AHRI Standard 545

2017 Standard for

Performance Rating of Modulating Positive Displacement Refrigerant Compressors

AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE

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2111 Wilson Boulevard, Suite 500
Arlington, VA 22201, USA
www.ahrinet.org
PH 703.524.8800
FX 703.562.1942

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IMPORTANT

SAFETY RECOMMENDATIONS

AHRI does not set safety standards and does not certify or guarantee the safety of any products, components or systems designed, tested, rated, installed or operated in accordance with this standard/guideline. It is strongly recommended that products be designed, constructed, assembled, installed and operated in accordance with nationally recognized safety standards and code requirements appropriate for products covered by this standard/guideline.

AHRI uses its best efforts to develop standards/guidelines employing state-of-the-art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

Notes:

This is a new standard.

As stated in the scope, compressors falling in the scope of other standards such as ammonia compressors (AHRI Standard 510) and carbon dioxide compressors (AHRI Standard 570) are not included in this scope even though these compressors often have modulating capabilities. It is the intent that the future standards will be harmonized and thus it will be possible to rate ammonia and carbon dioxide Modulating Compressors.

It is the responsibility of the user to select its preferred units of measure.

Price $10.00 (M) $20.00 (NM)
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PERFORMANCE RATING OF MODULATING POSITIVE DISPLACEMENT REFRIGERANT COMPRESSORS

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish, for Modulating Positive Displacement Refrigerant Compressors (Modulating Compressors): definitions, test requirements, rating requirements, minimum data requirements for Published Ratings, operating requirements, 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. The standard defines the minimum amount of information, in a standard form to enable the evaluation and comparison of different Modulating Compressors for use in a particular application.

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 Modulating Compressors operating in subcritical applications including Discrete Modulating Compressors and Continuous Modulating Compressors. This standard also applies to the presentation of performance data for Modulating Compressors for air-cooled, evaporative-cooled or water-cooled air-conditioning, heat pump and refrigeration applications.

2.2 *Exclusions*.

2.2.1 This standard does not apply to compressors employing ammonia, as defined in ANSI/AHRI Standard 510.

2.2.2 This standard does not apply to compressors employing carbon dioxide in subcritical and transcritical applications, as defined in ANSI/AHRI Standard 570 (I-P) and ANSI/AHRI Standard 571 (SI).

2.2.3 This standard does not apply to fixed displacement refrigerant mass flow compressors as defined in CAN/ANSI/AHRI Standard 540.

2.2.4 This standard does not apply to compressors intended for use in:

2.2.4.1 Household refrigerators and freezers
2.2.4.2 Automotive air-conditioners
2.2.4.3 Dehumidifiers
2.2.4.4 Industrial products other than heating and cooling

2.2.5 This standard does not apply to capacity modulation achieved using multiple compressors.

2.2.6 This standard does not apply to compressors utilizing vapor injection for the purpose of subcooling to gain capacity.

2.2.7 This standard does not apply to Modulating Compressor operation above the Maximum Step or below the Minimum Step.

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