



Manual

Crowcon Clip SGD

Dansk/Norsk	2 - 20
English	21 - 40

EAN: 5706445590568	Clip O ₂
5706445590551	Clip CO
5706445590544	Clip H ₂ S

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Dansk

Personlig Single Gas Detektor



Crowcon Clip SGD:

Er designet til brug i farlige områder. Enheden er kompakt, meget let, vedligeholdelsesfri og nem at bruge.

Crowcon Clip SGD: Findes i 3 udgaver:

De giftige gasser: Hydrogensulfid (Svovlbrinte) (**H₂S**),
Carbonmonoxid (Kulilte) (**CO**)
Ufarlig gas: oxygen (ilt) (**O₂**).

Clip SGD har alle en levetid på 2-årig efter aktivering.

Crowcon Clip har tydeligt display som viser aktuelle værdier af den målte gas, resterende levetid på cellen, samt batteri status.

Crowcon Clip har indbygget selvtest funktion der aktiveres når instrumentet tændes, eller hver 20. time, eller når brugeren måtte ønske det.

Crowcon Clip er designet til at modstå de hårdeste industrielle miljøer.

Crowcon Clip SGD leveres klar til brug inkl. manual, 1 stk. kalibreringsdæksel, samt et kalibreringscertifikat.

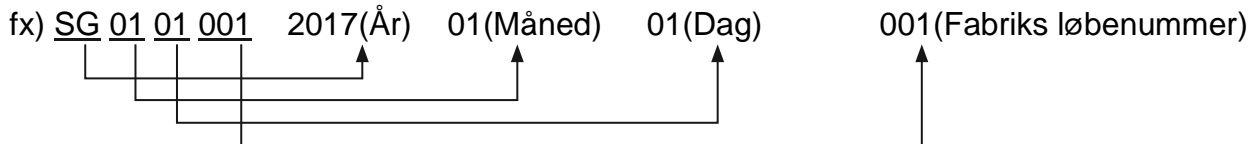
ADVARSEL

- **Crowcon Clip SGD** er en pålidelig og holdbar single gasdetektor serie i en kompakt og vedligeholdelsesfri udførelse. Denne skal betjenes og vedligeholdes i overensstemmelse med de instruktioner, advarsler og etiketoplysninger, der er indeholdt i denne manual.
- Før denne enhed tages i brug, skal man grundigt læse og forstå alle instruktioner i denne manual.
- Forstå alarm og advarsler samt informationer vist på displayet før brug.
- Før brug, skal man kontrollere at aktiveringsdatoen ikke er udløbet. Enhedens måleceller har en levetid på 2 år fra aktivering. Er aktiveringsdatoen udløbet må man ikke bruge enheden.
- Før enheden tages i brug skal man sikre, at enheden er i god stand at kabinet, display, alarm LED lamper, lyd alarmer er intakte og virker. Enheden skal startes op i ren frisk luft.
- Før brug skal der udføres en selvtest af Led lamper – lyd alarm og vibrator.
- Drop test enheden regelmæssigt ved at tilføje en gaskoncentration der er uden for alarmgrænserne. Det anbefales, at denne bump test udføres mindst hver **90**. dag.
- For **O2** detektoren udføres en kalibrering hver **30** dage i omgivelser med frisk luft
- Hvis enheden fejler en Drop test, kalibrering eller selvtest, må man ikke bruge enheden.
- Man må ikke adskille eller udskifte dele eller bruge enheden til andet formål end det beskrevet, da dette kan skade ens egen sikkerhed, ugyldiggøre certificeringen og garantien vil bortfalde
- Forsøg ikke at udskifte batteriet eller sensoren, da Clip SGD er designet til at være vedligeholdelsesfri og til engangsbrug.
- Brug kun IR kommunikation i et område uden farlige gasser

- For at forhindre statisk elektricitet må man ikke rengøre eller gnide på enhedens LCD-display med en tør klud eller med hånden i omgivelser med brændbare gasser.
- Rengøring og vedligeholdelse af enheden må kun udføres i et område, der er fri for farlige gasser.
- **Clip SGD** leveres med standardindstillinger for alarmgrænser. Det er brugerens ansvar at sikre, at alarmgrænserne passer til den specifikke applikation; Disse kan ændres efter behov via **IR_Link_PC Software**.
- Gaskoncentrationer der måles med sensoren, kan variere afhængigt af omgivelserne (temperatur, tryk og fugtighed). Derfor skal kalibrering af **Clip SGD** udføres i samme (eller lignende) omgivelser hvor enheden skal bruges.
- Voldsomme vibrationer eller stød på enheden kan afstedkomme en pludselig ændring af den målte gas. Brug kun **Clip SGD** efter at værdien af gaskoncentrationen er stabiliseret.
- Overdrevet stød/slag på **Clip SGD** kan forårsage funktionsfejl på enheden og / eller sensoren.
- Hvis temperaturen ændres meget under brug af enheden (for eksempel når man går fra indendørs til udendørs), kan værdien af den målte gaskoncentration pludselig ændres. Brug kun **Clip SGD** efter at værdien af gaskoncentrationen er stabiliseret.
- Enheden er beregnet til brug under normale atmosfæriske betingelser, tryk 80 kPa (0,8 bar) til 110 kPa (1,1 bar); og luft med normalt oxygenindhold, typisk 21% v / v (volumen / volumen).

⚠ FORSIGTIG

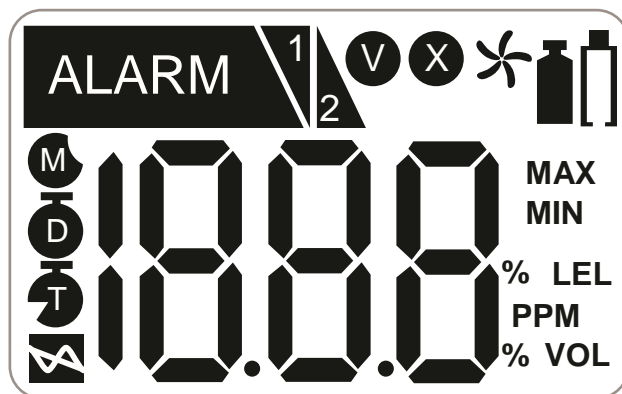
- Denne enhed er ikke et måleinstrument, men en gasdetektor.
- Rengør enheden med en blød klud og brug ikke kemiske stoffer til rengøring.
- For at sikre der kan opnås en 24 måneders batterilevetid, er det vigtigt at undgå følgende, da dette vil nedsætte batterilevetiden til mindre end 24 måneder.
 1. Undgå at detektoren er i gasalarm alt for ofte eller i længere perioder
(Normal alarm brug: Ikke mere end 4 minutters alarmtid pr. dag)
 2. Begræns brugen af "**Tasten**".
 3. Begræns tilslutning af detektoren med **Clip SGD IR Link**, brug den kun ved regelmæssig **Bump-test**.
- Serienummer ses på etiketten på bagsiden af enheden. (ex 20170101)
 1. Serienummeret er sammensat som vist her.



1 Oversigt og LCD-display



1. IR Port
2. LCD- Display
3. Alarm LED lamper
4. Buzzer Summer / Lyd giver
5. " Tasten "
6. Gas sensor
7. Gas Type



LCD display symboler

ALARM	Alarm Tilstand	M	Måneder tilbage
1	Lav alarm	D	Dage tilbage
2	Høj alarm	T	Timet tilbage)
V	Test Godkendt	MAX	Maksimum peak værdi
X	Test Fejlet	MIN	Minimum peak værdi
	Frisk luft kalibrering	%LEL PPM %VOL	Måleenhed
	Standard gas kalibrering		Lav batteri levetid (Mindre end 30 dage)


2 Aktivering

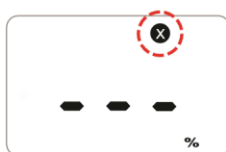
⚠ Forsigtig


Før brug af detektoren skal man kontrollere aktiveringsdatoen på emballagen. Hvis aktiveringsdatoen er overskredet, må man ikke aktivere enheden. Holdbarheden er inden for 6 måneder fra fremstillingen.

Enheden må kun aktiveres i områder med ren luft.

Tryk og hold på "Tasten" i 3 sekunder; Gas type og firmware version (fx v2.2) vil blive vist på displayet.

Efter 10 sekunders nedtælling aktiveres enheden fuldt ud, ikonet  blinker på displayet, og detektoren vil nu være klar i gasmåletilstand.



Hvis aktiveringen af enheden fejler, vises  ikonet på displayet, og enheden vil ikke gå i gasmålingstilstand.

I dette tilfælde skal man først foretage en kalibrering, er der stadig fejl kontakt Elma Instruments.

Når enheden tændes første gang, vises 23 (mdr.) som er den resterende levetid fra helt ny. Hver mdr. bliver der så "talt" 1 ned.

Når der er 1 måned tilbage, vises i stedet de resterende 30 dage.

Når der er 1 dag tilbage, vises i stedet resterende 24 timer(T).

⚠ FORSIGTIG

En kalibrering af detektoren er nødvendig før brug. Sørg altid for, at detektoren reagerer korrekt på den relevante gas. Kontrollér, at urenheder eller fremmede materialer som kan forstyrre detektionen af gas, ikke blokerer sensoren.

3 Tilstand

3.1 Gasmåletilstand

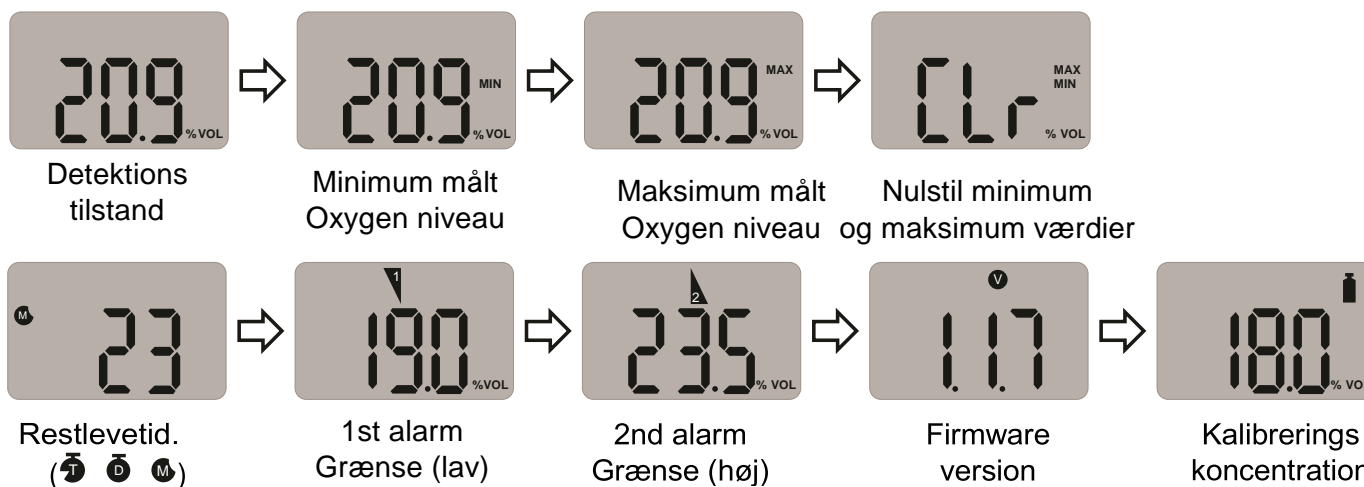


Efter aktivering vil enheden starte op i gasmålingstilstand. Sensorens resterende levetid eller gaskoncentration vises på displayet.

O₂ Oxygenkoncentrationen vises i volumenprocent (% vol.), og H₂S og CO de giftige gaskoncentrationer vises i dele pr. Million (PPM).



3.2 Display visninger

I **gasmåletilstand**: For at få vist enhedens nuværende tilstand, tryk på "Tasten" flere gange for at steppe igennem display visningerne i følgende rækkefølge.


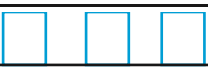












I sidste step vender enheden tilbage til gasmålingstilstand.

3.3 Alarmer og advarsler

Når en gaskoncentration overstiger en af de indstillede alarmgrænseværdier  eller  vises dette på displayet, enheden vibrerer, alarm LED lamperne vil blinke, og summeren afgiver en kraftig lyd. Alarmerne stopper, når enheden igen er i et område indenfor alarmgrænseværdierne.

Tabellen nedenfor viser 'alarmer' og 'advarsler', der vises på displayet under drift.

Alarm	Alarm Standard	Ses på displayet	Alarm og Vibration
Lav Alarm	Er under 1st Alarm (lav) grænse	 ikon & Gaskoncentration	 SummerLED Vibration 
High Alarm	Er over 2st Alarm (høj) grænse	 ikon & Gaskoncentration	 SummerLED Vibration 
Resterende levetid	Under 30 dage	 ikon	
Udløbet (End of Life)	Ældre end 24 måneder		Enheden er udløbet (Udskift den med en ny Clip SGD)
Test fejlet	Fejl på sensor test / kalibrering	Display viser ikonet  og summeren aktiveres	
Batteri test	Lav strøm		
Bump test	Bump test periode		Tryk på Tasten for at slukke alarmen
Kalibrering	Kalibrerings periode		Tryk på Tasten for at slukke alarmen

FORSIGTIG

Standard alarmgrænser er baseret på fælles internationale standarder. Det er brugerens ansvar at sikre, at de konfigurerede alarmgrænseværdier er i overensstemmelse med lokale regler og lokale procedurer.

Standard Alarm grænseværdier

Gas Type	CO			H ₂ S			O ₂	
Produkt Nummer	CL-C-25	CL-C-30	CL-C-35	CL-H-2	CL-H-5	CL-H-10	CL-O-19	CL-O-19.5
Lav Alarm grænse værdi	25ppm	30ppm	35ppm	2ppm	5ppm	10ppm	19%	19.5%
Høj Alarm grænse værdi	50ppm	100ppm	50ppm	5ppm	10ppm	15ppm	23.5%	23.5%

4 Log hændelser

Kun de sidste 30 loghændelser gemmes på enheden. Efter det, overskrives loghændelserne automatisk i den rækkefølge de er kommet ind, startende ved alarm loghændelse 1.

De lagrede loghændelser, kan downloades ved hjælp af **IR Link** eller **Docking Station** (se bilag 1 og 2). Hver loghændelse registrerer b.l.a. følgende:

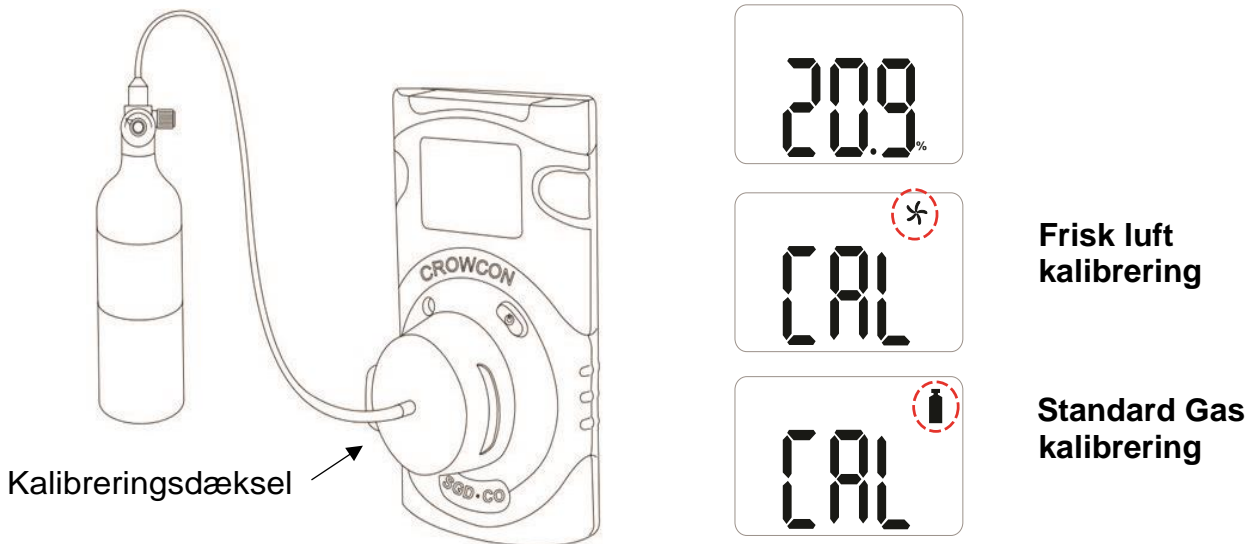
- Alarm type (1st eller 2nd)
- Alarm gaskoncentration i ppm eller %
- Peak Koncentrationer

5 Kalibrering

⚠ FORSIGTIG

Kun gældende for enheder med **O₂-Sensor**.

Der foretages en kalibrering på alle enheder inden afsendelse. Efter modtagelse skal kalibrering udføres månedligt (eller kvartalsvis) afhængigt af hvor tit enheden er i brug.



5.1 Friskluft kalibrering

⚠ FORSIGTIG

Kalibrering skal udføres i friskluft, hvor der ikke er andre gasser (kalibreringen skal udføres i omgivelser med en koncentration på 20,9% ilt).

Det anbefales også, at kalibrering ikke udføres i et lukket rum.




For at udføre en **Friskluft kalibrering** tryk på **"Tasten"** for at navigere til kalibreringstilstanden, kalibreringsikonet 🧴 vises på displayet.

- Tryk på **"Tasten"** og hold den nede i 5 sekunder, 'CAL' og ikonet ✖ for friskluft kalibrering ses på displayet.
- Tryk og hold **Tasten** nede i 3 sekunder for at starte **Friskluft kalibreringen**. Kalibreringen starter med en nedtælling (startende fra 10 til 0), dette ses på displayet





5.2 Standard Gaskalibrering

For at udføre en korrekt standard gaskalibrering, skal man bruge det medfølgende kalibreringsdæksel der monteres foran på enheden. Denne tilsluttes en relevant gastype der passer til enhedens målecelle.

- Tryk på "Tasten" for at navigere til kalibreringstilstand ikonet  vises på displayet.
- Tryk og hold på "Tasten" i 5 sekunder, 'CAL' og ikonet for friskluftkalibrering  vises på displayet.
- Tryk på "Tasten" én gang indtil kalibreringstilstand ikonet  vises på displayet.
- Tryk og hold på "Tasten" i 3 sekunder for at sætte standardkalibreringen i gang, en nedtælling fra minimum 60 sekunder (afhængig af model) vises på displayet.





Når den er færdig vil,  ikonet ses på displayet i flere sekunder, derefter er man tilbage i gas måletilstand.

Hvis aktiveringen af enheden fejler, vises  ikonet på displayet, og enheden vil ikke gå i gasmålingstilstand.

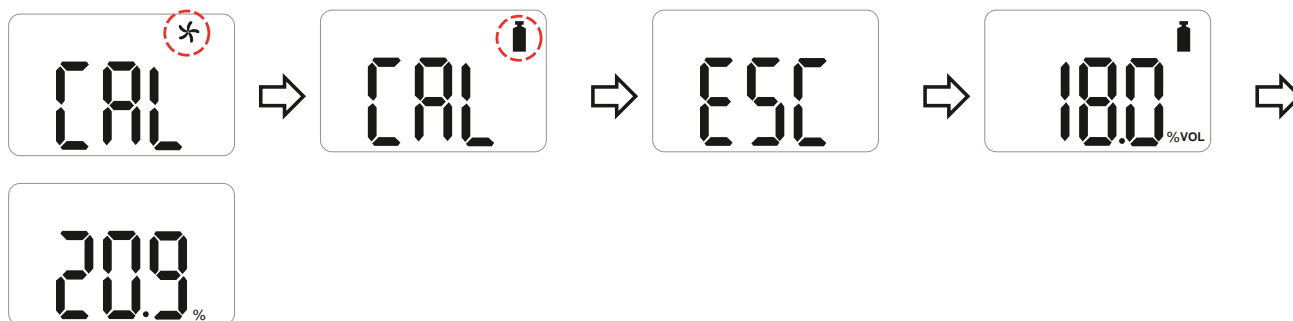
I dette tilfælde skal man først foretage en kalibrering, er der stadig fejl kontakt Elma Instruments.

5.3 Returner til gas måletilstand

For at vende tilbage til gas måletilstanden fra kalibreringstilstand, tryk på "Tasten" gentagende gange gennem  og  indtil 'ESC' vises på displayet.

Mens 'ESC' vises på displayet, tryk og hold på **Tasten** i 3 sekunder.

Enheden vender nu tilbage til gas måletilstanden.



Kalibrerings koncentration.

Gas	O ₂	CO	H ₂ S
Koncentration	18%Vol	100ppm	25ppm

6 Specification

Model	Clip SGD		
Gas enhed	O ₂	CO	H ₂ S
Sensor område	0-30%Vol	0-300ppm	0-100ppm
Sensor Type	Elektrokemisk		
Måling	Diffusion type		
Display	LCD display		
Lydstyrke	90dB ved 10cm		
Advarsels Lamper	Rød Blinkende LED lamper		
Vibration	Vibrations Alarm		
Batteri	Fabrikant: Vitzrocell / P/N: SB-AA02(P) / System Litium Primær batteri Nominal spænding: 3.6V / Nominal kapacitet: 1.2Ah		
Temperatur & Luftfugtighed	-40°C til +50°C (for de giftige H₂S og CO) / -35°C til +50°C (for O₂) 5% til 95% RH (ikke kondenseret)		
Kapslingsklasse	IP65 og IP67		
Kasse	Gummi belagt		
Følger med	Kalibreringshætte, manual, kalibrering og test certifikat		
Option (tilbehør)	IR Link, Docking Station		
Størrelse & Vægt	Dimensioner: 54mm(B) x 91mm(H) x 32mm(D) Vægt: 93g (Giftige H₂S og CO), 104g (O ₂) (Batteri, clips inkluderet)		
Levetid	24 måneder, baseret på 4 minutters alarm pr. dag (>2900 Alarm minutter)		
Hændelses Log	De sidste 30 hændelser		
Godkendelser	Se kapitlet Certifikater		

7 Selv Test og Bump Test

7.1 Selv-Test

Clip SGD har en selvtest funktion. Standardintervallet for påmindelse om hvor ofte dette skal gøres er 20 timer.

Brug **IR Link** eller **Docking Station** til at konfigurere intervallet til mellem 1 time og 20 timer eller til "Off".

Når selvtesten er slut, blinker "**STS**" på displayet (meddelelsen fortsætter med at blinke, indtil der er udført en vellykket selvtest).

• Tryk på "**Tasten**" for at starte Self -Test funktionen.

Enheden vil udføre en selv-test ved at aktivere summeren, LED lamperne, vibratoren og LCD skærmen. Lav og høj alarmgrænseværdier vises også på displayet.

Når selvtesten er færdig, vises "**END**" på displayet.

NB! Det er vigtigt at man kontrollerer at testen udføres som forventet.

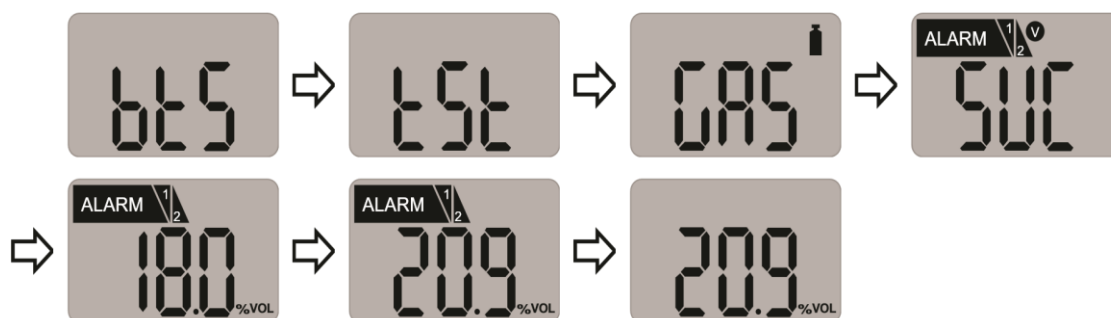
7.2 Bump Test



Enheden kan konfigureres til at vise en Bump test påmindelse på displayet.

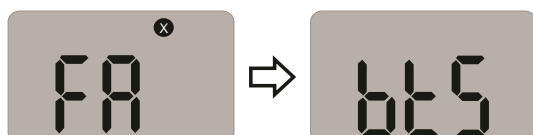
Som standard er denne slået fra, og der vises ingen bump-test påmindelse.

Hvis dette kræves kan et Bump Test-påmindelses interval, konfigureres ved hjælp af **IR Link** eller **Docking Station**. Intervallet kan konfigureres fra 1 dag til 365 dage.

Bump-test påmindelsen vises med meddelelsen "**bts**" der blinker i displayet.





- Tryk og hold **Tasten** nede i 3 sekunder, meddelelsen "**tst**" vises i 45 sekunder (for at annullere, tryk på **Tasten** i et sekund).
- Inden for de 45 sekunder påføres der gas ved hjælp af kalibreringsdækslet og gasrøret. Hvis **bump-testen** ikke gennemføres inden for de 45 sekunder, blinker "**bts**" -meddelelsen, indtil en vellykket test udføres.
- Efter at den valgte gas er påført, og hvis testen er vellykket, vises meddelelsen "**SUC**" med -ikonet i 3 sekunder, derefter vender man tilbage til gasmålingstilstand.
- Kalibreringskappen og gasrøret kan derefter fjernes.
- Hvis testen mislykkes, vises meddelelsen "**FA**" med ikonet  og meddelelsen "**bts**" blinker, indtil en vellykket test udføres



8 Certifikater

SGD Clip opfylder følgende certificeringer og standarder

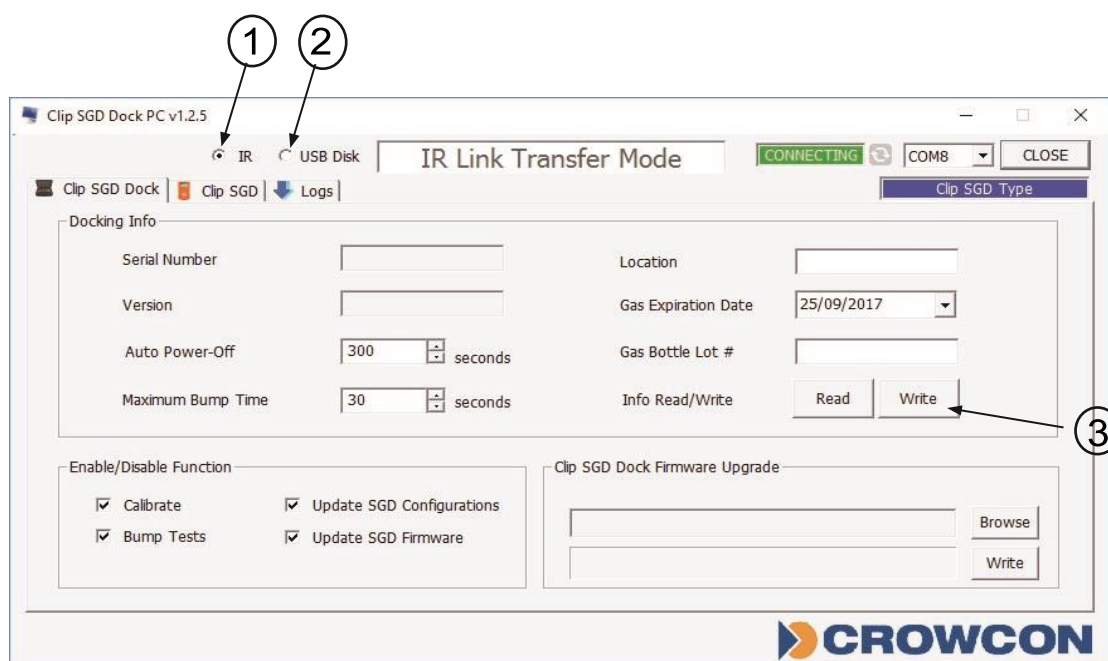
IECEX:	Ex ia IIC T4 Ga ① ② ③ ④ ⑤	1: Eksplosion beskyttet 2: Beskyttelseskoncept 3: Gas Gruppe 4: Temperatur klassificering 5: Udstyrets beskyttelsesniveau
	Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga Class I, Division 1, Groups A, B, C, D, T4	
ATEX:	 II 1 G Ex ia IIC T4 Ga KRH 17 ATEX 0013 Direktiv 2014/34/EU	
Standarder	<p>Det elektriske apparat og eventuelle lignende variationer af det, der er angivet her i skemaet for dette certifikat og de tilknyttede dokumenter, viste sig at overholde følgende standarder:</p> <p>IEC 60079-0:2011 Ed6 IEC 60079-11:2011 Ed6</p> <p>UL 61010-1, Ed. 3 UL 913, Ed. 8 UL 60079-0, Ed. 6 UL 60079-11, Ed. 6</p> <p>C22.2 No. 60079-0:2015 C22.2 No. 60079-11:2014 C22.2 No. 61010-1-12:2012</p> <p>EN 60079-0:2012+A11:2013 EN60079-11:2012</p>	
Overholder	Electromagnetic Compatibility Directive 2014/30/EU	
Produktion godkendelse:	Detektor producenten er certificeret i overensstemmelse med ISO 9001: 2000-bestemmelserne	

Bilag 1 Clip SGD Docking Station Manual



Clip SGD Docking Station Configuration

Brugere kan ændre indstillinger, opgradere firmware og downloade loghændelser via **Docking Stationens IR-linket** (se bilag 2).



Figur 1: **Clip SGD Dock PC Applikation**

IR / USB Disk

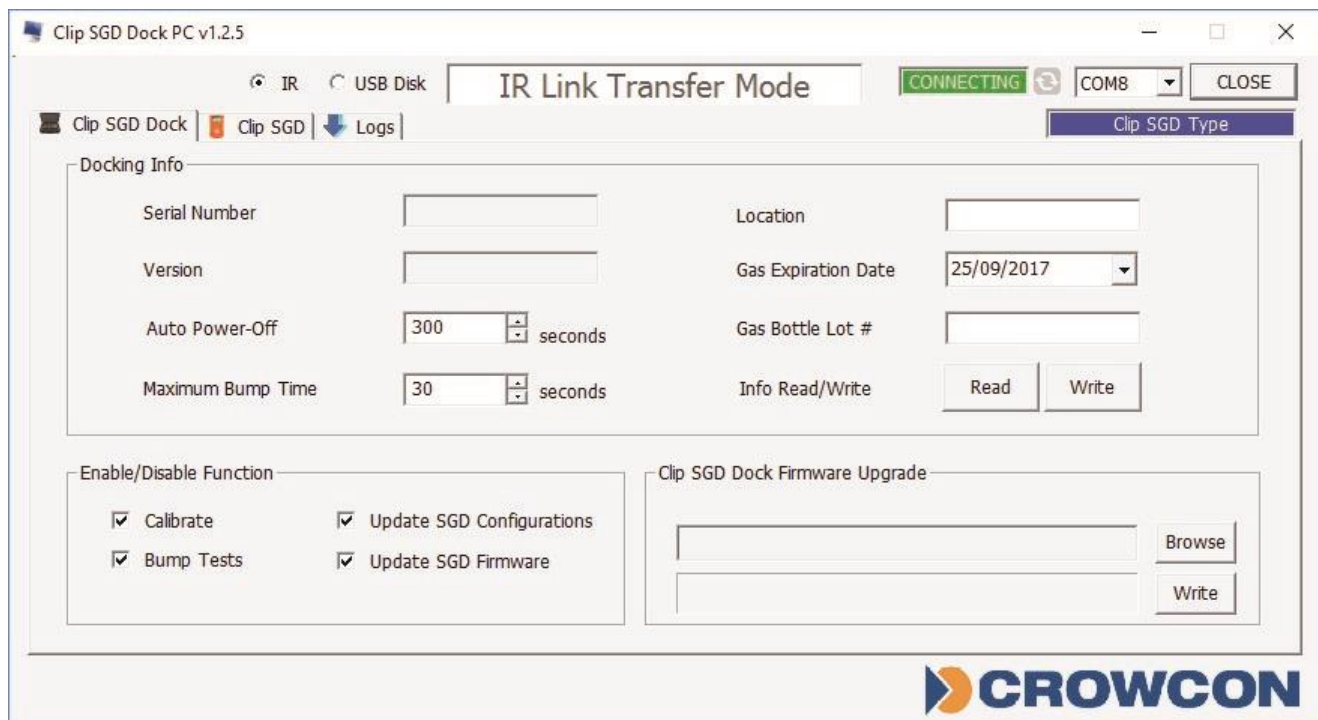
Vælg enten **IR Link** eller **USB disk** (1) for at overføre konfiguration til eller fra **Docking Stationen**.

- 'IR' ① Vælg 'IR' for at konfigurere **Docking Station** via Clip SGD **IR Link**.
- 'USB Disk' ②. Vælg 'USB Disk' Kopier konfigurationen fra en pc til en USB disk denne indsættes så i **Docking Station** så konfigurationen kan overføres.
- **Info Read/ Write:** ③ Vælg **Read** eller **Write** konfigurationen til **Docking Station** via **IR-link** eller til **USB disk**

Docking Stationen

Layoutet på **Clip SGD Dock** PC Applikationen er vist på Figur 1.

- For at kunne interagere med **Docking Stationen** via **Clip SGD IR Link**, skal den være tændt.
 - Kontroller, at pc'en har **Clip SGD Dock Pc**-programmet installeret, inden **Clip SGD IR Link** tilsluttes pc'en.
 - Placer toppen af **Clip SGD IR Link** med forsiden nedad i detektor båsen mærket "**Unit 1**".
- NB:** IR-linket virker kun i detektorbåsen mærket "**Unit 1**".



Figur 2

Docking Info

- Serial S/N: Fabrikkens serie nummer
- Version: Docking Station firmware version
- Auto Power-Off : Docking Station autosluk tid (Max 3600 sekunder)
- Maximum Bump Time: Bump test tid (sekunder) – Standard: 30 / Min: 20 / Max: 120
- Location: Lokationen indstilles i dette felt
- Gas Expiration Date: Tast den udløbsdato der står på gasbeholderen.
- Gas Bottle Lot #: Tast det lot nummer der står på gasbeholderen.
- Info Read/Write: Hent eller overfør indstillingerne fra Docking Stationen

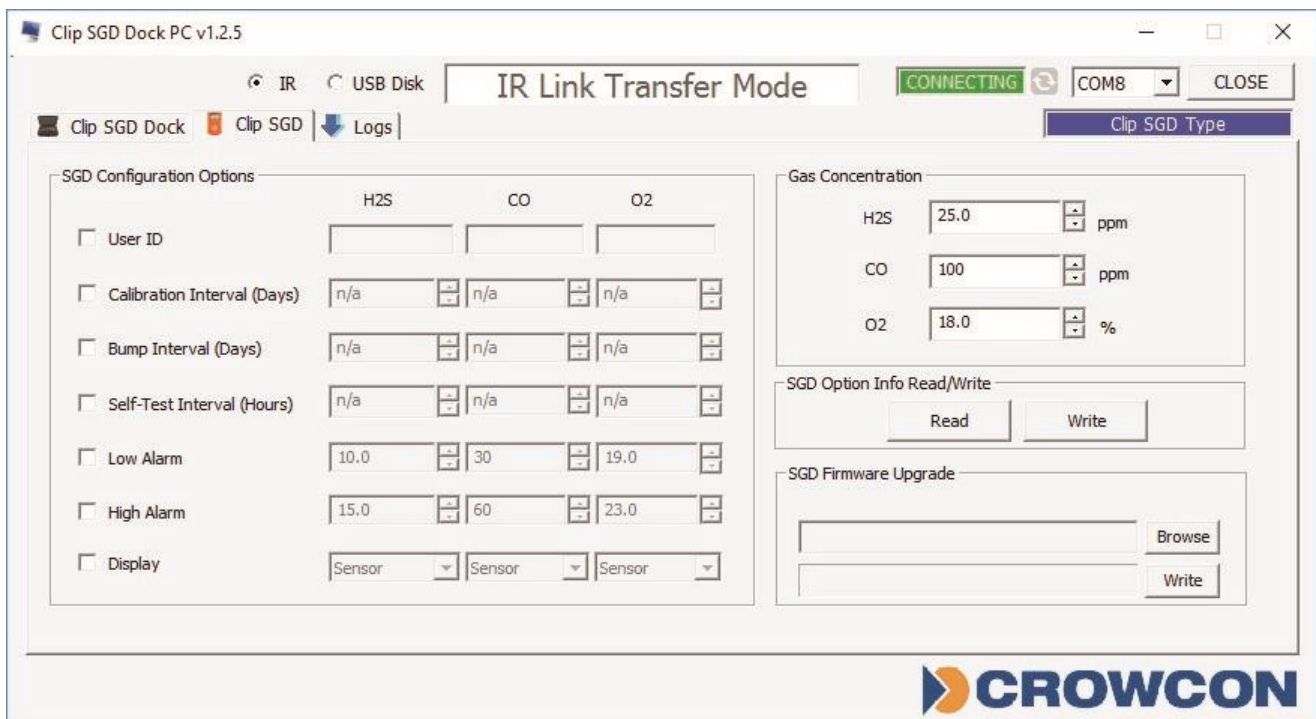
Aktiverer/deaktiverer funktion

Afkrydsningsfelt for at aktivere eller deaktivere funktioner; et kryds betyder aktiveret.

- **Kalibrering:** aktiverer / deaktiverer Docking stationens 'kalibrerings' -knap.
- **Bump test:** aktiverer / deaktiverer Docking Station 'Bump Test' knappen.
- **Opdater SGD-konfiguration:** aktiverer / deaktiverer konfiguration af Clip-SGD-konfigurationen under Bump Test eller kalibrering.
- **Opdater SGD Firmware:** aktiverer / deaktiverer Clip SGD firmware opdatering under Bump Test eller kalibrering.

Docking Firmware Opdatering

- Tillader, at Docking Station-firmware kan opgraderes - klik på '**Browse**' for at navigere til Firmware opdaterings filen.
- Klik på '**Write**' for at indlæse Firmware opdaterings filen.



Figur 3

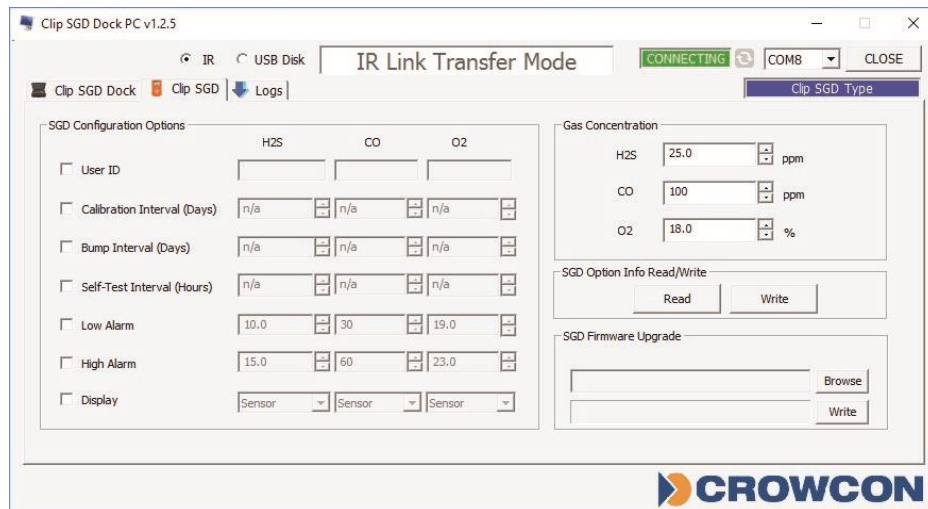
SGD Konfigurations muligheder

Gør det muligt at ændre konfigurationen af Clip SGD, mens Docking Station udfører en Bump-Test eller en kalibrering.

- **User ID:** Bruger-id: Indtast et bruger-id, hvis det kræves
- **Calibration Interval (0-365 days):** Kalibreringsinterval (0-365 dage): Indstil intervallet for kalibrerings påmindelsen
- **Bump Interval (0-365 days):** Indstil interval for **Bump test** påmindelsen
- **Self Test Interval (0-24 hours):** Selvttest interval (0-24 timer) Indstil intervallet for selvttest påmindelsen.
- **Low Alarm and High Alarm:** Lav alarm og høj alarm: Indstil de nødvendige gasgrænseværdier for den lave og høje grænseværdi.
- **Display:** Vælg **Clip SGD** for at vise enten gas måling ("Sensor") eller resterende levetid ("Life")

SGD Options Info Read/Write

- Read: Læs: Hent de gemte indstillinger fra Clip SGD Docking Station
- Write: Skriv indstillinger til Clip SGD Docking Station



Figur 4

Gas koncentrationen

Gasniveauet i cylinderen, der er tilsluttet Clip SGD Docking Station, indtastes

- Vælg den ønskede gaskoncentration til kalibrering. Standardindstillingerne er som følger: **H2S:** 25ppm, **CO:** 100ppm, **O2:** 18% Vol

SGD Firmware Upgrade

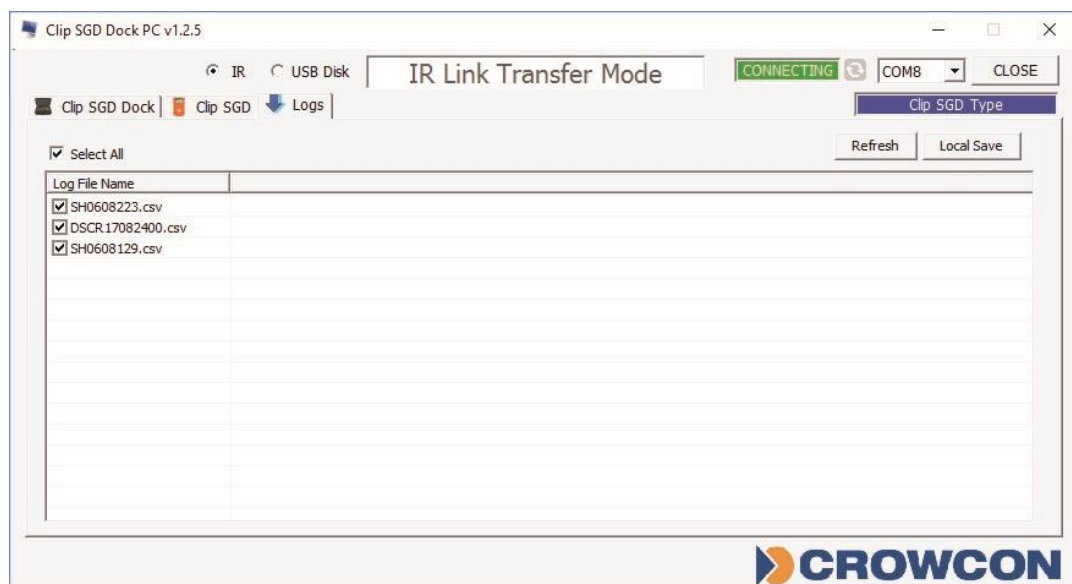
Clip SGD firmwareopgraderingsfilen indlæses herfra - klik på '**Browse**' for at navigere til filen.

- Klik på '**Write**' for at hente (downloade) filen

IR / USB Disk

Vælg enten **IR Link** eller **USB Disk** for at overføre konfiguration til og fra Docking stationen

- Klik på '**IR**' for at konfigurere **Docking stationen** via **Clip SGD IR Link**.
- Klik på '**USB Disk**' for at vælge USB disk der via pc har fået overført konfigurationen'
- **SGD Option Info Read/Write:** Vælg '**Read** (Læs)' eller '**Write** (Skriv)' konfigurationen til **Docking Stationen** via **IR-link** eller til **USB disk**



Figur 5

Event Log

- **Refresh:** Opdater: Se tilgængelige logfiler fra Docking Stationen
- **Select All:** Vælg alle: Vælg alle logfiler, der er tilgængelige i Docking stationen
- **Local Store:** Lokal hukommelse: Gem valgte logfiler til pc - logfilnavnet er baseret på serienummeret

Log Time	21/09/2017 11:50							
Docking Serial Number	DSCR17082400							
F/W Version	0.7.8							
H/W Version	1.0.0							
Place	DevLab							
Gas Expiration Date	2018.8.9							
Gas Bottle Lot	2340286							
Bay Num	Model	Gas Type	Test Type	Test Result	Serial Num	F/W Version	H/W Version	User ID
	1	Clip SGD	O2	Bump	SUCCESS	SH0608201	1.1.6	1.1.0
	2	Clip SGD	CO	Bump	SUCCESS	SH0608143	1.1.6	1.1.0
	3	Clip SGD	H2S	Bump	SUCCESS	SH0608162	1.1.6	1.1.0
	4	Clip SGD	H2S	Bump	SUCCESS	SH0608142	1.1.6	1.1.0
Log Time	21/09/2017 11:50							
Docking Serial Number	DSCR17082400							
F/W Version	0.7.8							
H/W Version	1.0.0							
Place	DevLab							
Gas Expiration Date	2018.8.9							
Gas Bottle Lot	2340286							
Bay Num	Model	Gas Type	Test Type	Test Result	Serial Num	F/W Version	H/W Version	User ID
	1	SGT	O2	Calibration	SUCCESS	SH0608201	1.1.6	1.1.0
	2	SGT	CO	Calibration	SUCCESS	SH0608143	1.1.6	1.1.0
	3	SGT	H2S	Calibration	SUCCESS	SH0608162	1.1.6	1.1.0
	4	SGT	H2S	Calibration	SUCCESS	SH0608142	1.1.6	1.1.0

Figur 6 Docking Station Log

Product Name	Clip SGD				
Serial Number	SH0608151				
Version	1.1.6				
Life Remaining	21 months 7 days				
Total Number of Events	30				
Duration of Events	00:52:53				
Zero Cal Time	28/07/2017	08:40:54			
Span Cal Time	21/09/2017	09:36:39			
Low Alarm	10				
High Alarm	15				
GAS Type	H2S				
Event Date	Event Time	Bump Test	Duration(s)	Sensor Reading	Alarm
2017.07.20	13:40:54	No	00:00:28	9.5	LOW Alarm
2017.07.20	13:42:25	No	00:01:27	89.9	HIGH Alarm
2017.07.20	13:45:03	No	00:00:12	2.3	LOW Alarm
2017.07.20	14:01:39	No	00:03:45	94.9	HIGH Alarm
2017.07.20	15:21:58	No	00:05:00	99.1	HIGH Alarm
2017.07.20	15:29:26	No	00:00:38	10.5	LOW Alarm
2017.07.20	15:31:44	No	00:00:30	82.7	HIGH Alarm
2017.07.20	15:33:30	No	00:00:52	97.2	HIGH Alarm
2017.07.20	15:37:06	No	00:01:34	97.6	HIGH Alarm
2017.07.25	09:38:19	No	00:02:55	52.9	HIGH Alarm
2017.07.25	10:24:02	No	00:02:40	52.9	HIGH Alarm
2017.07.25	11:26:37	No	00:03:18	53.2	HIGH Alarm
2017.07.27	11:54:34	No	00:00:15	15.9	HIGH Alarm
2017.07.28	10:31:38	No	00:03:24	48.9	HIGH Alarm
2017.07.28	10:35:27	No	00:03:56	94.3	HIGH Alarm
2017.07.28	11:43:54	No	00:02:49	48.5	HIGH Alarm
2017.07.28	11:47:51	No	00:02:49	93.7	HIGH Alarm

Figur 7 Clip SGD Hændelses Log

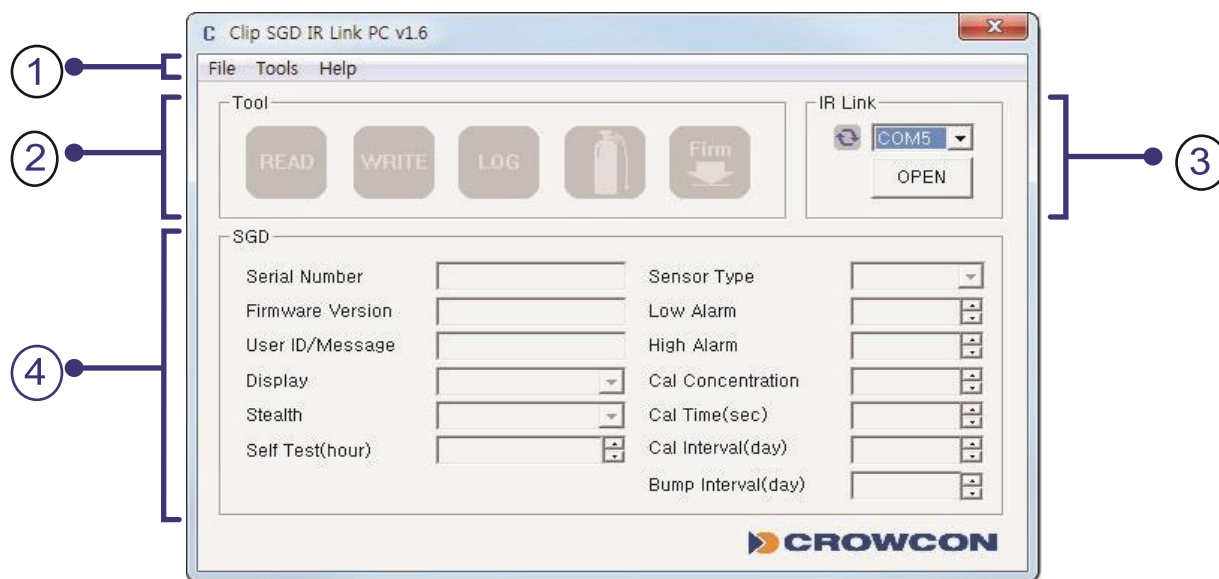
Bilag 2 IR Link Manual



Brug **IR Link** til at ændre indstillinger, opdatere firmware, download loghændelser og udfører kalibrering

Kom i gang

Først installeres softwaren på en PC. Tilslut **IR Link**-kablet, toppen af SGD-holdes nedad til **IR Link LCD**.



Software overblik

Top menu

File (filer)

- **Load:** Åbn de installerede indstillinger. (* Cfg)
- **Save:** Gem de installerede indstillinger. (* Cfg)
- **Exit:** Luk programmet

Tools

- **Calibration:** Kalibrering: Udfør ZERO / SPAN-kalibrering.
- **Log Read:** Hent og se loghændelserne.
- **Log Erase:** Slet loghændelserne.
- **Self Test:** Test om display, LED, Summer, vibration og batteri er OK.
- **Firmware Upgrade:** For nyeste firmwareversion, Efter en firmwareopdatering skal detektoren kalibreres igen.
- **Factory Default:** Fjerner alle data og gendanner til de oprindelige fabriksindstillinger. Detektoren skal efterfølgende altid kalibreres.

Help

- **About:** Vis en kort virksomheds profil.

Tool Interface

- **READ:** Hent og se loghændelserne
- **WRITE:** Opdater og juster indstillingerne.
- **LOG:** Vis de gemte loghændelser.
- **CALIBRATION:** Udfør ZERO og SPAN-kalibrering
- **FIRMWARE UPGRADE:** Opdater firmware.

IR Link Interface

- For at interagere med **Clip SGD** ved hjælp af **IR Link**, klik på "**OPEN**". Når indstillingerne for Clip SGD er hentet, vil man se "**Read Complete**".

Clip SGD Interface

- Serial Number: Vis serienummer.
- Firmware Version: Vis firmwareversion.
- User ID/Message: Programmer en ønsket besked / ID.
- Display: Vælg at vise enten realtid "Sensor Reading" eller "Sensor Life Remaining"
- Stealth (Option): Mulighed for at slukke for summer, LED og vibrationer.
- Self Test (Hour): Indstil et interval for meddeles om Self Test. (antal timer)
- Sensor Type: Vis enhedens sensortype.
- Low Alarm: Indstil lav alarmgrænseværdi i overensstemmelse med internationale eller lokale standarder.
- High Alarm: Indstil høj alarmgrænseværdi i overensstemmelse med internationale eller lokale standarder.
- Cal Concentration: Indstil en standard kalibreringsværdi.
- Cal Time (sec): Indstil en standard kalibreringstid. (sekunder)
- Cal Interval (day): Indstil et interval for meddeles om kalibrering. (dage)
- Bump Interval (day): Indstil et interval for meddeles om Bump-test (dage)

Garanti

Læs alt om Garanti i det engelske kapitel.

Kontakt Elma Instruments, hvis dette yderligere skal beskrives.

English

WARNING

<ul style="list-style-type: none"> Clip SGD 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 the manual.
<ul style="list-style-type: none"> Before operating this device, please read carefully and understand all instructions in the manual.
<ul style="list-style-type: none"> Understand the screen display and alarm warnings prior to use.
<ul style="list-style-type: none"> Before use, please check the activation date, and if the activation date has expired please do not use the device.
<ul style="list-style-type: none"> Before use ensure that the device is in good condition and the enclosure, the display window, alarm LED windows and sounder aperture are undamaged and clear from contaminants.
<ul style="list-style-type: none"> Before use perform the self-test of the LED's, sounder and vibrator.
<ul style="list-style-type: none"> Bump test the device regularly by applying a gas concentration exceeding the alarm set point. It is recommended that a bump test is performed at least every 90 days.
<ul style="list-style-type: none"> For the O₂ detector perform a calibration every 30 days in a fresh air environment.
<ul style="list-style-type: none"> If the device fails a bump test, calibration or self-test please do not use the device.
<ul style="list-style-type: none"> Do not disassemble or substitute components, or operate beyond the intended range of use as this may impair intrinsic safety, invalidate safety certification and will void the warranty.
<ul style="list-style-type: none"> Do not attempt to replace the battery or sensor as the Clip SGD is designed to be maintenance free and disposable. Changing the battery or sensor may impair intrinsic safety, invalidate safety certification and will void the warranty.
<ul style="list-style-type: none"> Use IR communications only in a safe area that is free from hazardous gases
<ul style="list-style-type: none"> To prevent the generation of static electricity do not clean or rub the LCD screen of the device with a dry cloth or hands in a hazardous area environment
<ul style="list-style-type: none"> Perform cleaning and maintenance of the device in a safe area only that is free from hazardous gases.
<ul style="list-style-type: none"> The Clip SGD is shipped with default alarm level settings. It is the users responsibility to ensure the alarm level settings are appropriate for the specific application; these can be changed as required via the IR_Link_PC Software.
<ul style="list-style-type: none"> Gas concentration measurements by the sensor can vary based on the environment (temperature, pressure and humidity). Therefore calibration of Clip SGD should be performed in the same (or similar) environment of the device's actual use.
<ul style="list-style-type: none"> Severe vibration or shock to the device may cause a sudden gas reading change. Please use Clip SGD after the value of gas concentration has stabilized.
<ul style="list-style-type: none"> Excessive shock to Clip SGD can cause the device and/or sensor to malfunction.
<ul style="list-style-type: none"> If the temperature changes sharply during use of the device (for example moving from indoors to outdoors), the value of the measured gas concentration can suddenly change. Please use the Clip SGD after the gas concentration value has stabilized.
<ul style="list-style-type: none"> The device is intended for use in normal atmospheric conditions, pressure 80 kPa (0.8 bar) to 110 kPa (1.1 bar); and air with normal oxygen content, typically 21 % v/v (volume/ volume).

⚠ CAUTION

- This device is not a measurement device, but a gas detector.
- Clean detectors with a soft cloth and do not use chemical substances for cleaning.
- To ensure a 24 months battery life is attained it is important to avoid the following activities as this will deplete the battery lifetime to less than 24 months.
 1. Allowing the detector to be in gas alarm frequently or for prolonged periods (Normal Alarm Use: No more than 4 minutes alarm time per day)
 2. Operating the detector user button frequently.
 3. Connecting the detector with the Clip SGD IR Link frequently, except for regular bump testing.
- View a serial number on the label at the back side of the device. (ex, 20170101)1. The serial number indicates below.

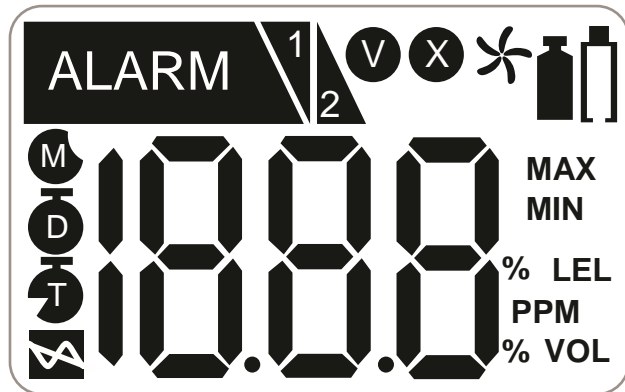
ex) SG 01 01 001 2017(Year) 01(Months) 01(Day) 001(Manufacture Order)

The diagram illustrates the structure of the serial number SG0101001. It is broken down into five segments: 'SG' (model name), '01' (Year), '01' (Months), '001' (Day), and '001' (Manufacture Order). Arrows point from each segment to its corresponding label: 'SG' points to 'SG', '01' points to '2017(Year)', '01' points to '01(Months)', '001' points to '01(Day)', and '001' points to '001(Manufacture Order)'. The '001' segment is also associated with the label '001(Manufacture Order)'.

1. Diagram and LCD



1. IR
2. LCDdisplay
3. Alarm LED
4. Buzzer
5. Button
6. Gas sensor
7. Gas Type




LCD display symbols

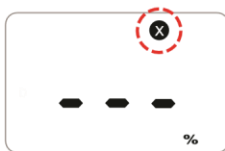
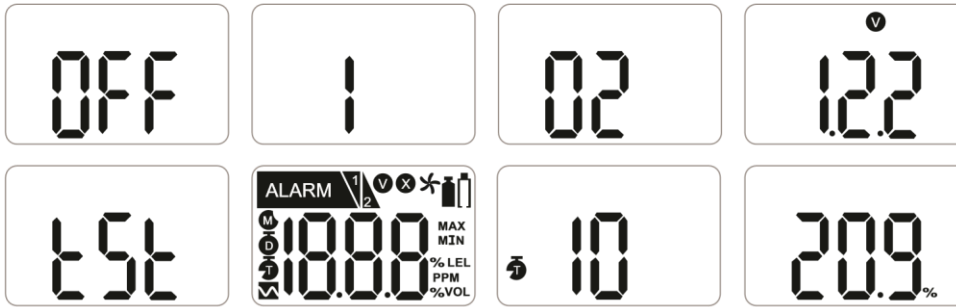
ALARM	Alarm condition	M	Months remaining
1	Low alarm	D	Days remaining
2	High alarm	T	Time remaining (hours)
V	Test success	MAX	Maximum peak value
X	Test failure	MIN	Minimum peak value
Fan icon	Fresh air calibration	%LEL PPM %VOL	Measurement Unit
Cylinder icon	Standard gas calibration	Battery icon	Low battery life (Less than 30 days)


2. Activation

⚠ CAUTION

Before use, check the activate by date on the box.
 If the activation date is past, do not activate the device.
 Shelf Life within 6 months from manufacture

Only activate in a safe environment. Press the button for 3 secs; gas type and firmware version (e.g. v2.2) will be displayed. Following the 10 secs countdown, the device will be fully activated, the  icon will flash on the display screen and the device will be in Gas Measurement mode.



In the event that activation of the device fails, the  icon will appear on the display and Gas Measurement mode will not be entered. In this case, perform calibration or contact authorized reseller or Crowcon Detection Instruments customer support at +44 (0) 1235 557711 for repair/return information

After turning on the device, the remaining life is displayed; 23 months originally. After the remaining life reaches 1 month, 30 days remaining is displayed. When 1 day is left, 24 hours(T) remaining is displayed.

⚠ CAUTION

Appropriate calibration of the device is required prior to operation. Always ensure that the device responds correctly to the relevant gas. Verify that foreign materials that could interfere with the detection of gas are not blocking the sensor.

3. Mode

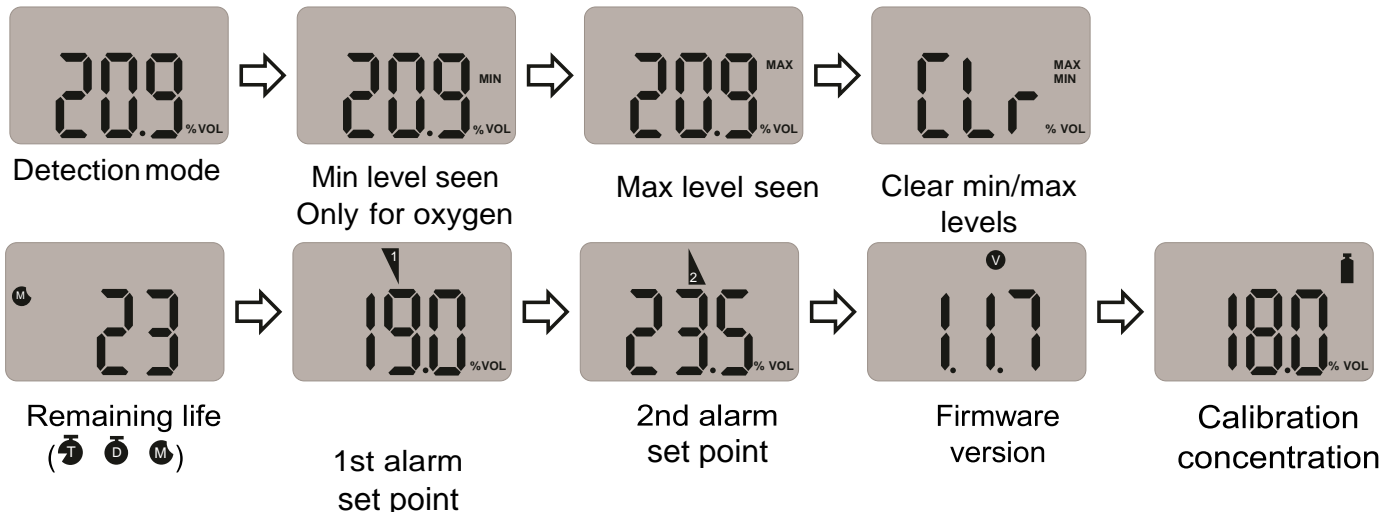
3.1.1 Gas Measurement Mode



Following activation the device will operate in Gas Measurement Mode. The remaining sensor life (default setting) or gas concentration (configurable option) will be displayed on the screen. Oxygen concentration is displayed in percent by volume (%Vol) and toxic concentration is displayed in parts per million (PPM).

3.2 Display Device Settings

In Gas Measurement Mode to view the device settings press the button to cycle through the settings. The settings will be displayed in the following order upon each button press.



At the last step the device will return to Gas Measurement Mode.

3.3 Alarms and Alerts

When a gas concentration exceeds the configured alarm set points, or will be displayed on the screen, the device will vibrate, alarm LEDs will flash, and the buzzer will sound. The alarms will stop when the device is moved to a clean air environment. The table below shows the 'alarms' and 'alerts' that may be shown on the display during operation.

Alarm	Alarm Standard	Shown on LCD Display	Alarm and Vibration Display
Low Alarm	Exceeds 1st Alarm set point	icon & concentration	Buzzer, Vibration
High Alarm	Exceeds 2nd Alarm set point	icon & concentration	Buzzer, Vibration
Remaining life	Below 30 days	icon	
Lifetime expiration	Past 24 months		Service life is over (Replace with a new Clip SGD)
Test failure	Failure of sensor test / calibration	Display icon with beeping	
Battery test	Low power		
Bump test	Bump test period		Press the push button to turn off the alarm
Calibration	Calibration period		Press the push button to turn off the alarm

⚠ CAUTION

Default alarm set points are based on common international standards. It is user responsibility to ensure the configured alarm set points are in accordance with local regulations and site procedures.

Default Alarm Set Point

Gas Type	CO			H ₂ S			O ₂	
Part Number	CL-C-25	CL-C-30	CL-C-35	CL-H-2	CL-H-5	CL-H-10	CL-O-19	CL-O-19.5
Lower Alarm Level	25ppm	30ppm	35ppm	2ppm	5ppm	10ppm	19%	19.5%
Upper Alarm Level	50ppm	100ppm	50ppm	5ppm	10ppm	15ppm	23.5%	23.5%

4. Event Log

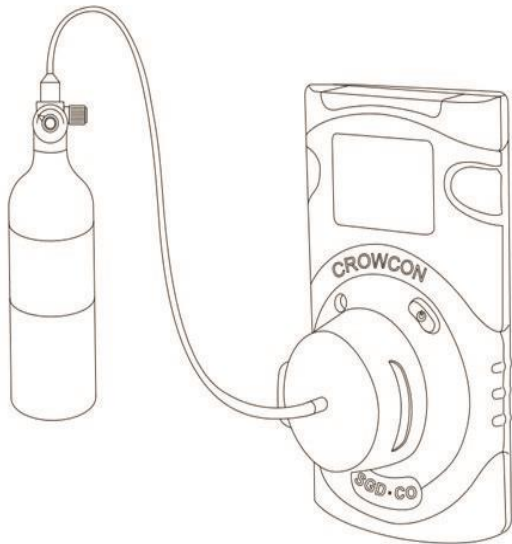
The last 30 events are stored on a device. Once 30 events are stored, the log events are removed automatically in the order starting at Event 1. The stored log events can be downloaded using the IR Link or the Docking Station (refer to Appendix 1 and 2). Each alarm event records the following:

- Alarm type (1st or 2nd)
- Alarm concentration in ppm or %
- Peak concentration

5. Calibration

⚠ CAUTION

For O2 units only. Initial calibration is performed on all devices prior to shipment. Once received, calibration should be performed monthly (or quarterly) depending on frequency of use.



Fresh Air
Calibration





Standard Gas
Calibration

5.1 Fresh Air Calibration

⚠ CAUTION

Calibration should be performed in a fresh-air environment that is free from the influence of other gases (calibration is assumed to be performed in an environment with a concentration of 20.9% oxygen). It is also recommended that calibration should not be performed in a confined space.

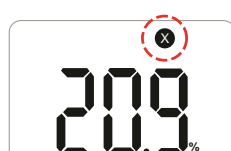
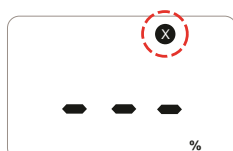
To perform a Fresh Air Calibration press the button to navigate to Calibration Mode, the calibration icon will be displayed on the screen .


- Press and hold the button for 5 seconds, 'CAL' and the fresh air calibration icon will be seen on the screen .
- Press and hold the button for 3 seconds to initiate the Fresh Air Calibration. When the calibration begins, a countdown (starting at 10) will be displayed on the screen



Press ESC to show Gas Measurement mode.




Once completed,  icon will appear on the LCD

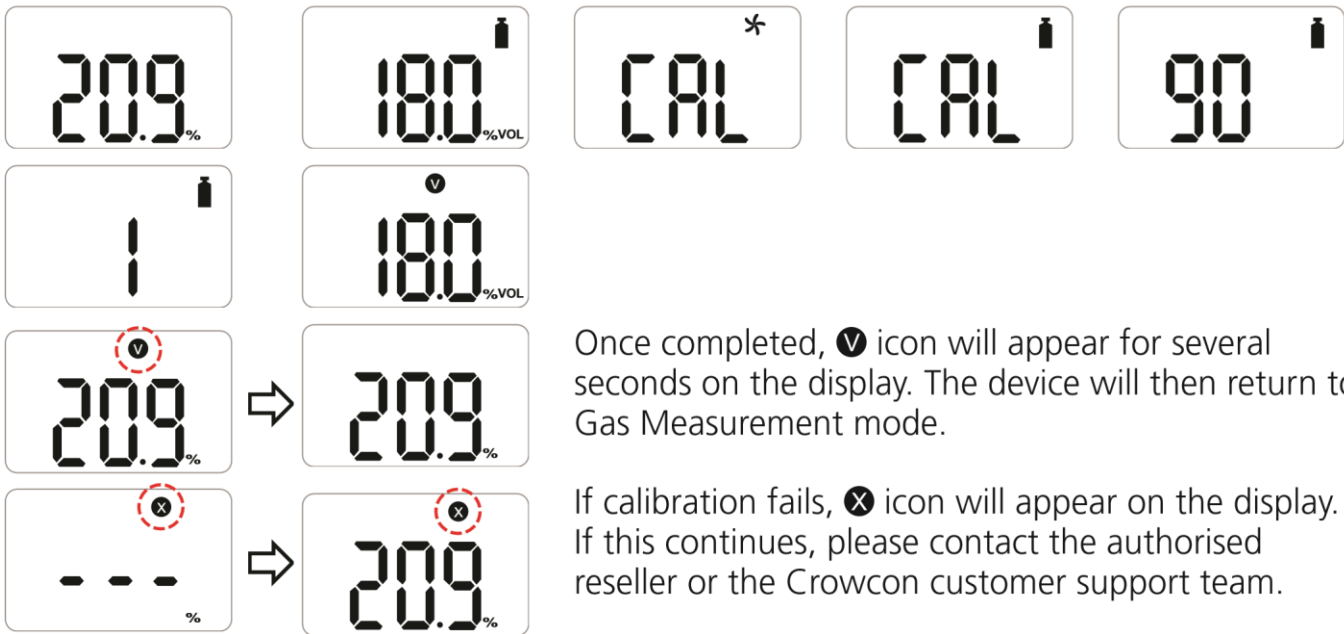


If calibration fails,  icon will appear on the display. If this continues, please contact Elma Instruments.



5.2 Standard Gas Calibration

To perform a Standard Gas Calibration, using the supplied calibration cap connect the appropriate gas cylinder to the device.

- Press the button to navigate to Calibration Mode, the calibration icon will be shown, .
- Press and hold the button for 5 seconds, 'CAL' and the fresh air calibration icon will be displayed on the screen, .
- Press the button once until the calibration icon is shown, .
- Press and hold the button for 3 seconds to initiate the Standard Calibration. When the calibration begins, a countdown (60 seconds or more depending on the gas type) will appear on the screen.



5.3 Return to Gas Measurement Mode

To return to Gas Measurement Mode from Calibration Mode, press the button to cycle through the Fresh Air Calibration  and Standard Calibration  screens until 'ESC' is shown on the display. Whilst 'ESC' is shown on the display press and hold the button for 3 seconds, the device will return to the Gas Measurement screen.



Calibration concentration.

Gas	O ₂	CO	H ₂ S
Concentration	18%Vol	100ppm	25ppm

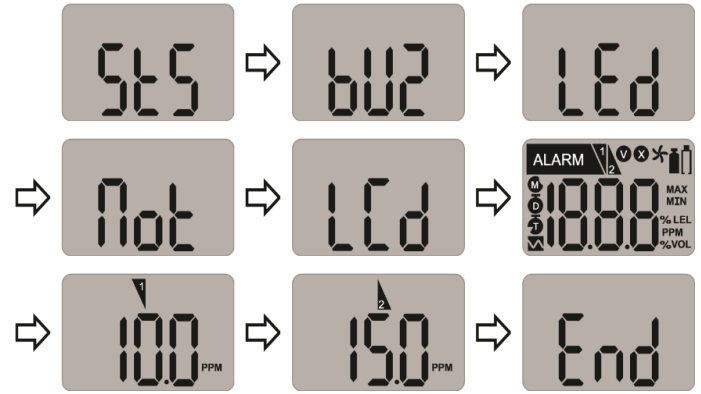
6. Specification

Model	Clip SGD		
Measure Gas	O ₂	CO	H ₂ S
Sensor range	0-30%Vol	0-300ppm	0-100ppm
Sensor Type	Electrochemical		
Measurement	Diffusion type		
Display	LCD display		
Audible	90dB at 10cm		
Warning Lamp	Red Flashing LEDs (Light-Emitting Diode)		
Vibration	Vibration Alarm		
Battery	Manufacture: Vitzrocell / P/N: SB-AA02(P) / System: Lithium Primary Battery Nominal voltage: 3.6V / Nominal capacity: 1.2Ah		
Temperature & Humidity	-40°C to +50°C (for Toxic) / -35°C to +50°C (for O ₂) 5% to 95% RH (non-condensing)		
Ingress protection	IP65 and IP67		
Case	Rubber Enclosure		
Accessories	Calibration cap, manual, calibration and test certificate		
Option	IR Link, Docking Station		
Size & Weight	Size: 54mm(W) x 91mm(H) x 32mm(D) Weight: 93g (Toxic), 104g (O ₂) (Battery, clip included)		
Operating Life	24 months, based on 4 minutes of alarm per day (>2900 Alarm minutes)		
Event Log	Recent 30 alarms		
Approval	See section Certificates		

7. Self Test and Bump Test

7.1 Self Test

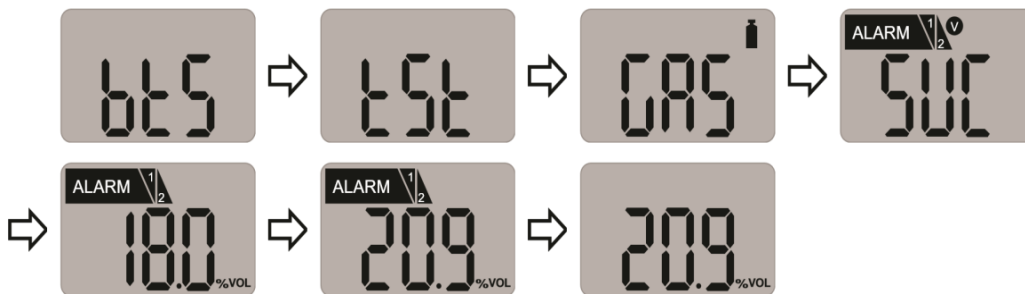
The Clip SGD provides a Self Test function. The default interval of the Self Test reminder is 20hrs. Use the IR Link or Docking Station to configure the interval between 1hr and 20hrs, or set to “off”. When the configured Self Test is due, “STS” will flash on the screen (the message will continue to flash until the user performs a successful Self Test).




- Press the button to initiate the Self Test function. The device will perform a self test by operating the buzzer, LED’s, vibrator and LCD. It will also show the configured low and high alarm set points on the display. After the test is completed, “END” will be displayed on the screen. (The user is required to check that the items operated in the self test, performed as expected).


7.2 Bump Test

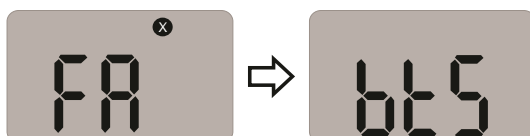
The device can be configured to provide an on screen Bump Test reminder. The default setting for the Bump Test reminder is “off”, no Bump Test reminder will be displayed. If a Bump Test reminder interval is required it can be configured using the IR Link or Docking Station. The interval can be configured from 1 day to 365 days. When configured and a Bump Test is due, the “bts” message be displayed and will flash on the screen.



- Press and hold the button for 3 seconds, and the “tst” message will be displayed for 45 seconds (to cancel, press the button for one second).
- Apply the gas using the calibration cap and gas tube within the 45 second period. If a Bump Test is not undertaken within this period the “bts” message will flash until a successful test is conducted.


After the selected gas is applied and if the test is successful, the “SUC” message with the  icon will be displayed for 3 seconds then immediately return to Gas Measurement Mode. The calibration cap and gas tube can then be removed.

If the test fails, the “FA” message with ico  will be displayed and “bts” message will flash until a successful test is conducted.



8. Certificates

The SGD Clip meets the following certifications and standards

IECEX:	<p>Ex ia IIC T4 Ga ① ② ③ ④ ⑤</p> <p>1: Explosion protected 2: Protection Concept 3: Gas Group 4: Temperature Classification 5: Equipment protection level</p>
	<p>Ex ia IIC T4 Ga Class I, Zone 0, AEx ia IIC T4 Ga Class I, Division 1, Groups A, B, C, D, T4</p>
ATEX:	<p>II 1 G Ex ia IIC T4 Ga KRH 17 ATEX 0013 Directive 2014/34/EU</p>
Standards	<p>The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:</p> <p>IEC 60079-0:2011 Ed6 IEC 60079-11:2011 Ed6</p> <p>UL 61010-1,Ed. 3 UL 913, Ed. 8 UL 60079-0, Ed. 6 UL 60079-11, Ed. 6</p> <p>C22.2 No. 60079-0:2015 C22.2 No. 60079-11:2014 C22.2 No. 61010-1-12:2012</p> <p>EN 60079-0:2012+A11:2013 EN60079-11:2012</p>
Compliance	<p>Electromagnetic Compatibility Directive 2014/30/EU</p>
Manufacturing Approval:	<p>The detector manufacturer is certified compliant with ISO 9001:2000 provisions</p>

Appendix 1 Clip SGD Docking Station User Manual



Clip SGD Docking Station Configuration

Users can change settings, upgrade firmware, and download log events through the Docking Station IR link (see Appendix 2).

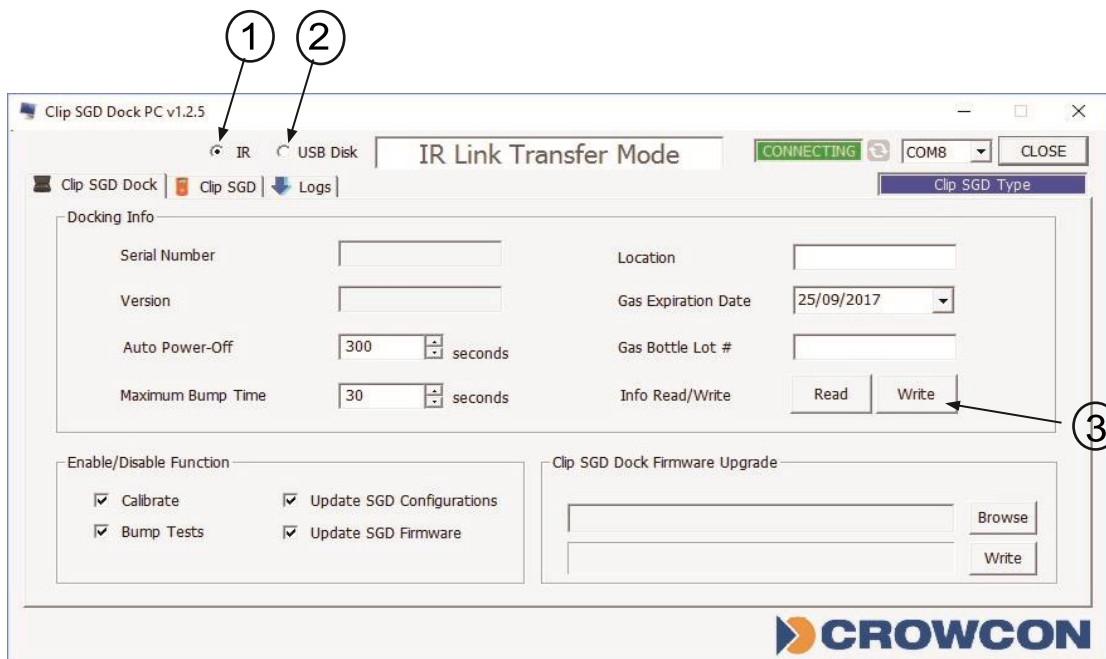


Figure 1: Clip SGD Dock PC Application

IR / USB Disk

Chose either IR Link or USB Stick to transfer configuration to and from Docking Station.

- Click 'IR' ① to configure Docking Station via the Clip SGD IR Link.
- Click 'USB Disk' ② to select USB Stick connected to PC and transfer configuration to the USB Stick – this can then be inserted into the Docking Station and the configuration uploaded.
- Info Read/Write: Select to 'Read' or 'Write' configuration ③ to Docking Station via IR link or to USB Stick

Docking Station

The layout of the Clip SGD Dock PC Application is shown above Figure 1.

- To interact with Docking Station via the Clip SGD IR Link, it must be turned on.
- Ensure the PC has the Clip SGD Dock PC Application installed and connect the Clip SGD IR Link to the PC.
- Place the topside of the Clip SGD IR Link face down in detector bay labelled "Unit 1". **N.B.:** The IR link only interacts with detector bay labelled "Unit 1".

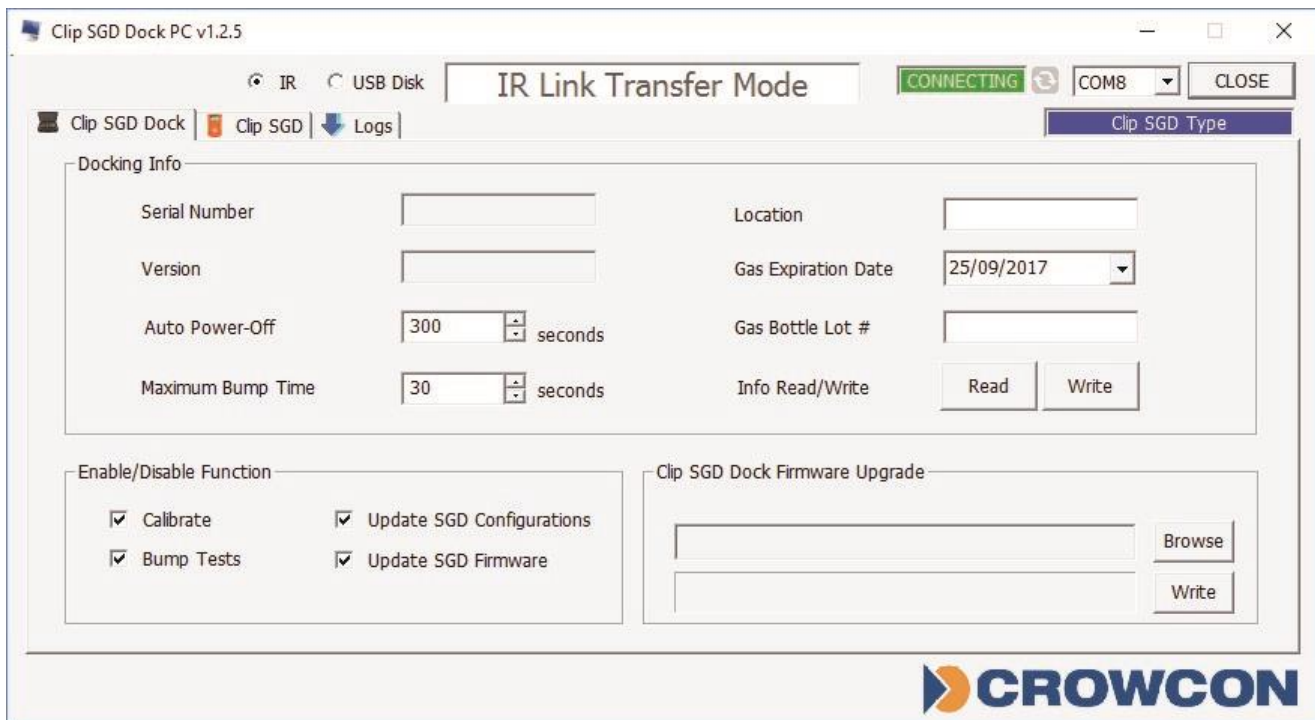


Figure 2

Docking Info

- Serial S/N: Factory serial number
- Version: Docking Station firmware version
- Auto Power-Off : Docking Station automatic power-off time (Max 3600 seconds)
- Maximum Bump Time: Bump test time (seconds) – Default: 30 / Min: 20 / Max: 120
- Location: Configure the installed location
- Gas Expiration Date: Enter the expiration date of the gas cylinder.
- Gas Bottle Lot #: Enter the lot number of the gas cylinder.
- Info Read/Write: Retrieve or write settings from Docking Station

Enable/Disable Function

Check box to enable or disable functions; a tick means enabled.

- Calibrate: enables/disables Docking Station 'Calibration' button.
- Bump test: enables/disables Docking Station 'Bump Test' button.
- Update SGD Configuration: enables/disables Clip SGD configuration updates during bump test or calibration.
- Update SGD Firmware: enables/disables Clip SGD firmware update during bump test or calibration.

Docking Firmware Upgrade

- Allows Docking Station firmware to be upgraded – click 'Browse' to navigate to file.
- Click 'Write' to download file.

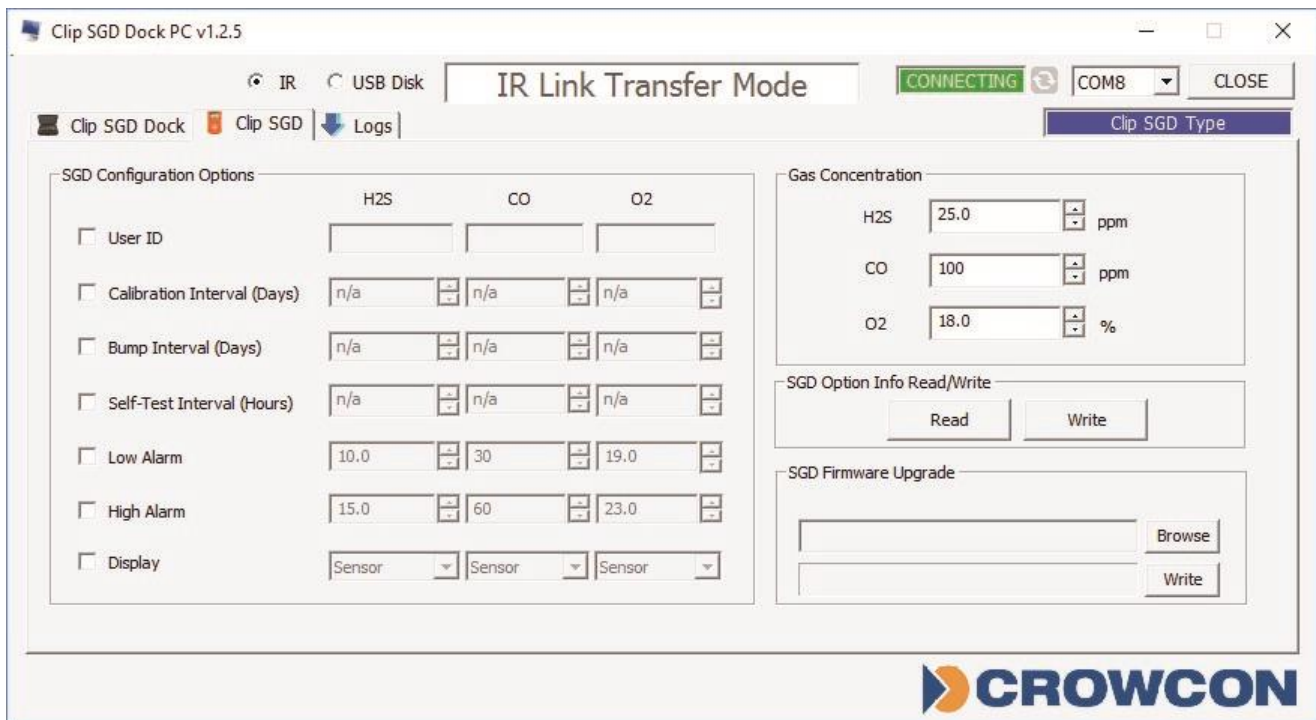


Figure 3

SGD Configuration Options

Allows the configuration of the Clip SGD to be modified whilst the Docking Station performs a bump test or a calibration.

- User ID: Enter a user ID if required
- Calibration Interval (0-365 days): Set the interval of the calibration alert
- Bump Interval (0-365 days): Set the interval of the bump test alert
- Self Test Interval (0-24 hours): Set the interval of the self test reminder.
- Low Alarm and High Alarm: Set the required low and high level gas alarms.
- Display: Choose for Clip SGD to display either gas reading ("Sensor") or instrument life remaining ("Life")

SGD Options Info Read/Write

- Read: Retrieve the stored settings from Clip SGD Docking Station
- Write: Write the adjusted settings to the Clip SGD Docking Station

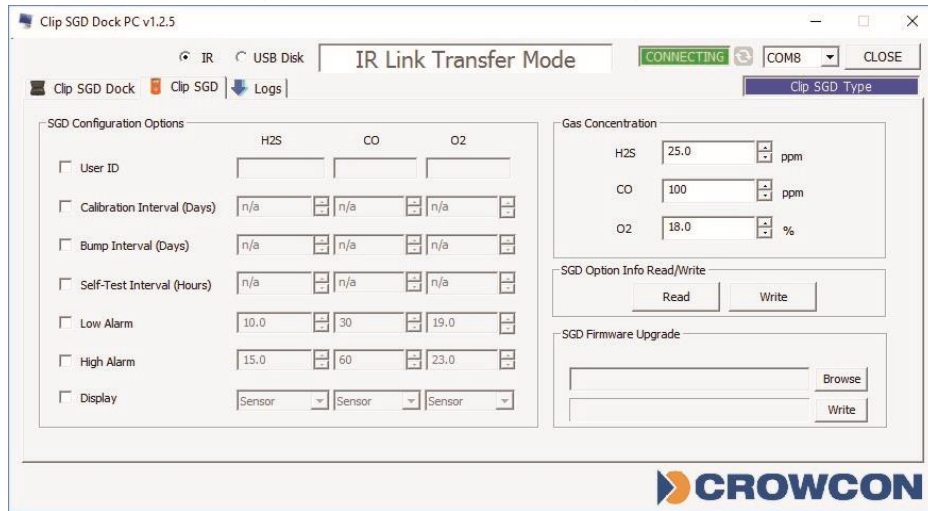


Figure 4

Gas Concentration

Allows the gas levels in the cylinder connected to the Clip SGD Docking Station to be entered

- Choose gas concentration required for calibration, default settings are as follows: H₂S: 25ppm, CO: 100ppm, O₂: 18%Vol

SGD Firmware Upgrade

- Allows the Clip SGD firmware upgrade file to be specified – click 'Browse' to navigate to file.
- Click 'Write' to download file

IR / USB Disk

Choose either IR Link or USB Stick to transfer configuration to and from Docking station • Click 'IR' to configure docking station via the Clip SGD IR Link.

- Click 'USB Disk' to select USB Stick connected to PC and transfer configuration to the USB Stick – this can then be inserted into the Docking Station and the configuration uploaded.
- SGD Option Info Read/Write: Select to 'Read' or 'Write' configuration to Docking Station via IR link or to USB Stick

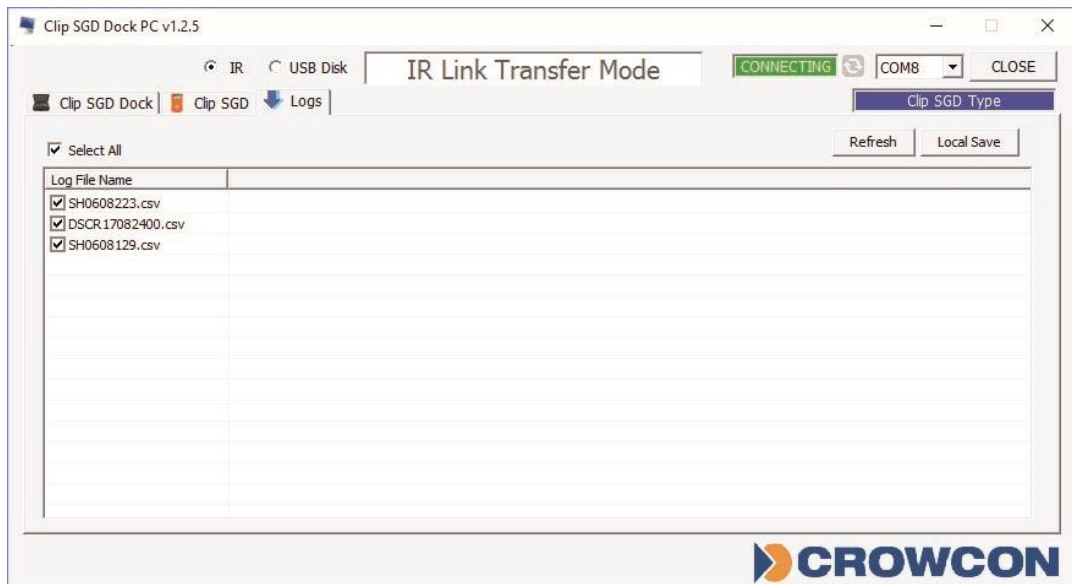


Figure 5

Event Logs

- Refresh: View available log files from docking station
- Select All: Select all log files available in the docking station
- Local Store: Save selected log files to PC – the log file name will be saved based on the serial number

Log Time	21/09/2017 11:50							
Docking Serial Number	DSCR17082400							
F/W Version	0.7.8							
H/W Version	1.0.0							
Place	DevLab							
Gas Expiration Date	2018.8.9							
Gas Bottle Lot	2340286							
Bay Num	Model	Gas Type	Test Type	Test Result	Serial Num	F/W Version	H/W Version	User ID
	1 Clip SGD	O2	Bump	SUCCESS	SH0608201	1.1.6	1.1.0	
	2 Clip SGD	CO	Bump	SUCCESS	SH0608143	1.1.6	1.1.0	
	3 Clip SGD	H2S	Bump	SUCCESS	SH0608162	1.1.6	1.1.0	
	4 Clip SGD	H2S	Bump	SUCCESS	SH0608142	1.1.6	1.1.0	
Log Time	21/09/2017 11:50							
Docking Serial Number	DSCR17082400							
F/W Version	0.7.8							
H/W Version	1.0.0							
Place	DevLab							
Gas Expiration Date	2018.8.9							
Gas Bottle Lot	2340286							
Bay Num	Model	Gas Type	Test Type	Test Result	Serial Num	F/W Version	H/W Version	User ID
	1 SGT	O2	Calibration	SUCCESS	SH0608201	1.1.6	1.1.0	
	2 SGT	CO	Calibration	SUCCESS	SH0608143	1.1.6	1.1.0	
	3 SGT	H2S	Calibration	SUCCESS	SH0608162	1.1.6	1.1.0	
	4 SGT	H2S	Calibration	SUCCESS	SH0608142	1.1.6	1.1.0	

Figure 6 Docking Station Log

Product Name	Clip SGD					
Serial Number	SH0608151					
Version	1.1.6					
Life Remaining	21 months 7 days					
Total Number of Events	30					
Duration of Events	00:52:53					
Zero Cal Time	28/07/2017	08:40:54				
Span Cal Time	21/09/2017	09:36:39				
Low Alarm	10					
High Alarm	15					
GAS Type	H2S					
Event Date	Event Time	Bump Test	Duration(s)	Sensor Reading	Alarm	
2017.07.20	13:40:54	No	00:00:28	9.5	LOW Alarm	
2017.07.20	13:42:25	No	00:01:27	89.9	HIGH Alarm	
2017.07.20	13:45:03	No	00:00:12	2.3	LOW Alarm	
2017.07.20	14:01:39	No	00:03:45	94.9	HIGH Alarm	
2017.07.20	15:21:58	No	00:05:00	99.1	HIGH Alarm	
2017.07.20	15:29:26	No	00:00:38	10.5	LOW Alarm	
2017.07.20	15:31:44	No	00:00:30	82.7	HIGH Alarm	
2017.07.20	15:33:30	No	00:00:52	97.2	HIGH Alarm	
2017.07.20	15:37:06	No	00:01:34	97.6	HIGH Alarm	
2017.07.25	09:38:19	No	00:02:55	52.9	HIGH Alarm	
2017.07.25	10:24:02	No	00:02:40	52.9	HIGH Alarm	
2017.07.25	11:26:37	No	00:03:18	53.2	HIGH Alarm	
2017.07.27	11:54:34	No	00:00:15	15.9	HIGH Alarm	
2017.07.28	10:31:38	No	00:03:24	48.9	HIGH Alarm	
2017.07.28	10:35:27	No	00:03:56	94.3	HIGH Alarm	
2017.07.28	11:43:54	No	00:02:49	48.5	HIGH Alarm	
2017.07.28	11:47:51	No	00:02:49	93.7	HIGH Alarm	

Figure 7 Clip SGD Event Log

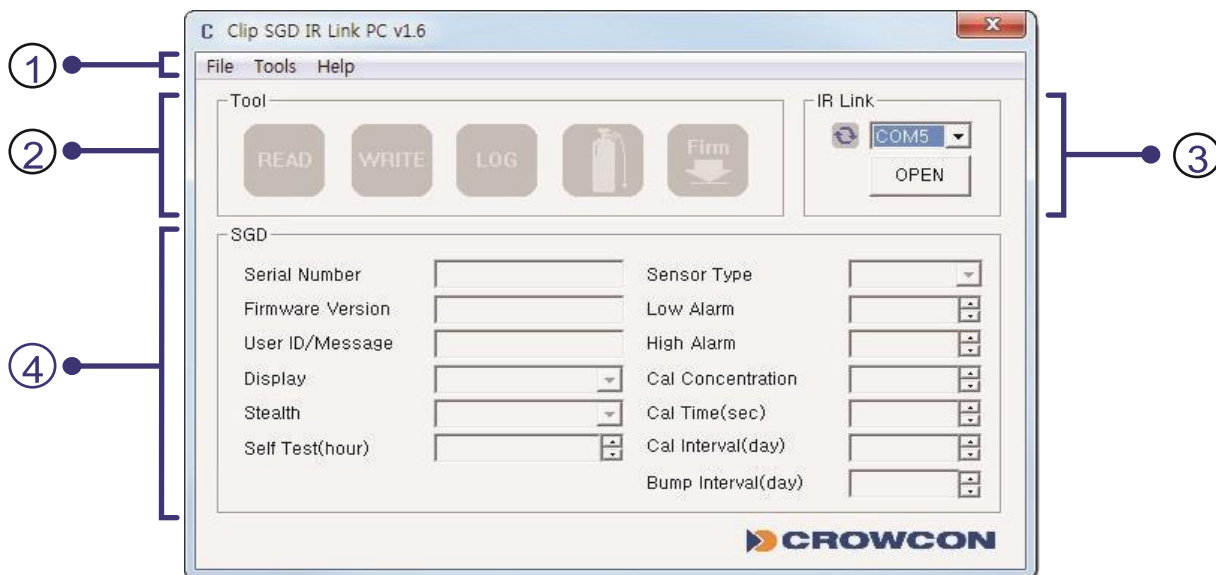
Appendix 2 IR Link User Guide



Use IR Link to change settings, upgrade firmware, download log events, and perform calibration

Getting started

To interact with Clip SGD, the software must be installed on your computer. Plug in the IR Link cable. Then, place the topside of the SGD face down to the IR Link LCD.



Software overview

Tab menus

File

- Load: Open the installed settings. (*.cfg)
- Save: Save the current settings. (*.cfg)
- Exit: Close the program.

Tools

- Calibration: Perform the ZERO/SPAN calibration.
- Log Read: Retrieve the log events.
- Log Erase: Erase log events.
- Self Test: Test if LED, LCD, Buzzer, vibration, battery and temperature work properly.
- Firmware Upgrade: For the latest firmware version, go to www.crowcon.com or contact your local service agent. After a firmware update, the detector **MUST** be recalibrated.
- Factory Default: Remove all data and restore the initial factory settings. After factory settings are restored, the detector **must** be recalibrated.

Help

- About: Display a brief company profile.

Tool Interface

- READ: Retrieve settings
- WRITE: Update and adjust settings.
- LOG: Display the saved log events.
- CALIBRATION: Perform the ZERO and SPAN calibration
- FIRMWARE UPGRADE: Upgrade firmware.

IR Link Interface

- In order to interact with the Clip SGD using the IR Link, click “OPEN”. When the Clip SGD settings have been successfully retrieved users will see “Read Complete”.

Clip SGD Interface

- Serial Number: Display a preset serial number.
- Firmware Version: Display a firmware version.
- User ID/Message: Users can program a desired message/ID.
- Display: Users can choose to display either the real time “Sensor Reading” or “Sensor Life Remaining”
- Stealth (Option): Users can turn off the buzzer, LED, and vibration.
- Self Test (Hour): Set an interval of the Self Test alert.
- Sensor Type: Display the sensor type of the device.
- Low Alarm: Adjust the low alarm set point in compliance with international or local standards.
- High Alarm: Adjust the high alarm set point in compliance with international or local standards
- Cal Concentration: Set a standard calibration value.
- Cal Time (sec): Set a standard calibration time.
- Cal Interval (day): Set an interval of the calibration alert.
- Bump Interval (day): Set an interval of the bump test alert.

Warranty

Limited Warranty

Crowcon warrants this product to be free from defects in material and workmanship under normal use and service for a period of two years beginning upon the date of activation for all Clip SGD products. This warranty is valid only if the personal monitor is activated by the ‘activate by’ date on the external packaging. This warranty extends only to the sale of new and unused products to the original buyer. Should the battery deplete prior to the 24 months of activation, this will demonstrate that the monitor(s) have experienced >2900 alarm minutes and will therefore be classed as outside warranty.

Warranty Procedure

To facilitate efficient processing of any claim, contact Elma Instruments to obtain a returns form for identification and traceability purposes. This form may be downloaded from our website ‘crowconsupport.com’ and requires the following information:

- Your company name, contact name, phone number and email address.
- Description and quantity of goods being returned, including any accessories.
- Instrument serial number(s).
- Reason for return.

Products will not be accepted for warranty without a Elma Instruments Returns Number (RMA). It is essential that the address label is securely attached to the outer packaging of the returned goods. The guarantee will be rendered invalid if the instrument is found to have been altered, incorrectly stored, modified, dismantled, tampered with, or has not used Crowcon spares for replacement parts (including sensors) or has been serviced or repaired by any party not authorised and certified by Crowcon to do so. The warranty does not cover misuse or abuse of the unit including use outside of specified limits.

Warranty Disclaimer

Crowcon accept no liability for consequential or indirect loss or damage howsoever arising (including any loss or damage arising out of the use of the instrument) and all liability in respect of any third party is expressly excluded. This warranty does not cover the accuracy of the calibration of the unit or the cosmetic finish of the product. The unit must be maintained in accordance with the instructions in this manual. The warranty on replacement consumable items supplied under warranty to replace faulty items, will be limited to the unexpired warranty of the original supplied item. Crowcon reserves the right to determine a reduced warranty period, or decline a warranty period for any sensor supplied for use in an environment or for an application known to carry risk of degradation or damage to the sensor. Our liability in respect of defective equipment shall be limited to the obligations set out in the guarantee and any extended warranty, condition or statement, express or implied statutory or otherwise as to the merchantable quality of our equipment or its fitness for any particular purpose is excluded except as prohibited by statute. This guarantee shall not affect a customer's statutory rights.

Crowcon reserves the right to apply a handling and carriage charge whereby units returned as faulty, are found to require only normal calibration or servicing, which the customer then declines to proceed with.

For warranty and technical support enquiries please contact Elma Instruments:



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