Pressure Switch for gas and air

GAO-A4…
GMH-A4…
GML-A4…

DUNGS®
Combustion Controls

UL Listed
- UL 353
- File # MH 16628

CSA Certified
- CSA C22.2 No. LR 53222
- Certification file # 201527

FM Approved
- Class 3510, 3530
- File # J.I. 1Y919.AF

Commonwealth of Massachusetts Approved Product
- Approval code G3-0106-191
- Gas pressure switch

Codes and Standards
This product is intended for installations covered by but not limited to NFPA 85, NFPA 86, UL 795, CSD-1, ANSI Z83.4, ANSI Z83.18, ANSI Z21.13, CSA B149.1, CSA B149.3 and CSA B149.6.

DUNGS is an ISO 9001 manufacturing facility.

Description
The GAO-, GMH- and GML-A4… ventless pressure switches are adjustable pressure switches for automatic burner controls.

These pressure switches are suitable for making and/or breaking a circuit when the medium pressure changes relative to the set point. The set point can be set in the field by an adjustable dial with an integrated scale. Test nipple integrated in metal housing to verify set point.

Application
The GAO-, GMH-, and GML-A4… pressure switch is recommended for industrial and commercial heating, ventilation and air-conditioning systems.

The GAO-, GMH-, and GML-A4… pressure switch is suitable for dry natural gas, propane, butane, air and other inert gases. Suitable for up to 0.1 % by volume, dry H_2S.

A “dry” gas has a dew point lower than +15 °F and its relative humidity is less than 60 %.

GAO-A4… SPDT pressure switch requires no auxiliary power. The GAO-A4… is suitable for making and/or breaking a circuit when the set point is exceeded or undershot. A tripped switch is indicated by a neon light after set point is exceeded or undershot. Automatic reset when pressure returns below or above set point.

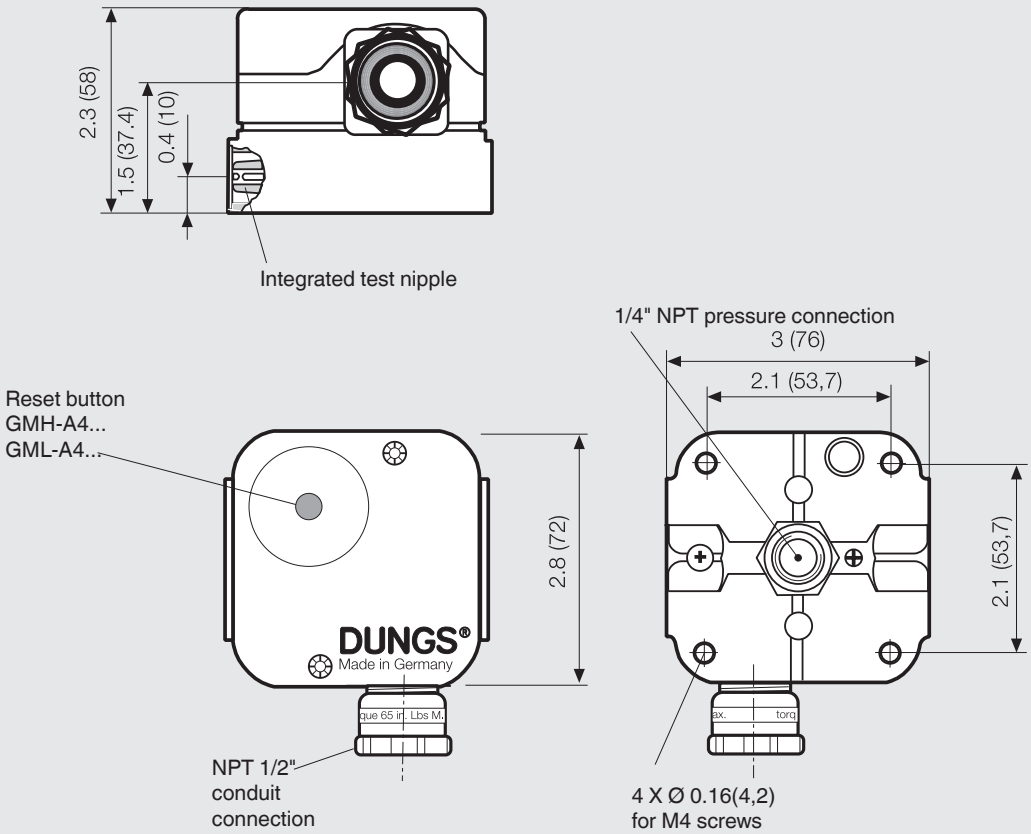
GMH-A4… SPDT pressure switch requires no auxiliary power. The GMH-A4… is suitable for making and/or breaking a circuit when the set point is exceeded. A tripped switch is indicated by a neon light after set point is exceeded. Manual reset is required to reset the switch.

GML-A4… SPDT pressure switch requires no auxiliary power. The GML-A4… is suitable for making and/or breaking a circuit when the set point is undershot. A tripped switch is indicated by a neon light after set point is undershot. Manual reset is required to reset the switch.

Specifications

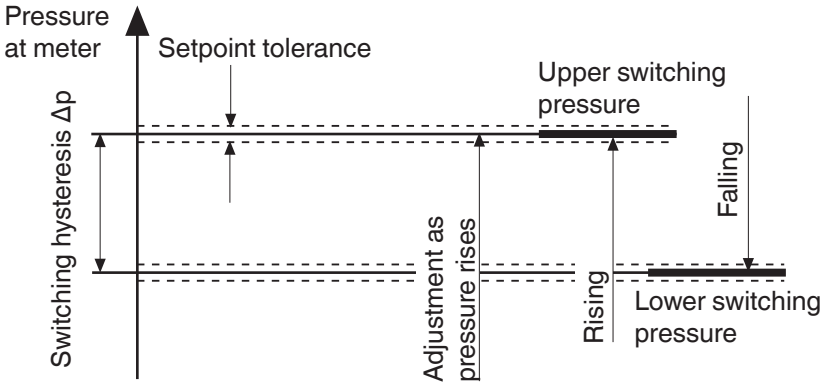
Max. operating pressure	GAO-A4-4-2,3,5,6 GMH- and GML-A4-4-4,6 GAO-, GMH- and GML-A4-4-8	7 PSI (500mbar) 7 PSI (500mbar) 14 PSI (1000 mbar)
Max. body pressure	15 PSI (1033 mbar)	
Pressure connection	Standard: 1/4" NPT female thread centered underside of housing.	
Temperature range: GAO-, GMH- and GML-A4-4 GAO-, GMH- and GML-A4-4-8	 Ambient temperature Medium temperature Ambient temperature Medium temperature	 -40 °F to +140 °F (-40 °C to +60 °C) -40 °F to +140 °F (-40 °C to +60 °C) -22 °F to +140 °F (-30 °C to +60 °C) -22 °F to +140 °F (-30 °C to +60 °C)
Materials	Housing Switch Diaphragm Switching contact	Aluminium Polycarbonate NBR-based rubber Silver or Gold
Electrical ratings	AC eff. DC	min. 24 V max. 240 V min. 24 V max. 48 V
Nominal current	Silver (Ag) contact ratings AC 10 A resistive @ 120 VAC AC 8 A inductive @ 120 VAC DC min. 20 mA @ 24 VDC DC max. 1 A @ 24 VDC & 48 VDC	Gold (Au) contact ratings DC max. 5 mA @ 5 VDC DC max. 20 mA @ 24 VDC
Indication light	0.30 W energy consumption	
Electrical connection	Screw terminals via 1/2" NPT conduit connection	
Enclosure rating	NEMA Type 4	
Setting tolerance	±15% switching point deviation referred to set point. Adjusted as pressure rises or as pressure falls, vertical diaphragm position.	
Vent Limiter	Incorporates a vent limiter as per UL 353 and limits the escape of gas less than 1.0 CFH of natural gas at 7 PSI if internal switch diaphragm ruptures	

Dimensions inch (mm)
GAO-, GMH-, GML-A4…

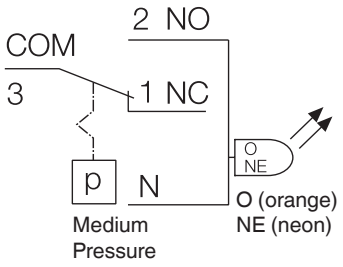


Adapters / Replacement parts / Accessories	Order No.	For equipment	Notes
Replacement conduit adapter	220-566	GAO, GMH, GML	1/2" NPT
Replacement cover	228-732	GAO	
Replacement cover	233-113	GMH, GML	
Replacement light	244-156	GAO, GMH, GML	120 VAC, yellow bulb
Replacement light	248-240	GAO, GMH, GML	24 VAC/VDC, green bulb
Replacement light	244-157	GAO, GMH, GML Gold contact versions	24 VAC/VDC, yellow blulb
Replacement conduit adapter	220-566	GAO, GMH, GML	Pg 11 to 1/2" NPT adapter
Replacement conduit adapter	240-671	GAO, GMH, GML	M20 to 1/2" NPT adapter
Electrical plug for A4 (For usw with 210-318)	219-659	GAO	
Electrical plug for A4 (For usw with 210-318)	227-644	GMH, GML	
DIN connector for A4 (For use with 219-659 or 227-644)	210-318	GAO, GMH, GML	

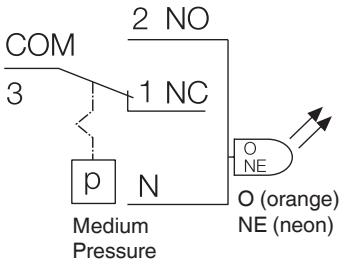
Definition of switching hysteresis Δp
The pressure difference between the upper and lower switching pressures



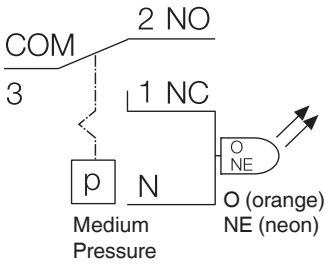
GAO (Shown as a high gas limit)
As pressure rises above set point, 1 NC opens, 2 NO closes, Neon light ON (fault). **As pressure falls** below setpoint, switch resets: 1 NC closes and 2 NO opens, Neon light off.



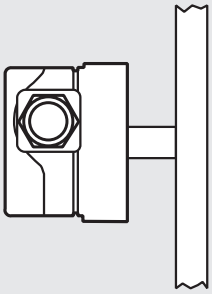
GMH (Operating state shown)
As pressure rises, 2 NO closes, 1 NC opens, and Neon light ON (fault), switch trips and locks out.



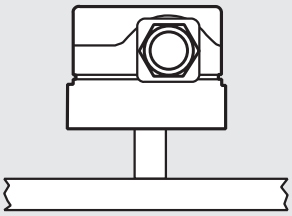
GML (Operating state shown)
As pressure falls, 2 NO opens, 1 NC closes, Neon light ON (fault), switch trips and locks out.



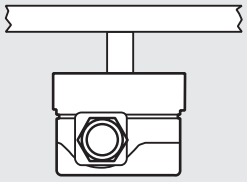
Installation position



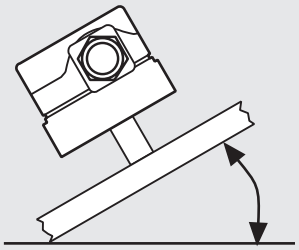
Standard installation position



When installed horizontally, the pressure switch switches at a pressure higher by approximately 0.2 in. W.C. (0.5 mbar).



When installed upside down, the pressure switch switches at a pressure lower by approximately 0.2 in. W.C. (0.5 mbar).



When installed in other position the pressure switch switches at pressure deviating from the set reference value by max. ±0.2 in. W.C. (0.5 mbar).

⚠ NOTE: Always calibrate the switch in the desired mounting position

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Type	Version	Order No.	Setting range in. W.C.	Switching hysteresis in. W.C.	Factory Calibration
GAO-A4… pressure switch	GAO-A4-4-2	217-090A	0.16 - 1.20	≤ 0.12	
	GAO-A4-4-3	217-091A	0.40 - 4.00	≤ 0.20	
	GAO-A4-4-5	217-092A	2.00 - 20.00	≤ 0.40	
	GAO-A4-4-6	217-093A	12.00 - 60.00	≤ 1.2	
	GAO-A4-4-8	217-094A	40.00 - 200.00	≤ 4.0	
	GAO-A4-4-2 Gold	223-525A	0.16 - 1.20	≤ 0.12	
	GAO-A4-4-3 Gold	222-267A	0.40 - 4.00	≤ 0.20	
	GAO-A4-4-5 Gold	222-268A	2.00 - 20.00	≤ 0.40	
	GAO-A4-4-6 Gold	222-269A	12.00 - 60.00	≤ 1.2	
	GAO-A4-4-8 Gold	223-526A	40.00 - 200.00	≤ 4.0	
GMH-A4… pressure switch	GMH-A4-4-4	217-326A	1.00 - 20.00	--	
	GMH-A4-4-6	217-327A	12.00 - 60.00	--	
	GMH-A4-4-8	217-328A	40.00 - 200.00	--	
	GMH-A4-4-4 Gold	222-270A	1.00 - 20.00		
	GMH-A4-4-6 Gold	222-271A	12.00 - 60.00		
GML-A4… pressure switch	GML-A4-4-4	217-340A	1.00 - 20.00	--	
	GML-A4-4-6	217-341A	12.00 - 60.00	--	
	GML-A4-4-8	217-342A	40.00 - 200.00	--	
	GML-A4-4-4 Gold	222-272A	1.00 - 20.00		

All switches with Silver contacts have 120 VAC neon lights factory installed
All switches with Gold contacts have 24 V lights factory installed

Accessories for pressure switch	Order No.
Replacement cover (screws not included)	228-732 (for GAO switches) and 233-113 (for GMH and GML switches)
Screw for replacement cover	237-675
PG 11 - 1/2” NPT conduit adapter	220-566
M 20 - 1/2" NPT conduit adapter	240-671
120 VAC neon light (orange)	244-156
24 VAC/VDC light (orange)	244-157
24 VAC/VDC light (green)	248-240
DIN connector (female plug)	210-318
Male plug for DIN connector	219-659 (for GAO switches) and 227-644 (for GMH and GML switches)

We reserve the right to make any changes in the interest of technical progress.

Offered By:
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