

# *FIRE DETECTION*



ELKRON. THE HI-PROTECTION COMPANY

**ELKRON**

# **GAS, LIQUIDS, HEAT AND LINEAR DETECTORS AND CONTROL UNITS**

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## DETECTORS AND CONTROL UNITS

### ATEX VERSION CONTROL UNITS

#### Gas Detection Control Units

ST/PL4 cod. SC6R00123

**Gas detection central unit allowing the connection of 4 minimum number to 8 maximum number of inflammable toxic gasses or oxygen detectors (through optional board) with 4-20 mA proportional output.**

- For each input it is possible to set the type of detector, suitable measure range and alarm level values.
- Concentration values measured are shown on a backlit liquid crystal display.
- The central unit has 5 relay outputs, 4 of which are associated to Failure, Alarm 1, Alarm 2, Alarm 3 and one is an auxiliary relay output that can be associated to one of the four above statuses.
- By adding an optional module, in addition to the 4 inputs there are also implemented 16 open collector outputs.
- Housing: Metallic enclosure
- Dimensions (hxlxd): 225x360x110 mm
- Display: backlit LCD with 16 characters for 2 lines
- Power supply: 230 Vac
- Absorption: 80 mA at rest, 160 mA on alarm status, 240 mA with expansion board
- Relay outputs: 1 A @ 24 Vdc 5 A @ 24 Vdc (relay AUX)
- Operation temperature: -0 to - 40°C
- Relative humidity: 15-85% non condensing



ST/PL4

ST/PL4/ESP cod. SC7R10123

**Expansion module for 4 inputs, 16 O.C. outputs that can be set for Alarm 2 or Alarm 3 ST/PL4 for central unit.**

- O.C. outputs: 250 mA

STG/MTSLB cod. SC8R00123

**Gas detection central unit allowing the connection of 8 minimum number to 104 maximum number of inflammable toxic gasses or oxygen detectors with 4-20 mA proportional output.**

- The connection is through (optional) remote concentrators arranged on RS485 serial line.
- The central unit has inside it 4 output relays to interface towards the field, and 4 open collector outputs.
- The unit can be configured with detectors that differ from one another as both gas detected and activation thresholds.
- Both explosive and toxic gas detectors can be configured.
- The central unit can store up to 800 events.
- Housing: Metallic enclosure
- Dimensions (hxlxd): 420x440x140 mm
- Display: backlit LCD with 256x64 dots
- Power supply: 230 Vac
- Expansibility: Up to 64 O.C. outputs with 8 STG/OUT16 optional modules
- Operation temperature: -0 to - 40°C
- Relative humidity: 15-85% non condensing



STG/MTSLB



## DETECTORS AND CONTROL UNITS

### ATEX VERSION CONTROL UNITS

#### Accessories for ATEX control units

STG/IN8 cod. SC9R10123  
Remote module for 8 board inputs

STG/OUT16 cod. SC1S10123  
Remote module for 16 open collector programmable board outputs

STG/BOX cod. ST0510123  
Metallic enclosure for containing a STG/IN8 or STG/OUT16 module

WMB/138V15 cod. ST0610123  
Metallic enclosure with 12 Vdc 1.5 A supply for containing a STG/IN8 or STG/OUT16 module.

### TOXIC AND EXPLOSIVES GAS DETECTORS

Gas detectors are used to detect the presence of combustibles in concentrations that can be expressed as a percentage of Explosiveness Lower Limit (%ELL) and of toxics that can be expressed as parts per million (ppm) or in the detection of oxygen deficiency or excess.

For explosive mixtures detectors a catalytic sensor is used, while for toxics detectors an electrochemical cell sensor is used.

The detector is fully controlled by a 10 bit microprocessor. The detectors provide either a current proportional output (4-20 mA) or relay contacts through an optional board.

#### GAS DETECTORS, EX II 3GD TYPE

S1604VB cod. SD2T00123  
**Petrol vapours detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.
- STS3REL relay board cannot be used.

S2096PR cod. SD5T00123  
**Propane gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S2096BU cod. SD6T00123  
**Butane gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S1606CO cod. SD7T00123  
**CO (Carbon Monoxide) detector 4-20 mA, 0-300 ppm**

- Electrochemical cell sensor.
- Absorption: 30 mA@12Vcc.
- STS3REL relay board cannot be used.



EX II 3GD



## DETECTORS AND CONTROL UNITS

### TOXIC AND EXPLOSIVES GAS DETECTORS

#### GAS DETECTORS, EX II 3GD TYPE

S2096ME cod. SD9S00123

**Methane gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S1702VB cod. SD3T00123

**Petrol vapours detector 4-20 mA, 0-100% LEL**

- Pellistor sensor.
- Absorption: 30 mA@12Vcc.
- Alarm output: 2 relays 1A@30Vcc.
- Fault output: 1 relay 1A@30Vcc.
- Suitable for parking lots.

S2096GP cod. SD4T00123

**LPG gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S1703CO cod. SD8T00123

**CO (Carbon Monoxide) detector 4-20 mA, 0-300 ppm**

- Electrochemical cell sensor.
- Absorption: 30 mA@12Vcc.
- Alarm output: 2 relays 1A@30Vcc.
- Fault output: 1 relay 1A@30Vcc.
- Suitable for parking lots.

#### MAIN CHARACTERISTICS OF GAS DETECTORS

Power supply	12 - 24Vcc - 20% + 15%
Auto-zero routine	Zero drift compensation
Light indications	Blinking LED
Precision	± 10% full scale
Warm-up time	5 minutes
Stabilization time	< 2 minutes
Response time	< 15 sec. T50; < 25 sec T90 (flammable gas version)
Air velocity	< di 6 mS
Digital filter	Sampled values variable averages
Resolution	1.024 points
IP protection	IP55
Weight	350 g
Dimensions (L) x (H) x (D) mm	106 x 170 x 65
Reference Standards	EN50014 EN50018 EN50021 [essential safety requirements EEx-n] / EN61779-1/4 [performances]
Atex marking	CE 722 Ex II 3GD Ex nA d IIC T6 IP55 T85°C



## DETECTORS AND CONTROL UNITS

### TOXIC AND EXPLOSIVES GAS DETECTORS

#### GAS DETECTORS, Ex II 2GD TYPE

S2097VB cod. SD1U00123

**Petrol vapours detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S2097ME cod. SD9T00123

**Methane gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S2131CO cod. SD5U00123

**CO (Carbon Monoxide) detector 4-20 mA, 0-500 ppm**

- Electrochemical cell sensor.
- Absorption: 30 mA@12Vcc.

S2097PR cod. SD3U00123

**Propane gas detector 4-20 mA, 0-100% LEL**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S2097GP cod. SD2U00123

**LPG gas detector 4-20 mA, 0-100% LIE**

- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.

S2097BU cod. SD4U00123

**Butane gas detector 4-20 mA, 0-100% LEL**

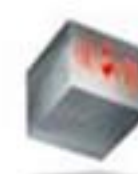
- Catalytic sensor: Nemoto.
- Absorption: 130 mA@12Vcc.



EX II 2GD

#### MAIN CHARACTERISTICS OF GAS DETECTORS

Power supply	12 - 24Vcc - 20% + 15%
Auto-zero routine	Zero drift compensation
Light indications	Blinking LED
Precision	± 10% full scale
Warm-up time	5 minutes
Stabilization time	< 2 minutes
Response time	< 15 sec. T50; < 25 sec T90 (flammable gas version)
Air velocity	< di 6 mS
Digital filter	Sampled values variable averages
Resolution	1.024 points
IP protection	IP66
Weight	950 g
Dimensions (L) x (H) x (D) mm	110 x 135 x 80
Reference Standards	EN50014 EN50018 EN50021 (essential safety requirements EEx-n) / EN61779-1/4 (performances)
Atex marking	CE 722 Ex II 2GD Ex d IIC Ex tD A21 IP65 T85°C



## DETECTORS AND CONTROL UNITS

### TOXIC AND EXPLOSIVES GAS DETECTORS

#### Accessories for gas detectors

ST/S3REL cod. SC5R10123

**Board with three relays for gas detectors.**

- It allows to have contacts free from voltage.
- The first output is associated to failure or Watch-Dog. The second output can be associated to either alarm 1 or alarm 2 of detector. The third output can be associated to either alarm 2 or alarm 3 of detector.
- Relay contacts current carrying capacity: 50mA @ 24 Vdc; 100 mA @ 12 Vdc.

VAL TEST cod. SI7100123

**Test kit containing instruments necessary to execute requested functionality tests.**

- It contains a flowmeter valve and a fitting suitable to connect the tanks to the detectors, in order to create a well defined titrated atmosphere.

### INFRARED FLAME DETECTOR

RU-ADPE cod. SD7100121

**Flame detector immediately responding to infrared thermal radiation released by fire. The detector is tuned to flame pulses in order to ignore sunlight and lamps.**

- It is contained in IP66 explosion proof enclosure.
- It needs 24 Vdc supply, with wide tolerance on its value, and provides two types of outputs: a wide range switching contact SPDT and a static signal on NPN collector.
- Both outputs go into alarm after a certain lag and go back to a rest condition as fire is over.
- Lag time is normally calibrated to 5 seconds; however, it can be ranging 1 to 10 seconds.
- Sensitivity is calibrated to 2 - 3%, i.e. a 10 cm flame at a 5 m distance, or a 20 cm flame at a 10 m distance.
- View field is a 90° cone; however, beyond 90°, the detector can still see, although with reduced sensitivity; and, by reflection, it can even see zones in shade behind obstacles.
- On detector front side, a red LED warns about test or alarm status.
- Casing: explosion proof aluminium alloy.
- Painting: epoxy, grey RAL7035.
- Implementation: II 2 GD EEx-d IIC T6 IP66.
- Certified: CESI 01 ATEX 036.
- Compliance with: directive ATEX 94/9 CENELEC EN 50014 (CEI 31.8) EN 50018 (CEI 31.1)
- Dimensions (mm): 230 x 230 x 154h main body only.
- Weight: 10 kg including detector.
- Cables input: 1" Gas.



## DETECTORS AND CONTROL UNITS

### LIQUID DETECTOR

#### Liquid detector

RA/209 cod. SD2B00121

**Electronic detector to detect the presence of (uninflammable) liquids.**

- Detecting the presence of water is through 4 support gilt feet, which put the detector into alarm by switching a relay placed inside it.
- For higher protection, RA/209 model is provided with a humidity detector having a sensivity that can be regulated by an inner trimmer.
- Facility for connecting 10 external probes of RA/209S model.
- Container material: Thermoplastic, white colour
- Operation voltage: 12 - 27 Vdc
- Average absorption: 3.5 mA at 27 Vdc
- Operation temperature: +5 to +50 °C
- Dimensions: 64 x 96 x 30 mm

### SPECIAL HEAT DETECTOR

#### Heat Detectors

RTS/2 cod. SD2C00123

**IP65 Special heat detector based on the deformation of a bimetallic element which closes a dry contact as the temperature is reached. This makes the detector easy to be interfaced with any board type.**

- The heat detector is suitable for detection in environments where potentially explosive atmospheres may be present. Its construction is complying with sector specific regulations (ATEX).
- The detector can operate based on the type of heat probe being used as follows:
  - DF: Gradient detector. The intervention only occurs when temperature increment is higher than 13 °C per minute.
  - SD: Semidifferential detector. The intervention always occurs as calibration temperature is reached; further, an intervention lead occurs when temperature increment is higher than 15°C per minute.
  - MAX: Maximum temperature detector. The intervention only occurs when calibration temperature is reached.
- Code SD2500123 is referred to a detector with a 60° C calibration temperature. Different grades are available to specify in the command.
- Operation principle: Bimetallic element deformation
- Protection degree: IP 65
- Working temperature: 190 C° MAX
- Relative humidity: 98%
- Weight: 0,9 Kg
- Bimetallic component: Nilvar-Brass
- Regulation range: -40 + 190 C°
- Intervention threshold: On Request /mod SD Max 88 C°
- Alarm condition: Normally closed contact
- Contacts current carrying capacity: 2,5 A
- Working voltage: 48 Vdc
- Enclosure material: Aluminium alloy
- Dimensions: 110 x 13 x 70 mm



RTS72





## DETECTORS AND CONTROL UNITS

### SPECIAL HEAT DETECTOR

#### Heat detector

RTS/4 cod. SD4C00123

**IP55 heat detector based on the deformation of a bimetallic element which closes a dry contact as the temperature is reached.**

- This makes the detector easy to be interfaced with any board type.
- The detector can operate based on the type of heat probe being used as follows:
  - DF: Gradient detector. The intervention only occurs when temperature increment is higher than 13 °C per minute.
  - SD: Semidifferential detector. The intervention always occurs as calibration temperature is reached; further, an intervention lead occurs when temperature increment is higher than 15°C per minute.
  - MAX: Maximum temperature detector. The intervention only occurs when calibration temperature is reached.
- Code SD4J00123 is referred to a detector with a 60° C calibration temperature. Different grades are available to specify in the command.
- Operation principle: Bimetallic element deformation
- Protection degree: IP 55
- Working temperature: 190 C° MAX
- Relative humidity: 98%
- Weight: 0,4 Kg
- Bimetallic component: Nilvar-Brass
- Regulation range: -40 + 190 C°
- Intervention threshold: On Request /mod SD Max 88 C°
- Alarm condition: Normally closed contact
- Contacts current carrying capacity: 2,5 A
- Working voltage: 48 Vdc
- Enclosure material: Aluminium alloy
- Dimensions: 92x167x67 mm

RTS/6 cod. SD3C00123

**IP65 Special heat detector based on the deformation of a bimetallic element which closes a dry contact as the temperature is reached. This makes the detector easy to be interfaced with any board type.**

- The heat detector is suitable for detection in environments where potentially explosive atmospheres may be present. Its construction is complying with sector specific regulations (ATEX).
- Code SD7E00123 is referred to a detector with a 60° C calibration temperature. Different grades are available to specify in the command.
- Heat probe is UL/FM certified.
- Operation principle: Bimetallic element deformation
- Relative humidity: 98%
- Weight: 0,4 Kg
- Bimetallic component: Nilvar
- Regulation range: on order fixed calibration
- Alarm condition: Normally closed contact
- Contacts current carrying capacity: 2 A
- Working voltage: 24 Vdc
- Sensor material: steel
- Enclosure material: Aluminium alloy
- Dimensions: 100 x 193,5 x 70 mm



RTS/4



## DETECTORS AND CONTROL UNITS

### SPECIAL HEAT DETECTOR

#### Heat Detector

RLB/1 cod. SD6P00121

Linear heat detector, 68°C calibration (certified)

- Packaging: 100 m skein

RLB/2 cod. SD5P00121

Linear heat detector, 105°C calibration (certified)

- Packaging: 100 m skein

### LINEAR DETECTORS

#### Smoke Linear Detector

S/2-100 + INT8C cod. IL1500123

Linear detector suitable for all environments characterised in high ceilings, where using smoke optical detectors results to be particularly hard.

- The system includes three units: Transmitting unit (TX), Receiving unit (RX), co-ordination unit (not including INT8C/24V interface module).
- The operation principle of linear detector is based on TX units to emit a beam of infrared rays. The beam runs through the zone to be monitored and radiates Receiving unit (RX). On running through monitored zone, the beam collects information about possible fire arising and carries it to RX. RX processes this information and draws from it a number of electrical signals, each corresponding to a single fire sign examination. Successive processing allows to diagnose the presence of smoke in monitored environment.
- On Transmitting unit there are present following leds: Power supply signalling green led, Receiving unit status repetition yellow led.
- On Receiving unit there are present following leds: Power supply signalling green led, Emitted and received IR intensity level yellow led, Fire alarm red led.
- Linear detector is suitable for lengths of 5 m to 150 m.
- Maximum operative width: 15 m.
- High aligning facility.
- Brackets, for improved wall application, already included.
- Obligatory connection interface INT/8C (not included).
- Obligatory calibration instrument ADM (not included).
- Operation voltage: 24 Vdc
- Absorption in mA Tx:
 

5-15m	20,0	55-75m	24,0
15-35m	21,8	75-100m	38,6
35-55m	22,7	100-150m	65,5
- Absorption in mA Rx: Normal operation 47,7 - Fault 66,7 - Alarm 64,0.
- Operation temperature: da -20 a + 55 C°
- Operative homologation: EN 54/12
- Protection degree: IP 44
- Weight: Tx Unit 1,257 g, Rx Unit 1,447 g.
- Dimensions with bracket:
 

Tx	224 x 119 x 313 mm
Rx	224 x 119 x 313 mm
- Dimensions without bracket:
 

Tx	220 x 119 x 148 mm.
Rx	220 x 119 x 148 mm
- Certificate EN54 part 12 Certificate N° 0786 - CPD - 20215.



S/2-100



## DETECTORS AND CONTROL UNITS

### LINEAR DETECTORS

#### Fire and smoke linear detectors

SF-100 + INT8C cod. IL1400123

##### Fire and smoke linear detector.

- The system includes three units: Transmitting unit (TX), Receiving unit (RX), co-ordination unit (not including INT8C/24V interface module).
- The operation principle of linear detector is based on TX units to emit a beam of infrared rays. The beam runs through the zone to be monitored and radiates Receiving unit (RX). On running through monitored zone, the beam collects information about possible fire arising and carries it to RX. RX processes this information and draws from it a number of electrical signals, each corresponding to a single fire sign examination.
- Successive processing allows to diagnose the presence of smoke in monitored environment.
- On Transmitting unit there are present following leds: Power supply signalling green led. Receiving unit status repetition yellow led
- On Receiving unit there are present following leds: Power supply signalling green led. Emitted and received IR intensity level yellow led. Fire alarm red led.
- Linear detector is suitable for lengths of 5 m to 150 m.
- Maximum operative width: 15 m.
- High aligning facility.
- Brackets, for improved wall application, already included.
- Obligatory connection interface INT/8C (not included).
- Obligatory calibration instrument ADM (not included).
- Operation voltage: 24 Vdc
- Absorption in mA Tx:
 

5-15m	20,0
15-35m	21,8
35-55m	22,7
55-75m	24,0
75-100m	38,6
100-150m	65,5
- Absorption in mA Rx: Normal operation 47,7 - Fault 66,7 - Alarm 64,0.
- Operation temperature: from -20 to + 55 C°
- Operative homologation: EN 54/12
- Protection degree: IP 44
- Weight: Tx Unit 1,257 g, Rx Unit 1,447 g.
- Dimensions with bracket:
 

Tx	224 x 119 x 313 mm
Rx	224 x 119 x 313 mm
- Dimensions without bracket:
 

Tx	220 x 119 x 148 mm.
Rx	220 x 119 x 148 mm
- Certificate EN54 part 12 N° 0786 - CPD - 20215.



SF-100



## DETECTORS AND CONTROL UNITS

### LINEAR DETECTORS

#### Accessories

INT8C/24V cod. IL1010123

**Interface module allowing the connection and operation of the Tx and Rx units of smoke linear detector.**

- The module has two relays inside it: one alarm relay and one failure relay to be used for connecting the apparatus to conventional central units, or analogue or digital input modules.
- Failure relay can be either normally energised (active safety) or normally not energised.
- Facility for delaying the failure by 0 to 90 seconds through a second jumper.
- Operation principle: 24 Vdc
- Absorption with not energised out of order relay: Normal operation 16,4mA @ 24 Vdc, Alarm: 22,4mA @ 24 Vdc, Failure: 22,2mA @ 24 Vdc
- Absorption with energised out of order relay: Normal operation 25,0mA @ 24 Vdc, Alarm: 15,7mA @ 24 Vdc, Failure: 30,6mA @ 24 Vdc.
- Dimensions (hxlxp): 130 x 130 x 58 mm.



INT8C/24V

ADM cod. IL1110123

**ADM instrument, associated to an analogue tester, was designed in order to best perform the management functions of sensitivity thresholds required by the nature of environmental disturbances present in environments to be protected.**

- The use of ADM instrument is necessary for models: ES 25-1; ES 50; ES 100; S/2-100 and SF-100.
- Operation voltage: 8-12 V
- Battery down indication: < 8 V
- Typical absorption : 2 mA
- Absorption: 1.6 – 2,2 mA max
- Operation time: 300 hours
- Dimensions: 60x36x18 mm



ADM

#### ECO series reflexion linear detector

ES50 cod. SD8P00123

**Infrared ray linear smoke detector, for flush-mounting, working range: 50m**

- Consisting of ECO transmitting and receiving units and reflector with articulated joint
- EN 54 certified - part 12 N. 0786-CPD-20214
- Operating voltage: 12Vdc to 24Vdc
- Outputs: alarm relay 1A@30Vdc
- Optical failure relay 170mA@30Vcc
- Working temperature: - 20° + 50°C
- Protection: IP44
- Dimensions: 103 (H) x 103 (L) x 63 (D) mm



ES50

ES80 cod. SD9R00123

**Same as ES50 but with 80 m range.**



KATA

KATA cod. IL7500123

**Reflexion unit**

SSM cod. SP7600123

**Pair of articulated joints for TX and reflector for the detectors of ECO series.**



## DETECTORS AND CONTROL UNITS

### ASPIRATING SYSTEMS

ASD cod. SC2R00123

**Aspirating single-pipe sampling unit.**

- For PVC/ABS ø 3/4" pipe, max pipe length: 100 m. Power supply: 24Vdc, smoke detectors not included.

PICO cod. SC3R00123

**Laser aspiration smoke detector, single-pipe.**

- For PVC/ABS ø 3/4" pipe, max length: 100 m. Power supply: 24Vdc.

FIRE TRACER cod. SC4R00123

**Fire Tracer with 4 aspirating pipes, 1 detection zone.**

- For 4 aspirating pipes PVC/ABS ø 3/4" pipe sections, 50m each. Power supply: 24Vdc, complete with diaphragm/ device control, event display.

PLEASE CONTACT THE SALE NETWORK FOR ACCESSORIES



ASD



FIRE TRACER

### ACCESSORIES FOR DETECTORS CHECK

AST cod. AT7100123

**Fibreglass telescopic extension pole 6 m max**

DFS cod. RT7100123

**Smoke detector tester.**

- (DBS bottle required)

DBS cod. SD9H10123

**Smoke detector test bottle.**

DTS cod. RT7200123

**Heat detector tester.**

DRS cod. SD8H10123

**Universal tool for removing and refitting any type of detectors**



DFS



DBS

