



# DPE 750

## DIGITAL PNEUMATIC CALIBRATOR

### TECHNICAL INFORMATION

The **Wallace & Tiernan** portable digital pneumatic calibrator is a menu guided universal calibration instrument with storage for measured values and a RS232 interface. The unit can be used independently of an external air supply and an external power supply. The digital pneumatic calibrator is mainly used for maintenance, installation and start-up of pneumatic measuring and control systems and especially for the calibration of pressure transducers. The unit can be used for field calibration as well as for workshop service. The **DPE 750** offers pressure measurement together with voltage or current measurement with automatic error calculation and data storage.



### ADVANTAGES

- High accuracy with 0.02 % of reading
- Temperature compensation between 10 °C and 40 °C
- Selectable pressure units
- Zero adjustment by keypress
- Easy to use menu system
- Automatic error calculation
- Simultaneous readout of pressure and electrical measurements
- Data storage
- RS232 interface
- LCD display with backlight
- Built-in pressure / vacuum pump with fine control
- Programmable pressure switch and leakage test mode
- DKD calibration certificate on request

### GENERAL DESCRIPTION

The **DPE 750** is a microprocessor operated precision pressure calibrator which combines a wide range of measurement capabilities and high accuracy with an easy to handle menu structure. The Calibrator is not only used to measure exact pressure values but also high precision electrical inputs in order to realize an automatic error calculation. The measured values are evaluated in linear or root function. Pressure values, electrical inputs and the relative error in percent, as a result of both input parameters, are shown simultaneously on the LCD display.

The **DPE 750** pressure calibrator also provides the capabilities for pressure switch calibration and leak test measurement. Results obtained during test and calibration can be stored in the internal memory for further analysis or be transferred to a computer system via RS232 interface. Calibration data of maximum 18 tested transducers with maximum 22 test points can be stored.

The pressure display is selectable in seven different pressure units. One additional pressure unit is free programmable.

Pressure as well as vacuum can be generated very easily with the internal hand pump and the precision volume controller without any external components. No counter pressure to the instrument's case is necessary at a vertical operating position during pressure generation.

### CONSTRUCTION

The **DPE 750** is housed in a robust aluminium case with an adjustable handle for easy transportation and for an optimum set-up in the case of a bench mounting.

The front panel with the keypad and the LCD display is covered with a polycarbonate front membrane. A small compartment for accessories is located on the rear side of the unit.

The instrument is powered by a rechargeable NiMH-battery with a typical operation time of approx. 18 hours or by an external plug-in power supply which can be used with a line voltage from 100 up to 240 V AC. The battery status is shown in the diagnosis menu. At a battery discharge of approximate 90 % the user will be warned by an acoustic signal.

The **DPE 750** is available for gauge-, compound-, differential- and absolute pressure ranges from min. 200 mbar up to max. 20 bar.

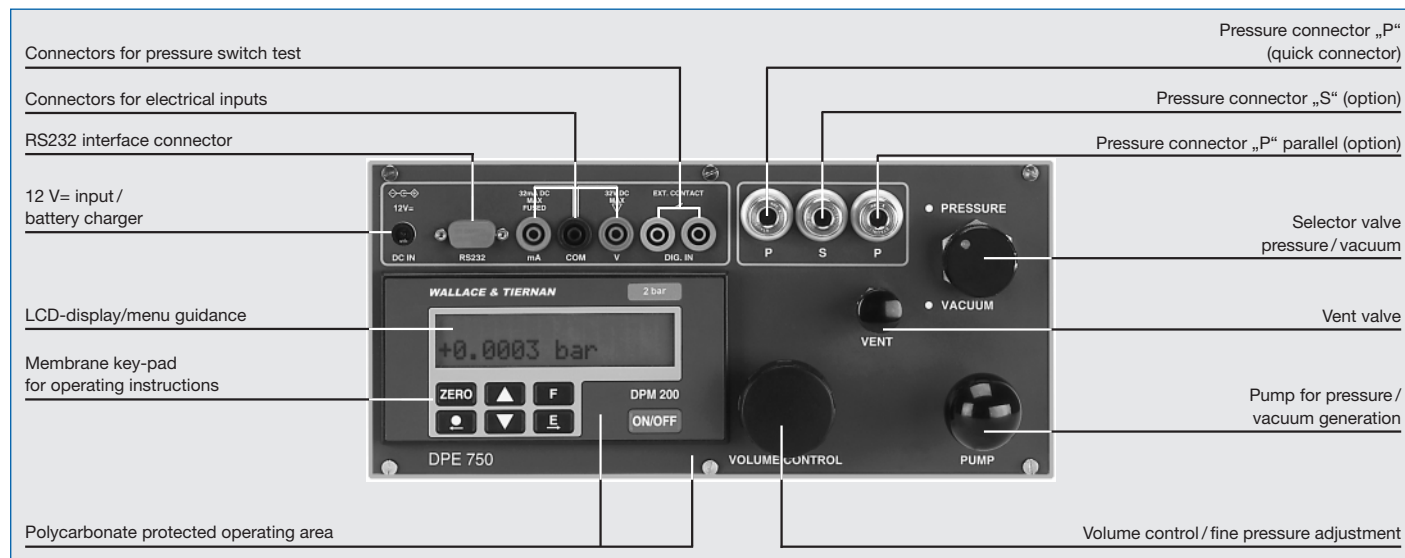
**WALLACE & TIERNAN**  
LEADER IN QUALITY  
DIN EN ISO 9001 certified  
DKD-K-02301 DIN EN ISO/IEC 17025

**WALLACE & TIERNAN**

[www.wallace-tiernan.com](http://www.wallace-tiernan.com)

# CONSTRUCTION / CAPABILITIES

## DIGITAL PNEUMATIC CALIBRATOR DPE 750 – FRONTPANEL



## ... HANDY, COMFORTABLE AND FUNCTIONAL



DPE 750 – mobile and stationary useable pneumatic calibrator.



Easy pressure or vacuum generation at a vertical instrument position.  
No counter pressure of case is necessary up to 20 bar.



Easy and comfortable instrument transportation by an adjustable carrying handle for mobile use.



The adjustable carrying handle guarantees also an optimum set-up for desktop or bench mounting operation.

# TECHNICAL DATA

## PRESSURE MEASURING SYSTEM

### Accuracy:

0.02 % of reading  $\pm 3$  or  $\pm 6$  digits  
(dependent on range, including linearity-,  
hysteresis- and temperature error)

### Temperature compensation:

Compensation between 10 °C and 40 °C  
(error within the specified tolerance for temperature  
changes less than 6 °C / hour)

### Resolution:

max. 44 000 digits (depending on range)

### T<sub>90</sub> – rise time (FS):

T<sub>90</sub> < 1 s  
(16 conversions / s) with additional display filter  
(3 samples / s)

### Pressure units:

mbar, bar, kPa, mmHg, PSI, IN.H2O (20 °C), IN.Hg  
and one programmable unit.

### Display:

LCD display 2 x 16 character, 8 mm high,  
with backlight (switchable)

### Pressure overload safety:

Ranges up to 0.4 bar: 3.5 times  
Ranges up to 4 bar: 3 times  
Ranges up to 20 bar: 2 times

### Pressure overload warning:

Optical warning at 5 % overload (flashing display) and  
acoustical warning at 10 % overload.

## ELECTRICAL MEASURING SYSTEM

### Voltage range:

(measurement range / accuracy)  
0 ...  $\pm 32$  V DC; 0.025 % FS  $\pm 2$  digits

### Resolution:

32 000 digits / 0.001 V

### Current range:

(measurement range / accuracy)  
0 ...  $\pm 32$  mA DC; 0.025 % FS  $\pm 2$  digits

### Resolution:

32 000 digits / 0.001 mA

### Temperature error:

(current and voltage range)  
max. 0.002 % / K

### Input impedance:

Voltage input  $\geq 10$  MOhm  
Current input  $\leq 1$  Ohm

### Interface:

Standard RS232 serial interface

## ENVIRONMENT SPECIFICATIONS

### Temperature:

Operating temperature 10 °C ... 40 °C (compensated)  
Storage temperature -10 °C ... 60 °C

### Safety issue:

EMC emission EN 50081  
EMC immunity EN 50082  
protection IP 41 EN 60529  
CE certified

### Medium:

Only use with non corrosive, dry gases.

## ADDITIONAL FEATURES

### Dimensions / weight (L x W x D):

302 mm x 133 mm x 198 mm

### Weight:

approx. 5 kg

### Pressure connections:

Quick plug-in connectors with 1/8" NPT female thread

### Ext. Power supply:

100 ... 240 V AC, 50 / 60 Hz ( $\pm 10$  %) for line and  
battery supply

### Enclosure construction:

Robust aluminium case with adjustable carrying handle.  
Complete set of test leads and connector plugs are  
included as a standard.

### Pressure / Vacuum Generation:

The pressure calibrator is fitted hand pump capable  
to generate pressure up to approx. 20 bar and  
vacuum up to approx. -850 mbar.

### Fine Adjustment:

The integrated volume controller allows exact and fine  
pressure adjustments.

### Vent Valve:

Pressure release and venting of the calibrator can  
be controlled with the internal vent valve.

### Selector Valve:

The generation of pressure or vacuum by means  
of the hand pump can be selected by a mechanical,  
multi-functional selector valve.

# TECHNICAL DATA

## ORDERING NO. AND STANDARD PRESSURE RANGES

Pressure ranges	Resolution	Ordering no.	Accuracy
<b>Gauge pressure ranges</b>			
0 ... 200 mbar	0.01 mbar	DPE-750-G-002	0.02 % of reading $\pm$ 3 digits
0 ... 400 mbar	0.01 mbar	DPE-750-G-004	0.02 % of reading $\pm$ 6 digits
0 ... 2 bar	0.0001 bar	DPE-750-G-020	0.02 % of reading $\pm$ 3 digits
0 ... 4 bar	0.0001 bar	DPE-750-G-040	0.02 % of reading $\pm$ 6 digits
0 ... 20 bar	0.001 bar	DPE-750-G-200	0.02 % of reading $\pm$ 3 digits
<b>Compound pressure ranges</b>			
-100 ... 0 ... 200 mbar	0.01 mbar	DPE-750-C-003	0.02 % of reading $\pm$ 6 digits
-1 ... 0 ... 3 bar	0.0001 bar	DPE-750-C-040	0.02 % of reading $\pm$ 6 digits
-1 ... 0 ... 20 bar	0.001 bar	DPE-750-C-210	0.02 % of reading $\pm$ 3 digits
<b>Differential pressure ranges (P &gt; S)</b>			
0 ... 200 mbar	0.01 mbar	DPE-750-D-002	0.02 % of reading $\pm$ 3 digits
0 ... 400 mbar	0.01 mbar	DPE-750-D-004	0.02 % of reading $\pm$ 6 digits
0 ... 2 bar	0.0001 bar	DPE-750-D-020	0.02 % of reading $\pm$ 3 digits
0 ... 4 bar	0.0001 bar	DPE-750-D-040	0.02 % of reading $\pm$ 6 digits
<b>Absolute pressure ranges</b>			
0 ... 2 bar	0.0001 bar	DPE-750-A-020	0.02 % of reading $\pm$ 3 digits
0 ... 4 bar	0.0001 bar	DPE-750-A-040	0.02 % of reading $\pm$ 6 digits
0 ... 20 bar	0.001 bar	DPE-750-A-200	0.02 % of reading $\pm$ 3 digits

## GENERAL NOTES

The max. static pressure for input "S" for the specified differential pressure ranges is 15 bar.

The standard calibrator for gauge or compound pressure is fitted with one quick plug-in pressure connector for connection output "P". Optional, a second parallel output quick connector can be considered (not necessary for DPE-750-D).

### Ordering information:

Please advise ordering no., requested range and a description if options are required.

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