

2001 STANDARD for

THERMOSTATIC REFRIGERANT EXPANSION VALVES



Standard 750

IMPORTANT

SAFETY RECOMMENDATIONS

It is strongly recommended that the product be designed, constructed, assembled and installed in accordance with nationally recognized safety requirements appropriate for products covered by this standard.

ARI, as a manufacturers' trade association, uses its best efforts to develop standards employing state-of-the-art and accepted industry practices. However, ARI does not certify or guarantee safety of any products, components or systems designed, tested, rated, installed or operated in accordance with these standards or that any tests conducted under its standards will be non-hazardous or free from risk.

Note:

This standard supersedes ARI Standard 750-94.

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THERMOSTATIC REFRIGERANT EXPANSION VALVES

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish for Thermostatic Refrigerant Expansion Valves: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

1.1.1 Intent. This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors and users.

1.1.2 Review and Amendment. This standard is subject to review and amendment as technology advances.

Section 2. Scope

2.1 Scope. This standard applies to Thermostatic Refrigerant Expansion Valves for use with refrigerants listed in 2.1.1 at evaporator temperatures between +50EF [10EC] and -40EF [-40EC].

2.1.1 Refrigerants. This standard applies to Thermostatic Expansion Valves for use with Refrigerants 12, 22, 502, 134a, 404A, 407C, 410A and 507.

Section 3. Definitions

All terms in this document shall follow the standard industry definitions in the current edition of *ASHRAE Terminology of Heating, Ventilation, Air Conditioning and Refrigeration* unless otherwise defined in this section.

3.1 Capacity of a Thermostatic Refrigerant Expansion Valves. The refrigerating effect produced by the evaporation of refrigerant which will pass through the valve under the following specified conditions:

- a. Liquid refrigerant temperature at the valve inlet
- b. Saturated evaporator temperature
- c. Pressure difference across the valve
- d. Static superheat setting
- e. Superheat change

3.2 Maximum Operating Pressure (MOP). The maximum equalizer (internal or external) pressure permitted by a pressure-limiting type Thermostatic Refrigerant Expansion Valve (see Appendix C).

3.3 Published Rating. A statement of the assigned values of those performance characteristics, under stated Rating Conditions, by which a Thermostatic Refrigerant Expansion Valve may be chosen to fit its application. These values apply to all Thermostatic Refrigerant Expansion Valves of like nominal size and type (identification) produced by the same manufacturer. As used herein, the term Published Rating includes the rating of all performance characteristics shown on the Thermostatic Refrigerant Expansion Valve or published in specifications, advertising or other literature controlled by the manufacturer, at stated Rating Conditions.

3.3.1 Application Rating. A rating based on tests performed at Application Rating conditions (other than Standard Rating Conditions).

3.3.2 Standard Rating. A rating based on tests performed at Standard Rating Conditions.

3.4 Rating Conditions. Any set of operating conditions under which a single level of performance results and which cause only that level of performance to occur.

3.4.1 Standard Rating Conditions. Rating conditions used as the basis of comparison for performance characteristics.

3.5 "Shall" or "Should". "Shall" or "should" shall be interpreted as follows:

3.5.1 Shall. Where "shall" or "shall not" is used for a provision specified, that provision is mandatory if compliance with the standard is claimed.

3.5.2 Should. "Should" is used to indicate provisions which are not mandatory but which are desirable as good practice.

3.6 Thermostatic Refrigeration Expansion Valve. A controlling device which regulates the flow of volatile refrigerant into an evaporator of a refrigeration system and which is actuated by changes in evaporator pressure and superheat of the refrigerant gas leaving the evaporator.

3.7 Thermostatic Refrigeration Expansion Valve Pressure Drop. The pressure drop across the valve port, which is the net pressure difference between the valve inlet and outlet pressures.

3.8 Thermostatic Refrigeration Expansion Valve Superheat. The difference between the temperature of the thermal bulb and the dew point temperature corresponding to