Fire Protection

BERMAD Fire Protection

400E - Product Catalog

Water Control Solutions

BERMAD

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* Pictures are for illustration only

FP 400E General Data

Description

The BERMAD FP 400E valve is an elastomeric, rolling diaphragm globe valve, with a solid radial seal disc. These automatic water control valves are designed for vertical or horizontal installation and are available in diameter sizes from 1½" to 12" (DN40 to DN300).

The BERMAD FP 400E valves are used for water flow control in Deluge, Combination Pressure Control Deluge, Preaction or Water/Foam systems. They are available in a wide range of construction materials, making them suitable for a variety of industrial specifications.

The FP 400E Deluge Valve is line pressure driven and is held closed by system water pressure trapped in the control chamber. When the releasing system operates, pressure is released from the control chamber, and the seal disc opens to allow water to flow into the system.

The design of the FP 400E valve body includes a single, full bore seat with an unobstructed flow path, free of any in-line ribs, supporting cage, or shafts.

The unique hydro-dynamic globe design provides high flow capabilities with minimum head loss. The cover is removable via four fastening bolts (6 bolts for 12" valves) for quick in-line inspection and servicing.

The internal design of the FP 400E valve is based on innovative VRSD (vulcanized radial seal disk) technology. This technology uses advanced rubber-based materials to achieve a solid, one-piece, elastomeric assembly including a flexible fiber reinforced diaphragm, vulcanized with a rugged radial seal disk, and together providing resilient, long term, drip tight sealing. The elastomeric assembly is carefully balanced and peripherally supported to avoid tension and protect the elastomer, resulting in long life and a smooth controlled actuation, even under harsh conditions.

For periodical servicing the elastomeric assembly can be easily inspected or removed from the valve body with no need for disassembling the valve from the line.

Accessories

BERMAD FP 400E Deluge Valves are trimmed with the original components and accessories per specification and in accordance with the valve's function and application.

Where additional specifications and/or signaling devices are required for a specific application, refer to system data for the system used, and to the BERMAD data sheet and Installation, Operation & Maintenance for specific model required.

Main Features

- Single piece molded elastomeric moving part – No maintenance required
- In-line serviceable, field replaceable internal parts
- Full bore and obstacle free flowpath
- Available in corrosion resistant materials
- Quick resetting without opening the valve
- Compatible with electric/hydraulic/pneumatic release and pressure control trim systems

Approvals

- UL Listed to UL260 to 250 psi (17.2 bar) Working Pressure, 1½" to 10" (DN40 to DN250)
- DNV Approved for for 20 bar maximum working pressure, 1½" to 12" (DN40 to DN300)
- ABS Approved for 300 psi (21 bar) maximum working pressure, 1½" to 12" (DN40 to DN300)
- Lloyd's Register Approved for 300 psi (21 bar) maximum working pressure, 1½" to 10" (DN40 to DN250)
- Fire Test Certified, 1½" to 12" (DN40 to DN300)

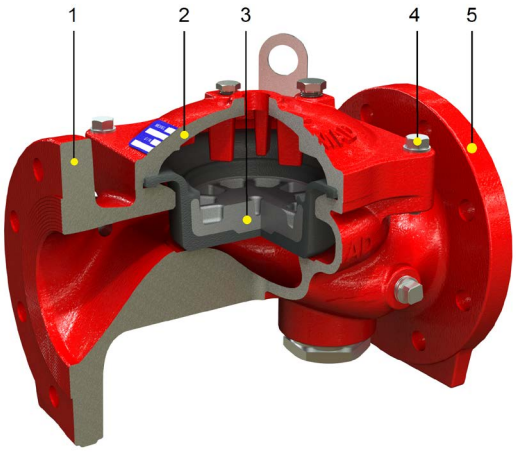
Notes:
1. The FP 400E valve shall be trimmed with specific components & accessories.
2. The FP 400E valve must be installed and maintained in compliance with the most recent BERMAD publications.

* Pictures are for illustration only

Construction Materials

The BERMAD FP 400E valves are available in a variety of materials to suit a wide range of application conditions. Providing the optimal resistance to corrosive media and harsh environments

To enable a higher corrosion resistance for ductile iron or cast steel valves, a UV protected Zinc based high build fusion bonded epoxy coating is available as an option.



Standard Configurations

Item Number	Description	Code	
		FP-C-ER	FP-S-ER
1	Valve Body	Ductile Iron	Cast Steel
2	Cover	Ductile Iron	Cast Steel
3	Elastomeric Assembly	HTNR with VRSD*	HTNR with VRSD*
4	External Bolts / Nuts	S.S. 316	S.S. 316
5	Coating (external and internal)	H.B. Epoxy	H.B. Epoxy

* VRSD - Vulcanized Radial Seal Disk

Specifications

Castings

- Ductile Iron to ASTM A536 65-45-12 (coated)
- Cast Steel ASTM A216 Grade WCB (coated)
- Nickel Aluminum Bronze ASTM B148 C95800
- Stainless Steel 316 ASTM A351 Grade CF8M
- Hastelloy C-276

Standard Bolting:

- Stainless Steel 316 to ASTM A276
  Option: Internal Spring - S.S. 302 or Inconel

Elastomer

- HTNR, Polyamide fabric reinforced Polyisoprene, Temperature Rating up to 80°C
- NBR, Polyamide fabric reinforced Nitrile (Buna-N), Temperature Rating up to 80°C
- EPDM, Polyamide fabric reinforced Ethylene-Propylene, Temperature Rating up to 90°C

Coating

- High Build, Fusion Bonded and UV Protected, Epoxy Coating
- Color: Fire Red to RAL 3002

Pressure Rating

Material	End Connection Standard Inlet & Outlet	Class & Type	Max. working Pressure (3)	
			psi	bar
Ductile Iron	Flanged ANSI B16.42	150#RF	250	17.2
	Flanged ISO 2-7005	PN16	235	16
	Grooved ANSI C606	250	250	17.2
	Grooved BS EN 10255	250	250	17.2
	Threaded ISO-7-RP/NPT	250	250	17.2
Cast Steel	Flanged ANSI B16.5	150#RF	250	17.2
	Flanged ISO 2-7005	PN16	235	16
Stainless Steel	Flanged ANSI B16.5	150#RF	250	17.2
	Flanged ISO 2-7005	PN16	235	16
Ni-Al Bronze	Flanged ANSI 16.5	150#RF	250	17.2
	Flanged ISO 2-7005	PN16	235	16

Notes:
1. To attach a grooved valve to flanged line or vice versa, use a grooved-flange adapter suited to the designated conditions.
2. Factory pressure testing: Each valve is tested at 375 psi (26 bar)
3. Max working pressure to be in accordance with pressure temperature rating of the relevant standard
4. Standard flange facing: Raised Face (RF), Serrated Finish. Flat Face (FF) flanges available on request.

* Pictures are for illustration only

Exploded View

Diaphragm Assembly
* Auxiliary Spring option

* Pictures are for illustration only

BERMAD Hydraulically Controlled Deluge Valve with EasyLock™ Local Reset

FP-400E-1M

The 400E-1M is activated by a sudden flow and pressure drop in a fusible plug wet pilot line. Once open, the 400E-1M latches open until locally reset.

The 400E-1M is ideal for systems with open nozzles for water or foam discharge.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electrically Controlled Deluge Valve with EasyLock™ Local Reset

FP-400E-2M

The 400E-2M is activated by a 2-Way solenoid valve. Once open, the 400E-2M latches open until locally reset.

The 400E-2M is ideal for systems with open nozzles for water or foam discharge and is available with electrical components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electrically Controlled Deluge Valve with Local Reset

FP-400E-3UM

The 400E-3UM is activated by a 3-way solenoid valve which in turn activates a relay valve that latches the main valve open until locally and manually reset.

The 400Y-3UM is ideal in systems with open nozzles for water or foam discharge, and is available with electric components to suit any hazardous location. also suitable for systems with dual redundant detection.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Pneumatically Controlled Deluge Valve with Local Reset

FP-400E-4M

The 400E-4M is activated by a fall in pneumatic pressure to the relay valve. The main valve remains open until manually and locally reset.

The pneumatic control makes the 400E-4M applicable for freezing environments and corrosive water supplies. The 400E-4M is suitable for systems with open nozzles for water or foam discharge.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Hydraulically Controlled, Anti-Columning Deluge Valve with Local Reset

FP-400E-5M

The 400E-5M is activated by a fall in hydraulic pressure to the relay valve. The main valve remains open until manually and locally reset.

The 400E-5M is ideal for systems with remote or elevated wet pilot lines, due to its boosted local pressure release.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electro Pneumatically Controlled Deluge Valve with Local Reset

FP-400E-6M

The 400E-6M is suitable for systems that include electric or redundant (electric or pneumatic) fire detection systems. It opens in response to an electric signal or a drop in pressure of a pneumatic pilot line. The fall in pneumatic pressure to the relay valve, latches open the main valve until locally and manually reset.

The 400E-6M is ideal for open-nozzle systems and is available with electrical components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Hydraulic Pressure Control Deluge Valve
with Local Reset

FP-400E-1MC

The 400E-1MC is activated by a fall in hydraulic pressure to the relay valve, latching open the main valve. Once open, the valve will not close until locally and manually reset. An integral pressure reducing pilot ensures a stable and precise preset downstream system water pressure.

The 400E-1MC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

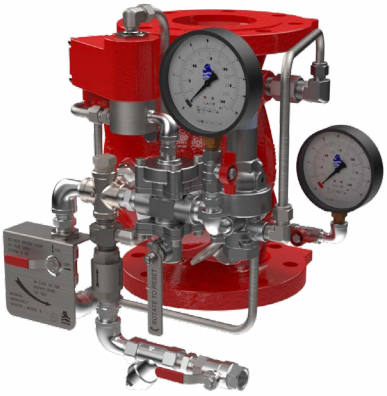
BERMAD Electric Pressure Control Deluge Valve
with Local Reset

FP-400E-2MC

The 400E-2MC is activated by a 2-Way solenoid valve, that actuates a relay valve latching the main valve open. Once open, the valve will not close until locally and manually reset. An integral pressure reducing pilot ensures a stable and precise preset downstream system water pressure.

The 400E-2MC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"



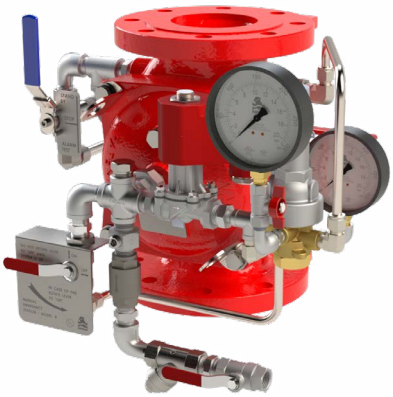
Bermad Electric Pressure Control On-Off Deluge Valve

FP-400E-2DC

The 400E 2DC is activated by a 2-way solenoid valve by which opening and closing of the deluge valve may be controlled remotely. An integrated pressure reducing pilot ensures a precise and stable pre-set downstream water pressure.

The 400E-2DC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"



* Pictures are for illustration only

BERMAD Electric Pressure Control On-Off Deluge Valve

FP-400E-3DC

The 400E-3DC is activated by a 3-way solenoid valve by which opening and closing of the deluge valve may be controlled remotely. The solenoid actuates a relay valve opening the main valve. An integrated pressure reducing pilot ensures a precise and stable pre-set downstream water pressure.

The 400E-3DC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Pneumatic Pressure Control On-Off Deluge Valve

FP-400E-4DC

The 400E-4DC is activated by a pneumatic relay valve. Opening and closing of the valve can be controlled remotely. An integrated pressure reducing pilot valve ensures a stable and precise preset downstream water pressure.

The BERMAD 400E-4DC is suitable for open-nozzle systems with a high pressure water supply. The pneumatic control makes it ideal for use in freezing environments and corrosive media.

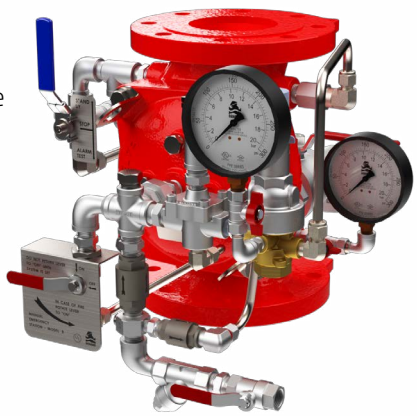
- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Hydraulic Pressure Control On-Off Deluge Valve

FP-400E-5DC

The 400E-5DC is activated by a hydraulically operated relay valve, through which opening and closing of the valve can be controlled either with a remote hydraulic command or with a wet pilot line with closed fusible plugs. An integral pressure reducing pilot valve ensures a precise, stable, pre-set downstream water pressure

The 400E-5DC is suited for systems that combine a remote wet pilot line with a high pressure water supply.



- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Electro Pneumatic Pressure Control On-Off Deluge Valve

FP-400E-6DC

The 400E 6DC is activated by a fall in pneumatic pressure of the pilot line or by an electric signal to a 3 way solenoid valve. The 400E 6DC can be activated remotely either pneumatically or electrically. When open an integrated pressure reducing pilot valve regulates the main valve to maintain a precise, stable, pre-set downstream pressure.

The 400E-6DC is ideal for open-nozzle systems with a high pressure water supply. It is available with electrical components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Electrically Controlled On-Off Deluge Valve

FP-400E-2D

The 400E-2D is activated by a 2Way solenoid valve, suitable for electric fire detection systems.

The 400E-2D is ideal for systems with open nozzles for water or foam discharge.

Available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electrically Controlled On-Off Deluge Valve

FP-400E-3D

The 400E-3D is activated by a 3-way solenoid valve, suitable for electric fire detection systems.

The 400E-3D is ideal for systems with open nozzles for water or foam discharge. Available with electric components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electrically Controlled, On-Off, Deluge Valve with Remote Reset Latch

FP-400E-3D-RL

The BERMAD 400E-3D-RL Deluge Valve is suitable for use with remote controlled or/and automatic water spray or foam deluge systems that include electric detection and piping systems with open nozzles.

This BERMAD Deluge Valve is equipped with two solenoid valves and Double-Acting Relay Valve (DRV) which trips the deluge valve into an open position during the Opening solenoid activation.

The valve will then latch in its last position. The 400E-3D-RL will reset remotely via short pulse to activate the Closing solenoid coil.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Pneumatically Controlled On-Off Deluge Valve

FP-400E-4D

The 400E-4D is controlled by a pneumatic relay valve, typically activated by a decrease in pressure of a pneumatic pilot line.

The 400E-4D can also be operated remotely. The Bermad 400Y 4D is ideal for use in systems with open nozzles for water or foam discharge also well suited for use with corrosive media or where freezing temperatures might be experienced.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Hydraulically Controlled On-Off Deluge Valve

FP-400E-5D

The 400E-5D is activated by a hydraulic relay valve, by which opening and closing of the valve can be controlled remotely.

The 400E-5D is suited to systems with remote release wet pilot lines.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

BERMAD Electro-Pneumatically Controlled On-Off Deluge Valve

FP-400E-6D

The 400E-6D is suitable for systems that include electric or redundant (electric or pneumatic) fire detection systems. It opens in response to an electric signal or a drop in pressure of a pneumatic pilot line.

The 400E-6D is ideal for open-nozzle systems and is available with electrical components to suit any hazardous location.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

BERMAD Solenoid Activated, Remote Controlled Monitor Valve

FP-400E-3X

The BERMAD Model FP 400E-3X is a line pressure driven, solenoid controlled valve that opens and closes drip tight in response to an electric signal.

The hydraulic actuation by a compact solenoid is resource saving, while providing maximum safety.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Hydraulically Operated, Remote Controlled Monitor Valve

FP-400E-5X

The Model FP 400E-5X is a line pressure driven control valve that opens and closes drip tight in response to an external hydraulic pressure command.

It's boosted local opening provides maximum safety also in systems with long and/or elevated hydraulic remote control piping lines.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Locally Operated Monitor Valve

FP-405-11

The BERMAD Model FP 405-11 is a simply designed, manually operated, on/off valve. It is particularly suited for monitors and industrial high capacity hydrants.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Locally Operated Deluge / Monitor Valve

FP-400E-1D

The 400E-1D is activated manually by opening the local Manual Release Valve attached to the valve's control trim.

The 400E-1D is ideal for use as a locally operated deluge valve for water spray or foam system nozzles.

It is also well suited for installation directly before high capacity water/foam monitors as a Listed/Approved quick opening water control valve.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 1½" to 10"

* Pictures are for illustration only

The BERMAD Zero pressure foam concentrate control valves are all stainless steel, hydraulically operated double chambered valves and can use existing firewater pressure to fully open or close. This makes their operation independent of the foam concentrate pressure, enabling functionality at very low pressure or even non-pressurized foam concentrate.

They have an over the seat design giving them drip tight sealing and an inherent “fail safe close” characteristic. These valves can share the opening command of a main deluge valve, whether electric, hydraulic or pneumatic. This ensures a perfect synchronization of the opening of the foam concentrate valve with the opening of the deluge valve and admission of firewater into the system. These valves replace mechanically operated valves to provide safer and smarter operation for modern foam systems, assuring maximum reliability.

BERMAD Zero Pressure, Solenoid Activated Foam Concentrate Valve

FC-700E-3X-BO-N

The BERMAD FC 700E-3X-BO is a Double Chambered hydraulically powered foam-concentrate valve, controlled electrically by a solenoid valve.

- **Sizes**: 1½” to 4”
- **Pressure Rating:** 28 bar/400 psi

BERMAD Zero Pressure Hydraulically Controlled Foam Concentrate Valve

FC-700E-5X-BO-N

The BERMAD FC 700E-5X-BO is a Double Chambered hydraulically powered Foam-concentrate valve, controlled by a 3-Way hydraulic relay valve.

- **Sizes**: 1½” to 4”
- **Pressure Rating:** 28 bar/400 psi

* Pictures are for illustration only

Pressure Sustaining/Relief for High Viscosity BERMAD Foam Concentrate Valve

FC-730-VBeZ

The BERMAD FC-730-VBeZ is a pressure sustaining / relief valve using an external water pressure source to control high viscosity foam concentrate.

- **Sizes**: 1½" to 4"
- **Pressure Rating:** 28 bar/400 psi

BERMAD Electrically Controlled, for High Viscosity Foam Concentrate Valve, UL-Listed

FC-700E-3U-BN

The BERMAD FC 700E-3U-BN is a Double Chambered hydraulically powered Foam-concentrate valve, controlled by a 3-Way Solenoid Valve, suited for operation with high viscosity concentrate.

- **Sizes**: 1½" to 4"
- **Pressure Rating:** 28 bar/400 psi

* Pictures are for illustration only

BERMAD Electrically Operated Foam Concentrate Valve

FC-400E-3X-N

The FC-400E-3X-N is of all stainless steel construction. It is activated electrically by a 3-way solenoid valve to open the main valve.
Suited for foam concentrate, local or remote control.

- **Sizes**: 1½" to 4"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Hydraulically Operated Foam Concentrate Valve

FC-400E-5X-N

The FC-400E-5X-N is of all stainless steel construction. It is activated hydraulically by a 3-way hydraulic relay valve to open the main valve.
Suited for foam concentrate, local or remote control.

- **Sizes**: 1½" to 4"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Electrical Remote Control Foam Concentrate Valve, UL-Listed

FC-400E-3U-N

The FC-400E-3U-N is of all stainless steel construction. It is activated electrically by a 3-way solenoid valve to open the main valve.
Suited for foam concentrate, local or remote control.

- **Sizes**: 1½" to 4"
- **Pressure Rating:** 17.2 bar/250 psi

* Pictures are for illustration only

BERMAD Single Interlock Pre-action System

FP-400E-7M

The BERMAD Model FP 400E-7M Single Interlock Pre-Action Release System is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device has been activated. Single Interlock Pre-Action Systems include automatic sprinklers attached to a dry sprinkler piping system, with a supplementary electric detection system installed in the same area. This system admits water into the sprinkler piping upon activation of the detection system. Water is discharged only through sprinklers that have been opened due to excessive heat. When a Supervised System is required, a pneumatic low pressure supply shall be provided. An anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

- **Sizes**: 2" to 8"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 2" to 8"

BERMAD Double Interlock Pre-action System Electric - Electric

FP-400E-7BM

The BERMAD Model FP 400E-7BM Double Interlock Pre-Action, Electric-Electric Release System is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device and a sprinkler have both been activated. Electric- Electric double interlock systems include automatic sprinklers attached to a dry sprinkler piping system, along with a supplementary electric detection system wired to a Cross- Zone releasing control panel, and a Electric Supervised System of low air pressure in the sprinkler system piping. The Double Interlock Pre-Action System admits water into the sprinkler piping only when both the detection device and the supervised systems simultaneously signal the control panel to trigger the solenoid valve. An anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

- **Sizes**: 2" to 8"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 2" to 8"

BERMAD Double Interlock Pre-action System Electric - Pneumatic

FP-400E-7DM

The BERMAD Model FP 400E-7DM Double Interlock Pre-Action, Electric-Pneumatic Release System is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device and a sprinkler have both been activated. Electric-Pneumatic Double Interlock Systems include automatic sprinklers attached to a dry sprinkler piping system, with a supplementary Electric Detection System and a Pneumatic Supervised System of low air pressure in the system piping. The Supervised System consists of a Pneumatic Pilot Valve (PORV), and pneumatic low pressure supply. The Double Interlock Pre-Action System admits water into the sprinkler piping only when the detection system triggers the solenoid valve through the control panel, while the PORV is simultaneously activated due to the pressure drop in the Supervised System. An anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

- **Sizes**: 2" to 8"
- **Pressure Rating:** 17.2 bar/250 psi
- **UL Listed:** 2" to 8"

* Pictures are for illustration only

BERMAD AMD with Adjustable Regulator and Spring - Return Bypass Valve - Model 74

FP-AMD-74

The BERMAD AMD-74 Air Maintenance Device is a pressure control unit that automatically regulates the supplied air pressure to a constant preset value. It is suited for use with dry pilot actuated Deluge systems as well as Dry Pipe and Pre-Action systems.

The AMD includes a field-adjustable pressure regulator, through which the air/ nitrogen pressure supply can be reduced, a check valve to maintain system pressure in the event of pressure source failure, a filter to ensure a clean air supply, and a bypass valve for a quick initial air pressure filling of the system. The supply system should include an air tank (provided separately).

- **Pressure Rating:** 12 bar/175 psi
- Aluminum regulator, brass accessories
- Equipped with 2.5" Liquid filled pressure gauge

BERMAD AMD with Adjustable Regulator All Stainless Steel 316 Construction - Model 75

FP-AMD-75

The BERMAD AMD-75 Air Maintenance Device is a robust Stainless steel 316 pressure control unit that automatically regulates the supplied air pressure to a constant preset value. It is suited for use with dry pilot actuated Deluge systems as well as Dry Pipe and Pre-action systems.

The AMD includes a field-adjustable pressure regulator, through which the air/ nitrogen supply can be reduced to a constant and stable pressure, a check valve to maintain system pressure in the event of pressure source failure, a filter to ensure a clean air supply, and abypass valve for a quick initial air pressure filling of the system.

- **Pressure Rating:** 12 bar/175 psi

Optional:

- Stainless steel back plate panel
- Brackets for direct mounting on a BERMAD deluge valve
- 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)

BERMAD AMD with Regulated By-Pass for Deluge System Fusible Plug Loops - Model 76

FP-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.

The standard configuration includes a field adjustable pressure regulator, a Y strainer and two spring loaded check valves.

Additional options include Pressure Gauges, Pressure Switches / Transmitters, Air Tank and Pressure Safety Valve (PSV).

The AMD unit is provided preassembled, tested and calibrated prior to shipment.

- **Pressure Rating:** 20 bar/300 psi
- Bronze and brass or SS316 construction material

Optional:

- Stainless steel back plate panel
- Brackets for direct mounting on a BERMAD deluge valve
- 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)

* Pictures are for illustration only

BERMAD Pressure Reducing Valve

FP-420-00-A5

The Model FP 420-00 Pressure Reducing Valve is a hydraulically self operated, diaphragm actuated control valve that reduces high, unstable upstream pressure to maintain precise stable downstream pressure, regardless of flactuating demand or varying upstream pressure.

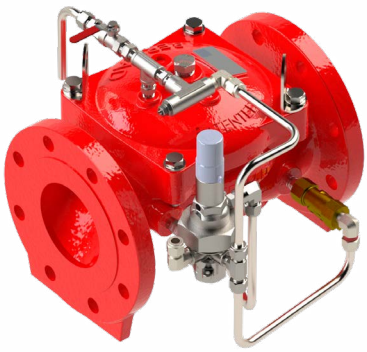
- **Sizes**: 1½" to 12"
- **Pressure Rating: 17.2 bar/250 psi**

BERMAD Pressure Differential Excess Flow Control Valve

FP-426-02

The Model FP-426-02 flow control valve is suited to protect flow sensitive devices. This valve uses a valve opening speed device to cushion intial opening flow and two differential pressure sensing points to restrict any flow increase in excess of the permitted rate.

- **Sizes**: 1½" to 12"
- **Pressure Rating: 17.2 bar/250 psi**



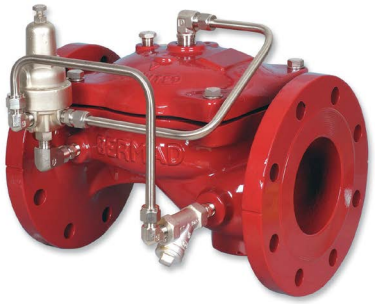
* Pictures are for illustration only

BERMAD Pressure Relief Valve

FP-430-UF-A5

The BERMAD Model FP 430-UF pilot operated valve prevents over pressure, maintaining a constant preset system pressure regardless of fluctuating demands.

UL-Listed (up to 175 psi) and FM-Approved according to NFPA-20. The valve offers reliable performance in: Refineries, petrochemical complexes, tank farms, high-rise buildings, aviation, marine and on-shore installations.



- **Sizes**: 1½" to 12"
- **Pressure Rating:** 12 bar/175 psi
- **UL Listed:** 2" to 6" - 12 bar/175 psi
- **FM Approved**: 2" to 6" - 12 bar/175 psi

BERMAD Pressure Relief Valve

FP-730-UF

The BERMAD Model FP 730-UF pilot operated relief valve prevents overpressure, maintaining a constant preset system pressure regardless of fluctuating conditions. It is UL-Listed (up to 350 psi) and FM-Approved in accordance with NFPA-20.

The valve offers reliable performance when installed in: Refineries, petrochemical complexes, tank farms, high-rise buildings, aviation and airports, marine and on-shore installations.

- **Sizes**: 1½" to 16"
- **Pressure Rating:** 24 bar/350 psi
- **UL Listed:** 2" to 6" - 24 bar/350 psi
  8" - 12 bar/175 psi
- **FM Approved**: 2" to 8" - 14 bar/200 psi

BERMAD Anti-Surge Pump Start Control Valve

FP-730-48-BL

The BERMAD 730-48-BL is a Normally Open, Anti Surge, pilot-operated and diaphragm-actuated control valve. It has a double-chambered actuator for positive and reliable actuation with an external lift spring, giving the valve it's normally open characteristic. Particularly suited for vertical turbine shaft pump applications.

This affords the BERMAD 730-48-BL a zero reaction time, pre-empting and dissipating any pressure surge or excess air at pump start up. Once the surge has passed and system piping pressure has normalized the 730-48-BL will close and will continue duty as a relief valve, relieving pressure spikes when needed, keeping the system pressure at its designed level. The 730-48-BL is an autonomous valve

- **Sizes**: 1½" to 16"
- **Pressure Rating:** 25 bar/365 psi

* Pictures are for illustration only

BERMAD Pressure Relief Valve with Electric Override

FP-430-59

The BERMAD Model FP 430-59 combines fire pump relief with a pre-opening feature to prevent damaging pressure rises during pump start up.

The valve prevents surge pressure rise by fully opening by electric override command synchronized with the pump start-up. After cessation of the electric opening command via a timer, the valve will continue to function hydraulically as a pressure relief valve.

With a low headloss chracteristic this valve performs reliably in high capacity fire pump systems.

- **Sizes**: 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Direct Acting Pressure Relief Valve ¾"

FP-3HC-0

The BERMAD model FP-3HC-0 is a direct acting, spring loaded, diaphragm type, relief valve.

The single port is held closed buy the force of the adjustable spring located above the pressure sensing diaphragm. When the force of the pressure sensed under the diaphragm exceeds the force of the spring the valve will open to relieve pressure and will close tight when pressure falls below the pre-set value.

This UL Listed and FM approved valve is well suited for use in protecting wet pipe systems from overpressure that occurs from temperature fluctuations and for fire pump casing relief as required by the NFPA 20 and NFPA 13 standards.

- **Pressure Setting:** 1 - 15 bar / 15 - 235 psi
  or
  7 - 25 bar / 100 - 365 psi
- FM Approved
- UL Listed

BERMAD Sprinkler Pressure Relief Valve ½"(M) inlet/¼" (F) outlet

FP-3PB-0

The BERMAD model FP-3PB-0 is a direct acting, spring loaded, diaphragm type relief valve.

The single port is held closed buy the force of the adjustable spring located above the pressure sensing diaphragm. When the force of the pressure sensed under the diaphragm exceeds the force of the spring the valve will open to relieve pressure and will close tight when pressure falls below the pre-set value.

This UL Listed and FM approved valve is well suited for use in protecting wet pipe Systems, pilot lines and Fusible sprinkler lines from overpressure occurring from temperature fluctuations, pump start up spikes and other excess pressure events.

- **Pressure Setting:** 1 - 15 bar / 15 - 235 psi
  or
  7 - 25 bar / 100 - 365 psi
- FM Approved
- UL Listed

* Pictures are for illustration only

BERMAD Level Control Valve with Altitude Pilot

FP-450-82

The BERMAD FP 450-82 Level Control Valve is a hydraulically controlled, diaphragm actuated automatic control valve that shuts at pre-set high reservoir level and opens in response to level drop, keeping the reservoir full.

The water level is maintained by the use of a highly accurate pilot valve that precisely senses the water level head from a sensing point at the bottom of the reservoir and controls the main filling valve accordingly.

This eliminates the need for the installation of a float mechanism, making it ideal for high level reservoirs.

- **Sizes:** 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Level Control Valve with Modulating Horizontal Float

FP-450-60

The Model FP 450-60 Level Control Valve with Modulating Horizontal Float is a hydraulically controlled, diaphragm actuated, control valve that controls reservoir filling to maintain constant water level, regardless of fluctuating demand.

- Very low supply pressure
- Low noise generation
- Energy cost critical systems
- Systems with poor water quality

- **Sizes:** 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Level Control Valve with Bi-Level Electric Float

FP-450-65

The Model FP 450-65 Level Control Valve with Bi-Level Electric Float is a hydraulically operated, diaphragm actuated, control valve that controls reservoir filling in response to an electric float switch signal.

The valve fully opens at a pre-set low level and closes at a pre-set high level.

- Very low supply pressure
- Low noise generation
- Energy cost critical systems
- Systems with poor water quality

- **Sizes:** 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

BERMAD Level Control Valve with Bi-Level Vertical Float

FP-450-66/67

The Model FP 450-66 Level Control Valve with Bi-Level Vertical Float is a hydraulically controlled, diaphragm actuated control valve that controls reservoir filling in response to a hydraulic on/off float pressure command.

The Valve opens at pre-set low level and closes at a pre-set high level.

- Very low supply pressure
- Low noise generation
- Energy cost critical systems
- Systems with poor water quality

- **Sizes:** 1½" to 12"
- **Pressure Rating:** 17.2 bar/250 psi

Note: The 450-67 is for reservoir "always full" application

* Pictures are for illustration only

BERMAD Basket Strainer with In-Line Flushing Outlet (Plugged)

ANSI #150RF, UL Listed

FP-60F-01-D

The BERMAD FP-60F-01-D is designed for in-line maintenance available with a large diameter flushing outlet for immediate and easy screen cleaning. In addition easy in-line access to the basket screen is enabled, requiring only the cover removal.

The FP-60F-01-D strainers are also well suited for use upstream of Pressure Control Valves and Deluge valves as well as other debris sensitive Fire System Devices.

- **Sizes**: 3" to 16"
- **Pressure Rating:** 17.2 bar / 250 psi
- **UL Listed**: 3" to 16"

14 & 16"

BERMAD Basket Strainer with In-Line Flushing Valve

ANSI #150RF, UL Listed

FP-60F-01-DV

The BERMAD FP-60F-01-DV is designed for in-line maintenance available with a large diameter flushing outlet and drain valve for immediate and easy screen cleaning. In addition easy in-line access to the basket screen is enabled, requiring only the cover removal. The FP-60F-01-DV strainers are also well suited for use upstream of Pressure Control Valves and Deluge valves as well as other debris sensitive Fire System Devices.

- **Sizes**: 3" to 16"
- **Pressure Rating:** 17.2 bar / 250 psi
- **UL Listed**: 3" to 16"

14 & 16"

BERMAD Y-Strainer

FP-70F

The BERMAD FP-70F Strainer is designed to remove foreign matter such as stones, sticks, etc, from the pipeline.

It is recommended to install the strainer upstream from control valves, flow meters and other system appliances.

- **Sizes**: 1½" to 18"
- **Pressure Rating:** 25 bar/365 psi

Notes for BERMAD Strainers:

(1) Ductile Iron Body ER Epoxy (RAL 3002) FB Coated
(2) Stainless Steel 316 Screen
(3) Bolts & Nuts: Stainless Steel 304

* Pictures are for illustration only

FP — 2″ — 400E-2M

Category	Code
Standard	**FP**
Seawater	FS
Foam Concentrate	FC

Valve Size	
1½″	40 mm
2″	50 mm
2½″	65 mm
3″	80 mm
4″	100 mm
6″	150 mm
8″	200 mm
10″	250 mm
12″	300 mm

Group	Model	Code
Deluge with Local Reset (1)(2)	Hydraulically Controlled with Local Reset	400E-1M
	Electrically Controlled with Local Reset	400E-2M
	Electrically Controlled with 3/2 Local Reset Relay	400E-3UM
	Pneumatically Controlled Deluge with Local Reset	400E-4M
	Hydraulically Controlled, Anti-Columning with Local Reset (5)	400E-5M
	Electro-Pneumatically Controlled with Local Reset	400E-6M
Pressure Control Deluge (1)(2)	Hydraulic Pressure Control with Local Reset (3)	400E-1MC
	Electric Pressure Control with Local Reset (3)	400E-2MC
	Electric Pressure Control, On-Off (3)	400E-3DC
	Electro-Pneumatic Pressure Control (3)(9)	400E-6DC
	Pneumatic Pressure Control (9)	400E-4DC
	Hydraulic Pressure Control, On-Off (3)	400E-5DC
On-Off Deluge (1)(2)	Electrically Controlled, On-Off (3)	400E-3D
	Electrically Controlled, On-Off with Remote Reset (3)	400E-3U
	Electro-Pneumatically Controlled, On-Off (3)	400E-6D
	Pneumatically Controlled, On-Off	400E-4D
	Hydraulically Controlled, On-Off	400E-5D
Monitor Valves	Locally Operated Monitor/Deluge (2)	400E-1D
	Locally Operated	405-11
	Solenoid Activated, Remote Controlled	400E-3X
	Hydraulically Operated, Remote Controlled	400E-5X
Pre-action Systems	Single Interlock Pre-action, Electric Release (2)(6)	400E-7M
	Double Interlock Pre-action, Electric-Electric Release (2)(6)	400E-7BM
	Double Interlock Pre-action, Electric-Pneumatic Release (2)(6)	400E-7DM
Pressure Control	Pressure Reducing Valve (11)	420-00
	Pressure Differential Overflow Control Valve	426-02
	Pressure Relief Valve (4)	430-UF
	Pressure Relief Valve (10)	730-UF
	Pressure Relief Valve with Electric Override	430-59
	Anti-Surge Pump Start Control Valve	730-48-BL
	Differential Pressure Sustaining Valve (3)	436-00
Level Control	Level Control Valve with Modulating Horizontal Float	450-60
	Level Control Valve with Bi-Level Electric Float	450-65
	Level Control Valve with Bi-Level Vertical Float	450-66
	Level Control Valve with Altitude Pilot (7)	450-82
Foam Concentrate Control	Electrically Controlled (2)	400E-3U-N
	Electrically Controlled for High Viscocity (2)	700E-3U-BN
	Electrically Controlled Zero Pressure	700E-3X-BO-N
	Hydraulic Operated (2)	400E-5U-N
	Hydraulic Operated for High Viscocity (2)	700E-5U-BN
	Hydraulic Operated Zero Pressure	700E-5X-BO-N
	Pressure Sustaining for High Viscocity	730-VBeZ

Notes:

(1) Add code "A" for Full Trim, including drain and indicating components ("A" items)
(2) UL Listed for sizes 1½, 2, 2½, 3, 4, 6, 8 & 10"
(3) Electric Remote Reset can be achieved by using Magna-Latch solenoid valve (add option code H2 or H3)
(4) UL Listed and FM Approved for 2, 2½, 3, 4 & 6"
(5) Add Elevation code after the model:
"M6" - Setting for Max elevation 35m/115ft
"M7" - Setting for Max elevation 70m/230ft
(6) Pre-action & Dry Pipe Valves Including Full Trim (A) and Trimmed Check Valve
(7) Altitude pilot adjustment Ranges : "M6" for 2-14 m (standard), "M5" for 5-22 m, "M4" for 15-35 m and "M8" for 25-70
(8) Add "BL" suffix code
(9) Local Manual Reset may be provided, add option code H to include this feature
(10) UL Listed and FM Approved for 2, 2½, 3, 4 & 6"
(11) In case of UL and/or FM approval requirement select 42T instead

BERMAD Standard Configuration

G | C | A5 | ER | 4DC | NN | 7P7K

Valve Pattern	Code
Universal (basic trim only)	G
Vertical	V
Horizontal	H
Oblique (700 only)	Y
Angle (700 only)	A

Body Material	Code
Ductile Iron (Standard)	**C**
Cast Steel	S
Stainless Steel 316	N
Nickel Al. Bronze	U

For others consult BERMAD.

End Connections	Code
ANSI #150RF (Standard)	**A5**
ANSI #150RF-SF (1)	AM
ANSI #150RFF-SF (1)	aM
ANSI#150FF	a5
ISO-PN16	16
Grooved ANSI C-606-81 (2)	VI

Coating	Code
High Build Epoxy Red	**ER**
Zinc Based High Build Epoxy Red (4)	ZR
Uncoated	UC

Notes:
(1) Serrated Finish (SF) Bronze/Steel alloys as per MSS-SP-6, applicable for Uncoated S.Steel, Ni.A.Bronze and other high alloys only
(2) For 2", 3", 4", 6" and 8" only
For others consult BERMAD
(4) Zinc based coating is available for valves up to and including 10"

Voltage - Main Valve N.O or N.C*	Code
24VDC - N.C. (Standard)	**4DC**
24VDC - N.O.	4DO
24VDC - Magna Latch	4DS
110VDC - N.C.	5DC
110VDC - N.O.	5DO
110V/50-60 - N.C.	5AC
110V/50-60 - N.O.	5AO
220V/50-60 - N.C.	2AC
220V/50-60 - N.O.	2AO

* NO or NC refers to the main valve status when the Solenoid is de-energized

Tubing & Fittings	Code
Stainless Steel 316 (Standard)	**NN**
Monel	MM

Options	Code
Pressure Switch, General Purpose (8)	P
Ex Proof Pressure Switch (8)	P7
EExd ATEX Pressure Switch (8)	P9
Single Limit Switch, General Purpose	S
Single Ex Proof, Limit Switch	S7
Single Ex d Proximity Limit Switch	S9
Double Ex d Proximity Limit Switch	SS9
Double Ex d Proximity Limit Switch with SS junction Box	SS9Jn
Pressure Gauge Assembly (8)	6
S.S Glycerin Pressure Gauge Assembly (8)	6n
Monel Pressure Gauge Assembly (8)	6m
Ex Proof NEC Class 1 Div.1 Solenoid	7
Ex d ATEX / IECEx Solenoid	9
Drip Check (9)	DC
Drain Valve (9)	DV
Manual Emergency Release Box (9)	D
Mechanical Latching Pilot	H
Mechanical Latching Solenoid	H1
Magna-Latch Solenoid -2 Wires	H2
Magna-Latch Solenoid -3 Wires	H3
Water Motor Alarm Assembly (8)	W
Special Elastomer (10)	E
Large Control Filter	F
Valve Position Indicator	I
Junction Box	J
S.S. Solenoid Valve	K
S.S. 316 Trim Accessories (11)	N
Pressure Transmitter (8)	Q
Drain and Indicating Components	A

Notes:
(8) Instrument Supplied loose.
(9) Optional for Models 3D, 4D, 5D, 6D, 3DC, 4DC, 5DC & 6DC.
(10) NBR or EPDM - Consult BERMAD for availability.
(11) Not including Solenoid Valves & Pressure Gauges

Separate Items & System Components

Description	BERMAD Catalog Number
Water Motor Alarm Assy. (W) w/Strainer for Deluge/Preaction System	9901240028
AMD-74, Air Maintenance Device w/Regulator for External Pressure Supply	TEX0000003
AMD-76 Air Maintenance Device Regulated By-Pass Pressure Supply	TEX0000009
Standard Manual Release Station Model-D w/S.S. 304 Box-Brass valve	2920400093
S.S. 316 Manual Release Station Model-DN w/S.S. 316 Box	2920S1093

BERMAD Standard Configuration

UNDERWRITERS LABORATORIES	Deluge Type (VLFT) Special System Water Control Valves Pressure Reducing Type (VLMT) Double Interlock Type (VLJH)
FACTORY MUTUAL	Pressure Relief Valves Process Control Valves Pressure Reducing Valves Dry Pipe Valves Deluge Sprinkler Systems Preaction Sprinkler Systems Refrigerated area Sprinkler Systems
Det Norske Veritas	Marine and Offshore Type Approval Blast Proof Certification
VDS SCHADENVERHUETUNG	German Standard and European Certification for Fire Protection Deluge Valves
LLOYD'S REGISTER	Marine and Offshore Type Approval
AMERICAN BUREAU OF SHIPPING	Marine and Offshore Type Approval Blast Proof Certification
NATIONAL FIRE PROTECTION ASSOCIATION	Compliant with codes: NFPA 11 Low, medium and high Expansion Foam NFPA 13 Installation of Sprinkler Systems NFPA 15 Water Spray Fixed Systems NFPA 16 Deluge Foam-Water Systems NFPA 20 Installation of Stationary Pumps for Fire Protection NFPA 24 Private Fire Service Mains NFPA 25 Water-Based Fire Protection Systems

BERMAD Standard International Warranty

BERMAD CS LTD. (**"BERMAD"**) warrants that, for a period of 12 months from the day of delivery of the product by BERMAD to its customer (the "Warranty Period"), each component of the product shall be free from defects in material or workmanship and shall meet, in all material respects, the products technical specifications as defined by BERMAD.

General Conditions

This warranty shall be valid only if the product is installed, handled and maintained in accordance with BERMAD's written or verbal instructions and/or recommendations, if such has been provided.

This Warranty does not cover defects or damages resulting from accident, inappropriate physical or operational environment, failure of electrical power, improper installation, maintenance, service, repair, transportation, storage, modification, operation, use, negligence or fault by any party other than BERMAD.

This Warranty shall run solely to and in favor of the customer that purchased the defective product directly from BERMAD, and it does not extend to any other purchaser or user of the product.

Claims, Notifications and Compensation

Every warranty claim must be notified in writing to BERMAD as soon as reasonably possible after the discovery of the defective product, enclosing the original sales receipt and this warranty.

The claimant must allow BERMAD to inspect the product involved and the installation site itself, while the product is still in its original position and has not been removed or altered in any way, and/or return the product to BERMAD for testing. BERMAD reserves the right to investigate independently the cause of any failure.

If a claim under this Warranty is properly notified within the Warranty Period and found to be justified by BERMAD, then BERMAD, at its sole option, shall: (i) replace such product; or (ii) repair such product; or (iii) repay to the BERMAD customer any amounts actually paid to BERMAD for such product.

In any way, BERMAD's liability shall not exceed the amounts actually paid by the BERMAD customer to BERMAD for the defective products.

Limitations

This Warranty is the sole warranty in respect to the products.

Under no circumstances shall BERMAD be liable for any indirect, special or consequential damages, and including, without limitation, for any loss of profit, loss in connection with business interruption, loss of use, loss of revenues or damage to business or reputation.

This warranty does not cover any costs and expenses of removal and installation of the product or shipping cost or taxes or any other direct or indirect loss(es) which may result from the product failure, and BERMAD shall not be liable for such costs and expenses.

OTHER THAN HAS BEEN SPECIFICALLY STATED IN THIS WARRANTY, ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED SO FAR AS THE LAW PERMITS.

* Pictures are for illustration only

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