Digital pressure sensor with solenoid valve control

MVS–201 series

●Wiring savings

Only 1 cable of 4 lead wires to the PLC.

No need to connect solenoid valves cables.

●Energy saving circuit integrated

Air consumption reduction: MVS–201 sensor controls the solenoid valves and turn on the vacuum generation only when minimum vacuum degree pressure value is reached.
Please refer to p.389

●Easy settings

Only 3 key for value settings

How to order

MVS – 201 – ① N ② C

① Output type

N	NPN Open collector
P	PNP Open collector

② Cable

C	M8 (4PIN) (cable 2m with connector)

CONVUM ejector mounting reference

MVS – 201 ① P – ② MC22 – ③ S

①Output type

Blank	NPN open collector
P	PNP open collector

② Applicable series

MC22	For MC22
MC72	For MC72
MPV3	For MPV3
MC10	For MC10

③ Soleroid valve air passage

A	Normally open
B	Normally close
W	Self–holding

Note) The energy–saving function of a sensor cannot work if the self–holding valve is selected.

How to order (option)

M8 cable: MPS–ACCL8

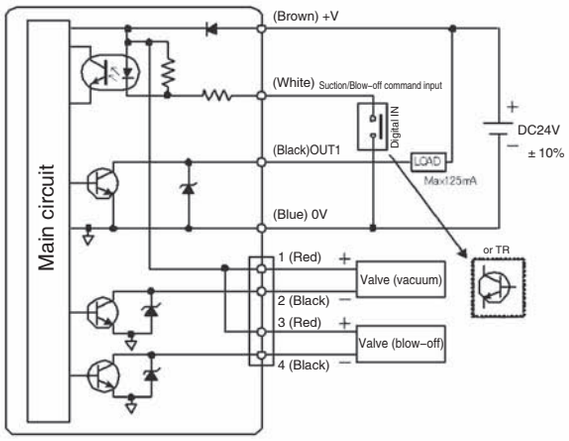
Specifications

Type		Unit	MVS–201
Fluid			Air (non corrosive, nonflammable gas)
Diaphragm			Silicone Diaphragm
Pressure range		kPa	–101 ~ 500
Proof pressure		MPa	0.8
Operating ambient temperature		℃	0 ~ 50
Operating humidity		%	35 ~ 85 RH(no condensation)
Power supply		V	DC24, ripple (Vp–p)10% or less *1)
Power consumption		mA	45
Output			NPN or PNP open collector,output 1point
	Current load	mA	max.125mA
Digital input (Suction/break command)		V	Non–contact input (more than 1msec)
Repeatability		%	± 0.3 F.S., less than 1digit
Temperature characteristic			25℃ ± 2% of F.S. or less at range of 0 ~ +50℃
Response time		ms	2.5
Hysteresis			Variable
Display			3 digits, 7 segments LED (Red color)
Display resolution		kPa	1
Display time		s	0.2
Protection structure			IP 40
Vibration resistance			10 ~ 150Hz, double amplitude 1.5 mm 2 hours/each direction XYZ
Shock resistance		m/s^2	100 (3times each direction)
Connection of power source and output			M8 connector
Cable specifications	M8 Connector		ϕ4 0.3mm^2 4 wires 2000mm
Mass(without cable)		g	20

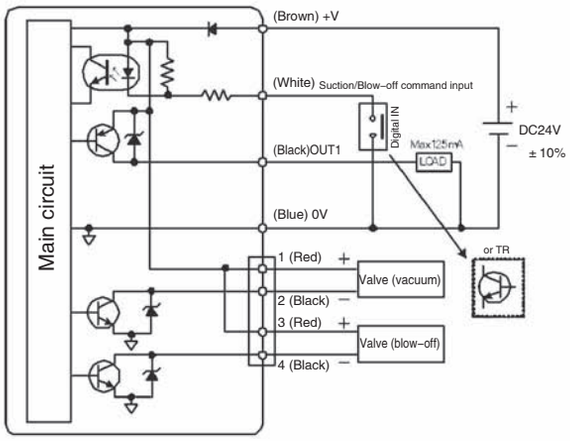
Note) Consult with us for sensor operating voltage when solenoid valve use other than 24 VDC.

Internal circuit

NPN output

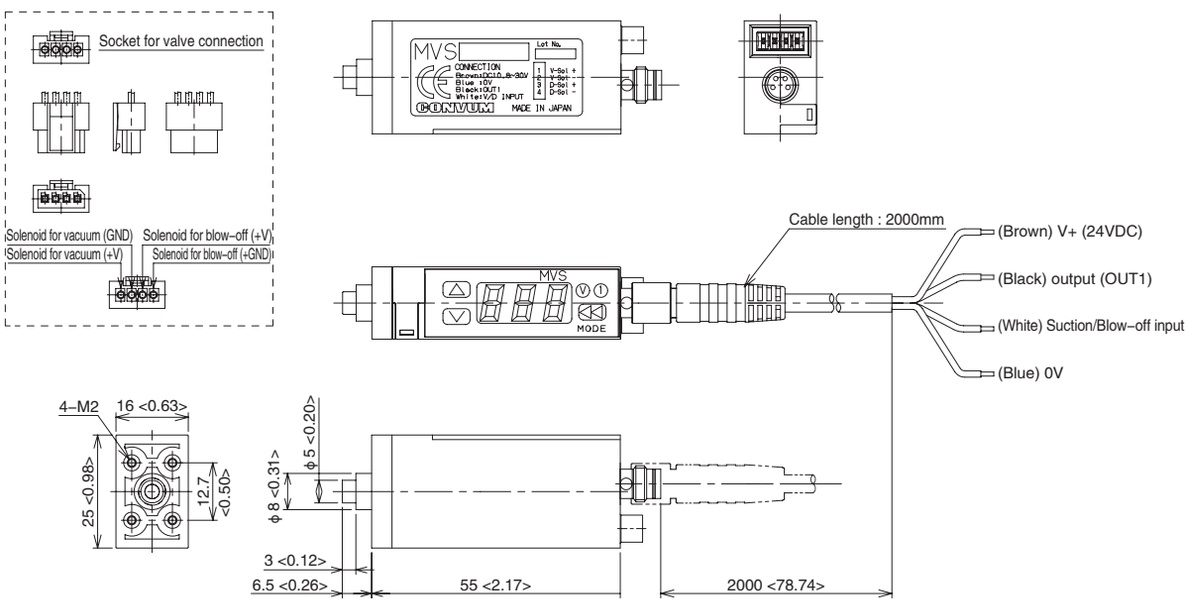


PNP output

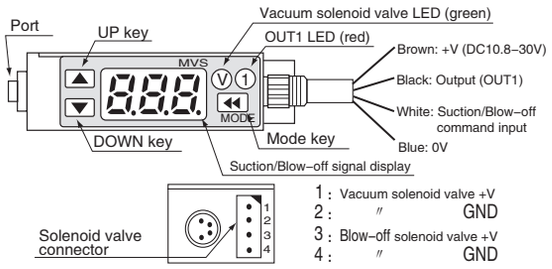


Dimensions

Unit : mm <inch>



Display description

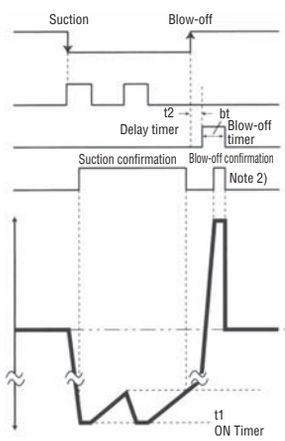


Function description

Input signal only needs to be applied to suction demand as blow–off will be done automatically.
Suction command signal turns on the vacuum solenoid valve to generate vacuum so that suction can be started. When it turns off, the blow–off solenoid valve turns on automatically and start to blow–off.
The following 3 modes of vacuum solenoid valve and blow–off solenoid valve can be switched by operating the panel key.

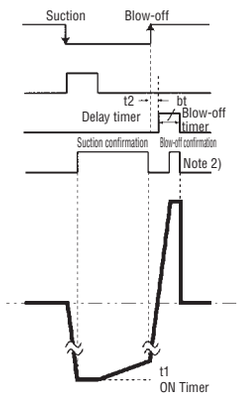
■ CONVUM energy–saving mode (Suction mode 1)

Digital input (suction demand signal) turns on the vacuum solenoid valve to generate vacuum so that suction can be started.
Upon reaching the assigned vacuum volume, vacuum solenoid valve turns off. Thereafter, when vacuum decreases below the assigned vacuum volume, vacuum solenoid valve will turns on again.
Vacuum solenoid valve subsequently turns on/off repeatedly until digital input was turned off.
When digital signal was turned off, blow–off solenoid valve turns on and start to blow–off.
By monitoring vacuum pressure as described above, air consumption will be dramatically reduced because air supply is no longer required during the time when pressure was holding at the assigned pressure volume.

	Operation example of OP1. To maintain suction by timer
Suction/ blow–off command signal (digital IN) vacuum valve Blow–off valve suction/ blow–off confirmation output (out 1) 500kPa + pressure 0 – –101kPa	

■ CONVUM timer off mode (Suction mode 2)

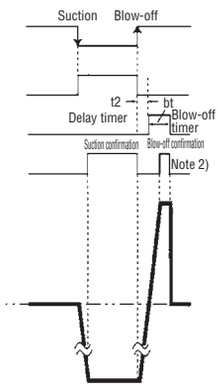
Digital input (suction demand signal) turns on the vacuum solenoid valve to generate vacuum so that suction can be started.
Once OUT1 becomes ON upon reaching the assigned vacuum volume, vacuum solenoid valve turns off.
On this mode, the vacuum solenoid valve does not turn on again regardless of the value of vacuum pressure.
Digital signal turns off the vacuum solenoid valve, the blow–off solenoid valve turn on and start to blow–off.

	Operation example of OP2. To turn off the vacuum solenoid after expiration of timer
Suction/ blow–off command signal (digital IN) vacuum valve Blow–off valve suction/ blow–off confirmation output (out 1) 500kPa + pressure 0 – –101kPa	

Note 1) In the OUT1, the determination of the suction and blow–off confirmation will be accomplished by taking the AND between the suction command and blow–off command.
Note 2) With automatic blow–off function. (automatic function delivers if bt lasts longer than 9.99sec)
Timer initial value: t1=0.3sec t2=0sec bt=2.0sec

■ CONVUM vacuum solenoid valve keeping ON mode (suction mode 3)

Suction command signal turns on the vacuum solenoid valve to generate vacuum so that suction can be started.
Upon reaching the preset vacuum, OUT1 becomes ON. Vacuum solenoid valve remains ON regardless of the value of vacuum pressure.
Digital signal turns off the vacuum solenoid valve, the blow–off solenoid valve turn and start to blow–off.

	Operation example of OP3. To keep vacuum solenoid valve ON
Suction/ blow–off command signal (digital IN) vacuum valve Blow–off valve suction/ blow–off confirmation output (out 1) 500kPa + pressure 0 – –101kPa	

■ Setting method

Please refer to the instruction manual for details.