

Option Thermodynamic State Charts

Product Information

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1 Overview

1.1 Introduction

During the development and testing of all types of air conditioning and cooling systems, physical variables such as pressure and temperature are recorded at the test bench or test vehicle – usually together with other measured signals and internal controller values. To evaluate the system configuration and the employed components and coolants, engineers working in the field of air conditioning technology need specific ways of visualizing thermodynamic data.

With the option Thermodynamic State Charts for CANape, vSignalizer and vMeasure exp, you can now also display thermodynamic data synchronized with other measured data and generate highly informative state charts for online* and offline analysis.

* = Online analysis only possible with CANape and vMeasure exp

1.2 Overview of Advantages

- > Many different possible configurations for the individual design of the state chart types that are available for selection.
- > Selection of thermophysical properties from the extensive TILMedia materials library from the specialist TLK-Thermo permit the use of both real gases and mixtures.
- > Online calculation of the state charts and consequently also individual adaptation of the isolines

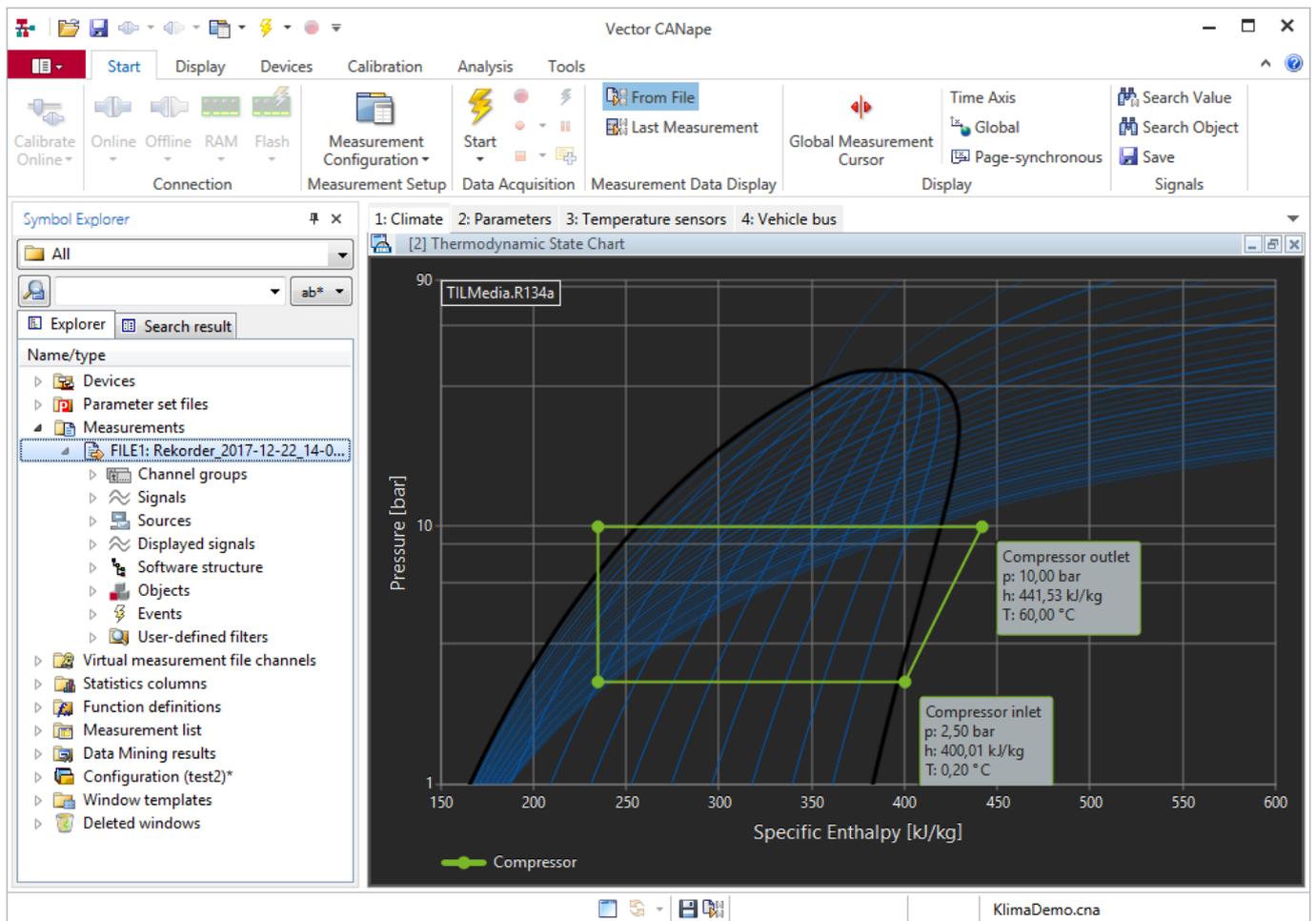


Figure 1: Professional display of thermodynamic state charts

1.3 System Requirements

The option Thermodynamic State Chart is supported as of

- > CANape version 16.0
- > vMeasure exp version 2.0
- > vSignalizer version 16.0

1.4 Further Information

Various documents are available on the web for CANape, vMeasure exp and vSignalizer. In addition, you will find further valuable expertise in the form of specialist articles and application notes. For more information, visit the [Vector Download Center](#).

2 Functions

The option Thermodynamic State Charts makes it possible to generate individually designed thermodynamic state charts in just a few clicks. These simplify the online analysis of automotive coolingcycles, for example.

You can choose between the following types of chart

- > Pressure-enthalpy (ph),
- > Pressure-specific volumes (pv),
- > Pressure-temperature (pT),
- > Temperature-enthalpy (Th)
- > Temperature-entropy (Ts)

When configuring your chart, you can choose from a wide range of materials and even mixed materials are possible. The variables that are relevant for the displayed state chart are calculated from the measured signals, for example for temperature and pressure, on the basis of the material data. It is possible to determine missing cycle reference points.

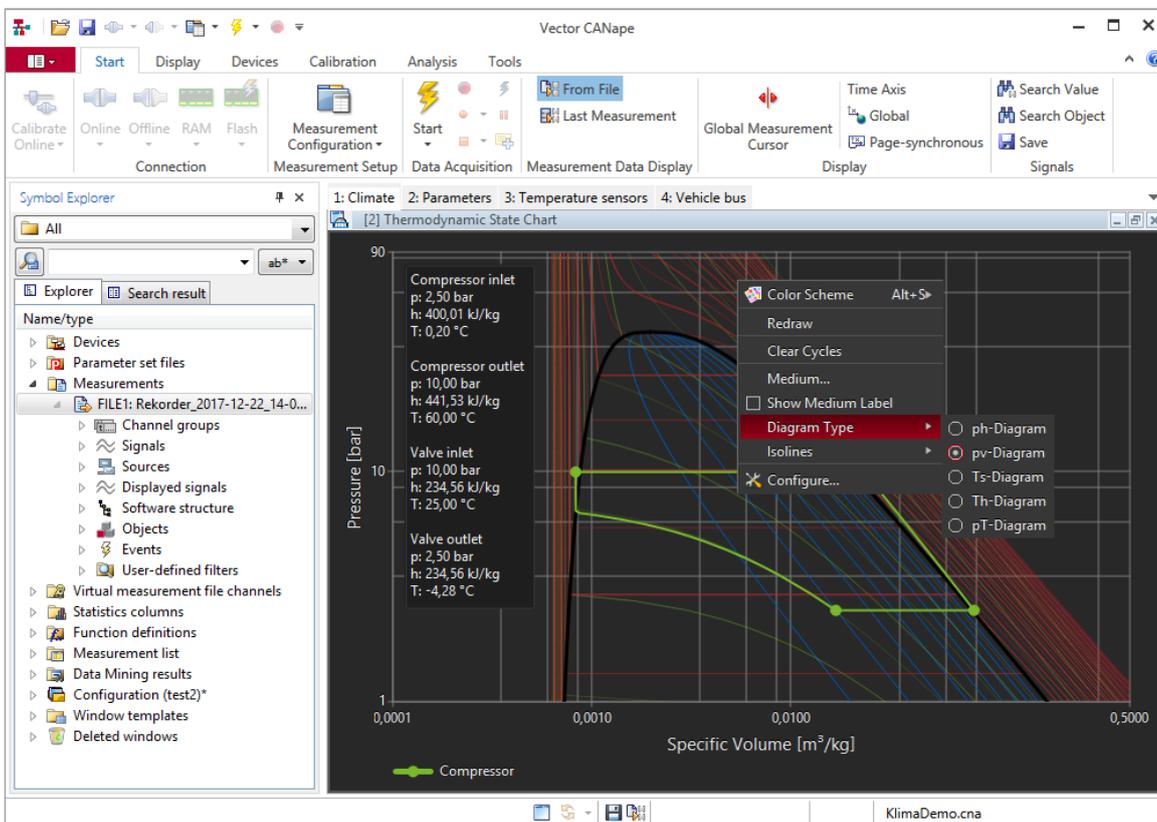


Figure 2: Switch between different chart types at a single click

3 Training

Our training program includes various training courses and workshops for CANape and vSignalizer, both in our seminar rooms and on-site at the customer's premises.

You will find more information on the individual training events and dates on the web at: www.vector-academy.com



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