

機電工程署
氣體安全事項簡介會

2017年2月22日 (星期三)

Pro-Act Training and Development Centre (Gas)
卓越培訓及發展中心 (氣體燃料業)

尋找煤氣洩漏方法



明火試漏？



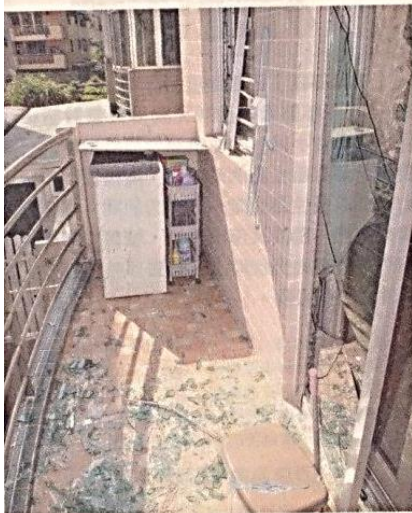
明火試漏

2010年11月25日大埔江庫花園

明報

A6

技工點火測漏氣 釀爆炸兩人傷



▲石油氣泄漏引發的爆炸威力強勁，部分鋁窗飛脫墜街，其他玻璃窗及玻璃門均告粉碎。

(蘇偉明攝)
◀追查石油氣泄漏時「點火測試」的技工，事後燒傷面，送院治理後情況穩定。

【明報專訊】大埔江庫花園一住戶發現寓所滲漏石油氣，昨找來中央石油氣服務承辦公司派出一名註冊技工到來檢查，仍找不到漏氣源頭，此時技工竟作「點火測試」，引發猛烈爆炸，單位門窗炸散飛脫，技工及男戶主同告受傷。專家指技工舉動匪夷所思，女戶主亦無奈說：「真係畀佢累死！」

戶主：畀佢累死 專家：匪夷所思

單位女戶主 Jacqueline 事後對技工的舉動感詫異：「連師奶都唔會做嘅事（點火），佢（技工）都係，真係大笑話。」她慶幸事前已將3歲女兒交予母親照顧，否則後果不堪設想，已委託律師追討賠償。

鬧禍被炸傷的技工馬×清（45歲），面及雙手被火球燒傷，被送往大埔那打素醫院治理後，需轉送沙田威爾斯親王醫院留醫；男戶主鄧×強（51歲）則腳部被玻璃碎片割傷，兩人情況穩定。

現場為汀角路屋村江庫花園一幢3層村屋的2樓單位。據悉，該屋苑每幢村屋都有獨立石油氣系統，以前維修油氣機氣，承辦商為大埔瑞安街一間公司。該公司職員只說，他們工作一般都會按安全程序，暫未接觸受傷同事了解情況。

從事飲食的鄧×強，與從事洋酒業務的妻子及幼女於年多前搬入單位，全屋家俬電器都是新購置，裝在廚房的熱水爐則是上手業主留下。鄧的外母說，女兒一家三餐都在外用膳，甚少開爐煮食，而據悉，石油氣熱水爐長期處於備用狀態，不會關掉供氣單。早前鄧氏夫婦不時在家嗅到石油氣味，遂致石油氣公司派員上門檢查，惟找不到源頭。

至近日，氣味更為濃烈，連睡房都嗅到，戶主遂再找人上門追查。昨晨8時許，姓馬技工到來，當時只有鄧×強在屋內，鄧遂陪同馬四處尋找氣味來源，但始終找不到。此時，馬竟想到在廚房點火作測試，初時他用自己的打火機，但卻「搵不着」，轉而向鄧借來點香用的打火器，結果隨着點火器「咗」的一聲，即引發氣體爆炸，大團火球冒出。

爆出火球 木門鋁窗炸飛

馬首當其衝被燒傷，強勁氣流令廚房木門整扇飛脫，露台玻璃趟門撞碎；屋內多扇鋁窗被炸脫飛墜樓下，站在一旁的鄧走避不及，除了少撮頭髮被燒焦，腳亦被玻璃割傷。事發後，消防等相關部門均有派員到場調查，初步懷疑是熱水爐喉管漏氣氣體積聚，遇明火即爆炸。

機電工程署發言人稱，涉事維修技工領有適當級別的註冊氣體裝置技工。根據氣體安全條例，只有受僱於註冊氣體工程承辦商及領有適當級別的氣體裝置技工，才可進行氣體裝置工程，違例者可處罰款2.5萬元及監禁6個月。

對於技工在懷疑有石油氣泄漏仍然點火，職業訓練局（沙田）應用科學系講師梅觀全博士大感匪夷所思，形容做法「大錯特錯」，「就算普通市民嘍咁嘅環境下都唔會點火嘅！」



資料來源：明報

正確燃氣系統檢查方法

- 1) 壓力計
- 2) 檢漏液
- 3) **手提氣體探測器**

花多眼亂,如何選擇? 何處購買?



鴨寮街 - 地攤



新填地街 - 安全用品公司



網絡 - 尋找代理

The screenshot displays the Safetech website's 'Products' page. At the top, there is a navigation bar with the company name '有限公司 LIMITED' and a language selector 'EN | 中文'. The main menu includes 'Home', 'About Safetech', 'Products', 'News & Events', 'Partners', and 'Contact Us'. A large banner image shows safety glasses and a yellow hard hat, with the word 'Products' overlaid in white. Below the banner, the 'Products' section is titled, and a breadcrumb trail reads 'Home > Products > 頭部保護 > M40'. A sidebar on the left lists product categories: 'Head Protection' (with a red hard hat icon), 'Eye and Face Protection' (with safety glasses icon), 'Hearing Protection' (with earplugs icon), and 'Respiratory Protection' (with a respirator icon). The main content area features a 'Product Name' section with 'M40', a 'Brand Name' section with 'Industrial Scientific Corporation (ISC)', and a 'Feature' section with two bullet points: '1 to 4 gas monitoring for O2, H2S, CO and combustible gases (LEL)' and 'Easy calibration. Large LCD. External sampling pump.' To the right, a 'Product Images' section shows two yellow gas monitors, one with a digital display showing '20.9'.

有限公司
LIMITED

EN | 中文

Home | About Safetech | Products | News & Events | Partners | Contact Us

Products

Products

Home > Products > 頭部保護 > M40

Head Protection

Eye and Face Protection

Hearing Protection

Respiratory Protection

Product Name

M40

Brand Name

Industrial Scientific Corporation (ISC)

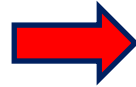
Feature

- ★ 1 to 4 gas monitoring for O2, H2S, CO and combustible gases (LEL)
- ★ Easy calibration. Large LCD. External sampling pump.

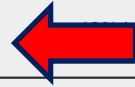
Product Images

Detection Range 探測範圍

- ppm 百萬份比
- % LEL 百份比爆炸下限
- % volume 百份比體積



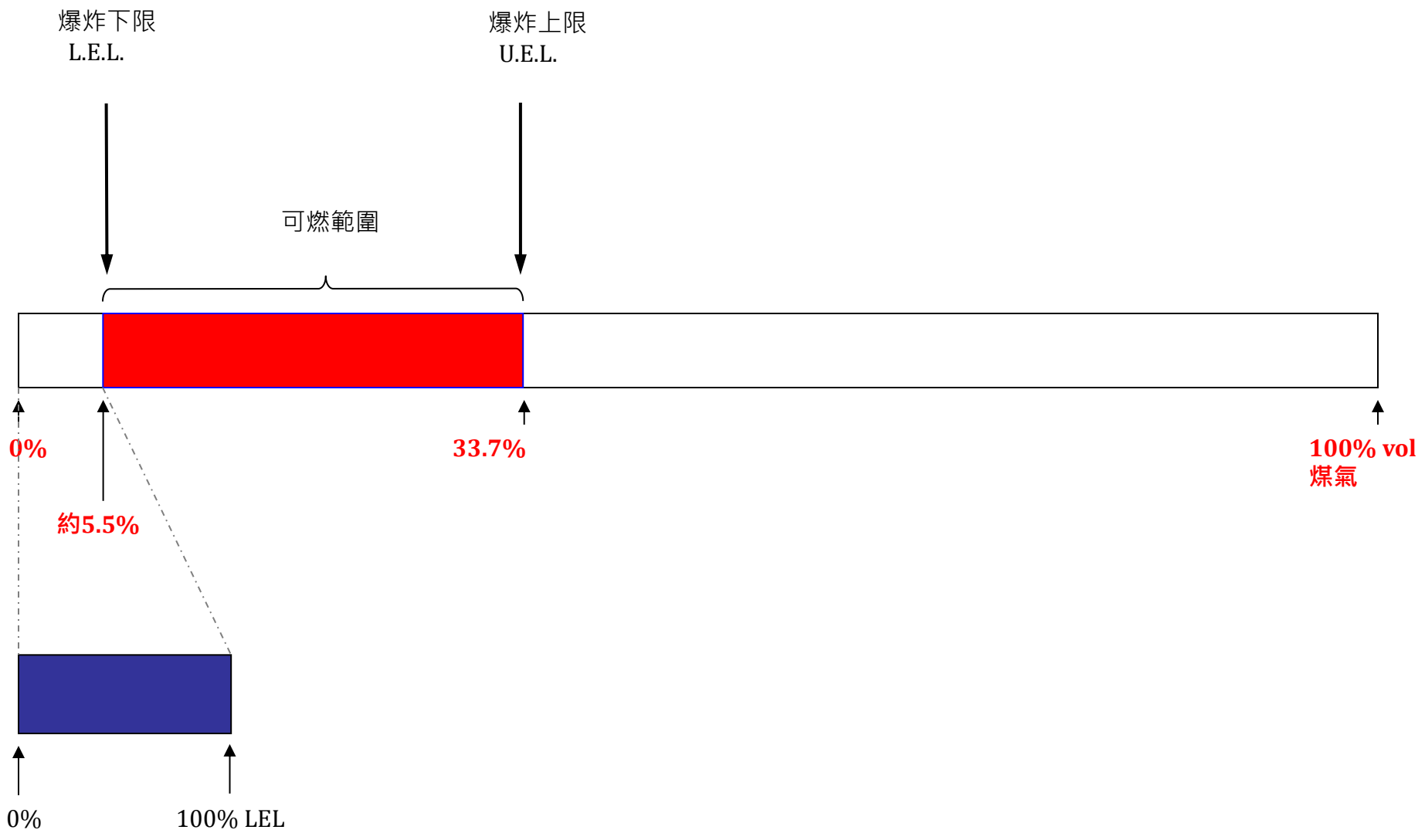
Features	Specifications	Downloads	Parts	Video	
Gas Detected	Combustible Gases (Methane as standard)	% Volume Methane	PPM Methane	Oxygen (O2)	Carbon Monoxide (CO)
Detection Principle	Catalytic combustion	Thermal conductivity	MOS catalytic	Galvanic cell	Electro-chemical cell
Detection Range	0 ~ 100% LEL	0 ~ 100% Vol.	0 ~ 5000 ppm optional 10,000 ppm range version available	0 ~ 25% vol.	0 ~ 500 ppm
Accuracy Statement (whichever is greater)	± 5% of reading or ± 2% LEL	± 5% of reading or ± 2% of full scale	± 10% of reading or ± 50 ppm CH4	± 0.5% O2	± 5% of reading or ± 5 ppm CO
Sampling Method	Internal sample pump, flow rate nominal 0.5 LPM, includes hydrophobic filter				
Display	Digital LCD with 7 segments, auto backlight during alarm				
Preset Alarms (User Adjustable)	1st alarm 10% LEL 2nd alarm 50% LEL Over alarm 100% LEL	No alarms for % Vol. CH4	Increasing tone/light pulse as concentration increases	Low alarm 19.5% High alarm 23.5% Over alarm 40.0%	1st 25 ppm 2nd 50 ppm TWA 25 ppm STEL 200 ppm Over 500 ppm
Alarms Types	Leak Tracker Mode: Escalating audible/visual alarm, changes with gas level (audible can be turned off) Gas alarms: 1st and 2nd, STEL, TWA (user adjustable) and OVER Trouble alarms: Sensor connection, low battery, low flow, circuit trouble and calibration error				
Alarm Methods	Gas alarms: Flashing lights, two tone buzzer, and vibration Trouble alarms: Flashing lights, trouble displayed, intermittent buzzer, and vibration				
Operating Temp. & Humidity	-20°C to +50°C (-4°F to +122°F) 0 to 95% RH, non-condensing				
Response Time	Within 30 seconds (T90)				
Continuous Operation	Alkaline battery: 15 hours Li-Ion battery: 10 hours 70°F (21°C)				



爆炸下限 爆炸上限
L.E.L. U.E.L.

可燃範圍





Detection Range 探測範圍

- ppm?
- % LEL?
- % volume ?



Detection Range 探測範圍

- ppm?
- % LEL?
- **% volume ?**



Sampling Method 取樣方法

- Natural Diffusion
自然擴散式
- Aspirated or Extractive
吸氣或提取式
- 內置泵(0.5LPM)

Features	Specifications	Downloads	Parts	Video	
Gas Detected	Combustible Gases (Methane as standard)	% Volume Methane	PPM Methane	Oxygen (O2)	Carbon Monoxide (CO)
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Sampling Method 取樣方法



Minimum Detection Concentration 最低探測濃度

- (3)
- (2)
- (1)
- (1/5) 30ppm
- (0) 10ppm



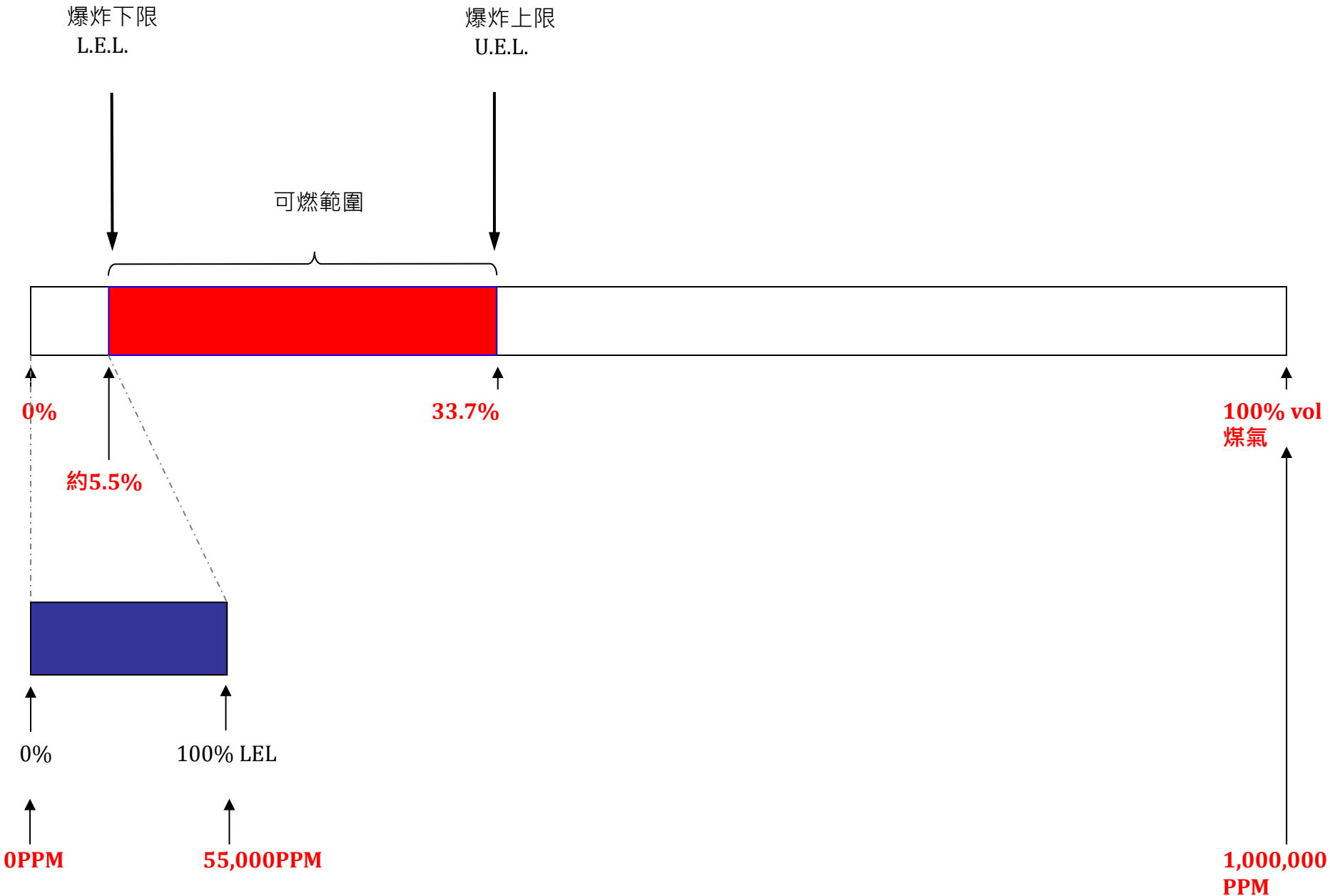
Specifications

Model			
Gas Detected	One type of combustible gas (e.g., city gas, LPG)	Two types of combustible gas (selectable)	CFC substitutes and combustible gas (selectable)
Detection Principle	Hot wire semiconductor		
Minimum Detectable Leak Rate	City gas, LPG, etc. : 3.3×10^{-6} Pa · m ³ /S		
Minimum Detectable Concentration	City gas, LPG, etc. : 10ppm		
Response Time	3s or less (not including CFCs)		
Detection Indication	Intermittent buzzer and flashing lamp		
Power Source	3×AA alkaline dry cells		
Battery Life	Up to 18 hours (by alkaline dry cells) at constant temperature and humidity		
Explosion-Proof Structure	Sensor: Pressurization, Other parts: Intrinsic safety		
Operating Temperature	- 20 to 50°C		
Dimensions	W60 × H140 × D40mm (excluding protrusions)		
Weight	Approx. 260g (excluding batteries)		
Standard Accessories	Probe with filter/moisture trap, Check gas, Standard attachment, 3×AA alkaline dry cells, Hand strap, Spare filters		
Optional Accessories	Probe for testing roadway surfaces, Telescopic gas probe, Earphones, etc.		

*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.

*2 The gas probe set is available in four types. Contact us for details.

*3 Contact us for information on the types of gas that can be detected.



1ppm 是多少?



Gas Detected 所探測氣體

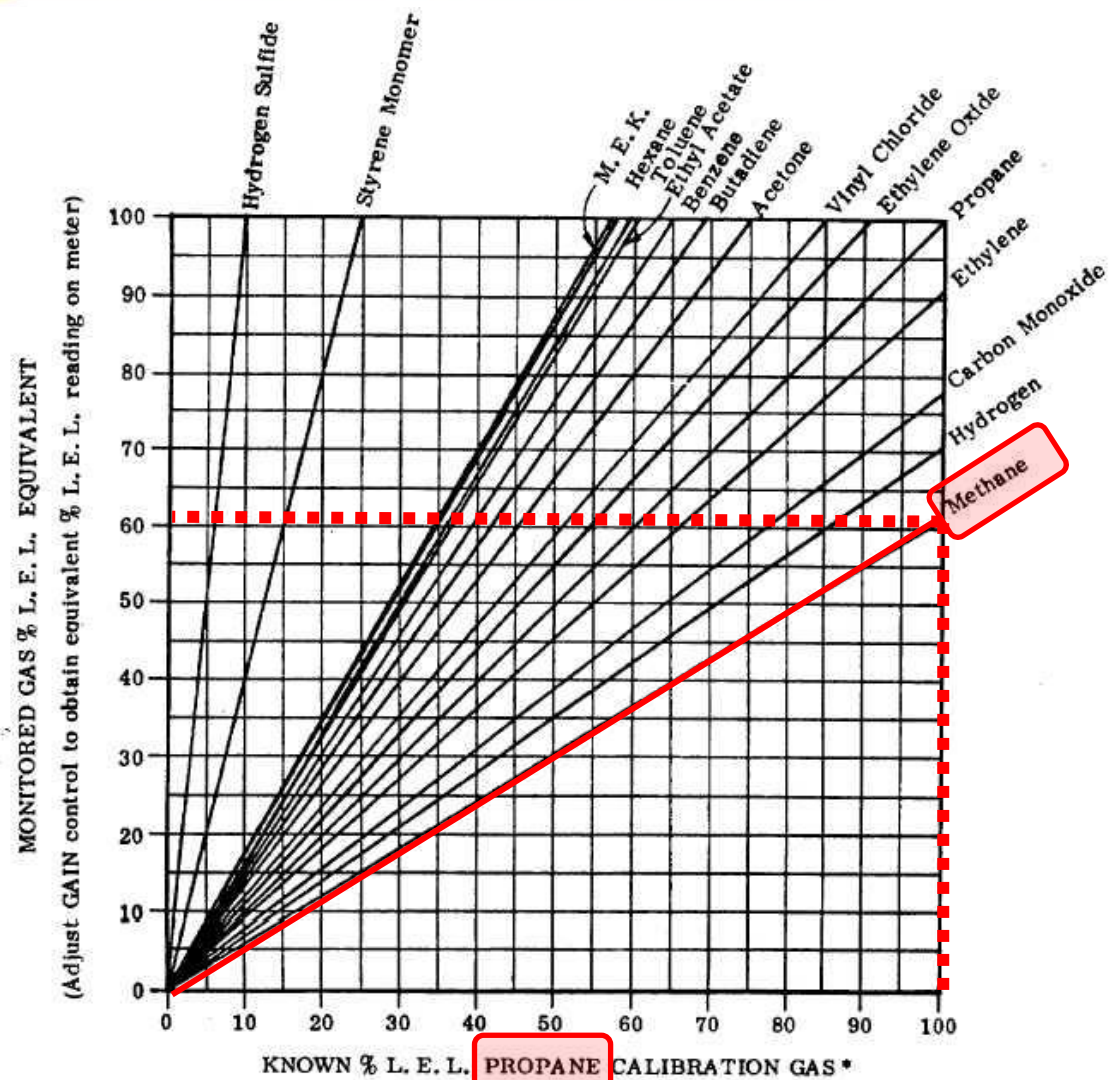
- Methane 甲烷
- Propane 丙烷

Specifications	
Model	
Gas Detected	Methane, Propane, <input type="text"/> Carbon dioxide, etc. (specify gas to be detected)
Detection Principle	Thermal conductivity
Sampling Method	Extractive
Detection Range	0-100vol%
Indication Accuracy (Under identical conditions)	H range: ±5% L range: ±10%
Alarm Set Value	50vol%
Display	LCD digital (with backlight) Digital display: 0-100vol% Digital bar display: Auto range changeover 0-10vol% or 0-30vol% (L range) 0-100vol% (H range)
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exibd II BT3
Operation Temperature	0 to 40°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 30 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable).

*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

Gas Detected 所探測氣體

- 以甲烷調較的氣體探測器探測丙烷
- 只得大約60% 反應



Response Time 反應時間

- <5 seconds (T90)

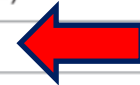


General technical data

Storage temp.	-20 to +50 °C
Oper. temp.	+4 to +45 °C
Oper. humidity	0 to 95 %RH
Battery type	9V block battery
Battery life	> 5 h
Weight	Approx. 300 g
Dimensions	190 x 57 x 42 mm (without sensors)



Display	LED (3 colour)
t90	< 5 s
Heat-up time	< 30 s
Other features	Semi-conductor sensor
Warranty	1 year

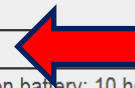
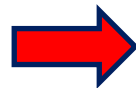


Response Time 反應時間

- <30 seconds (T90)



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Response Time 反應時間

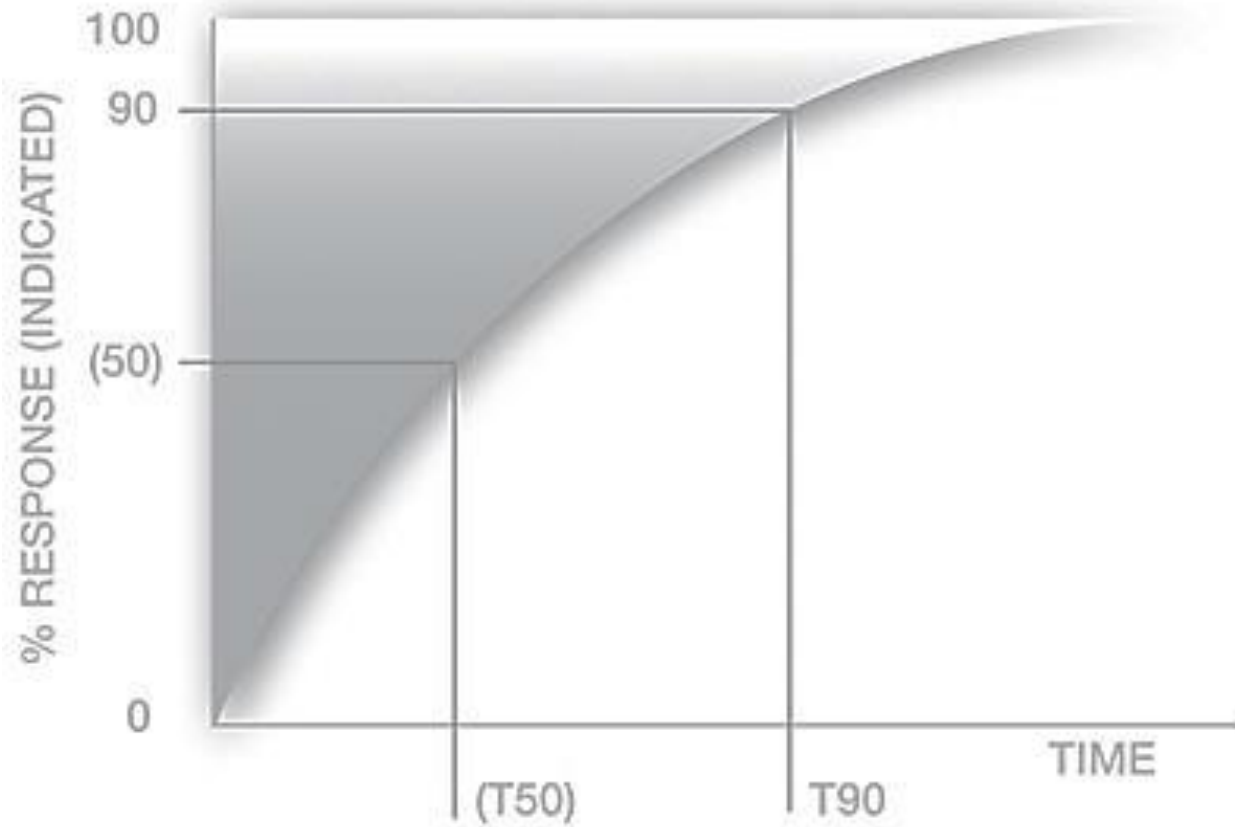
- T90



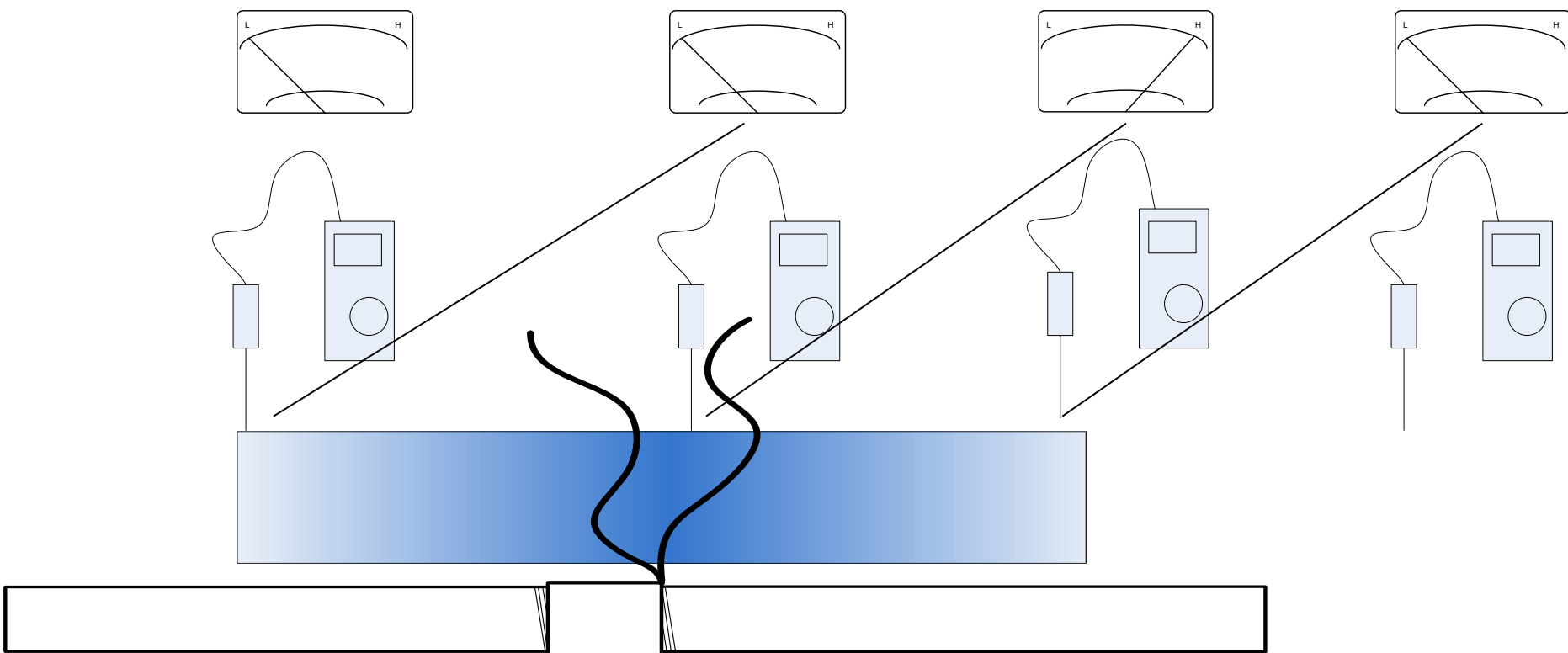
<5秒 (T90)



<30秒 (T90)



探測管長與時間延遲的關係



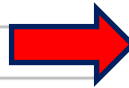
Warranty 產品保用

- 1 Year only
- Calibration is required



General technical data

Storage temp.	-20 to +50 °C
Oper. temp.	+4 to +45 °C
Oper. humidity	0 to 95 %RH
Battery type	9V block battery
Battery life	> 5 h
Weight	Approx. 300 g
Dimensions	190 x 57 x 42 mm (without sensors)



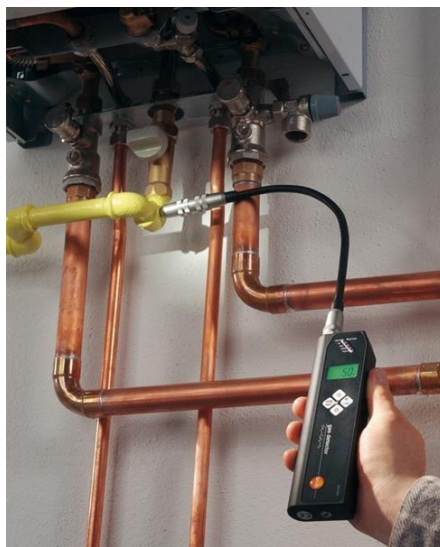
Display	LED (3 colour)
t90	< 5 s
Heat-up time	< 30 s
Other features	Semi-conductor sensor
Warranty	1 year



EX-protection 防爆保護

☒ 一般住宅維修

☑ 石油氣加氣站



General technical data

Storage temp.	-10 to +50 °C	Weight	Approx. 200 g
Oper. temp.	0 to +40 °C	Dimensions	135 x 45 x 25 mm
Oper. humidity	20 to 80 %RH (not condensed)	Protection class	IP54
Voltage supply	2 x 1,5 V (Mignon) / AA Type permitted for use in areas with danger of explosion: Camelion Plus Alkaline LI (see order data, order no. 0515 0316)	EU guideline	94/9/EG (ATEX) 2004/108/EG
Battery life	to 10 h	EX-protection	II 2G EEx ib IIC T1 (Ex Zone 1)
t ₉₀	14 s	Warranty	1 year on the instrument 1 year on the sensor

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良機 • 實幹 • 成功

查詢電話: 24491334

多謝大家!!