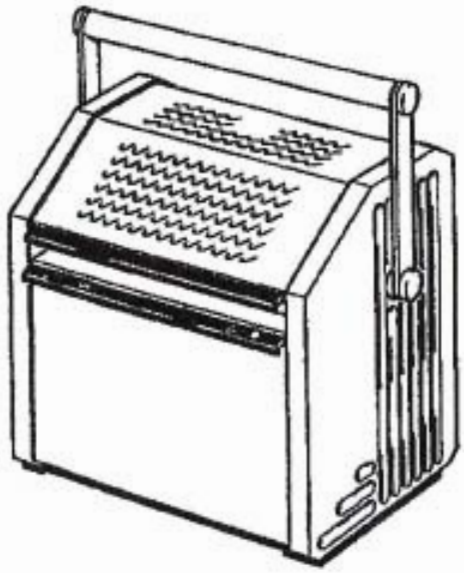
2 SETS OF DPA 75 " BAUR - AUSTRIA"

1. Product Information



The Insulating Oil Tester DPA 75

Measuring the electric breakdown strenght of insulating liquids

The Insulating Oil Tester DPA 75 is used **to measure the electric breakdown strenght of insulating liquids** (eg insulating oil of transformers etc).

A judgement criterion for the quality of insulating liquids

The dissipation factor tan δ and the relative permittivity ε_r, together with the breakdown voltage, are the most important parameter for which insulating liquids are tested.
The breakdown voltage shows the degree of contamination by cellulose fibres and water.
For the operating safety of oil insulated high voltage units the electrical breakdown strength of insulants is the deciding factor.

For further information also see the technical report 'Testing of dielectric properties of insulating liquids' by M. Krüger. Obtainable from BAUR under no. 8602e.

Test vessels and electrodes

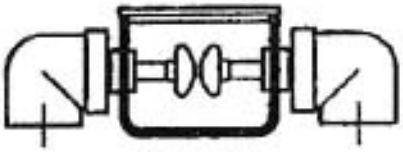
Test vessel 0.4 lt. with lid

IEC 156 Fig I

415-567

Test vessel 0.4 lt. with lid

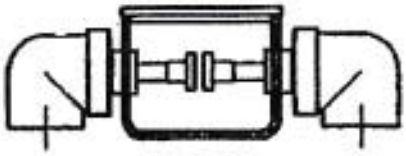
IEC 156 Fig II



415-566

Test vessel 0.4 lt. with lid

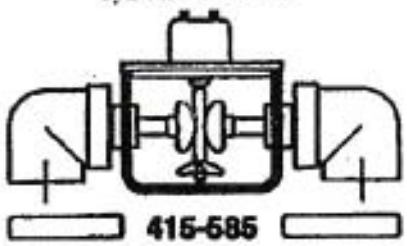
ASTM D 877



415-568

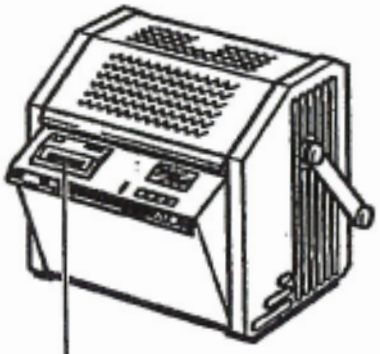
Test vessel 0.4 lt. with lid, oil stirrer and setting gauge

ASTM D 1816



415-585

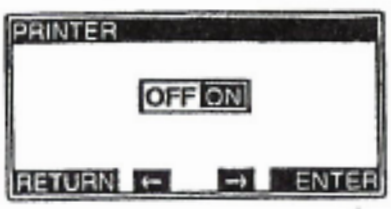
5.3 Printer report - standard test



```
REPORT  DPA 75   V1.0
26.04.94         09:30

REPORT NR.:
4309

STANDARD:
IEC 156/63

ELECTRODES  : ..........

SPACING     : ..........

TEMP.                20.5 °C
                     36.8 °F
S/M                  10.6 %
STD. DEV.             7.1
MEAN VALUE           67.2 kV

TEST 6               65.7 kV
TEST 5            >  75.0 kV
TEST 4               66.3 kV
TEST 3            >  75.0 kV
TEST 2               65.0 kV
TEST 1               56.0 kV
```

Reading test results from printer report:
test data and evaluation results

> No breakdown happened.
Breakdown voltage higher than 75 kV.



Condition:
If printer is switched off activate it within menu INSTRUMENT SETTING.

PTP

CALIBRATION REPORT

Calibrated Equipment

This calibration reports is belong to following unit identification :

* Customer name : R Engineering Support Co., Ltd.
* Equipment model : DPA 75
* Manufacturer : BAUR
* Serial number : 954103078
* Report date : February 12, 2008
* Due date : February 11, 2009

Test Equipment

* Equipment model : KA 75
* Manufacturer : BAUR
* Serial number : 96 42 01 003
* Last calibration date : September 06, 2007
* Due date : September 05, 2008

As reference, calibrator can be traced back to international and nation standard as attached sheet.

Ambient temperature : 23 °C

PTP POWER TESTING PRODUCT CO.,LTD. บริษัท พาวเวอร์ เทสติ้ง โปรดัก จำกัด

C-0802001

บริษัท พาวเวอร์ เทสติ้ง โปรดัก จำกัด 100/33 หมู่ 5 ถ.บางกรวย-ไทรน้อย ต.บางสีทอง อ.บางกรวย จ.นนทบุรี 11130
Power Testing Product Co.,Ltd. 100/33 Moo 5 Bangkruay-Sainoi Road, Bangsithong, Bangkruay, Nonthaburi 11130 Thailand.
Tel.: 66(0) 2447 6228 Fax : 66(0) 2447 6229 E-mail : ptpco@cscoms.com

Report Service Test: 12.02.2008 16:10:09

Hardware values

	Designation	Unit	Range	Value	
A	U supply	V	10.50 - 14.80	14.44	ok
B	+5V supply	V	4.90 - 5.10	5.00	ok
C	+8V supply	V	8.00 - 8.50	8.14	ok
D	-9V supply	V	-8.90 - -11.80	-11.56	ok
E	Frequency	Hz	59.70 - 60.30	60.03	ok
F	+40 V counter 0	V	7.00 - 9.00	7.57	ok
G	-40 V counter 0	V	-7.00 - -9.00	-7.85	ok
H	Amplifier output counter 0	V	0.00 - 0.03	0.00	ok
I	Sine amplifier counter 434	V	1.60 - 1.80	1.69	ok
J	+40 V counter 434	V	22.50 - 25.50	23.20	ok
K	-40 V counter 434	V	-22.50 - -25.50	-23.99	ok
L	Amplifier output counter 434	V	1.35 - 1.55	1.42	ok
M	Sine amplifier counter 897	V	3.40 - 3.65	3.49	ok
N	+40 V counter 897	V	39.50 - 43.00	40.82	ok
O	-40 V counter 897	V	-39.50 - -43.00	-41.82	ok
P	Amplifier output counter 897	V	2.85 - 3.15	2.92	ok
Q	Temperature	°C	15.00 - 40.00	29.00	ok

Statistical values

Serial no. : 954103078
Software version : 1.3
last calibration : 12.02.108
Correcting factor kV-value indication : 1.0201
Correcting factor rate of rise : 1.0277
Operating hours : 1185
Operating hours H.V. : 93
mean breakdown value : 43.47 kV
No. of tests : 19268
Supply : Mains operation
Battery capacity :
No. of possible single tests :

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DPA 75
======

Seriennummer
Serial no. : 954103078

geprüft mit Kalibrator KA 75 Nr.
tested with calibrator KA 75 no. : 964201003

Anzeige DPA 75 Display (kV)	Anzeige KA 75 Display (kV)	Differenz Difference (kV)	PC-Auswertung PC-Evaluation
10.05	10.11	-0.06	ok
20.02	20.09	-0.07	ok
30.08	30.06	0.02	ok
39.97	40.00	-0.03	ok
50.02	50.01	0.01	ok
60.08	60.03	0.05	ok
69.96	69.90	0.06	ok
75.03	74.84	0.19	ok

maximale zulässige Abweichung
maximal permissible deviation : ± 1.0 kV

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Funktions- u. Sicherheitsprüfung
nach Prüfanweisung Nr. 471-534 erfüllt

Function and safety check met
acceptance to test instruction no. 471-534 ☐

12.02.2008 Name: .....

SIEMENS
Siemens Limited
Industrial Solutions & Services, Calibration Laboratory
79/38 Prime State Project, Soi Pookmit, Srinakarin Rd.,
Nongbon, Pravate, Bangkok 10260 Thailand
Tel. : +66 (0) 2366 0951-8 ext. 201-5 , Fax : +66 (0) 2747 1223

Certificate No.
501/2007
Number of pages
2

Certificate of Calibration

Description: Voltage Calibration Meter

Manufacturer: BAUR

Model: KA 75

Serial no.: 964201003

Inventory no.: -

Customer: Power Testing Product Co., Ltd.
100/33 Moo 5, Bangkruay-Sainoi Road,
Bangsithong, Bangkruay
Nonthaburi 11130

The Certificate of Calibration traceable to the International System of Units maintained at national standards laboratory. This certificate may not be reproduced other than in full, except with the prior written approval of the head of Siemens Calibration Laboratory.

The reported uncertainty of measurement is based on standard uncertainty multiplied by a coverage factor K = 2, providing confidence level of approximately 95%.

The result of Calibration was found accurate as show on date and place of calibration only.

Work order no.: WO-0501/2007

Procedure used : Direct measurement with reference standard(s) using in-house calibration procedure(s).

Reference standards used:

Description	Model	Manufacturer	Serial no.	Certificate No.	Due Date	Traceability
Multi-Product Calibrator /with coil	5520A	FLUKE	7450203	EL-0075/07	27 Apr 2008	NIST,PTB,BIPM,NPL
Digital Multimeter	3458A	Hewlett Packard	2823A21635	EL-0244/06	09 Nov 2007	PTB,BIPM,NIMT

Room temperature: 23 °C ± 2 °C **Rel. humidity:** 50 % ± 15 %

Date of Receipt : 5 Sep 2007 **Date of Calibration :** 6 Sep 2007 **Date of Issue :** 6 Sep 2007

Seal

Head or deputy of the calibration laboratory

Vichit Tipsena

POWER TESTING PRODUCT CO.,LTD.
Calibrated by

Krisada Nuamnak

Calibration Results

Description : Voltage Calibration Meter
Manufacturer : BAUR
Model / Type : KA 75
Serial No. : 964201003
Inventory No. : -

1. Voltage Measurement

Expected Value	Standard Value	Unit Under Test (UUT)			Estimate Uncertainty(±)
		Value	Error	Tolerance(±)	
15 kV	42.43 µA	**14.96** kV	-0.04 kV	0.11 kV	62 V
20 kV	56.57 µA	**20.03** kV	0.03 kV	0.14 kV	82 V
30 kV	84.85 µA	**30.06** kV	0.06 kV	0.21 kV	0.12 kV
40 kV	113.14 µA	**40.07** kV	0.07 kV	0.28 kV	0.16 kV
50 kV	141.42 µA	**50.09** kV	0.09 kV	0.35 kV	0.20 kV
60 kV	169.71 µA	**60.12** kV	0.12 kV	0.42 kV	0.25 kV
70 kV	197.99 µA	**70.15** kV	0.15 kV	0.49 kV	0.29 kV
75 kV	212.13 µA	**75.00** kV	0.00 kV	0.53 kV	0.31 kV

Remark :

- tested frequency as 60Hz

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