



Emerson® Intelligent Store™ ESR

Smarter solutions for better results

In an industry spending billions of dollars every year on energy, maintenance and product loss, supermarkets are under more pressure than ever to find new and better ways to cut costs to ensure their long-term survival. That means looking for solutions to control energy usage, lengthen the life of vital refrigeration equipment and protect and preserve the quality of food on their shelves.

That's where Emerson Climate Technologies™ can help. Our revolutionary Intelligent Store™ architecture addresses the unique challenges supermarkets face every day. The Intelligent Store blends intelligent devices, networked system controls and advanced software algorithms with monitoring and services to form a new architecture to improve both store operations and financial performance. Simply put, it is a solution that will help you make critical decisions for stronger results.

Cost-saving protection

For peak performance, the Intelligent Store™ requires products designed and built to work together. Specifically, that means a combination of control boards and valves that work in tandem with an Emerson® E2 Facility Management System. Working together, our solution lets you:

- Reduce energy consumption
- Lower maintenance and labor costs
- Extend the life of products on your shelves



Make the right choice.

The MultiFlex ESR suction stepper control is the “intelligent” alternative to mechanical suction pressure regulation in refrigerated case circuits. When used with an E2 Facility Management System, Emerson Climate Technologies™ Electronic Stepper Regulator (ESR) products allow you to replace traditional mechanical evaporator pressure regulators (EPRs) with variable-position ESR valves. That combination provides greater precision in controlling temperature, precision you can use to reduce product shrinkage and energy expenses.

Meanwhile, the computer-controlled accuracy of our ESR12 and ESR20 valves modulates to maintain product temperatures to one-half degree Fahrenheit of set-point temperatures. The result: unmatched temperature reliability and accuracy. Because the Emerson® MultiFlex ESR controller uses suction stepper valves in place of mechanical EPRs, it can open and close to the exact position needed to achieve the case-circuit temperature set point. If the case is too cold, the valve closes to increase evaporator pressure. If it's too warm, the valve opens to decrease pressure.

Reduce energy consumption.

Combining the MultiFlex ESR with the E2 Facility Management System and ESR valves means your cases are always operating at the highest possible suction pressure. That, in turn, means you never have to worry about wasting energy from an incorrectly set EPR. Because there are no external-sealing o-rings on the valves, you'll see significantly better external leakage results – and less refrigerant loss.

The Emerson® advantage

The built-in compatibility of Emerson® products forms a single integrated solution that provides you with:

- *More valve information from RS-485 communications*
- *Patent-pending stuck-valve detection algorithm with Emerson ESR valves*
- *Patent-pending open-wire detection algorithm with Emerson ESR valves*
- *Superior temperature control vs. mechanical EPRs*
- *Higher product quality, reduced product loss and shrinkage*
- *Highest possible evaporator pressure*
- *Fast, easy troubleshooting*
- *Energy savings and longer compressor life*
- *Reduced pipe failures and refrigerant-charge losses*



E2 Faci

Emerson's E2 Facility Management System maintains precise temperatures and pressures in order to meet your needs.

MultiFlex I/O board



Case temperatures used for temperature control are supplied to the E2 using an analog input board, such as a MultiFlex 16AI.

Lower your maintenance costs.

Since electronic suction regulators are controlled by the MultiFlex ESR, the need for costly valve adjustments has been eliminated. By modulating pressure control within the evaporator, stress on piping and joints is reduced, once again saving you the cost of potentially expensive refrigerant leaks.

There's more. Our labor-saving valves bring you an array of features designed to add life to your systems. Features that include a direct-drive stepper motor design that's both fast and reliable; a simple service replacement with VLB (Valve Less Body) option that lets your maintenance technicians easily remove and replace the internal components and valve

motor as a unit, with no brazing required; and a removable external connector that allows for the use of the Emerson® hand-held MTB-1 valve controller, which can drive the valve independently of the E2 for fast, accurate troubleshooting. Even the stainless steel housing with its added corrosion resistance adds to the list of longer-life advantages.

Of course, since protecting the food on your shelves is so critical, Emerson® ESR valves include a solenoid-tight shutoff feature for faster defrost times and quicker recovery periods after defrost, an advantage that delivers more consistent product temperatures.

Facility Management System

Facility Management System monitors case-circuit and commands the MultiFlex ESR to open or close valves at the temperature set points.

CASE CIRCUIT



CASE TEMP

CASE TEMP

SUCTION →

← LIQUID

MultiFlex ESR control board



The MultiFlex ESR connects up to eight variable-position suction side valves, such as Emerson's ESR12 and ESR20.

Emerson® ESR12 or ESR20



Emerson's ESR valves provide precise temperature control. When regulated by the MultiFlex ESR, the need for costly valve adjustments is eliminated, and patented algorithms that identify potential problems are enabled.

Make better, faster decisions.

Just as important, your Emerson® solution lets you make the kind of swift, sound decisions necessary to control costs – and contain the competition. How? The products communicate with each other. For example, the MultiFlex ESR “talks” with the E2 via an RS-485 communication network, providing you with more vital data than ever about the valve’s parameters and status.

Because no mechanical adjustment is required, you can make any necessary setting modification via a remote interface. No physical adjustments are needed.

Other “smart” features of the valve include:

- Broken valve-motor-wire diagnostic – A patent-pending algorithm inside the board that detects a broken or cut wire. There’s no more worry about not knowing why your system is performing improperly.
- “Un-clog” alarms – Another patent-pending algorithm that tells you when debris in the system is hurting its performance or keeping it from responding to commands. If an Emerson® ESR valve is stuck or unresponsive, our blended solution will generate appropriate alarms that you can view either through your E2 Facility Management System or off-site via UltraSite™ remote-access software.

Put the total solution together.

To make the most of the feature-rich Emerson Climate Technologies™ solutions, you have to make sure the parts and components you’re using are capable of working together seamlessly. Here’s how to know you’re getting exactly what you need:

Flow Controls™ Products

Product code no.	Description
064773	ESR 12 T 7 S/T 12V NC
064774	ESR 12 T 7 S/T 24V NC
062566	ESR 20 T 11 S/T 12V NC
062750	ESR 20 T 11 S/T 24V NC
064858	ESR 12 T 7 ANG 12V NC
064859	ESR 12 T 7 ANG 24V NC
064860	ESR 20 T 11 ANG 12V NC
064861	ESR 20 T 11 ANG 24V NC
062093	ESR external molded connector 5'
062094	ESR external molded connector 22'

Computer Process Controls™ Products

Product code no.	Description
810-3198	MultiFlex ESR controller
834-0300	E2 RX-300 Facility Management System
834-0400	E2 RX-400 Facility Management System
836-0300	E2 CX-300 Facility Management System
836-0400	E2 CX-400 Facility Management System

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