POLI MP400/MP400P

mPower Electronics
Making Powerful Senses
1-866-mPower7

Confined Space Entry Monitors

The POLI multi-gas meters offer 4-gas monitoring of toxic gases, oxygen (O_2), combustibles (LEL), carbon dioxide (CO_2) and volatile organic compounds (VOCs). The POLI MP400P is an advanced model with built-in pump that allows a full selection of sensors for a wide range of applications, including Confined Space Entry, while the POLI MP400 is a basic, 4-gas diffusion detector for worker safety at hazardous locations. Smart sensors carry calibration and ID information with them for quick exchange in the field during Hazmat response. Specific sensors include electrochemical (EC) for carbon monoxide (CO), hydrogen sulfide (H_2S), ammonia (NH_3), hydrogen cyanide (HCN), hydrogen chloride (HCl), chlorine (Cl_2), chlorine dioxide (ClO_2), nitric oxide (NO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ethylene oxide, methyl mercaptan, and others. Also available are pellistor for LEL level combustibles, non-dispersive infrared (NDIR) for Vol% level CO_2 or methane, and photo-ionization detector (PID) for ppm level VOCs. Use of combination CO/H_2S or SO_2/H_2S and CH_4/CO_2 sensors allows up to 6 gas measurements in a single instrument. The MP400/400P 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.

Features, Functions and Benefits

POLI MonoDock

- Wide selection of “plug-and-play” Smart Sensors (carry calibration data)
- 4 Sensor slots for up to 6 gas measurements using combination sensor
- 16-Hour rechargeable Li-ion battery
- Pump-off switch and low-power sensor options save battery for longer operation
- 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 remote team communication available (see mSquad & mPlatoon datasheets)
- Mobile App for POLI simulation and training in smartphone or tablet

POLI Specifications

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	Over 30 interchangeable and field-replaceable sensors including PID for VOCs, EC for Toxic and O_2, Pellistor for LEL, and NDIR for LEL, Vol% & CO_2
Response Time (t_{90})	• 15 seconds (LEL/CO/H_2S/O_2) • 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	Bulit-in pump (MP400P) or diffusion (MP400)
Calibration	Manual calibration or automated using POLI Docking Box. CaliCase option allows automatic bump test and calibration on up to 4 units simultaneously
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 CaliCase.
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	Class I, Div 1, Group ABCD T4, -20°C ≤ T_{amb} ≤ +50°C **IECEx** Ex ia IIC T4 Ga ATEX Ex 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, O_2, CO, CO_2, H_2S, SO_2, HCN, NO, NO_2, and PH_3 • 1 Year on other sensors

Sensor Options‡

Sensor	Range	Resolution
PID[P]	0-200 ppm 0-2000 ppm 0-10000 ppm	0.01 ppm 0.1 ppm 1 ppm
Oxygen (O_2) Lead Wool **Lead-Free**	0-30%Vol 0-30%Vol	0.1%Vol 0.1%Vol
Combustibles (LEL%)	0-100%LEL	0.1%/1%LEL
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 Methane + CO_2 CH_4 CO_2	0-100%LEL 0-50000 ppm	1%LEL 100 ppm
NDIR Bio-gas* Methane + CO_2 CH_4 CO_2	0-100%VOL 0-100%VOL	1%VOL 1%VOL
CO_2 (Carbon Dioxide)	0-50000 ppm	100 ppm
CO (Carbon Monoxide)	0-1000 ppm	1 ppm
H_2S (Hydrogen Sulfide)	0-100 ppm 0-1000 ppm	0.1 ppm 1 ppm
CO + H_2S CO H_2S	0-500 ppm 0-200 ppm	1 ppm 0.1 ppm
SO_2 + H_2S SO_2 H_2S	0-20 ppm 0-100 ppm	0.1 ppm 0.1 ppm
NH_3 (Ammonia)[P]	0-100 ppm 0-500 ppm	1 ppm 1 ppm
Cl_2 (Chlorine)[P]	0-50 ppm	0.1 ppm
ClO_2 (Chlorine Dioxide)[P]	0-1 ppm	0.01 ppm
$COCl_2$ (Phosgene)[P]	0-1 ppm	0.01 ppm
H_2 (Hydrogen)	0-1000 ppm	1 ppm
HCl (Hydrogen Chloride)[P]	0-15 ppm	0.1 ppm
HF* (Hydrogen Fluoride)[P]	0-20 ppm	0.1 ppm
HCN (Hydrogen Cyanide)[P]	0-100 ppm	0.1 ppm
NO (Nitric Oxide)	0-250 ppm	1 ppm
NO_2 (Nitrogen Dioxide)[P]	0-20 ppm	0.1 ppm
N_2O (Nitrous Oxide)	0-1000 ppm	10 ppm†
PH_3 (Phosphine)	0-20 ppm 0-1000 ppm	0.01 ppm 1 ppm
SO_2 (Sulfur Dioxide)	0-20 ppm 0-100 ppm	0.1 ppm 0.1 ppm
C_2H_4O (Acetaldehyde)[P]	0-20 ppm	0.1 ppm
ETO (Ethylene Oxide)[P]	0-100 ppm	0.1 ppm
CH_3SH (Methyl Mercaptan)	0-10 ppm	0.1 ppm
THT (Tetrahydrothiophene)[P]	0-40 ppm	0.1 ppm

[P] Use in pumped models is strongly preferred * Check availability
† 100 ppm deadband ‡See TA Note 4 for all sensor specifications

Android iOS

Scan 2-D barcode to find **POLI Training App** on a mobile device App store and simulate all functions of an actual POLI.

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