AutroPoint HC200

Infrared Hydrocarbon Gas Detector
Product datasheet

Features

- Superior optics protection system
- No undisclosed failure modes
- SIL 2 model certified to IEC 61508 by exida®
- Routine calibration not required
- Explosion-proof, stainless steel housing with tethered weather protection baffle
- Integral wiring compartment eliminates need for external junction boxes
- Built-in tri-color LED eliminates need for external display module
- Built-in optional relay package eliminates need for external relay output module
- Non-interfering HART communication capability
- Optional Intrinsically Safe HART communication port
- Optional hand-held HART communicator enables field configuration and calibration
- Optional model AV20 Universal Display for remote calibration
- Heated sapphire optics deliver long-lasting, high performance detection capability
- Immune to damage from exposure to constant background gases or to high gas concentrations
- FM, CSA, DNV/MED, DEMKO and CE (including ATEX 94/9/EC) certifications
- Certified to FM/CSA Div. 1 and DEMKO Ex d, e protection standards for maximum versatility.
- Gas performance verification by FM/CSA/ DEMKO.
- Certified factory set and calibrated to methane, propane, ethylene, or butane
- Faster response output option available

Application/Description

The AutroPoint HC200 is a diffusion-based, infrared combustible gas detector that provides continuous, fixed monitoring of flammable hydrocarbon gases from 0 to 100% Lower Flammable Limit (LFL). Standard device outputs include an electrically isolated 4-20 mA signal with HART communication protocol, and RS-485 serial communication. Serial communication protocols supported include MODBUS and ASCII. An optional relay output board with two programmable alarm relay outputs and one fault relay output is available.
An optional AutroVu Explosion-Proof Universal Display Unit Model AV20 can be used for remote calibration.



Ideally suited for protection of challenging on/offshore oil and gas facilities and other downstream hydrocarbon applications, the HC200 is globally certified for use in Class I, Divisions 1 and 2, and Zones 1 and 2 hazardous areas. In addition, the stainless steel construction, sapphire optics, and modular design all combine to deliver industrial grade hardness along with easy installation and the lowest cost of ownership available.

The AutroPoint HC200 is capable of detecting hundreds of flammable hydrocarbon gases and vapors. The detector is performance certified to methane, propane, ethylene, and butane, and is shipped from the factory set and calibrated to one of these gases. Numerous additional operating parameters are programmable via digital communication or the optional hand-held communicator.

For details regarding versions and article numbers, please contact our sales department or see our product catalogue.

SIL2 IEC 61508

Specifications

Input Voltage
24 Vdc nominal. Operating range is 18 to 32 Vdc. Ripple cannot exceed 0.5 volt P-P.

Power Consumption
4.0 watts nominal @ 24 Vdc
7.5 watts maximum @ 24 Vdc
10 watts maximum @ 32 Vdc.

Short Circuit Current
Isc: 5.4 amperes.
Isc (fuse): 3.1 amperes.
Power Supply Max Voltage: Um = 250V.

Warmup Time
Two minutes from cold power-up to normal mode; 1 hour minimum recommended.

Current Output Relays (opt.)
Linear 4-20 mA (current source/sink, isolated/ non-isolated) rated at 600 ohms maximum loop resistance @ 24 Vdc operating voltage.

Temperature Range
Operating: –55°C to +75°C (–67°F to +167°F).
Storage: –55°C to +85°C (–67°F to +185°F).

Humidity
0 to 99% R.H. (Company verified).
5 to 95% R.H. (FM/CSA/DEMKO verified).

Detection Range
0 to 100% LFL standard.
Other ranges are configurable.

Detectable Gases
Most flammable hydrocarbon vapors are detectable. HC200 is performance certified to methane, propane, ethylene, and butane, and is shipped from the factory set and calibrated to one of these gases.

For detection of other gases, configuration using HART, MODBUS, and device calibration are required.

Device Configuration
Configuration parameters include tag number, measurement range, signal processing algorithm, alarm levels, and other selectable parameters.

Response Time in Sec. (With Methane Applied and Baffle installed)

Baffle	T20 FR	T50 STD/FR*	T90 STD/FR*
Without Filter	< 1	4.5/1.0	7.1/1.5
With Filter	< 1	4.8/1.2	7.6/2.6

Testing based on EN 60079-29-1.
See manual HC200/IGB for other gases and other performance standards.
STD = Standard Response, FR = Fast Response
*STD based on 100% LFL applied, FR based on 50% LFL applied

Alarm Setpoint Range
Low Alarm: 5 to 60% LFL
High Alarm: 5 to 60% LFL.

Accuracy
±3% from 0 to 50% LFL, ±5% from 51 to 100% LFL.

Self-Diagnostic Test
All critical tests performed once per second.

Detector Housing Material
316 stainless steel (CF8M).

Conduit Entry Options
Two entries, 3/4 inch NPT or 25 mm.

Wiring Terminals
Field wiring screw terminals are UL/CSA rated for up to 14 AWG wire, and are DIN/VDE rated for 2.5 mm2 wire.

Shipping Weight (Approximate)
10.5 pounds (4.8 kg).

Dimensions
L = 236 mm, W = 132 mm, H = 117 mm

Certifications

FM & CSA:
Class I, Div. 1, Groups B, C & D (T4) with intrinsically safe output for HART communication in accordance with control drawing 007283-001.
Class I, Div. 2, Groups A, B, C & D (T3C).
Performance certified to Methane, Propane, Ethylene, & Butane in accordance with FM 6310/6320, ANSI/ISA 12.13.01, and CSA C22.2 No. 152.
Tamb = –40°C to +75°C.
Acidic atmospheres excluded.
Conduit seal not required.

CE:
Conforms to:
Low Voltage Directive: 2014/35/EU
EMC Directive: 2014/30/EU
ATEX Directive: 2014/34/EU
Marine Equipment Directive: 2014/90/EU

IEC:
IECEx UL 16.0157X
Ex de IIC T4-T5 Gb
-- OR --
Ex de [ib] IIC T4-T5 Gb (with HART communication port)
T5 (Tamb –50°C to +40°C)
T4 (Tamb –50°C to +75°C)
-- OR --
IECEx ULD 04.0002X
Ex d IIC T4-T5 Gb
-- OR --
Ex d [ib] IIC T4-T5 Gb (with HART communication port)
T5 (Tamb –55°C to +40°C)
T4 (Tamb –55°C to +75°C)
IP66/IP67.

ATEX:
CE 0539 Ex II 2 G
Ex de IIC T4-T5 Gb
-- OR --
Ex de [ib] IIC T4-T5 Gb (with HART communication port)
DEMKO 01 ATEX 129485X.
(Performance certified to Methane, Propane, Ethylene, & Butane in accordance with EN 60079-29-1.)
T5 (Tamb –50°C to +40°C)
T4 (Tamb –50°C to +75°C)
-- OR --
CE 0539 Ex II 2 G
Ex d IIC T4-T5 Gb
-- OR --
Ex d [ib] IIC T4-T5 Gb (with HART communication port)
DEMKO 01 ATEX 129485X.
(Performance certified to Methane, Propane, Ethylene, & Butane in accordance with EN 60079-29-1.)
T5 (Tamb –55°C to +40°C)
T4 (Tamb –55°C to +75°C)
IP66/IP67.

DNV:
Certificate No. A-11023

MED:
Certificate No. MED-B-5866
Certificate No. MED-D-1508

SIL:
All Safety-Certified HC200 models are certified compliant to: IEC61508: 2000
SIL 2 certified.