VCM301

VCM/VNM

Negative pressure switches (vacuum switches)

FEMA negative pressure switches detect the pressure difference relative to atmospheric pressure. All data relating to the switching pressure ranges and thus also the scale divisions on the switching devices are to be understood as the difference in pressure between the relevant atmospheric pressure and the set switching pressure. The "zero" reference point on the scale of the unit corresponds to the relevant atmospheric pressure.

SIL 2 according IEC 61508-2

SIL2 FUNCTIONAL SAFETY

Technical data

Pressure connection
External thread G 1/2 (pressure gauge connection) according to DIN 16 288 and internal thread G 1/4 according to ISO 228 Part 1.

Switching device
Robust housing (200) made of seawater resistant die cast aluminium GD Al Si 12.

Protection class
IP 54, in vertical position.

Pressure sensor materials

VNM111 and VNM301:	Metal bellows: 1.4571 Sensor housing: 1.4104
VCM095, 101 and 301:	Metal bellows of CuZn Sensor housing of CuZn
VCM4156:	Perbunan diaphragm sensor housing: 1.4301

Mounting position
Vertically upright and horizontal.
VCM4156 vertically upright.

Ambient temp. at switching device
–25…+70 °C

Exeption
VCM4156 –15…+60 °C

Max. medium temperature
The maximum medium temperature at the pressure sensor must not exceed the permitted ambient temperature at the switching device. Temperatures may reach 85°C for short periods. Higher medium temperatures are possible provided the above limit values for the switching device are ensured by suitable measures (e.g. siphon).

Mounting
Directly on the pressure line (pressure gauge connection) or on a flat surface with two 4 mm Ø screws.

Switching pressure
Adjustable from outside with screw driver.

Switching differential
Not adjustable with VCM types. Adjustable with VCMV type. For values see Product Summary.

Contact arrangement
Single pole change over switch.

Switching capacity	250 VAC (ohm)	250 VAC (ind)	250 VDC (ohm)	24 VDC (ohm)
Normal	8 A	5 A	0.3 A	8 A

Product summary

Type	Setting range (differential pressure)		Switching differential (Tolerance)		Max. permissible pressure		Dimen-sioned drawing
Switching differential not adjustable							page 21+22
VCM4156	–15…+6mbar		0,7 ... 3	mbar	1	bar	1 + 11
VCM301	–250…+100mbar		10 ... 35	mbar	1,5	bar	1 + 13
VNM301	–250…+100mbar		10 ... 60	mbar	3	bar	1 + 15
VCM101	–1*…+0,1bar		30 ... 60	mbar	3	bar	1 + 14
VCM095	–0,9…+0,5bar		35 ... 65	mbar	3	bar	1 + 14
VNM111	–1*…+0,1bar		30 ... 70	mbar	6	bar	1 + 15
Switching differential adjustable							
VCMV301	–250…+100mbar		30 – 200	mbar	1,5	bar	1 + 13
VCMV101	–1*…+0,1bar		80 – 350	mbar	3	bar	1 + 14
VCMV095	–0,9…+0,5bar		90 – 400	mbar	3	bar	1 + 14
VNMV301	–250...+100mbar		70 – 500	mbar	3	bar	1 + 15
VNMV111	–1*…+0,1bar		90 – 650	mbar	6	bar	1 + 15

* At very high vacuums, close to the theoretical maximum of –1 bar, the switch may not be usable in view of the special conditions of vacuum engineering. However, the pressure switch itself will not be damaged at maximum vacuum.

For additional functions refer to page 26 – 28.
For smaller pressure ranges see also DPS data sheets, page 69.

Calibration

The **VCM** and **VNM** series are calibrated for falling pressure. This means that the adjustable switching pressure on the scale corresponds to the switching point at falling pressure. The reset point is higher by the amount of the switching differential. (See also page 23, 1. Calibration at lower switching point).

Ex VCM/VNM
see page 65

CE

Protection Class:
IP 54

FEMA by Honeywell