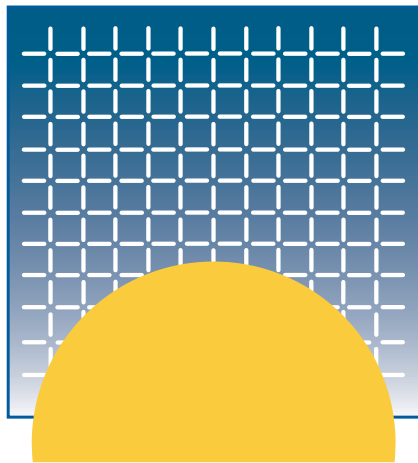




PIPENET

LEADING THE
WAY IN FLUID
FLOW ANALYSIS



SUNRISE



PIPENET™

LEADING THE WAY IN FLUID FLOW ANALYSIS

What is **PIPENET**?

PIPENET is a powerful software tool for rapid flow analysis of pipe and duct networks. Three modules ensure that, no matter how extensive or complex your network, **PIPENET** will perform.

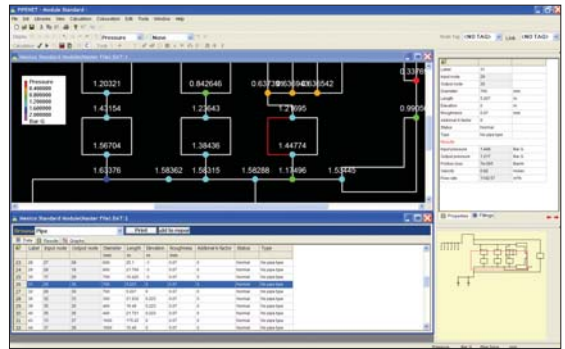
Why use **PIPENET**?

- **PIPENET** sets the standard – leads the way in flow analysis – the best!
- **PIPENET** starts at the design phase. It performs pipe sizing and pump selection calculations in the steady state. From there it goes all the way to computing hydraulic loads for pipe stress analysis and support design, through several optional stages depending on exactly what the user requires.
- **PIPENET** has been in use across the globe for over 25 years, by companies large and small, including many multinationals, in the oil and gas, process, fire protection, ship building, and power generation industries.
- **PIPENET** is flexible, offers a wide selection of units, user-defined pipe schedules, fittings libraries and pump characteristics.
- **PIPENET** is constantly being updated and enhanced, putting us at the forefront of pipework and pipeline design technology.
- **SUNRISE SYSTEMS** is accredited with ISO 9001.

PIPENET – Which Module do I need?

PIPENET has three modules which work independently:

PIPENET Transient Module is ideal for unsteady flow problems such as ‘water hammer’, ‘steam hammer’, control systems and hydraulic forces for pipe stress analysis.



PIPENET Spray Sprinkler Module sets the global standard for the design of fire protection systems especially in the oil, gas and process plant industries - deluge, ringmain, sprinkler or foam concentrate systems.

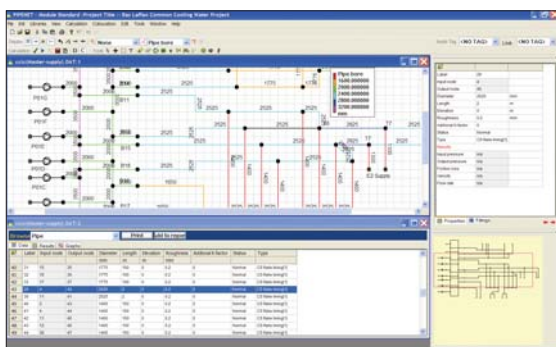
PIPENET Standard Module is the perfect tool for solving general flow problems with liquids, gases or steam – in pipe and duct networks – cooling water systems, steam distribution systems, HVAC systems.

PIPENET – What support will I get?

PIPENET is supported by a rapid-response team based in the UK, who will talk you through any difficulties you may have. In addition, PIPENET is supported by Authorised Marketing Partners and Training Consultants across the globe. We offer a cost effective maintenance, updates and support programme which will keep you up to date, ensuring that you always have the latest technology at your fingertips.

PIPENET – GUI Highlights

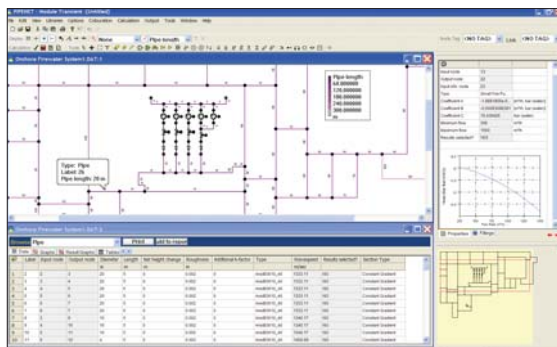
- Colours – component coded according to data/results/user defined rules
- Bird's eye view, unlimited undo/redo, tool tips, pan & zoom, font sizes
- Isometric/orthogonal schematic grids, automatic creation of ranges with multiple items
- Tabulated data with copy/paste from and to virtually any spreadsheet, global edit, sorting
- Extensive online help, online tutorials, user manuals and training manuals
- Import underlays in .dxf and .emf formats
- Copy/paste of sub-networks to rapidly build up a large system
- Extensive range of output formats including HPGL/2 for plotting



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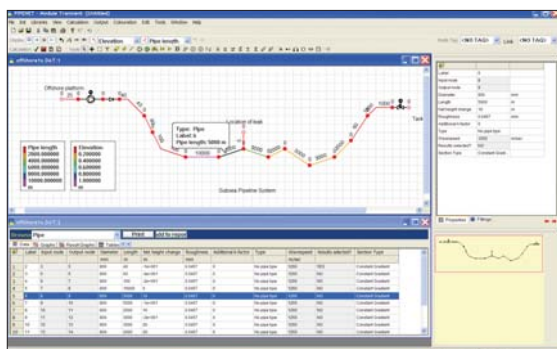
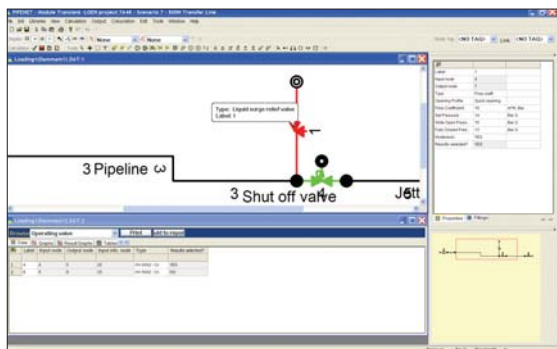
TRANSIENT MODULE

PIPENET Transient Module provides a rapid means of in-house rigorous transient analysis and pinpoints problem areas and potential solutions.



Applications of **PIPENET Transient**:

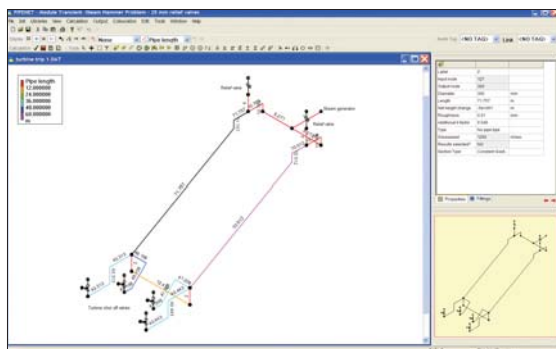
- Loading/unloading systems analysis
- Cooling water systems modeling
- Firewater systems surge analysis
- Water injection systems studies
- Subsea and cross country pipelines
- Steam hammer



PIPENET Transient is the perfect tool for modeling networks:

- Pipes – rigorous and short, mile post data
- Valves – operating, surge relief, control, non-return, swing check, regulating, bursting disk, inertial check
- Pumps – simple and turbo
- Tanks – simple, accumulator, surge, receiving vessel
- Vacuum breakers – with or without hysteresis

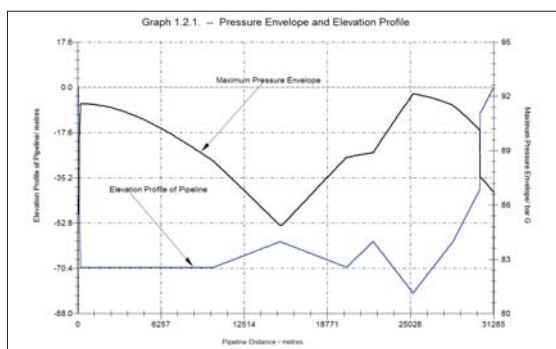
- Control systems – pressure, flow, differential pressure sensors, PID control, transfer functions, switches
- Caissons – partially filled pipes
- Specifications – extensive range of boundary conditions
- Hydraulic transient forces – dynamic/total, unbalanced/complex forces



PIPENET Transient Features:

- Output – graphical, tabular and forces output, snap shot, dynamic movie, min/max tables, pressure envelopes, hydraulic grade lines
- Initial state – steady state, user-defined, run-in time, final steady state
- Cavitation modeling – simple cavitation, cavity separation with elevation effect
- Time step – fixed/variable, software/user-defined
- Force – time history neutral file output for reading by pipe stress analysis and finite element programs

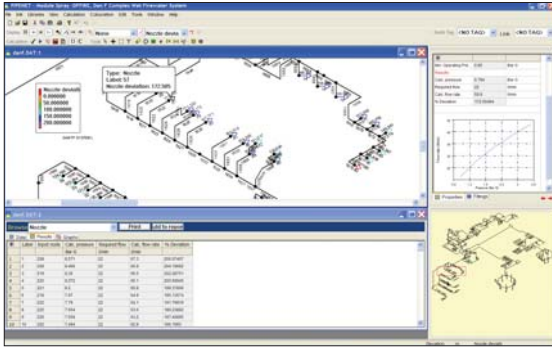
PIPENET Transient professionally performs dynamic analysis with ease and accuracy.



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SPRAY / SPRINKLER MODULE

PIPENET Spray/Sprinkler Module is excellent for hydraulic analysis of firewater systems in compliance with NFPA13, NFPA15 and NFPA16 rules. This addresses the hydraulic analysis requirements of virtually all national and international standards. Ideal for the design of systems used in critical applications such as offshore platforms, FPSO's, petrochemical plants, power plants, refineries, ships, and airport hangers.

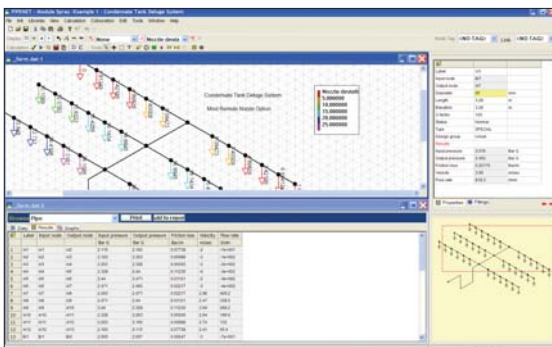


Applications of **PIPENET Spray/Sprinkler** Module:

- Deluge systems
- Firewater ringmain systems
- Sprinkler systems
- Foam solution systems
- Foam concentrate systems
- Spray mist systems

PIPENET Spray/Sprinkler is the ideal modeling tool for:

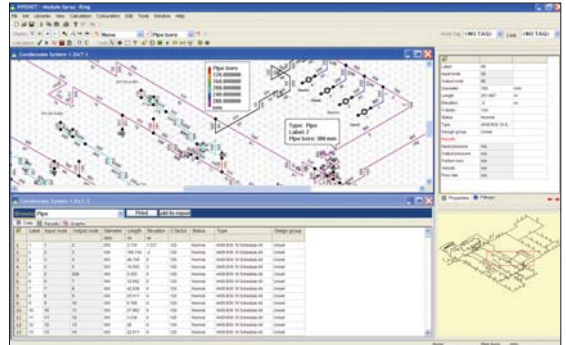
Pipes, nozzles, fittings, overboard dump valves, nonreturn valves, orifice plates, equipment items.



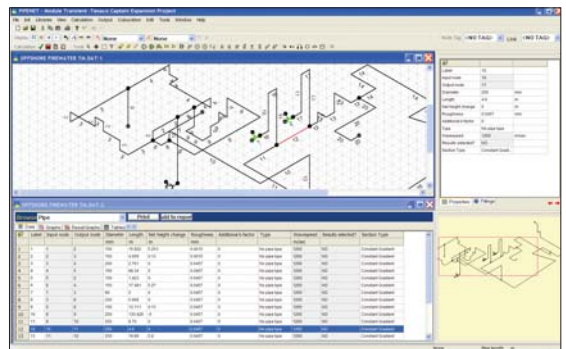
PIPENET Spray/Sprinkler Features:

- Input – isometric or orthogonal schematic input, tabular input including copy and paste from spreadsheets
- Underlay – import of drawings for use as underlays for schematic drawings
- Output – easy, readable output as tables, or display of data and results on the schematic

- Choice of calculation modes – hydraulically most remote nozzle, inlet pressure/flowrate
- Orifice plates – diameter to be calculated or specified
- Multiple pump scenarios
- Multiple fire scenarios
- Block/Break of pipes to simulate closed valves and burst pipes
- Pumps – sizing of pumps or user-defined vendor's pump curves



- Pipe schedules – built-in and user-defined pipe schedules, lined pipes, multiple pipe schedules in one system
- Overboard dump and minimum flow valves
- User defined libraries of pipe schedules, nozzles, deluge valves and linings



- Choice of Hazen-Williams and Darcy-Weisbach equations
- Choice of pipe or node elevations

PIPENET Spray/Sprinkler module is the fire protection professional's first choice.



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STANDARD MODULE

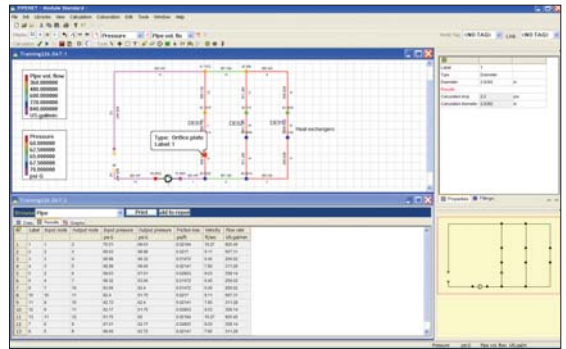
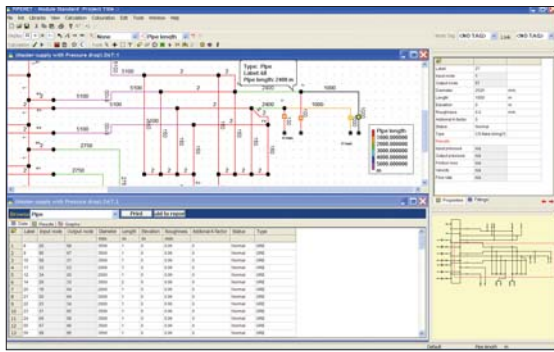
PIPENET Standard Module is ideal for analysis of general network systems handling liquids, gases and steam, including piping HVAC and ducting systems.

Applications of **PIPENET Standard Module**:

- Cooling water systems
- Steam distribution systems
- Ventilation systems
- Water distribution systems
- Fuel gas systems
- Chilled water systems
- Ventilation systems

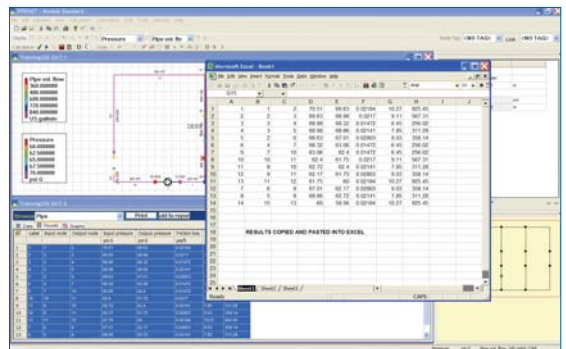
PIPENET Standard Models:

Pipes, ducts, fittings, pumps, fans, check valves, control valves, nozzles, filters, orifice plates, fixed pressure drops.



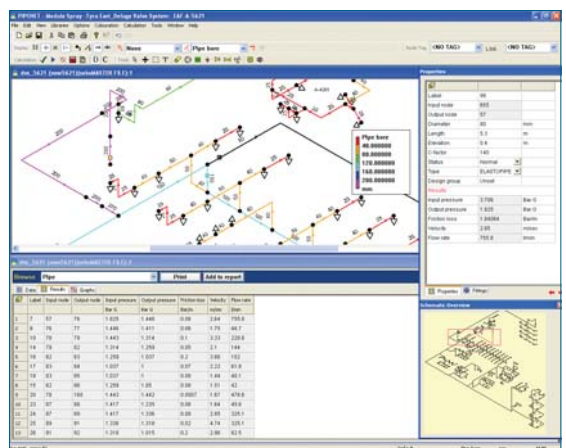
- Control valves – pressure, flow, differential and set position
- Variable properties and temperatures
- Choice of pipe or node elevations

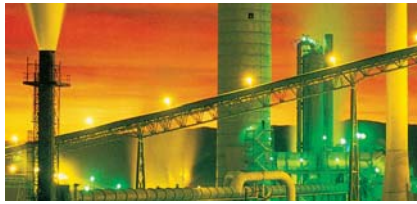
PIPENET is the solution in design optimisation and setting standards in safety.



PIPENET Standard Features:

- Input – isometric or orthogonal schematic input, tabular input including copy and paste from spreadsheets
- Underlay – import of drawings for use as underlays for schematic drawings
- Output – easy, readable output as tables, or display of data and results on the schematic
- Extensive library of fittings and user-defined fittings, using Crane data
- Powerful pipe sizing capability
- Orifice plates – diameter to be calculated or specified
- Multiple pump scenarios
- Block/Break of pipes to simulate closed valves and burst pipes
- Pumps – sizing of pumps or user-defined vendor's pump curves
- Pipe schedules – extensive built-in and user-defined pipe schedules
- Checking for cavitation, correction for ambient pressure decrease with height, calculation of hydraulic gradients and modeling of leaks





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