Raychem TraceCalc© Pro Version 2.20
Readme File

Welcome to Raychem TraceCalc Pro, the industry standard for heat tracing design. Chemelex is devoted to delivering quality software and support to make this the best design tool available in the industry today. Your feedback is very important to us. Please feel free to contact us at info@chemelex.com with questions, issues or suggestions for this program.

IMPORTANT: Please check our web site periodically to obtain the latest TraceCalc Pro news and updates.

This Readme covers the following topics:

1. Main new features of version 2.20

- For users adhering to IEC standards, a new range of controllers has been added: the Raychem Elexant 3500i. This is a family of compact, full-featured, electronic thermostats for heat tracing control and monitoring in freeze protection and process temperature maintenance applications. Designed from a common hardware platform, the Elexant 3500i offers multiple variants with different features to allow the user flexibility in tailoring the control solution to their heat tracing needs. Available features include: alarm relay, RS-485 and Bluetooth connection, load sensing, ground fault detection, automated heat trace system check, mobile app for wireless configuration, and more. The Elexant 3500i is suitable for hazardous and nonhazardous locations, and can be wall mounted or pipe mounted.

- To optimize TIC (total Installed Cost) for designs using Raychem Mineral Insulated Heating Units (MI), we updated the function allowing the direct connection of a heater into a controller. When possible TraceCalc Pro will simplify the BoM by omitting the junction box. It is important for the user to evaluate, if by using this option, other functions of the controller that would be required for the final design are still possible. For example, by allowing direct connection of an MI heating unit type B (requires two entries), daisy chaining might not be possible anymore. Please consult the relevant controller datasheets to properly assess the implications on other features for the controller used.

- The desired attributes on the controls tab has been updated to allow a user to specify whether he wants an On-pipe or an Off-pipe mounted controller. Previously this feature was only available for heat tracing components but not for controllers.

- TraceCalc Pro now includes two import functions. Both are available through the File menu item 'Import...', available when there is an open project.
  The first function allows fast input of lines from Excel. Upon opening the form, the user may save a copy of the Excel import template.
  The template is customized for the user's language (English, French, or German) and the project database (European or American). In addition to the ImportData spreadsheet, the user will find is second spreadsheet containing Help: complete instructions on proper data entry.

The template is in Excel 1997-2003 format because this feature currently works only with Excel 1997-2003 format files.
The second function allows the user to import all of the lines from one TraceCalc Pro project into another. The user has two options: import lines only, or import both project settings and lines. The only restriction is that the two projects must use the same system of units.
In case of questions about these features, reach out to your Chemelex representative or customer service.

- The software now offers an additional module for static heat up designs of pipes. The module allows performance of analysis only or also include the heat-up requirements in the final design. Alternatively, it also offers an estimation of the cool down time, even with partially operating heat tracing.
  Important: The software will not check internal heat distribution during the heat up or cool down. It is up to the user to assess in how far this aspect affects the actual performance of the heating system.
  Furthermore, the input data for heat up calculations for the fluids and insulation, such as density and specific heat, need to be correct for your application.
  The software contains fluids and insulation materials, however data might not be representative for all design conditions (e.g. different pressure, temperature etc…). It is up to the user to verify the validity of the data used.
  Lastly, phase changes can generate significant volume changes. It is up to the user to assess in how far this can affect the heat tracing performance / circuit repartition.
  In case of questions about this feature, reach out to your Chemelex representative or customer service.

- Using Raychem SC Polymer Insulated Series Heaters for heat trace designs no longer requires a validation code. Upon installation, the SC heater range is now available by default for designs adhering to NAM standards.
  It is important to realize that designing with series heaters requires proper understanding of electrical heat tracing in general and all the sensitivities that come with it, from a safety/regulatory, electrical, controls and installation point of view. If trainings are desired, reach out to your local representative.

- Chemelex has added two new insulation schedules to the list of insulations, more particularly ArmaGel XGH and ArmaGel XGC. To the best of our knowledge the data that has been entered correctly as per the technical information provided to us. However, the user shall at all times remain solely responsible for the adequacy and accuracy of the information. More information can be found on www.armacell.com on the technical datasheet of the relevant products.

- For designs in the NAM region, we have added RMI-TW as an attachment method to install Mineral Insulated heating units on pipes. The tie wire comes in reels of about 45m/147ft per canister and is suited to be used with steel jacketed Heating units.

- The Raychem RMI-JB3 aluminum junction box ,that allows the connection up to 3 mineral insulated heating units in regions adhering to NAM standards, has been made obsolete. Contact Chemelex for suitable alternatives

- The IEC approved Polymer Insulated Series Heating Cable range XPI-F, designed for low temperature long line applications, has been made obsolete. All applications that used XPI-F can be fulfilled by standard XPI heating cables, including repairs & modifications.

- The IEC approved Mineral Insulated Series Heat cable range HDF/HDC, using an outer jacket in Cupro Nickel, has been made obsolete. Contact Chemelex for help on suitable alternatives for your application.

2. Known Issues and Limitations

- For designs with European single conductor, polymer insulated (PI) series heater cables, the connection components selected by TraceCalc Pro have the following limitations:

  a. For CS-150-xx-PI connection kits, the specific crimp size is not indicated in the bill of material. You will need to manually select the correct crimp based on data presented in the latest Technical Data Book.

  b. For Power Tee or Power Splice configurations, a JB-EX-20 junction box will be selected by TraceCalc Pro; a JB-EX-21 should be substituted instead.

  c. The last leg of a multi-segment Parent/Child design will include two single conductor segments and a junction box allowed for series connection of the two segments. At this point, TraceCalc Pro does not support a single looped cable as the last segment.

  d. TraceCalc Pro will not support the full application range of the universal connection and splice kit for PI heating cables, reference: CS-150-UNI-PI.
  Its maximum use temperature has been limited to 120°C for simplification of the selection algorithms. If the user plans to select the kit, it is important to verify the maximum allowed wattages for higher temperatures as detailed in our installation instructions (ref. Install-064). In case of doubt, please contact Chemelex or use the kit CS- 150-2.5- PI instead.

- For European series cable designs, TraceCalc Pro will propose a bill of materials for which some components have the quantity set to zero. These are small electrical items required to create the desired electrical configuration and are compatible with the proposed junction box. Users should adjust the quantities of these components to ensure that the requested electrical configuration can be realized. Refer to the individual datasheets of the proposed junction boxes for more information on the exact contents and electrical limitations.

3. System Requirements

The TraceCalc Pro installation package no longer supports installation on Windows XP. Contact Chemelex for more information.

Minimum Requirements:

- Microsoft Windows 10 or later, Server 2012 or later
- At least 25 MB of free hard disk space
- **Internet Explorer 6.0 or later**
- Adobe Acrobat Reader 5.0 or later
- Recommended: 500 MHZ, 2 GB RAM

4. Installation

The program can be downloaded from our website. After downloading, just start the TraceCalc Pro 2.20 Setup.exe program and follow the instructions.

During installation, Setup will detect if an earlier version has been installed. If you have an earlier version installed, then Setup will uninstall it before continuing. All of your application settings will be retained. Old projects will not be removed and can be used with TraceCalc Pro 2.20.

5. Register for a Validation Code

When you install the TraceCalc Pro software, you are getting a trial version that will only function for 30 days, unless it is registered and a valid registration code entered.

The first time you launch TraceCalc Pro, you will be prompted to register. Register online through our public website. Once you register, we will send you the validation code. To enter the code, launch TraceCalc Pro, click **Register** on the main menu and type the code in the pop-up window.

6. Technical Support

For help using TraceCalc Pro, first check the extensive on-line help in the program.

- To contact your local Chemelex representative, visit our website, click on the 'Support' menu, then choose 'Where to Buy'
- To view Frequently Asked Questions, visit our website, click on the 'Support' menu, then choose 'Frequently Asked Questions (FAQ)'
- To contact Technical Support, send email to info@chemelex.com and indicate your country and preferred language.
- To download the latest version of TraceCalc Pro or the user manual, go to the TraceCalc Pro page.

Thanks for reporting any issues to us.

7. Change history

Version 2.20

New	Raychem 3500i controller added for designs adhering to IEC standards.
New	Raychem Polymer Series heaters SC and SC/H cable are now available in the public version by default for NAM users.
New	Insulation schedules for ArmaGel XGH and ArmaGel XGC are now included in TraceCalc Pro list of insulations.
New	Import LineList functionality added for all users.
New	Static heat up & cool down for pipes made available to the wider public.
New	The IEC approved XPI-F PI heating cable range has been made obsolete.
New	The IEC approved HDC/HDF MI heating cable range has been made obsolete.
New	The Raychem junction box,RMI-JB3, which is approved to NAM standards, has been made obsolete.

Fixed	Upon copying a line group that had trace ratio overrides on its child lines, the software erroneously could dismiss the override.
Fixed	The Raychem junction box range with reference MIJB xxxx, designed for the connection of mineral insulated heating in the NAM region, is suited for use Class I Division 2 Gas group A
Fixed	The max. exposure temperature for of pipe-mounted controllers was not always being checked.
Fixed	The maximum circuit length calculation for Raychem XTVR and HTV when using metric units could sometimes cause an unspecified error.
Fixed	When GT-66 is disabled by the user and he is designing with Alu tape on a metal pipe in combination with glass tape, there was an error upon attempting to select the glass tape.
Fixed	Obsolete items will not be auto-selected but may still be forced..
Fixed	Disallow direct connection of heater to controller for child lines of type: power parallel (parent control)
Fixed	For some designs with the sensor on a child line could generate an error and no solution was found
Fixed	JB-EX-42-EP mounted on-pipe is now available for MI cable design
Fixed	The CS-20-2.5-PI-NH splice kit for Raychem Polymer Insulated XPI heating systems was mistakenly marked as above insulation
Fixed	For design using PI direct that failed validation due to too high temperatures in the Junction box, an ‘unknown’ error was thrown as opposed to the error message “no component found “.
Fixed	When a user would request an SAPC design and also force a local controller that is not SAPC capable, the forced controller would be on the BOM if it passed convention validations although it is not SAPC capable.
Fixed	FxT heaters voltage level in L-N erroneously rejected
Fixed	Informational message for obsolete items implemented for all products

Version 2.19

New	Default storage locations for user data has changed from Documents\nVent folder to Documents\Chemelex

Fixed	When creating a circuit with a power splice in parallel, using parallel heating cables, and forcing the sensor to be located on that line segment, the software would not allow to save the circuit.
Fixed	For vessel designs using the North American product database, the software erroneously did not allow to select the sensor type RTD4/7. This has been corrected
Fixed	DT 920 controller T-rating has been updated to T3A consistent with the latest Approvals Certificate.