

# DrägerSensor® PID HC

Order no. 68 13 475

| Used in          | Plug & Play | Replaceable | Guaranty             | Expected sensor life | UV lamp |
|------------------|-------------|-------------|----------------------|----------------------|---------|
| Dräger X-am 8000 | no          | yes         | 1 year <sup>1)</sup> | 2 years              | 10.6 eV |

## MARKET SEGMENTS

Chemical industry, painters, storage and use of fuels (e.g. gas stations)

## TECHNICAL SPECIFICATIONS

|                                  |                                             |         |
|----------------------------------|---------------------------------------------|---------|
| Detection limit:*                | 0.3 ppm isobutylene                         |         |
| Resolution:*                     | 0-20 ppm                                    | 100 ppb |
|                                  | > 20-50 ppm                                 | 200 ppb |
|                                  | > 50-100 ppm                                | 500 ppb |
|                                  | > 100-200 ppm                               | 1 ppm   |
|                                  | > 200-500 ppm                               | 2 ppm   |
|                                  | > 500-1.000 ppm                             | 5 ppm   |
| (valid for isobutylene)          | > 1,000-2,000 ppm                           | 10 ppm  |
| Measurement range:               | 0 to 2,000 ppm isobutylene                  |         |
| General technical specifications |                                             |         |
| Ambient conditions               |                                             |         |
| Temperature: <sup>2)</sup>       | (-20 to 60)°C (-4 to 140)°F                 |         |
| Humidity: <sup>2)</sup>          | (10 to 95)% RH                              |         |
| Pressure:                        | (700 to 1,300) hPa                          |         |
| Warm-up time:                    | 2 minutes ready for measurement (warm-up 1) |         |
|                                  | 2 minutes ready for calibration (warm-up 2) |         |

## TYPICAL MEASURING PROPERTIES FOR THE MEASUREMENT RANGE 0 TO 2,000 PPM WHEN CALIBRATED WITH ISOBUTYLENE IN AIR:

|                                      |                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Response time:                       | Diffusion mode ≤ 5 seconds (t <sub>20</sub> )                                                                                          |
|                                      | Diffusion mode ≤ 10 seconds (t <sub>90</sub> )                                                                                         |
|                                      | Pump mode ≤ 5 seconds (t <sub>20</sub> )                                                                                               |
|                                      | Pump mode ≤ 10 seconds (t <sub>90</sub> )                                                                                              |
| Precision                            |                                                                                                                                        |
| at 100 ppm isobutylene:              | ≤ ± 2% of measured value; at zero point ≤ ±0.3 ppm isobutylene                                                                         |
| Linearity error:                     | ≤ ± 5% of measured value; A calibration in the range of the expected concentration will give a higher accuracy at the measuring point. |
| Pressure effect                      | compensated                                                                                                                            |
| Effect of humidity, at 20 °C (68 °F) |                                                                                                                                        |
| (0 to 90% RH, non-condensing)        |                                                                                                                                        |
| Zero point:                          | ≤ ± 0.05 ppm isobutylene/% RH                                                                                                          |
| at 100 ppm isobutylene:              | ≤ ± 0.15 ppm isobutylene/% RH                                                                                                          |
| Test gas:                            | approx. 100 ppm i-C <sub>4</sub> H <sub>8</sub> (isobutylene)                                                                          |

\* Depends on the response factor of the measured gas

<sup>1)</sup> At a run time of max. 2,500 hours

<sup>2)</sup> Sudden temperature and humidity changes influence the measurement signal. When sudden temperature and humidity changes are expected, it is recommended to use a humidity pre-tube (81 03 531) for the measurement.

## SPECIAL CHARACTERISTICS

The PID can be used to detect numerous volatile organic compounds (VOCs). More than 80 of the VOCs most commonly used in industry are stored in its data memory. Other gases can be added to the memory on the customer's request.

## GASES STORED IN THE MEMORY

| Gas/Vapor                    | CAS no.    | Code | Measurement range |
|------------------------------|------------|------|-------------------|
| Acetaldehyde                 | 75-07-0    | Aald | 0 - 10000 ppm     |
| Acetone                      | 67-64-1    | Acet | 0 - 2000 ppm      |
| Acetophenone                 | 98-86-2    | AcPh | 0 - 2000 ppm      |
| Acrolein                     | 107-02-8   | Acro | 0 - 8000 ppm      |
| Allyl alcohol                | 107-18-6   | AlOH | 0 - 4500 ppm      |
| Allyl chloride               | 107-05-1   | AlCl | 0 - 8000 ppm      |
| alpha-Pinen                  | 2437-95-8  | aPIN | 0 - 800 ppm       |
| Ammonia                      | 7664-41-7  | NH3  | 0 - 10000 ppm     |
| Benzene                      | 71-43-2    | C6H6 | 0 - 1000 ppm      |
| 1-Bromopropane               | 106-94-5   | BrPr | 0 - 3000 ppm      |
| 1,3-Butadiene                | 106-99-0   | BTD1 | 0 - 1500 ppm      |
| 1-Butanol                    | 71-36-3    | BuOH | 0 - 9500 ppm      |
| 2-Butanol                    | 78-92-2    | 2BOH | 0 - 6500 ppm      |
| 1-Butene                     | 106-98-9   | Bute | 0 - 2000 ppm      |
| n-Butyl acetate              | 123-86-4   | Bace | 0 - 5500 ppm      |
| Carbon disulfide             | 75-15-0    | CS2  | 0 - 2000 ppm      |
| Chlorobenzene                | 108-90-7   | ClBz | 0 - 1000 ppm      |
| Cumene                       | 98-82-8    | Cume | 0 - 1500 ppm      |
| Cyclohexane                  | 110-82-7   | Chex | 0 - 2500 ppm      |
| Cyclohexanone                | 108-94-1   | CyHo | 0 - 2000 ppm      |
| 1,2-Dichlorobenzene (ortho-) | 95-50-1    | BeDi | 0 - 1500 ppm      |
| trans-1,2-Dichloroethylene   | 156-60-5   | DiCl | 0 - 900 ppm       |
| Diesel fuel                  | 68476-34-6 | Desl | 0 - 2000 ppm      |
| Dimethyl ether               | 115-10-6   | DME  | 0 - 5000 ppm      |
| N,N-Dimethylformamide        | 68-12-2    | DMF  | 0 - 2000 ppm      |
| 1,4-Dioxane                  | 123-91-1   | Diox | 0 - 2500 ppm      |
| Ethanol                      | 64-17-5    | EtOH | 0 - 10000 ppm     |
| Ethyl acetate                | 141-78-6   | Etat | 0 - 8000 ppm      |
| Ethylbenzene                 | 100-41-4   | EtBz | 0 - 1000 ppm      |
| Ethylene                     | 74-85-1    | C2H4 | 0 - 10000 ppm     |
| Ethylene oxide               | 75-21-8    | EO   | 0 - 10000 ppm     |
| Ethyl ether                  | 60-29-7    | DETH | 0 - 2000 ppm      |
| Ethyl mercaptan              | 75-08-1    | EtM  | 0 - 5000 ppm      |
| Ethyl tert-butyl ether       | 637-92-3   | ETBE | 0 - 2000 ppm      |
| 4-Ethyltoluene               | 622-96-8   | EtTo | 0 - 1000 ppm      |
| Furfural                     | 98-01-1    | Furf | 0 - 3000 ppm      |
| Gasoline                     | 8006-61-9  | Gaso | 0 - 2000 ppm      |
| n-Heptane                    | 142-82-5   | Hept | 0 - 6500 ppm      |

## GASES STORED IN THE MEMORY

| Gas/Vapor                             | CAS no.   | Code | Measurement range |
|---------------------------------------|-----------|------|-------------------|
| 1,1,1,3,3,3-Hexamethyldisilazane      | 999-97-3  | HMDS | 0 - 500 ppm       |
| n-Hexane                              | 110-54-3  | Hexa | 0 - 8000 ppm      |
| 1-Hexene                              | 592-41-6  | Hex1 | 0 - 2000 ppm      |
| Hydrogen sulfide                      | 7783-06-4 | H2S  | 0 - 8000 ppm      |
| Isobutanol                            | 78-83-1   | iBto | 0 - 10000 ppm     |
| Isobutyl acetate                      | 110-19-0  | iBAc | 0 - 6500 ppm      |
| Isobutylene                           | 115-11-7  | iBut | 0 - 2000 ppm      |
| Iso-octane                            | 540-84-1  | iOct | 0 - 2000 ppm      |
| Isoprene                              | 78-79-5   | iPre | 0 - 1500 ppm      |
| Isopropanol (IPA)                     | 67-63-0   | PrOH | 0 - 10000 ppm     |
| Isopropyl acetate                     | 108-21-4  | iPAc | 0 - 6000 ppm      |
| Isopropyl ether                       | 108-20-3  | iPEt | 0 - 2000 ppm      |
| Jet fuel                              | 8008-20-6 | JetF | 0 - 2000 ppm      |
| 2-Methoxyethanol                      | 109-86-4  | EGME | 0 - 6500 ppm      |
| Methyl acetate                        | 79-20-9   | MeAc | 0 - 10000 ppm     |
| Methyl bromide                        | 74-83-9   | MeBr | 0 - 4000 ppm      |
| 2-Methylbutane (Isopentane)           | 78-78-4   | iPen | 0 - 10000 ppm     |
| Methylcyclohexane                     | 108-87-2  | Mche | 0 - 2000 ppm      |
| Methyl ethyl ketone                   | 78-93-3   | MEK  | 0 - 2000 ppm      |
| Methyl isobutyl carbinol              | 108-11-2  | MIBC | 0 - 4000 ppm      |
| Methyl isobutyl ketone                | 108-10-1  | MiBK | 0 - 2000 ppm      |
| Methyl mercaptane                     | 74-93-1   | MeM  | 0 - 1500 ppm      |
| Methyl tert-butyl ether               | 1634-04-4 | MTBE | 0 - 2000 ppm      |
| n-Nonane                              | 111-84-2  | Nona | 0 - 3000 ppm      |
| n-Octane                              | 111-65-9  | Octa | 0 - 4000 ppm      |
| n-Pentane                             | 109-66-0  | Pent | 0 - 10000 ppm     |
| 1-Pentanol                            | 71-41-0   | PeOH | 0 - 9500 ppm      |
| Phosphine                             | 7803-51-2 | PH3  | 0 - 8000 ppm      |
| n-Propanol                            | 71-23-8   | nPOH | 0 - 10000 ppm     |
| Propyl acetate                        | 109-60-4  | PrAc | 0 - 9000 ppm      |
| Propylene                             | 115-07-1  | C3H6 | 0 - 2500 ppm      |
| Styrene                               | 100-42-5  | Styr | 0 - 800 ppm       |
| Tetrachloroethylene                   | 127-18-4  | PCE  | 0 - 1500 ppm      |
| Tetrahydrofuran                       | 109-99-9  | THF  | 0 - 4000 ppm      |
| Thiophene                             | 110-02-1  | ThPh | 0 - 700 ppm       |
| Toluene                               | 108-88-3  | Tolu | 0 - 1000 ppm      |
| Trichloroethylene                     | 79-01-6   | TCE  | 0 - 1000 ppm      |
| 1,2,4-Trimethylbenzene (Pseudocumene) | 95-63-6   | PsDo | 0 - 1000 ppm      |
| 1,3,5-Trimethylbenzene                | 108-67-8  | Mesi | 0 - 1000 ppm      |
| Vinyl acetate                         | 108-05-4  | Vac  | 0 - 2500 ppm      |
| Vinyl chloride                        | 75-01-4   | VC   | 0 - 4000 ppm      |
| Vinylidene Chloride                   | 75-35-4   | DCE  | 0 - 2000 ppm      |
| meta-Xylene                           | 108-38-3  | mXyl | 0 - 800 ppm       |
| ortho-Xylene                          | 95-47-6   | Xyol | 0 - 1000 ppm      |
| para-Xylene                           | 106-42-3  | pXyl | 0 - 1000 ppm      |

The standard gas is: Isobutylene

The response factors of the library gases are predefined and cannot be changed. For gases not included in the library, use the designated user gases VOC, VOC<sub>1</sub> to VOC<sub>9</sub>. These can be configured accordingly on a customer-specific basis.

For additional information on the gases stored in the library see data sheet 9300316 at [www.draeger.com](http://www.draeger.com) at the Dräger X-am 8000 or the PID sensors (instructions for use).