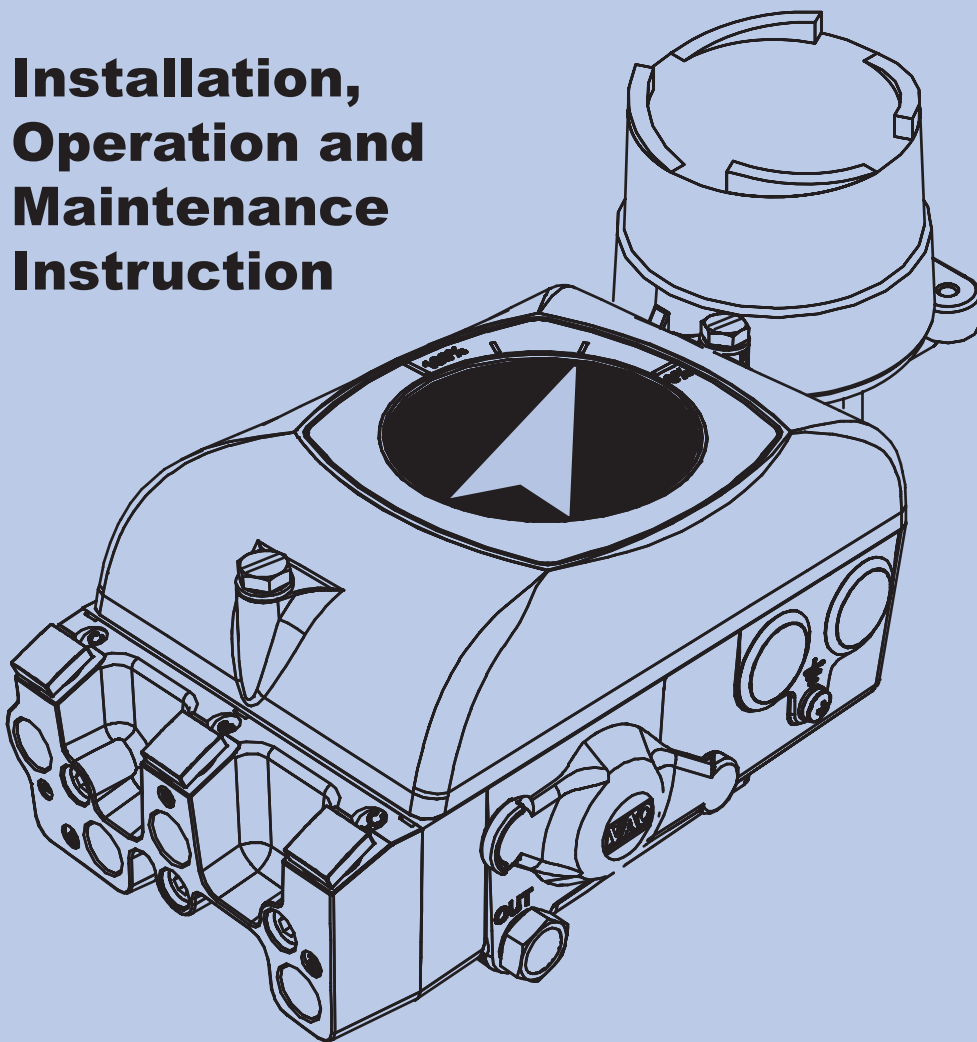




VAC, Valve Accessories & Controls.
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V200 EXTERNAL OPTION

**Installation,
Operation and
Maintenance
Instruction**





V200 POSITIONER

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1 INTRODUCTION

1.1 Air quality recommendations

Poor air quality is one of the main causes of premature functional problems with pneumatic and electropneumatic equipment. The pilot valve and IP converter are precision instruments, and are therefore the most sensitive parts of the positioner.

a) Water in the supply air is a natural occurrence. This happens when air is compressed. The compression heats the air and the natural degree of water in the air can remain as moisture. When the air cools in pipes etc. the moisture condenses and becomes liquid water. Large quantities can build and sometimes flood small water separators. This excess water will eventually reach the control valve and positioner. This can cause corrosion damage to the IP converter, causing the unit to malfunction.

We strongly recommend the use of water separators with adequate capacity. Coalescing filters from a reputable manufacturer is an inexpensive way to help prevent unit malfunctions or failures, and add life to the product. These filters remove particles and moisture from air lines.

b) Oil in the supply air usually is from the main compressor. Oil can clog the small nozzles and disturb the flapper in the IP converter. It can also cause the spool to “drag” within the pilot valve. The result is poor control or in the worst case, failure.

c) Particles in the air usually occur because of corrosion. Dirt and particles can block the small nozzles of the IP converter. They can also cause the pilot valve to malfunction. The unit may completely fail.

To ensure normal operational safety with VAC positioner products, we recommend that a water separator and a <80 micrometer filter are mounted as close to the product as possible. If large amounts of oil are present an oil separator should be installed as well.

To further increase operational safety, we recommend that the working air is clean, dry and free of moisture, water, oil, particles and other contaminants, in accordance with the Standard ANSI/ISA– 7.0.01– 1996

1.2 Safety Instructions



CAUTION: Beware of moving parts when positioner is operated!



CAUTION: Beware of parts with live voltage!

A voltage, which is normally not dangerous, is supplied to the positioner. Avoid touching live parts and bare wires as well as short circuiting live parts and the housing.



CAUTION: Do not dismantle a pressurized positioner!

Dismantling a pressurized positioner will result in uncontrolled pressure release. Always isolate the relevant part of the pipeline. Release the pressure from the positioner and the piping. Failure to do this may result in damage or personal injury.



CAUTION: Do not exceed the positioner performance limitations!

Exceeding the limitations marked on the positioner may cause damage to the positioner, actuator and valve. Damage or personal injury may result.



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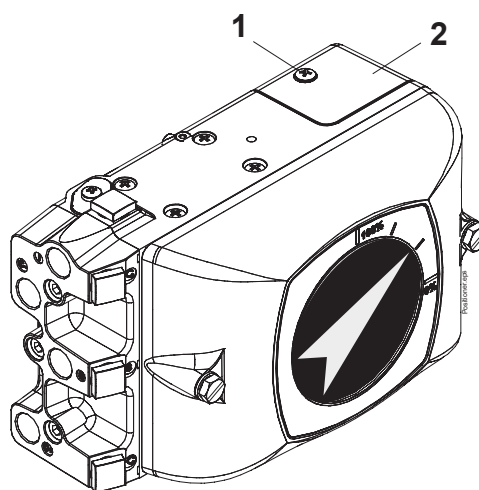
2 INSTALLATION

2.1 Installing external IP converter on V200P

NOTE! This instruction is for use when converting from V200P to V200EX, V200FF or other external IP converter.

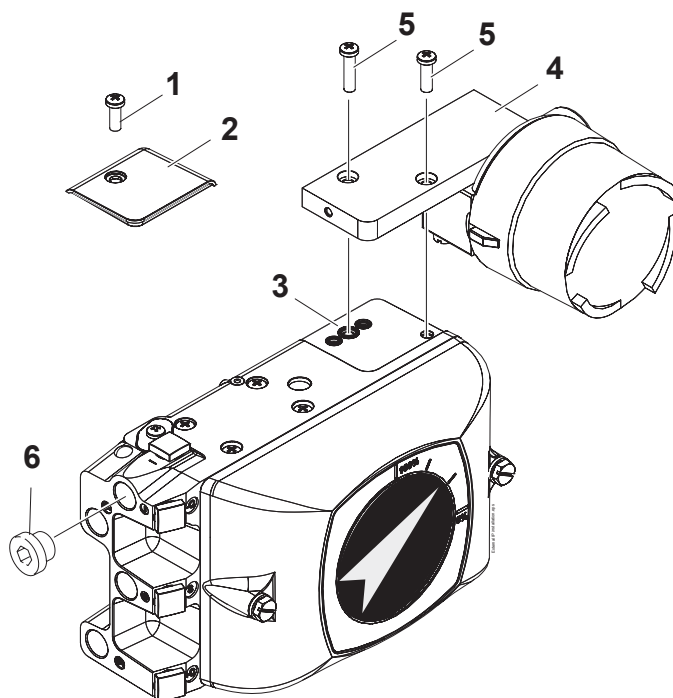
When converting from V200E please follow the instruction in section 2.2.

1. Loosen the screw (1) and remove the plate(2).
2. Make sure there are three O-rings(3) in the positioner housing.
3. Install the IP converter(4) and tighten the screws(5).
4. Install the 1/4" plug(6) in the port marked I.



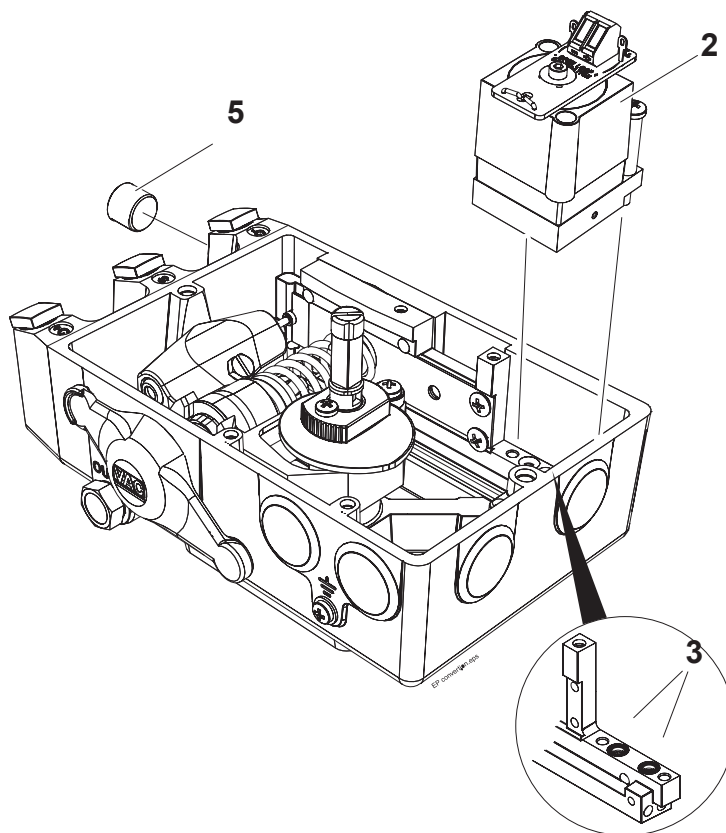
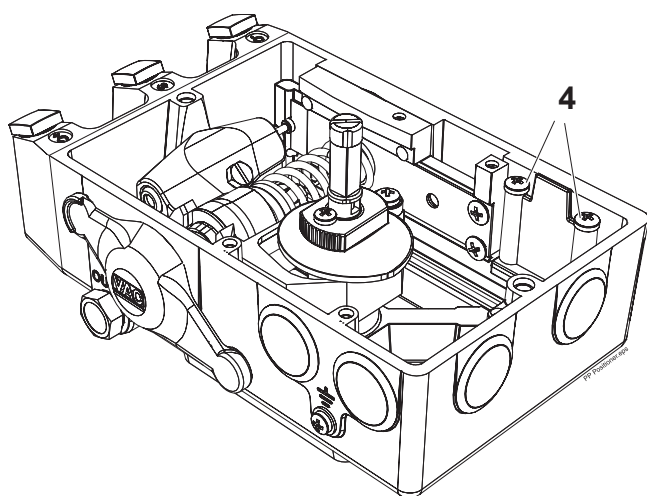
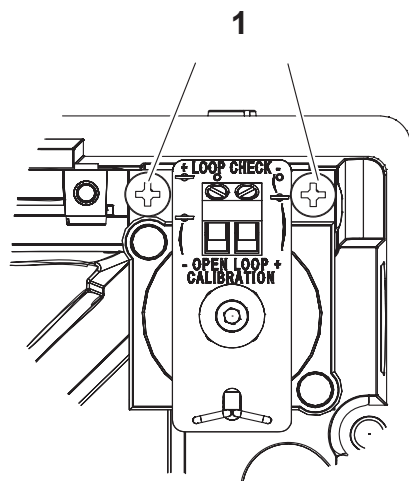
1 - External IPs are pre-calibrated to supply the V200 positioner with the proper pneumatic input signal, relative to electronic input. NO CALIBRATION of the external IP is needed

2 - All External IPs are supplied air from the V200 supply port. This internal porting provides the proper air supply to the external IP. NO ADDITIONAL AIR PORTING OF THE IP IS NEEDED



2.2 Installing external IP converter on V200E (which has the internal IP inside the unit).

1. Loosen the two screws(1) that secure the internal IP converter(2) and remove the internal IP.
2. Make sure the two O-rings(3) are still in the positioner housing.
3. Install the pneumatic sealing plate(4) and tighten the screws.
4. Check that the 1/4"plug(5) is installed in the port marked I.
5. Continue with the instruction 2.1 (page 5)



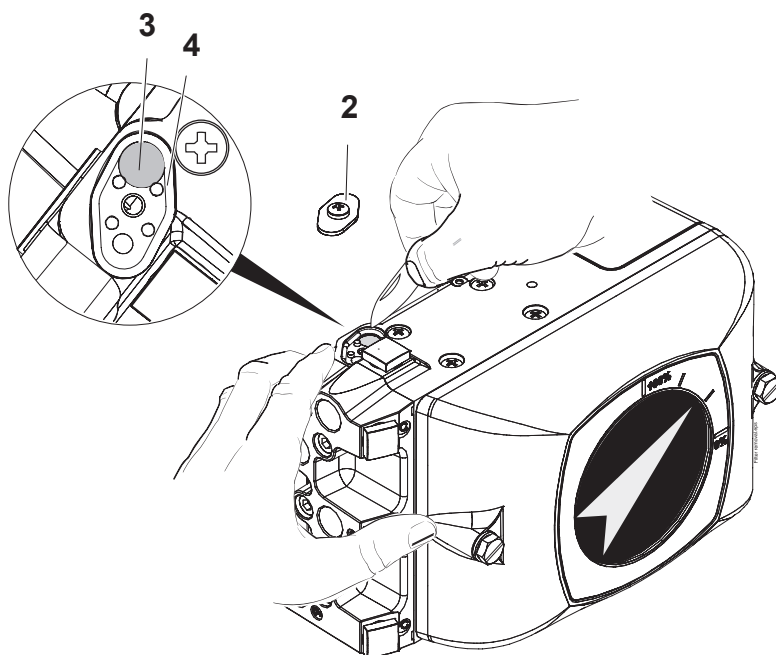
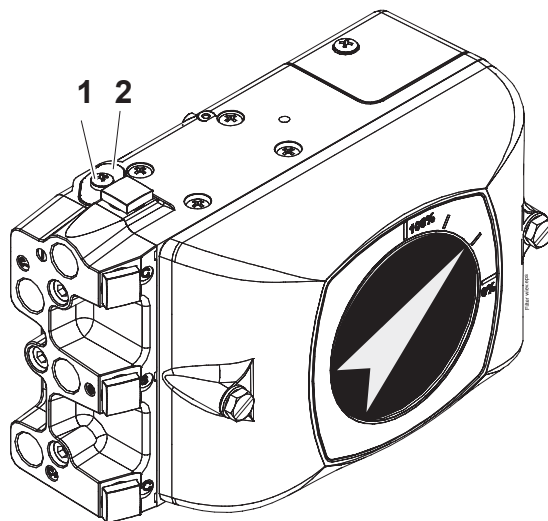
2.3 Main supply filter for IP converter

Changing the filter

1. Turn off or disconnect the main air supply.

Should air supply not be disconnected or turned off, the pressure may cause the filter cover to eject from the unit.

2. Loosen the screw(1) and remove filter cover(2)
3. Cautiously remove the filter (3) with a sharp pointed object e.g. a pocket knife.
4. Press the new filter(3) into the housing.
5. Check the O-ring(4) and replace if needed.
5. Install the filter cover(2) and tighten the screw(1)



If the filter(3) shows traces of oil or water, check the water/oil separator in the supply line.

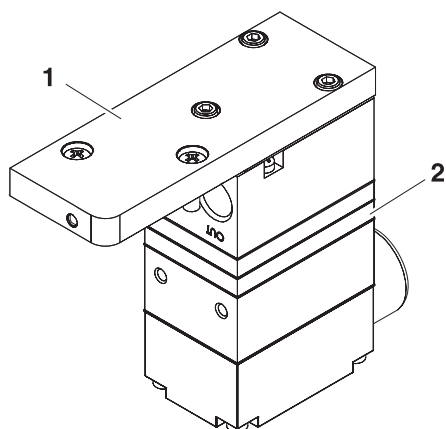
Oil and water can cause functional problems in the IP converter.

3 SPARE PARTS

3.1 Exploded drawing external options

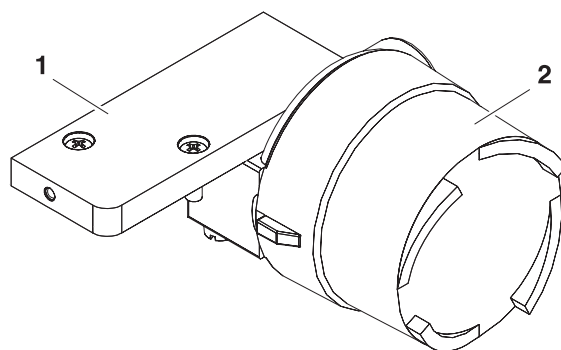
1

V200 External IP module 0-10V



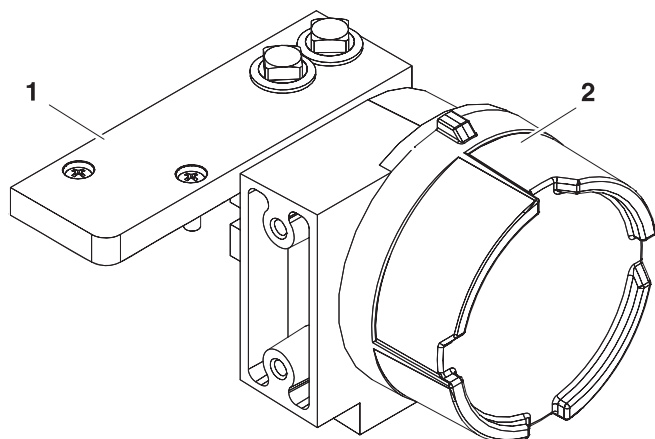
2

V200 External IP module EX



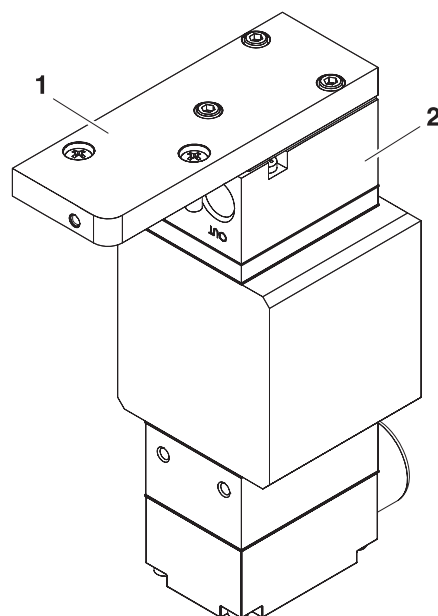
3

V200 External IP module Gas Approved



4

V200 External IP module Fail Freeze





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3.2 Spare parts list external options

Item Qty	Description	Material	Part no	
1	External IP module 0-10V		93064.....	1
1	IP 0-10V		Contact VAC ...	1
2	Mounting Kit external IP FA TA78+TA61		91024.....	1
	- Screw ISO 7048 M5x20/12.. Stainless Steel		7048052012....	1
	- Screw ISO 7048 M5x16/10.. Stainless Steel		7048051610....	1
	- Screw #8-32 UNC 13 x 13 .. Stainless Steel		476208321313	3
	- Rubber Gasket IP TA78+TA61Nitrile Rubber.....		90142.....	1
	- Mounting Plate FA TA78 +TA61Aluminum, painted		90085.....	1
2	External IP Module EX		93017.....	1
1	IP EX		Contact VAC ...	1
2	Mounting Kit external IP EX		91004.....	1
	- Screw ISO 7048 M5x20/12.. Stainless Steel		7048052012....	1
	- Screw ISO 7048 M5x16/10.. Stainless Steel		7048051610....	1
	- O-ring Ø3x2 NBR 70..... Nitrile Rubber		OR3x2NBR.....	2
	- Screw ISO 4017 M6x40/10z Stainless Steel		4017064010z..	2
	- Washer ISO 7089 M6		708906.....	2
	- Mounting Plate IP ABB EX... Aluminum, painted		90046.....	1
3	External IP Module Gas Approved		93063.....	1
1	IP Gas Approved		Contact VAC ...	1
2	Mounting Kit external IP Gas Approved		91012.....	1
	- Screw ISO 7048 M5x20/12.. Stainless Steel		7048052012....	1
	- Screw ISO 7048 M5x16/10.. Stainless Steel		7048051610....	1
	- Screw NPT 1_4..... Stainless Steel		90089.....	2
	- O-ring Ø14x2 NBR70..... Nitrile Rubber		OR14x2NBR...	4
	- Mounting Plate FC X78..... Aluminum, painted		90079.....	1
4	External IP Module Fail Freeze.....		93065.....	1
1	IP Fail Freeze.....		Contact VAC ...	1
2	Mounting Kit external IP FA TA78+TA61		91024.....	1
	- Screw ISO 7048 M5x20/12.. Stainless Steel		7048052012....	1
	- Screw ISO 7048 M5x16/10.. Stainless Steel		7048051610....	1
	- Screw #8-32 UNC 13 x 13 .. Stainless Steel		476208321313	3
	- Rubber Gasket IP TA78+TA61Nitrile Rubber.....		90142.....	1
	- Mounting Plate FA TA78 +TA61Aluminum, painted		90085.....	1



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4 SPECIFICATIONS

4.1 Specifications external options

	0-10V V200 0-10V	EX V200EX	Gas approved V200EX-GA	Fail Freeze V200FF
Input Signal:	0-10VDC (Ri 10K Ohm)	4-20mA (Ri 260 Ohm)	4-20mA (Ri 10K Ohm)	4-20mA (Ri 197 Ohm)
Supply Pressure:	20-120 PSI (0.14 - 0.83 MPa)	20-145 PSI (0.14-1MPa)	20-120 PSI (0.14 - 0.83 MPa)	20-120 PSI (0.14 - 0.83 MPa)
Linearity error:	<0.8% f.s	<0.8% f.s	<0.8% f.s	<1.2% f.s
Hysteresis:	<0.5% f.s	<0.5% f.s	<0.5% f.s	<0.8% f.s
Repeatability:	<0.4% f.s	<0.4% f.s	<0.4% f.s	<0.5% f.s
Temperature range:	-40° to +160 F* -40° to +71C*	-40° to +158 F* -40° to +70°C*	-40° to +160 F* -40° to +71C*	-20° to +150 F -30° to +65°C

*Temperature range depending on certification

Values with standard pilot valve, **LB** installed.

Pressure gain:

@87 PSI (600kPa)	240:1	240:1	240:1	240:1
Bleed Rate:	SCFM (SLPM)	SCFM (SLPM)	SCFM (SLPM)	SCFM (SLPM)
@87PSI (600kPa)	0,51 (14.5)	0.43 (12.2)	0.51 (14.5)	0.43 (12.4)
Air Delivery	SCFM (SLPM)	SCFM (SLPM)	SCFM (SLPM)	SCFM (SLPM)
@87 PSI (600kPa)	28.3 (800)	28.3 (800)	28.3 (800)	28.3 (800)

Air connections: 1/4" NPT (optional G threads)

Gauges: 1/8" NPT (optional G threads)

Cable entry: 1/2" NPT (optional M20x1.5)

Ingress & corrosion protection: NEMA 4X and IP66

Standard coating: Polyester

Weight:	4.41 lbs (2.01kg)	4.70 lbs (2.13g)	5.75 lbs (2.61kg)	5.73 lbs (2.60kg)
Weight with gauges:	4.63 lbs (2.10kg)	4.89 lbs (2.22kg)	5.95 lbs (2.7kg)	5.93 lbs (2.69kg)

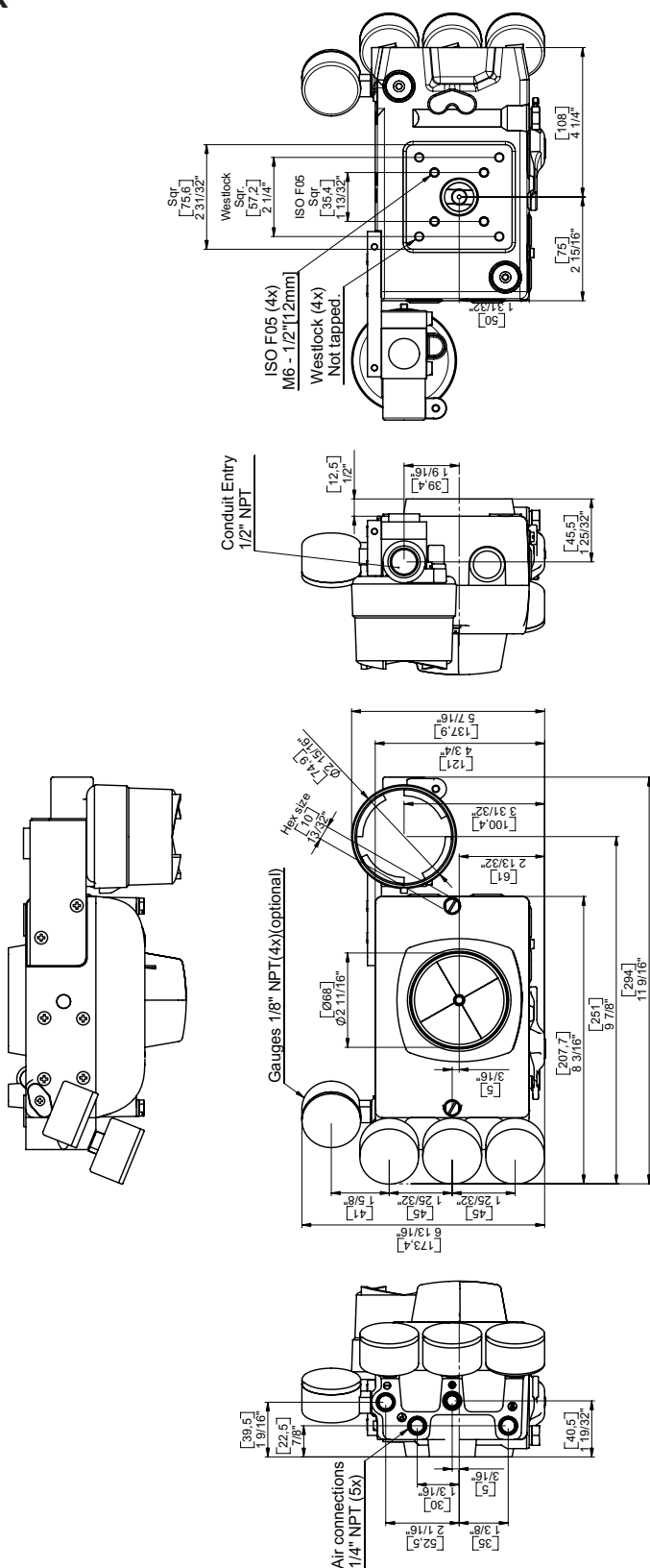
Valve types. (SG/LB valve is installed as standard)

			SG/LB	SHG (3)	SHGSHF (4)
Pressure Gain:	@ 29 PSI (0.2MPa)	Poutput / Pinput	80	367	370
	@ 87 PSI (0.6MPa)	Poutput / Pinput	240	1100	1100
	@ 145 PSI (1.0MPa)	Poutput / Pinput	400	1833	1830
Pressure Gain:	Any	%Poutput / %Pinput	16	79	72
Acc. to ISA S75.13					
Air Delivery:	@ 29 PSI (0.2MPa)	SCFM/(SLPM)	9.4 / (270)	10.5 / (297)	16.6 / (470)
	@ 87 PSI (0.6MPa)	SCFM/(SLPM)	28.3 / (800)	31.5/ (890)	50.0 / (1400)
	@ 145 PSI (1.0MPa)	SCFM/(SLPM)	47.1 / (1330)	52.5 / (1486)	83.4 / (2330)
Bleed Rate:	@ 29 PSI (0.2MPa)	SCFM/(SLPM)	0.07 / (3.4)	0.28 / (7.9)	0.4 / (12.3)
	@ 87 PSI (0.6MPa)	SCFM/(SLPM)	0.2 / (5.6)	0.83 / (23.5)	1.3 / (36.8)
	@ 145 PSI (1.0MPa)	SCFM/(SLPM)	0.35 / (10.0)	1.38 / (39.1)	2.2 / (61.3)

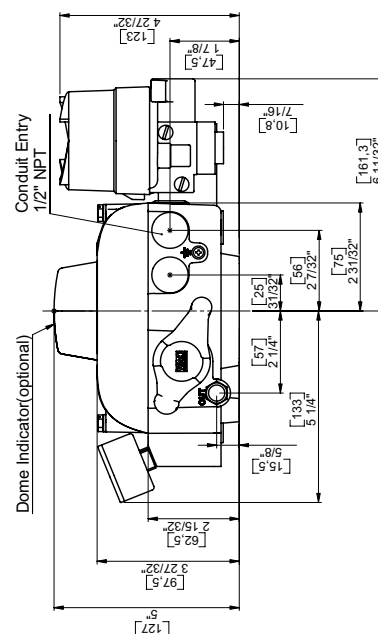
Options: Feedback Spring for 6-30 PSI (40-200kPa) input signal. Gauges. Stability kit, feedback modules.



5.2 V200EX

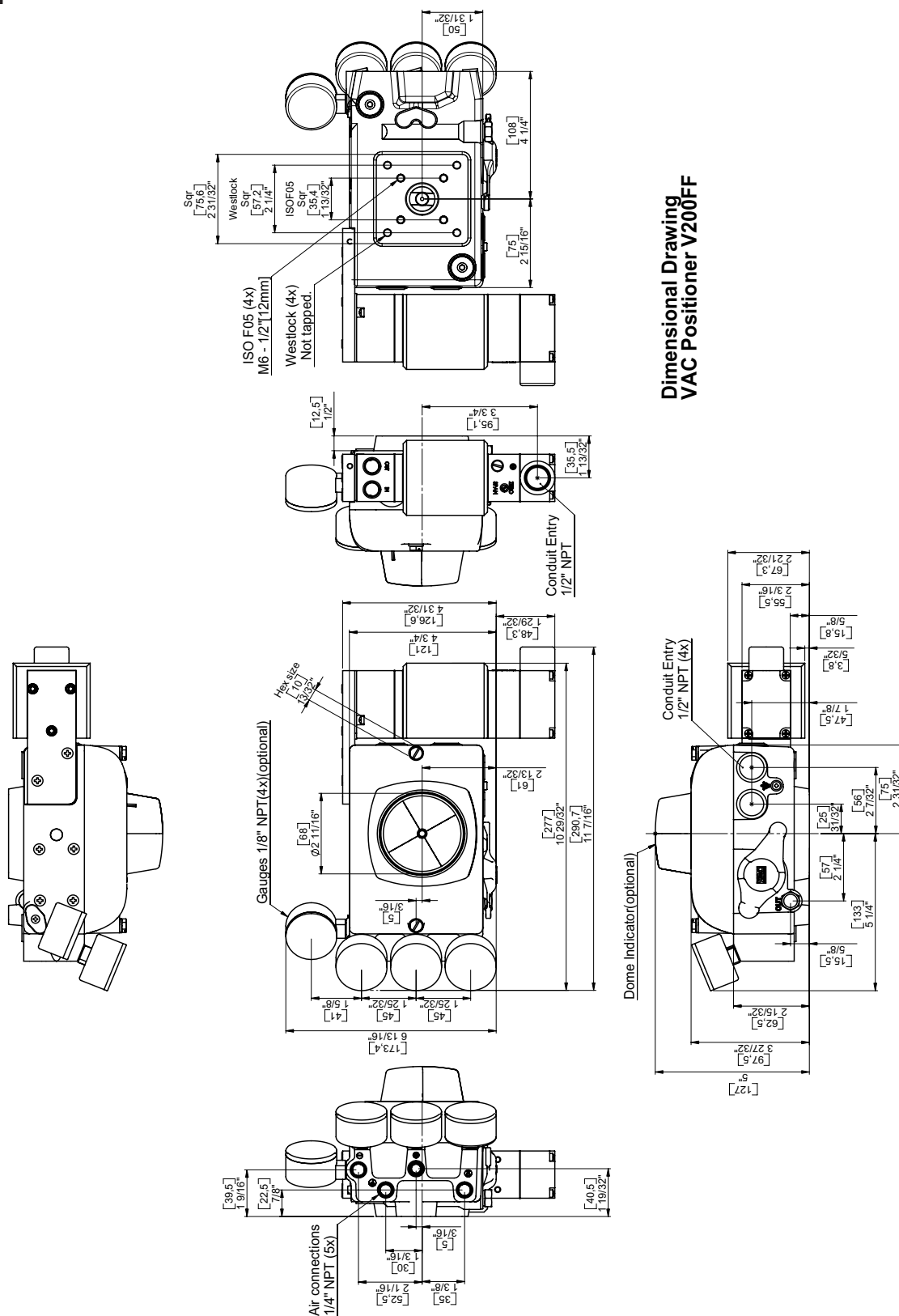


Dimensional Drawing VAC Positioner V200 EX





5.4 V200FF



Dimensional Drawing
VAC Positioner V200FF