

## Portable Calibration Unit



### Test and Calibration Gas Carrying Pouch

for LAMTEC Sensors and Measuring Systems

## Technical Data Portable Calibration Unit

### Carrying Pouch for 3 Test and Calibration Gas Cylinders



*Fig. 1 Pouch*

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#### Dimensions carrying pouch for 3 test and calibration gas cylinders

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Dimensions (HxWxD)	400x380x125 mm / 15.75x14.96x4.92" in
Weigth	0,7 kg / 1.55 lb
Material	Polyester

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## Test and Calibration Gas (single use)



Fig. 2 Test and calibration gas cylinders (single use)

Dimensions Test and Calibration Gas Cylinders (single use) with Test Gas A, B, C, D, E	
Ø	90 mm / 3.543 " in
High	370 mm / 14.57" in
Volume	1.6 l
Capacity	112 l at 70 bar / 1000 psi
Tare weight	1.2 kg / 2.645 lb
Pressure	70 bar / 1000 psi
Material	aluminium ISO11118
Valve protection	plastic cap
Valve outlet	5/82" 18 UNF C10
Gas composition	see table
Typical durability	3 years
Typical composition tolerances	± 2 %

## Test gases for test and calibration gas cylinders (single use)

Test gas	Composition			
	O <sub>2</sub> [Vol.%]	CO <sub>e</sub> [ppm]*	NO (ppm)**	N <sub>2</sub> [Vol.%]
A	21	0	0	Rest
B	3	0	0	Rest
C	3	300	0	Rest
D	0	0	30	Rest
E	0	0	100	Rest

\* CO Equivalent CO<sub>e</sub> is the sum of all components in the exhaust gas. In test gases, it is represented by CO and H<sub>2</sub> in pro portion of 2:1, e.g. 300 ppm CO<sub>e</sub> = 300ppm CO<sub>e</sub> = 200 ppm CO +100 ppm H<sub>2</sub>.

\*\* A calibration with nitrogen corresponds to a calibration on NO<sub>x</sub> for NO/NO<sub>2</sub> > 9, thus NO<sub>x</sub> = NO+NO<sub>2</sub>.

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## Flow Regulator with Test Gas Hose



Fig. 3 Flow regulator with hose connection

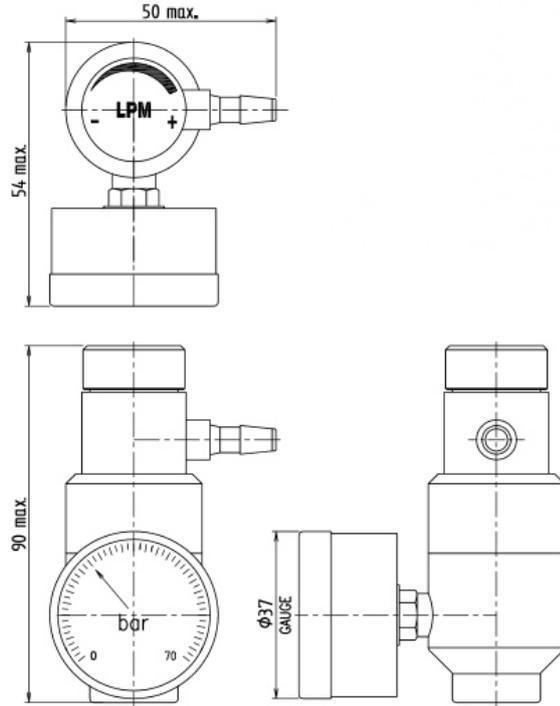


Fig. 4 Dimensional drawing flow regulator

### Dimensions

Dimensions (HxWxD)	90x50x54 mm / 3.543x1.97x2.126" in
Weight	0.315 kg / 0.695 lb
Material (Body / Gasket / Valve seat)	Chrome plated brass/Viton/Teflon 5

### Input Data

Test gas inlet	5/8" 18 UNF C10
Test gas outlet	3/16" hose nipples
Flow (variable with 9 steps)	0,5 – 5,0 l/min
Typical accuracy (with cylinder pressures between 3,5-70 bar / 50-1000 psi)	± 12 % of measured value
Pressure range when instrument air adapter is connected	permissible: 0 ... 7 bar / 0 ...101 psi recommended: 3 ... 4 bar / 43 ...58 psi

### Dimensions Test Gas Hose

Dimension (Dxd)	6x3 mm / 0.237x0.118" in
Length	1 m / 39.37" in
Weight	0,03 kg / 0.062 lb
Material	Silicone

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### Instrument Air Adapter for Flow Regulator



Fig. 5 Instrument air adapter for flow regulator

<b>Dimensions Instrument Air Adapter</b>	
Dimensions (HxWxD)	40x22x19 mm/1.575x0.866x0.748" in
Weight	0.042 kg / 0.093 lb
Material	Stainless steel/brass nickel-plated
Pressure range when instrument air adapter is connected	permissible: 0 ... 7 bar/0 ... 101 psi recommended: 3 ... 4 bar/43 ...58 psi

<b>Dimensions Hose</b>	
Dimension (Dxd)	6x4 mm/0.237x0.158" in
Length	1 m/39.37" in
Weight	0,02 kg / 0.044 lb
Material	PUN

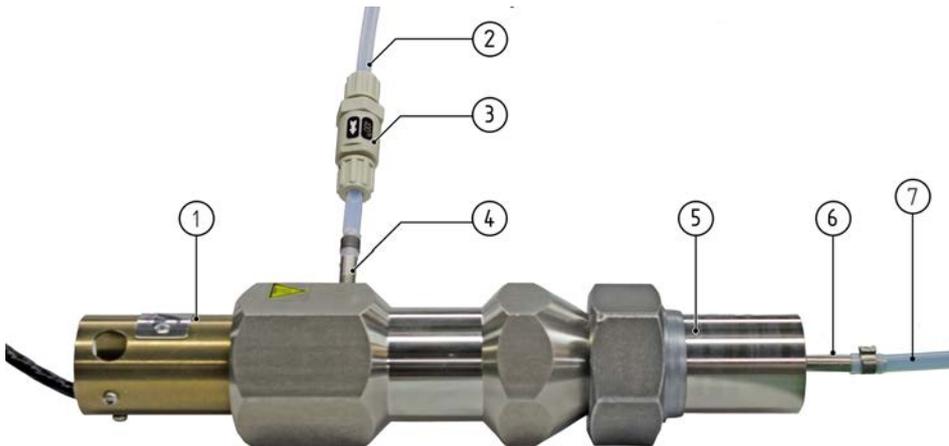
# Technical Data Portable Calibration Unit

## Testing Device

### Description:

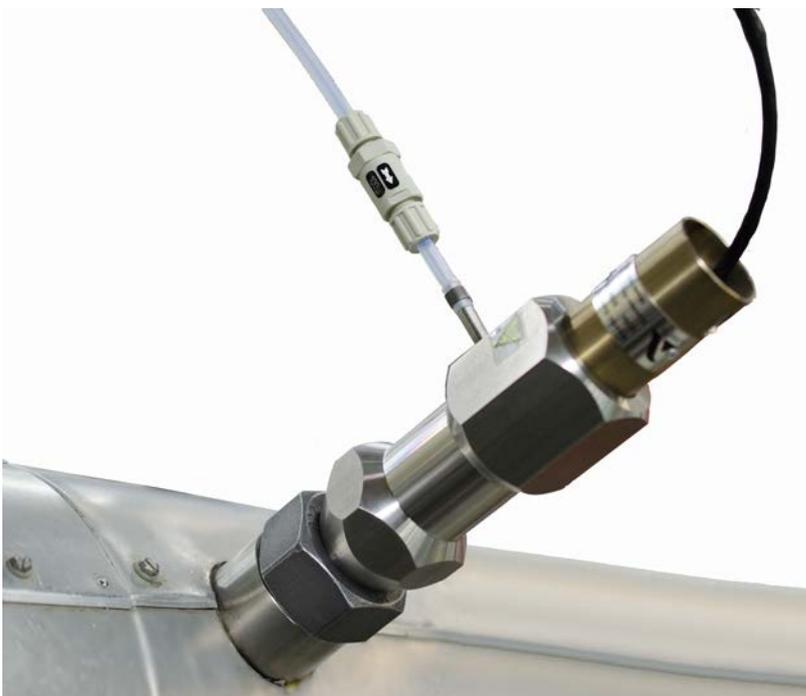
The testing device is a device for the task of testing gases via the test gas connection ON (Nr. 4 in *Fig. 6 Testing device laying on the table*) onto the probes LS2/KS1D ECO in the standard housing. The probe can be tested or calibrated by means of test gas function.

The testing device can be used lying on the table or plugged into the flue gas channel (*Fig. 6 Testing device laying on the table* and *Fig. 7 Testing device plugged into flue gas channel*).



*Fig. 6 Testing device laying on the table*

- 1 Probe LS2, KS1D in Standard housing
- 2 Hose
- 3 Particle filter
- 4 Test gas connection ON
- 5 Plug in nozzle for flue gas channel
- 6 Test gas outlet
- 7 Hose



*Fig. 7 Testing device plugged into flue gas channel*

# Technical Data Portable Calibration Unit

## Order Information

Description	Order no.
<p><b>Portable calibration unit for LS2 probe all types, as set including:</b></p> <ul style="list-style-type: none"> <li>– 1 piece bag for portable calibration unit (max. 3 disposable aluminium cylinder)</li> <li>– 1 piece flow controller with adjustable flow rate for disposable test gas aluminium cylinder</li> <li>– 1 piece instrument air adapter for flow controller</li> <li>– 1 piece test gas hose 6/3 mm/0.237x0.118 in. material silicon, length 1 m/39.37 in.</li> <li>– 1 piece Compressed air hose (6x4 mm/0.237x0.158 in., material PUN, length 1 m/39.37 in.</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l/70 bar</li> </ul>	699R0060
<p><b>Portable calibration unit with synthetic air for LS2 probe all types, as set including:</b></p> <ul style="list-style-type: none"> <li>– 1 piece bag for portable calibration unit (max. 3 disposable aluminium cylinder)</li> <li>– 1 piece flow controller with adjustable flow rate for disposable test gas aluminium cylinder</li> <li>– 1 piece instrument air adapter for flow controller</li> <li>– 1 piece test gas hose 6/3 mm/0.237x0.118 in., material silicone, length 1 m/39.37 in.</li> <li>– 1 piece compressed air hose 6x4 mm/0.237x0.158 in., material PUN, length 1 m/39.37 in.</li> <li>– 1 piece synthetic air for offset calibration in aluminium disposable cylinder 1.6 l / 70 bar</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l/70 bar</li> </ul>	699R0061
<p><b>Portable calibration unit for KS1/KS1D probe all types, as set including:</b></p> <ul style="list-style-type: none"> <li>– 1 piece bag for portable calibration unit (max. 3 disposable aluminium cylinder)</li> <li>– 1 piece flow controller with adjustable flow rate for disposable test gas aluminium cylinder</li> <li>– 1 piece instrument air adapter for flow controller</li> <li>– 1 piece test gas hose 6/3 mm/0.237x0.118 in. material silicone, length 1 m/39.37 in.</li> <li>– 1 piece compressed air hose 6x4 mm/0.237x0.158 in., material PUN, length 1 m/39.37 in.</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l/70 bar</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; 200 ppm CO; 100 ppm H<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l / 70 bar</li> </ul>	699R0062
<p><b>Portable calibration unit with synthetic air for KS1/KS1D probe all types, as set including:</b></p> <ul style="list-style-type: none"> <li>– 1 piece bag for portable calibration unit (max. 3 disposable aluminium cylinder)</li> <li>– 1 piece flow controller with adjustable flow rate for disposable test gas aluminium cylinder</li> <li>– 1 piece instrument air adapter for flow controller</li> <li>– 1 piece test gas hose 6/3 mm/0.237x0.118 in. material silicone, length 1 m/39.37 in.</li> <li>– 1 piece compressed air hose 6x4 mm/0.237x0.158 in., material PUN, length 1 m/39.37 in.</li> <li>– 1 piece synthetic air for offset calibration in aluminium disposable cylinder 1,6 l/70 bar</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1,6 l/70 bar</li> <li>– 1 piece test gas 3 % O<sub>2</sub>; 200 ppm CO; 100 ppm H<sub>2</sub>; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l / 70 bar</li> </ul>	699R0063
<p><b>Portable calibration unit with synthetic air for KS2DNO<sub>x</sub> probe all types, as set including:</b></p> <ul style="list-style-type: none"> <li>– 1 piece bag for portable calibration unit (max. 3 disposable aluminium cylinder)</li> <li>– 1 piece flow controller with adjustable flow rate for disposable test gas aluminium cylinder</li> <li>– 1 piece instrument air adapter for flow controller</li> <li>– 1 piece test gas hose 6/3 mm/0.237x0.118 in. material silicone, length 1 m/39.37 in.</li> <li>– 1 piece compressed air hose 6x4 mm/0.237x0.158 in., material PUN, length 1 m/39.37 in.</li> <li>– 1 piece synthetic air for offset calibration in aluminium disposable cylinder 1,6 l/70 bar</li> <li>– 1 piece test gas 30 ppm NO; balance N<sub>2</sub> in aluminium disposable cylinder 1,6 l/70 bar</li> <li>– 1 piece test gas 100 ppm NO; balance N<sub>2</sub> in aluminium disposable cylinder 1.6 l/70 bar</li> </ul>	699R0064

### NOTICE

To calibrate the probes in the standard housing (650R1000,656R0000T, 656R2000) the testing device 650R1015 is required in addition to the portable adjustment unit.

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## Spare Parts

Description	Order-No.
Carrying pouch for 3 test and calibration gas cylinders	650R1017
Test and calibration gas cylinders A (Aluminium single use cylinder with test gas A: 21 Vol.% O <sub>2</sub> , Rest N <sub>2</sub> )	650R1020
Test and calibration gas cylinders B (Aluminium single use cylinder with test gas B: 3 Vol.% O <sub>2</sub> , Rest N <sub>2</sub> )	650R1022
Test and calibration gas cylinders C (Aluminium single use cylinder with test gas C: 3 Vol.% O <sub>2</sub> , 300 ppm CO <sub>e</sub> *, Rest N <sub>2</sub> )	650R1021
Test and calibration gas cylinders D (Aluminium single use cylinder with test gas D: 30 ppm NO**, Rest N <sub>2</sub> )	650R1024
Test and calibration gas cylinders E (Aluminium single use cylinder with test gas E: 100 ppm NO**, Rest N <sub>2</sub> )	650R1026
Flow regulator with hose connection (with adjustable flow rate for test and calibration gas cylinders.	650R1016
Test gas hose (6x3 mm/0.237x0.118 in., silicone, length 1 m/39.37 in.)	650P0726
Instrument air adapter for flow controller	650R1018
Compressed air hose (6x4 mm/0.237x0.158 in., PUN, length 1 m/39.37 in.)	657P0547
Test gas testing device for LS2 ECO, KS1D ECO (in standard housing)	650R1015

\* CO Equivalent CO<sub>e</sub> is the sum of all components in the exhaust gas. In test gases, it is represented by CO and H<sub>2</sub> in pro-portion of 2:1, e.g. 300 ppm CO<sub>e</sub> = 200 ppm CO + 100 ppm H<sub>2</sub>

\*\* A calibration with nitrogen corresponds to a calibration on NO<sub>x</sub> for NO/NO<sub>2</sub> > 9, thus NO<sub>x</sub> = NO+NO<sub>2</sub>

The information in this publication is subject to technical changes.



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