

Name Automatic gas shut-off device operator

VAC-300T (For large caliber City gas)

VAC-300P (For small caliber LP gas)

VAC-310T (For large caliber City gas)

Model VAC-310P (For large caliber LP gas)

Doc. Name Product Specifications

Azbil Kimmon Co., Ltd.

azbil

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Rev

KM-VAC3-010

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Automatic Gas Shutoff System Operator Specifications

Purpose of use	For city gas		For LP Gas	
Type	VAC-300T	VAC-310T	VAC-300P	VAC-310P
Applicable shutoff valve caliber	small caliber (25A、32A)	Large caliber (40A、50A、80A)	Small caliber (20A、25A、32A)	Large caliber (40A、50A、80A)
Applicable shutoff valve type	KCV-2-25T KCV-2-32T	KCV-2-40T KCV-2-50T KCV-2-80T	KCV-2-20 PKCV-2-25P KCV-2-32P	KCV-2-40P KCV-2-50P KCV-2-80P

1. input signal

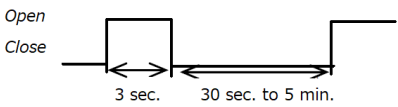
Item	Specification	Remark
alarm signal	Stationary DC 6V Gas leak DC 12V CO detection DC 18V※ Shutoff 0V Alarm failure 0V	Connect up to 3 lines
External device signal input 1	a-contact (contact capacity 24 VDC, 0.1 A or more)	Duct fire signals, etc. when activated 「ON」
External device signal input 2		
Remote open/close signal	a-contact (same as above)	When "ON" function is closed When "ON→OFF" shutoff activated
Gas pressure drop signal	b-contact	When pressure drops 「OFF」 ※ Refer to the shutoff valve (KCV) spec. for the detected pressure value.
Valve answering signal	a-contact	When valve opened 「OFF」 When valve closed 「ON」

※ For CO alarms for city gas

2. Output signal

Item	Specification	Remark
24V DC Alarm power supply	DC 24V 0.45A	Up to 3 units can be connected
state output	a-contact (Contact capacity: DC30V, 20W) Select "Output at valve close" or "Output at error" by setting switch	<ul style="list-style-type: none"> Output when valve is closed (for shutoff valve open/close indication panel) All valves closed 「ON」 Valve opened 「OFF」 Output in case of abnormality (for centralized monitoring system) <ul style="list-style-type: none"> Gas leakage 「ON」 Low pressure 「ON」 Ext. device signal input 「ON」 Minor leakage detection 「ON」 ※ Normal open/close operation 「OFF」

※Normal open/close operation by front panel switch and remote open/close signal

Item	Specification	Remark
Pulse output for shutoff valve	Valve open DC 24V (Small caliber) DC 45V (Large caliber) Valve close DC 12V (Both large and small caliber)	The output signal at valve opening is different for large and small caliber valves.
Signal lines (e.g., shutoff valves)	Valve coil (+) Red Valve coil (-) Black Valve Answer White Gas pressure Green G line Yellow (G wire and connection of shutoff valve) FG line Green (Connect to FG terminal of other reporting devices)	(Note) [In a system that is not connected to other reporting devices, both the G line and the FG line should be left open and not used. When using the system, please consult with the gas supplier or system manufacturer before use. City gas shutoff valve: VCTF 0.75mm ² , 4 cores LP gas shutoff valve: VCTF 0.75mm ² , 5 cores
line resistance	Within 3Ω (reciprocal) Within 50m of 0.75mm ² (lamellas) 1.25mm ² within 80m (lane) (*)2.0mm ² within 130m (lane) (*)3.5mm ² within 250m (lane)	Must be strictly observed (*)Direct connection of thick cables is not allowed.
Valve opening condition	When receiving a remote open/close signal from the "open/close" button, remote open/close switch, etc., when confirming the return safety, and when confirmed.	
Restart safety check	Gas injection time to secondary side Approx. 3 sec. (Valve opening time) Secondary side pressure check time: 30 seconds, 1 minute, 2 minutes, 3 minutes, 5 minutes (changeover by setting switch) 	After injecting gas into the secondary side, check the pressure retention with an arbitrarily set check time.

Item	Specification	Remark
Valve closing condition 【Abnormal Alarm Shutdown】 <ul style="list-style-type: none"> • In case of gas leakage • When CO is detected • When gas pressure drops • External device input • When built-in seismic sensor is activated 【Normal shutdown】 <ul style="list-style-type: none"> • Manual shutoff • Remote Shutoff • Restart safety check in progress 	When a gas leak signal is received continuously for approximately 40 seconds or longer. When the CO detection signal is received continuously for about 40 seconds or longer. When the gas pressure drop signal is received continuously for more than 5 seconds. When an external device input signal is received continuously for 1 second or longer. When the built-in seismic sensor receives an ON time of 2 seconds or more continuously, or when a seismic pattern is received. When a close signal is received by the "open/close" button on the actuator. When a closing signal by a remote switch is received.	When connected to an alarm for city gas Equivalent to intensity 5 (80 to 250 gals)

3. Setup switch

Item	Specification	Remark
Return safety check time	<input type="text" value="30"/> seconds, 1min, 2min, 3min, 5min	ディップスイッチによる切り替え 注意) 切り替えは電源オフ時に行うこと。電源オン時に切り替えても反映されません。 <input type="checkbox"/> : 初期値 (工場出荷時)
Built-in Seismic Sensors	<input type="checkbox"/> ON <input checked="" type="checkbox"/> Off	
Alarm 1	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	
Alarm 2	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	
Alarm 3	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	
State output	<input type="checkbox"/> Valve closed (For shut-off valve open/close indication panel, etc.) In case of abnormality (for centralized monitoring system, etc.)	

4. Display, buzzer

Item	Specification	Remark
1) LCD	Valve open/close status, abnormality and cause of shutdown are displayed in kanji and alphanumeric characters.	All lights on for 5 seconds when power is turned on
2) Panel switch	Button switch <ul style="list-style-type: none"> • "Open/Stop" for shutoff valve operation • Reset "buzzer/alarm" 	
3) Buzzer	Electronic buzzer continuous sound	Sounds when abnormality alarm is shut off, abnormality is detected, or valve open/close operation fails

5. Accessory Functions

Item	Specification	Remark
1) Minute leak detection	When the secondary side pressure drop signal is received within about 15 minutes after the manual or remote close signal is received, the alarm is displayed from that point on. However, this function will be deactivated when the open operation is performed within 15 minutes.	Valve open/close status output "ON" 15 minutes after valve closing when valve open/close status output is set to abnormal status output (centralized monitoring system using telephone line, etc.) Refer to the shutoff valve (KCV) specifications for the detected pressure value.
2) Detection of wire breakage and answer failure (open/close operation failure)	Alarm with buzzer and LCD display <ul style="list-style-type: none"> • Disconnection between alarm and actuator • Valve solenoid disconnection • answer failure 	Real-time During open/close operation
3) Alarm input and external device input identification	Alarm input number (1 to 3), and External device input number (1-2)	
4) at the time of a power outage	Shutoff valve maintains pre-power failure condition	
5) Backup Function	If the following shutoff signals are received within approximately 15 minutes* after a power failure, the valve is shut off <ul style="list-style-type: none"> • Manual closing • External device signals • remote closing • Pressure drop signal • Seismic sensor signal 	One time only ※ After 10 years of use, depending on ambient temperature and other factors, the time may be less than 15 minutes. Replacement should be made after 10 years.
6) Interruption history display function	Memorizes and displays the three most recent histories of abnormal alarm shutdowns (excluding normal shutdowns)	The history is cleared when the backup function expires. Please refer to the valve closing conditions on P.3 for the details of the abnormal alarm shutoff.
7) Power switch	AC power on/off (not normally used, always on, used for periodic inspections, etc.)	Can only be operated with the terminal block cover removed. (Slide switch)

6. Other Specifications

Item	Specification	Remark
1) Power supply	AC 90V ~ 120V 50Hz / 60Hz	
2) Power consumption	Maximum 8W	When using the 24V alarm
3) Operating temperature range	-10°C ~ +50°C	
4) Operating humidity range	85%RH以下	
5) Dimensions	121W × 201H × 56Dmm	
6) Weight	Approx. 700g (main unit only)	Mounting plate about 150g
7) Installation	Wall-hung type with attached mounting plate. (To maintain the performance of the seismic sensor, mount the unit within ±3° of inclination.)	Conforms to JIS C8340 for 2 switch boxes
8) Material	Main parts are noncombustible or flame retardant	
9) Accessory	Mounting and operating manual (with warranty) Mounting plate (with level) Countersunk screws for mounting plate (4 pcs.) Truss screws for mounting plate (4 pcs.)	
10) Guaranty	1 year	
11) Durability	10 years	

About the type of actuator

V A C - 3 0 0 P
 ① ② ③ ④ ⑤

Ex :

V A C - 3 1 0 P
 For LP Gas
 Type 3 large ☆ caliber

- ① Actuator
- ② 3:3 Type
- ③ 0: Small ☆ diameter (25A, 32A)
 1: Large ☆ diameter (40A, 50A, 80A)
- ④ 0: 0 fixed
- ⑤ P: For LP Gas
 T: For city gas

About the type of shutoff valve

K C V - 2 - 4 0 P F
 ① ② ③ ④

Ex :

K C V - 2 - 4 0 P F
 For LP Gas
 ☆ caliber 40A type 2
 shutoff valve

- ① Shutoff valve
- ② 2:2 Type
- ③ 2 Digit number: ☆ diameter
- ④ T B : For city gas (gas category I)
 T A : For city gas (gas category II)
 P F : For LP gas (gas category III)

Standard set pressure value for shutoff valve

type suffix	Category	gas type		Set value
T B	Gas Type Category I	City gas	4 A, 5 A N, 5 A, 6 A, 4 B, 5 B, 6 B, 4 C, 5 C, 6 C, 7 C	196~490 Pa {20~50mmH ₂ O}
T A	Gas Type Category II	City gas natural gas	1 2 A, 1 3 A	686~980 Pa {70~100mmH ₂ O}
P F	Gas Type Category III	L P gas	L P G	1. 37k~1. 62k Pa {140~165mmH ₂ O}

Revision History

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