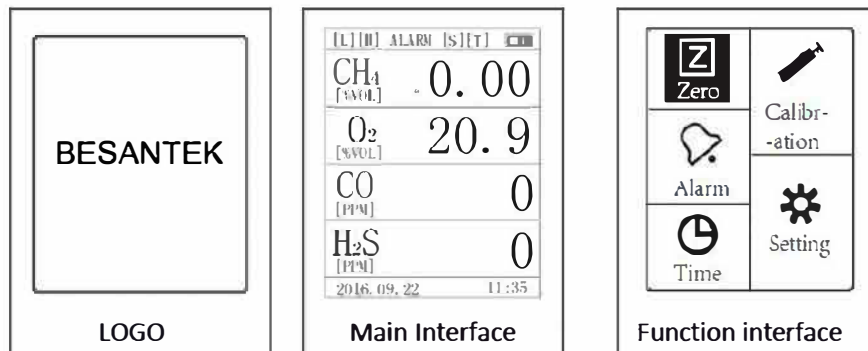


BST-MG08/09 Multi-gas Detecting Alarm

Manual Instruction

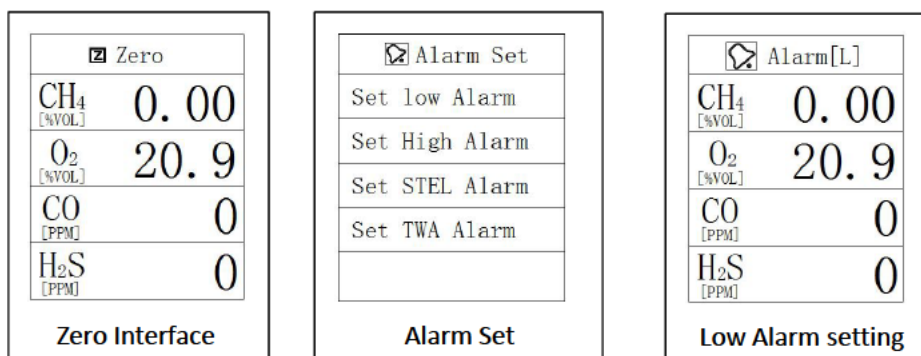
- Application:** This product is designed to ensure safety for users who work in dangerous places. It's used for detecting CO, O₂, H₂S, CH₄ simultaneously and alarm users by light, sound and vibration. This device is portable, anti-explosion and intrinsically safe.
- Features:**
 - Measured gases: Combustible Gas(LEL/CH₄), Oxygen(O₂), Carbon Monoxide(CO), and Hydrogen Sulfide(H₂S). Contact manufacturer for other gas combinations.
 - It will alarm users by sound, vibration, and light with different intensity if actual concentration is higher or lower than preset alarm points.
- Operation:**
 - 4 buttons included. On/Off button; OK button; Up button; Down button
 - Long press On/Off button to activate the device. It will show below information in turn:
 - Product brand
 - Low Alarm [L]
 - High Alarm [H]
 - STEL Alarm [S]
 - TWA Alarm [T]
 - Preset Calibration Value
 - Product number and next calibrate date, 30 seconds countdown
 - Auto Zero option



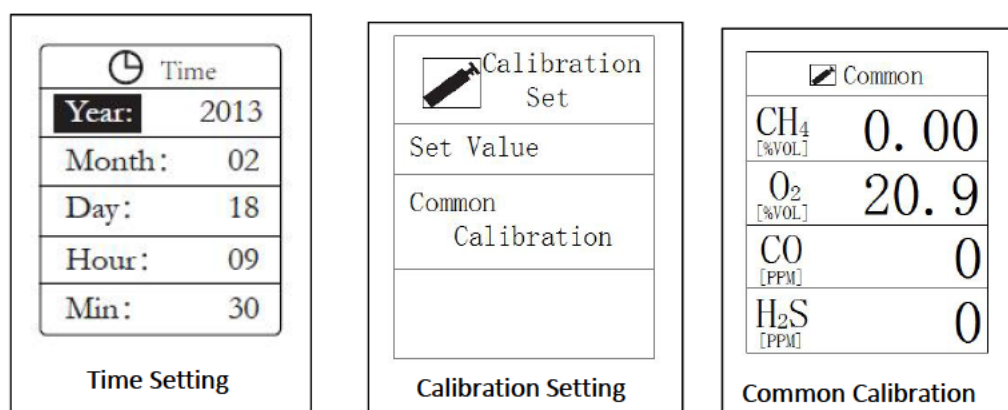
- In auto zero option, after seeing "Adjust Zero?", long press "OK" button to zero all sensors, short press "" button to exit. When the device is zeroed in unfresh air, the system will zero itself when the device is back to fresh air, no need to worry about the accuracy.
- In main interface, it shows 4 alarm icons on top area: [L], [H], [S], [T], if there is any alarm, the corresponding icon will turn red. Short press "" to switch among STEL, TWA, PEAK, and MIN. No operation for 30 seconds will bring it back to main interface.
- Long press "OK" button to enter function interface.

6. In function interface, short press “▲” or “▼” to select function, then short press “OK” button to enter corresponding function.
7. In zero interface, short press “▲” or “▼” to select gas, long press “OK” button, the background of selected gas will turn red, long press “OK” button again to complete the operation with display “set OK”. If there is no “set OK” showed, it means operation is failed. Short press “⏏” to exit.

Notice: Use 100%vol nitrogen gas to zero oxygen sensor, for other sensors, it can be done in fresh air.



8. In alarm interface, short press “▲” or “▼” to select among “Set Low Alarm”, “Set High Alarm”, “Set STEL Alarm”, and “Set TWA Alarm”. Short press “OK” button to enter each setting “Alarm[L]”, “Alarm[H]”, “STEL[S]”, “TWA[T]”, short press “▲” or “▼” to set the value, long press “OK” button to complete the operation with display “set OK”. Short press “⏏” to exit.
9. In time setting interface, short press “OK” button to select “Year”, “Month”, “Day”, “Hour”, “Min”, then press “▲” or “▼” to adjust the value. Long press “OK” button to complete this operation with display of “Set OK”. Short press “⏏” to exit.



10. In calibration setting interface, short press “▲” or “▼” to select between “Set Value” and “Common Calibration”
 - A. “Set Value”: user should input available calibration gas concentration here, short press “OK” button to select among gases and short press “▲” or “▼” to adjust gas values, long press “OK” button to complete this setting with display of “Set OK”.

Important: user should make this setting before following operations.

- B. In “Common Calibration” interface, short press “▲” or “▼” to select gas, long press “OK” button, the background of selected gas will turn red, connect calibration gas and after the value is stable, long press “OK” button to complete this operation with display of “Set OK”. Short press “⏻” to exit.

Notice:

- a. Before calibration, activate this device for at least 6 minutes to allow it run stably
 - b. When the device is alarming for low power, stop calibration and charge it right away
 - c. Calibration gas must be standard gas used for calibration purpose
 - d. Zero sensors firstly before calibration
 - e. Make sure gas flow is stable before connecting calibration gas, calibration gas flow for CH4, CO, O2 is 200ml/min, 300ml/min for H2S.
 - f. Suggested calibration gases are as following:
CH4 1.00%vol, CO 500ppm, H2S 50ppm, oxygen can be calibrated in fresh air
11. In setting interface, short press “▲” or “▼” to select among “CH4”, “LEL”, “PPM”, “MG/m³”, “Allow Calibration”, “√” means item is selected. Long press “OK” button to select and confirm. Short press “⏻” to exit.

Important: User can't enter calibration interface without choosing “Allow Calibration”

4. Technical Parameter:

Technical Specification	Parameter		
Measured gas	Methane(CH4), Oxygen(O2), Carbon Monoxide(CO), Hydrogen Sulfide(H2S)		
Methane (CH4)			
Measurement range	(0.00~5.00)%vol		
Measurement error	(0.00~1.00)%vol: ±0.10%CH4 (1.00~3.00)%vol: True value ± 10% (3.00-5.00)%vol: ±0.30%CH4		
Respond time	≤20s (T90)		
Resolution	0.01%vol	Alarm point	1.00%vol (Adjustable for full range)
Oxygen (O2)			
Measurement range	(0.0~30.0)%vol		
Measurement error	(0.0~5.0)%vol: O2: ±0.5%vol (> 5.0~30.0)%vol: O2:0.9%vol		
Respond time	≤35s (T90)		
Resolution	0.1%vol	Alarm point	18.0%vol(Adjustable for full range) 25.0%vol(Adjustable for full range)
Carbon Monoxide (CO)			
Measurement range	(0~1000)ppm		
Measurement error	(0~20)ppm: ± 2ppm (> 20~100)ppm: ± 4ppm		

	(>100~500)ppm: True Value \pm 5% (>500~1000)ppm: True value \pm 6%		
Respond time	\leq 45s (T90)		
Resolution	1ppm	Alarm point	24%vol(Adjustable for full range)
Hydrogen Sulfide (H2S)			
Measurement range	(0~100)ppm		
Measurement error	(0~50)ppm: \pm 3ppm (>50~100)ppm: \pm 10%		
Respond time	\leq 45s (T90)		
Resolution	1ppm	Alarm point	10ppm(Adjustable for full range)
Sensor lifetime	CH4: \geq 1 year CO,H2S,O2: \geq 2 years		
Alarms	Audible--buzzer with \geq 85dB @1m audible Visible--flashing red LED, \geq 20m visible Vibration		
Charging time	4-5hours		
Continuous operating hours	\geq 13 hours		
Battery model	PL123450, 3.7V/1500mA		
Protect Grade	IP66		
Working temperature	-25 $^{\circ}$ C ~ 50 $^{\circ}$ C		
Size(mm)	130*70*37		
Data logging for MG08 only	Continuously data logging (100000 records with 1-10 minutes interval)		
Enclosure	PC+ABS with resistance \leq 10 $^{-9}$ Ω		
Display	Color Screen LCD		

Test Equipment Depot - 800.517.8431 - 99 Washington Street Melrose, MA 02176

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