



# SMART 3 gas detectors



II 3GD

II 2GD



## DESCRIPTION

- Non-intrusive one man calibration (display or IrDA versions)
- Easy sensors replacement
- Wide range of sensors and gases detectable
- Standard 4-20 mA 3 wires output
- Wide range of accessories for installation and maintenance
- Zero tracking to maintain the detector zero point from possible drifts
- Ongoing system self diagnosis
- ATEX certified Group I & II

## APPLICATION

- Refineries
- Drilling Platforms
- Compressor stations
- Fuel loading stations
- Chemical Plants
- Gas turbines
- LNG/LPG storage facilities
- Laboratories
- Tunnels and mines



## DESCRIZIONE

- Taratura non intrusiva (versioni Display e IrDA)
- Facile sostituzione dei sensori
- Ampia gamma di sensori utilizzabili e di gas rilevabili
- Segnale standard 4-20 mA su 3 fili
- Ampia scelta di accessori per l'installazione e la manutenzione
- Inseguitore di zero per il mantenimento del parametro del sensore da possibili derive
- Autodiagnosi continua del sistema
- Certificati ATEX per Gruppo I & II

## APPLICAZIONI

- Raffinerie
- Piattaforme di perforazione
- Stazioni di compressione
- Distributori di carburante
- Impianti chimici
- Turbine a gas
- Depositi di gas GPL e Metano
- Laboratori
- Miniere e gallerie



## DESCRIPTION











- Etalonnage local non intrusif (versions display et IrDA)
- Echange des capteurs aisé
- Large gamme de capteurs disponibles et de gaz détectables.
- Signal sortie standard 4-20 mA 3 fils
- Large gamme d'accessoires pour l'installation et la maintenance.
- Zéro automatique pour le maintien du paramètre de zéro par possibles dérives
- Auto-diagnostic continu du système
- Certifications ATEX Group I & II

## APPLICATION

- Raffineries
- Plateformes de forage
- Stations de compression
- Stations de service
- Implantations Chimiques
- Turbines à gaz
- Stockage de GPL/GNL
- Laboratoires
- Tunnels et mines

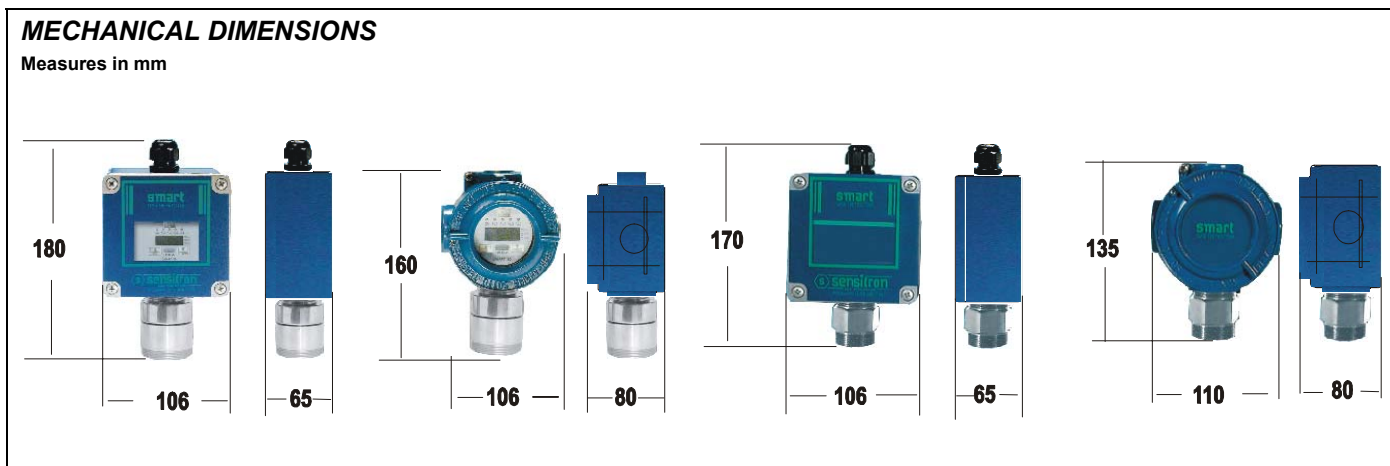
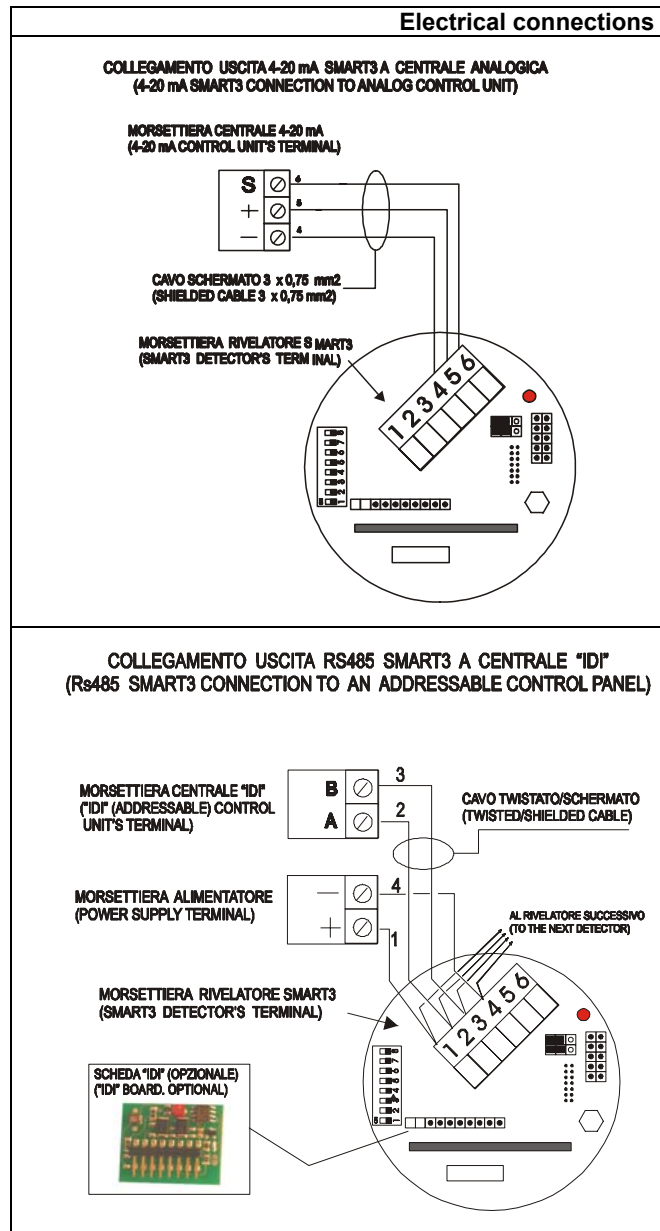
 DESCRIPTION	 DESCRIZIONE
<p><b>SMART3 series</b> gas detectors (trade name of <b>NET/x</b> ATEX detector) are employed to detect either flammable compounds (in terms of %LEL), toxic compounds in ppm (parts per million), or Oxygen depletion and enrichment.</p> <p>The <b>Pellistor</b> cells (industrial grade Catalytic sensors) employed for the flammable Gas detection show an excellent output linearity up to 100 % LEL.</p> <p>For aggressive atmospheres, where the Pellistor cells would seriously be damaged, Sensitron developed the <b>SMART3 IR</b> employing industrial grade Infrared sensors: IR sensors are poison free and this grants a higher accuracy and a longer lifetime to the cell.</p> <p>For the toxic gas detection, Sensitron has operated a reliable selection among the most performing <b>electrochemical cells</b> to supply units representing the state of the art in toxic gas detection.</p> <p>The SMART3 line has been designed to offer a wide range of alternatives that grant customers the best solution to their requirements.</p> <p><b>SMART3 CC</b> has been specifically designed to offer high performance products for light industrial applications.</p> <p><b>SMART3 CD</b>, designed to meet with tougher industrial requirements, offer a 4 digits back-lit display and 5 mode status LEDs for the gas concentration reading. They feature <b>non intrusive magnetic calibration</b> for an accurate and easy calibration via Hall-effect switches, without opening the instrument and declassifying the area.</p> <p>Gas detectors series <b>SMART3 IrDA</b> have the same technical specifications and performance than <b>SMART3</b> detectors, but offer a one-man <b>non intrusive calibration via a handheld calibration keypad ST.S/CKD IrDA</b>. It will be neither necessary to declassify the area nor open the instrument to operate on it.</p> <p>Specific SMART3 gas detectors for tunnels and mines are available with certification for <b>Group I</b>.</p> <p><b>SMART3</b> gas detectors are fully ATEX certified for Group II 2 and 3 GD and for Group I M2.</p>	<p>I rilevatori di gas della serie <b>SMART3</b> (nome commerciale dei rilevatori ATEX <b>NET/x</b>) vengono impiegati per rivelare la presenza di sostanze infiammabili in valori di %LIE, di gas tossici in ppm (parti per milione), oppure per la rivelazione di deficienza o eccesso di ossigeno.</p> <p>Il sensore catalitico industriale (Pellistore), utilizzato nelle versioni per miscele esplosive, conferisce una linearità eccellente fino al 100% LIE.</p> <p>Nei luoghi in cui i Pellistori non possono garantire una funzionalità ottimale, Sensitron ha sviluppato una serie di rivelatori con sensore infrarosso <b>SMART3 IR</b>. I sensori Infrarosso permettono di aggiungere affidabilità e durata, evitando i problemi di avvelenamento a cui i Pellistori sono a volte soggetti.</p> <p>Per la rivelazione dei gas tossici Sensitron ha operato una selezione tra le più affidabili <b>celle elettrochimiche</b> per realizzare strumenti che rappresentino lo stato dell'arte nella rivelazione dei gas tossici.</p> <p>La serie SMART3 è stata concepita per offrire ai clienti un'ampia gamma di soluzioni, a seconda delle specifiche necessità dei clienti.</p> <p><b>SMART3 CC</b> è stato disegnato per offrire elevate prestazioni a strumenti per applicazioni civili e industriali.</p> <p>La versione <b>SMART3 CD</b> (display), progettata per l'impiego in ambienti industriali è fornita con un display luminoso a 4 cifre che visualizza in tempo reale la concentrazione di gas misurata. Inoltre, lo <b>SMART3 CD</b> consente una taratura in campo non intrusiva tramite magneti a effetto Hall che permettono di operare sullo strumento senza doverlo aprire o declassificare l'area.</p> <p>I Rilevatori nella versione <b>SMART3 IrDA</b> hanno le medesime caratteristiche tecniche e prestazionali dei rilevatori <b>SMART3</b> descritti sopra con in più la possibilità di <b>taratura in campo non intrusiva tramite la tastiera di calibrazione ST.S/CKD IrDA</b>. Non sarà quindi necessario aprire lo strumento o declassificare l'area per poter effettuare la taratura periodica.</p> <p>Per sottosuolo e miniere, è disponibile una versione certificata <b>Gruppo I</b>.</p> <p>I rilevatori serie <b>SMART3</b> sono certificati ATEX per Gruppo II 2 e 3 GD e per Gruppo I M2.</p>
 DESCRIPTION	
<p>Les détecteurs de gaz de la série <b>SMART3</b> (nom commercial des détecteurs ATEX <b>NET/x</b>) sont utilisés pour détecter la présence de substances combustibles, dans des concentrations exprimables % LIE, et de substances toxiques dans des concentrations en ppm (parties par million) ou bien pour la détection de déficience ou d'excès d'oxygène.</p> <p>Le capteur catalytique industriel (Pellistor), utilisé dans les versions pour les mélanges explosifs, confère une linéarité jusqu'à 100% LIE et une précision optimale avec n'importe quel type de gaz inflammable. Dans les lieux où les Pellistori ne peuvent pas garantir une fonctionnalité optimale, Sensitron a développé une gamme de détecteurs avec cellule Infrarouge <b>SMART3 IR</b> qui permet d'ajouter fiabilité et durée, en évitant les problèmes d'empoisonnement auxquels sont parfois sujets les Pellistori.</p> <p>Pour la détection des gaz toxiques, Sensitron a effectué une sélection parmi les cellules électrochimiques fournissant les meilleures prestations afin de réaliser des appareils qui représentent la pointe de la technique dans la détection des gaz toxiques.</p> <p>La série SMART 3 a été élaborée afin d'offrir une large gamme de solutions qui satisfassent toutes les nécessités de la clientèle.</p> <p>Les <b>SMART 3 CC</b> sont des détecteurs à hautes performances conçus pour le secteur tertiaire et l'industrie légère.</p> <p>Les <b>SMART3 CD</b> offrent la lecture immédiate de la concentration relevée sur l'écran LCD à 4 chiffres. L'étalonnage local non intrusif à l'aide des aimants à effet Hall, permet d'intervenir sur les appareils, sans les ouvrir, ni mettre la zone hors service.</p> <p>Les détecteurs de la série smart3 IrDA ont les même caractéristiques techniques que les autres SMART3 mais ils permettent un <b>étalonnage local non intrusif</b> à l'aide de la <b>télécommande infra-rouge ST.S/CKD IrDA</b>.</p> <p>Pour les mines et les tunnels, une version certifiée pour Groupe I M2, est également disponible.</p> <p>Les détecteurs <b>SMART 3</b> sont certifiés ATEX pour Groupe II 2 et 3 GD et le Groupe I M2.</p>	

Order codes and versions

	CD (Display) Ex II 3GD	CD (Display) Ex II 2GD	CD (Display) IR sensor Ex II 3GD	CD (Display) IR sensor Ex II 2GD	CC (Standard) Ex II 3GD	CC (Standard) Ex II 2GD	CC (Standard) IR sensor Ex II 3GD	CC (Standard) IR sensor Ex II 2GD	IrDA Ex II 2GD	GRI Tunnels/ Mines Ex I M 2
<i>Versions for flammable gases (% LEL)</i>										
METHANE	S1156ME	S1157ME	S1601ME	S1602ME	S1096ME	S1097ME	S1653ME	S1654ME	S1300ME	S1255ME
LPG	S1156GP	S1157GP	S1601GP	S1602GP	S1096GP	S1097GP	S1653GP	S1654GP	S1300GP	
BUTANE	S1156BU	S1157BU	S1601PR	S1602BU	S1096BU	S1097BU	S1653BU	S1654BU	S1300BU	
PROPANE	S1156PR	S1157PR	S1601BU	S1602PR	S1096PR	S1097PR	S1653PR	S1654PR	S1300PR	
PETROL VAPOURS	S1156VB	S1157VB		S1602VB	S1096VB	S1097VB		S1654VB	S1300VB	
ACETIC ACID						S1097AA			S1300AA	
ACETONE		S1157AT		S1602AT		S1097AT		S1654AT	S1300AT	
ACETYLENE		S1179AC				S1151AC				
AMMONIA		S1157AM				S1155AM				
CYCLOPENTANE		S1157CP				S1097CP			S1300CP	
ETHANE		S1157EN		S1602EN		S1097EN		S1654EN	S1300EN	
ETHYL ACETATE		S1157AE				S1097AE			S1300AE	
ETHYL ALCOHOL		S1157ET		S1602ET		S1097ET		S1654ET	S1300ET	
ETHYLENE		S1157EL		S1602EL		S1097EL		S1654EL	S1300EL	
ETHYLENE OXYDE						S1155OE				
HEPTANE						S1097EP			S1300EP	
HEXANE		S1157ES				S1097ES			S1300ES	
HYDROGEN		S1157H2				S1097H2			S1300H2	
ISO BUTANE		S1157IB		S1602IB		S1097IB		S1654IB	S1300IB	
ISO BUTYL ALCOHOL						S1097IT			S1300IT	
ISO PENTANE						S1097IN				
ISO PROPYL ALCOHOL						S1097IP			S1300IP	
JP8 (JET PROPELLER)		S1108P8				S1154P8				
METHYL ALCOHOL		S1157MT		S1602MT		S1097MT		S1654MT	S1300MT	
METHYL ETHYL KETONE		S1157MK				S1097MK			S1300MK	
NONANE						S1097NN				
PENTANE		S1157PE		S1602PE		S1097PE		S1654PE	S1300PE	
PROPYLENE		S1157PP				S1097PP			S1300PP	
PROPYL ALCOHOL		S1157PN				S1097PN			S1300PN	
STYRENE		S1157ST		S1602ST		S1155ST		S1654ST		
TRI-METHYLBENZENE						S1097TM				
TOLUENE		S1157TO		S1602TO		S1097TO		S1654TO	S1300TO	
XYLENE		S1157XI				S1097XI			S1300XI	
<i>Other flammable gases on request</i>										
<i>Versions for Toxic gases</i>										
OXYGEN (O2) 25% Vol.	S1642O2	S1643O2			S1640O2	S1641O2				
CARBON MONOXIDE (CO) 300 ppm					S1638CO	S1639CO				
CARBON MONOXIDE (CO) 500 ppm	S1162CO	S1163CO			S1130CO	S1131CO				S1493CO
ETHYLENE 200 ppm					S1130ET					
AMMONIA (NH3) 0-200 ppm	S1164AM	S1165AM			S1132AM	S1133AM				
AMMONIA (NH3) 0-1000 ppm	S1166AM	S1167AM			S1134AM	S1135AM				
HYDROGEN SULPHIDE (H2S) 50 ppm	S1168HS	S1169HS			S1136HS	S1137HS				
NITRIC OXYDE (NO) 100 ppm	S1176NO	S1177NO			S1144NO	S1135NO				
NITROGEN DIOXIDE (NO2) 20 ppm	S1172ND	S1173ND			S1140ND	S1141ND				
SULPHUR DIOXIDE (SO2) 20 ppm	S1170SD	S1171SD			S1138SD	S1139SD				
CHLORINE (CL2) 20 ppm	S1174CL	S1175CL			S1142CL	S1143CL				
HYDROCHLORIC ACID (HCL) 50 ppm		S1311HC				S1147HC				
HYDROCYANIC ACID (HCN) 100 ppm						S1149HN				
CARBON DIOXIDE (CO2) 2% Vol			S1631CO2	S1634CO2			S1649CO2	S1651CO2		
CARBON DIOXIDE (CO2) 5% Vol			S1632CO2	S1635CO2			S1650CO2	S1652CO2		
<i>Other toxic gases on request</i>										
	CD (Display) Ex II 3GD	CD (Display) Ex II 2GD	CD (Display) IR sensor Ex II 3GD	CD (Display) IR sensor Ex II 2GD	CC (Standard) Ex II 3GD	CC (Standard) Ex II 2GD	CC (Standard) IR sensor Ex II 3GD	CC (Standard) IR sensor Ex II 2GD	IrDA Ex II 2GD	GRI Tunnels/ Mines Ex I M 2
										
<i>Accessories</i>										
ST.S/CSW: Software for SMART 3	O	O	O	O	O	O	O	O	O	O
ST.S/IDI: RS485 board, for the IDI addressable control panel.	O	O	O	O	O	O	O	O	O	O
ST.S/CKD: Handheld calibration keypad.	O	O	O	O	O	O	O	O	O	O
ST.S/CKD IrDA: Intrinsically safe handheld calibration keypad.	NA	NA	NA	NA	NA	NA	NA	NA	O	NA
ST.S/OC: 2-Open Collector card.	O	O	O	O	O	O	O	O	O	O
ST.S1REL: 1-Relay card.	E	E	E	E	O	O	O	O	O	O
ST.S3REL: 3-Relay card.	O	O	O	O	O	O	O	O	O	O

E: enclosed, O: optional, NA: not available

Technical specifications	
Sensing element	PELLISTORS, Industrial grade Electrochemical Cells, INFRARED sensor
Measurement range	0-100% LEL or different in ppm (parts per million)
Power supply	12- 24 Vdc - 20% + 15%
Consumption at 12Vdc	90 mA (medium); 130 mA (max)
Visual indications	flashing LED (standard); 3 red LED for Alarm levels, yellow for Fault and green for Power supply (display version).
Display characteristics (CD Display version)	4 digit, 7,5 mm high, 7 segment display
Proportional output	4-20 mA (200 Ω)
Serial Output (optional)	Serial RS-485 for SENSITRON "GALILEO IDI"
O/C or relay outputs (optional)	Open collectors or relay optional boards
Precision	1,5% full range or 10% reading
Repeatability	+/- 5% full scale
Warm-up time	5 minutes
Stabilization time	< 2 minutes
Response time	< 15 sec. T50; < 25 sec. T90 (flammable gas with Pellistor)
Storage temperature	-25 / + 60 °C
Operating temperature	-10 / + 60 °C (flammable gas version)
Relative humidity	20-90 % Rh / 40° C
IP rating	IP65 (2GD version); IP55 (3GD version)
Operative pressure	80-110 KPa
Air velocity	< 6 mS
Weight	2GD: 900 gr. (CC) 3GD: 800 gr (CC) 2GD : 900 gr. (CD) 3GD : 700 gr (CD)
Dimension	2GD : L.106, H. 160, D. 80 mm 3GD : L.106, H. 180, D.65 mm
Orientation	The detector must be mounted with sensor head downward
Reference Norms	EN60079-0 EN60079-1 EN60079-15 EN61241-0 EN61241-1 (Electrical Apparatus for Explosive Atmospheres). EN 61779-1/4 (Performance)
Certificates (as NET/x)	CESI 01ATEX053 (2GD version) CESI 03ATEX339 (3GD version) CESI 02ATEX084 (2GD + performance) CESI 04 ATEX106 (Group I)



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