

# GSM-60

## Gas Sampling Monitor, with Internal Pump and Sensors Also Accepts Additional Inputs from Remote Sensor/Transmitters

Designed for monitoring ductwork, tank headspaces, scrubber exhausts, etc.

The GSM-60 is a versatile instrument, which, in addition to having an internal sampling pump and sensors, can also accept inputs from remote gas sensor/transmitters. The system can be custom configured to monitor a variety of conditions, including VOCs, CO, CO<sub>2</sub>, oxygen, as well as many toxic and other gases. The instrument has a user-friendly interface for all maintenance and operation functions, and it is protected by a compact and durable enclosure for process environments. Applications include: medical, pharmaceutical, aerospace and process manufacturing industries in general.



**GSM-60**  
showing monitor only,  
with internal sensors

### FEATURES

- Many Instrument Configuration Options Available for VOCs, Oxygen, H<sub>2</sub>, CO<sub>2</sub>, CO, and many Other Toxic Gases
- Internal Pump and Sensors for Monitoring Scrubber Exhaust, Tank Headspaces, Ductwork, or other Enclosed Spaces, plus the Capability of Ambient Air Monitoring with Remote Sensor/Transmitters
- Monitors Up to 4 Gases with a Combination of Internal Sensors and Remote Sensor/Transmitters
- Designed for use in Industrial, Aerospace, Medical, Pharmaceutical, Semiconductor, and General Process Applications
- Programmable Relay Contacts
- Adjustable Alarm Points
- Large Easy-to-Read Display
- RS-232/RS-485 Modbus Communication
- 4-20 mA Inputs and Outputs
- Can be Configured on Request for Reactive Gases, including O<sub>3</sub>, HF, Cl<sub>2</sub>, etc.

### TABLE 1 SENSOR SPECIFICATIONS

Gas (1)	Sensor Type (1)	Sensor (2) Location	Typical Range (3)	Display Resolution	Example (4) Low, High (5) Alarm Point LEDs	Relay (6) Alarm Points	Life (7)	Temp °C (8)	Response Time t <sub>90</sub>	Optional Range (3)	Optional Display Resolution
VOCs	PID	Internal (10)	0-100 ppm	0.1 ppm	10, 20 ppm	↑ Specify When Ordering User Programmable ↓	60	0° to 40°	30 sec	0-2000 ppm	1 ppm
Dew Point	TFP	Internal (10)	-112° to 68°F	1°F	-40°, +39°F		60	0° to 25°	10 sec	-----	-----
N <sub>2</sub> O	IR	Internal (10)	0-2000 ppm	20 ppm	100, 500 ppm		60	-10° to +50°	30 sec	-----	-----
HC	IR	↑ INTERNAL (10) or REMOTE (11) ↓	0-100% LEL	1% LEL (9)	10, 20% LEL		60	-10° to +50°	30 sec	0-100% by Vol (9)	1% by Vol
HC/VOCs	MOS		0-500 ppm	1 ppm	100, 200 ppm		48	-10° to +50°	180 sec	0-100% LEL (9)	1% LEL
CO <sub>2</sub>	IR		0-5000 ppm	10 ppm	1000, 2000 ppm		60	-10° to +40°	30 sec	0-100% by Vol (9)	1% by Vol
O <sub>2</sub>	EC		0-30% by Vol	0.1% by Vol	19.5%, 23.5% by Vol		18	-10° to +40°	15 sec	0-100% by Vol	1% by Vol
CO	EC		0-500 ppm	1 ppm	50, 200 ppm		30	-10° to +40°	30 sec	0-1000 ppm	1 ppm
NH <sub>3</sub>	EC		0-100 ppm	1 ppm	25, 75 ppm		24	-10° to +40°	60 sec	0-1000 ppm	1 ppm
SO <sub>2</sub>	EC		0-30 ppm	0.1 ppm	2, 10 ppm		30	-10° to +40°	35 sec	-----	-----
H <sub>2</sub>	EC		0-2000 ppm	1 ppm	200, 1000 ppm		30	-10° to +40°	60 sec	0-4% by Vol (9)	0.01% by Vol
H <sub>2</sub> S	EC		0-100 ppm	1 ppm	10, 50 ppm	30	-10° to +40°	30 sec	0-30 ppm	0.1 ppm	
NO	EC		0-100 ppm	1 ppm	25, 75 ppm	30	-10° to +40°	20 sec	-----	-----	
NO <sub>2</sub>	EC		0-30 ppm	0.1 ppm	3, 10 ppm	30	-10° to +40°	30 sec	-----	-----	
ETO	EC	0-10 ppm	0.1 ppm	3, 9 ppm	24	-10° to +40°	120 sec	-----	-----		

#### NOTES FOR TABLE 1:

- (1) See TABLE 2 for nomenclature, symbols and abbreviations used.
- (2) See TABLE 3 for maximum quantity and combinations.
- (3) Examples of typical ranges. Other ranges may be available on request.
- (4) Examples of typical alarm points. Other alarm points available on request.
- (5) High and Low alarm points are user programmable.
- (6) See TABLE 4 for gas alarm relay programmable configurations.
- (7) Typical sensor life in months.
- (8) Maximum temperature range in degrees C. External sensors might exceed specified range.
- (9) Internal sensors are not intrinsically safe or explosionproof.
- (10) Internal sensors for monitoring compressed air lines.
- (11) Contact ENMET for information on remote gas sensor/transmitters.

### TABLE 2

#### GAS/GAS GROUP

Volatile Organic Compounds (VOCs)  
Dew Point (DP)  
Nitrous oxide (N<sub>2</sub>O)  
Hydrocarbons (HC)  
Organic solvents (VOCs/HC)  
Carbon dioxide (CO<sub>2</sub>)  
Inorganics (O<sub>2</sub>, CO, etc.)  
Ethylene oxide (ETO)

#### SENSOR TYPE

Photoionization Detector (PID)  
Thin-film polymer (TFP)  
Non-dispersive infrared (NDIR, IR)  
Non-dispersive infrared (NDIR, IR)  
Metal oxide semiconductor (MOS)  
Non-dispersive infrared (NDIR, IR)  
Electrochemical (EC) cell  
Electrochemical (EC) cell

# GSM-60 Gas Sampling Monitor

## GENERAL SPECIFICATIONS

**Display:** 2 line, 16 character, dot matrix LCD  
**Alarms:** Visual: LEDs, Audible: piezo electric  
**Horn:** 95 dB at 2 feet  
**Alarm Relays:** 5 programmable gas relays plus fault. All relays are programmable latching or non-latching, dry SPDT, 10 amps (resistive load only) at 110 VAC.  
**Operating Power:** 100 to 240 VAC and/or 12 VDC, 15 Watts  
**Flow Rate:** 1 Lpm (pump/internal sensors)  
**Sample Inlet Connection:** Female quick release, supplied with male quick release for 1/4" I.D. tubing. Tubing available from ENMET on request  
**Enclosure:** Thermoplastic box with clear, hinged front cover, designed for NEMA 12 and 4X  
**Size:** 10.5"H x 8.5"W x 7.8"D  
**Weight:** 9 lbs.

**NOTE:** Loss of primary power renders continuous gas monitors inoperative. Contact factory for specifications and pricing for backup battery systems compatible with ENMET monitors.

## TABLE 3 SENSOR & SENSOR/TRANSMITTER LOCATION & QUANTITY

(SEE TABLE 2 FOR ABBREVIATIONS USED)

GSM-60 can be configured with up to a total combination of 4 internal sensors or external sensor/transmitters as follows:

- A.) INTERNAL SENSORS (and/or B):**  
 Any combination of up to 4 of the following internal sensor types:  
 1 each TFP, 1 each PID, 1 each IR, 1 each MOS, 2 each EC
- B.) EXTERNAL SENSOR/TRANSMITTERS\*:**  
 Any combination of up to 3 (maximum of 2 if monitor includes dew point) of the following types of 4-20 mA sensor/transmitters: IR (CO<sub>2</sub>, HC), MOS, EC
- Notes: 1). The internal dew point sensor utilizes one of the 4-20 mA inputs, so if the monitor includes dew point, the maximum external 4-20 mA sensor/transmitter is limited to 2.  
 2). The maximum total combination of internal sensors and external sensor/transmitters is 4.

\*Contact ENMET for information on available remote gas sensor/transmitters

## EXAMPLES

### INTERNAL SENSORS

- 1.) TFP PID
- 2.) TFP PID EC EC
- 3.) TFP PID MOS IR

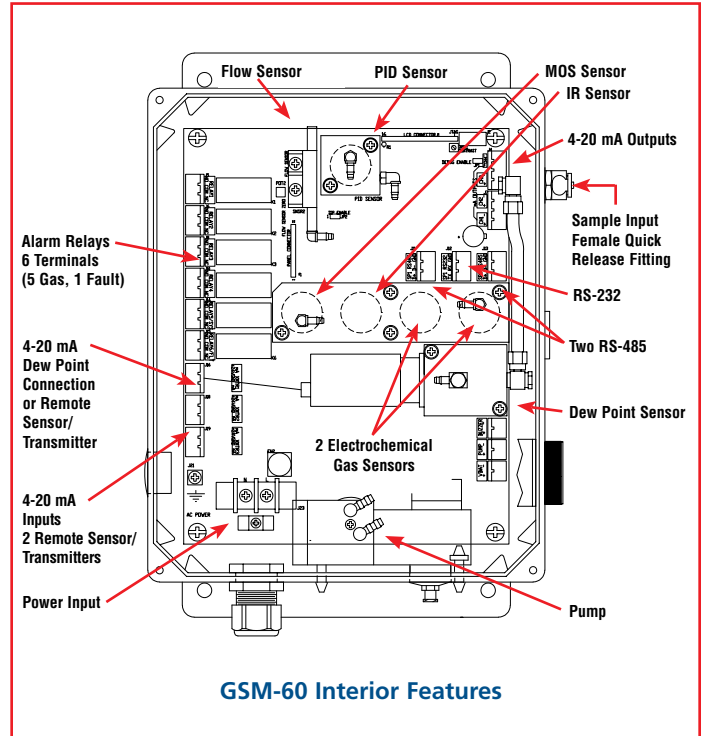
### EXTERNAL SENSOR/TRANS

- 1.) EC EC EC
- 2.) MOS IR EC
- 3.) MOS MOS IR

### COMBINATION INTERNAL & EXTERNAL

- 1.) TFP (internal dew point) +2 (external) EC
- 2.) PID (internal) +3 (external) MOS
- 3.) EC & PID (internal) + IR & EC (external)

**NOTE:** GSM-60 also has two RS-485 modbus connections, one Master (input) and one Slave (output), for digital communications.



## TABLE 4 PROGRAMMABLE ALARM RELAYS

GSM-60 has 5 gas alarm relays and 1 fault relay. The gas alarm relays are completely user programmable. The instrument has the potential of a maximum of 4 sensors (channels), with 2 alarms (Low, High) per channel.

TYPICAL 4-CHANNEL			TYPICAL 2-CHANNEL		
CH 1	ALARM 1	RELAY 1	CH 1	ALARM 1	RELAY 1
CH 2	ALARM 1	RELAY 2	CH 1	ALARM 2	RELAY 2
CH 3	ALARM 1	RELAY 3	CH 2	ALARM 1	RELAY 3
CH 4	ALARM 1	RELAY 4	CH 2	ALARM 2	RELAY 4
CH 1-4	ALARM 2	RELAY 5	CH 1-2	ALARM 2	RELAY 5

## ORDERING INFORMATION

See Price List

**NOTE:** Contact ENMET for information on our SDS-97D, EX-5150-MOS & other remote sensor/transmitters, ProAir 2200, MedAir 2200, ISA-300RAL and related products.

