



Allyl Chloride sensor transmitter (LEL Detection)

Model: SMART S2XX7

For zone 1, 2 (gas explosion) hazardous explosion proof areas



SMART S series allyl chloride vapour sensor transmitter is an industrial grade gas detector suitable for installation in most stringent & tough working conditions. It is designed for online, continuous measurement and monitoring of allyl chloride gas or vapour flammability or LEL level detection in ambient air or sampled gas / air.

Flammable Limits: Lower (LEL): 3.3% Upper (UEL): 11.2% v/v.

Its 10-bit microprocessor based electronic module converts these corresponding measured values to industry standard electrical signals.

The gas sensor instrument is ATEX certified with safety integrity level SIL 2, thereby suitable for installation in gas explosion, hazardous area classified Zone 1 or Zone 2 eg. Polymer manufacturing facilities, plastic industry, solvents and petrochemical plants, chemical plants etc.

It offers industry standard linear, proportional analog current output. Optionally, RS485 serial interface with Modbus RTU communication is also available. Manual addressing can be done with onboard module. The instrument is also available with or without optional onboard LCD display, potential free relay contacts and alarm LEDs.

These can be mounted on wall, ceiling, surface or duct with help of suitable mounting kit.

Transmitter enclosure is of anti-static epoxy coated metal alloy, while sensor cell is housed in stainless steel 316 enclosure with flashback arrestor with sintered filter.





Key Features:

- Catalytic bead based Pellistor sensor cell with low flash energy
- 10-bit microprocessor control unit
- Non-intrusive one-man calibration via hall effect switches
- ATEX certified explosion proof / flameproof, suitable for Zone 1, 2 gas explosion installation
- Linear, proportional analog industry standard current output
- Continuous system self-diagnosis with watch dog
- Flashback arrestor with sintered filter
- Auto Zero-point tracking to zero-point compensation
- SIL 2 HW TUV certified
- RS485 serial interface with Modbus RTU communication (optional)
- 1 or 3 relay output module (optional)
- System and alarm LED indicators (optional)
- Modbus RTU output allows instrument networking.

Application Areas / Industries:

- Solvent manufacturing
- Oil & gas, refinery
- Plastic and polymer manufacturing
- Chemical warehouse
- Resin manufacturing facility







Technical Specifications:

| Parameters | Specifications |
|---|--|
| Gas name | Allyl chloride vapour |
| Calibrated against | Ethane |
| Measuring range | 0 ~ 100 %LEL (LFL) 0 ~ 3.3% v/v |
| Sensor element technology | Pellistor with catalytic bead |
| Accuracy | ± 5% of full scale |
| Repeatability | ± 5% of full scale |
| Response time T90 | < 30 sec |
| Stabilization time | < 2 mins |
| Warm-up time | < 5 mins |
| In-built Control microprocessor unit | |
| Microprocessor type | 10 bit |
| Digital filter | Variable average of sampled measuring values |
| Watch dog | Inbuilt internal, with microprocessor status monitor and control With continuous system self-diagnosis |
| Resolution | 1024 points |
| Auto zero tracking | Zero drift compensation |
| Power supply | 12 – 24 VDC – 20% + 15% |
| Consumption at 12 VDC | 90mA (medium), 130mA (max.) |
| Analog output | 4-20mA (200 Ω), 3 - wire Linear, proportional |
| Ingress protection | IP65 weather-proof also available IP67 with weather-proof adaptor and cable gland |
| Mounting | Supplied with mounting strip <ul style="list-style-type: none"> • Wall / Column / Surface (with sensor head face downward) • Pipe / duct (with sampling kit) |
| Enclosure, material | Anti-static epoxy coated metal alloy |
| Sensor cell enclosure, material | Stainless steel 316 |
| Cable entry | 3 x NPT ¾ in |
| Earth / Ground terminal | Screw terminal |
| Weight | 1250 ~ 1550 gm |
| Max. air velocity | < 6 m / s |
| Operating pressure | 80 – 110 kPa |
| Relative humidity | 20 ~ 90% Rh / 40°C |
| Operating temperature | - 40°C ~ + 60°C |
| Storage temperature | - 25°C ~ + 60°C |

Specifications are subject to change, without prior notice.
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| Dimensions | 130 mm (L) x 180 mm (H) x 90 mm (D) |
| ATEX marking | CE 722  II 2G EEx d IIC T6 CE 722  II 3G EEx nA IIC T6 |
| Certificates | CESI 01 ATEX 053 CESI 02 ATEX 084 (performance) |
| Sensor head | CESI 01 ATEX 013U or CESI 01ATEX066U |
| System integrity level | SIL 2 HW TUV certified |
| EMC reference norms | EN50270:1999 EN61000-6-3 |
| Warranty | One year on material and bad workmanship (excluding sensor cell) (from date of supply) |
| Calibration | Non-intrusive via hall effect switches (display version) System tool kit (without display) |
| Optional features | |
| Display | 4 digits, 7.5 mm high, 7 segments |
| Visual indications | 3 x Red LEDs for Alarms 1 x yellow LED for fault 1 x green LED for power supply |
| Serial Interface output | RS485, with Modbus RTU With manual addressing |
| Relay outputs | <ul style="list-style-type: none"> 1 x potential free relay (max. 24 V AC/DC, 1A) (with or without display option) 3 x potential free relay (max. 24 V AC/DC, 1A) (without display option) tension free changeover contact 24V – 1A (non-latching relay) |

