

# Emerson Solutions for Integral Display Cases With R290



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Many end-users and equipment manufacturers are investigating ways to minimize their impact on the environment while adapting and improving their system architecture. The F-Gas Regulation is accelerating the commercial refrigeration market transition to future-proof refrigerants and improved new system architectures.

R290 (Propane) is one of the most-discussed refrigerants which has long been known for its good performance. R290 is a future-proof refrigerant with excellent thermodynamic properties and it is becoming an attractive natural refrigerant choice for distributed system architectures such as self-contained display cases.

Emerson is investing in research and development activities in order to pro-actively support and guide the customers to go through the F-Gas transition phase. With already several tens-of-thousands of integral display case solutions installed in retail stores all over the world, Emerson is leading the way in providing the advanced technology solutions to the customers for R290 integral display cases.

## Key benefits of Emerson R290 Solutions

### Solution Provider

- Application & engineering experts team with in-depth know-how and experience
- Full technical support during development and possibility for customized solutions development
- Solution centre with system performance, sound & vibration, EMC testing and analytical engineering capabilities
- Proven pre-defined solutions for faster implementation and short time to market for OEMs



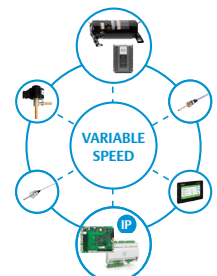
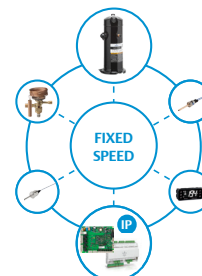
### Safety and regulatory compliance

- Reduce complexity of regulations by providing state-of-the-art “pre-compliant” solution
- Allow easy & fast certification/compliance of final unit according to relevant application standards
- Safety compliance – EN60335-2-89 / EN60079



### Technology options for flexibility

- Solutions for multiple circuit and single circuit applications for cabinets with and without doors
- Fixed speed and variable speed modulation
- Parametric and programmable controller for customisation



### Intelligent electronics

- Advanced control features with Defrost synchronization schemes and Demand Defrost for higher system efficiency
- Variable Speed Compressor & System Management
- Enable preventive maintenance & enhanced services with compressor & system data
- Deliver added value at system, facility and enterprise level

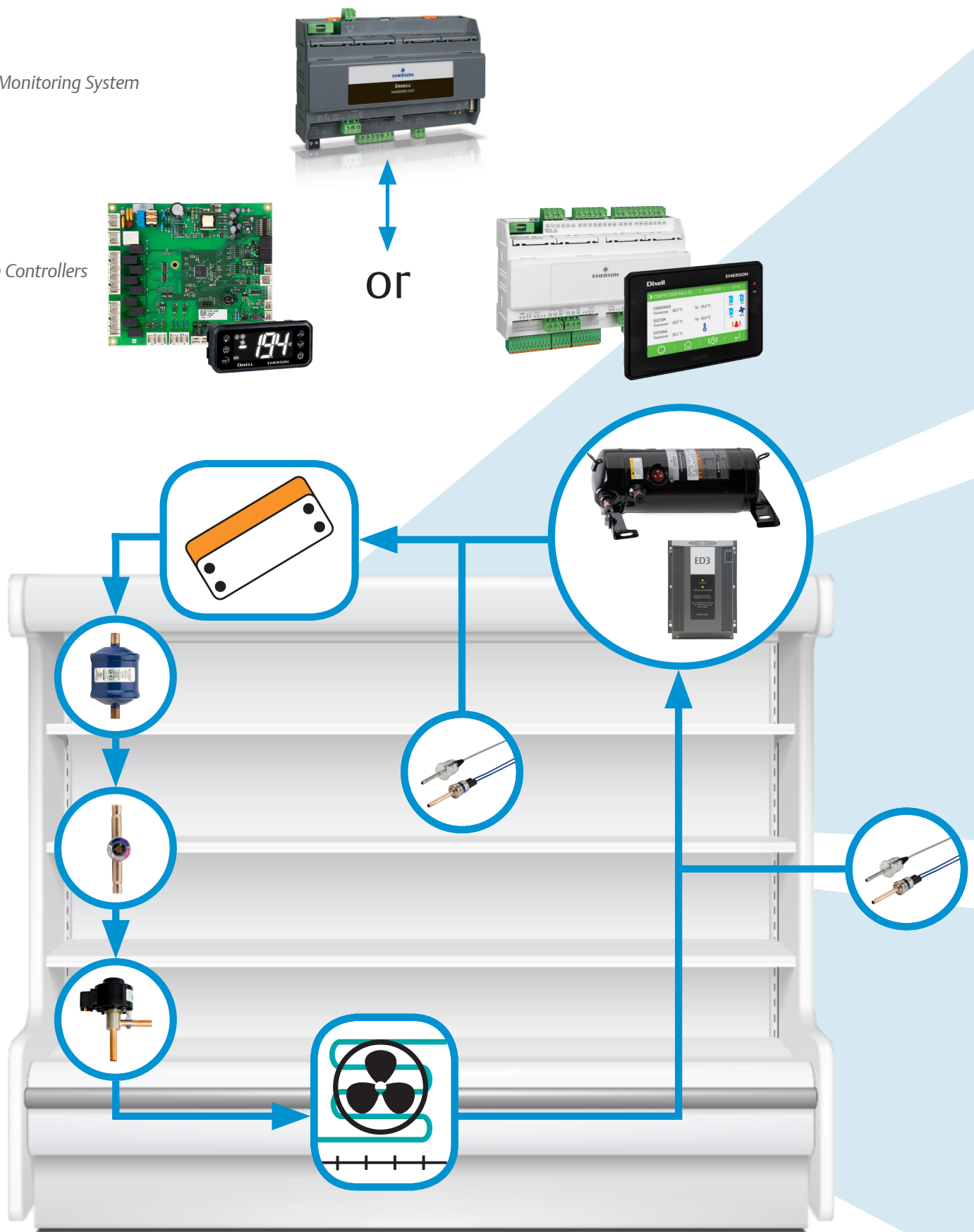


# R290 variable speed solutions

## For single circuit cabinet with high refrigerant charge

XWEB Monitoring System

System Controllers



# Emerson Solution Benefits

## Efficient Capacity Modulation

- System efficiency gain up to 10%
- Noise reduction at part load
- Compact compressor design (<190mm height)
- Versatile platform: MT & LT; from 1 to 7kW capacity
- Plug & play inverter drive with large modulation range



## Modular Control Options

- Scalable electronic platform
- Pre-set compressor & drive parameters and envelopes
- Validated case management, compressor & superheat control
- Built-in diagnostic & alarm management
- Fault detection enabled by inverter data
- Envelope protection for reliability & efficiency



## Pre-Compliant Solution

- EN60335-2-89 or ATEX ready components
- Safety compliant sensors & switches
- EXM valves qualified per EN60335-2-89
- Pre-matched compressor-drive package according to EN60335-2-34 & EN55014
- Reduced complexity allowing easy & fast certification



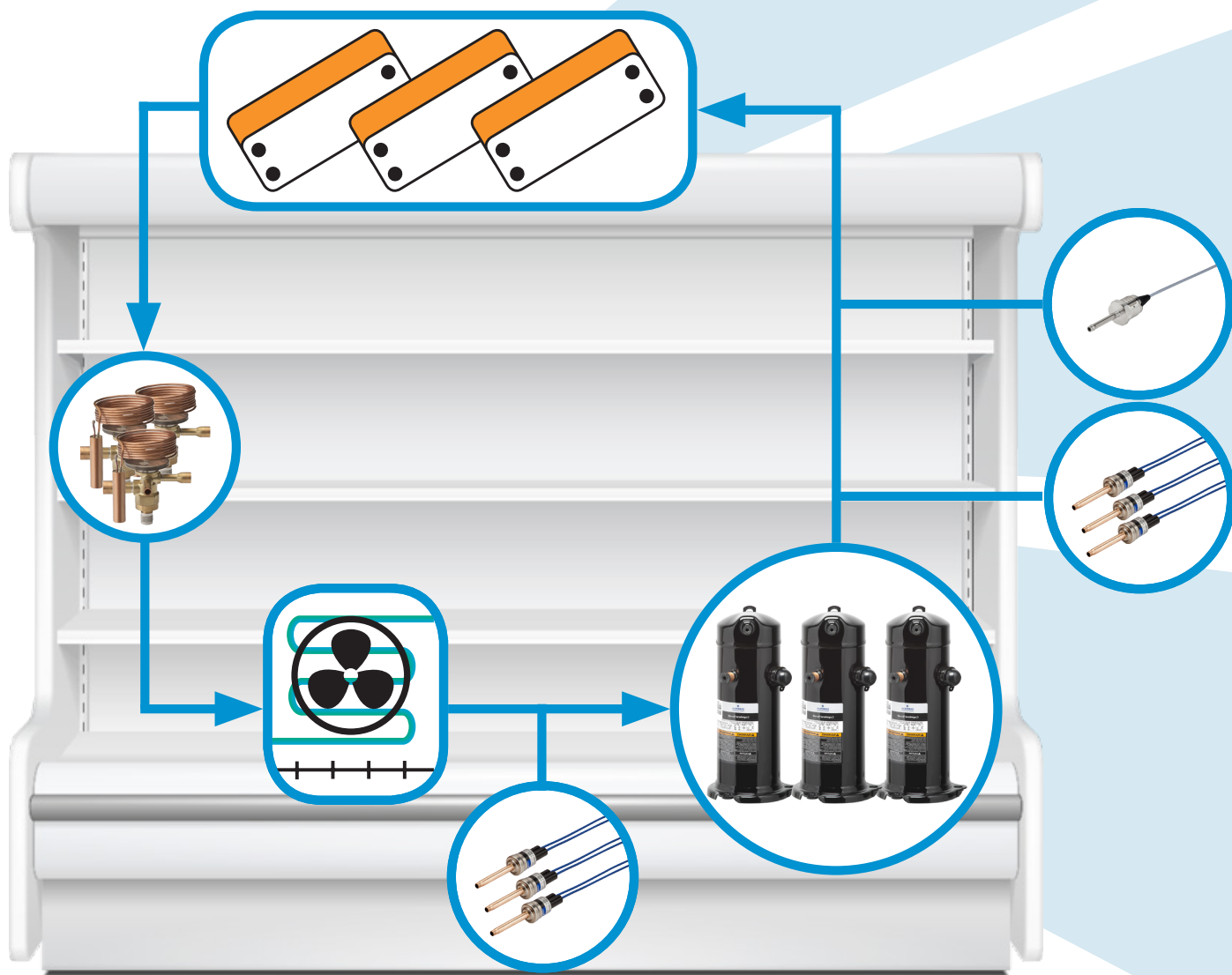
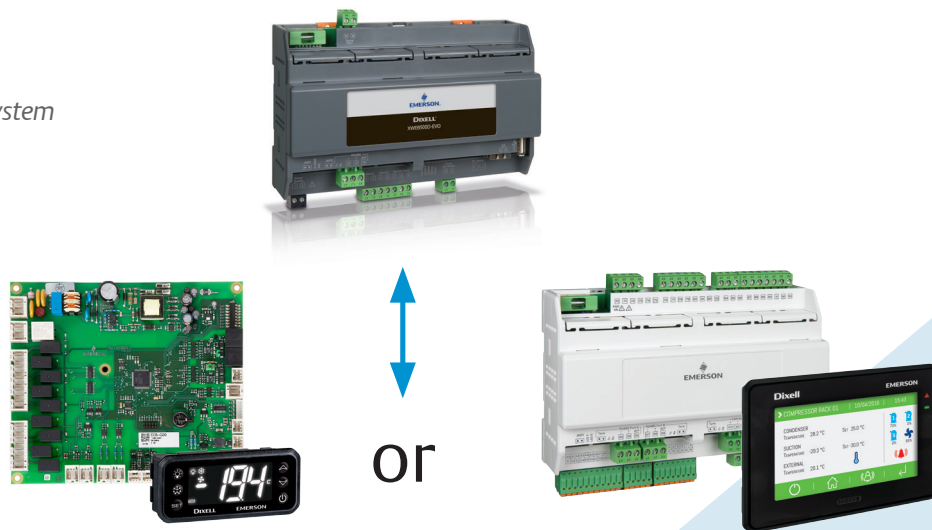


# R290 fixed speed solutions

## For multiple circuit cabinet with low refrigerant charge

XWEB Monitoring System

System Controllers



# Emerson Solution Benefits

## Optimized Medium Temperature Scroll Design

- High scroll efficiency with tailored application envelope
- Reduced inner volume & oil quantity
- Dedicated design for lower refrigerant charge below 150g
- Fully hermetic design - safe compressor for R290 refrigerant
- Compact 3-foot fully hermetic design
- Molded plug for easy service



## System Management Electronics

- Temperature control
- Lights & fans management
- Case safety & protection
- VDE & UL ready design
- User display
- Defrost optimization
- Alarm management and enhanced communication



## R290 Ready Flow Controls

- Best-in-class controls
- Safety compliant sensors & switches
- Optimized expansion valves

