M SQUAD

Mobile Wireless Multi-Gas Team Warning System

MP400S   MP400S   MP400S   MP400S

The mSquad System is a quickly-deployable set of mobile multi-gas meters that communicate wirelessly to a Squad leader up to 0.8 km (0.5 miles) distant.

The system is ideal for Hazmat Response, firefighters, temporary venue protection, etc. An mSquad consists of one Head monitor (MP400H) and up to 7 Soldier monitors (MP400S) that communicate with each other.

Each 4- or 5-gas monitor has options for a full range of sensors for toxic gases, oxygen (O_2), combustibles (LEL) and carbon dioxide (CO_2). The MP400S can also have a PID for volatile organic compounds (VOCS).

In addition to high gas concentration alarms, all Squad units receive any Man-Down alarms to notify them remotely of a worker in distress. All the Squad monitors are Class I Division I certified to operate in hazardous zones.

The entire mSquad is mobile, running on batteries for up to 12 hours. The MP400S and MP400H have rugged construction and easy-to-learn 2-button operation.
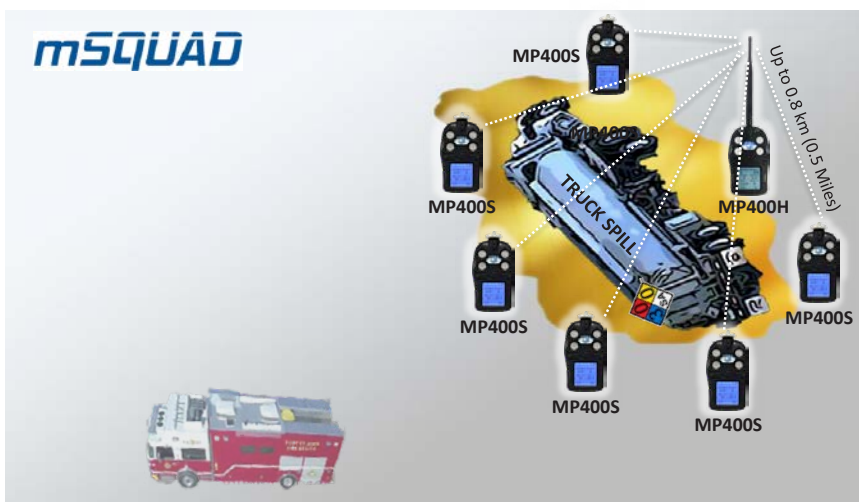
MP400H

KEY FEATURES

- **Remote, wireless real-time readings and alarms including Man-down**
- **Up to 8 remote 4- or 5-gas monitors**
- **Up to 0.8 km (0.5 miles) distance to Squad Head**
- **All mSquad units alarm if any one unit has an alarm condition**
- **Mobile system operation**
- **• 12-hour continuous operation on single Li-ion battery charge.**
- **USB Micro cable for battery charging and direct PC communication**
- **Wide selection of sensor types**

MP400S

MP400S

TRUCK SPILL

Up to 0.8 km (0.5 Miles)

MP400S

MP400H

MP400S

MP400S

MP400S

MP400S

mSQUAD

- Mobile, Local-area monitoring; local Alarm and Man-Down warnings
- MP400H communicates with up to 7 MP400S Monitors
- Firmware included at no extra fee

SENSOR OPTIONS

Sensor		Range	Resolution
PID		"0-200 ppm 0-2000 ppm"	"0.01 ppm 0.1 ppm"
Oxygen (O₂)	Lead Wool Lead-Free	"0-30%Vol 0-30%Vol"	"0.1%Vol 0.1%Vol"
Combustibles (LEL%)		0-100%LEL	1%LEL
Hydrocarbons (Vol%)		0-100%Vol	0.1%Vol
Dual-Range LEL%/Vol%		0-100%Vol	1%LEL
CO₂ (Carbon Dioxide)		0-50000 ppm	100 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
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"
C₂H₄O (Acetaldehyde)		0-20 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

Typical Battery Run Times

Sensor Configuration	Monitor	Pump	Time
NDIR LEL/VOL/O₂/CO/H₂S	MP400H	None	36 hr
	MP400S	Off	36 hr
	MP400S	On	24 hr
NDIR LEL/VOL/PID/O₂/CO+H₂S	MP400H	None	20 hr
	MP400S	Off	20 hr
	MP400S	On	15 hr
Pellistor LEL/O₂/CO/H₂S	MP400H	None	12 hr
	MP400S	Off	12 hr
	MP400S	On	10 hr
Pellistor LEL/PID/O₂/CO+H₂S	MP400H	None	10 hr
	MP400S	Off	10 hr
	MP400S	On	8 hr

M SQUAD

SPECIFICATIONS Specifications subject to change without notice

MP400S AND MP400H

Size	5.7 x 3.3 x 1.7 in (140 x 84 x 42 mm) w/o Antenna
Weight	15.5 oz (435 g)
Sensors	Interchangeable and field-replceable: PID for VOCs (MP400S only), EC for Toxic & O2, Pellistor for LEL, and NDIR for LEL, Vol% & CO2
Response time (t90)	• 15 s (LEL/CO/H2S/O2) MP400S • 20 s (LEL/CO/H2S/O2) MP400H • Others vary up to 120 s
Sampling	MP400S - Internal pump; MP400H - Diffusion
Battery	8-36 hr (depending on sensors and pump installed)
Direct Readout	• Real-time reading of gas concentration • PID measurement gas and correction factor, • Battery status • 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 and auto flip screen
Range	0.8 km (1/2 mile) between MP400H and MP400S
Frequency	ISM band (902-928 MHz) FCC Part 15 approved
Calibration	Zero and span calibration. Single or multiple sen- sor simultaneous calibration settings
Monitors	Up to 8 per mSquad (1 MP400H plus 7 MP400S)
Alarms	• Audible (95 dB @ 30 cm) • Visual (flashing bright red LEDs) • Vibration • On-screen indication of alarm conditions • Man-Down alarm and manual Panic alarm
Wireless Alarm Notification	Alarm on any monitor sent to all others in mSquad for 5 seconds, then remains on at MP400H
Datalogging	Continuous datalogging (6 months for 4 sensors at 1-minute intervals, 24 hours/day and 7 days/week)
Direct PC Comm and Charging	USB cable for charging, data download, instrument setup and firmware upgrades on PC or 100-240V AC charger, or CaliCase.
Temperature	-4° to 122°F (-20° to 50°C)
Humidity	0% to 95% Relative humidity (non-condensing)
IP Rating	IP-65 MP400S (pump); IP-67 MP400H (diffusion)

Safety Certifications	Class I, Div 1, Group ABCD T4, -20°C ≤ Tamb ≤ +50°C IECEx Ex ia IIC T4 Ga II 1G Ex ia IIC T4 Ga European Conformity
EMC/RFI	EMC directive: 2014/30/EU
Warranty	• 2 Years on instruments • 2 Years on sensors for pellister LEL, and O2, CO, H2S, SO2, HCN, NO, NO2, and PH3 EC sensors • 1 Year on other sensors