

Version 15.0.35071 Release Notes

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Key Highlights

- Added thermal analysis capability for sensible heat transfer into or out of flowing fluids using two new devices: a Heat Source / Sink and a Heat Exchanger
- Incorporated NIST REFPROP Database 23 for Fluid Property calculation
- Added new Operating Modes for Devices
- New messages and identification of Over Controlled configurations with Automatic Solution for some configurations involving Sizing Pumps and Centrifugal Pumps

Benefits and Applications

1. Determine if your piping system will meet the thermal and hydraulic requirements of your plant processes
2. Determine how the thermal requirements of your process system establishes the hydraulic requirements of the auxiliary systems
3. Determine if the heat exchanger you have or will be purchasing meets the thermal and hydraulic requirements of your plant processes
4. Help size and select a heat exchanger to meet the thermal requirements of your plant processes
5. Fluid properties sourced from a well-recognized standards organization
6. Model more real world process controls

New Features

- Thermal Analysis calculations for sensible heat transfer into or out of flowing fluids
- Fluid property generation from NIST REFPROP Database 23
- New devices to model Heat Sources, Sinks and Heat Exchangers
- Temperature Control modes of operation for valves and pumps to model process control of heat exchangers.
- Better identification of the Over Controlled scenarios and automatic solution for Over Controlled scenario with pumps

Changes to Current Features or Devices

New Device Operating Modes

- New **Temperature Control** operating mode for Control Valves, Sizing Valves, Flow Demands, Centrifugal Pumps, Sizing Pumps)
- New **Discharge Pressure** and **Suction Pressure** operating modes for Centrifugal Pumps and Sizing Pumps

Usability Improvements

- **Flow rate unit picker** for devices with a flow rate setting (control valve, sizing valve, flow demand, centrifugal pump, sizing pump)
- One click access from the **Property Grid** to most **Device Dialog Boxes**
- **Autonaming** of devices now start with 1
- **Hover over** FLO-Sheet text displays the text in a pop-up
- Convert Curve dP Devices to Heat Transfer Devices (Heat Source / Sink and Heat Exchanger 2-Pipe)
- Improved device graphs
- Updated Reports
- New gradient colors for thermal calculations.
- New document units to support thermal analysis calculations

New Calculations

Over **15 new** calculations added, including:

- Heat Transfer Rate
- Heat Capacity Rate
- Inlet Temperature
- Outlet Temperature
- Temperature Difference
- Flow Rate using Thermal Analysis
- UA Required
- UA Available
- Number of Transfer Units (NTU)
- Effectiveness
- Heat Capacity Rate Ratio

- Maximum Heat Transfer Rate
- Log Mean Temperature Difference
- Corrected Mean Temperature Difference
- Configuration Factor

Messages

- Over 20 new messages added:
 - Heat transfer messages
 - New messages that better identify the cause and highlights the section of the model involved in an Over Controlled configuration
 - Identification of the Most Hydraulically Remote control valve in the automatic solution for Over Controlled configurations

Fixes to Bugs in Previous Versions

- None