Isolation Tester - Calibrator
OCM191

- ✓ Resistance Range 50 kΩ to 1 TΩ
- ✓ Voltage applied from 50V to 10kV
- ✓ kV internal Meter Monitor
- ✓ Function for Short Circuit Current Measurements
- ✓ Calibration of Dielectric Absorption and Polarisation
- ✓ Accuracy 0.1 % to 5%
- ✓ Keyboard, RS 232 or IEEE488
- ✓ 19“ Option

OCM191 is a high voltage resistance decade for calibration of Teraohmmeters, Megaohmmeters, Isolation Measuring Instruments and Instruments for verification of Revision Instruments with resistance ranges up to 1TΩ. It permits up to 10kV voltage for be applied. The calibrator can be operated from the front panel keyboard or from data ports RS232 or GPIB.

The basic unit is the programmable high resistance decade with additional circuitry permitting measurements of DC voltage and short currents calibration as well as the calibration of Dielectric and Absorption Parameters such as Polarizing Index (PI), Dielectric Absorption Ratio (DAR) and Polarization Ratio (PR).

OCM191 permits also verification of Timer Function of Security Tester, Isolation Instruments, HIPT Tester and other within the resistance range from 10kΩ to 1TΩ. The resistance can be set with 4,5 digits resolution and accuracy of 0.1% to 5%. The output can be loaded between 50V and 10kV, depending on selected resistance values.

The high accuracy and the possibility of remote control permit applications in laboratories, automatic calibration lines, service departments and design centre. 3HE module is optionally available for 19” rack.

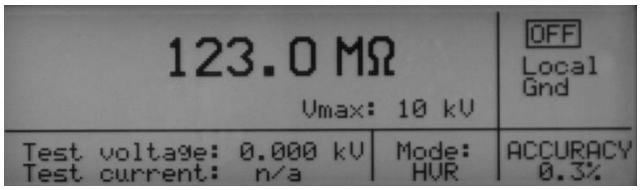
FUNCTIONS and READINGS

HVR High Resistance Decade

The basic function is High Resistance Source generation from 10 kΩ to 1 TΩ with 4 digit resolution. The resistors can be switched with up to 3kV voltage applied and with up to 10kV voltage disconnected during switching.

Display Readings

- Set resistance value in Ω
- Maximum safe test voltage
- True applied test voltage
- Calculated Test Current
- Accuracy in % of the selected resistance



HVC High Voltage Capacitance

In this function three build-in high voltage capacitors 10nF, 50nF or 100nF can be connected to the output terminals. This function can be used for calibration of Megaohmmeters and Insulation Testers which can also measure capacitance. The maximum testing voltage is 5kVDC.

Display Readings

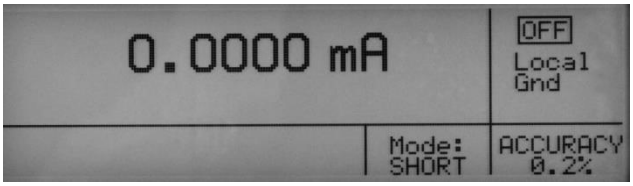
- Calibration value of the selected capacitor
- Maximum allowed DC test voltage
- True measured applied voltage
- Capacitance Accuracy in %

SHORT Short Current Measurement

This function can be used for verification of short current capability. The Calibrator measures the DC current sourced by the tested instrument in a range from 0 to 5mA with a resolution to five digits. The input resistance is 2.5 kΩ.

Display Readings

- Measured short current in mA
- Accuracy of the measured value in %.

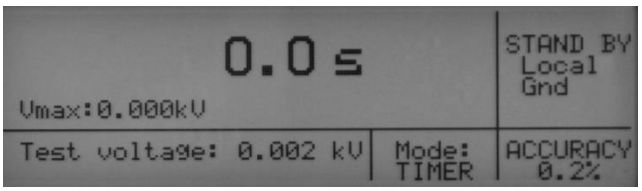


TIMER Timer Function

Timer Function permits verifying the Timer features of Safety Testers, Isolation Meters and Megaohmmeters. The Calibrator measures the time interval of the test voltage generated by the unit under test. During the measurement the calibrator goes automatically through sequences: OFF, STANDBY, RUNNING, OFF. During this sequence the calibrator automatically connects a resistance of 100 MΩ to the output terminals. This value can be free selected upon demand.

Display Readings

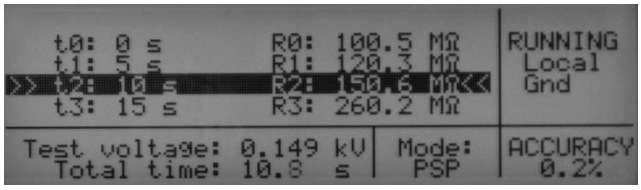
- Measured time in seconds.
- Maximum DC test voltage stored during the measurement.
- Test voltage at the output terminals
- Accuracy of the time measurement



DPP & PSP Dielectric and polarization parameters

This function permits the direct calibration of Dielectric and Absorption Parameters, Polarization Index or Polarization Ratio. The principal of operation is in switching of predefined resistance values in selected time intervals to the output terminals.

Display Readings
- Parameters DAR, PR, PI
- Basic resistance level R0 can be set 10 MΩ to 100 GΩ.
- Coefficient from 0.5 to 99.9.



The DPP function contains time sequences defined by the DAR/PR/PI parameters. The PSP function is programmable by the operator. The resistance can be set from 10 MΩ to 100 GΩ, the sequences from 0 to 9999 s.

SPECIFICATIONS

The stated accuracies include long-term stability, temperature coefficient, linearity, load and line regulation and the traceability of factory and National C0alibration Standards. Specified accuracy is valid after one hour warm up at the temperature 23 ± 2 °C. Specified accuracy lasts for 12 month.

Function HVR - High Resistance Decade

Total resistance range: 10.00 kΩ to 1000.0 GΩ

Accuracy in grounded mode (G) and floating mode (F):

Resistance Range Ω	Accuracy in G-Mode* %	Accuracy in F-Mode* %	Maximum DC Test Voltage***	Typical Voltage Error ppm/V	Test Voltage Accuracy	Test Currant Range	Test Current Accuracy
10.00k - 99.99k	0.2	0.2	65V	< 0.05	0.5 %+10 V	10 mA	0.7 %+100 µA
100.0k - 999.9k	0.1	0.1	315V	< 0.05	0.5 %+10 V	2.5 mA	0.7 %+10 µA
1.000M - 9.999M	0.1	0.1	1 250V	< 0.05	0.5 %+10 V	1 mA	0.7 %+1 µA
10.00M - 99.99M	0.1	0.1	5 000V	< 0.05	0.5 %+10 V	500 µA	0.7 %+100 nA
100.0M - 499.9M	0.2	0.2	10 000V	< 0.05	0.5 %+10 V	100 µA	0.7 %+20 nA
500.0M - 999.9M	0.2	0.2	10 000V	< 0.07	0.5 %+10 V	20 µA	1 %+10 nA
1.000G - 9.999G	0.5	0.5	10 000V	< 0.15	0.5 %+10 V	10 µA	1.5 %+1 nA
10.00G - 19.99G	1.0	1.0	10 000V	< 0.15	0.5 %+10 V	1 µA	1.5 %+500 pA
20.00G - 99.99G	1	2	10 000V	< 0.20	0.5 %+10 V	500 nA	2 %+100 pA
100.0G - 299.9G	2	3	10 000V	< 0.20	0.5 %+10 V	100 nA	5 %+20 pA
299.9G - 1000.0G	5	6	10 000V	< 0.20	N/A**	N/A**	N/A**

* Accuracy is valid for reference temperature 23+/-2 °C and RH < 50%.
** Test voltage Voltmeter Function is not available from 299.9 GΩ to 1 000 GΩ.
*** Maximum measured DC test voltage is 5% over the specified range

Additional Functions and Parameters

Function SHORT	*Short test current verification*
Current range:	0.000 – 5.000 mA DC
Input resistance:	2700 Ω nom.
Short test current accuracy:	0.2% + 5 uA
Function TIMER	*verification of the Timer feature*
Range of the timer:	1 s to 9 999 s
Timer accuracy:	(0.3+0.0001* t) t =elapsed time in seconds.
Threshold voltage:	< 100 V DC,
Maximum test voltage:	10 kV DC + 5% over range
Output resistance:	100 MΩ
Test voltage indication:	0 to 10 kV DC with suppressed reading below 50 VDC
Test voltage accuracy:	0.5 % + 10 V
Max. test voltage hold function:	to 11 kV DC
Function PSP	programmable simulation of polarization parameters
Number of switching steps:	4
Resistance range:	10.00 MΩ to 100.00 GΩ
Maximum allowed test voltage:	3 kV DC
Maximum period setting:	9 999 s
Function DPP	*Dielectric and Polarization Parameters*
Resistance range:	10.00 MΩ to 100.00 GΩ
Maximum allowed test voltage:	3 kV DC
Maximum period setting:	9 999 s
Preset parameters:	Polarization index (PI) Dielectric absorption ratio (DAR) Polarization ratio (PR)
Function HVC	*High voltage capacitance*
Capacitors:	10, 50, 100 nF firm values
Tolerance:	± 10 %
Calibration uncertainty:	0.3 % + 200 pF
Maximum test voltage:	5 kV DC + 5% over range
Test voltage indication:	0 to 5 kV DC with suppressed indication bellow 50 VDC
Test voltage accuracy:	0.5 % + 10 V

General Specifications

Warm up time:	15 minutes
Operating temperature:	23 ± 10 ºC, Relative humidity < 70%
Reference temperature:	23 ± 2 ºC, Relative humidity < 50 % for resistance range from 10 kΩ to 1 000 GΩ Relative humidity < 70 % for resistance range from 10 kΩ to 10 GΩ
Temperature coefficient:	Additional resistance uncertainty due to temperature coefficient for temperature outside of Tcal ±2°C: +13 °C to +33 °C add 0.1 x specified accuracy /°C at a ref. temperature
Humidity coefficient:	Additional uncertainty due to humidity coefficient in range 50 to 70 % RH: - 0.15 x specified accuracy / % RH for range 10.00 GΩ to 1 000.0 GΩ - 0.05 x specified accuracy / % RH for range 100.0 MΩ to 9.99 GΩ - 0.02 x specified accuracy / % RH for range 10.00 kΩ to 99.99 GΩ
Storage temperatures:	-10 ºC to +55 ºC
Dimension:	450 (W) x 430 (D) x 150 (H) mm
Netto weight	12 kg
Power line:	110/115/120/125 - 220/230 V – 50/60 Hz, 40 VA
Safety class:	I according to EN 1010-1

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