

POLI MULTI-GAS MONITORS FOR INERT GAS OPERATIONS



POLI



CONFINED SPACE ENTRY MONITORS

The POLI MP400P multi-gas detectors allow custom configurations for inert gas applications by use of inverted oxygen alarms and non-dispersive infrared (NDIR) LEL sensors.

Features, Functions and Benefits

Quick, one-button switching between Normal O2 Mode and Inert Mode

Inverted oxygen alarms in Inert Mode

100+ foot sampling distance using 1/8-in I.d. tubing

Wide selection of "plug-and-play" Smart Sensors (carry calibration data)

16-Hour rechargeable Li-ion battery (NDIR/PID/ECs with pump)

360-Degree LED alarm bar and Man-Down alarm; Flip screen

USB Micro charger & communications cable

Optional POLI MonoDock station for automated bump test and calibration

6 Months continuous datalogging

Durable double shot outer case

Wireless team communication available (see mSquad & mPlatoon datasheets)



Inert Mode Icon on POLI Display



POLI MonoDock

MP400P Inert Multi-Gas Detectors

While typical oxygen low alarms trigger when O2 concentrations are below breathing levels near 20.9%, inverted alarms trigger when O2 levels are above the low or high alarm limits (default at 4% and 5%), and thus are in alarm in breathable air. A simple one-button operation allows switching between Normal O2 Mode and Inert Gas Mode. Because catalytic combustion LEL sensors are not functional without O2 present, NDIR sensors are used for inert gas applications, as these sensors do not require oxygen. The built-in pump allows remote sampling from 100 feet or more using 1/8" i.d. tubing. Other sensor options include photo-ionization detector (PID) for ppm level volatile organic compounds (VOCs), CO2 by NDIR, and a full range of electrochemical (EC) toxic gas sensors including carbon monoxide (CO), hydrogen sulfide (H2S), ammonia (NH3), hydrogen cyanide (HCN), hydrogen (H2), sulfur dioxide (SO2), and others. The MP400P has rugged construction and easy-to-learn 2-button operation. The unique Man-Down alarm feature notifies team workers wirelessly if a user becomes incapacitated.



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***Caution!** NDIR does not detect hydrogen explosivity!
 € 200 ppm deadband
 † 100 ppm deadband
 ‡ See TA Note 4 for all sensor specifications



Sensor Specifications

Gas		Range	Resolution
PID		0-200 ppm 0-2000 ppm 0-10000 ppm	0.01 ppm 0.1 ppm 1 ppm
Oxygen (O2)	Lead Wool Lead-Free	0-30%Vol 0-30%Vol	0.1%Vol 0.1%Vol
NDIR Methane (LEL%)		0-100%LEL	1%LEL*
NDIR Methane (Vol%)		0-100%Vol	0.1%Vol*
Dual-Range LEL%/Vol%		0-100%Vol	1%LEL*
NDIR Dual-gas	CH4	0-100% LEL	1%LEL*
Methane + CO2	CO2	0-50000 ppm	10 ppm€
NDIR Bio-gas	CH4	0-100%VOL	1%VOL
Methane + CO2	CO2	0-100%VOL	1%VOL
CO2 (Carbon Dioxide)		0-50000 ppm	10 ppm€
CO (Carbon Monoxide)		0-1000 ppm	1 ppm
H2S (Hydrogen Sulfide)		0-100 ppm 0-1000 ppm	0.1 ppm 1 ppm
CO + H2S	CO H2S	0-500 ppm 0-200 ppm	1 ppm 0.1 ppm
SO2 + H2S	SO2 H2S	0-20 ppm 0-100 ppm	0.1 ppm 0.1 ppm
NH3 (Ammonia)		0-100 ppm 0-500 ppm	1 ppm 1 ppm
Cl2 (Chlorine)		0-50 ppm	0.1 ppm
ClO2 (Chlorine Dioxide)		0-1 ppm	0.01 ppm
H2 (Hydrogen)		0-1000 ppm	1 ppm
HCl (Hydrogen Chloride)		0-15 ppm	0.1 ppm
HF (Hydrogen Fluoride)		0-20 ppm	0.1 ppm
HCN (Hydrogen Cyanide)		0-100 ppm	0.1 ppm
NO (Nitric Oxide)		0-250 ppm	1 ppm
NO2 (Nitrogen Dioxide)		0-20 ppm	0.1 ppm
N2O (Nitrous Oxide)		0-1000 ppm	10 ppm†
PH3 (Phosphine)		0-20 ppm 0-1000 ppm	0.01 ppm 1 ppm
SO2 (Sulfur Dioxide)		0-20 ppm 0-100 ppm	0.1 ppm 0.1 ppm
ETO (Ethylene Oxide)		0-100 ppm	0.1 ppm
CH3SH (Methyl Mercaptan)		0-10 ppm	0.1 ppm
THT (Tetrahydrothiophene)		0-40 ppm	0.1 ppm

Detector Specifications

Size	5.74 x 3.31 x 1.65 in (140 x 84 x 42 mm)
Weight	15.5 oz (435 g)
Sensors	About 30 interchangeable and field-replaceable sensors including PID for VOCs, EC for Toxic and O2, and NDIR for LEL%, Vol% & CO2
Response Time (t90)	15 seconds (CO/H2S/O2) Others vary – see TA Note 4 at www.mpowerinc.com
Battery	Rechargeable Li-ion pack: 16 hours in diffusion mode, 12 hours with pump
Direct Readout	- Real-time reading of gas concentration - PID measurement gas and correction factor - Visual compliance indicator - Battery status - Datalogging on/off - STEL, TWA, peak and minimum values - Man-Down alarm on/off
Display	128 x 128 graphical LCD, 1.77 x 1.73 in (45 x 44 mm), with LED backlight for enhanced readability. Automatic screen "flip" feature
Keypad	2 Operation keys
Sampling	Built-in pump (MP400P) draws 100 feet using 1/8" i.d. tubing

Calibration	Manual calibration or automated using POLI Docking Box
Alarms	- Audible (95 dB @ 30 cm) - Visual (flashing bright red LEDs) - Vibration - On-screen indication of alarm conditions - Man-Down alarm with pre-alarm - Panic Alarm (manual)
Datalogging	Continuous datalogging (6 months for 4 sensors at 1-minute intervals, 24 hours/day and 7 days/week)
Charging and Communication	Charging, data download, instrument setup and firmware upgrades on PC or laptop via PC comm, cradle, travel charger, or docking station
Temperature	-4° to 122°F (-20° to 50°C)
Humidity	0% to 95% Relative humidity (non-condensing)
IP Rating	IP-65 (pump versions); IP-67 (diffusion versions)
Safety Certifications	- UL US Class I, Div 1, Group ABCD T4, -20°C ≤ Tamb ≤ +50°C - IECEX Ex ia IIC T4 Ga - ATEX II 1G Ex ia IIC T4 Ga - CE European Conformity
EMC/RFI	EMC directive: 2014/30/EU
Warranty	2 Years on instruments 2 Years on sensors for LEL, LEL/Vol, O2, CO, CO2, H2S, SO2, HCN, NO, NO2, and PH3 1 Year on other sensors

* Due to ongoing research and product improvement, specifications are subject to change without notice *