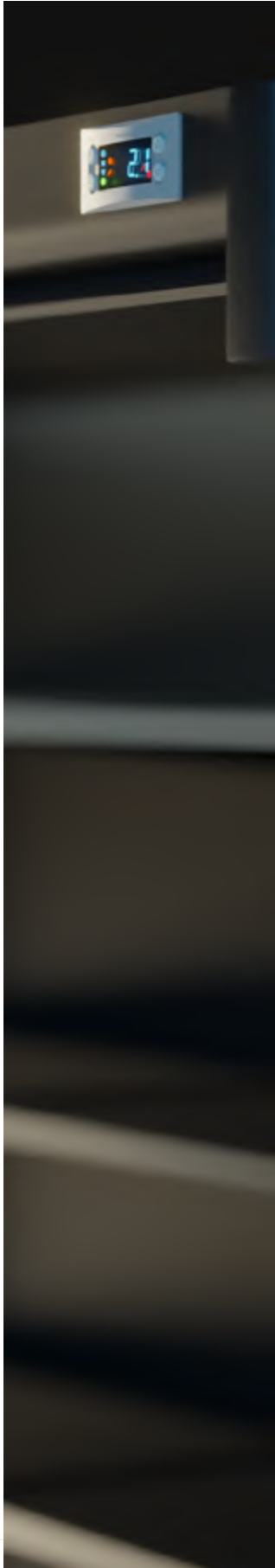




Mercury Controllers

Advanced Refrigeration
Case and Coldroom Control



The Mercury controller from Resource Data Management is a compact, cost-effective control solution intended for use in refrigeration display cabinets or coldroom applications.

The controller manages evaporator valves or compressors using advanced control strategies based on temperature or superheat. Support for up to six temperature probes, two digital status inputs and one pressure transducer facilitates accurate monitoring of case or coldroom conditions for a precise control based on either temperature or pressure.

Mercury's software interface supports advanced control solutions for various refrigeration applications. Flexible user-defined parameters and integration with RDM's front-end, DMTouch or miniDM allow users to formulate complex control strategies in simple terms, helping to meet specific requirements.

Mercury Features Overview

Within the Mercury range there are three different hardware versions available for refrigerant valve control. One supports control of mechanical valves, or either a single or dual compressor setup. A second features a solid-state relay (SSR) to control pulse electronic expansion valves (EEVs). A third allows for the control of stepper EEV's.

Additional control capabilities include defrost, lights, fans, trim heaters (anti-sweat) and alarm relay.

Control configuration types for various LT and HT refrigeration applications are pre-programmed with default parameters. Safeguards such as maximum operating pressure (MOP) protection with alarm monitoring, and pack/rack shutdown support help maintain efficiency and safety.

Mercury controllers have built-in energy-saving features such as defrost skip and can integrate with DMTouch or miniDM's energy-saving features such as Temperature Performance Indicator (TPI) and suction pressure optimisation.

Key Features

- HT & LT Case and Coldroom Control
- Variants for LLV / compressor, EEV PWM or EEV Stepper control
- Defrost skip and other energy-saving features
- Local or remote light and defrost schedules
- Direct pressure transducer connection
- Two volt-free status (digital) inputs
- Timed or networked trim heater/anti-sweats humidity control

Mercury Variants

Mercury Controller for Hydrocarbon Refrigerants

This hardware-modified variant of the Mercury range is suitable for use with hydrocarbon refrigerants, such as propane (R290). The controller is equipped with sealed relays compliant with IEC 60079-0 and 60079-15 standards regarding use in explosive gas atmospheres.

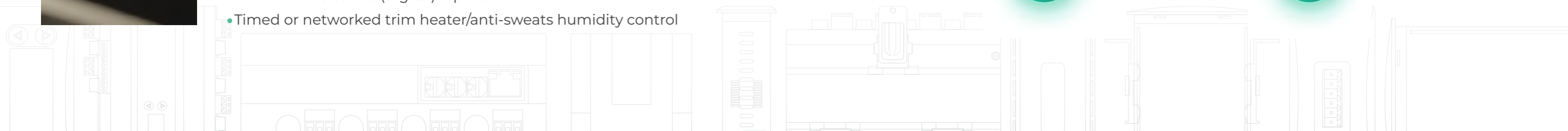
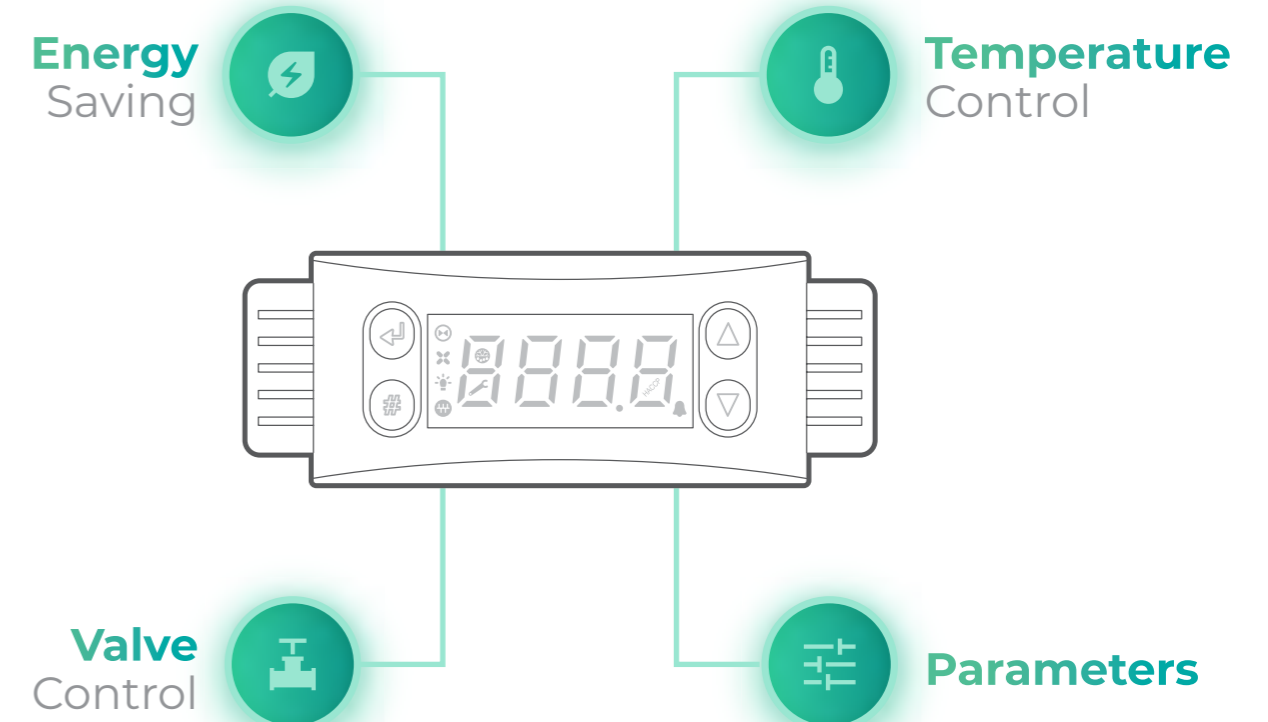
In order to comply with the IEC standards, all relay connections consist of fixed screw terminals. Unlike the plug and socket style connectors on standard Mercury controllers, the terminals on this variant cannot be unplugged. This reduces the risk of electrical arcing across the connections and sparks igniting the highly flammable hydrocarbon gases.

The terminals accept a maximum cable/ferrule diameter of 2.5mm compared to 1.5mm on the standard Mercury series. The controller can be integrated easily into an approved powertray or existing enclosure.

Mercury Frequency Controller

The Mercury Frequency controller is designed specifically for use in refrigerated self-contained cabinets utilising an Embraco variable speed compressor. A frequency signal controls the cabinet temperature by varying the compressor speed based on the average of the air on and air off temperature probes. It can monitor the discharge temperature to protect the compressor if a set discharge temperature is exceeded.

Variable speed compressors provide substantial energy savings by only using the energy required at a given moment as opposed to traditional on/off compressors which always operate at full power when in use. Varying the compressor speed also allows more accurate temperature control and results in fewer start/stop cycles, thus reducing energy-intensive start-up currents.



Technical Specifications

FEATURE	SPECIFICATION
Inputs	6 Probe Inputs 2 Status Inputs 1 Pressure Transducer Input (4-20mA or 0-10V)
Outputs - Mechanical Relay/ Compressor & SSR for EEV	5 relays (Optional SSR on Relay 1)
Outputs - Stepper	4 relays and one bi-polar Stepper Output
Networking	1 Ethernet (IP or RS232 interface)
Accessories	Optional Remote Display
Supply Voltage - Mechanical Relay & SSR for EEV	100-240 Vac ±10%
Supply Voltage - Stepper Relay	24 Vac or 24Vdc ±10%
Supply Frequency	50-60 Hz ±10%
Max. Supply Current	2 A
Typical Supply Current	> 1 A

Ordering Information

V	CONTROLLER TYPE	W	OUTPUT	X	DISPLAY	Y	COMMS INTERFACE	Z	APPLICATION SOFTWARE
0	Standard Controller	M	Mechanical Relay	D	Local/Integral Display	IP	Ethernet IP Comms	FQC	Frequency Control
4	For Use with Hydrocarbon Refrigerant	E	Solid State Relay for EEV	R	Remote Display	232	RS232 Comms	CAS	Case/Coldroom (M&E relays only)
		S*	Stepper					STEP	Case/Coldroom (Stepper output only)
								Two	Case/Coldroom (Twin Evap, Common LLV)
								TWI	Case/Coldroom (Twin LLV, Twin Coil)
								MOB	Mobile/Integral Cabinet/Case

Example: **PR074V WXYZ**

A controller for use within hydrocarbon applications using a TEV, with a remote display, IP comms for case/coldroom control = **PR0744 MR IP CAS**



*Available only with STEP software