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1. Brief introduction

TH2685/TH2686 Electrolytic Capacitor Leakage Current Meter is a kind of instrument on the basis of Micro Process Technique, which can test the parameter of electrolytic capacitor leakage current automatically.

The instrument can meet the demand of IEC about each electrolytic capacitor leakage current. The test range of leakage current is 10nA~20mA, totally 5 bins, and adopting 3 1/2 digit display. The instrument can select the range automatically according to the set leakage current value, and the test voltage can be adjusted continuously adopting 3 digit display. Charge –test can be transformed automatically, and the charge time can be set within 0~99.9 s. The instrument also have the feature of sorting over-limit indication, high accuracy, fast speed, convenient operation, and reliability, which can is suitable for the production line of electrolytic capacitor factory, incoming inspection of components as well as the measurement and sorting on the electrolytic capacitor leakage current in colleges and the department of scientific research, measurement units and quality control.

The instrument is consonant with the demand of 2nd group in Electronic industry department standard GB6587.1 *Electronic Test Instrument Environmental Test General Programme*, the specified condition is:

- A. Environment temperature: 0~40°C
- B. Relative humidity: 20~80%RH
- C. Atmosphere pressure: 86~106Kpa
- D. General vibration and shock is allowed in the procedure of using the instrument.

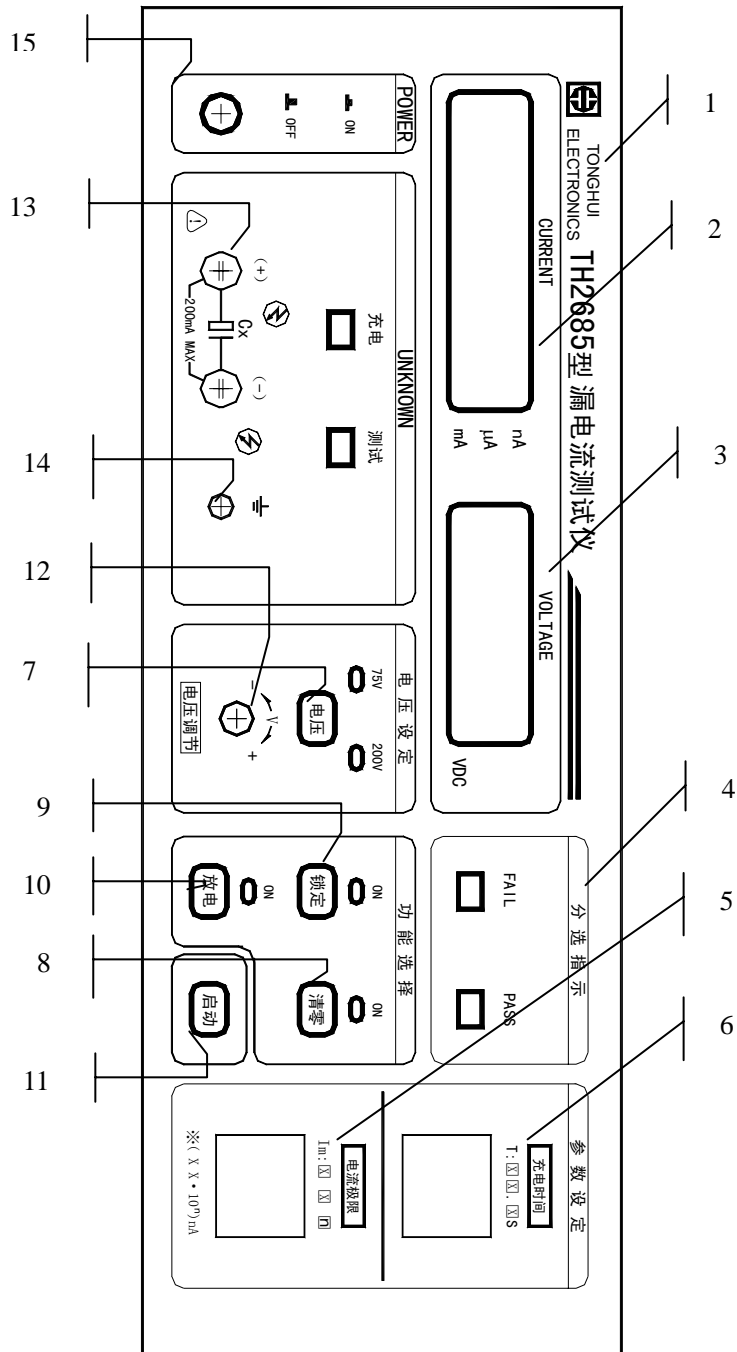
2. Main specifications

1. Test voltage: totally 2 bins, 3 digits display

TH2685:	0 ~ 75V	basic accuracy 1%+2 digit
	0 ~ 200V	basic accuracy 1%+2 digit
TH2686:	0 ~ 200V	basic accuracy 1%+2 digit
	0 ~ 500V	basic accuracy 1%+2 digit
2. Test range of leakage current: 3 1/2 digit display
 10 nA~ 19.9mA basic accuracy 2%+2 digit; Max. resolution: 1 nA
3. Max. charge current: 200mA±10%
4. Charge time: set by dial switch
 Range: 0 ~ 99.9 秒, basic accuracy 2%+0.5 秒
5. Leakage current pre-setting: set by dial switch
 Range: 0 ~ 99×10ⁿ (nA)
6. Clear the base number automatically
7. “charge/measurement” can be transformed to “charge/measurement/discharge” automatically or manually
8. Power voltage: 220V ± 5%
 Frequency: 50Hz ± 5%

9. Power consumption: < 30W

10. Volume: 350mm × 355mm × 130mm Weight: approx.6kg。



3. Instruction of panel function

Label	Name of key	Function
1	Brand and model	
2	Leakage current display window	Display the value of measured leakage current adopting 3 1/2 digit display, the unit includes nA, μ A, mA
3	Test voltage display window	Display the value of measured voltage adopting 3digit display
4	Sorting indication	When the leakage current value of tested capacitor is smaller than the set one., PASS indicator lights up; where as, FAIL indicator lights up with alarm indication.
5	Leakage current setting switch	The value is the qualified-setting leakage current value. When the tested leakage current value is smaller than the set one, it means the product is qualified, whereas is unqualified. There are 3 digits of diver plate value with format of $AB \times 10^n \text{nA}$, if the setting is 324, the set leakage current value is $32 \times 10^4 \text{nA} = 320 \mu\text{A}$
6	Charge time setting switch	There are 3 digits of diver plate value with format of $ABC \times 0.1 \text{ s}$, if the setting is 324, then the charge time is $324 \times 0.1 = 32.4 \text{ s}$. the charge of tested capacitor is performed automatically according to the setting of drive plate, when the charge finishes, the instrument turns to the measurement status automatically.
7	Voltage transformation key	TH2685 can be selected to 75V or 200V bin freely, and TH2686 can be selected to 200V or 5 00V bin
8	Correction key	Zeroing status: Zeroing indicator lights and the instrument can be performed to open correction. After pressing start, the instrument performs 5 bin open correction, when the correction finishes press correction key, and the instrument returns to the measurement status.
9	Lock key	Locking: Locking indicator lights now and the display data is the Max. value of capacitor leakage current when the charge finishes. Unlocking: The display data is the actual tested value of capacitor leakage current under the current status.
10	Discharge key	On the status of charge: Press discharge key to perform discharge on the tested capacitor. On the status of measurement: Press discharge key to perform discharge on the tested capacitor. On the status of discharge: Press discharge key to perform discharge on the tested capacitor.
11	Start key	On the status of correction, start key to perform open correction on the instrument. On the status of discharge, start key to perform

		measurement on the DUT.
12	Voltage-adjustment knob	On the status of discharge, the tested voltage can be adjusted freely, no available on the other status
13	Test terminal	Connect the tested capacitor, the right black connector post is the voltage output (negative voltage output), connect the negative pole of capacitor, and the left red connector post is the positive pole of capacitor.
14	Ground terminal	Be used to connect the shielding ground of tested capacitor
15	Power switch	Press to ON, and the power is connected.

4. Operational step

1. Insert the plug, and the switch is pressed to ON, there is digit display in the display window: (1) TH2685: current window displays 26, voltage window displays 85, delay 1s, current window displays the current leakage current value, and the voltage window displays the current output voltage value; (2) TH2686: current window displays 26, voltage window displays 86, delay 1s, current window displays the current leakage current value, and the voltage window displays the current output voltage value. The initiated status is: (a) The voltage of TH2685 is 200V bin, 200V indicator lights; the indicator of TH2686 with the voltage of 500V lights; (b) when the instrument is on the status of measurement, correction indicator is dark; (c) the display data is the unlock status, lock indicator is dark; (d) when the instrument is on the status of measurement, the measurement indicator lights. After 5 min warm-up, the instrument begins to test.
2. On the status of discharge, the suitable voltage can be adjusted using potentiometer, and the tested voltage value can be displayed correctly in the voltage display window. After the adjustment of voltage, please don't adjust the potentiometer randomly; set suitable charge time using time drive plate, the range of charge time is 0 ~ 99.9s, if the setting is 546, and the charge time is 54.6s; Set the max. allowing leakage current value using the current drive plate on the panel, the range of leakage current value is 0 ~ 19.99mA, and the format is $AB \times 10^n \text{nA}$, if the set leakage current value is 324, then max. allowing leakage current value is $32 \times 10^4 \text{nA} = 320 \mu\text{A}$.
3. Press correction key to make the instrument being on the status of correction, current indication window display is OP-, and the voltage indication window displays current drive plate and the value of time drive plate respectively, so now can check if the set charge time and current limit is correct. Press start key, then instrument can perform open calibration on test fixture. After the end of calibration, the current indication window displays OPC, press correction key, then the instrument can be on the measurement status, now the bin base number of each range should all be zero.
4. Connect the tested capacitor:
 - (1) when the instrument is on the discharge status, press start key or discharge key to make the instrument on the discharge status, the charge indicator lights, according to the set charge time of drive plate, the instrument can execute charge on the tested capacitor;

(2) when the instrument is on the status of measurement, the instrument will turn to the charge status automatically as the tested capacitor is connected, the indicator of measurement status lights up, and the instrument execute charge on the tested capacitor on the base of the set charge time of drive plate; At the end of charge, the instrument will turn to measurement status automatically, and indicator lights up. When testing on the leakage current of tested capacitor, the current window displays the test data, if beyond the range, - - - is displayed, as well as the pass or fail can be judged. When the PASS indicator lights, it means the product is qualified, if FAIL indicator lights, for example alarm switch is ON, then buzzer alarms.

5. Measurement finish:

(1) if the inter discharge is unnecessary, then the capacitor should be taken off

(2) if the inter discharge is necessary, then press discharge key to make the instrument being on the status of discharge, and the discharge indicator lights, the instrument perform discharge on the capacitor.

6. Repeat the procedure of 4~5 below。

7. Turn off the power