"SUCCEEDS" Evaporator Control

- Pulsed expansion valve control
- Defrost control
- Pan heater / auxiliary heater control
- Fan control
- Lighting / Night blind control
- Temperature display
- Network ready

The "SUCCEEDS" series of evaporator controllers have been developed to meet the demand for safe and reliable control of pulsed expansion valves (PEVs).

Fundamental research into the effects of PEVs on evaporators and refrigeration systems has led to a unique, highly effective control method has been developed for use in a wide range of display cabinet and coldroom applications.

"SUCCEEDS" controllers offer many benefits including :-

- Improved merchandise quality through close temperature control
- Substantial energy savings and lower pollution levels
- Simple set-up for reduced maintenance and commissioning costs
- Adaptive control for efficient and reliable operation
- Improved reliability over other control methods at low load conditions
- Protection against compressor damage for reduced maintenance costs
- High tolerance of refrigerant temperature glide for improved control
- Well researched and proven technology for reliable operation

dti Smart Achievement Awards

dti Foresight Achievement Award

The "SUCCEEDS" project has won both stages of the Department of Industry's "SMART" award for innovation in 1994 and 1995, was a prize winner in the Engineering Council's Environment Award finals in 1996 and won the Air Conditioning & Refrigeration News Product of the Year Award in 1997.

engineering council

SALES SUPPORT DATA

Description

Control

"SUCCEEDS" controllers control Pulsed Expansion Valves (PEVs) using variable-length pulses to open and close their valve on a frequent basis (typically every 6 seconds) .

The length of each pulse, the proportion of time the valve is open, is determined fundamentally by a PI function based on the measured air temperature and its setpoint. This approach allows very close temperature control for improved merchandise quality.

The superheat at the exit of the evaporator is continually monitored to ensure that the demands for refrigerant by the PI function are limited to a safe level. If the exit superheat falls below an adjustable minimum level, the PI function is overridden and the valve opening time progressively reduced until the superheat recovers. This ensures that any risk of liquid being delivered to the compressors (a significant risk with other control methods under various conditions) is eliminated.

The PI function is modified as a result of such overrides so that the pulse lengths are proportionally shortened to a level that reduces the need to override the PI function under difficult control conditions.

Energy Saving

The use of PEVs with JTL controllers in the recommended configuration inherently allows the system pressure and thus the electricity used by compressors to be significantly reduced (by about 30%). Further savings can be made by using the additional optimising features provided by the JTL integrated refrigeration control system.

Datasheets for specific SUCCEEDS products are available from the JTL Sales office in Newbury.

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JTL Systems Limited

Head Office	Newbury	**tel:** 44 (0)1635 263646
Technical Support Centre	Newbury	**tel:** 44 (0) 870 321 8585
Monitoring Centre	Sunderland	**tel:** 44 (0) 870 321 4161