# Polytector III
# Polytector III Pro
## Multi-Gas Detector

- Flexible multi-gas detector for simultaneous monitoring of 7 gases
- ToxAlert™ broadrange sensor to protect against unknown toxic gases
- Built-in sampling pump, no pump adapter required
- Ever ready for use after battery or sensor replacement
- Datenlogger, AutoCAL, AutoZERO, leak detection
- 360° flashlight, loud siren (99dB), vibrating alarm
- ppm, % LEL and % Vol. for combustible gases

**Worldwide Supplier of Gas Detection Solutions**

# ToxAlert™ – the broadrange sensor for additional safety
# More than 100 toxic gases extra – with only one detector!

## Standard multi-gas detectors:

- Warn of flammable, toxic gases and of oxygen deficiency.
- Provide a built-in sampling pump.
- Are small, light-weight, robust and easy to operate.

## The Polytector III:

- Additionally warns of a multitude of other toxic gases like fuel mixtures, solvents, refrigerants and many more (see chart below) - by means of broadrange **ToxAlert™** sensor!
- The DualEx sensor catalytic combustion / thermal conductivity warns of all flammable gases, not only within the LEL range but also in the high % vol. range.
- Is flexible to be used as a leak detector.
- Requires no pump adapter which could be lost.

## Protection from 100+ gases
The Polytector III monitors:
Oxygen, flammable gases and vapors and toxic gases.
The DualTox sensor $CO/H_2S$ allows mounting of an additional EC sensor.
Finally the Polytector III provides the space for a chemosorption sensor, e.g. the **ToxAlert™**-sensor.
This single detector protects you from hundreds of gases!

## ToxAlert™ - Protection from unknown gas hazards
Electrochemical sensors are used in gas detectors to warn of specific toxic gases. Over decades, these electrochemical sensors have been designed more and more for high selectivity. So there will be insufficient protection from „unknown" gases. In such cases the

**ToxAlert™** is of essential importance, since its broad detection range provides a warning of a multitude of toxic gases simultaneously.



## ToxAlert broadrange sensor - protection from the unknown
Unknown gas hazards often lurk particularly in sewer systems or in chemical plants.
Again and again gas hazards occur when toxic, acid or explosive gas and vapour mixtures may built up.

In such cases the **ToxAlert™**-sensor provides an early, reliable and safe warning.

## Increased safety
**A built-in pump** allows detection of critical gas concentrations in confined spaces before entering. Switching on the pump automatically closes the diffusion inlet. This ensures that the measurement results are not affected by ventilation and wind.
**A loud alarm** (99dB) and 360° visible **alarm lights** immediately indicate a gas hazard. For extremely noisy environments the Polytector III is available with an optional **vibrating alarm**.



Leak detection

## Common gas detectors warn of 4 or 5 gases
## The ToxAlert™-sensor protects from hundreds!
**Toxic gases, solvents, fuel mixtures (incl. kerosene and naphta) refrigerants (e.g. R22, R23, R123, R134a, R142, R143, R152a)**

| | | | | |
|---|---|---|---|---|
| Aceton | Xylene | Ethanol | Isopentane | Propane |
| Acetonnitrile | Chlorobenzene | Ethyl acetate | Isopropanol | Propanol |
| Acetylene | Chloromethane | Ethylamine | LPG | Propene |
| Acrylnitrile | Cyclohexane | Ethylene | Methane | Propine |
| Ammonia | Cyclopentane | Ethylen oxide | Methanol | Propyl acetate |
| Benzene | Dichlorobenzene | Heptane | Methyl acetate | Propylene oxide |
| Bromomethane | Dichloroethane | Hexane | Methylamine | Sulphur dioxide |
| Butadiene | Diethylether | Hydrogen | Methylethylketon | Styrene |
| Butane | Difluoroethane | Hydrogen chloride | Methylisobutylketon | Tetrahydrofurane |
| Butanol | Dimethylether | Hydrogen Cyanide | Nitrogen dioxide | Toluene |
| 2-Butanon | Dioxan | Hydrogen sulfide | Nitrogen monoxide | Trichloroethane |
| Butene | Ethandiol | Isobutane | Nonane | |
| Butyl acetate n | Ethane | Isobutanol | Octane | |
| Carbon | Ethane monoxide | Isobutyl acetate | Pentane | |

**...and many more hydrocarbons, alcohols, ketones, esters and aromatic compounds**

# Flexible, robust, attractive

**Robust design for use in harsh environments**

The rugged and small detector weighs **only 600 grams (21 oz.)**. It is dust and splash water proof as per IP64. It is designed to operate under extremely difficult conditions. A rubber boot makes the robust gas monitor **extremely resistant** to damage from falling.

**Reduced down-time**

Immediately after replacing the battery or any sensor the unit is ready for operation (1 min. warm-up time).

With the quick-charger the battery pack has its full capacity after only four hours. Down-time is therefore reduced and utilizability increased.

The **data logger** saves minimum and peak values, which can be displayed and edited on a PC.

The **large display** allows clear readings of up to 7 gases simultaneously, even under difficult conditions.

**Flexibility by smart-sensors**

The smart sensor technology allows easy exchange of each single sensor. The Polytector III recognizes the sensor type, the gas type, the detection range, the date of the previous calibration, the alarm thresholds, etc. No further adjustment is necessary.

**Easy handling**

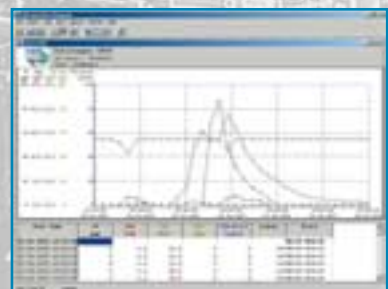The Polytector III is very user-friendly and easy to operate. The pump is activated by moving the shutter upwards. Many gas detectors need a separate pump adapter - the Polytector III features a built-in sampling pump where no parts can be lost.

**Leak detection by external leak sensor**

The **Polytetcor III Pro** combines the flexibility and functionality of a multi-gas detector with the sensitivity of a **leak detector**.

Easy readable display even on the belt without contortion. The display can be turned 180° by simply touching a key.

# Polytector III
## Technical Data

### Gases and detection ranges

**Chemosorption sensor (CS)** (CS)

| | | |
|---|---|---|
| 1. ToxAlert™-broadrange sensor for toxic gases | | 0 - 100 digits |
| 2. Methane | | 0 - 10000 ppm |

**Electrochemical sensoren** (EC)

| | | | |
|---|---|---|---|
| 3. Oxygen, 2 years | $O_2$ | 0 - 25 Vol.-% |
| 4. Hydrogen sulfide | $H_2S$ | 0 - 100 ppm |
| 5. Hydrogen sulfide | $H_2S$ | 0 - 500 ppm |
| 6. Carbon monoxide | CO | 0 - 300 ppm |
| 7. Carbon monoxide | CO | 0 - 1000 ppm |
| 8. Carbon monoxide | CO | 0 - 2000 ppm |
| 9. Hydrogen | $H_2$ | 0 - 2000 ppm |
| 10. Hydrogen | $H_2$ | 0 - 1 Vol.% |
| 11. Hydrogen | $H_2$ | 0 - 4 Vol.% |
| 12. Ammonia | $NH_3$ | 0 - 200 ppm |
| 13. Ammonia | $NH_3$ | 0 - 1000 ppm |
| 14. Nitrogen dioxide | $NO_2$ | 0 - 30 ppm |
| 15. Nitrogen dioxide | NO | 0 - 100 ppm |
| 16. Hydrogen cyanide | HCN | 0 - 50 ppm |
| 17. Hydrogen chloride | HCl | 0 - 30 ppm |
| 18. Chlorine | $Cl_2$ | 0 - 10 ppm |
| 19. Sulfur dioxide | $SO_2$ | 0 - 10 ppm |
| 20. Phosphine | $PH_3$ | 0 - 10 ppm |
| 21. Silane | $SiH_4$ | 0 - 20 ppm |
| 22. Ethylene oxide | $C_2H_4O$ | 0 - 20 ppm |
| 23. Chlorine dioxide | $ClO_2$ | 0 - 2 ppm |
| 24. Ozone | $O_3$ | 0 - 1 ppm |
| 25. Phosgene | $COCl_2$ | 0 - 1 ppm |

**Electrochemical DualTox sensor** (EC)

This allows to fit an additional EC Sensor

| | | | |
|---|---|---|---|
| 26. Hydrogen sulphide | $H_2S$ | 0 - 100 ppm |
| **and** Carbon monoxide | CO | 0 - 300 ppm |
| 27. Hydrogen sulphide | $H_2S$ | 0 - 100 ppm |
| **and** Carbon monoxide | CO | 0 - 500 ppm |

**Infrared sensor** (IR)

| | | | |
|---|---|---|---|
| 28. Carbon dioxide | $CO_2$ | 0 - 1 Vol.% |
| 29. Carbon dioxide | $CO_2$ | 0 - 5 Vol.% |
| 30. Carbon dioxide | $CO_2$ | 0 - 25 Vol.% |
| 31. Carbon dioxide | $CO_2$ | 0 - 70 Vol.% |
| 32. Propane | $C_3H_8$ | 0 - 5 Vol.% |
| 33. Propane | $C_3H_8$ | 0 - 25 Vol.% |
| 34. Propane | $C_3H_8$ | 0 - 100 Vol.% |

**Catalytic combustion sensor** (CC)

for all flammable gases, calibrated for:

| | | | |
|---|---|---|---|
| 35. Methane | $CH_4$ | 100 % UEG |
| 36. Natural gas | $CH_4 + C_nH_m$ | 100 % UEG |
| 37. Ethane | $C_2H_6$ | 100 % UEG |
| 38. Propane | $C_3H_8$ | 100 % UEG |
| 39. n-Butane | $C_4H_{10}$ | 100 % UEG |
| 40. n-Pentane | $C_5H_{12}$ | 100 % UEG |
| 41. Heptane | $C_7H_{16}$ | 100 % UEG |
| 42. Octane | $C_8H_{18}$ | 100 % UEG |
| 43. Nonane | $C_9H_{20}$ | 100 % UEG |

**Catalytic combustion / thermal conductivity** (CC/TC)

| | | | |
|---|---|---|---|
| 44. Methane | $CH_4$ | 100 % UEG |
| **and** | $CH_4$ | 100 Vol.-% |

**External leak detection sensor (Chemosorption)**

| | | |
|---|---|---|
| 45. Methane | | 0 - 10000 ppm |

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### Power supply
Metalhydride battery pack
- rechargeable
- charging time: 4 hours
- integrated charge control
- quick battery replacement

### Operational time
10 .. 30 hours, depending on fitted sensors and sampling time

### Casing
IP 64

### Display
Graphic display, automatic digit adjustment for optimal readings, indication of battery capacity, indication of gas concentration as actual value and as bar graph, zoom function, backlight illumination

### Weight
600 g

### Dimensions
77 x 139 x 44 mm (WxHxD)

### Ambient temperature
-20 ... +50°C

### Ambient pressure
800 ... 1300 hPa

### Data logger (option)
1650 data sets (i.e. a logging interval of 2 minutes allows to store data over a period of 50 hours) with measurement value and time, documentation with GfG software package.

### Gas supply
Diffusion or built-in pump (switching to pump mode closes the diffusion inlet automatically).

### Response time
5 .. 60 seconds, depending on gas

### Alarm
Visual: 360° visible alarm flash
Audible: siren, 99 dB in 30 cm distance
Vibrating alarm (option)

### EX-protection
Ex II G EEx ib IIC T4 ATEX pending
UL Class1, Division 1, Group ABCD T3C, pending

### Function test certificate pending

### Accessories
Rubber boot, stainless steel belt-clip, external leak sensor, plug-in charger, docking station

### Sensor cassettes
for 6 smart sensors.
Using DualTox sensor the following gases can be monitored::
- 3 x toxic gases (EC)
- 1 x oxygen (EC)
- 2 x flammable gases (CC and TC)
- 1 x CS (ToxAlert™ or methane)
- 1 x Infrared ($CO_2$ or flammable gases)

Docking station

**certified ATEX and DIN EN ISO 9001:2000**
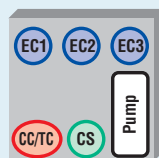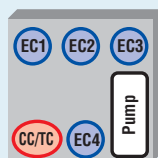
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## SMART SENSOR SYSTEM
**The sensors of each sensor-cartridge-version are interchargeable in any way, because every sensor is smart – not only the sensor-cartridges!**
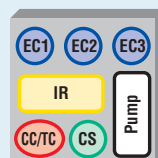
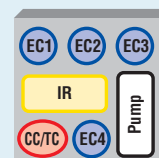### Create your individual gas-detector - 4 basic versions!

| G850 | G854 | G860 | G864 |
|---|---|---|---|
| EC1 EC2 EC3 / CC/TC CS / Pump | EC1 EC2 EC3 / CC/TC EC4 / Pump | EC1 EC2 EC3 / IR / CC/TC CS / Pump | EC1 EC2 EC3 / IR / CC/TC EC4 / Pump |
| **G850** up to 3 electro-chemical sensors, CS-Sensor, Ex-Sensor | **G854** up to 4 elektro-chemical sensors, Ex-Sensor | **G860** like G850 + Infrared-sensor for carbon dioxide or explosive gases (e. g. propane) | **G864** like G854 + Infrared-sensor for carbon dioxide or explosive gases (e. g. propane) |

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