



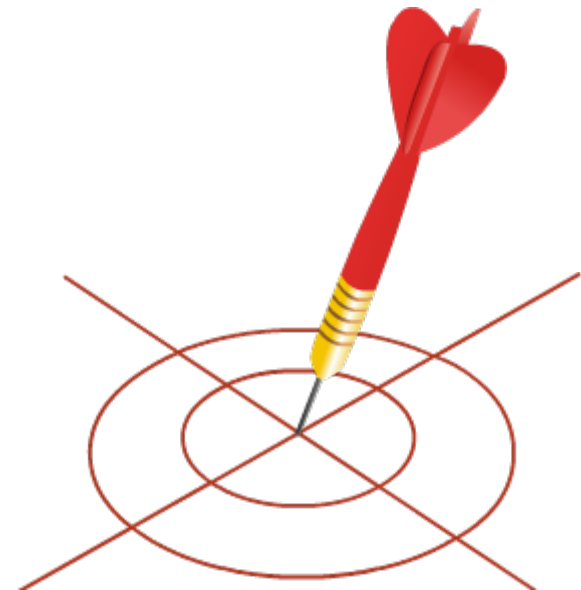
Welcome to the Session on
**Meter Testing in Laboratory and
at Site**

Learning Objective

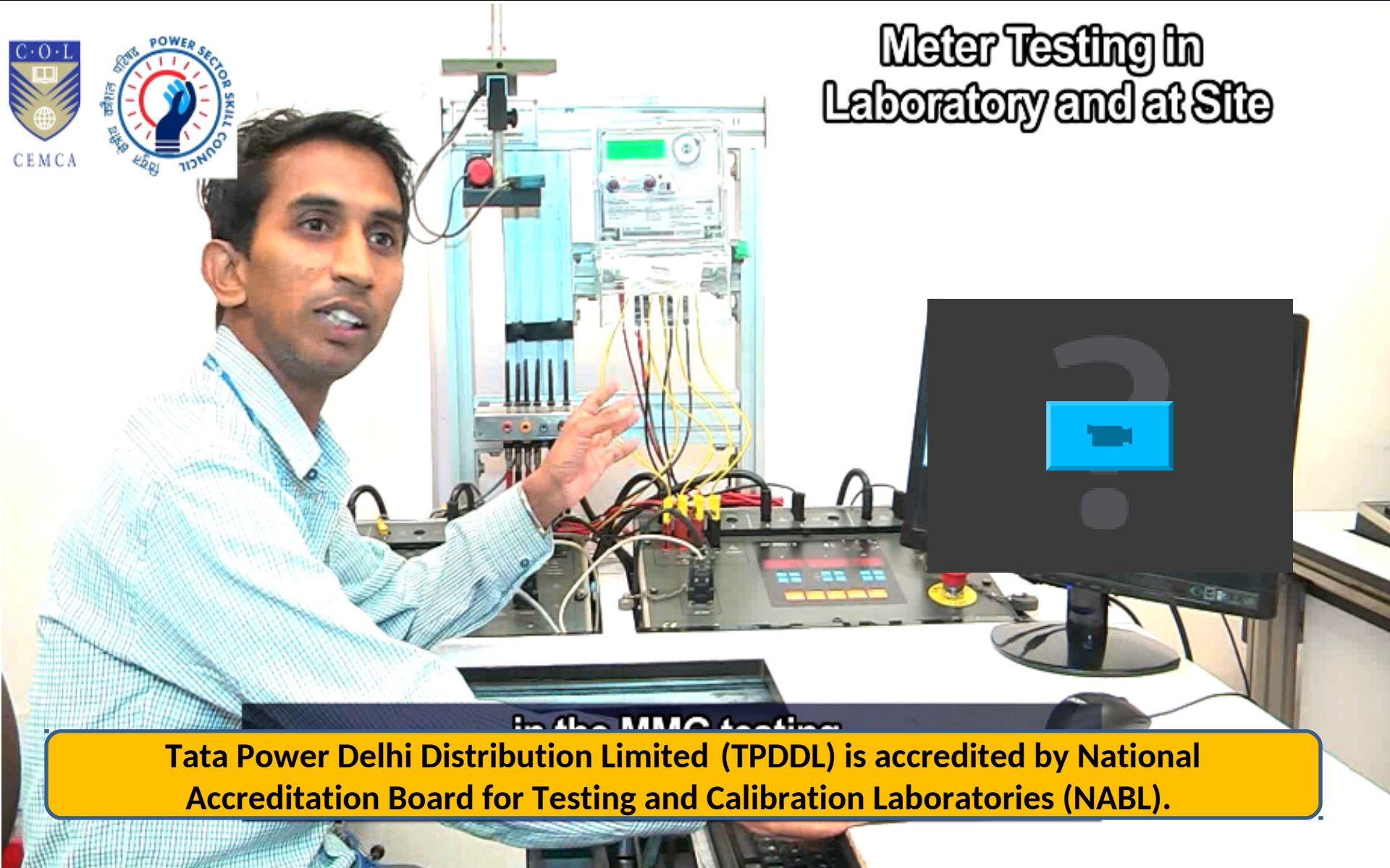


By the end of this session, you will be able to:

- Explain how to test energy meter at the meter testing laboratories and consumer's premises



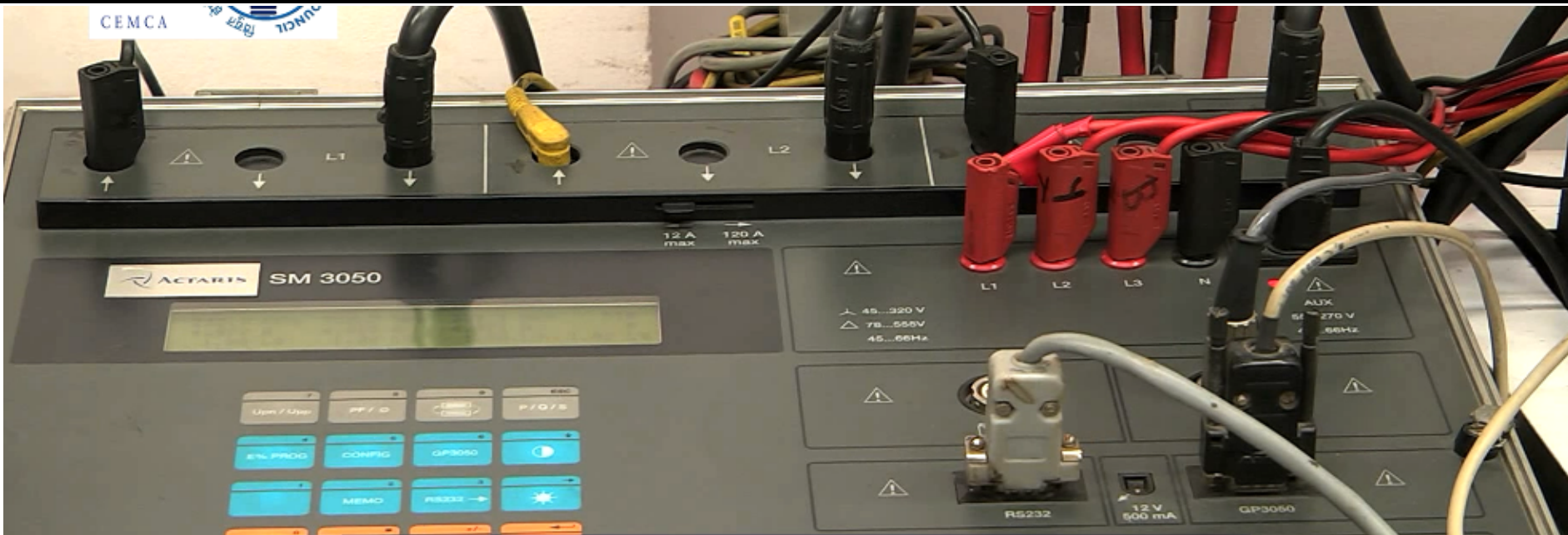
Meter Testing in Laboratory and at Site



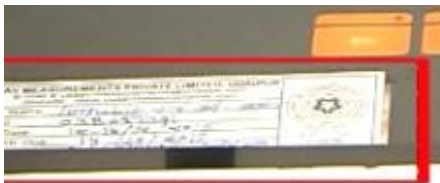
in the MMC testing

Tata Power Delhi Distribution Limited (TPDDL) is accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL).

Meter Testing in Laboratory



Standard energy meter of accuracy class 0.05



Sticker seal - This is the test certificate issued by the government laboratory.

Meter Testing in Laboratory



Meter Testing in Laboratory and at Site

Test certificate is issued by Government laboratory

Instrument test results are valid for two years

Leads are coming out from upper end and are connected to Meter Under Test (MUT)

Standard meter should be of superior class than that of MUT

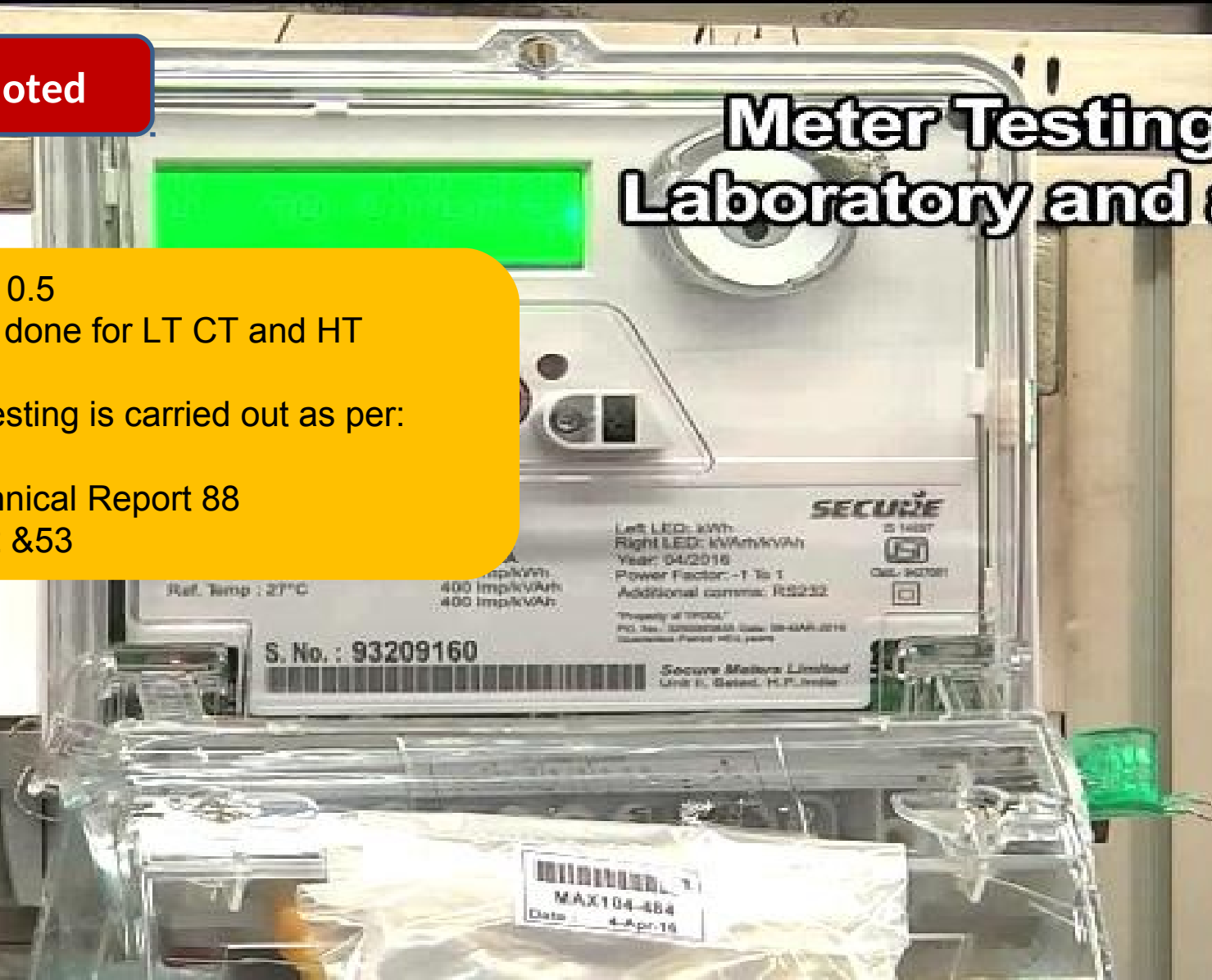
The certificate confirms that this instrument is calibrated



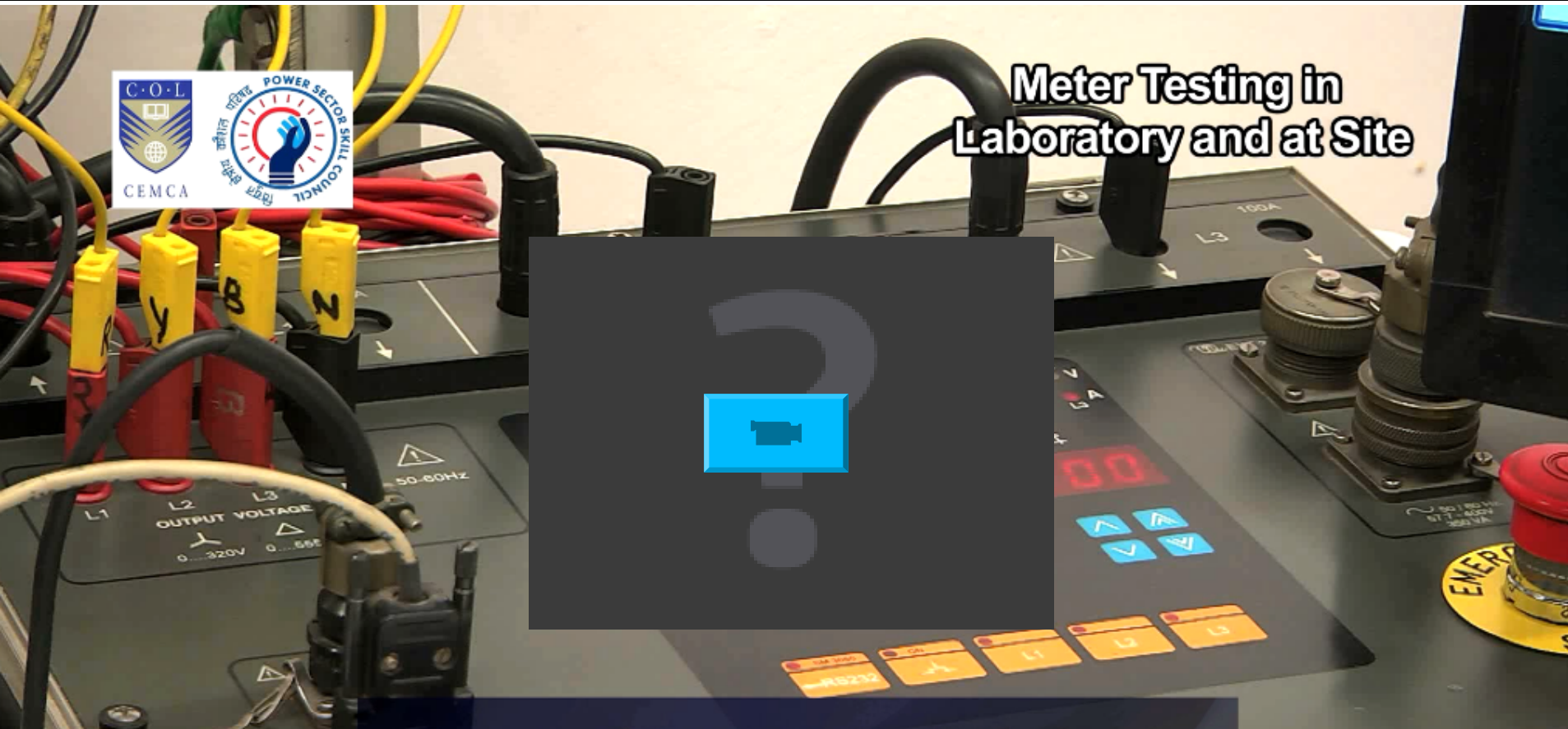
Points to be Noted

- MUT is of class 0.5
- 100% testing is done for LT CT and HT meters
- Energy meter testing is carried out as per:
 - IS 13779
 - CBIP Technical Report 88
 - IEC 62052 &53

Meter Testing Laboratory and a



Phantom Load Machine



The current, voltage and power factor are controlled according to test requirements as per the standard.

Phantom Load Machine



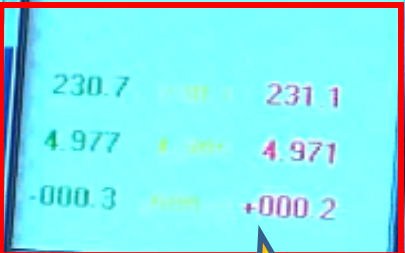
The MUT of rating 3X230 V, 100/5 A is connected on the test bench.

Meter Under Test (MUT)



			voltage	current	p.f.	ic	revolut	time	limit 1	limit 2	power (kWh)	error (kWh)
			2645	0	1.0i		1	600	-0.5	0.5	0.000	0.000
			230	0.005	1.0i		1	900	-0.5	0.5	0.003	0.000
4	E	RST	230	0.25	1.0i		40	104	-0.5	0.5	0.172	0.005
5	E	RST	230	0.5	1.0i		50	65	-0.5	0.5	0.345	0.006
6	E	RST	230	1	1.0i		100	65	-0.5	0.5	0.690	0.013
7	E	RST	230	2.5	1.0i		250	65	-0.5	0.5	1.725	0.031
8	E	RST	230	2.5	0.5i		150	60	-0.5	0.5	0.863	0.019
9	E	RST	230	2.5	0.8c		200	60	-0.5	0.5	1.380	0.025
10	E	RST	230	5	1.0i		500	60	-0.5	0.5	3.450	0.063
11	E	RST	230	5	0.5i		250	65	-0.5	0.5	1.725	0.031
12	E	RST	230	5	0.8c		400	65	-0.5	0.5	2.760	0.050
13	E	RST	230	6	1.0i		600	65	-0.5	0.5	4.140	0.075
14	E	RST	230	6	0.5i		300	65	-0.5	0.5	2.070	0.037
15	E	RST	230	6	0.8c		500	65	-0.5	0.5	3.450	0.063

Meter Testing in Laboratory and at Site



Defective Test Results

Basic data displayed on the screen

Test Results

The meter will be declared defective. % without any human involvement

Meter Testing at Consumer's Location



Vinod, Engineer

Ramandeep, Senior Technician

Manoj Kumar Saini, Additional Manager

The team brings the electricity bill of the consumer so that they will work at the correct location.

Meter Testing at Consumer Location

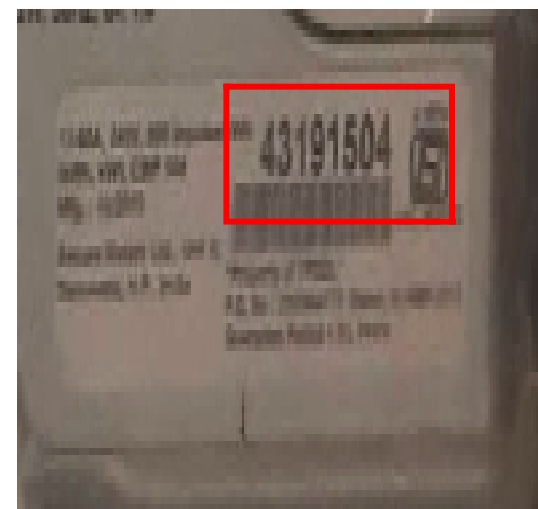
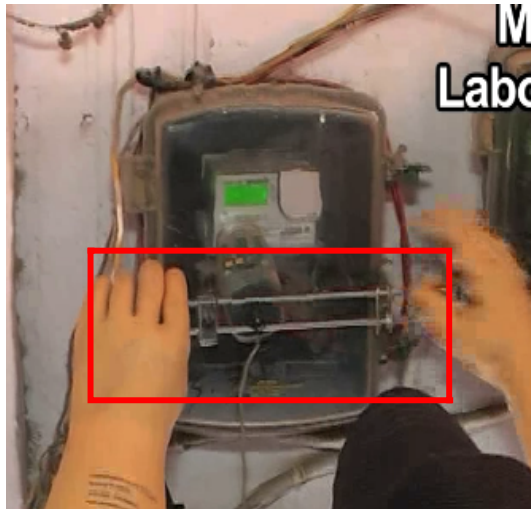


Location of meter



Meter number is matching

Meter Testing at Consumer Location



Fixing the optical scanner

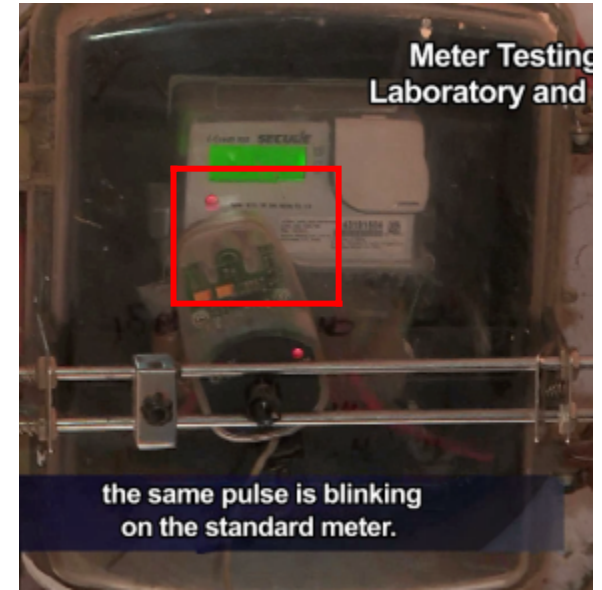
Feed consumer's particulars

Meter number



Click the video icon to play the video.

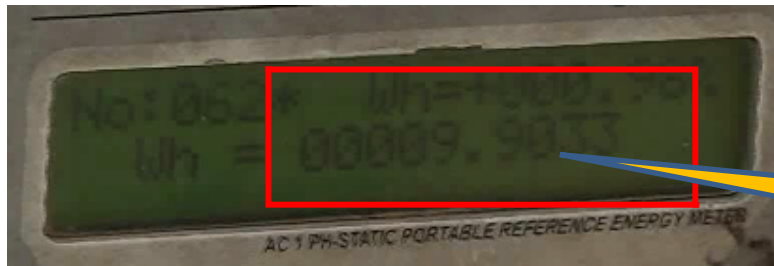
Meter Testing at Consumer Location



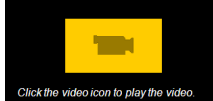
Meter is put on Test Mode

Start button is 'On'

Pulse is blinking on standard meter



0.98% Accuracy



Key Learning Outcomes



- The sticker seal on the standard energy meter is the test certificate issued by the government laboratory
- The standard meter must be of a superior class than the MUT
- Energy meter testing is carried out as per IS 13779
- Optical scanner senses the pulse of meter under test
- Energy meter can be tested in the laboratory and at the consumer's premises

