

**VEX 720T / 725T / 740T /
750T / 760T / 770T / 780T / 790T**

Assembly &
Maintenance Guide

EN



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1. RECOMMENDATIONS AND SAFETY SETPOINTS



PROHIBITED

- This unit has to be used under proper conditions according to its technical specification and design purpose. (Otherwise responsibility belongs to practitioner)
- Unauthorized personnel must not interfere in unit and/or must not use unoriginal spare parts. (Otherwise responsibility of failure that may occur belongs to practitioner)
- Do not install this product in a refrigerated warehouse, heated swimming pool or other location where temperature and humidity are significantly different. (Failure to heed this warning may result in electrical shock or malfunctioning.) Unit should not be subjected to excessive vibration and shock while transporting.
- If the unit is damaged due to any transporting etc. reasons, it should not be mounted.
- There should be avoided to put any material on to the unit that may cause any damage.
- Do not install this product in a location where acid, alkali or organic solvent vapors, paints or other toxic gases, gases containing corrosive components or high concentrations of oily smoke are present (Failure to heed this warning may result not only in malfunctioning but also fire, power leakage and electrical shock.)
- Do not use this product outside the range of its rated voltage and control capacity.



ATTENTION

- Install this product in an environment where the temperature ranges from -20 °C to +45 °C. If outdoor air is too cold and can cause condensation, pre-heater should be used to prevent.
- Select an adequately sturdy position for installing the product and install it properly and securely. (The unit can cause injuries in case of fall.)
- The surface of the unit must be able to carry the weight of the unit.
- Use electric cables specified in the manual to connect the room control board and check the connection strength (Otherwise fire may occur).
- Where ducts pass through the building and in the area which is connection with building construction, pay attention that ducts never touch any metal parts and any electrical contact.
- The outside ducts must be tilted at a gradient (1/30 or more) downwards toward the outdoor area from the main unit, and properly insulated.
- Gloves should be worn while installation. (Failure to heed this warning may result in injury.)
- A dedicated circuit breaker must be installed at the origin of mains power supply. This circuit breaker must be provided with a means for locking (lock and key).
- The body of the unit, the control room panels and cables must be at least 3 meters away from high electro-magnetic field forming equipment or cables.
- The spigots must be connected to the ventilation network.



- This product must not be disassembled under any circumstances. Only authorized repair technicians are qualified to conduct disassembly and repairs. (Failure to heed this warning may result in fire, electrical shock or injury).



- Connect the product properly to the ground. (Malfunctioning or power leaks can cause electrical shock.)
- Electrical connection should be made by authorized and trained technical personnel.
- Water connections should be done before the electrical connection is made. Before starting electrical connection, be sure water connection is made tightly.
- Electrical wiring connections must be made according to the specified electrical wiring diagram.
- There should not be any changes to the electrical connections that is made at the factory.
- Cables used in network connection must conform to specified standards and earth connection must be made.
- A circuit breaker should be placed between the network and unit. The circuit breaker should be selected according to the total power and current value specified on the label.
- Overcurrent fuse is recommended for the unit.
- The power must be switched off before any maintenance or cleaning procedure.
- Ensure that the unit can't be started accidentally.

NOTE: The installations, which is not available for installation and operation manual, is out of guarantee.



2. CHECK LIST

In the event of unit failure and pre-commissioning checks to be made are determined as follows; after checking this information, please contact our company in case failure continues.

Controls



Make sure that the unit receives power and electrical grounding is made!

Make sure that the electricity cables are drawn from in the correct cross section!
(Please check whether there is heating on cables or not.)

Please check whether the cables in unit control panel are shielded (shielded magnetic field) or not; make sure shielding is grounded. If not, please change them!

Make sure that fresh air and exhaust air filters are clean and they do not block the flow of air!

Please check whether the diameter of the air duct connection of the unit and the diameter of the spigot are the same. If the duct connection is smaller, change it with the correct one.

Make sure the electrical connections of the unit are made as suggested on the unit and in this guide, check if there is incorrect connection.

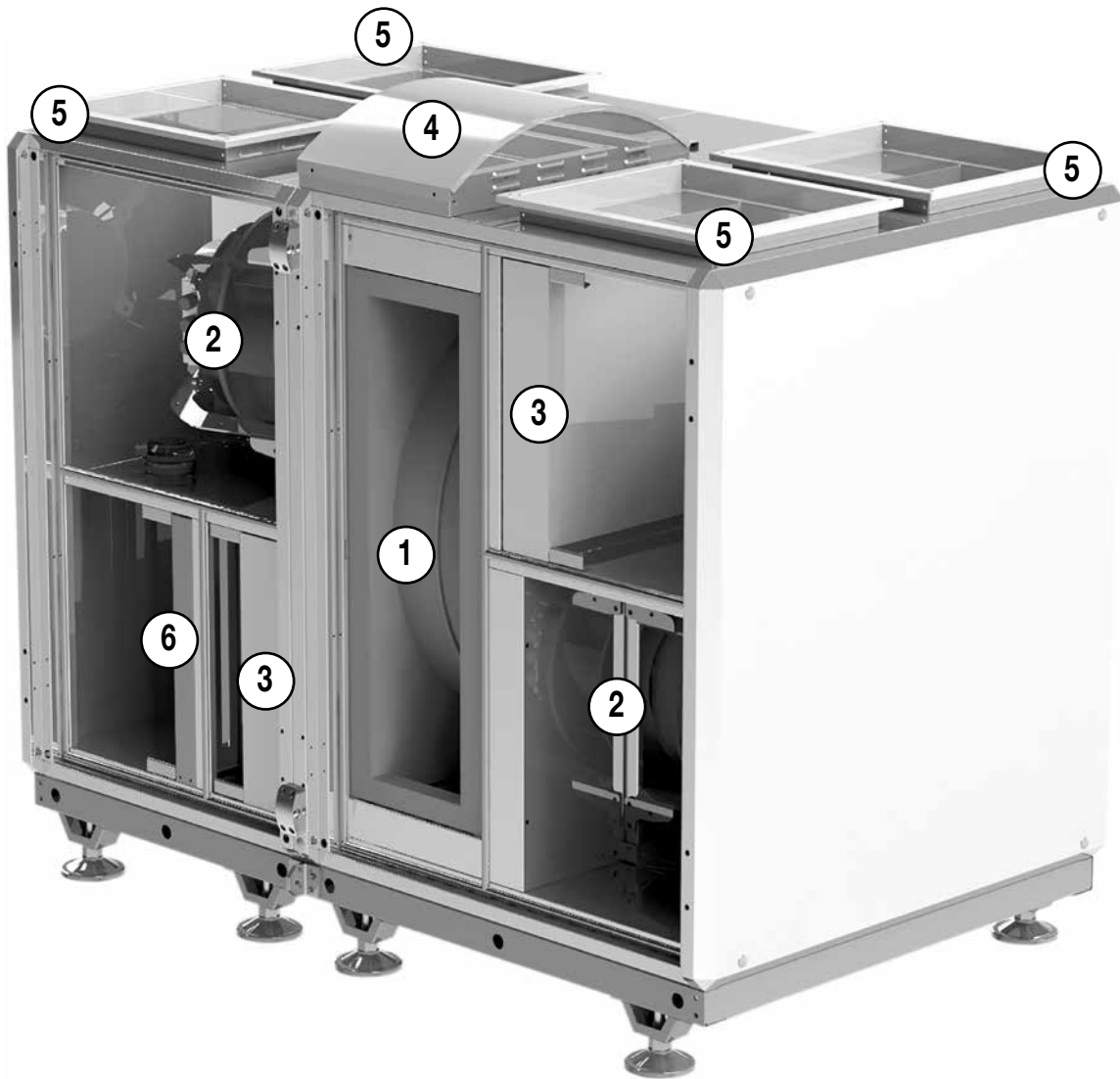
Make sure during the installation of the unit there is enough space for the service and if there is not enough space, re-install again.

After installing the unit, make sure that it does not create an abnormal sound or vibration, if there is, make sure that rubber pads are used.



3. UNIT COMPONENTS

VEX700T Series Units



① Rotary energy recovery

② Exhaust and supply
air fans

③ Exhaust and supply
air filters

④ Control

⑤ Duct connections

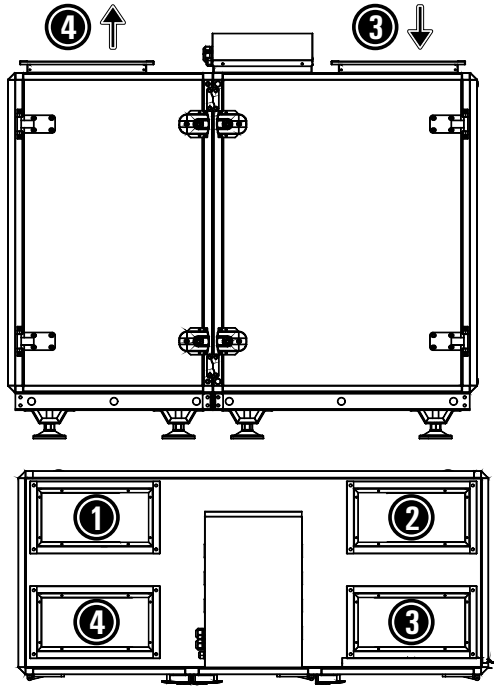
⑥ Pre-filter (Optional)



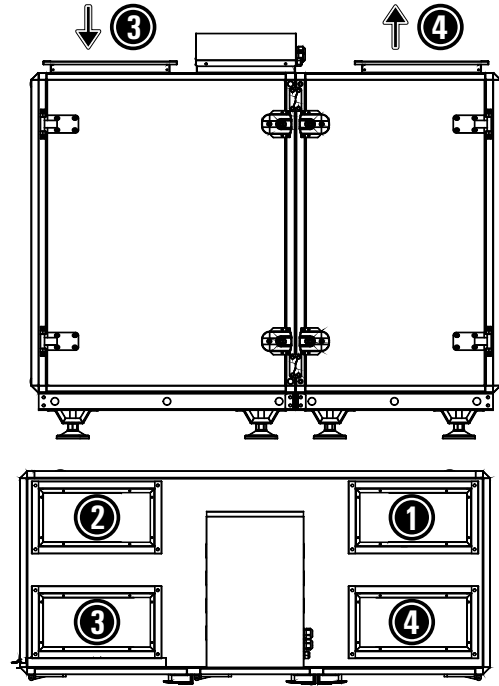
4. UNIT CONFIGURATION

VEX700T Series Units

Right-Hand Type



Left-Hand Type



① Outdoor air - OA

② Supply air - SA

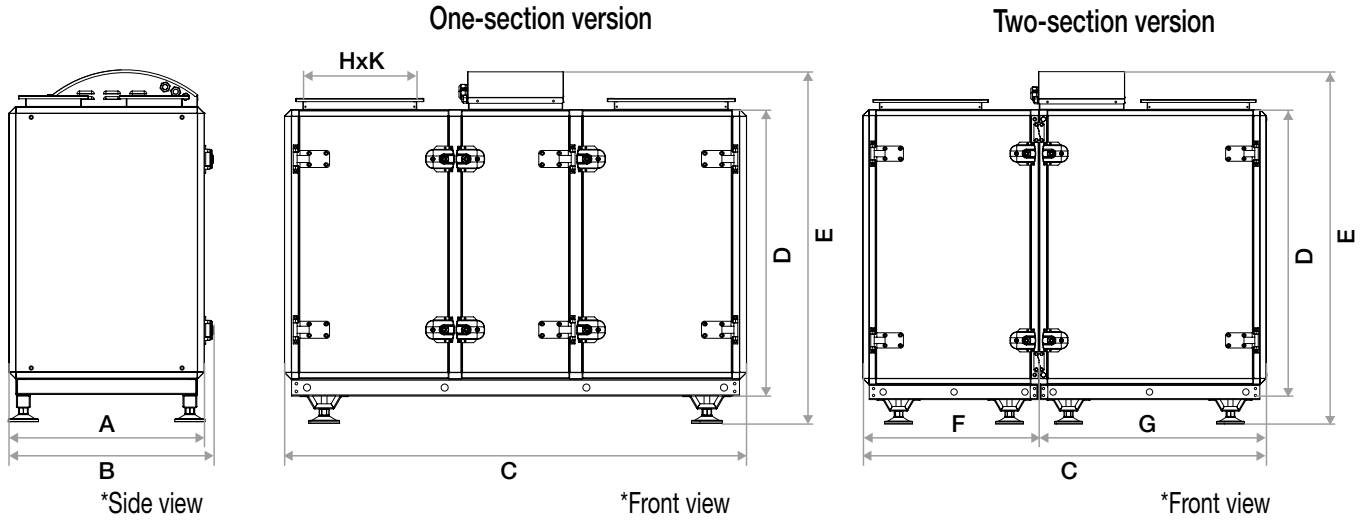
③ Return air - RA

④ Exhaust air - EA

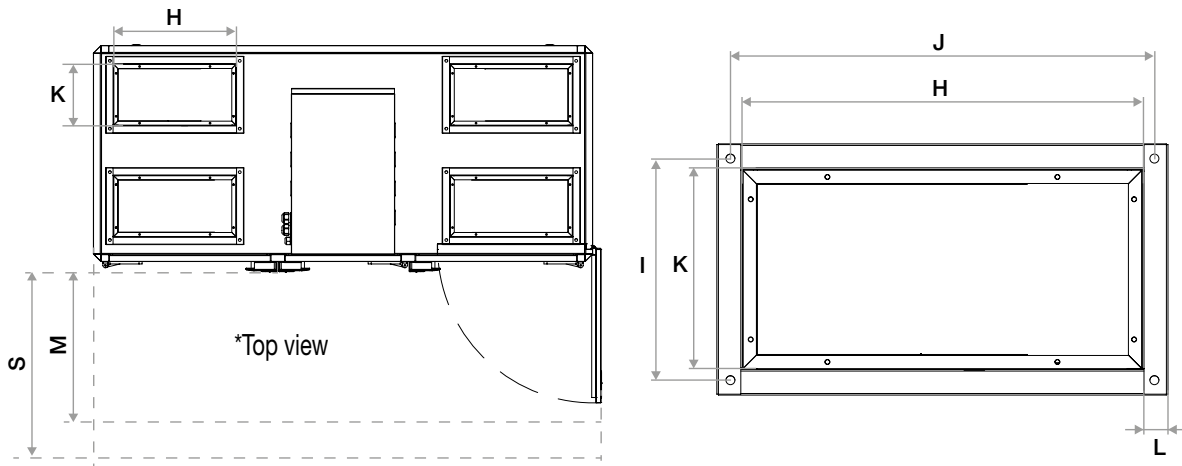


5. DIMENSIONS

VEX700T Series Units



The M quotation represents the space required for the maintenance of the unit (substitution of fans, filters...). The S quotation represents the space required to change the heat exchanger.



	VEX720T	VEX725T	VEX740T	VEX750T	VEX760T	VEX770T	VEX780T	VEX790T
A	705	705	805	955	1055	1185	1405	1405
B	740	740	840	1010	1110	1240	1460	1460
C	1630	1630	1630	1580	1580	1580	1930	1930
D	1010	1010	1110	1145	1245	1245	1405	1405
E	1245	1245	1345	1380	1480	1480	1680	1680
F	-	-	-	690	690	690	860	860
G	-	-	-	890	890	890	1070	1070
H	400	400	400	400	400	400	500	500
I	222	222	272	372	422	472	572	572
J	424	424	424	424	424	424	424	424
K	200	200	250	350	400	450	550	550
L	25	25	25	25	25	25	25	25
M	600	600	600	870	870	870	1050	1050
S	700	700	800	950	1050	1200	1300	1300
Weight (Kg)	250	250	280	340	370	410	485	500

*All measurement values are mm.



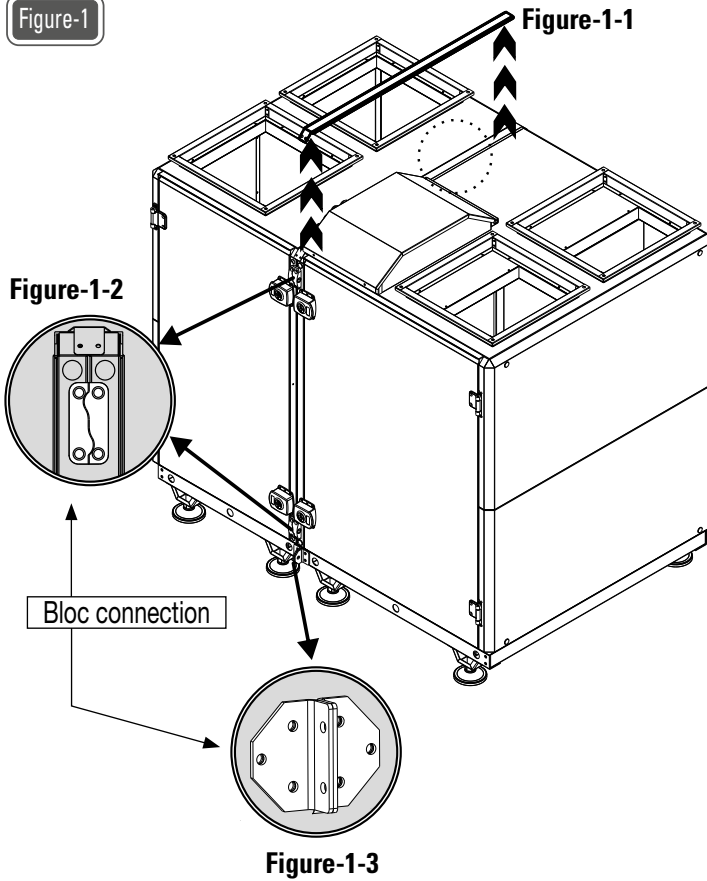
6. INSTALLATION

Disassembly of bi-blocs VEX700T Units



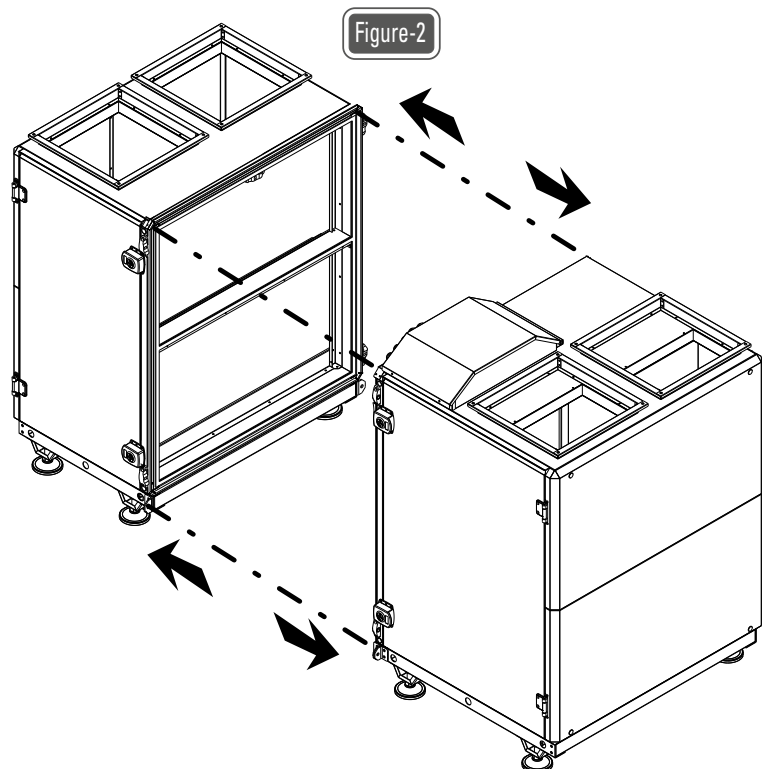
The following information is available for Multi-blocs VEX750T/760T/770t/780T/790T series.

Figure-1



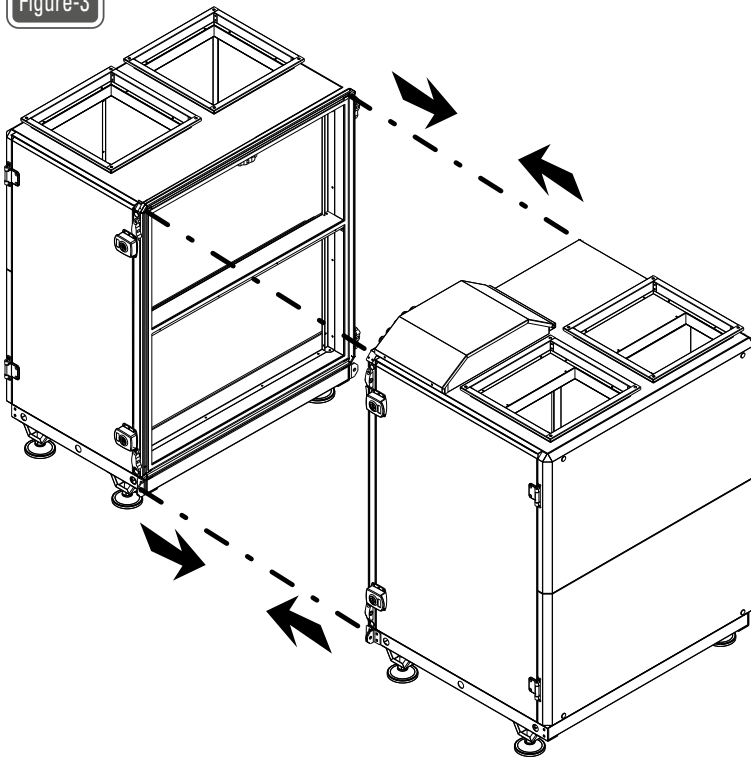
- Remove the rain protection cover which is assembled on the unit.
- Unscrew the bolts of connecting parts of the blocs. (Figure-1-3)
- Unscrew the bolts of connecting parts of the bloc base frame.

Blocs can be separated from each other (Figure-2)



The following information is available for Multi-blocs VEX750T/760T/770T/780T/790T series.

Figure-3

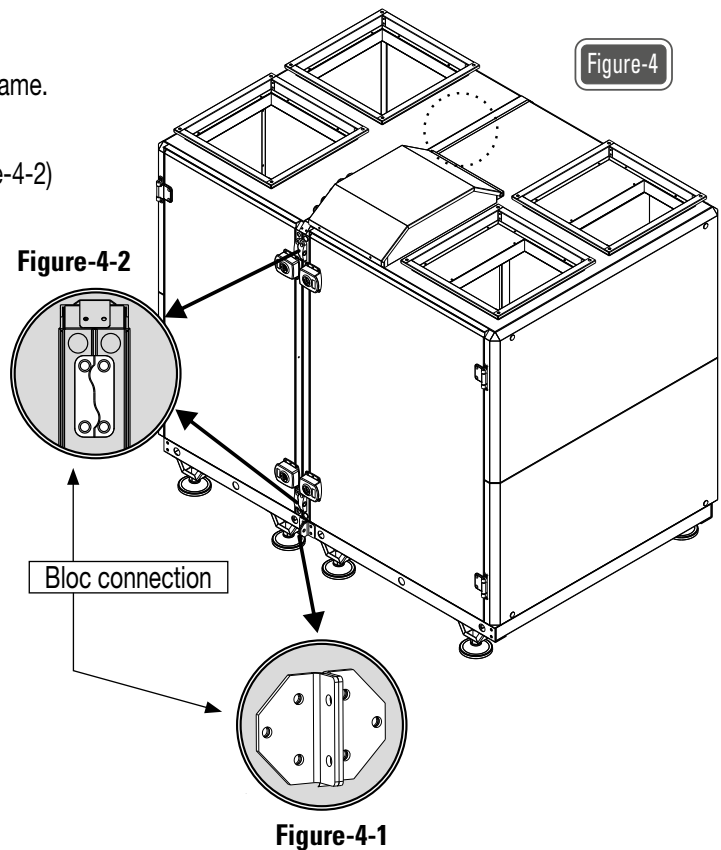


- Prepare the installation parts.
- Remove shipping bolts on the mounting surface.
- Assemble the contact surfaces of the unit with the help of sealing as shown in Figure 3.
- Check the seals in between the blocs. Change if it damaged.
- Assemble the blocs.

- Screw the bolts of connecting parts of the bloc base frame. (Figure-4-1)

- Screw the bolts of connecting parts of the bloc. (Figure-4-2)

Figure-4



Lifting Considerations

- Do not lift the unit when it is windy and while a personnel is working under the unit.
- Use lifting chain as shown below. Lifting chains must be capable of supporting the entire weight of the device.
- Lifting chains may not be the same length. Set lifting chains to balance the device.
- If possible, create a parallel loop straps to the air flow direction.
- For your safety, when unit is lifted up, you may use appropriate equipment method such as belts, straps.
- Determine center of gravity of unit and test it by lifting up about 500 mm. If lifting point is not appropriate, re-determine it to prevent falls.

Not lifting the unit properly may cause serious injury even death.



Failure to follow the instructions above may cause damage of equipment, serious injury, or even death. Subassemblies and parts of unit are equipped as shipped from the factory.

For units that are dispatched as one piece, please place minimum 4 pipes into carrying holes which are located on the unit and affix them to the carrying handle then carry the units as it is shown in **figure a**.

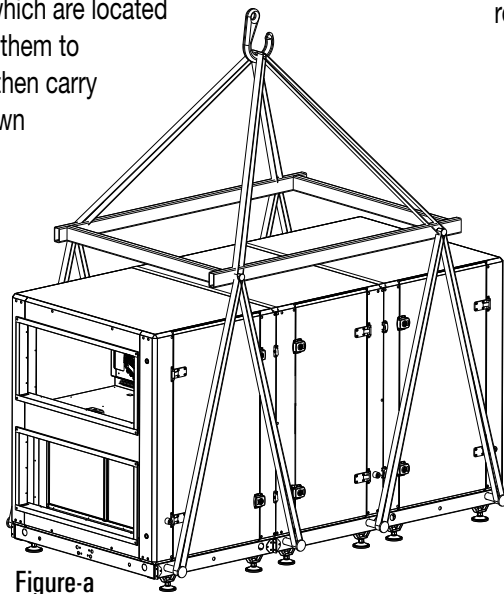


Figure-a

For units that are dispatched as bi-blocs, please affix pipes into holes which are located on the units and carry with ropes as it is shown in **figure b**.

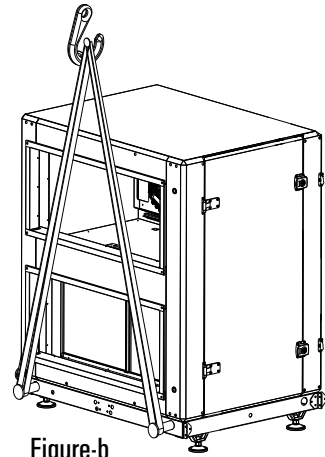


Figure-b



7. ELECTRICAL CONNECTION

System Connections

- 1- Cut the gaskets in cable connection hole from the center.
- 2- Pass the on/off switch cables through the cable connection hole.
- 3- Connect the main power cable and ground wires to the terminals in the junction box.
- 4- Use cable tie to hold the cables tightly.
- 5- After making cable connections, insulate the cable connection hole against entering water and impurity.

Considerations During Electricity Network Connection

- 1- Electrical connection must be done by an authorized personnel.
- 2- All kinds of safety measures should be taken by the technician during installation.
- 3- Electrical wiring must be done according to the specified electrical diagram. Any electrical connection which is made by the factory should not be changed.
- 4- Cables to be used during network connection must conform to the specified standards and should be connected to a grounded power supply.
- 5- A circuit breaker should be placed between the unit and network. Circuit breaker must be selected according to the total power and current value specified on+ the nameplate.
- 6- Over current protection is recommended for the units.

⚠ THE ELECTRICAL DIAGRAMS ARE DELIVERED WITH EACH VEX700T. THEY ARE LOCATED IN THE ELECTRICAL BOX.



8. SELECTION OF ELECTRICAL CABLE CROSS-SECTION

Electrical Cable Selection of Energy Recovery Unit - 400V 3 phase + Neutral + ground

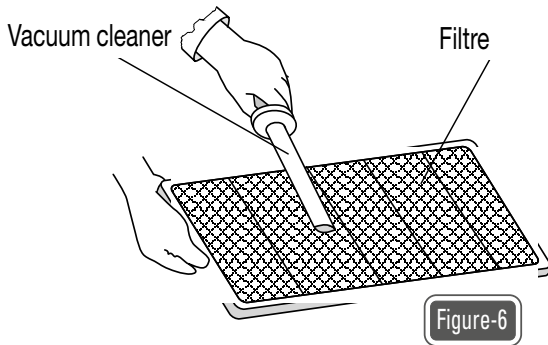
Unit Model	Power (kW)	Current (A)	Fuse (A)	Cable Cross-Section (mm ²) for 50M and PF = 0,8
VEX				
720T	0,99	2	3 x 3	1,5
725T	0,99	2	3 x 3	1,5
740T	1,59	3	3 x 4	1,5
750T	2,37	5	3 x 6	1,5
760T	3,49	7	3 x 10	1,5
770T	5,77	10,4	3 x 16	1,5
780T	7	12,7	3 x 16	1,5
790T	10,8	19,5	3 x 25	2,5



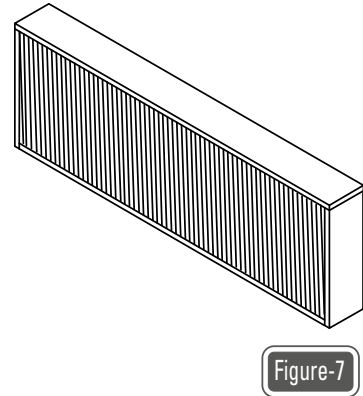
9. MAINTENANCE

Filter Maintenance

- To clean up G class filters;
- Turn off the unit.
 - Remove dirty filters.
 - Use a vacuum cleaner to clean the dust from the air filter.
 - Place the filters in the filter slots.
 - Close the service cover and be sure it is closed tightly.

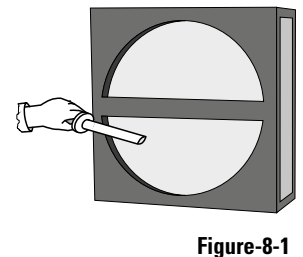
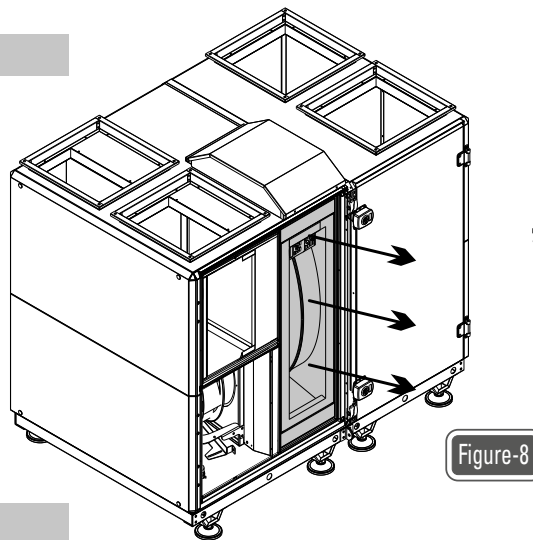


- To clean up F / M class filters:
- Turn off the unit.
 - Remove dirty filters.
 - Place new bag filters in the filter slots.
 - Close the service cover and be sure it is closed tightly.



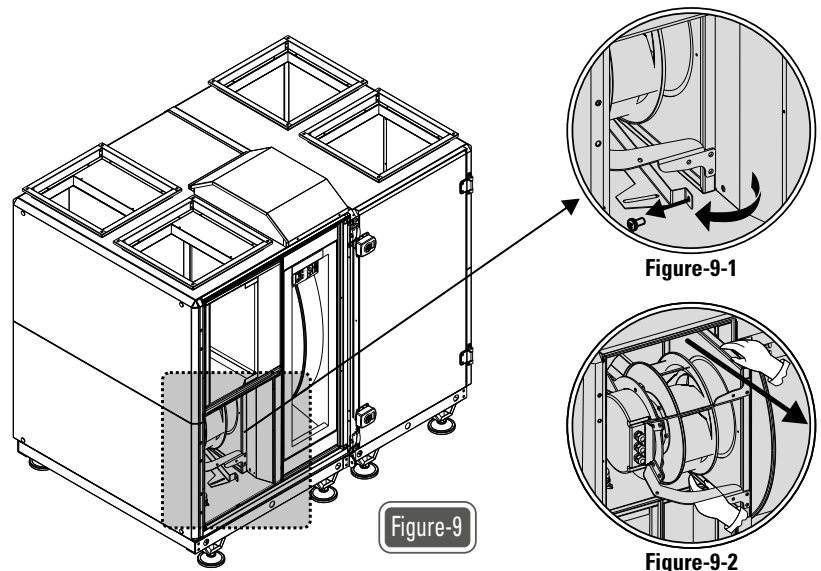
Heat Exchanger Maintenance

- Turn off the power of the unit.
- Remove the electrical connection of rotary heat exchanger.
- Remove rotary heat exchanger carefully out of the unit.
- Clean fins of storage medium with compressed air.
- Check tension of the drive belt and be sure the belt is running properly.



Fan maintenance

- Turn off the power of the unit.
- Remove the fan out of the unit carefully. Clean the fan with vacuum cleaner.
- Clean the dirty areas of the fan with warm water with natural detergent or soap powder. Dry wet surfaces to prevent corrosion on metal surfaces.
- Place cleaned fan in the slots.



Maintenance Period

Every year:

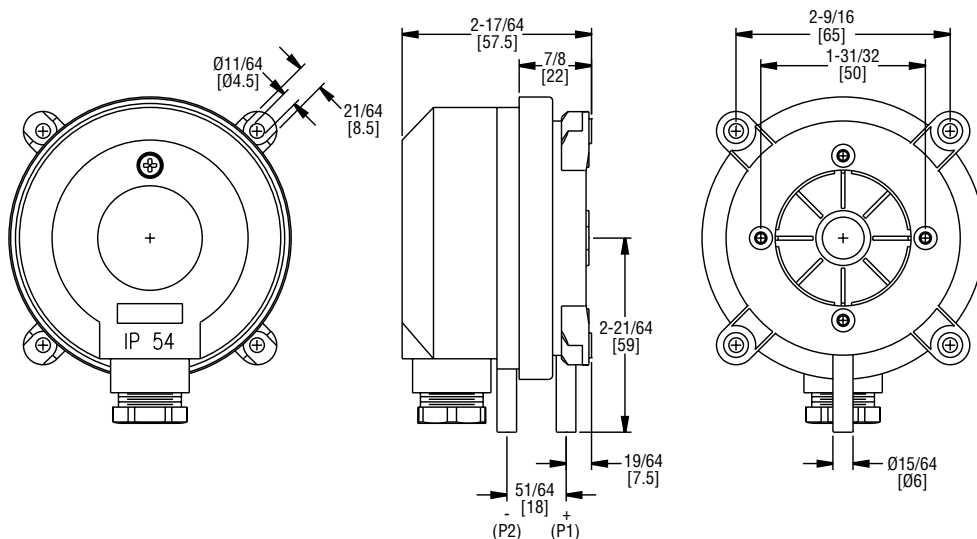
- Check tension of the drive belt and be sure the belt is running properly (for units with rotary type heat exchanger)
- Paint the exterior surface of casing to prevent corrosion on metal surfaces of the unit.
- Clean fan propeller and fan shaft of the fan.
- If the unit has damper, check the connection of damper, set screw and rigging.
- Check all electrical connections and isolation.
- Check if there is any damaged cable connections.
- Check if there is any damaged on all gaskets around door and buffer. Check the situation of all isolation materials. Check all connections to prevent fracture and leakage, and if there is any repair it.

Every 3-6 months:

- Check all electrical connections.
- Check the accumulated dirt on coils.
- If the unit has damper, clean damper and its components.
- Clean or change clogged or dirty filters.



10. PRESSOSTAT - INSTALLATION AND OPERATING INSTRUCTIONS



The Series aDpS adjustable Differential pressure Switch is designed for overpressure, vacuum, and differential pressure applications. The scaled adjustment knob allows changes to the switching pressure to be made without a pressure gage. The ADPS is available with settings from 0.08" w.c. (20 Pa) to 20" w.c. (5000 Pa). The silicone diaphragm and PA 6.6 body make the Series ADPS perfect for use with air and other noncombustible gases. The Series ADPS can be used in monitoring air filters, ventilators, and industrial cooling-air circuits along with controlling air and fire-protection flaps and many other applications.

Use only with mediums such as air, or other noncombustible or non-aggressive gases. Otherwise operating faults or accidents may occur.

Mounting Switch

First check the pressure switch to ascertain whether any damage is visible on the housing. If the housing is leaky because of damage, the pressure switch must not be used.

Switching pressure specifications apply to vertical installation which is also the recommended position with pressure connections pointing downwards.

Only if there is no potential for condensate forming can you mount the pressure switch horizontally. In this case, however, the switching values are approximately 0.08 in w.c. (20 Pa) higher as indicated on the scale. In the horizontal position, the pressure switch should be mounted 'lying down' only (that is to say with the electrical connections pointing upwards). Do not mount the pressure switch in a hanging position (that is to say, not 'overhead' with the electrical connections pointing downwards). Otherwise the device will function inaccurately.

a) Mounting with screws or brackets

- To mount the pressure switch, L-shaped A-288 and S-shaped A-289 mounting brackets can be ordered separately. To secure the device on the rear side of the housing, only use the sheet metal screws (3.5 x 8 mm) which are supplied together with the mounting brackets. Under no circumstances must you use longer screws. Otherwise, the base of the housing could be punctured resulting in the pressure switch leaking.
- You can also mount the pressure switch directly on a wall. To do this use screws with a maximum diameter of 0.315" (8.0 mm), if you use the outer mounting lugs to screw the device in place. Do not tighten the screws so much that the base of the device is deformed. Otherwise, the pressure switch can be shifted out of position, or leak.

SPECIFICATIONS

Service: Air and noncombustible, compatible gases.

Wetted Materials: Diaphragm material: Silicone; Housing material & switch body: POM and PA 6.6; Cover: Polystyrene.

Temperature Limits: Process ambient temperature from -4 to 185°F (-20 to 85°C).

Pressure Limits: Max. Operating Pressure: 40" W.C. (10 kPa) for all pressure ranges.

Switch type: Single-pole double-throw (SPDT).

Repeatability: ±15% FS.

Electrical Rating: Standard: Max., 1.5A/250 VAC, max. switching rate: 6 cycles/min.; Gold Contact Option: 0.1 A/ 24 VDC.

Electrical connections: Push-on screw terminals. M20x1.5 with cable strain relief or optional 1/2" NPT connection.

Process connections: 5/16" (7.94 mm) outside diameter tubing, 1/4" (6.0 mm) inside diameter tubing.

Mounting orientation: Vertically, with pressure connections pointing downwards.

Mechanical Working Life: Over 106 switching operations.

Weight: 5.6 oz (160 g).

Enclosure Rating: IP54.

Agency approvals: CE, RoHS.

Installing Hoses

Important: Pressure tubing cannot be kinked. Pay particular attention to this point if you run hoses over an edge. It is better to form a loop. If the hoses are kinked, the device cannot function accurately.

a) For connection to the pressure switch two fittings inherent in the housing are provided for hoses with an internal diameter of 1/4" (6.0 mm).

- Connect a hose with the higher pressure to socket P1 which is located on the lower section of the housing.
- Connect a hose with the lower pressure to socket P2 which is located on the middle section of the housing.

After you have installed the hoses, it is absolutely essential to check them for tightness of fit at the connection points and to make sure that they run without any kinks.

Electrical connection

Work on electrical installations must only be carried out by electricians who are specifically trained for this purpose.

CAUTION First make sure that there is no voltage on the connecting cable while you are working on the electrical connections. Otherwise, a possible electric shock may result and the connected equipment may be damaged. The connecting cable can be run to the pressure switch from three sides, according to choice. The screw cable connection has a plug-in design for this purpose. Rotate protective cover accordingly.

For cable gland models, the seal in the screw cable connection is designed for cables with alternative sheath diameters of 0.275" (7 mm) or 0.393" (10 mm). Only use these sizes – otherwise the screw cable connection cannot seal adequately.

1. If using a 0.275" (7 mm) connecting cable, you can line up the press nut, the plain washer and the sealing ring directly on the cable.
2. If using a 0.393" (10 mm) connecting cable, you must first break the inner rubber ring out of the sealing ring directly on the cable. Then line up the press nut, the plain washer and the sealing ring on the cable.

Wiring

The switching device in this pressure switch is designed as a change-over contact as can be seen from the wiring diagram (Figure 1). The rest position is shown in Figure 1 (pressure below the activation switch point on dial).

1. In the instance where pole 3 (COM) closes to Pole 2, the pressure is increasing (NO).
2. In the instance where pole 3 (COM) closes to Pole 1, the pressure is decreasing (NC).

Protect the feed line (to pole 3) by fuse, either in control system or along the line, and do so with:

1. Max. 1.5 A / 250 VAC, if you are loading the contact with an resistive load;
2. Max 0.4 A / 250 VAC, if you are loading the contact with an inductive load (such as relay);
3. Max. 0.1 A / 24 VDC, if you are using the pressure switch in the weak current version with gold-plated contacts.

The connections are intended for crimp-type sockets, 0.25 in (6.3 mm).

1. Make sure the crimp connection is perfect, and that the cable lugs fit properly on to the connections.
2. If you do not have any crimp-type sockets available, you can also use the cable lugs which are supplied with mounted screw terminals. However, these are only intended for rigid copper wire.
3. On flex, it is either necessary to crimp on strand end sleeves – and then you can also screw the strands on – or to crimp cable lugs on directly as previously described.

Setting the pressure Range

Make absolutely certain that there is no voltage on the electrical connections before you carry out any setting on the pressure switch. Otherwise, it could be fatal if you accidentally touch the electrical connections or the metal adjusting screw while you are performing the settings.

- a) Use the adjustment dial to set the pressure which should trip the switch on an increase of pressure.
 1. The indications on the dial are only correct for the vertical mounting position.
 2. When the pressure falls, the switch returns to its resting position as soon as the pressure falls below the dead band.

Attaching cover

- a) Insert the screw cable connection into the recess provided for this purpose on the housing.
- b) Then place the housing cover in position and screw it down evenly on to the pressure switch.

Testing the Setting

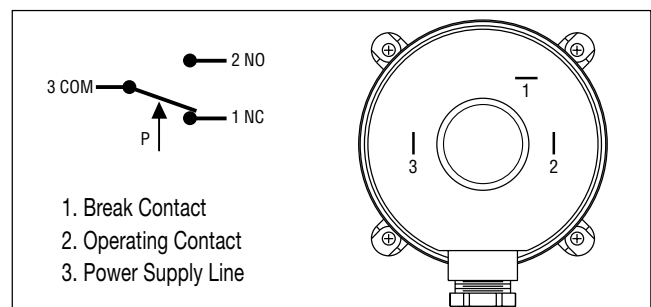
Do not operate the system until the housing is closed. Otherwise there is the possibility of an electric shock if you accidentally touch live parts.

Check the trip and reset pressures by slowly increasing the pressure and then allowing it to fall again.

IMPORTANT: Observe the maximum permissible operating pressure of 40" w.c. (10 kPa) which is indicated in the data sheet. Otherwise the pressure switch may be damaged.

MAINTENANCE

Upon final installation of the Series ADPS Adjustable Differential Pressure Switch, no routine maintenance is required. A periodic check of system operation is recommended. The Series ADPS is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

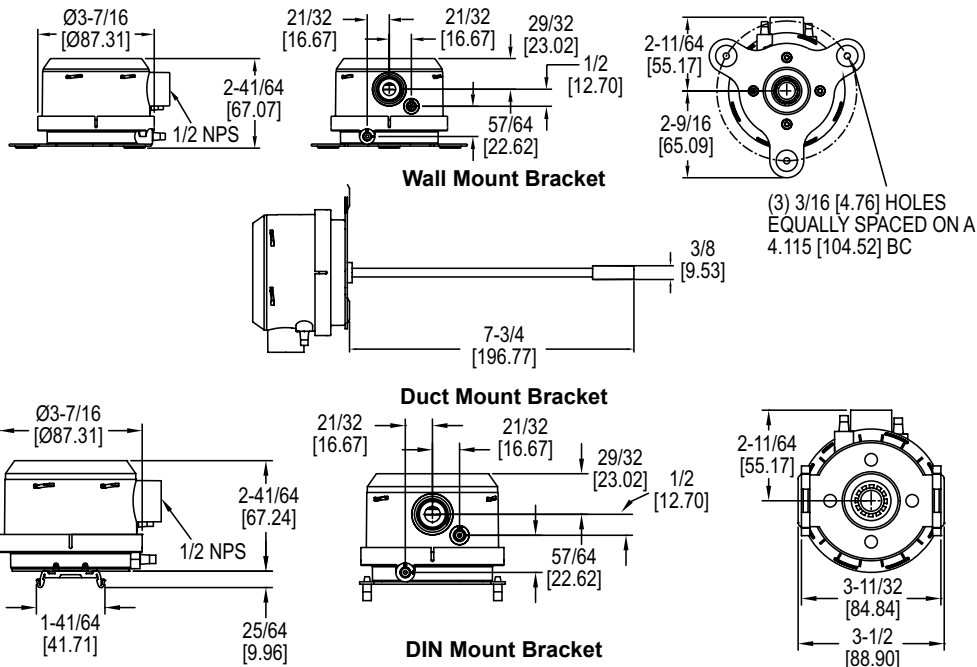




11. DIFFERENTIAL PRESSURE TRANSMITTER

MAGNESENSE® II DIFFERENTIAL PRESSURE TRANSMITTER

Monitors Pressure, Air Velocity and Air Flow, BACnet/Modbus® Communications



The SERIES MS2 Magnesense® II Differential Pressure Transmitter combines the proven stable piezo technology and the versatility of our original Series MS with additional features to reduce installation time and simplify ordering. Like the original Series MS, the second generation transmitter can be used as a linear pressure output or a linear velocity output with the square root extraction done in the transmitter. Additional parameters have been included to expand the square root capability to include flow measurements.

FEATURES/BENEFITS

- Field selectable ranges and output signal reduce inventory and the chances of ordering an incorrect part
- BACnet or Modbus serial communications reduce wiring cost by daisy-chaining the transmitters
- Our integral field-upgradeable display or plug-in remote display tool save upfront material cost and allow for local viewing of measurements.

APPLICATIONS

- Filter monitoring in air handler units
- Building pressure in pharmaceutical-semiconductor clean rooms
- Duct static pressure in commercial buildings
- Air velocity/flow in VAV systems

SPÉCIFICATIONS

Supported Baud Rates: 9600, 19200, 38400, 57600, 76800, 115200.
Data Size: 8.
Parity: None.
Stop Bits: 1.
Service: Air and non-combustible, compatible gases.

Wetted Materials: Consult factory. Typical Accuracy: $\pm 1\%$ FS for 0.15 in w.c. (40 Pa), 0.25 in w.c. (50 Pa), 0.5 in w.c. (125 Pa), 2 in w.c. (500 Pa), 3 in w.c. (750 Pa), 5 in w.c. (1250 Pa), 10 in w.c. (2 kPa), 15 in w.c. (3 kPa), 25 in w.c. (5 kPa), 28 in w.c. (6.975 kPa); $\pm 2\%$ FS for 0.1 in w.c. (25 Pa), 1 in w.c. (250 Pa), and all bi-directional ranges.

Stability: $\pm 1\%$ / year FSO.

Temperature Limits: 0 to 150°F (-18 to 66°C).

Pressure Limits: 1 psi max., operation; 10 psi burst.

Power Requirements: 10 to 35 VDC (2-wire), 17 to 36 VDC or isolated 21.6 to 33 VAC (3-wire).

Output Signals: 4 to 20 mA (2-wire), 0 to 5 VDC, 0 to 10 VDC (3-wire).

Response Time: Adjustable: 0.5 to 15 sec. time constant. Provides a 95% response time of 1.5 to 45 seconds.

Zero & Span Adjustments: Digital push buttons.

Loop Resistance: Current output: 0 to 1250 Ω max; Voltage output: Min. load resistance 1 k Ω .

Current Consumption: 40 mA max.

Display (Optional): 5 digit LCD.

Electrical Connections: 3-wire removable European style terminal block for 16 to 22 AWG.

Electrical Entry: 1/2" NPS thread.

Process Connection: 3/16" ID tubing (5 mm ID); Max. OD 9 mm.

Enclosure Rating: IP66.

Mounting Orientation: Diaphragm in vertical position.

Weight: 8.0 oz (230 g).

Agency Approvals: BTL, CE.

Model chart

Model	in w.c.	Pa	mm w.c.	kPa
MS2-W101	0.10, 0.15, 0.25, 0.50	25, 40, 50, 125	2.5, 4, 6, 10	0.025, 0.04, 0.05, 0.125
MS2-W111	±0.10, ±0.15, ±0.25, ±0.50	±25, ±40, ±50, ±125	±2.5, ±4, ±6, ±10	±0.025, ±0.04, ±0.05, ±0.125
MS2-W102	1, 2, 3, 5 ±1, ±2, ±3, ±5	250, 500, 750, 1250 ±250, ±500, ±750, ±1250	25, 50, 75, 125 25, 50, 75, 125	0.25, 0.5, 0.75, 1.25 0.25, 0.5, 0.75, 1.25
MS2-W103	10, 15, 25, 28 ±10, ±15, ±25, ±28	2500, 3500, 5000, 6975 ±2500, ±3500, ±5000, ±6975	250, 350, 500, 697.5 ±250, ±350, ±500, ±697.5	2.5, 3.5, 5.0, 6.975 ±2.5, ±3.5, ±5.0, ±6.975

Note: For duct mount static probe change W to D. Example: MS2-D101
For DIN rail mounting change W to N. Example: MS2-N101

Options		Accessories	
To order add suffix:	Description	Model	Description
-LCD	Units with display	A-151	Cable gland for 5 to 10 mm diameter cable
Example: MS2-W101-LCD		A-MS2-LCD	Field upgradeable display
-BC	BACnet Communications	A-435-A	Remote display tool
Example: MS2-W101-BC		A-480	Plastic static pressure tip
-MC	Modbus® Communications	A-481	Installer kit; includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing
Example: MS2-W101-MC		A-489	4" 303 SS straight static pressure tip with flange
-NIST	NIST traceable calibration certificate	A-302F-A	4" 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing
Example: MS2-W101-NIST		SCD-PS	100 to 240 VAC/VDC to 24 VDC power supply
-FC	Factory calibration certificate		
Example: MS2-W101-FC			

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