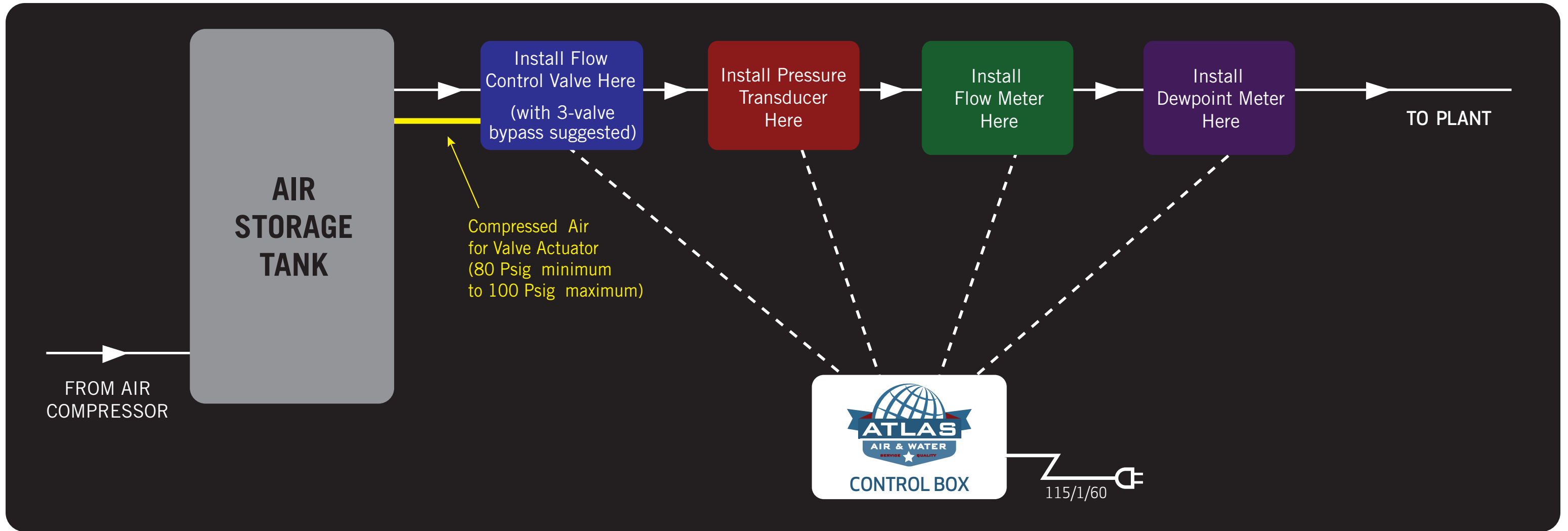




PFE 4-in-1 Pressure Controller Complete Installation and Programming Guide



Requirements for PressureFlowEnergy Controller

- 3-valve bypass by client
- 80 psig minimum (100 psig maximum) compressed air .25" ID air line for Valve Positioner
- 120 volt power for controller
- Prs xd Pressure Transducer 1/4" - 20 NPT Port for downstream of valve

Requirements for Flow Meter Installation (optional)

- Kit for Flow Meter drill guides, etc. if purchased
- 8-wire Flow Meter (length specific to each installation)
 - 2-wire +/- 24v
 - 2-wire +/- 4-20 mA
 - 3-wire Remote Display
 - 1 spare



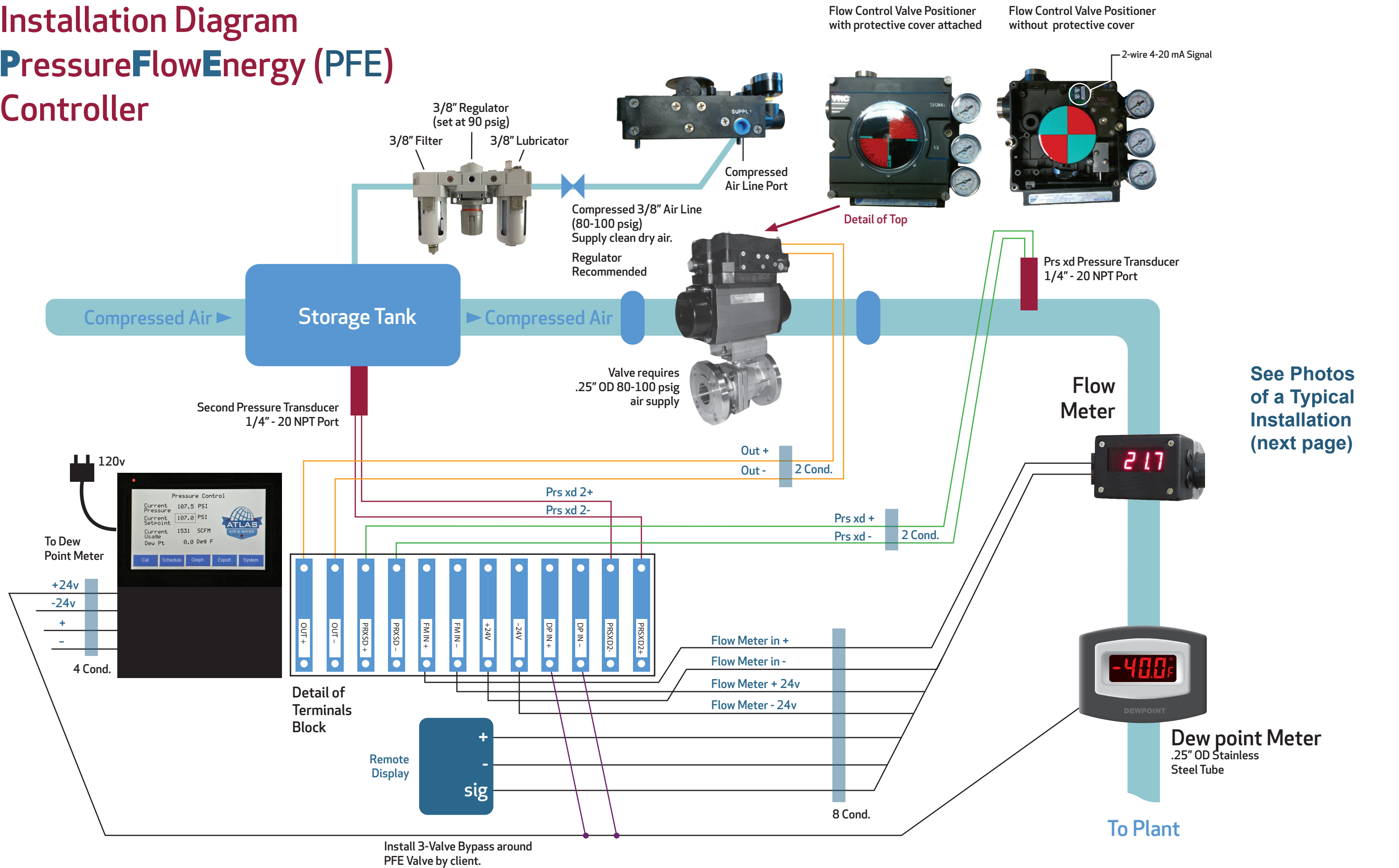
Requirements for Dew point Meter Installation (optional)

- .25" tube compression connection on meter
- .25" OD stainless steel tube (not plastic as plastic allows moisture to penetrate)
- 25' 2-wire cable and Prs xd (provided)
- 4-wire Dew point Meter (length specific to each installation)
 - 2-wire +/- 24v
 - 2-wire +/- 4-20 mA

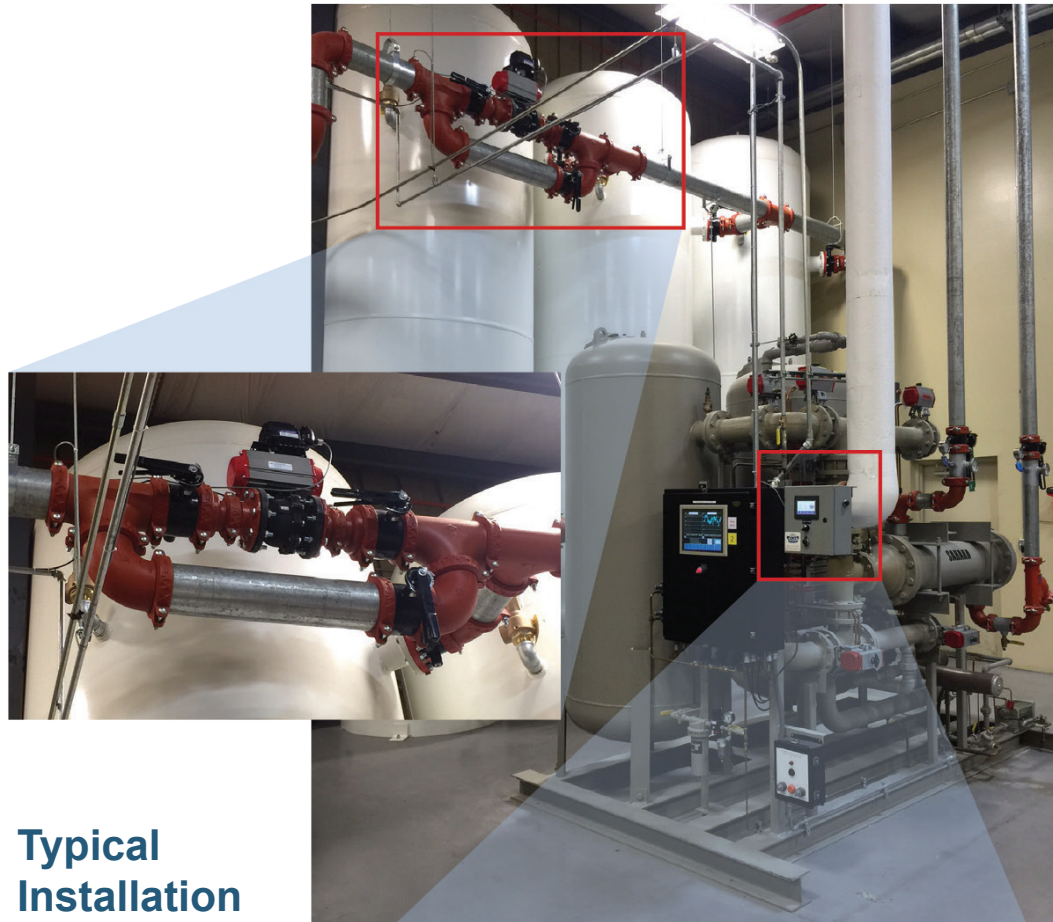


Installation Diagram

PressureFlowEnergy (PFE) Controller



Typical Installation



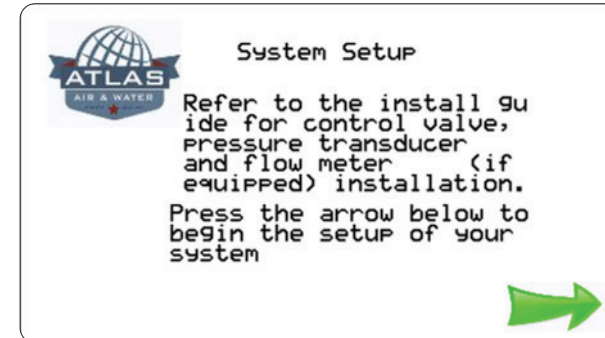
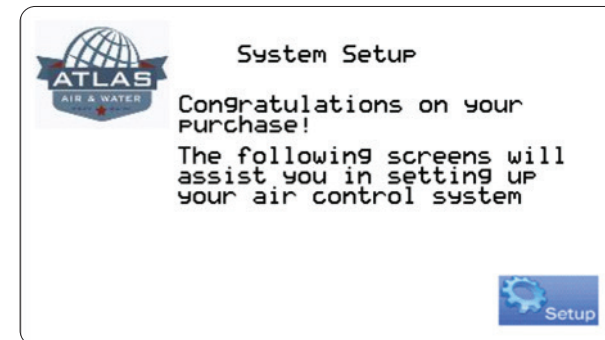
Programming Directions PressureFlowEnergy (PFE) Controller

BEFORE YOU BEGIN:

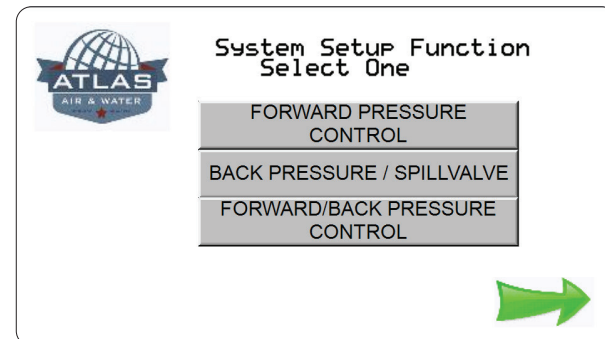
Install pressure transducers per instructions on pages 10, 11 and 12 of this guide.

- Locate the Flow Meter (if installing) and Digital Dew Point Meter (if installing).
- Wire according to Installation Diagram in this document.
- Plug Deluxe Controller in to 120V power source. Panel can be permanently wired if required.
- Turn on the main power switch. Allow 30 seconds for start-up.
- Follow on-screen instructions.

Touch SET-UP to start set-up



Follow on-screen set-up



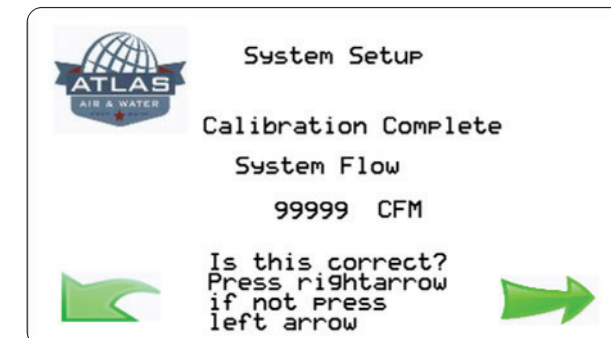
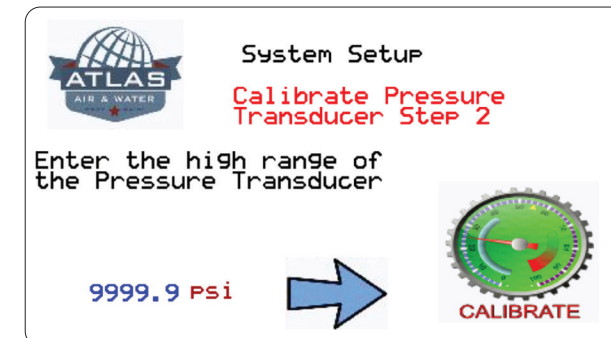
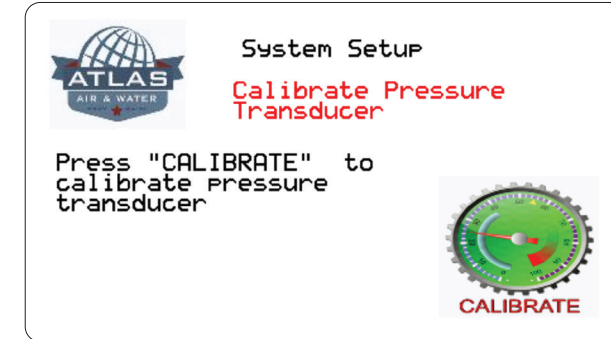
Calibrate Prs xd

Press CALIBRATE

Enter 240 psi

When complete, current pressure should be displayed

Press NEXT



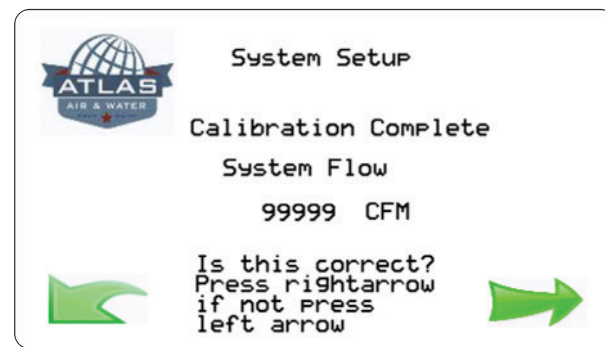
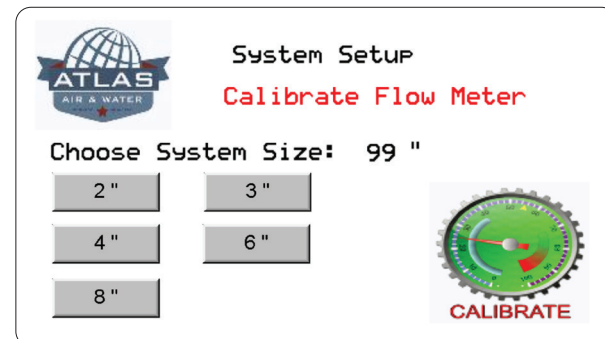
Flow Meter

Choose Flow Meter size: 2" - 8"

Press CALIBRATE

When complete, system flow will show SCFM.

Press next green arrow



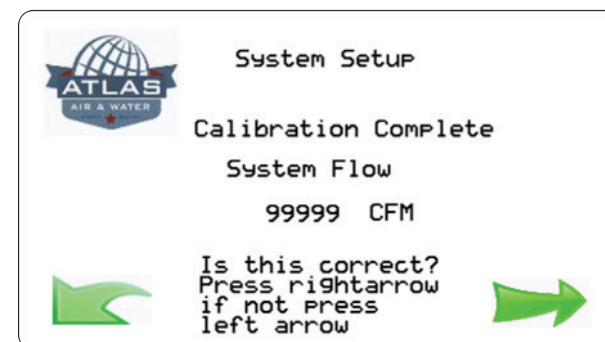
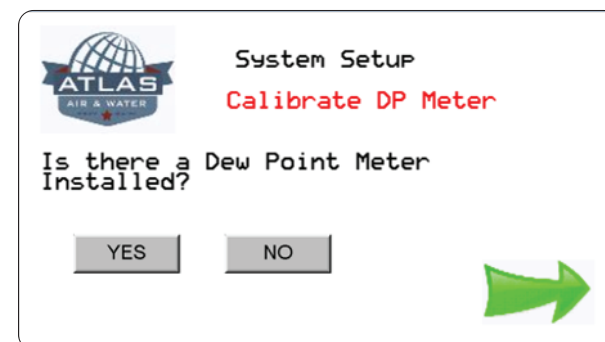
Dew Point Meter (if required)

Press YES or NO

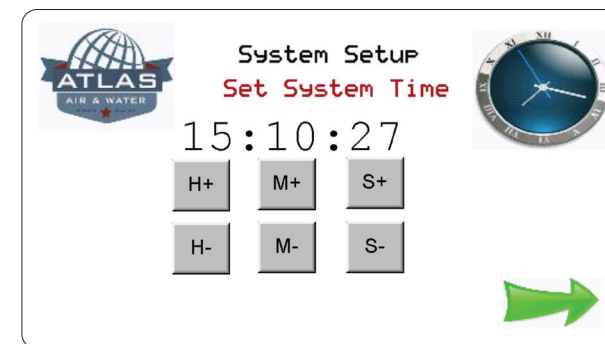
If YES: Press NEXT button to calibrate Dew Point Meter.

Note: YES must be followed by a green arrow

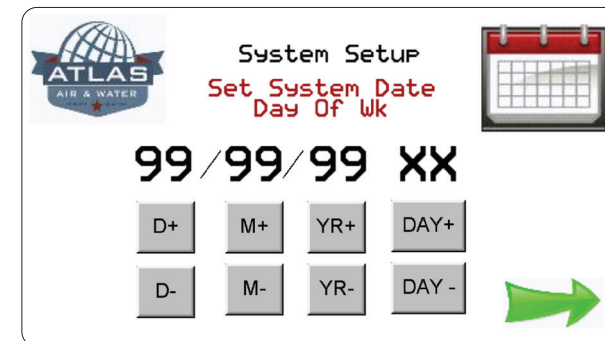
System dew point should be displayed



Press TIME SET-UP and set time using keypad



Press NEXT and set date

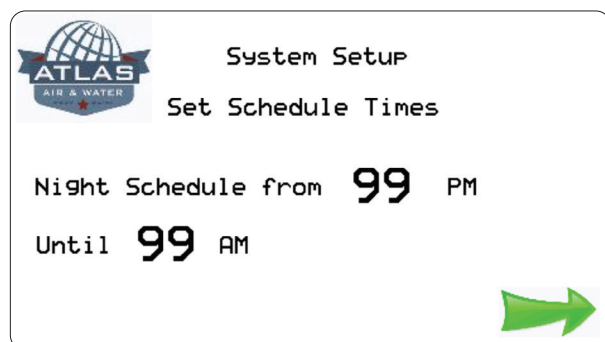
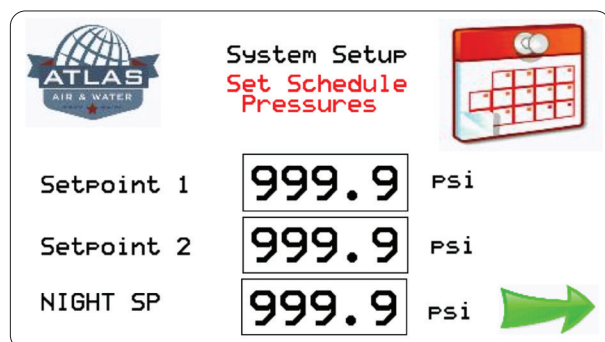


Press SET SCHEDULE and set schedule

- SP1 is running set point. Touch number on screen to adjust SP1.
- SP2 is second set point.
- NIGHT SP is night psi set point.

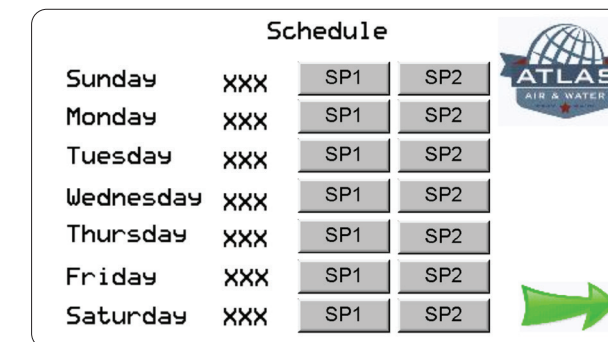
Press green arrow to set Night Set Point.

- Set Night Set Point at whole hour intervals to turn back set point.

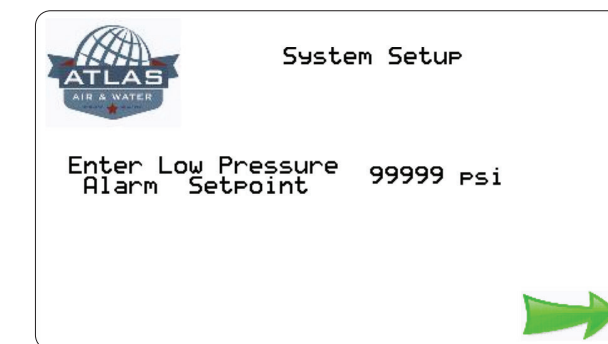


Press NEXT for scheduling.

- Choose SP1, SP2 or Night Set Point for day of week as running set point.
- Press NEXT



Set Low Pressure Alarm



Set-up is complete. Press RUN SYSTEM.

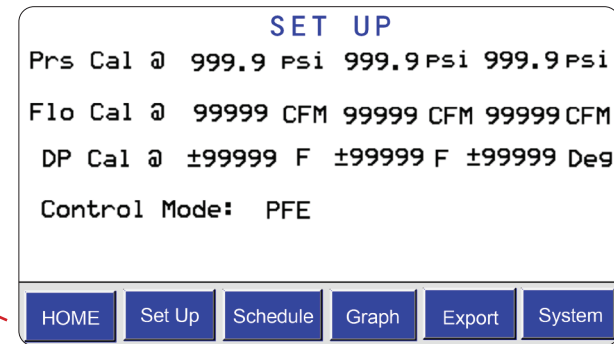
Ethernet Modbus TCP Communication

- Pressure is 50121
- Flow is 50122
- Dew point is 50123



Home

Returns you to the Pressure Control User Page.



Set-Up

Configure Set-up Parameters

Schedule

Allows changing SP1, SP2 and Night Schedule.

Press NEXT allows adjustment of night schedule. To disable, Enter "0" for both values.

Graph

The graphing shows a historical display of variable data. Time can be adjusted 1 hour or 1 day into the past to a time.

System Operation

Do not touch. It is for factory technician use only.

Export

Allows data to be stored on a USB drive.

Insert blank USB drive into front USB port.

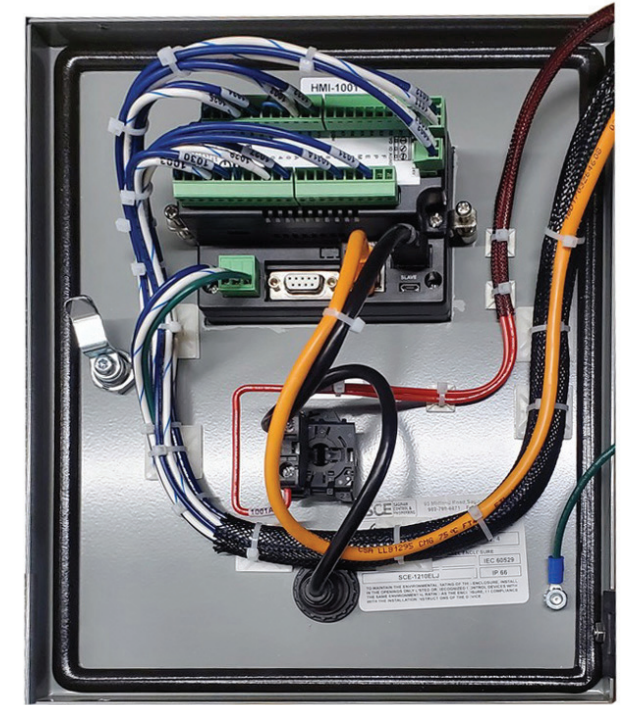
Choose date for export and time using buttons.

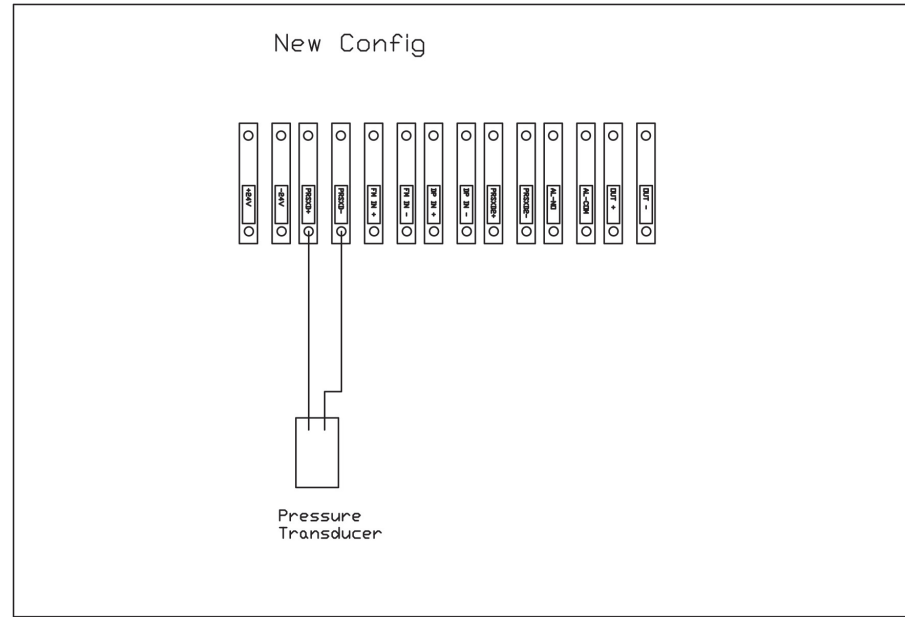
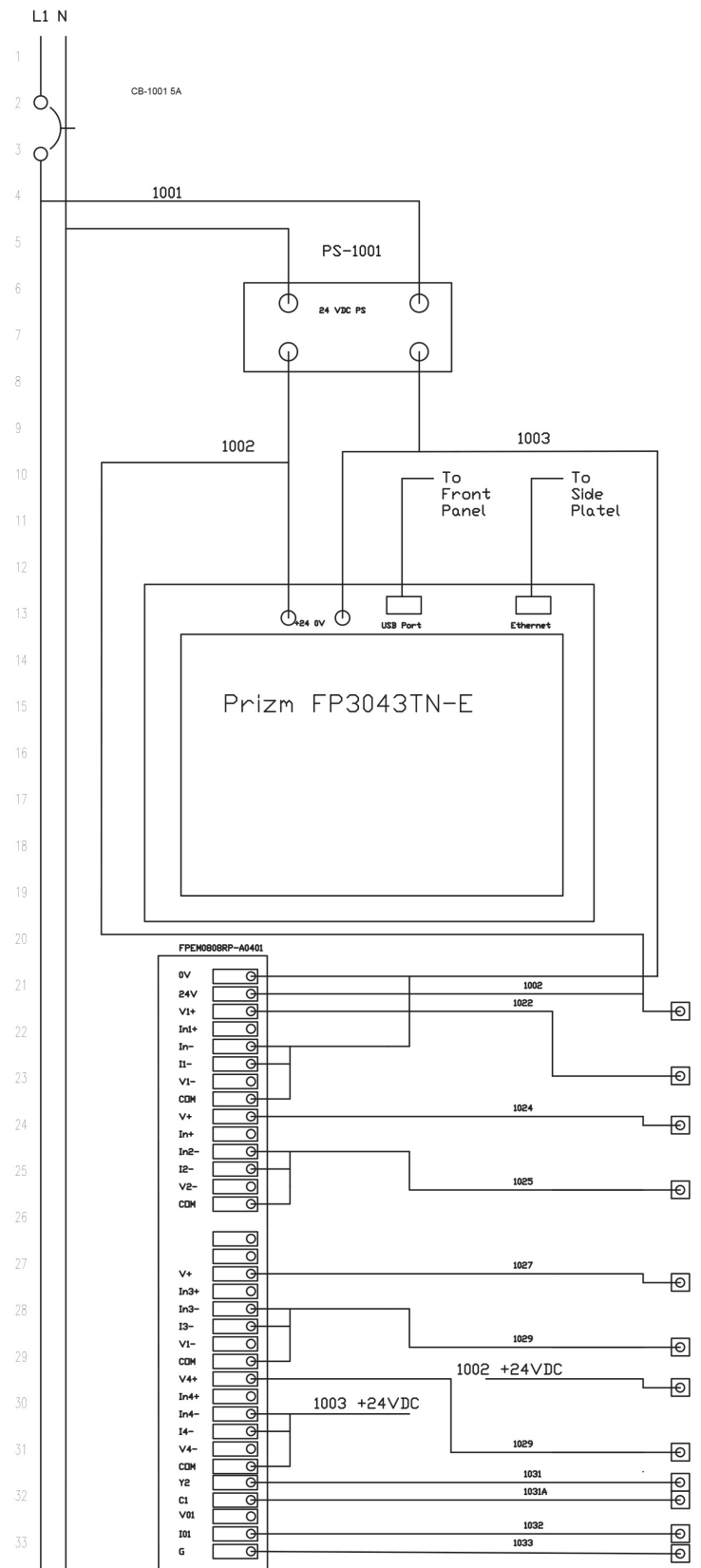
Press EXPORT.

Screen will show completion of export and when to remove drive.

Choose "Clear Log" if desired.

Red RETURN button takes you back to main screen.



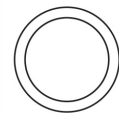


- PRSDX+
- PRSDX-
- FMIN+
- FMIN-
- DPIN+
- DPIN-
- PRSDX2+
- PRSDX2-
- AL-ND
- AL-C
- OUT+
- OUT-

Notes: UL 508 on Panel
120V 2A FLA

SHEET 2 of 2

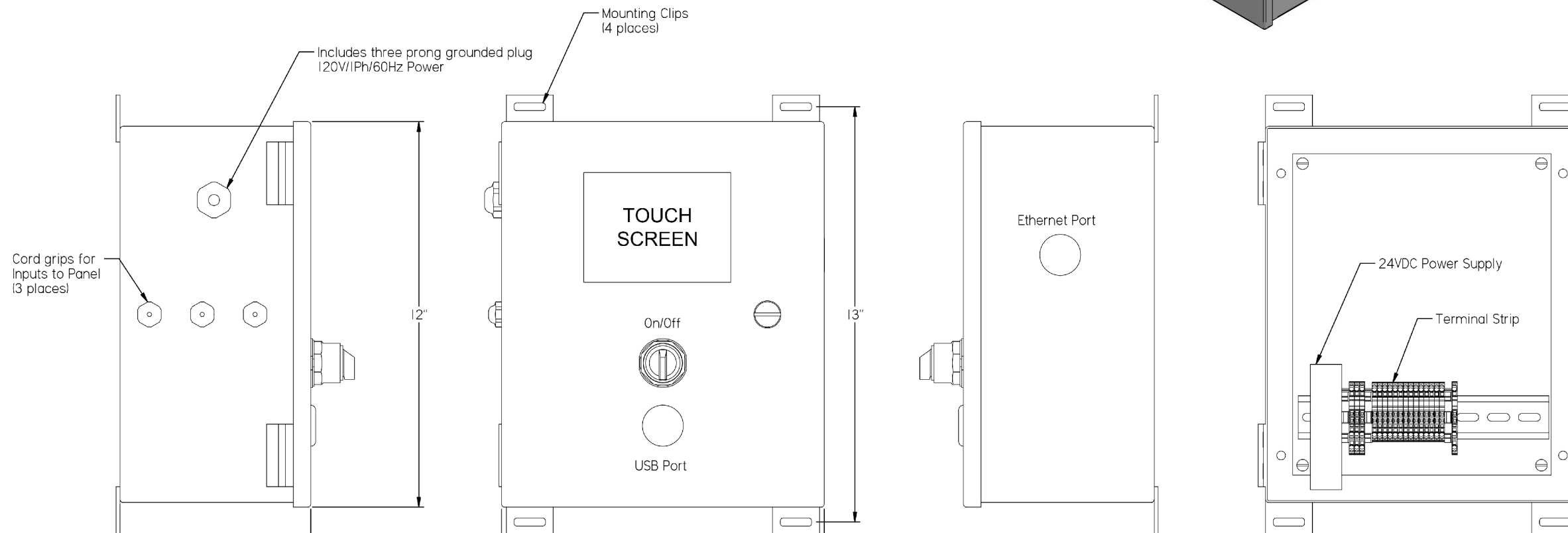
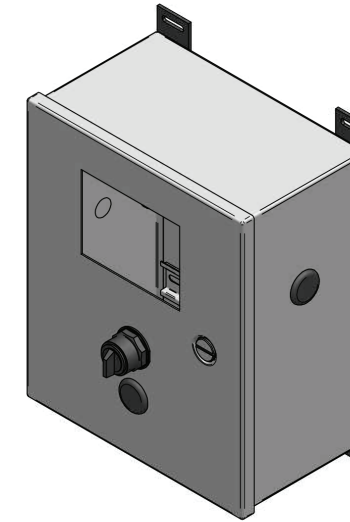
	Original Drawing	10-10-12	DMS
	REVISED	4-18-16	DMS
	REVISED	9-18-16	DMS
	REVISED	6-27-19	DMS



PFE Deluxe Control Panel with Ethernet

Atlas Air & Water, Inc.

PFE Electronic Control Panel



NOTES:

- 1) Dimensions are for reference only.
- 2) AC Mains should be connected to earth grounded, three prong plug that comes with the control panel.
- 3) If three prong ground plug is removed the cabling should be of minimum 18 AWG wire and should follow local state and national codes.

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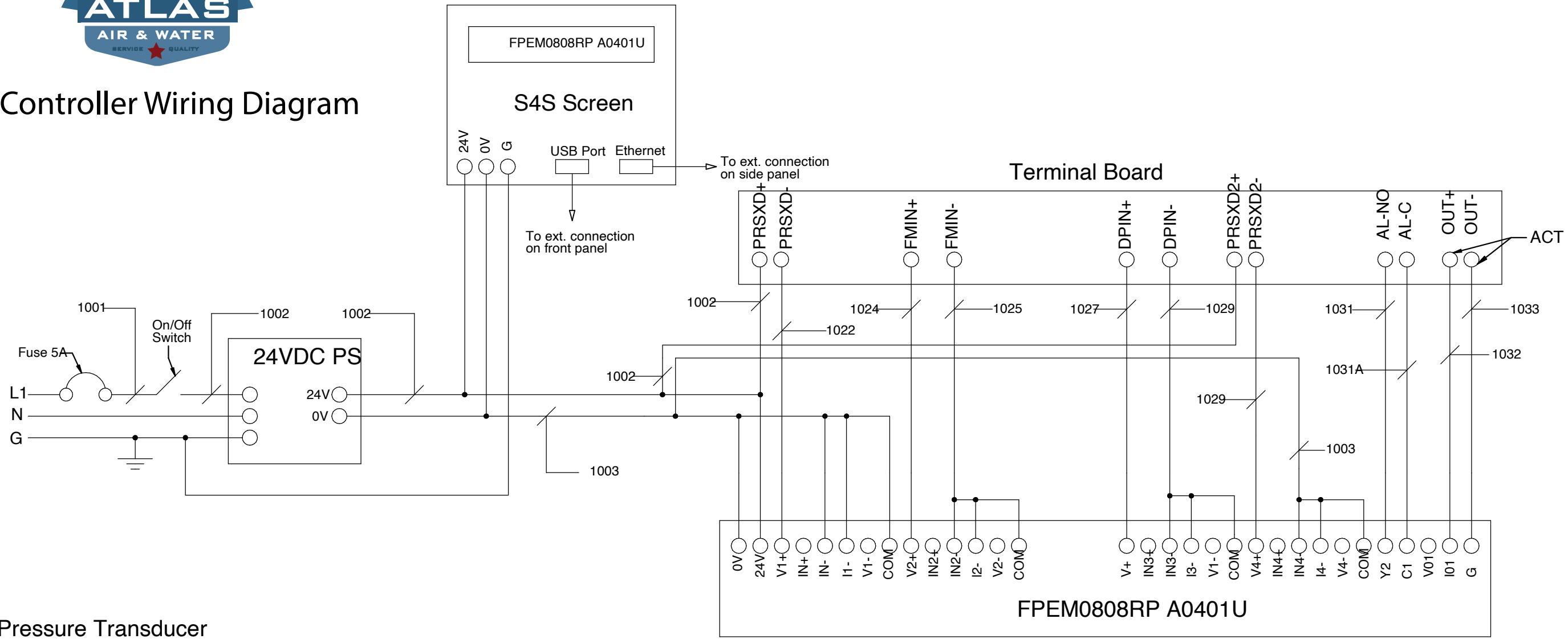
4	Revision	Modified from	Date	Int./Appd.

All materials supplied are in compliance with the requirements of the List of Prohibited Substances

Tolerances if not indicated according to: +/- 1.0"		Confidentiality Class acc. to 1152K: Internal	
Name: _____		ACD	
Material: _____		Drawing owner: JCR	
Scale: _____	Family: _____	A1	Compare
Drawn by: Corporate	Blank nr: _____	Replaces: _____	
Version Draw: 1	Blank set: _____	Kg	Fin set: 0
Des checked: _____	Prod checked: _____	Approved: _____	Date: 11/5/19
RELEASED			



PFE Controller Wiring Diagram



- PRXD - Pressure Transducer
- F - Flow Meter (optional)
- DP - Dew Point Montitor (optional)
- PRXD2 - Second Pressure Transdcuer (optional)
- AL - Alarm Contacts
- ACT - Wires to KFC Valve Actuator

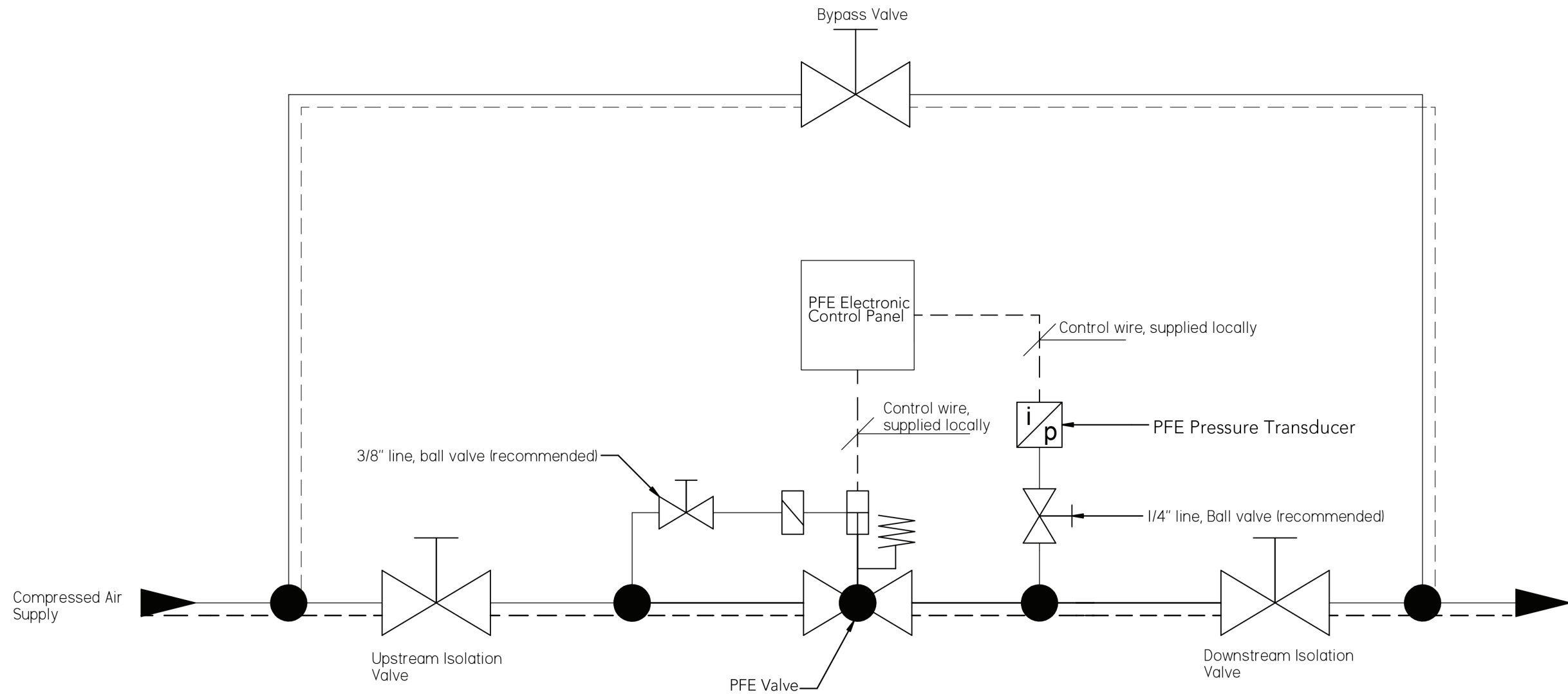
1.) AC Mains should be connected to earth grounded, three prong plug that comes with AAW Electronic Conrol Panel
 2.) If three prong grounded plug is removed the cabling should be of minimum 18 AWG wire and follow local, state and national codes

This drawing also contains work to be done on site. All site work (to include site preparation/ construction, system component assembly and installation, etc.) must be done in accordance with all relevant local, state, and national building, electrical, and occupational safety codes and regulations. Product manuals must be read and understood by the end-user and any sub-contractor responsible for, and prior to, installation of the equipment. Installation guidelines in the manuals must be followed. All Danger, Warning, and Caution notes and decals in the manuals and on the equipment must be observed. All equipment must comply with the relevant safety codes and standards in force at the time of manufacture.

		Documents released by engineering are identified by these characteristics in the title block: Date of review/release and name of the reviewing/releasing individual.			
Project No. Status		Station Setup ID		Station ID	
07			Date	Name	KFC 2500E - 15000E Electronic Control Panel / / / /
06			Drawing	2/17/2022 mhuberty	
05			Review	2/17/2022 mhuberty	
04			Released	2/17/2022 mhuberty	
03			Template Rev. 24.04.2018		
02					
01	Updated Wiring Diagram	2/17/2022	mhuberty		Sketch Page 1 of 1 P&I Diagram
00	Wiring Diagram	4/11/2019	mhuberty		Sketch WD 4323.01 Description
Rev	Modification	Date	Name	Original	Replaces Replaced by

Neither the original nor copies may be provided or disclosed to third parties in any fashion. We reserve the right to make changes in the course of development. This drawing can only be modified with CAD. This drawing depicts a typical installation for the AAW equipment requested within the dimensions supplied. This is a general arrangement drawing showing required service and ventilation for the AAW equipment and is not indicative of all additional site work required to complete the installation.

PFE-1.5, 2, 3, 4, 6, 8



NOTES:

- 1) Dimensions are for reference only.
- 2) Max Operating Pressure: 250 psig
Operating Pressure range: 85-250
PSIG Set Point Range: 40-225 psig
- 3) PFE must be properly supported. Follow installation instructions
- 4) Flow rating based on 110 psig inlet, 100 psig set point (outlet) and 68°F compressed air temperature. Flow rating will vary under different conditions.
- 5) ASME B16.5 150# Flanges
- 6) Compressed air supply must be clean, dry air.
- 7) Bypass recommended but not provided. Bypass installed by others.
- 8) Style of isolation valve (ball or butterfly) will vary depending on pipe size.
Between isolation valves, on both sides of the PFE, a method to "bleed" the air line is required but not shown.

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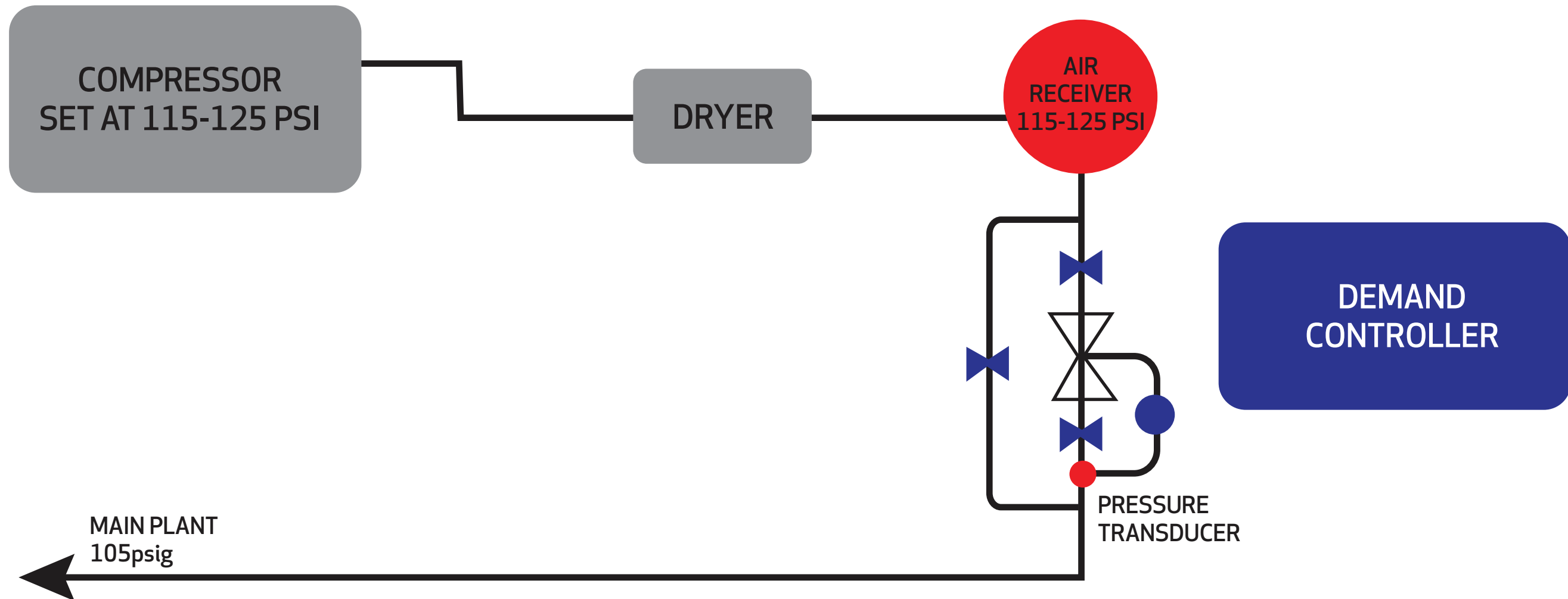
Note	Position	Modified from	Date	Init./Appd.
4				

All materials supplied are in compliance with the requirements of the List of Prohibited Substances

Tolerances if not indicated according to:			
+/- 1.0"			
Name		Confidentiality Class	
Material		Internal	
Treatment		ACD	
Scale	Family	AT	Compare
Drawn by: Corporate	Blank no.	Replaces	Drawing number: JCR
Version Orig 1	Blank wt.	Hg	Flu wt. 0
Des checked.	Prod checked.	Approved	Date: 11/5/19
RELEASED			

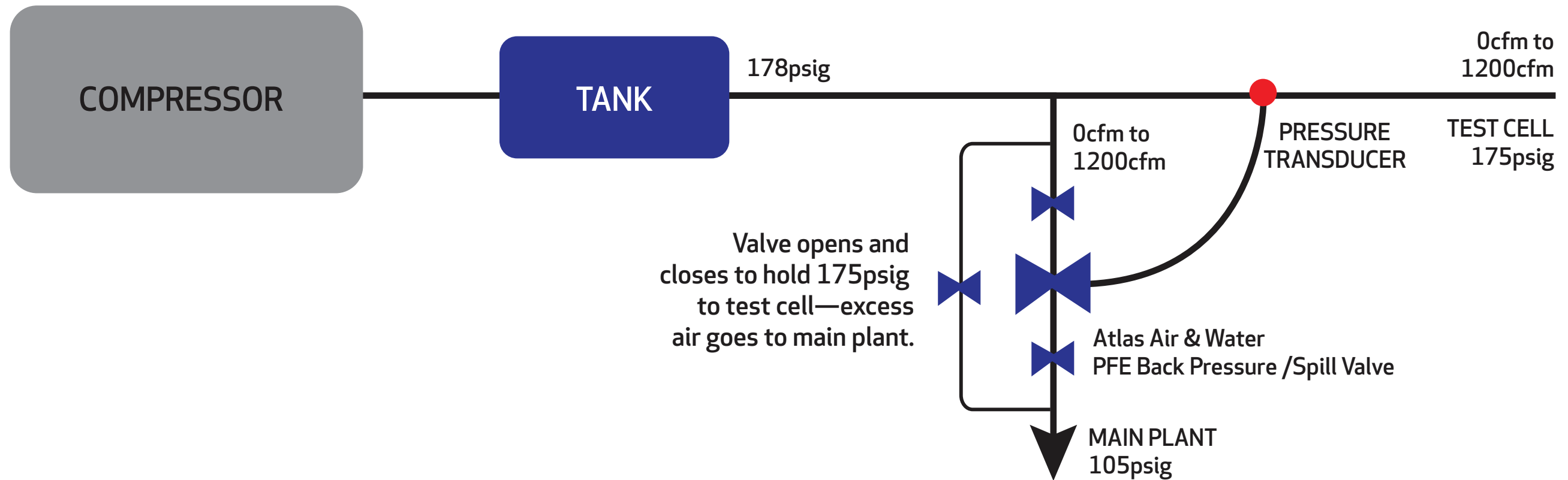


PFE 4-in-1 Forward Pressure Controller



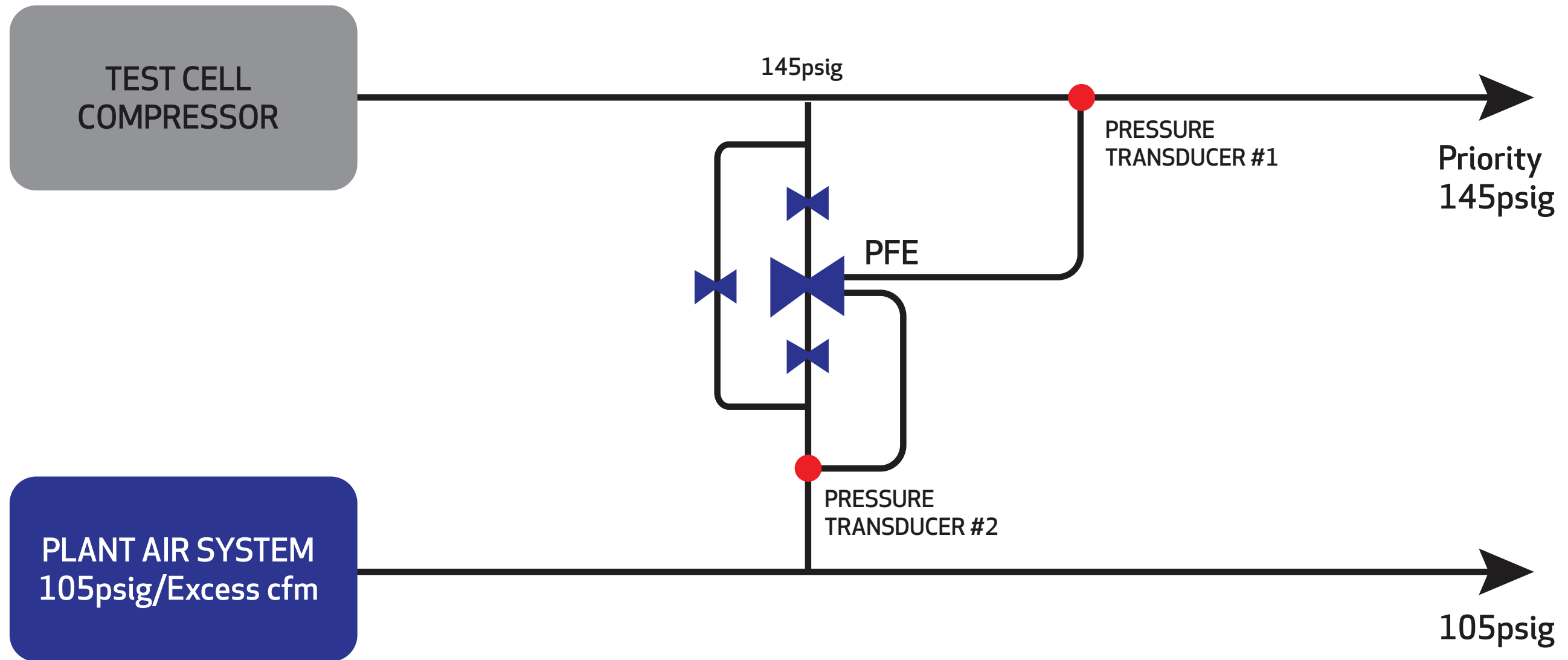


PFE 4-in-1 Back Pressure/Spill Valve





PFE 4-in-1 Combination Forward/Backward Pressure Controller





Hot Tap Flowmeter for Compressed Air Systems

FEATURES

- No system shutdown required
- Installs in minutes
- Weather resistant and surge protected
- Milliamp output
- Pulse output convertible to threshold output
- User-configurable scaling, filtering and units of measure
- Optional wired or wireless output for networking
- Housing rotates to suit vertical or horizontal installation

The Atlas Air & Water (AAW) 5450 is a modified version of the 5400 model that allows installation under pressure. It incorporates two valves through which the probes pass and a muffler that collects chips from the drilling process. It takes an equal amount of installation time as our standard meters and requires no shutdown of the compressed-air system.

Like all of our 5000-series meters, it measures flow by maintaining one probe warmer than the other. It determines the mass flow rate from the amount of heat required. The flow rate, in scfm or equivalent units, is shown on a large, four-digit display; a 4-20 mA output and a pulse output permit remote display, totalizing and data collection.

AVAILABLE SIZES		
Nominal Size	Range ^a (scfm)	Model No. for Sch 40 Steel
2 in.	600	5450-20S
3 in.	1200	5450-30S
4 in.	2000	5450-40S
6 in.	5000	5450-60S
8 in.	6000	5450-80S

(a) Range of milliamp output and recommended maximum flow. Meters will function at somewhat higher flow rates but at reduced accuracy.



SPECIFICATIONS

Accuracy:

5 percent of reading plus 1 percent of range for flows from 10 percent to 100 percent of indicated range at air temperatures between 20 and 120 degrees Fahrenheit

Fluids:

Compressed air and Nitrogen

Operating pressure:

130 psig maximum on Sch. 40 steel; consult AAW for other materials and higher pressures.

Input power:

250 mA at 24 Vdc

Output resistance:

600 Ohms max.

Materials exposed to measured fluid:

Stainless steel, gold, thermal epoxy, Teflon, Aluminum and Viton

Ring material:

Aluminum

Display:

Four-digit LED display

Response time:

One second to 63 percent of change in value at flows above 30 percent of range

US Patent 6,802,217 Additional patent pending.

APPLICATION

The meter is designed for use with compressed air and Nitrogen, and must be installed on a pressurized pipe to ensure chips are cleared. The air must be free of oil, dirt that could foul the probes, and suspended water droplets. In a compressed-air application, the meter should be installed downstream of a dryer. Each meter is calibrated for a specific size and type of pipe. If a meter will be used in a type or size of pipe that is not listed, consult AAW about a special calibration.

The meter is not to be used in safety or life-support applications. It should not be used as a sole means of determining required capacity of air compressors and related equipment. The meter must not be used in hazardous locations.

INSTALLATION

Drilling the holes to install the meter may release some metal shavings into the pipe. When planning the installation, make sure that all downstream equipment is protected by filters, or take other precautions to ensure that shavings do not reach critical equipment or get blown out in a way that could cause injury.

For best accuracy, the meter should be installed with at least 20 diameters of straight pipe upstream and three diameters downstream. Avoid installing the meter downstream of any item that could distort or concentrate the flow, such as a partially-closed valve, a regulator, a filter or moisture separator, two closely-spaced elbows in different planes, a long-radius elbow or a curved hose. Allow at least 30 diameters of straight pipe between any such item and the meter. If a valve or other restriction will be immediately downstream of the meter, provide at least five diameters downstream. Select a location that meets these requirements and also provides good visibility from the plant floor. If this is not possible, consider using the remote display discussed below.

Depending on the pipe position and flow direction, the display may need to be adjusted. The display and cover can be removed and rotated 180 degrees relative to the meter housing, and the meter housing can be rotated 90 degrees relative to the ring, using screws under the housing.

The following provides a brief outline of how the 5450 flowmeter works. It is not meant as a replacement for the *5450 Installation and Operation Instructions*, which is provided with each meter and must be read and understood prior to installing the meter.

The installation process consists of clamping the base assembly in place, drilling holes through two valves in the base plate using the drill guide and filter assembly, adding the seal plate, snapping the meter assembly into place and finally securing it with two safety screws. It takes about as long as installing one of our 5400 meters and does not require a system shutdown. Because of the potential for inadvertently opening one of the valves at the wrong moment, face protection must be worn.

MILLIAMP AND PULSE OUTPUTS

The meter has an isolated, unpowered, milliamp output. The meter is shipped with a jumper in place to power the output from the instrument's dc supply. With the jumper in place, the meter will source a dc signal. The pulse output is an open collector, referenced to the instrument ground. For applications in which a contact-closure output is required, the isolated pulse output (AAW 5200-IPO) should be used. It installs inside the meter. The pulse output can be made into a threshold output by using the optional configuration cable.

DISPLAY CONTROL AND CONFIGURATION

The display can be cycled through rate, daily usage and cumulative usage using a button indicated by a circle on the front of the meter. The same button can be used to select a default display option, reset totals and select units of measure. Please refer to the configuration instructions enclosed with the meter.

METER CONFIGURATION

Several parameters of the meter's configuration can be changed by the user using an optional configuration cable and software available from AAW. These parameters include milliamp scaling, pulse scaling, conversion from pulse output to threshold output, filtering (smoothing) of the output, pipe inside diameter, and pressure compensation for high-pressure applications. For most applications, none of these parameters need to be changed.

POWER SUPPLY

Each meter is furnished with a wall-plug dc supply for 110 V to 230 Volt AC main with a 6-foot (1.5 M) cable plus a 14-foot (4.2 M) extension cable. Prongs for Australian, European, UK and US outlets are provided, as appropriate. The meter may alternatively be hard wired to a 24-Volt dc supply. Eighteen-Volt supplies furnished with some earlier AAW flowmeters must not be used.

DRILL GUIDE

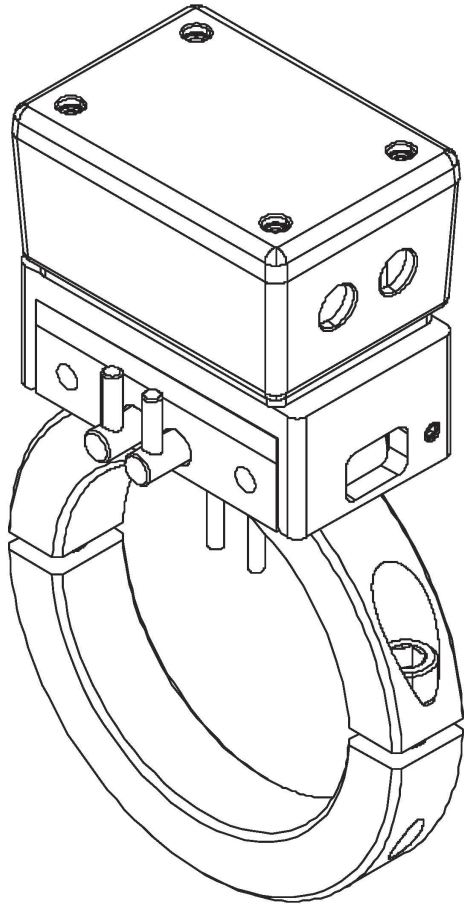
The hot tap drill guide (5450-DG) is supplied with each meter and is the same for each size. Upon request, drill guides can be omitted for customers who already have one.

LIMITED WARRANTY

AAW warrants solely to the buyer that the Model 5450 Flowmeter shall be free from defects in materials and workmanship, when given normal, proper and intended usage, for three years from the date of purchase. During the warranty period, AAW will repair or replace (at its option) any defective product at no cost to the buyer. The foregoing warranty is in lieu of any other warranty, express or implied, written or oral (including any warranty of merchantability or fitness for a particular purpose). AAW's liability arising out of the manufacture, sale or supplying of the flowmeter, whether based on warranty, contract, tort or otherwise, shall not exceed the actual purchase price paid by the buyer, and in no event shall AAW be liable to anyone for special, incidental or consequential damages.

AAW Hot Tap Flowmeter

Installation and Operating Instructions



Safety Precautions

Installation of the meter requires two hands, and missteps could cause a release of air that would startle the installer. Consequently, the work should be done from a lift or staging, and fall protection must be provided where appropriate.

Opening either valve at the wrong moment or withdrawing the drill without closing the corresponding valve would cause air containing sharp chips to blow out at high velocity. Consequently

- Gloves and face protection must be worn.
- The installer should practice opening and closing the valves and withdrawing the drill several times before drilling the holes.

Normally, the chips formed by the drilling operation are small. If long chips are formed, the installer should back out the drill frequently to clear the chips so that they will not prevent the valves from being closed.

Limitations and Cautions

AAW 5450 flowmeters are not for use in hazardous areas or on pipes containing gasses other than air or Nitrogen. They must be installed in a pressurized pipe to ensure all chips are cleared. They are not for use in control or safety applications or designed for installation where pressure exceeds 130 psig (9 barg). Contact AAW for all applications other than steel pipe. The temperature compensation of the meters is suitable for use from 20 to 120°F (-7 to 49°C). The meters may be applied, at reduced accuracy, at temperatures up to 150°F (66°C).

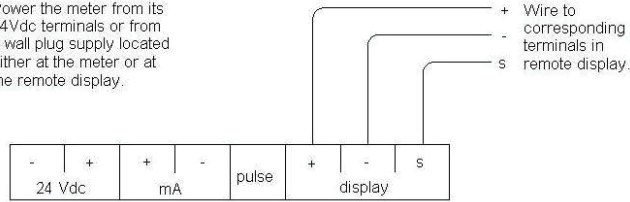
Locating the Meter

For accurate and reliable readings, the meters must be installed with adequate straight pipe upstream, and, in compressed-air applications, they must be installed downstream of a dryer.

Select a location with a straight run of pipe upstream equal to at least twenty times the pipe diameter. If the meter is downstream of something that could distort or concentrate the flow, such as a sweep elbow, a partially-closed valve, an increase in pipe size or a hose, the run of pipe should be as long as possible; thirty times the diameter at a minimum. Three diameters of straight downstream piping is sufficient, unless the meter is immediately upstream of something that would restrict the flow, such as a valve. If possible, locate and orient the meter for good visibility from the plant floor.

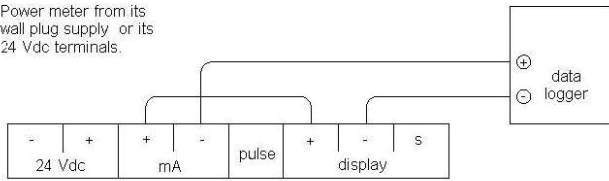
The meters may, when necessary, be installed outdoors. For best visibility, avoid direct sunlight.

Power the meter from its 24Vdc terminals or from a wall plug supply located either at the meter or at the remote display.



CONNECTING TO A REMOTE DISPLAY

Power meter from its wall plug supply or its 24 Vdc terminals.



CONNECTING TO A DATA LOGGER

PULSE OUTPUT

The pulse output is open-collector, that is, a transistor switch to the meter's negative supply. To use it, connect it to the input of the receiving device; also connect that input through a 10K Ohm resistor to a suitable positive supply and connect the negative supply of the receiving device to the negative supply of the meter. If an isolated relay contact is required, install the AAW 5200-IPO isolated pulse output and wire it to the receiving device.

SERIAL COMMUNICATION OPTION

The RS-485 signal used with the Serial Communication option is wired to the special Serial Communication display board. The two threaded openings in the meter enclosure permit the signal to be wired from meter to meter without external splices. Please refer to the data sheet for the Serial Communication options.

Wiring the Meter

Wiring must be in accordance with applicable codes and standards. In areas where electrical interference may be present, signal wiring should be shielded with the shield grounded remote from the meter. Signal cables must not be run in conduit or cable trays shared with power wiring. The main terminal block inside the meter is accessed by removing the cover and lifting out the display circuit board.

POWER

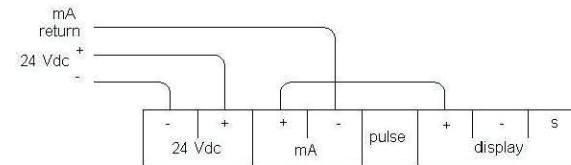
Either use the dc wall-plug supply furnished with the meter, or connect the terminals marked "24V dc" to a distributed dc power supply and seal the unused power opening with the plastic plug provided. The meter will draw a maximum of 250 mA. Unlike earlier 5200 and 5400 meters, the Rev. 3 meters do not connect the dc- terminal to the pipe on which they are mounted. Please note that 18 Volt dc supplies furnished with some earlier AAW flowmeters do not provide the voltage required for Rev. 3 meters.

REMOTE DISPLAY

If you are using the summing remote display (SRD), connect the three terminals marked "display" to the corresponding terminals in the remote display. The meter may be powered from the remote display if the cable is 22 gauge or heavier and the distance is no greater than 200 feet.

MILLIAMPER OUTPUT

The 4 - 20 milliamp output is optically isolated within the meter and it is provided with a factory-installed jumper which allows it to source a milliamp signal powered from the meter. The resistance of the loop connected to the output should not exceed 600 Ohms.



CONNECTING METER AS A THREE-WIRE TRANSMITTER

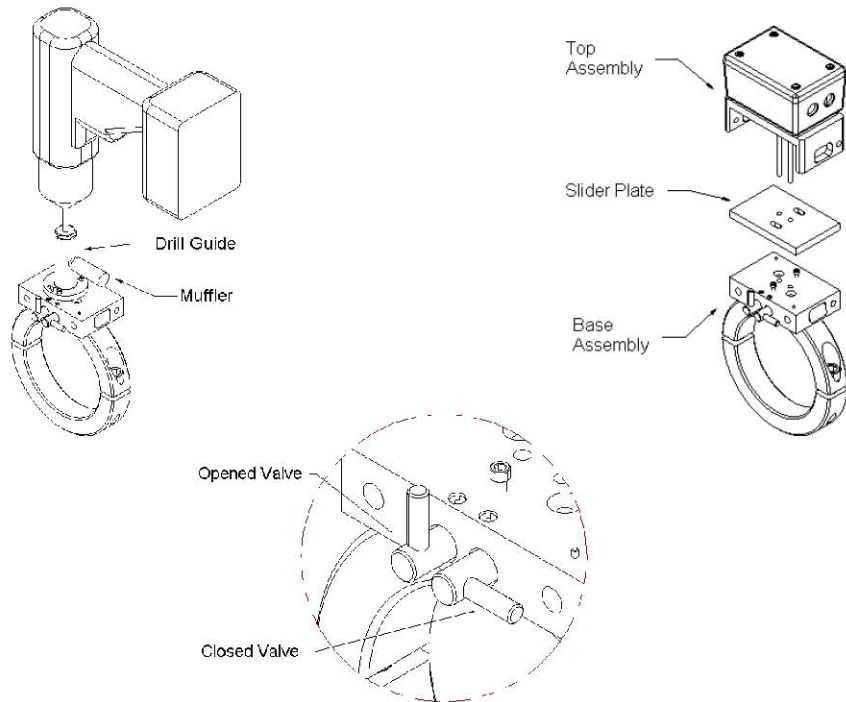
Preparing for Installation

When the holes are drilled, metal shavings will enter the pipe. Make sure that filters or other provisions are present downstream to prevent shavings from damaging equipment or product or being blown out and causing injury.

Prepare the meter for the pipe orientation and the direction of flow. To switch the 5450 between horizontal and vertical orientation, loosen the screws on the underside of the top bracket, rotate the display, and then re-tighten the screws. Be careful to loosen the screws no more than necessary, and then tighten them securely. The flow arrow on the meter must be oriented to match the direction of flow in the pipe. If doing so will cause the display to be upside-down, remove the cover of the meter, lift out the display, rotate both 180° and re-install.

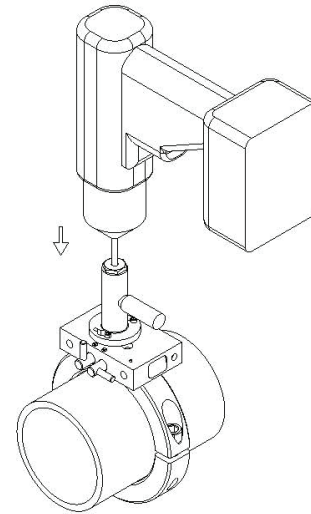
Apply the "Holes in Pipe" decal so that it will be hidden when the meter is in place but will be revealed when it is removed.

Installing the Meter



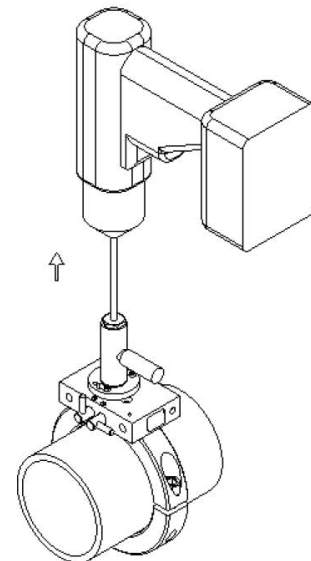
Installation of the AAW 5450 Hot Tap Flowmeter should be done by an experienced mechanic. As a precaution, hearing, face, and hand protection should be worn at all times. If done properly, the sound of the drill will be the loudest part of the installation.

Step 1



- Mount the base assembly on the pipe and tighten the cap screws evenly. The torque should be sufficient to seal the gasket but not so great that it will crush the gasket, or distort or over-stress the pipe.
- Place the drill guide over the exposed socket head cap screws, slide fully to one side and tighten. Orient the drill guide so that the muffler is horizontal or pointing down.
- Open the corresponding valve.
- Install the 5/32" drill bit into the drill's chuck. Insert the bit into the drill guide and base until the tip makes contact with the pipe. The distance between the chuck and the top of the drill guide must exceed the thickness of the pipe's wall. Readjust if necessary.

Step 2

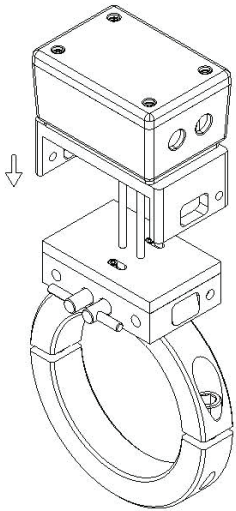


- Without applying too much force, begin drilling the hole. Occasionally back the drill bit off of the pipe to help dissipate heat and clear the chips.
- Once you have broken through the pipe wall, run the drill bit up and down through the hole to ensure clean edges. With the drill bit still spinning, extract it so one to two inches of it is exposed, being careful not to completely remove the bit or expose the flute. Hold it there for a few seconds to give time for all chips to bypass the drill bit and collect within the muffler.
- Carefully remove one hand from the drill and apply light pressure to the corresponding valve handle as if you were closing it. While the bit is spinning, begin extracting the drill bit slowly. The pressure applied to the valve

handle will help indicate when the drill bit has cleared. When this happens, rotate the handle 90° to its closed position. It is now safe to completely remove the drill bit. At this stage a slight hiss may be present through the drill guide.

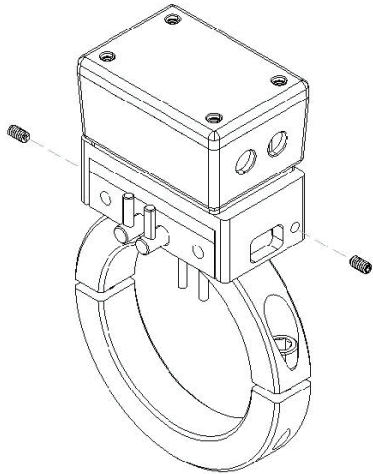
- d. Loosen, but do not remove, the screws holding down the drill guide, slide it so that it aligns with the second hole, and tighten the screws back down.
- e. Open the corresponding valve.
- f. Repeat steps 2a through 2c.

Step 3



- a. Loosen the screws holding down the drill guide, remove it, and empty the chips from the muffler. Wipe away any chips that may have fallen on top of the base. Place the slider plate over the screws with the side containing the white O-rings facing the base. Slide it into position so the alignment pins are in place and it sits flat against the base. Tighten the screws so that the slider plate is firmly mounted to the base.
- b. With the flow arrow in the correct direction, insert the probes into the two holes of the slider plate. Expect some resistance as the probes make their way through the O-rings. Continue to push in until the probes make contact with the closed valves. At this point any leakage noted in step 2c should go away.

Step 4



- a. With one hand firmly holding the top assembly, use the other to rotate each valve 90° to its open position. Push the top assembly into place until you hear an audible 'click', letting you know the two latches are now firmly in place and it is safe to let go. You can expect approximately five pounds of force at the meter's maximum pressure rating.
- b. To complete the installation, there are two safety screws that will need to be placed in the side of the top bracket next to each latch. Screw both in until they bottom out.

Using the Outputs

The milliamp output is scaled so that four milliamps corresponds to zero flow and 20 milliamps corresponds to the range of the meter indicated on the data sheet. The meter will display the milliamp full-scale value for a few seconds on startup. It will also display it if the button on the main (lower) circuit board is pressed twice.

The pulse output generates a square wave signal, sending one pulse for each cubic foot of air that passes through the meter. The LED blinks with the pulse output. At zero flow it may be on or off. The pulse output can be configured as a threshold output, and the scaling of both the pulse output and the milliamp output can be changed, using the optional configuration cable.

Using the Display

Pressing a button indicated by a circle on the front of the meter cycles the display through four display options: rate, daily usage, cumulative usage and units of measure, the last indicated by a digit: (0) for scfm, (1) for m³/min and (2) for m³/hr. The cumulative values are indicated in thousands of cubic feet or cubic meters. Holding the button pressed in either of the cumulative modes (daily usage or cumulative usage) will reset that value to zero. The display normally defaults to the rate display, but this can be changed, as can the units of measure and the decimal point location in the cumulative modes. Please refer to information on configuring the display.

Maintenance

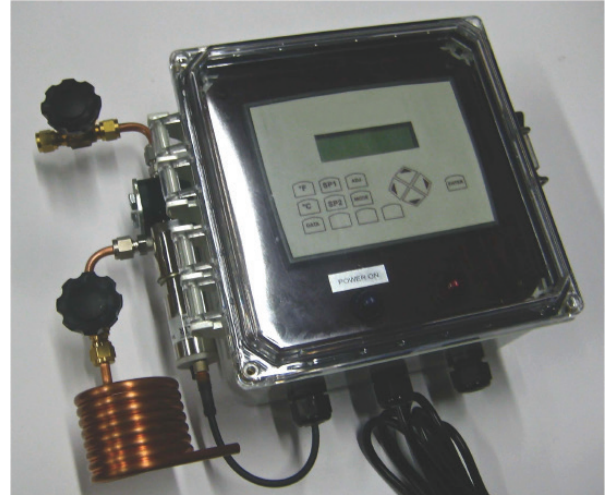
If oil or dirt accumulates on the probes, the meter will read low. For this reason, we recommend cleaning the probes from time to time. To clean the probes, wipe them with a cloth dampened with alcohol or a similar degreaser. It may be found that the system is clean enough that cleaning is not needed.



DDP -76/+68 Digital Dewpoint Monitor with High Dewpoint Alarm

Stable and reliable polymer sensors have been used for relative humidity measurement for decades. Their drawback has been they were not accurate in very low dewpoint ranges - Until Now...Atlas Air and Water's DDP -76/+68 Dewpoint Sensor combines the proven characteristics of long term stability and rugged design with a far wider operating range. The operating parameters have been expanded to cover applications where measurement of low moisture content is critical to process operations. This list includes (but is certainly not limited to) industrial and manufacturing processes found in food, metal, paper/wood, pharmaceutical, plastics, oil & gas, petrochem and other markets.

- The AAW DDP -76/+68 Dewpoint Monitor is a high performance, wide range dewpoint monitoring instrument for compressed air and other inert gases.
- It is designed for industrial applications where a rugged, reliable, maintenance-free instrument is required.
- Long term performance is assured due to the sensor's ability to get wet - particularly important in installations that occasionally experience process water spikes due to pipeline condensation, start-up or failure conditions.
- The sensor is immune to non-metallic particulate contamination, oil vapor and most chemicals.
- The DDP -76/+68 has one of the longest calibration intervals available - typically two years.
- The DDP -76/+68 uses a patented auto-calibration procedure to detect measurement inaccuracies and automatically make corrections to the calibration curve. Auto-calibration works while the process is running and usually the user will not even realize it has taken place.
- Easy operation - Simply connect a 1/4" sample line to the inlet connection. The system is complete with integral sample cell and sample valves. Dewpoint can be measured at atmospheric or line pressure.
- Excellent choice for dewpoint demand upgrade or retrofit to older dryers.



DDP -76/+68 Digital Dewpoint Monitor

Sensor Type:	Thin-film Capacitive Polymer
Sensor Pressure Rating:	700 PSIG
System Pressure Rating:	300 PSIG (std); 700 PSIG (optional)
Dew/Frost Point Range:	-60°C to +20°C (-76°F to +68°F)
Accuracy:	±2°C
Relay Outputs:	(2) SPST dry; 5a @24VDC/120VAC (configurable HI or LO)
Analog Output:	4-20ma scaled to -76°F to +68°F
Dimensions:	App. 12"H x 13"W x 6"D



DDM -76/+68 Dew Point Monitor IFU

The AA&W Model DDM-76/68 Dewpoint Monitor is a high performance, wide range dewpoint monitoring instrument for compressed air and other inert gases. It is designed for industrial applications where a rugged, reliable, maintenance-free instrument is required. Long term performance is assured due to the sensor's ability to get wet - particularly important in installations that occasionally experience process water spikes due to pipeline condensation, start-up or failure conditions. The sensor is also immune to particulate contamination, oil vapor and most chemicals.

- Our DDM has one of the longest calibration intervals available - typically two years.
- The DDM uses a patented auto-calibration procedure to detect measurement inaccuracies and automatically make corrections to the calibration curve. Auto-calibration works while the process is running and usually the user will not even realize it has taken place.

SPECIFICATIONS

SensorType:	Thin-film Capacitive Polymer
Moisture Probe Pressure Rating:	600 PSIG std (Optimized for 100 PSIG) Higher pressures available
System Pressure Rating:	600 PSIG standard Higher pressures available
Dew/Frost Point Range:	-76°F to +68°F (-60°C to +20°C)
Accuracy:	±3.5°F from -76°F to +68°
SP1/SP2 Relay Outputs:	(2) Form A SPST (n.o.) (5a max @ 24VDC/120VAC)
Analog Output:	4-20 ma scaled to the range of the instrument.
Dimensions:	9"W x 9"H x 7"D (app. 14" x 11" overall footprint)

Installation

- The AA&W Model DDM-76/68 Dewpoint Sensor is a rugged system designed for industrial applications. While it can withstand getting wet in upset conditions, the moisture or condensate must still be relatively clean. Rust, scale and other metallic based contaminants will damage the electronics of the probe.
- Whenever possible, make sure air/gas sample lines are taken from the top of the pipeline or vessel, etc. to minimize carrying liquid over to the dewpoint sensor.
- A small instrument filter may be installed ahead of the dewpoint monitor to prevent particulate damage to the sensor.
 - Note: A filter ahead of the dewpoint monitor may actually cause false high readings if the element in the filter is wet. The system may need to be purged to dry out the lines and filter prior to taking readings.
- The instrument can remain portable or can be mounted on the wall or on existing equipment. Mounting feet are supplied with each instrument.

Operation

- **Important Note:** Upon application of power, the transmitter will go through a start-up procedure for about 7 minutes. The instrument will appear to be reading dewpoint for a few moments, however, it will then appear that the instrument is "frozen". Do not be concerned about what is on the display during this time. DO NOT try to make adjustments or press any of the display buttons during this time.
- A sample of air or gas is passed through a sample cell in which the dewpoint sensor is installed. The sensor constantly monitors the dewpoint as long as there is power to the system.
- The dewpoint can be monitored at line pressure or at atmospheric pressure.
 - For line pressure: V1 (sample in) should be fully open (3 to 4 turns) and V2 (sample vent) should be just "cracked" open.
 - For atmospheric: V1 should be "cracked" open and V2 should be fully open (3 to 4 turns).
- Both the sample in and the sample vent valves should be closed tight when the instrument is not being used.

Initial Set-Up

- The Model DDM-76/68 Dewpoint Monitor has two individually adjustable setpoints (SP1 and SP2) as well as a red indicator light (alarm/event) that can be associated with either of the setpoints.
- Each setpoint can be configured as “high” - energized **above** its setpoint - or as “low” - energized **below** its setpoint.
 - The “Alarm/Event” light is associated with either setpoint but can also be configured as “high” or “low” even if its associated setpoint is set up differently.
- Press the “mode” button twice to enter the Set-Up mode. “SCALE” will be displayed on the upper left. Press the °F key or the °C to display the values in Fahrenheit or Celsius.
 - The corresponding “RANGE” will be shown for whatever scale is selected.
Note: the range is not adjustable.
- Press the “enter” key to display SP1 Operation. Use the up and down arrow keys to select “ABOVE” or “BELOW”.
 - “ABOVE” means that the SP1 relay is energized when the dewpoint reading is equal or greater than the setpoint value.
 - “BELOW” means that the SP1 relay is energized when the dewpoint reading is less than the setpoint value.
- Press the “enter” key to display SP1 Adjustment. This is the actual dewpoint setting for SP1. Use the up and down arrow keys to increase or decrease the current setting. Press and hold the key - the value will change slowly at first but, after a few seconds, will change more rapidly. Single presses will increment to the desired setting.
- Press the “enter” key to display SP2 Operation. Similar to SP1 Operation, use the up and down arrow keys to select “ABOVE” or “BELOW”.
- Press the “enter” key to display SP2 Adjustment. Use the up and down arrow keys to increase or decrease the current setting.

- Press the “enter” key to display the Alm/Event light function. The light is associated with either SP1 or SP2.
 - Use the up arrow to select SP1.
 - Use the down arrow to select SP2.
- Press the right arrow to select the “high” or “low” function of the light.
 - Note: this does **not** change the “high” or “low” function of the setpoint itself.
 - Use the up and down arrow keys to select “ABOVE” or “BELOW”.
- Press the “enter” key to return to the main dewpoint display screen.

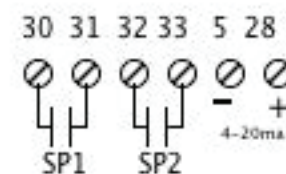
If a change needs to be made to any of the parameters, press the mode key twice to return to the set-up mode. Press “enter” repeatedly until at the desired step to be changed. When changes are complete, press enter until back at the dewpoint display.

The Dewpoint Display shows the current dewpoint reading in °F or °C. It also shows the status of the SP1 and SP2 relays - a * below SP1 or SP2 indicates that the relay is energized.

Factory Settings:

- °F (-76F to +68F)
- SP1 On ABOVE Setpoint
- SP1 set @ +10°F
- SP2 On BELOW Setpoint
- SP2 set @ -25°F
- Alm/Event Light linked to SP1
- Alm/Event Light On ABOVE Setpoint

Wiring connections are made to the terminal strip inside the instrument. Remove the four screws securing the hinged panel and lift the panel.



SAFETY INFORMATION

WARNING

- The Flow Control Products are designed to control the flow of compressed air which can cause serious personal injury, death and property damage at high air pressures.
- ATTENTION STATE OF CALIFORNIA USERS: Flow Control Products are not intended to be used in compressed air systems for use on humans or animals.
- Flow Control Products are suitable for non-hazardous locations only.
- EXPLOSION HAZARD! Do not disconnect Flow Control Products unless power has been removed or the area is known to be nonhazardous.
- Disconnect the air supply and de-pressurize all air lines connected to the Flow Control Product before installation or servicing.
- ELECTRIC SHOCK HAZARD! Disconnect the electrical supply to the Flow Control Product before installation or servicing.
- ELECTRIC SHOCK HAZARD! Misuse of the Flow Control Products can result in fire or death by electrical shock.
- Operate within the specified pressures, temperatures, and other conditions listed in the label.



- Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.
- Replace battery with type CR1225FH-LF, manufactured by Renata SA, only. Use of a different battery may present a risk of fire

TECHNICAL DATA

- Flow Control Products should not be connected to electrical equipment generating more than 120 volts.
- Operating Temp: 0° - 60° C
- Supply Pressure Range: 85-125 psig, 1/4" ID Compressed Air Line
- Humidity: Non-condensing

OPERATIONAL INSTRUCTIONS

- The Flow Control Products are designed for use primarily for compressed air. When other inert gases are used, e.g. nitrogen, the user must make suitable precautions so the buildup of the inert gas does not present a health hazard.
- Do not use an electrical ground that has an unstable impedance, such as painted screws, or ground subject to vibration.



PROP65 WARNING FOR CALIFORNIA RESIDENTS
WARNING: DO NOT USE FOR BREATHING AIR. NOT
SUITABLE FOR HUMANS OR ANIMALS.

www.p65warnings.ca.gov



Frequently Asked Questions

Q: What if I lose power?

A: When power is returned, the system will resume with previous program and values. No new set-up is required.

Q: What if I want to add a Flow Meter or Dew Point meter?

A: Your system is already configured to accept both. Contact your rep for a quote on these products.

Q: What if my system pressure is not accurate?

A: Check pressure xd wiring to panel. Check for obstructions in air line to transducer.

Q: What if the flow control valve is not responding?

A: Check compressed air connection to the valve. There must be a minimum supply of 80 psi to operate the valve. Also check the wiring from the control panel to the valve.

Q: What if my flow is off?

A: Rerun the set-up from the calibration screen making sure proper pipe size selection was made.

Q: What if my Dew Point Meter is not accurate?

A: Check wiring to Dew Point Meter. If no solution, please contact your representative.

Q: How do I connect to the screen via Ethernet?

A: Contact your factory rep for more connectivity options.

Q: What if the PFE will not hold pressure?

A: One of three things are going on here.

Either the valve has no control air to the valve or the PFE is receiving pressure signal to change valve position and there is or no electronic communication from the PFE panel to the valve or both of the above check out and the valve is stuck.



Atlas Air & Water
737 Quentin Avenue South
Lakeland, MN 55043
www.atlasairandwater.com
sales@atlasairandwater.com
Serving Industry Since 1986!