

Retro-FM® AT A GLANCE

- cCSAus certified
- Self-Regulating heating cable
- NSF/ANSI 61 Drinking Water Safe certified
- Maximum pressure rating of 230 PSI
- Suitable for grey/ black water and potable water systems
- 5 year warranty with optional 10 year extended
- Can be fully insulated to decrease energy costs
- Thermostats and other control devices optional
- Will never melt or burn the pipe, even if pipe is dry
- Can be easily installed inside most existing pipes, tanks and vessels without their removal
- Fast Installation - Retro-FM comes ready to use

SPECIAL REQUIREMENTS

Since 1988 Heat-Line has been specializing in freeze protection of all types. If you have a special application of any kind, give us a call. Special system designs are common to us. We manufacture many other innovative products not mentioned in this brochure.



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HLFM-1021-1

SPECIFICATIONS

Approvals

cCSAus approved (Canada and USA)
Internal waste (Grey and Black) water certified
Internal potable water certified NSF/ANSI 61

Plumbing Specifications

Certified for pressures up to 230 PSI
Tubular heater constructed of ½ inch ID chemical resistant HDPE
Minimum pipe inside diameter required for installation is 2 inch

In order to adapt to a variety of plumbing connections, the Retro-FM is supplied with a non-metallic 1 inch male threaded adapter fitting and a 1 inch FIP X 2 inch MIP PVC reducing bushing.

Electrical Specifications

Self-regulating/conductive polymer tubular heater
Standard systems 5 watt/ft. @ 50F (10C), custom systems available by special request in 3 and 8 watts/ft. @ 50F (10C)

120 Volt models

5 watt/ft. at 50°F (10°C), maximum length 230 ft. (70m)
GFC model - 4 ft. (1.2 m) power supply lead with 27 milliamp GFCI plug-in device

CS model - 6 ft. (1.8 m), 14 AWG SJEOOW supply cord for direct hard wire connection

240 Volt models

5 watt /ft. at 50°F (10°C), maximum length 540 ft. (165 m)

GFC models - 6 ft. (1.8 m) power supply lead with 27 milliamp GFCI plug-in device

CS models - 6 ft. (1.8 m), 14 AWG SJEOOW supply cord for direct hard wire connection



THERMOSTATS & TIMERS

With Retro-FM, control devices such as thermostats and timers are not a requirement but a beneficial accessory used to increase energy efficiency.

It is important to understand that while self-regulating technology is very efficient; the heating cable can never completely turn off and as a result is always a minimal consumer of energy when powered (turned on or plugged in directly). The addition of a thermostat or timer will duty-cycle the heating cable on/off thus decreasing the energy consumed further.

Depending on the application, combining insulation and a thermostatic control can increase energy savings by as much as 80%.

Other control options such as simple switches, computer controllers, monitoring services and automation systems can also be employed. Consult Heat-Line directly for control option questions.



INSULATION

One extremely important feature of self-regulating heating cables is the fact they can be thermally insulated without fear of overheating.

A thermally insulated pipe is not as susceptible to freezing and erratic changes in the environment's temperature.

The insulation creates greater thermal consistency throughout the pipe and increases the efficiency of the Retro-FM system. When the warmth generated by the heating cable system is captured by insulation, the amount of energy consumed by the heating cable is vastly reduced.

It is recommended that all new or exposed pipes are insulated.

Depending on the application, combining insulation and a thermostatic control can increase energy savings by as much as 80%.



Retro-FM®

Internal Heat Tracing System for Large Potable Water Supply and Sewage Force Mains



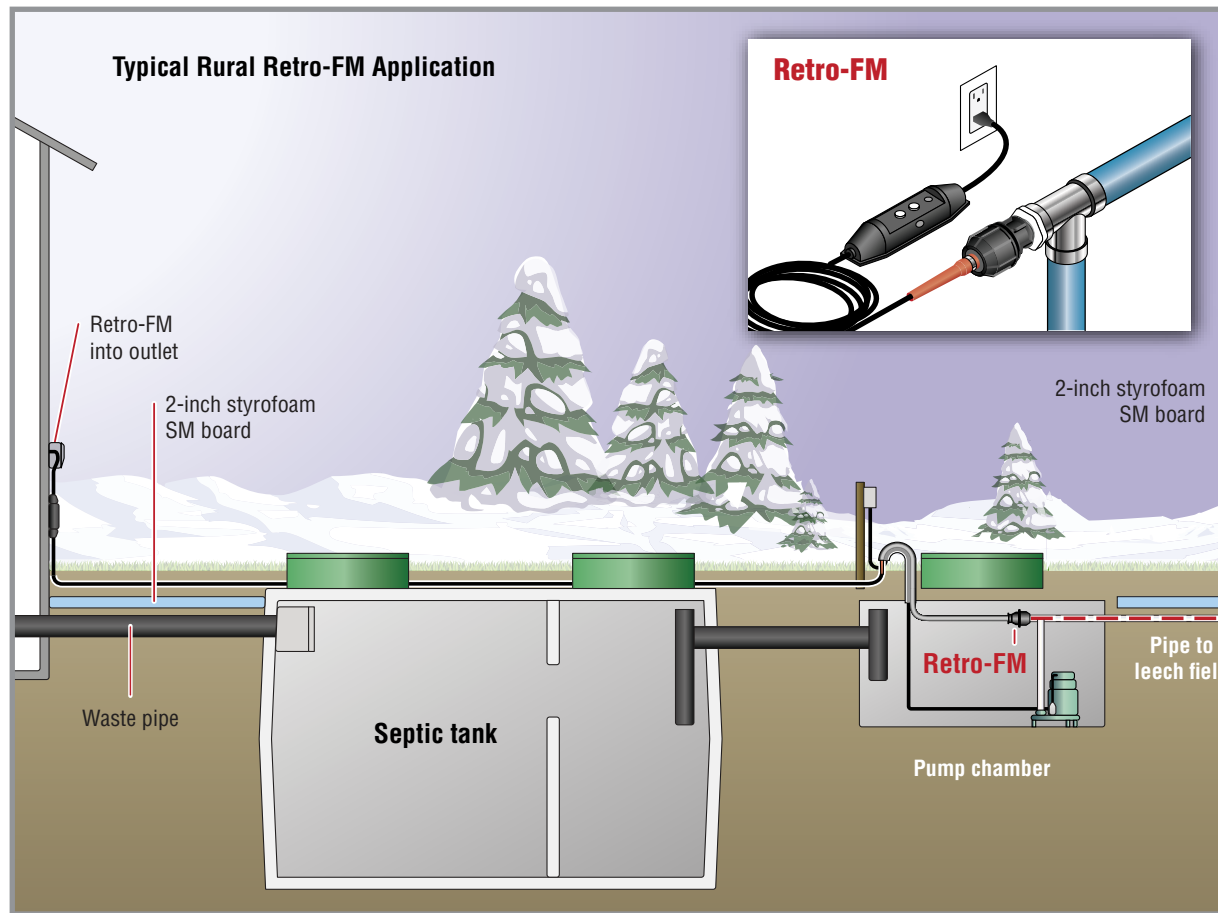
Drinking Water
NSF/ANSI 61

ABOUT Retro-FM®

Retro-FM is a job-ready, advanced internal self-regulating tubular heating cable system that is used for efficient and reliable pipe freeze protection of both metallic and non-metallic pressurized septic and large diameter potable water supply pipe applications.

Retro-FM is manufactured using a pre-determined length of Heat-Line certified, self-regulating heating cable, factory installed inside a HDPE tube finished with a proprietary fusion end-seal. The purpose of the HDPE tube is to provide a barrier from fluids such as grey and black water, while providing extremely efficient heat transfer. The HDPE tube also certifies the Retro-FM system to be used in high pressure systems up to 230PSI and potable water supply pipes.

The Retro-FM system is supplied complete with a non-metallic 1 inch male threaded adapter fitting and a 1 inch FIP X 2 inch MIP PVC bushing to quickly interface into most 2 inch FIP force main tee and wye fittings.



INSTALLATION

To quickly interface with most force main tee and wye fittings the Retro-FM system is supplied job-ready with a non-metallic 1 inch male threaded adapter fitting and a 1 inch FIP X 2 inch MIP PVC bushing. This versatile interface process of the Retro-FM makes the system suitable for installation in pipe diameters 2 inches and greater.

The Retro-FM system will easily push inside most pipes for distances up to 150 feet (46m) and in some cases greater. For distances greater than 150 ft. (46m) the Retro-FM can be drawn in with a plumbing/electrical fish tape or rope.

In large diameter pipe applications, Retro-FM is designed to provide a melt-water path, thus allowing

continuous flow through the entire channel. This allows the fluids to carve their way through large diameter pipes without having to install energy-expensive high watt density heat tapes.

Even in applications where the pipes are intended to be dry for short or extended periods of time, the Retro-FM presents no danger of overheating or melting the pipe, making it suitable for all metal and non-metal pipes which may not always contain liquids.

Retro-FM can be used as a system to prevent freezing or as a precautionary system to use only if a freeze-up occurs. The Retro-FM is a fully serviceable product. If a blockage occurs, the entire heat system can be removed and re-installed.

APPLICATIONS

The Retro-FM heating cable system is a safe and reliable solution for both metallic and non-metallic pressurized water supply and sewage pipes.

Applications include but not limited to:

- Existing sewage, septic and effluent pipes
- Existing large diameter and high pressure water supply

For non-pressurized pipe systems such as sewage drains and waste water drains refer to Heat-Line Retro-DWS.

For new or exposed pipes refer to Heat-Line Paladin/EXT systems.



SELF-REGULATING TECHNOLOGY

Retro-FM employs the unique and advanced performance of self-regulating heating cable technology. Self-regulation allows the heating cable to effectively increase heat and energy output to sections along its length which are cold and simultaneously reduce heat and energy output to sections which are warm. Retro-FM gives you the peace of mind of reliable freeze protection without the risk of burning out or overheating. Retro-FM has become an essential product for home owners, engineers and building maintenance professionals to provide safe and reliable freeze protection in specialized applications.