

**Technical Data**  
**NABL accredited Measurement Capabilities**

Measured Quantity/ Instrument	Range	(±) Best Measurement Capability Expressed as an Expanded uncertainty (k=2)	Remarks
<b>Current Transformer</b> Primary Secondary	5 Amp. - 2000 Amp. 1 Amp., 5 Amp.		Calibration by using Laboratory Source. Burden: Actual & as per IS & IEC standards
Ratio Error	-	0.03%	
Phase Error	-	1.5 minute	
<b>Potential Transformer</b> Primary Secondary	3.3 kV - 33 kV 50 V - 144 V		Calibration by using Laboratory Source. Burden: Actual & as per IS & IEC standards
Ratio Error	-	0.08%	
Phase Error	-	4 minutes	
<b>Potential Transformer</b> Primary Secondary	33 kV - 132 kV 50V - 144 V		Calibration by using actual Line Voltage Burden: Actual & as per IS & IEC standards
Ratio Error	-	0.1%	
Phase Error	-	4 minutes	
<b>AC Voltage</b> 40 Hz - 70 Hz	40 V - 300 V	0.03 %	
<b>AC Current</b> 40 Hz - 70 Hz	3 mA - 120 A	0.03 %	
<b>AC Power/Energy</b> 40 Hz - 70 Hz Single phase & Three phase Active & reactive energy	40 V - 300 V & 3 mA - 120 A	Active 0.05 % Reactive 0.06%	Power Factor + 0.5 to - 0.5
<b>Frequency</b>	40 Hz - 70 Hz	0.02%	
<b>Power Factor</b>	+ 0.5 to - 0.5	0.04°	

**Advantages of onsite calibration**

- ! Negligible shut down time
- ! No need to keep spare transformers
- ! No hassles of mounting and demounting and transporting to distance laboratory
- ! State of art accuracy at site
- ! Error measurement with actual burden on CT/PT
- ! Calibration findings may lead to huge financial benefit.
- ! Developing confidence on healthiness of metering system.



**Yadav Measurements Pvt. Ltd.**

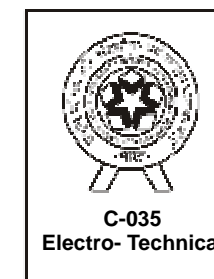
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**Electrical Measurement Solutions At Your Doorstep**



**A Complete Solution  
 for  
 NABL accredited Calibration of  
 Measuring Instruments & Instrument Transformers in  
 HV/EHV substation**



**Yadav Measurements Pvt. Ltd.**



Yadav Measurements Pvt. Ltd, an Echelon-2 laboratory accredited by India's National Accreditation Board for Laboratories (NABL) and the United Kingdom Accreditation Service (UKAS) operates a complete calibration and type test facility for electricity meters and electrical instruments.

Yadav Measurements now brings to your doorstep its pioneering MobiLAB, an unparalleled facility for calibration and testing of instrument transformers and all substation measuring instruments.

Accurate electrical measurements e.g. energy, voltage, current, power factor etc. in sub-stations depends upon the voltage and current transformers providing the measurement signals to various instruments. While the accuracy of energy meters has received attention, the other major source of errors, viz. instrument transformers have been overlooked. Errors from instrument transformers have a major impact on the overall energy measurement and cause significant differences in energy balances across the system. [For example 0.5% ratio error and 30 minutes phase error contributes to a total error of 1.2% in energy. For a substation of 100 MVA, this could result into a revenue loss of about Rs. Seventeen Million per year.] Manufacturer's laboratory results are burden sensitive and actual installed burdens influence these errors. Field tests under actual burden conditions provide more reliable accuracy. Better energy accounting requires periodic calibration of substation instrument transformers.

The large size of instrument transformers, installation practice, the need for lengthy shutdowns and the inability to operate the sub-station in their absence makes laboratory testing impractical. MobiLAB solves all these problems in one go by performing accurate and traceable measurements right within the substation.

## The essence of our philosophy is

**Accuracy** - the key to all measurements.

**MobiLAB** is equipped with instruments that are several folds more accurate than the best substation instruments. Meticulous care in operation and maintenance ensure repeatable and reproducible measurement accuracy

**Safety** - the backbone of working in sub-stations. Trained personnel, reliable equipment, safe procedures and a safety culture makes **MobiLAB** safe for work in sub-stations. Carefully designed equipment stowage keeps lab equipment in transit

MobiLAB is a self-contained Echelon-2 mobile laboratory capable of calibrating and testing the entire suite of substation electrical instruments. Manned by qualified metrologists, the air conditioned interior of MobiLAB creates the correct test environment to give accurate and traceable results.

MobiLAB is a one stop solution for traceable calibration and accuracy certification of:

- ! Instrument transformers (Current and voltage transformers)
- ! Energy and demand meters (active, reactive, apparent energy and demand)
- ! Indicating instruments (voltmeters, ammeters, power meters, frequency meters, PF indicators etc.)

MobiLAB, fitted with state-of-art measuring equipment has the facilities to operate in the difficult environment of a sub-station yard. It brings to your substation bulky precision equipment, e.g. 132 kV rated oil-filled capacitor for in-situ calibration of PTs and is able to set up this equipment quickly and correctly, minimizing the shut down required.

All measurements made by MobiLAB conform to Indian and IEC specifications and are traceable to National Standards maintained by NPL. This is what makes MobiLAB an Echelon-2 laboratory on wheels.

Apart from the test and measuring equipment needed, MobiLAB is equipped with materials handling facilities, all tools, cabling etc. which would be needed for the job and computing and certificate printing facilities. MobiLAB arrives at the sub-station and only needs a single phase and three phase supply.

Once set up, testing is quick and MobiLAB will leave traceable test certificates with you before it leaves.

**Quality** the reason for a measurement service. The accuracy of all **MobiLAB**

instruments is traceable to India's National Standards giving valid measurements every time. **MobiLAB** is backed by many years of experience of running NABL / UKAS accredited facilities. **MobiLAB** practices conform to IEC17025

**Speed** - the essence of working in sub-stations. The **MobiLAB** crew practices procedures designed for quick set-up, accurate testing and rapid wind-up.

**MobiLAB** will reach the remotest substation, carry out the tests and issue test certificates. This is the quickest way to get instruments calibrated

