AIR MAINTENANCE DEVICE FOR FUSIBLE PLUG LOOPS

Model AMD-76

The Bermad AMD-76 Air Maintenance Device is a pressure control unit that automatically regulates a continuous pressurized air (or nitrogen) supply to a constant preset value. The BERMAD AMD-76 is designed for use with dry pilot line deluge systems using a dry fusible plug loop.

Construction Materials

Pressure Regulator: Stainless Steel CFM8 Type 316
Accessories: Brass
Tubing & Fittings: 316 Stainless Steel

Pressure Range and Settings

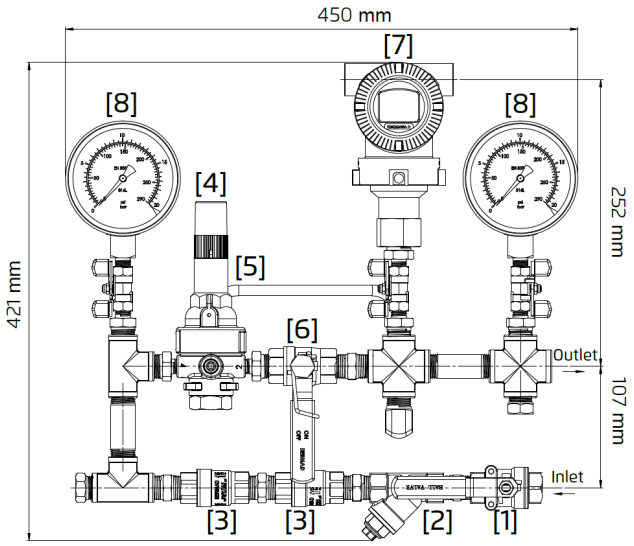
Pressure Rating: 20 barg / 300 psig
Factory Outlet Pressure Setting: 2.5 barg / 36.26 psig
Field-Adjustable Outlet Range: 1.0 to 7.0 barg / 15 to 100 psig

Connections

Inlet & Outlet 1/2"NPT

Additional Options

All Stainless steel (suffix code N)
Stainless steel 316 back plate panel (suffix code BP)
Stainless steel 316 instrument cabinet
Brackets for direct mounting on BERMAD deluge valves
Air tank, Stainless steel (Code AT)
Inlet and outlet pressure gauges (Code 6n6n)
Pressure Switch Low, Ex.proof (Code P7)
Pressure Transmitter, Ex.proof (Code Q)



Principle of Operation

The air or nitrogen supply enters the AMD-76 via the pressure supply ball valve [1] and the filter [2]. The ball valve must be kept open at all times that the AMD is in the automatic operation mode. For added safety and convenience and as a guard against incorrect operation the AMD is equipped with a spring loaded Normally Closed (N.C) Bypass valve [6], ensuring an essential default closed position, on completion of system pressurization. To quickly fill the system for initial pressurization the spring loaded (N.C) Bypass Valve should be opened. Once the required system pressure has been reached, release the N.C Bypass valve handle, which will automatically return it to the closed position, allowing only a restricted airflow to the system through the fixed restriction orifice [5]. Twin check valves [3] retain the outlet pressure supply in the event that the air supply is interrupted. In such a case the AMD will maintain air pressure in the system for a limited period of time only. The Pressure Regulator [4] automatically maintains system pressure at the pre-set value. The Fixed Restriction Orifice limits the air flow into the fusible plug
system to a flow that is significantly lower than will be exhausted when a fusible release device is activated. Thus ensuring a sufficient drop in pressure to activate low pressure triggered equipment such as deluge valves and alarm devices.

Installation

1. The air or nitrogen supply provided to the Air Pressure Maintenance Device must be continuous, clean, dry, and oil free.
2. Unions should be installed upstream and downstream of the Air Pressure. Maintenance Device to allow easy removal for servicing.
3. Connect the air supply to the inlet port of the AMD, and the outlet port to piping of no less than ½"(DN15).
4. Provide wiring to any installed instrumentation according to the manufacturer's instructions.

Placing in Service & Resetting Procedure

1. Open the Supply Isolating valve and introduce air pressure to the inlet.
2. Verify that the inlet pressure gauge [8] indicates a high and stable pressure.
3. Open the Bypass valve [6] enough to slowly pressurize the complete system.
4. After the system pressure has stabilized to the required pressure, as shown by the outlet pressure gauge [8], release the Bypass valve handle which will automatically return it to the closed position. The AMD is now ready for standby service.

Adjustment

Remove the regulator [4] plastic tamper-proof cap and while observing the outlet pressure gauge, slowly turn the regulator adjusting screw clockwise to increase pressure or counter-clockwise to decrease pressure. If the system is over-pressurized during fill and/or adjustment, the excess pressure must be released.
After the pressure regulator has been set, lock the adjusting screw with the locking nut, and replace the plastic tamper-proof cap. The AMD will then automatically maintain the pre-set system pressure.
Any installed instrumentation shall be calibrated according to the manufacturer's instructions.

Inspection & Testing

The Model AMD-76 must be inspected at least quarterly:
1. Verify that the Bypass Valve [6] is closed.
2. Verify that the Air Supply Isolating Valve [1] is Open and verify that any control valve in the air supply trim to the system being pressurized is open.
3. Verify that the fusible plugs system pressure downstream of the AMD is as per the system requirement. If adjustment is necessary refer to the "Adjustment" paragraph.
4. Drain accumulated moisture from the system piping and/or Air Tank (if mounted) by slowly opening a draining valve. The Air Maintenance Device is now ready for service.

Factory Supplied Additional Options

AMD - 76 -	NQ6n
Description	**Code**
S.S 316 Trim Accessories	N
Solenoid Valve (to be specified)	SS
Pressure Transmitter	Q
Pressure Switch, General Purpose	P
Block & Bleed Valve / Two Valve Manifold	B
Ex Proof Pressure Switch	P7
Ex d ATEX Pressure Switch	P9
Pressure Gauge 2.5" Brass Socket Glycerin	6
Pressure Gauge 4" S.S Socket Glycerin	6n
Pressure Gauge 4" Monel Socket	6m
Air Pressure Tank/Reservoir and PSV	AT
Stainless Steel 316 Back Plate Panel	BP
Stainless Steel 316 Instrument Cabinet	IC

Material	Code	Description	Cat No.
Standard	AMD-76	BERMAD AMD-76-STD-BASIC Air Maintenance Device, Regulated Bypass W/ Spring Return Valve, 2PBL Regulator, SS316 Fittings, Brass Accessories	TEX0000009
Stainless Steel	AMD-76-N	BERMAD AMD-76-N-BASIC Air Maintenance Device, Regulated Bypass W/Spring Return Valve, 2PBL Regulator, All SS316	TEX000S009