Portable Test Equipment
Multifunction portable signal source with integrated working standard of power and energy

⇒ Highlights
- Laboratory and on-site meter measurements
- Easy evaluation of meters under precise load conditions, using the built-in compact current and voltage source
- Testing of meters with closed I-P links
- Automatic operation with predefined load points without the need for an external computer
- Each source channel can be programmed with user defined harmonic content or standardized signal test shape
- Each source channel can be modulated with programmable Ripple control telegram
- Independent generation of single or three-phase loading conditions for testing, calibration and verification of meters
- Active, reactive and apparent energy measurement with integrated error calculator and pulse output
- Capable to test the ratio and burden of CT/PT

⇒ Description
The Portable Test Equipment consists of an integrated current and voltage source and electronic reference standard of accuracy class 0.05% or 0.02%. Device is available in three-phase version PTE 2300 or single phase version PTE 2100.

⇒ Available Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Phases</th>
<th>Class</th>
<th>Max. Output Power (per phase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTE 2100A</td>
<td>1</td>
<td>0.05</td>
<td>Voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30 VA</td>
</tr>
<tr>
<td>PTE 2100E</td>
<td>1</td>
<td>0.02</td>
<td>30 VA</td>
</tr>
<tr>
<td>PTE 2300A</td>
<td>3</td>
<td>0.05</td>
<td>30 VA</td>
</tr>
<tr>
<td>PTE 2300E</td>
<td>3</td>
<td>0.02</td>
<td>30 VA</td>
</tr>
</tbody>
</table>
The related to apparent
in range

Measurement Range
Ripple Control
Harmonics
Phase Angle
Current
Range
Output Power 120 A output
Output Power 12 A output
Accuracy *1
Distortion Factor < 0.3 %
Resolution 0.01 V
Stability < 0.005 % (within 60 min period @ time base 150 s)

Range
0 ... 360 °
Resolution
0.001 ° (45 ... 100 Hz)

Fundamental Frequency Range
45 ... 70 Hz
Bandwidth
30 ... 2200 Hz
Phase Shift
0 ° ... 360 °
Max. Amplitude
50 % (2nd ... 6th harmonics)
15 % (7th ... 40th harmonics)

Frequency Range
100 ... 1600 Hz
Modulation
0 ... 15 %
Channels Selection
any combination of Voltage and Current channels

Reference Meter (built-in / specification per phase)

Measurement Range
Voltage
30 V ... 300 V (phase to neutral)
Current
1 mA ... 120 A
Power Factor
-1.000 ... +1.000 (with 0.001 step)

Voltage
PTE 2x00E
PTE 2x00A
Voltage
0.015 %
0.035 %
Current *1
0.015 %
0.035 %
Power *1
0.02 %
0.05 %
Frequency
40 Hz ... 70 Hz
Phase Angle
0.02 °

Temperature Coefficient
0.0025 (°C ... +40°C)
0.0040 (°C ... +50°C)

*1 In range 1 mA ... 30 mA related to 30 mA
*2 related to apparent power

Current Output Limit Values

Operat. Temperature -10 ... +50 °C
Storage Temperature -20 ... +60 °C
Operating Humidity ≤ 85% at Ta ≤ 21°C
≤ 95% at Ta ≤ 25°C
30 days / year spread
Power Consumption approx. 550 VA
Power Supply 100 VAC ... 240 VAC
Degree of Protection IP-67 (closed case)

Safety Requirements
Isolation protection: EN 61010-1:2001
Measurement category: 300 V CAT IV,
600 V CAT III

Dimensions (W x D x H)
470 x 370 x 180 mm (device)
Weight (approx.)
17 kg (device)/ 5 kg (accessories) – PTE 2300
12 kg (device)/ 3 kg (accessories) – PTE 2100

Impulse Output
Type
LED or 5 V
Impulses Assigned to
Active, Reactive, Apparent Energy
or programmable constant frequency
Meter Constant
programmable
Max. Imp. Frequency
70 kHz

Impulse Input

Suitable for
• Optical Sensor OPTS 2100
• Snap Switch
• Impulse SO

Standard Accessories
• Optical Sensor OPTS 2100, Fixing Clamp OPFC 1000
• Optical Sensor Cable WSSC 2000
• Power Supply Cord, Spare Fuses
• Current Cables, USB Cable
• Voltage Cables with Standard Voltage Clips
• Software for PC (Installation USB key)
• Printed User’s Guide, Calibration Certificate

Optional Accessories
• Software Package ELMA for full control of PTE (SPE 1001)
• Current Transducer CT 3x20x
• Current Clamps CC 2x12B, CC 3x24C, CC4x30C
• Flexible Current Probe FCP 3x21x /WS
• Voltage Transducer VT 2x60x
• Special Voltage Clips, Spike Volt. Clips, Omega Volt. Clips
• Snap Switch WSSC 3000, RS232 cable, Impulse SO cable
• Optical Communication Head OPTH 1200
• Portable Printer with communication cable

The information in this document is subject to change without notice

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