

Gas Detector Alarm System (Gas Alarm)

Product Specifications

Model B-780-220V

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|----------------------------------|--|--|--|-------------------------|------------|------------|
| Revision No. | 0 | Gas Detector Alarm System (Gas Alarm) | | Registration №C54LC-205 | | |
| Created on Feb. 17, 2025 | | | | Approved by | Checked by | Drafted by |
| Revised on | | Product Specifications | | | | |
| NEW COSMOS ELECTRIC CO., LTD. | Model | B-780-220V | | | | |
| Detector input signals | 2-step voltage 3-wire system - When monitoring: 6 VDC (5-6 VDC) - When gas leak alarm is active: 12 VDC (11-15 VDC) - When power is OFF or a fault is detected: 0 VDC (0-3 VDC) - Input impedance: 27 kΩ±5% | | | | | |
| Detector power supply | 24 VDC±20%, 70 mA or more (per detector) | | | | | |
| Number of connectable detectors | 1-3 detectors (selectable using the DIP switch) Up to 3 detectors can be connected. | | | | | |
| Power supply | 100-220 VAC±10%, 50/60Hz (Terminal block type) | | | | | |
| Power consumption | Approx. 5 W during normal operation(max) Approx. 10 W during gas alarm(max) | | | | | |
| Power-on display | Green (Power) light ON | | | | | |
| Initial timer | Approx. 30 seconds (Green (Power) light blinks during initial timer.) | | | | | |
| Alarm method | Immediate alarm type, auto reset type or manual reset type (selectable using the DIP switch) Gas leak alarm is prioritized. | | | | | |
| | 1. Gas leak alarm 1) When alarm is active - Red (Alarm) light blinks or turns ON (Immediately). - Beeping sound Sound volume 80 dB (A)/m or more - Mute setting available (selectable using the DIP switch) 2) When alarm is stopped - Red (Alarm) light turns ON or turns OFF (Immediately). - Mute | | | | | |
| | 2. Fault alarm 1) When alarm is active - Yellow (Fault) light blinks or turns ON (Immediately). - Intermittent speaker electronic sound Sound volume 80 dB (A)/m or more - Mute setting available (selectable using the DIP switch) 2) When alarm is stopped - Yellow (Fault) light turns ON or turns OFF (Immediately). - Mute | | | | | |
| Alarm stop | Alarm sound can be stopped using a push button (Alarm Stop switch). (Alarm is activated again if a subsequent alarm occurs while alarm is stopped.) | | | | | |
| Circuit inspection function | Gas leak alarm operation can be inspected using a push button (Test switch) (3-point simultaneous inspection). | | | | | |
| External output signals | (Output 1) 2-step voltage 2-wire system, immediate output - When monitoring: 6 VDC (5-6 VDC) - When gas leak alarm is active: 12 VDC (11-15 VDC) - When a fault is detected: 0 VDC (0-3 VDC) - Rated load: 1.2-50 kΩ (Output 2) Non-voltage NO/NC contact output - Contact capacity: 220 VAC, 1 A max 24 VDC, 1 A max - When monitoring or when a fault is detected: OFF - When gas leak alarm is active: ON - Output delay time: Immediate or approx. 35 seconds (selectable using the DIP switch) | | | | | |

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|----------------------------|--|------------------------|--------------------|----------------------|----------------------|-------------------------------------|----------------------|----------------------------|--------------------|------------------------|----------------------------|-------------------------|------------------------|-------------------|--------------------|-----------------|
| | (Output 3) Voltage 100-220 VAC output (Voltage the same as the input power voltage is output.) | | | | | | | | | | | | | | | |
| | - Maximum current : AC 1 A | | | | | | | | | | | | | | | |
| | - When monitoring or when a fault is detected: OFF | | | | | | | | | | | | | | | |
| | - When gas leak alarm is active: ON | | | | | | | | | | | | | | | |
| | - Output delay time: Immediate or approx. 35 seconds (selectable using the SW) | | | | | | | | | | | | | | | |
| Accessory circuits | 1. Approx. 30-second timer for alarm prevention at the beginning of energization (When the timer is operating, the green (Power) light blinks.) 2. Lightning surge protection circuit (FG terminal) 3. Wrong connection protection circuit 4. Detector input and external output short-circuit protection circuit | | | | | | | | | | | | | | | |
| Operating temperature | -10°C to +40°C (no condensation) | | | | | | | | | | | | | | | |
| Dimensions | W 138×H 180×D 33 mm (excluding protrusions) | | | | | | | | | | | | | | | |
| Mass | Approx. 420 g | | | | | | | | | | | | | | | |
| Installation method | Tighten the hooks on top and bottom of the gas alarm with screws to fix it. | | | | | | | | | | | | | | | |
| Connection method | Use crimp terminals to tighten screws on the terminal block for both input and output. | | | | | | | | | | | | | | | |
| Connectable detectors | <table border="0"> <tr> <td>Flame-proof detector</td> <td>KD-5G (for LP gas)</td> <td>Explosion class d2G4</td> </tr> <tr> <td>Flame-proof detector</td> <td>KD-5GM (for gases lighter than air)</td> <td>Explosion class d2G4</td> </tr> <tr> <td>Weather-resistant detector</td> <td>KD-5T (for LP gas)</td> <td>Weather-resistant type</td> </tr> <tr> <td>Weather-resistant detector</td> <td>KD-5M (for methane gas)</td> <td>Weather-resistant type</td> </tr> <tr> <td>Standard detector</td> <td>GD-1B (for LP gas)</td> <td>Drip-proof type</td> </tr> </table> | Flame-proof detector | KD-5G (for LP gas) | Explosion class d2G4 | Flame-proof detector | KD-5GM (for gases lighter than air) | Explosion class d2G4 | Weather-resistant detector | KD-5T (for LP gas) | Weather-resistant type | Weather-resistant detector | KD-5M (for methane gas) | Weather-resistant type | Standard detector | GD-1B (for LP gas) | Drip-proof type |
| Flame-proof detector | KD-5G (for LP gas) | Explosion class d2G4 | | | | | | | | | | | | | | |
| Flame-proof detector | KD-5GM (for gases lighter than air) | Explosion class d2G4 | | | | | | | | | | | | | | |
| Weather-resistant detector | KD-5T (for LP gas) | Weather-resistant type | | | | | | | | | | | | | | |
| Weather-resistant detector | KD-5M (for methane gas) | Weather-resistant type | | | | | | | | | | | | | | |
| Standard detector | GD-1B (for LP gas) | Drip-proof type | | | | | | | | | | | | | | |
| Accessories | <table border="0"> <tr> <td>Screw (φ3.8×25)</td> <td>2 pcs</td> </tr> <tr> <td>Crimp terminal</td> <td>10 pcs</td> </tr> </table> | Screw (φ3.8×25) | 2 pcs | Crimp terminal | 10 pcs | | | | | | | | | | | |
| Screw (φ3.8×25) | 2 pcs | | | | | | | | | | | | | | | |
| Crimp terminal | 10 pcs | | | | | | | | | | | | | | | |

[Function and Operation]

×: OFF, △: Blinking, ●: ON

Output 1: 2-step voltage 2-wire system immediate output

Output 2: Non-voltage NO(NC) contact output

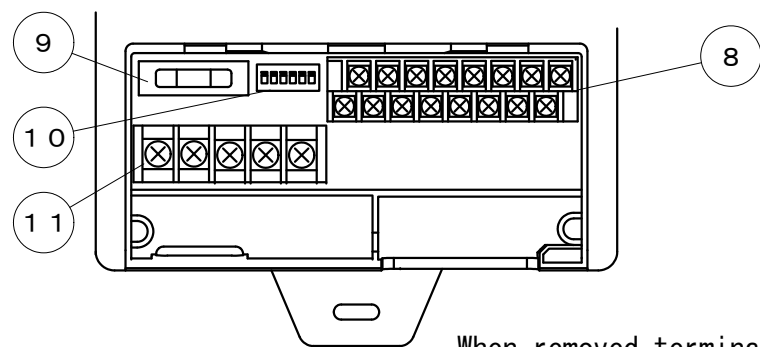
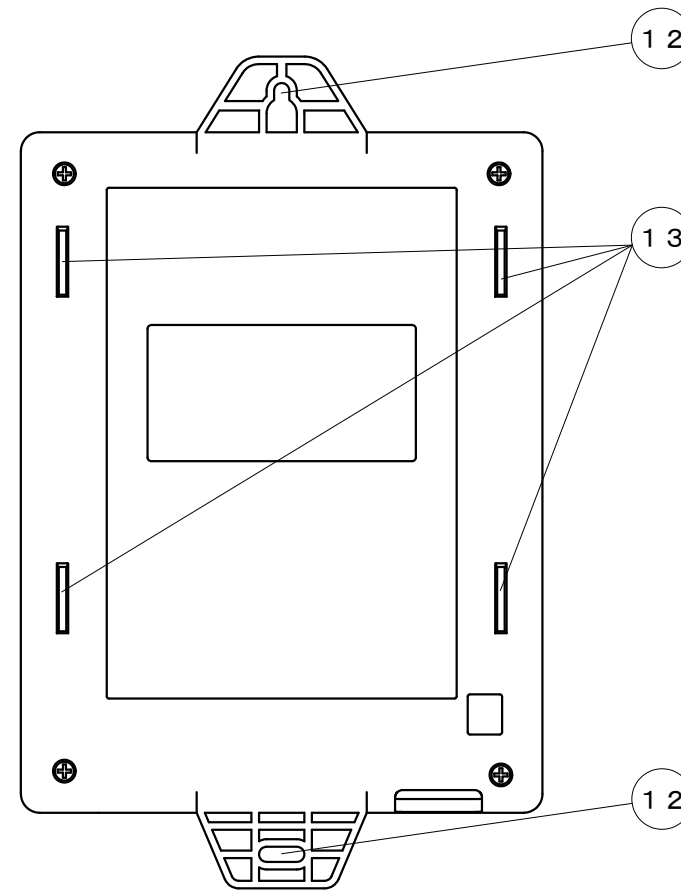
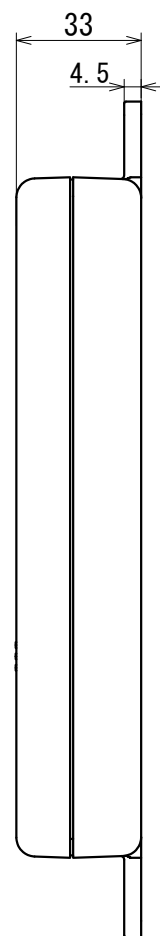
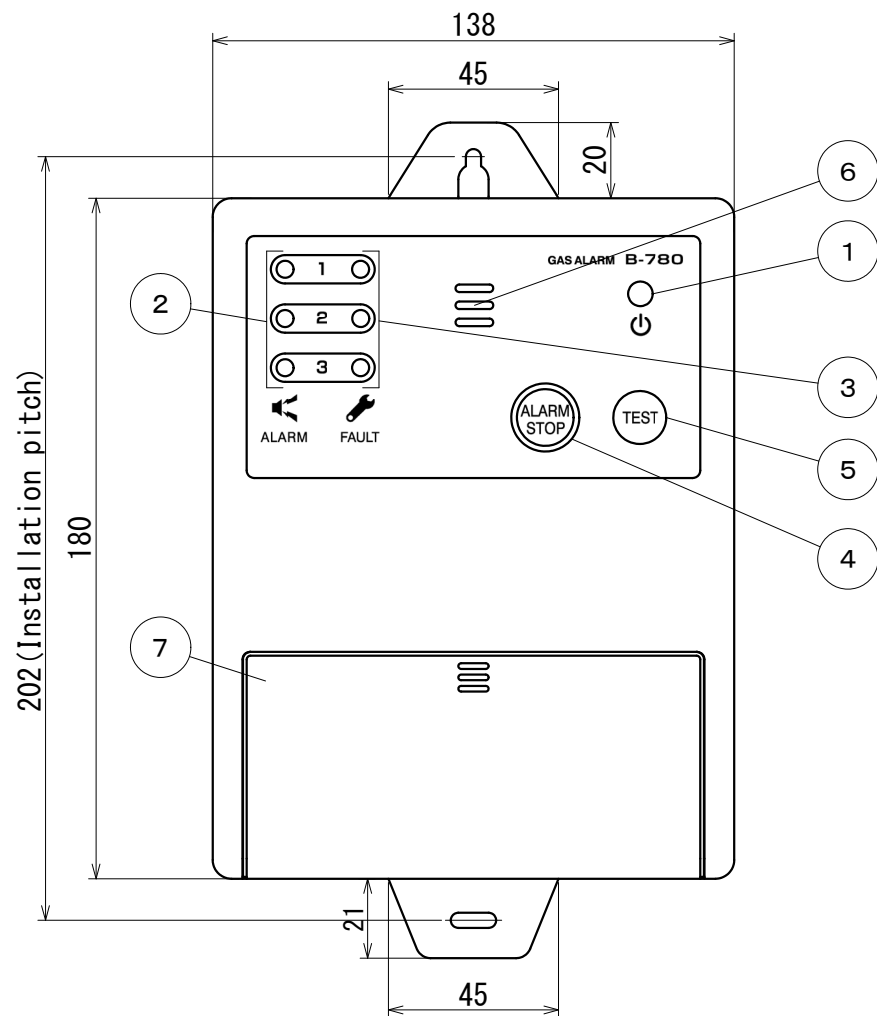
Output 3: Voltage 100-220 VAC output

| Item | Green light | Red light | Yellow light | Alarm sound | External output, etc. |
|--|-------------|-----------|--------------|--|--|
| At power-ON (during power-on initial timer) | △ | × | × | None | Timer approx. 30 seconds Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| When monitoring normally | ● | × | × | None | Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| When gas leak alarm is active | ● | △ | × | Beeping sound (Can be set to the buzzer sound or mute.) | Output 1: 12 VDC Output 2: ON (OFF) (Immediately or after approx. 35-second delay) Output 3: ON (Immediately or after approx. 35-second delay) |
| When trouble alarm is active | ● | × | △ | Beeping sound (Can be set to mute.) | Output 1: 0 VDC Output 2: OFF (ON) Output 3: OFF |
| Simultaneous alarm for gas leak and fault (Gas leak alarm is prioritized.) | ● | △ | △ | Beeping sound (Can be set to the buzzer sound or mute.) | Output 1: 12 VDC Output 2: ON (OFF) (Immediately or after approx. 35-second delay) Output 3: ON (Immediately or after approx. 35-second delay) |
| Auto reset - When restored to monitoring (from gas leak alarm or fault alarm) | ● | × | × | None | Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| Manual reset - When restored to monitoring (from gas leak alarm) | ● | ● | × | Beeping sound (Can be set to the buzzer sound or mute.) | Output 1: 12 VDC Output 2: ON (OFF) (Immediately or after approx. 35-second delay) Output 3: ON (Immediately or after approx. 35-second delay) |
| Manual reset - When restored to monitoring (from fault alarm) | ● | × | ● | Beeping sound (Can be set to mute.) | Output 1: 0 VDC Output 2: OFF (ON) Output 3: OFF |
| Manual reset - When restored to monitoring (from gas leak alarm or trouble alarm) | ● | ● | ● | Beeping sound (Can be set to the buzzer sound or mute.) | Output 1: 12 VDC Output 2: ON (OFF) (Immediately or after approx. 35-second delay) Output 3: ON (Immediately or after approx. 35-second delay) |

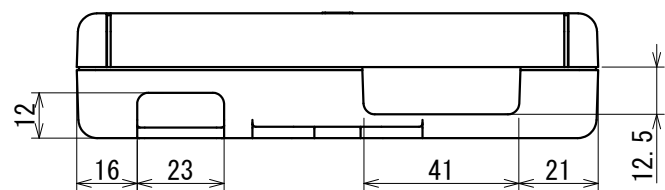
| | | | | | |
|--|---|---|---|--|--|
| Alarm stop – Manual reset cancellation (from gas leak alarm or fault alarm) | ● | ● | ● | None | Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| Alarm stop – Manual reset cancellation (from monitoring restoration alarm with manual reset) | ● | × | × | None | Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| Restoration to monitoring after alarm is stopped | ● | × | × | None | Output 1: 6 VDC Output 2: OFF (ON) Output 3: OFF |
| Test | ● | △ | × | Beeping sound and voice message “Possible gas leak” (Can be set to the buzzer sound or mute.) | Output 1: 12 VDC Output 2: ON (OFF) (Immediately or after approx. 35-second delay) Output 3: ON (Immediately or after approx. 35-second delay) |

DIP switch setting specifications

| | SW 1 Detector 2 | SW 2 Detector 3 | SW 3 Alarm method | SW 4 Output delay | SW 5 Alarm sound | SW 6 Alarm sound type |
|-----------------|--------------------|--------------------|----------------------|----------------------|---------------------|--------------------------|
| ON | Not connected | Not connected | Auto reset | 35 seconds | Disable | Buzzer alarm |
| OFF | Connected | Connected | Manual reset | Immediate | Enable | Voice alarm |
| Initial setting | OFF | OFF | ON | ON | OFF | OFF |



When removed terminal cover



| 1 3 | Installation plate notches | |
|-----|--|-------------------------------|
| 1 2 | Mounting hook | Φ3.8×25 |
| 1 1 | AC power I/O terminal | 100-220 VAC |
| 1 0 | Alarm function setting switches | |
| 9 | Fuse | (250V, 2A) |
| 8 | Detector connection terminals and output terminals | NO/NC contact, 2-step voltage |
| 7 | Terminal cover | |
| 6 | Speaker | |
| 5 | Test button | |
| 4 | Alarm stop button | |
| 3 | Yellow (Fault) light | |
| 2 | Red (Alarm) light | |
| 1 | Green (Power) light | |
| No. | Description | Remarks |

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|----------------------------|--|
| 承認 [APPROVED] H. NAGAI | 機種名 [MODEL] B-780-220V |
| 確認 [CHECKED] S. KURODA | 題名 [TITLE] 外觀図 External Appearance |
| 設計 [DESIGNED] Y. UENO | 三角法 THIRD ANGLE PROJECTION |
| 作成 [DRAWN] Y. UENO | 単位 UNIT mm |
| 日付 [DATE] Feb. 10, 2025 | 尺 度 SCALE 1/2 |
| 作成 Initial release | 図番 [DRAWING No.] X-A711-300 |
| 上野 Y. U. | A3 |

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|---|---------------|-----------------------|-------------|
| 2 | | | |
| 1 | | | |
| 0 | Feb. 10, 2025 | 作成 Initial release | 上野 Y. U. |