical Over current and Earth Fault Relay MW140C (Megawin) (Digital)	No.	1				
20	Testing & Calibration of Tripping Relay Type MVAJ (Megawin) Sr no. 2006032408 (Electro-mechanical)	No.	1				
21	Testing & Calibration of Buchholz Relay (Electro-mechanical)	No.	15				
22	Testing & Calibration of 3 O/C + 1 E/F protection with trip circuit supervision relay (50+51+50N/G+51N/G+74 TCS) Aux. 24 V DC, Make: Siemens, Cat no. 7SR10 (Digital)	No.	14				
23	Testing & Calibration of Master Trip Relay -(86) 24V DC, Make: Alstom, Cat no. VAJH13 (Electro-mechanical)	No.	17				
24	Testing & Calibration of Auxiliary relay-VAA (ALSTOM) (WTI, OTI & Buch) (Electro-mechanical)	No.	2				
25	Testing & Calibration of RMU Protection Relay , (o/c & e/f) ,Make:C &S (Digital)	No.	4				

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26	Testing & Calibration of Transformer Protection relay, TR-7544 (WTI ) (Digital)	No.	2				
27	Testing & Calibration of Transformer Fault Relay, (WTI A&T, OTI A&T, BUCHH. A&T) , 24 V DC, Make: Alstom, Cat no. VAA33 (Analog)	No.	2				
28	Testing & Calibration of Trip Circuit Supervision Relay VAX, (Vx 24-27), Make:- ALSTOM (Analog).	No.	3				
<b>Total</b>							

(In words Rupees \_\_\_\_\_)

**Note: The rates quoted should be exclusive of GST. Applicable GST shall be paid on the quoted price.**