

# ThermEvolve™ Technology

## Overview

### The New Standard in Performance

Since 2011, engenity has shipped thousands of SoliStat™ industrial thermostats. SoliStat, the one-of-a-kind control for D.C.-powered heating and cooling applications, has been successfully deployed in many applications where durability, resilience to a wide range of environmental conditions, and reliability—**greater than 5M cycles MTBF**—are of the utmost importance. In the time since SoliStat's market introduction, we have spoken with hundreds of system designers and engineers who have successfully used SoliStat to **control heaters, chillers, and fans** in a variety of applications. One thing we have heard those customers tell us over and over is that they would like complete, engineered thermal management systems that could be easily field-installed, rather than having to piece the components together themselves.

Well, when our customers talk, we listen. Introducing engenity's patent-pending IntelliThaw™ heating jackets and IntelliHose™ heated hoses, featuring ThermEvolve technology.

### ThermEvolve

IntelliThaw and IntelliHose products are application-specific, engineered heating systems that can be economically produced in small quantities for short-run projects or one-offs. While originally conceived to meet the needs of manufacturers of off-road diesel and gas turbine powered equipment, IntelliThaw and IntelliHose systems can be designed for any application where D.C. operation is required.

Unlike other solutions, all IntelliThaw and IntelliHose products are guaranteed to

- **Maintain** the designed setpoint temperature all the way down to **-40°C**
- **Heat** from **-40°C** to the setpoint **faster** than any other available solution
- Consume **less power** at any ambient temperature than any other available solution



*IntelliThaw heating jacket on a PCV filter in a diesel engine*

*Patent Pending*



## IntelliThaw

### Durable, Controlled, and Contained Heat

IntelliThaw heating jackets are designed to withstand the rigors of use encountered by components in heavy equipment. All IntelliThaw heating jackets consist of:

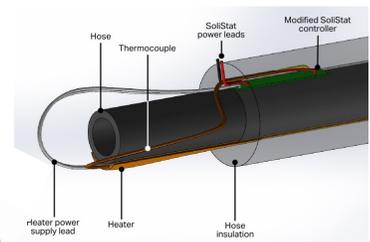
- A form-fitting insulator made of polyamide foam
- A heating element suitably sized to the application
- A SoliStat-based temperature control

The polyamide foam used in IntelliThaw heating jackets is non-reactive with a wide range of industrial and automotive chemicals, and offers a maximum continuous operating temperature of 190°C (374°F). Setpoints for the temperature control are determined based on customer requirements.

## IntelliHose



*5/8" IntelliHose used as a CCV drain line*



### Heated Hoses—6mm and Larger

IntelliHose heated hoses are built with virtually any hose specified by the customer:

- Inside diameters down to 6mm
- Length from 0.3m (1') to 10m (33')

All IntelliHose heated hoses consist of:

- High-temperature 150°C (302°F) EPDM insulation
- A heating element suitably sized to the application
- A SoliStat-based temperature control

An optional outer abrasion prevention layer is available on request.

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## IntelliThaw and IntelliHose Application Information

### Configured for Your Design

Every IntelliThaw heating jacket and IntelliHose heated hose is designed specifically for your application. Below is the information we will need to **get started designing and quoting yours**.

- Component dimensions and geometry (SolidWorks files preferred, STEP files acceptable)
- Desired component maintenance temperature
- Minimum ambient temperature
- Operating voltage—6V DC to 24V DC standard, voltages up to 100V DC available on request
- Allowable maximum current consumption
- Desired rise time from minimum ambient temperature to maintenance temperature
- Additional pertinent information—lead wire length, system bypass/shutdown requirement, *etc.*
- Estimated annual usage

Within three business days we will let you know whether your application is feasible. If it is, you will receive a quote at that time. Once you have accepted the quote, we will then need **a sample of the hose or component to be heated**—especially important if the component is mostly plastic. At this point we will build and test a prototype in our lab.

After you have approved the prototype, we go to tooling for IntelliThaw heating jackets then to a pre-production run, or for IntelliHose heated hoses we go straight to pre-production.

Lead time from quote initiation to receipt of first articles for IntelliThaw heating jackets ranges from six to eight weeks, and three to four weeks for IntelliHose heated hoses.



*SoliStat controls are not protected against long-term accidental reverse polarity connection to the power supply. Please consult your local representative or the factory if you require reverse polarity protection!*



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