



Guidance

In-service inspection — Equipment and instruments

Number: LEVC 01

Prepared by: TC 8 — Local Exhaust ventilation (LEV) committee

Approved by: Technical Steering Committee (TSC)

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Date: 12 April 2021

Reference: The Control of Substances Hazardous to Health Regulations 2002 (as amended) (COSHH), the Control of Lead at Work Regulations 2002 (CLAW) and the Control of Asbestos Regulations 2012 (CAR)

Situation:

When undertaking LEV inspection and testing as required by COSHH, SAFed member companies will need to have access to a range of appropriate guidance and information relating to instruments. Such information is collated within this Guidance.

Guidance:

The following listing of instruments is offered to SAFed member companies to aid them in undertaking their responsibilities when undertaking LEV thorough examination and testing.

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LEVC 01 — Issue 05— Dated 12th April 2021 — Equipment and instruments — Table 1 — Manometers

Abbreviations — **PI** = Pressure Instruments — **VI** = Velocity Instruments — **VA** = Visual aids — **ST** = Specialist test — **RT** = Real Time Monitoring

No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
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Table 1 — Manometers

	PI	Manometer	Water tube	Buck & Hickman	Manoflex 12"	0-12"	Not applicable	
2	PI	Manometer	Electronic manometer ATEX Rated	Digitron	P200UL	Lo 0 -19.99 mbar Hi 0 – 100 mbar	12 months	20°C to 30°C -0.1% rdg +0.1% fs + 1 digit -20°C to 50°C -0.15% rdg +0.15% fs + 1 digit Maximum overpressure is 1000 mbar
3	PI	Manometer	Electronic manometer ATEX Rated	Digitron	P200L	Lo 0 -199.99 mbar Hi 0 – 500 mbar	12 months	20°C to 30°C -0.1% rdg +0.1% fs + 1 digit -20°C to 50°C -0.15% rdg +0.15% fs + 1 digit Maximum overpressure is 2000 mbar
4	PI	Manometer	Electronic manometer ATEX Rated	Digitron	P200M	Lo 0 -199.99 mbar Hi 0 – 1000 mbar	12 months	20°C to 30°C -0.1% rdg +0.1% fs + 1 digit -20°C to 50°C -0.15% rdg +0.15% fs + 1 digit Maximum overpressure is 2000 mbar

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
	PI	Manometer	Electronic manometer ATEX Rated	Digitron	P200H	Lo 0 - 199.9 mbar Hi 0 - 2000 mbar (0-20 kPa)	12 months	20°C to 30°C -0.1% rdg +0.1% fs + 1 digit -20°C to 50°C -0.15% rdg +0.15% fs + 1 digit Maximum overpressure is 4000 mbar
	PI	Manometer	Electronic manometer	Digitron	P202IP	0-130 mbar 0-13 kPa	12 months	Accuracy From -10°C to +50°C 0.15%rdg +0.15%fs +1 digit Non-IS Overrange 750 mbar
	PI	Manometer	Electronic — Pressure ranges 477-3	Dwyer	477-3-FM	0-50 kPa	12 months	Accuracy +/- 0.5% FS
	PI	Manometer	Magnehelic Gauge 0-1"	Kistler Instruments		0-1"	24 months	
	PI	Manometer	Electronic manometer	Kistler Instruments	477-2	0-100 mbar	24 months	
	PI	Manometer	Micromanometer	TSI / TSI [formerly Airflow Developments]	PVM610 and PVM620	Pressure: -3735 – +3735 Pa Velocity: 1.27 – 78.7 m/s	12 months or 24 months	Accuracy Pressure: +/- 1% of reading +/- 1 Pa Velocity: +/- 1.5% at 10.16 m/s

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
	PI	Manometer	Digital	TSI [formerly Airflow Developments]	DM2	-200 – +200 kPa	12 months or 24 months	Accuracy =< 0.5% Full Scale +/- 1 digit
	PI	Manometer	Micromanometer	TSI [formerly Airflow Developments]	PVM100	0 – 76 m/s 0 – 3500 Pa	12 months	Accuracy +/- 1% of reading +/- 1 digit Has a direct velocity readout facility and can average readings. It has a limited range.
	PI	Manometer	Pressure micromanometer	Testo	510i	-150 to + 150 hPa	12 months or 24 months	Bluetooth interface via app. Accuracy +/- 0.2 hPa

LEVC 01 — Issue 05— Dated 12th April 2021 — Equipment and instruments — Table 2 — Anemometer — Hot wire

Abbreviations — PI = Pressure Instruments — VI = Velocity Instruments — VA = Visual aids — ST = Specialist test

No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
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Table 2 — Anemometer — Hot wire

14.	VI	Anemometer	Type K — Thermocouple (Hot wire) Thermometers — Airspeed with temperature – Duplication?		KM 4007	0-30 m s ⁻¹	12 months	
15.	VI	Velometer	Velometer	AEI	-	Various	12 months	+/- 3% FSD Expensive £1.5K
16.	VI	Anemometer	Thermal — Digital display	TSI [formerly Airflow Developments]	TA5	0-2 m s ⁻¹ 0-15 m s ⁻¹ 0-30 m s ⁻¹	12 months	Accuracy +/- 2% +/- 1 digit +/- 2% +/- 1 digit +/- 2% +/- 1 digit
17.	VI	Anemometer	Thermal — Analogue display	TSI [formerly Airflow Developments]	TA2 [obsolete spares limited]	0-2 m s ⁻¹ 0-15 m s ⁻¹ 0-30 m s ⁻¹	12 months or 24 months	Accuracy +/- 3% FSD +/- 2% FSD +/- 2% FSD reliable, non-directional
18.	VI	Anemometer	Thermal — Digital display	TSI [formerly Airflow Developments]	TA4	0-30 m s ⁻¹	12 months	+/- 3% of reading +/- 1 digit

LEVC 01 — Issue 05— Dated 12th April 2021 — Equipment and instruments — Table 2 — Anemometer — Hot wire

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
19.	VI	Anemometer	Thermal	TSI [formerly Airflow Developments]	TA45	0 – 30 m/s	12 months or 24 months	Accuracy Better than +/- 3% of reading +/- 1 digit or +/- 0.06 m/s +/- 1 digit, whichever is the greater
20.	VI	Anemometer	Thermal	TSI / TSI [formerly Airflow Developments]	TA 410	0 – 20 m/s	12 months or 24 months	Accuracy +/- 5% of reading or +/- 0.025 m/s whichever is greater
21.	VI	Anemometer	Thermal	Testo	405i	0-30 m/s	12 months or 24 months	Bluetooth interface via app. Accuracy +/- 0.3m/s

LEVC 01 — Issue 05 — Dated 12th April 2021 — Equipment and instruments — Table 3 — Anemometer — Rotating vane

Abbreviations — PI = Pressure Instruments — VI = Velocity Instruments — VA = Visual aids — ST = Specialist test- RT = Real Time Monitoring Device

No	Type	Generic name	Instrument title	Supplier	Supplier code	Range		Calibration frequency	Comments
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Table 3 — Anemometer — Rotating vane

22.	VI	Anemometer	Pocket Anemometer	Kestrel	1000	0.3 – 40 m/s	12 months or 24 months	Accuracy 3 % of reading +/- least significant digit Practical use has found that accuracy is poor in air velocities of less than 1 m/s.
23.	VI	Anemometer	Rotary Vane	Leda	1000	0.1-30 m s ⁻¹	12 months	Twin head unit, has built-in timer but is twice the price of the TSI [formerly Airflow Developments] units
24.	VI	Anemometer	Rotating Vane	TSI [formerly Airflow Developments]	LCA 30is	0.25-30 m/s	12 months	Accuracy Better than +/- 1% of reading +/- 1 digit Velocity or direct reading of volume flow — Intrinsically safe — Certified by BASEEFA to Ex ia IIC T5. Zone 0 hazardous areas reading of air velocity (m s ⁻¹)
25.	VI	Anemometer	Rotating Vane	TSI [formerly Airflow Developments]	LCA301 and LCA501	0.25 – 30 m/s	12 months or 24 months	Accuracy +/- 1.0% of reading +/- 0.02 m/s

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range		Calibration frequency	Comments
26.	VI	Anemometer	Rotating Vane	TSI [formerly Airflow Developments]	LCA6000	0.25-30 m/s	12 months	Accuracy Better than +/- 1% of reading +/- 1 digit	
27.	VI	Anemometer	Rotating Vane ATEX Rated	Omni	Miniar 20Ex	MIEX202132 85 mm diameter head 0 – 20 m/s MIEX202134 85 mm diameter head 0 – 40 m/s MIEX202262 85 mm diameter head 0 – 20 m/s		Expensive meter is approximately £2.2k before selecting measure heads and a case Meter 0 – 50° C MIEX202132 85 mm diameter head Suitable for media temperatures up to 140°C. Range 0-20m/s with a ±1.0% MIEX202134 85 mm diameter head Suitable for media temperatures up to 140°C. Range 0-40m/s with a ±1.0% Eex Class II: Chemical Industry Other sized heads are available although are over £1000 each	

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LEVC 01 — Issue 05 — Dated 12th April 2021 — Equipment and instruments — Table 4 — Tachometer

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
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Table 4 — Tachometer

28.	ST	Tachometer	Hand Tachometer	Danaher Controls	Dynapar brand HT5002	6.0 – 99999.9 rpm	Function test only at each use.	Accuracy +/- 0.01 % +/- 1 digit
29.	ST	Tachometer	Hand Tachometer	Superb Instrumentation	Venture ATH4	0 to 500 rpm 0 to 5000rpm 0 to 50000 rpm	48 months	
30.	ST	Tachometer	Optical	TSI [formerly Airflow Developments]	Veeder Root	0-9999 rpm	60 months	

LEVC 01 — Issue 05 — Dated 12th April 2021 — Equipment and instruments — Table 5 — Associated tools and consumables

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No	Type	Generic name	Instrument title	Supplier	Supplier code	Range	Calibration frequency	Comments
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Table 5 — Associated tools and consumables

31.	VA	Dust Lamp	Dust lamp	Numerous	Numerous	NA	N.A.	100000 cd minimum
32.	PI	Pitot tube	Pitot Static Tube	TSI [formerly Airflow Developments]	Various lengths	Not applicable	Not applicable	Telescopic units are very useful but slightly more expensive
33.	VA	Smoke tubes	Air Current Tubes	Drager	CH216	Not applicable	Not applicable	Fairly inexpensive <£100, glass tubes must not be used on certain sites e.g. food, pharmaceutical etc.
34.	VA	Smoke generator	Smoke generator	Concept Engineering Ltd	Colt 4	N.A.	N.A.	High volume smoke generation predominately used for smoke clearance times etc.
35.	VA	Smoke generator	Flow Check	Drager	Disposable tubes	-	N.A.	Alternative to glass, fairly expensive >£400 battery life 20 minutes and operating time per glycerine ampoules is 3 minutes.
36.	VA	Smoke Generator	Concept AirTrace	Colt Concept	AT2-0-Kit	N/A	N/A	Alternative to glass, fairly expensive >£400. Rechargeable battery 20 minutes operating time. Glycerin based fluid

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Table 6 — Real Time Monitoring Devices

37.	RT	Real Time Aerosol Monitoring	Microdust Pro	Casella CEL ltd Regent House Wolseley Road Kempston Bedford MK42 7JY	Microdust Pro		User calibration with provided sample	Forward light scattering infrared sensor. Four ranges of measurement 0.001 to 2.500 mg/m ³ 0.01 to 25.00 mg/m ³ 0.1 to 250.0 mg/m ³ 1 to 2500 mg/m ³ Expensive
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