



MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.
CIN No. U40109MH2005SGC153646

From,

Executive Engineer, MSETCL EHV O&M Division, Sangli.
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Ref. EE/EHV O&M/DN/SGL/T/ No. **02216** /2025-26

Dtd. 23.12.2025

23 DEC 2025

Budgetary offer

(Through MSETCL webpage)

TO WHOM SO EVER IT MAY CONCERN

Dear Sir,

The budgetary offers through email/By Hand/By Post are invited Providing & Fixing of Numerical Differential & Distance Protection Relays at various substations under EHV O&M Division, Sangli as per Schedule A. You are requested to quote your lowest rates for tentative quantities as per Schedule A attached herewith.

SCHEDULE 'A'

| Sr No. | Description | Unit | Qty | Ex Work Rate |
|--------|--|------|-----|--------------|
| 1 | Providing Fixing, Commissioning & Testing of Numerical Differential Protection Relay(02 Winding) | EA | 1 | |
| 2 | Providing Fixing, Commissioning & Testing of Numerical Distance Protection Relay | EA | 1 | |

The above rates are Exclusive of all taxes and charges.

Numerical Differential Protection Relays should have the following features:-

- 1) Be fully Numerical, programmable, IEC-61850 compliant (site selectable IEC61850 Edition1&2) having built-in facility for CT ratio correction/selection.
- 2) Numerical relays shall be SCADA/PC compatible and shall have built-in display units which will indicate the various system parameters and also the settings. The selection of mode/parameter shall be through feather touch push buttons.
- 3) Be triple pole type, with faulty phase identification / indication.
- 4) Have an operating time not greater than 40 milliseconds at 2 times setting, 35 milliseconds at 5 times setting.
- 5) Have three instantaneous high set over-current units.
- 6) **Be a percentage biased Differential current relay with adjustable bias setting range of 20-60%.**
- 7) Be suitable for Auto transformers (ICTs) & two or three winding Transformers.
- 8) Be suitable for rated current of 1Amp.
- 9) Have second harmonic or other inrush proof features and also should be stable under normal

- over fluxing conditions. Magnetizing inrush proof feature shall not be achieved through any intentional time delays e.g. use of timers to block relay operation or using disc operated relays.
- 10) Be capable of adapting to have internal feature in the relay to take care of the angle & ratio correction. Should have suitable inbuilt Over-fluxing Protection configuration for Alarm/Trip.
 - 11) The processor capabilities of the Differential Protection relay shall be 32 bit.
 - 12) The relay shall have GPS time synchronization via IRIG-B, via binary input, via the communication protocol of SCADA/ Protection system or direct fiber connectivity (using SNTP and PTP).
 - 13) One set of (copiable) software required for relay Parameterization and retrieving data from the relay along with two sets of associated cables, connectors, etc. shall be offered free of cost.
 - 14) BI & BO not less than 16 nos. & LED not less than 8 nos. (Dual Colour)

Numerical Distance Protection Relays should have the following features:

- 1) The Distance Protection Relays offered for Retrofitting shall be Fully Numerical & IEC-61850 Edition 1&2 compliant having built-in supervision feature & having not less than six independent measuring loops for continuous and simultaneous measurement of all potential fault loops (phase to phase & phase to earth). The supervision scheme shall continuously monitor the healthiness of various internal circuitry and sub-modules.
- 2) Numerical relays shall be SCADA/PC compatible and shall have built-in display units which will indicate the various system parameters as also the settings. The selection of mode/parameter shall be through feather touch push buttons.
- 3) The Numerical Distance Protection Relays offered shall have the following built in features:
 - (i) Power Swing blocking.
 - (ii) Single & Three phase Autore-closing, programmable as per requirement.
 - (iii) PT supply supervision.
 - (iv) DC supply supervision.
 - (v) Carrier supervision & programmable tele-protection facility.
 - (vi) Distance to fault indication.
 - (vii) Events recording.
 - (viii) Detection of over-loading (current) settable for trip or alarm with programmable time setting.
 - (ix) Disturbance recording.
 - (x) Switch-on-to-fault trip (SOTF).
 - (xi) Check synchronizing & deadline charging.
 - (xii) Broken Conductor detection.
 - (xiii) Phase overvoltage detection.
 - (xiv) Self-Supervision.
 - (xv) Back-up O/C-E/F protection.
 - (xvi) Local Breaker Backup protection
- 4) The distance protection shall have minimum four directional zones (three forward zones and one reverse zone). It shall be possible to set overreach setting of each zone independently. **Operating time for faults in the first zone shall be instantaneous and shall not exceed 40 milliseconds including the trip relay timing.** Operation of second zone and third zone shall be with (variable) time delays, that of third zone being more than second zone timing.
- 5) One set of (copiable) software required for relay Parameterization and retrieving data from there lay along with two sets of associated cables, connectors, etc. shall be offered free of cost.

- 5
- 6) For Numerical Distance Protection Relays the communication protocol shall be as per IEC 61850 with site selectable Edition 1 & 2 support.
 - 7) The relay shall have GPS time synchronization via IRIG-B or via binary input or via the communication protocol of SCADA/ Protection system or direct fibre connectivity (using SNTP and PTP).
 - 8) BI & BO not less than 16 nos. & LED not less than 8 nos. (Dual Colour)

Note:-

- 1) Please note that said budgetary offer is only for estimate purpose & not considered for any bidding & no work order will be issued based on this Enquiry.
- 2) All interested bidders are requested to submit their best reasonable budgetary offer for above works on Email ID: ee3120@mahatransco.in/ By Hand/By Post upto 18:00 Hrs on Dtd.30.12.2025

Thanking you,

Yours' faithfully

Sd/-

**Executive Engineer
EHV O&M Division, Sangli**