

MMS-030AB Instruction Manual

Thank you for purchasing a MMS-030AB vacuum sensor. Please read this instruction manual carefully and make it sure that you understand its operation procedures before using the product. This manual is important for later reference, so please keep it in good hands



CAUTION

No protection against water, oil and lubricant, so do not install this product to the place exposed to water, oil and lubricant, because the electrical elements inside of this product will be deteriorated due to the water, oil etc. soaking into there from the outside.

Do not use with corrosive or flammable gases.

Do not apply excessive force by spanner etc. to the parts except metal adapters when installing a single type sensor.

Do not insert a screw driver, wires etc. into the pressure port. Diaphragm may be damaged and out of order of the sensor's function.

In approx. 2 sec. after input of electrical supply, no sensing of the correct value is available.

Use a power supply of 12 to 24VDC to the sensor and set the ripple to Vp-p-10% or less. Avoid excessive voltage and voltage surges by using the electrical supply separated from the power supply for relays, solenoid valves, motors etc.

Pressure tolerance is 0.5MPa. Be careful please.

Proper earth of power supply is requested.

Do not insert the cables of the sensor in the common duct for power supply and high voltage cables.

12VDC rather than 24VDC is better for the power supply of the sensor.

In case of 100/200VAC power supply, OMRON Sensor Controller 「S3D2」 or equivalent is to be applied.

Collector current of the output transistor is designated for 80mA or less with loaded voltage of 30VDC or less.

When installing the single type sensor to COMUM, the adapter or sensor base is needed separately. Please turn over.

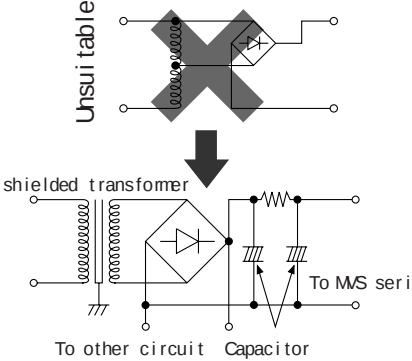
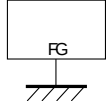
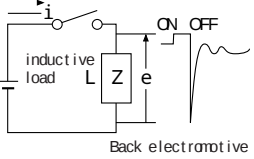
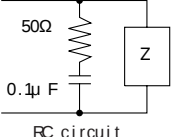
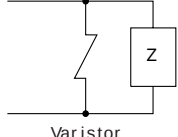
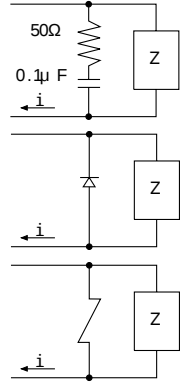
Specification and dimension of the sensor are to be referred to the catalog.



SPECIAL CAUTION ON VACUUM SENSOR

Diffusion type semiconductor pressure transducers are integrated for the vacuum sensors in MMS series.

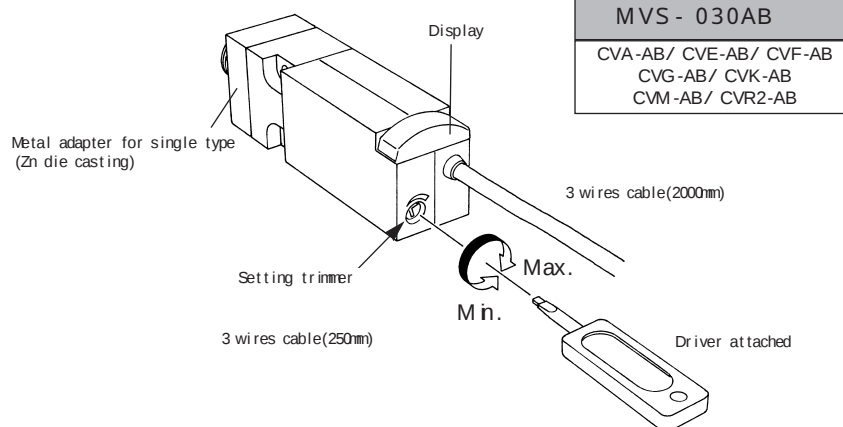
For the use of the sensors, pay special attention to the followings to avoid the error and damages caused by voltage surges.

Cause	1.No rectification at power source section	2.Noise or surge voltage is generated from other electric parts (including mechanical parts)	3.Surge voltage is generated due to loads of vacuum sensor				
Measure	Take following measures to improve rectification of power source section 1-1 Use special-purpose power source 1-2 Reinforce power source section  1-3 In the case of switching power source  Always connect frame ground to earth (See Item 2-3 as well)	2-1 Back electromotive force generation source Generating from inductive loads, DC motor, solenoids (coil), DC relay drive (relay sequence), etc. 2-2 Back electromotive force quantity Back electromotive force of several hundred volts to 1000V generates  Back electromotive force : $e = -L \frac{di}{dt}$ Examples of generation of back electromotive force <table><tr><td>12 VDC relay.....</td><td>165V</td></tr><tr><td>24 VDC relay.....</td><td>200V</td></tr></table> 2-3 Measure:Examples of protection network For AC Provide each one protection circuit within 0.5m of all loads on the primary side of capacitor  RC circuit  Varistor Varistor is FERRZ, etc. For DC Provide each one protection circuit within 0.5m of all loads on the secondary side of capacitor (same as item 3) It is effective to apply measure both for AC and for DC together. See item 1 and 3 as well.	12 VDC relay.....	165V	24 VDC relay.....	200V	For DC Install within 0.5m from a load of vacuum sensor  RC circuit Diode Varistor Matsushita ZNR 10K330 etc. 「i_l」 shall not exceed 80 mA (refer to Item 1-2)
12 VDC relay.....	165V						
24 VDC relay.....	200V						

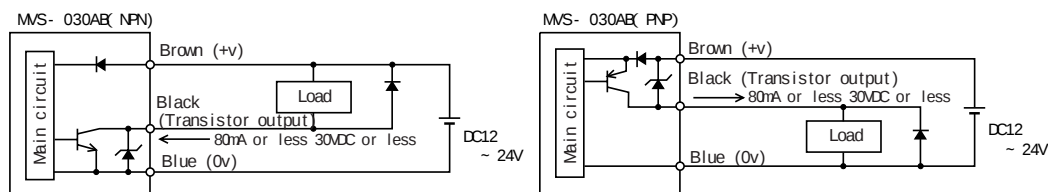
Value Setting (Set value at ex-factory: -46.6kPa)

Setting Trimmer turns clockwise upto -100.9kPa and anticlockwise upto 0kPa.

- Be careful not to push the trimmer by excessive force and turn it slowly. (The pushing force by driver is 0.49N or less.)



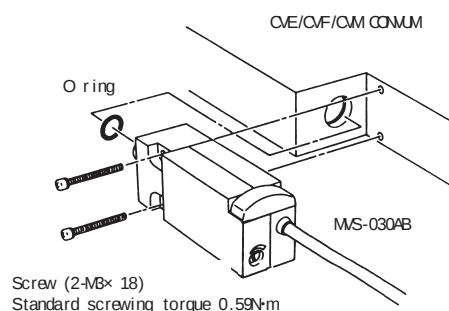
Wiring diagram



Installation method

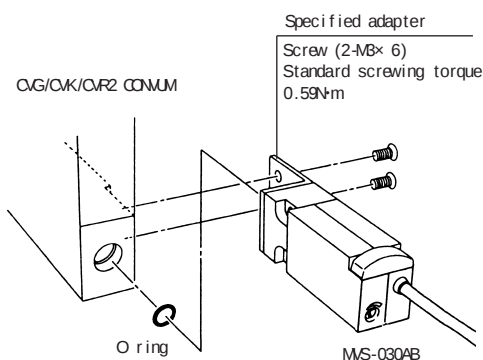
For CVE/CVF/CVM CONUM

- In case the single type sensor is mounted on CONUM, metal adapter is not necessary.



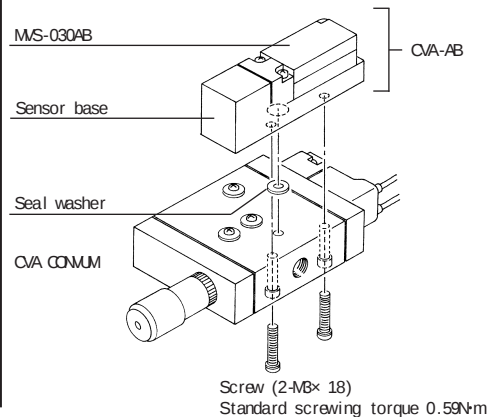
For CVG/CVK/CVR2 CONUM

- In case the single type sensor is mounted on CONUM, the specified adapter is necessary.



For CVA CONUM

- In case the single type sensor is mounted on CONUM, the specified sensor base is necessary. (The specified sensor base is included in the scope of supply as a accessory when the CONUM order requests CVA-AB.)



Accessories

MODEL	Parts	Remarks	Q'TY
Single type MVS-030AB	Driver for trimmer		1
	Screw	M8× 18 with spring washer	2
CONUM mountable type CV□ -AB	Driver for trimmer		1
	Screw	M8× 18 (CVE/CVF/CVM CONUM)	2
		M8× 6 (CVG/CVK/CVR2 CONUM)	2
		M8× 25 (CVA CONUM)	2
	O ring	(CVE/CVF/CVM CONUM)	1
	Adaper + O ring	(CVG/CVK/CVR2 CONUM)	each 1
	Sensor base	(CVA CONUM)	1

CONVUM

<http://www.convum.co.jp>