PRODUCT OVERVIEW & SET UP

Before use, **T4 and T4x** should always be checked for any signs of physical damage. If this is the first time of use, the battery will require charging to attain the full operating time. The typical battery run time for **T4** is 18 hours. **T4x**'s fitted with MPS Flam, Long-Life O_2, CO & H_2S sensors typically has a maximum of 35 hours run time.

T4 Orientation

Before Operating T4 and T4x

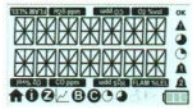
Before turning **T4 and T4x** on ensure you are in 'clean air' (i.e. outside, in normal air away from any plant process or suspected gas location). This will allow **T4 and T4x** to be zeroed using clean air as the base point. If **T4 and T4x** is zeroed in contaminated air a false gas reading can result, or the zero could fail.

Turn On Your T4

Turn on **T4** by holding down the operator button for 3 audible short blips followed by one longer tone. **T4** will warm up and go through a series of automatic processes as follows:

T4 will not respond to gas until the startup sequence is complete.

Firstly a test screen will be displayed showing all the possible LCD segments and icons turned on.



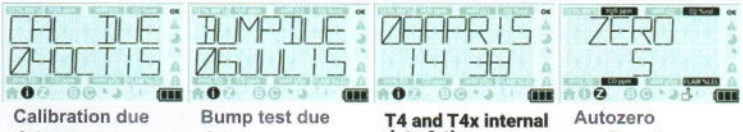
If **T4 and T4x** is switched on within 8 hours of being switched off, the following screen will be displayed allowing **T4 and T4x** to retain TWA, STEL and peak readings (refer to the **T4 and T4x** User and Operator Manual for further details on this feature).

Simply click the operator button to retain or do not click the operator button and allow countdown to expire.

The following screens will then be shown (Note that not all screens may be shown and will be dependent upon configuration settings).

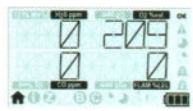
Crowcon splash screen | **T4 and T4x serial number** | **T4 and T4x firmware version** | Configured user name

Configured lower alarm levels | Configured upper alarm levels | STEL configured alarm levels | TWA configured alarm levels



Calibration due date | Bump test due date | **T4 and T4x internal date & time** | Autozero confirmation

After a successful test cycle the screen will revert to the 'home screen'.



Alarms

Low battery

T4 and T4x will indicate a low battery alarm when the battery has a maximum of 30 minutes remaining life.

Instantaneous alarm

T4 and T4x will go into alarm immediately if the level of any gas exceeds acceptable limits, **T4** will indicate an alarm state '1' or alarm state '2' according to which level has been exceeded (see alarm icon table).

Short term exposure (STEL)

For each toxic gas being monitored **T4 and T4x** stores information about the gas levels detected to determine the average exposure over a 15 minute running period. If the average levels exceed predetermined levels, **T4 and T4x** will go into alarm (see alarm icon table).

Time weighted average alarm (TWA)

For each toxic gas being monitored **T4 and T4x** stores information about the gas levels detected to determine the average exposure over an 8 hr running period. If the average levels exceed predetermined levels, **T4 and T4x** will go into alarm (see alarm icon table).

Display Alarm Icons

Icon	Description	Action
OK	Status OK	No action required
⚠	Fault status	Refer to manual
◕	Long term exposure alarm (TWA)	Follow site procedure
◔	Short term exposure alarm (STEL)	Follow site procedure
1	Alarm 1	Follow site procedure
2	Alarm 2	Follow site procedure

Accessing Menu Functions

With the home screen displayed, double click the operator button to access the menu functions. Single click the operator button repeatedly to scroll right until the required menu icon is displayed and then double click the operator button to select the function.

Menu Function & Icons

- When this icon is selected, the Home screen will be displayed.
- The information function displays **T4 and T4x** status/configuration.
- The manual zero function allows **T4 and T4x** to be zeroed at any time.
- The peak mode function allows the peak gas readings to be displayed.
- The bump test function allows **T4 and T4x** to be bump tested at anytime.
- The calibration function allows **T4 and T4x** to be calibrated at anytime.
- The STEL function allows the current STEL value to be displayed.
- The TWA (or long term exposure limit) function allows the current TWA value to be displayed.

+ve Safety™

+ve Safety™ is a quick and easy indication of the operating status of **T4 and T4x**, this status is indicated by a front mounted LED.

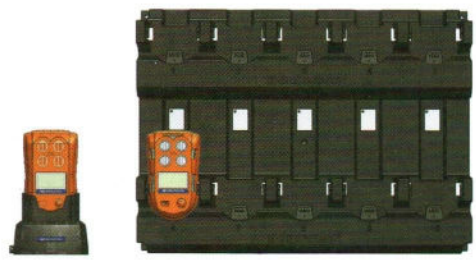
When the +ve Safety™ LED is illuminated green, this indicates that the unit is functioning as required and no further action is necessary. This enables users and supervisors to easily see that the employee is safe and following work procedures.

When the +ve Safety™ LED is illuminated red this indicates that one of the following situations has occurred and will require user action:

Battery is critically low:	The battery has a maximum of 30 minutes runtime before it will be completely depleted. This will be accompanied by additional alerts signifying a low battery.
Bump test is required:	Bump test has failed or exceeded the due date required to meet site procedures. The bump test due date can be reviewed via the information menu.
Calibration is due:	Calibration has failed or exceeded the due date required to meet the site procedure. The calibration due date can be reviewed via the information menu.
T4 and T4x is in gas alarm:	This could be a high or low gas alarm, or a STEL or TWA alarm. The **T4 and T4x** display will indicate which alarm type has been activated by the relevant icon being displayed on the screen.
T4 and T4x fault:	**T4 and T4x** must be reviewed by trained personnel for repair as **T4 and T4x** has detected an internal fault. An appropriate fault warning will also have been shown on the display.

Charging & Battery Indications

Charging must take place in non-hazardous (safe) areas. To charge **T4 and T4x**, simply plug it into either the desktop charging unit or the ten-way charging unit.



Only Crowcon supplied AC Adaptors must be used.

When **T4 and T4x** is powered off and placed in a charger, the +ve Safety™ LED will indicate charging status. Whilst charging the +ve Safety™ LED will flash red. When fully charged the LED will flash green. The **T4 and T4x** battery icon contains 3 segments and indicates charging by sequentially filling the segments and repeating this process.

If **T4 and T4x** is switched on whilst charging, after approx. 30 minutes instrument will automatically power down and continue charging. Whilst **T4 and T4x** is not charging the battery icon segments, indicate the battery's state of charge.

When fully charged and all three segments are shown, the battery typically has a maximum of 18 hours run time or 35 hours runtime with **T4x** models. When **T4** changes from three to two segments the battery typically has a maximum of 12 hours run time. When **T4** changes from two segments to one, the battery typically has a maximum of 8 hours run time. When the battery icon is flashing with no segments the battery typically has a maximum of 30 minutes run time before the battery will be depleted.

T4's fitted with Long-Life O_2 sensors require continuous power to maintain accurate readings, known as 'biased'. To maintain optimum accuracy, ensure **T4 and T4x** is always sufficiently charge and avoid from shutting down with low battery.

Once the device shuts down from low battery, there will be approx. 4 days before the sensor loses bias. If the sensor loses bias, 3 hours of charge is required to fully regain its bias (known as 'soak') and for the O_2 readings to settle and be accurate.

Further Information

Please refer to **Crowcon** website, www.crowcon.com to download the full **T4 and T4x** User and Operator manual (M070044), including safety information and language translations.

Por favor, diríjase a la página web de **Crowcon**, www.crowcon.com, para descargarse el manual completo de Usuario y Operador **T4 and T4x** (M070044) que incluye la información de seguridad y las traducciones.

Das vollständige **T4 and T4x** Benutzer- und Bedienerhandbuch sowie sämtliche Sicherheitsinformationen und Übersetzungen in verschiedene Sprachen finden Sie auf unserer Webseite www.crowcon.com zum Download.

Consultare il sito web di **Crowcon**, www.crowcon.com, per scaricare il manuale d'uso e funzionamento **T4 and T4x** (M070044) completo e comprensivo delle informazioni sulla sicurezza e delle traduzioni in altre lingue.

Pełną wersję Podręcznika żytkownika i operatora **T4 and T4x** (M070044) włącznie z informacjami bezpieczeństwa oraz inne wersje językowe można pobrać z witryny internetowej **Crowcon** www.crowcon.com.

Veuillez-vous reporter au site Internet **Crowcon**, www.crowcon.com pour télécharger l'intégralité du manuel de l'utilisateur et de l'opérateur de **T4 and T4x** (M070044), y compris les informations de sécurité et les traductions dans les autres langues.

Para acessar o Manual do Usuário e Operador do **T4 and T4x** (M070044), incluindo informações de segurança e versões em outros idiomas, acesse o site da **Crowcon**, www.crowcon.com.

Zie de **Crowcon** website, www.crowcon.com, voor het downloaden van de volledige **T4 and T4x** Handleiding voor gebruikers & operators (M070044), m.i.v. veiligheidsinformatie en vertalingen.

Consulte el sitio web de **Crowcon**, www.crowcon.com, para descargar el manual del usuario y operador de **T4 and T4x** (M070044) completo, incluida la información de seguridad y sus traducciones.

Contact Crowcon:

UK: Crowcon Detection Instruments Ltd
172 Brook Drive, Milton Park, Abingdon, Oxfordshire, OX14 4SD
+44 (0) 1235 557700 **sales@crowcon.com**

US: Crowcon Detection Instruments Ltd
5690 Eighteen Mile Road, Sterling Heights, MI 48314, USA
859-957-1039 **salesusa@crowcon.com**

SG: Crowcon Detection Instruments Ltd
Block 194 Pandan Loop, #06-20 Pantech Industrial Complex, Singapore, 128383
+65 6745 2936 **sales@crowcon.com.sg**

CN: Crowcon Detection Instruments Ltd
Floor 3, Building 7, No.156, 4th Jinghai Rd, BDA, Beijing, P.R. China. 101111100176
+86 10 6787 0335 **saleschina@crowcon.com**

www.crowcon.com

T4 and T4x

Portable Multi-Gas Detector

Quick Start Guide

M07081
Issue 6 August 2023

CROWCON
Detecting Gas Saving Lives

Safety Information

T4 and T4x is a hazardous area certified gas detector and as such must be operated and maintained in strict accordance with the instructions, warnings and label information included in this manual. T4 and T4x must be operated within the limitations stated.

- Read and understand all instructions in the operation section of the manual prior to use.
- Before use ensure that the equipment is in good condition, the enclosure is intact has not been damaged in any way.
- If there is any damage to the equipment do not use, contact your local Crowcon office or agent for repair/replacement
- Do not disassemble or substitute components as this may impair intrinsic safety and invalidate safety certification.
- Only genuine Crowcon replacement parts must be used; substitute components may invalidate certification and warranty of the T4 and accessories, reference "Service and Maintenance" section of the manual for details.
- No live maintenance is permissible
- Observe all warnings and instructions marked on the unit and within the manual.
- Observe site health and safety procedures for gases being monitored and evacuation procedures.
- Understand the screen display and alarm warnings prior to use.
- If this product is not working properly, read the troubleshooting guide and/or contact your local Crowcon office or agent, for details reference the 'Crowcon Contacts' section of the manual
- Ensure maintenance, service and calibration is carried out in accordance with the procedures in the manual and only by trained personnel.
- Charging & Communication (Um = 9.1V)
- The T4 and T4x re-chargeable battery must only be charged in non-hazardous (safe) areas.
- Only connect to T4 in a safe area for charging or communications
- T4 and T4x must not be charged or have communication to the device, at ambient temperatures outside the range 0 °C to +40 °C.
- T4 and T4x has been certified and marked Um = 9.1V therefore, if charging T4 and T4x via the T4 and T4x Charger Cradle use only Crowcon supplied AC Adaptor. Otherwise this may impair intrinsic safety and invalidate safety certification
- T4 and T4x has been certified and marked Um = 9.1V therefore, if charging T4 and T4x via the T4 and T4x 10 way charger use only Crowcon supplied AC Adaptor. Otherwise this may impair intrinsic safety and invalidate safety certification
- Alternative charging and communication cable assemblies types "power cable", "communication cable", "power and communication cable", "vehicle power cable", "cradle power and communications" and "cradle charger" are suitable for use with T4 and T4x.
- Refer to Power & Communication Cables Technical Data" manual (M07996) for further details

These devices are intended for use in normal atmospheric conditions of temperature –20 °C to +55 °C; pressure 80 kPa (0.8 bar) to 110 kPa (1.1 bar); and air with normal oxygen content, typically 21 % v/v (volume/volume).

T4x 'Type 1' (as indicated on the certification label) may be used in Zones 0, 1 and 2, for Group IIA, IIB and IIC gases and vapours and for Temperature Classes T1, T2, T3 and T4. (see Certification label below).

T4 'Type 2' (as indicated on the certification label) may be used in Zones 1 and 2, for Group IIA, IIB and IIC gases and vapours and for Temperature Classes T1, T2, T3 and T4. (see Certification label below).

Certificaton labels

The certification marking for ATEX, IECEx, UL, UKCA, UKCA MED & cUL marked T4 is as follows:
T4 and T4x is certified for use in ambient temperatures in the range -20°C to +55°C (-4 to 131°F).

IECEx
IEC 60079-0: 2017, 7th Edition
explosive gas atmospheres Part 0: General requirements
IEC 60079-1:2014 7th Edition (T4 Type 2 only)
Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d" IEC 60079-11:2014 6th Edition
Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Ex ia IIC T4 Ga -20°C ≤ Ta ≤ +55°C (T4x Type 1)
Ex db ia IIC T4 Gb Tamb -20°C to +55°C (T4 Type 2)
IECEx ULD 15.0002X

ATEX & UKCA
EN 60079-0: 2018
Explosive atmospheres – Part 0: Equipment - General requirements EN 60079-1:2014 (T4 Type 2 only)
Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d" EN 60079-11:2012
Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
II 1 G Ex ia IIC T4 Ga -20°C ≤ Ta ≤ +55°C (T4x Type 1)
II 2 G Ex db ia IIC T4 Gb Tamb -20°C to +55°C (T4 Type 2)
DEMKO 15 ATEX 1411
UL21UKEX2261

North American (UL)
Gas detector use in hazardous locations Class 1 Division 1, Groups A, B, C and D only as to intrinsic safety
UL 913
UL 60079-0:2013
UL 60079-11:2013

Canadian (cUL)
Gas detector use in hazardous locations Class 1 Division 1, Groups A, B, C and D only as to intrinsic safety
CSA C22.2 No. 60079-0
CAS C22.2 No. 60079-11