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1st ISA Analysis Division Singapore Symposium 2017

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One Farrer Hotel & Spa - Singapore

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Presenter



Title: **New Physical Property Process Analyzers rapiDist-4**

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Presenter



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Presenter Biography	<ul style="list-style-type: none">-Dipl. Ing. degree in Chemical Engineering from the Fachhochschule Nürnberg, Germany-Over 30 years of experience in process analyzers and systems for refinery applications-Project management for turn key projects in the refinery industry starting from field survey, study, detail engineering, production, field installation and start up
Paper/ Presentation Title	New Physical Property Analyzer rapiDist-4 for fast online control
Topic Category	Innovation in Analytical Techniques
Abstract	<p>Distillation, Ex-proof Online Process Analyzers, ASTM D86 Correlation, Process Control</p> <p>The measurement of distillation points is the most common method for the control of refinery processes. As margins become tighter, refinery operators are implementing new methods to optimise these processes by incorporating faster analytical systems. This presentation will describe the new online process distillation analyzer rapiDist-4 which allows operators to run a fast multi-point analysis from IBP to FBP in 10 – 15 minutes or a single point measurement in less than 10 minutes, both with ASTM D86 correlation. Target applications are distillation towers where the beginning and end of the boiling curve are vital for control, blending processes for all types of middle distillates which require the full curve and feed-stocks for the petrochemical industry where individual points on the curve are of importance.</p>

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Introduction



- The measurement of distillation points is the most common method for the control of refinery processes.
- As margins become tighter, new methods to optimize processes require faster analysis methods.
- The topic of the presentation is the new rapiDist-4 which offers fast, reliable and accurate boiling point measurements from IBP to FBP correlating with the master method ASTM D86.
- Target applications are atmospheric distillation towers, blending processes for all types of middle distillates and feedstocks for petrochemical processing.

Technical Details



- The rapiDist-4 core components, as dosing unit, vaporizer, condenser and receiver meet the design specification set by ASTM D86.
- Results correlating with ASTM D86.
- Robust, non-contact optical level measurement for dosing and receiver unit.
- Dosed volume is adjustable from 15 to 20 ml, allowing faster distillation depending on matrix.
- Analyzer incorporates integrated diagnostic and maintenance features including automated decoking and remote access.
- Measuring points from IBP to FBP, free programmable.
IBP – FBP cycle time for diesel about 10 minutes.
IBP – FBP cycle time for gasoline about 15 minutes.

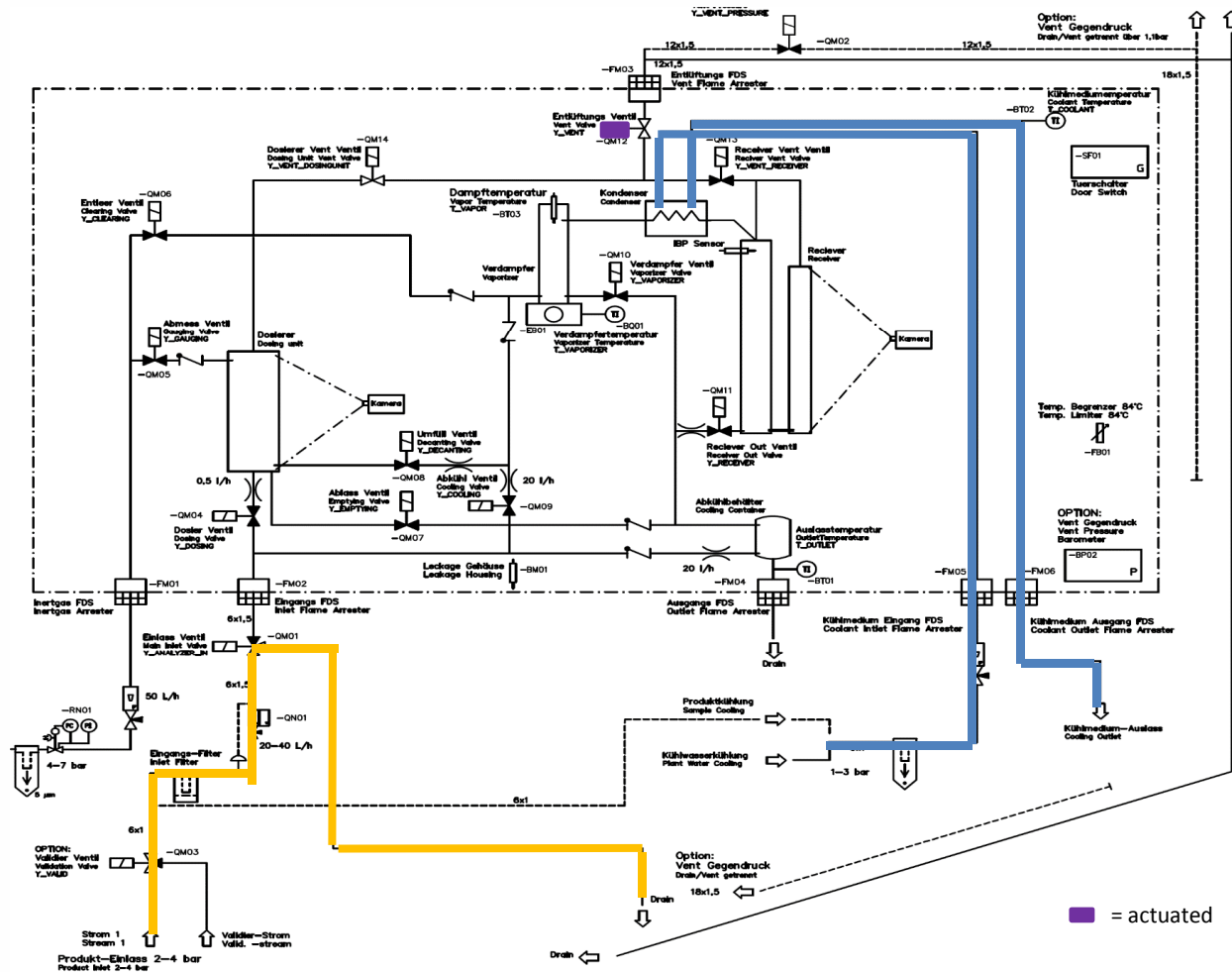
Technical Details



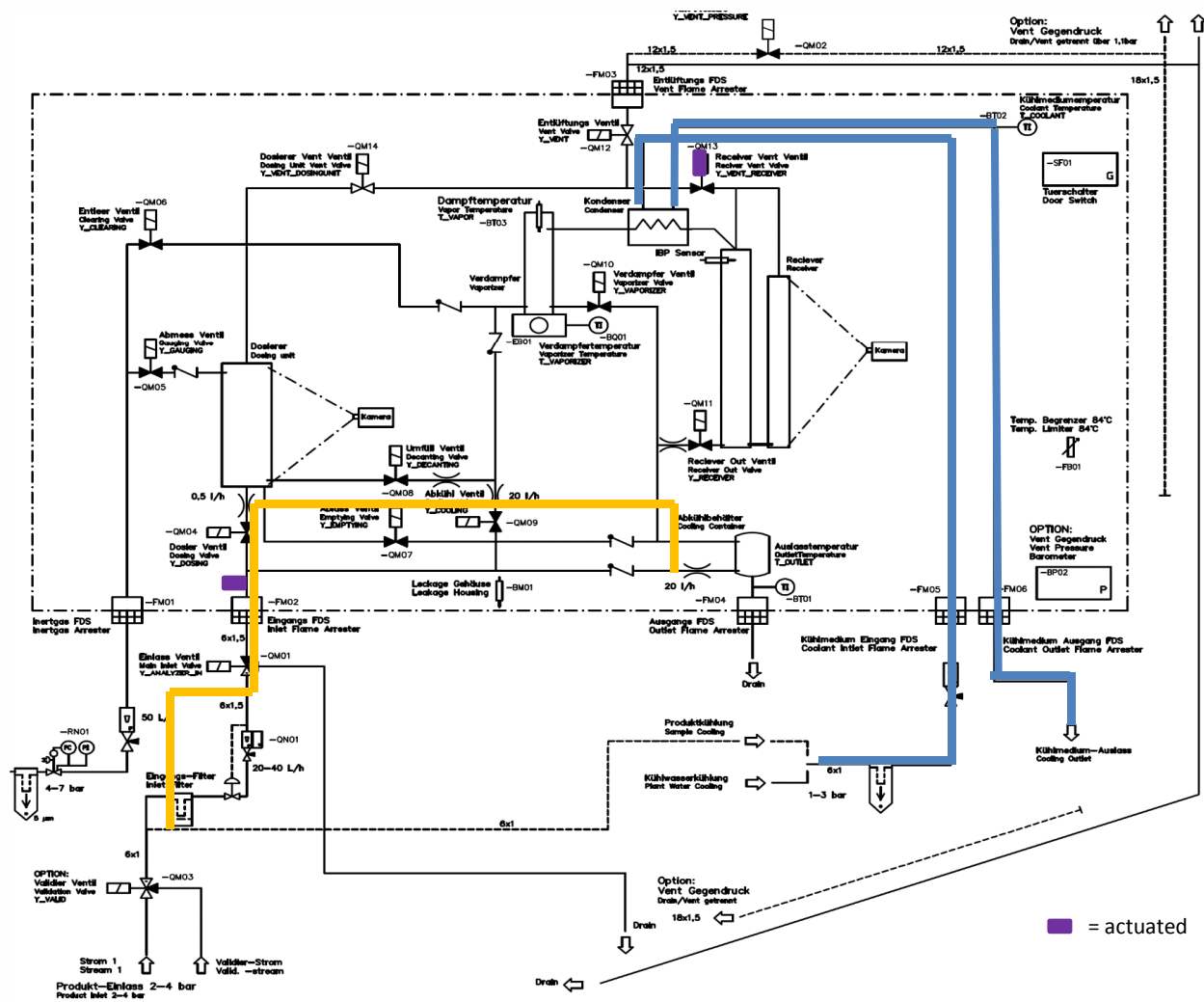
The rapiDist-4 is part of the „Series 4“ analyzers with following standardized features:

- Hazardous area certification to meet ATEX, IECEx, CSA C/US and TRCU.
- BARTEC control unit for pressurized cabinet and key switch for bypass.
- Industrial PC and touch panel, standard components, long-time available spares, easy expandable and upgradeable.
- Windows 7 operating system, PACS* (* process analyzer control system, BARTEC BENKE software), locally operated or via remote access.
- State of the art communication features, can be daisy chained with all other BARTEC BENKE physical property analyzers.

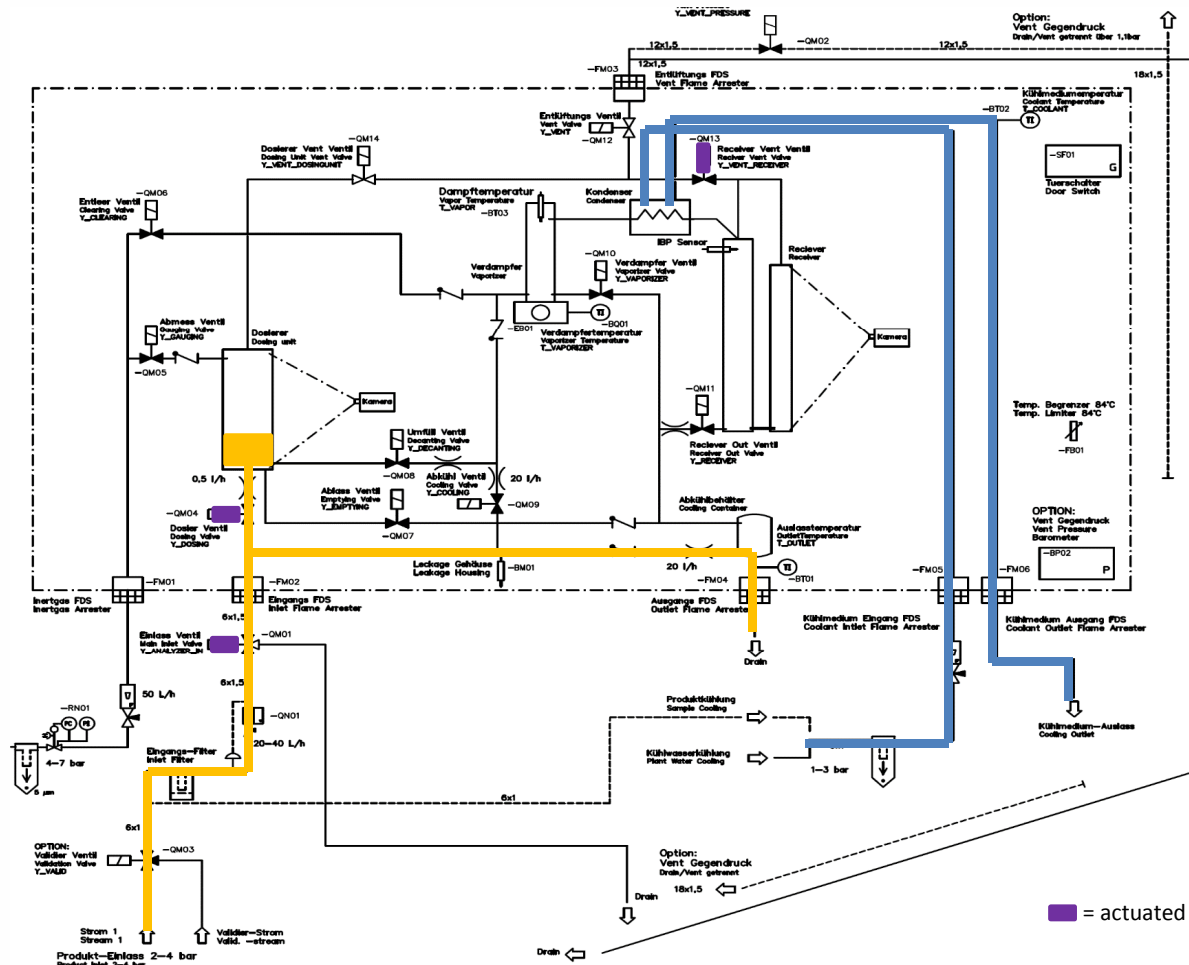
How it works? – Safe State mode



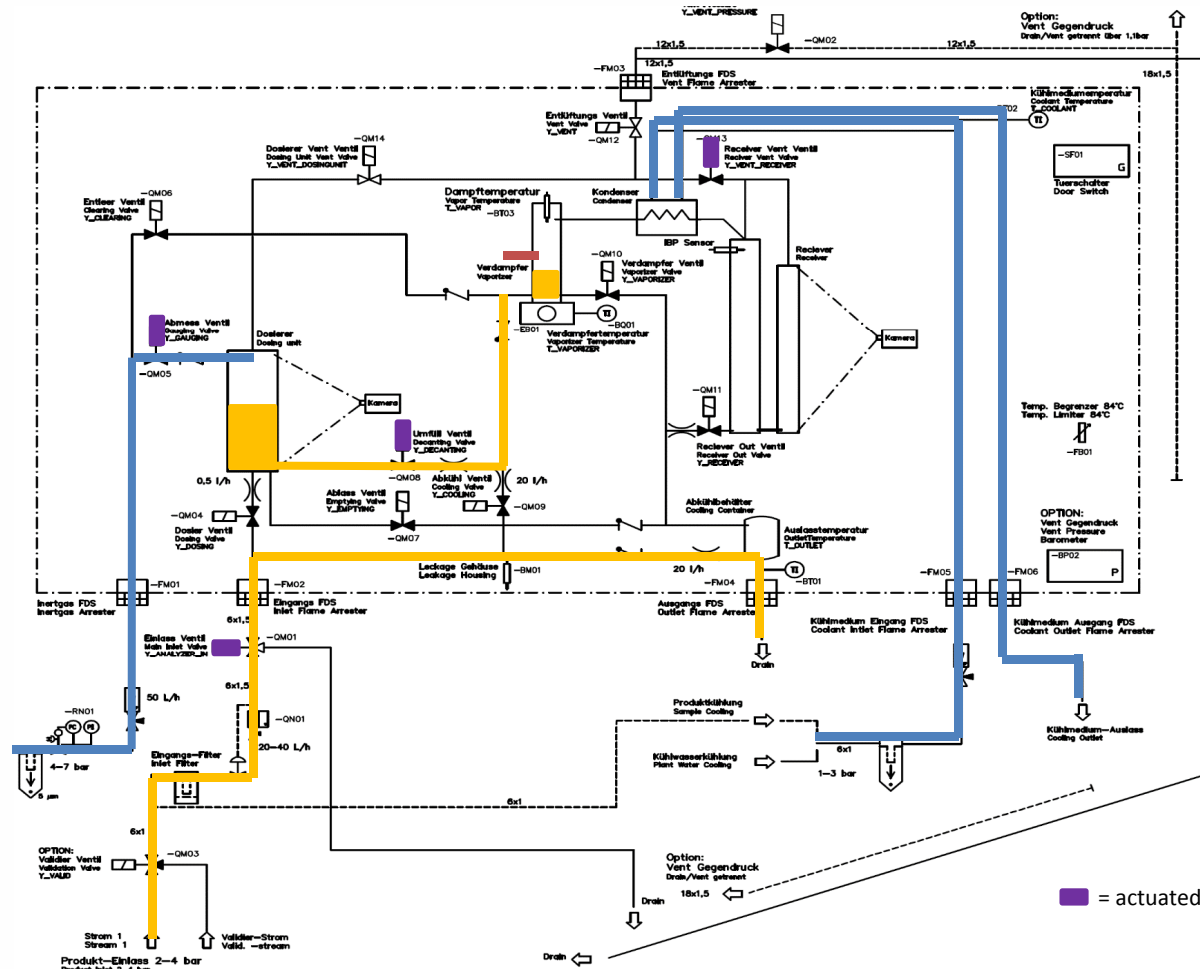
How it works? – Standby mode



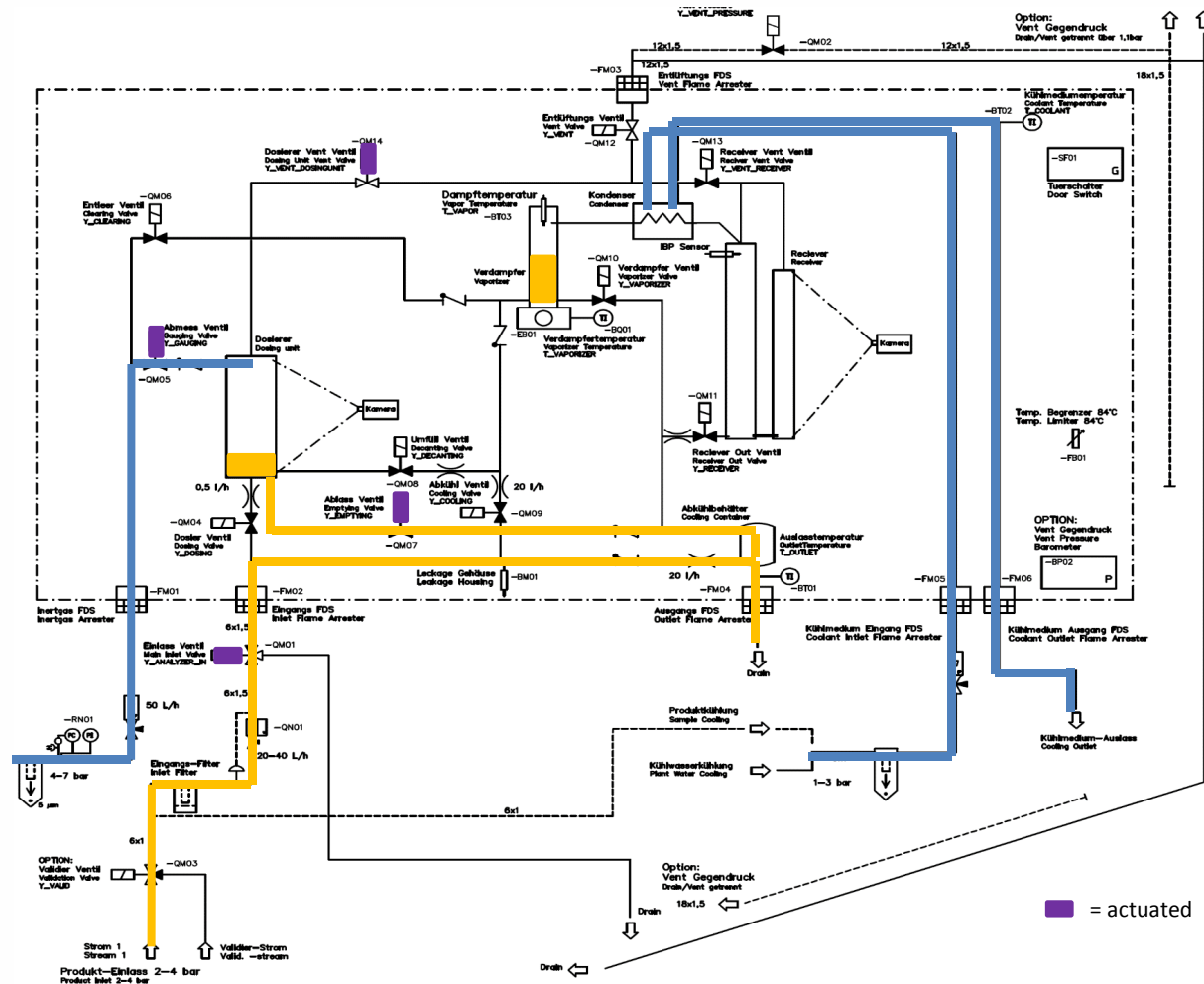
How it works? – Filling dosing unit



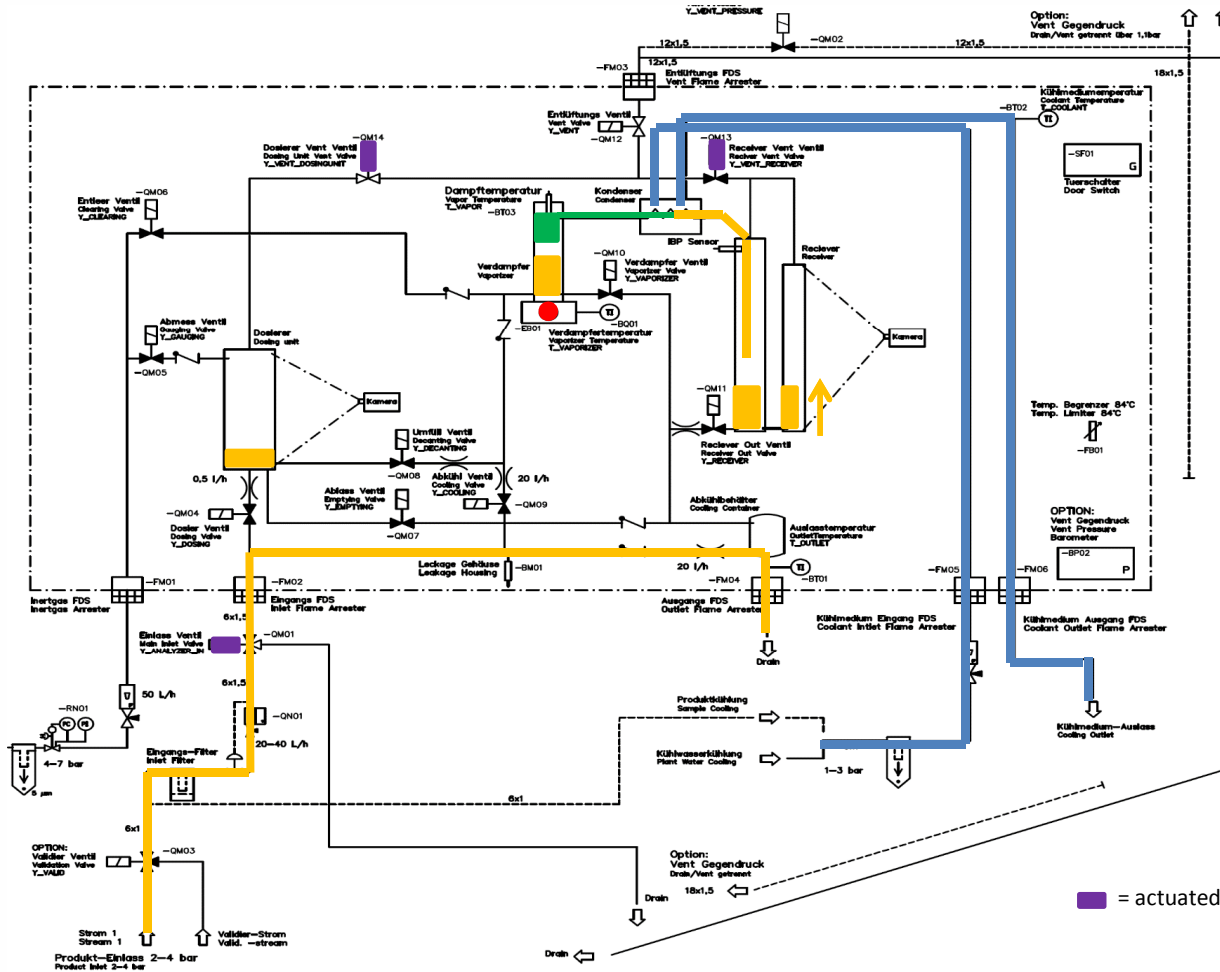
How it works? – Gauging



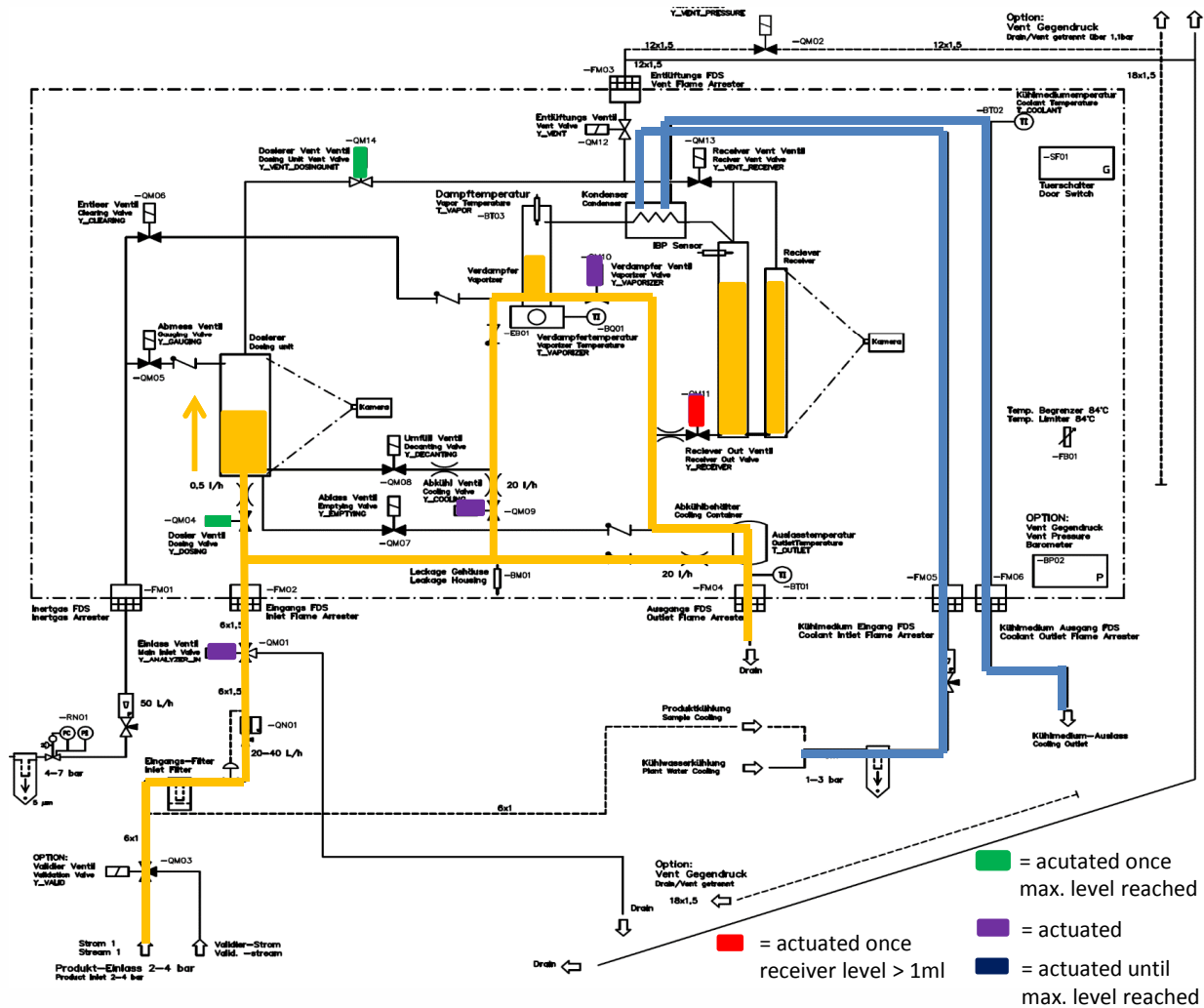
How it works? – Empty dosing unit



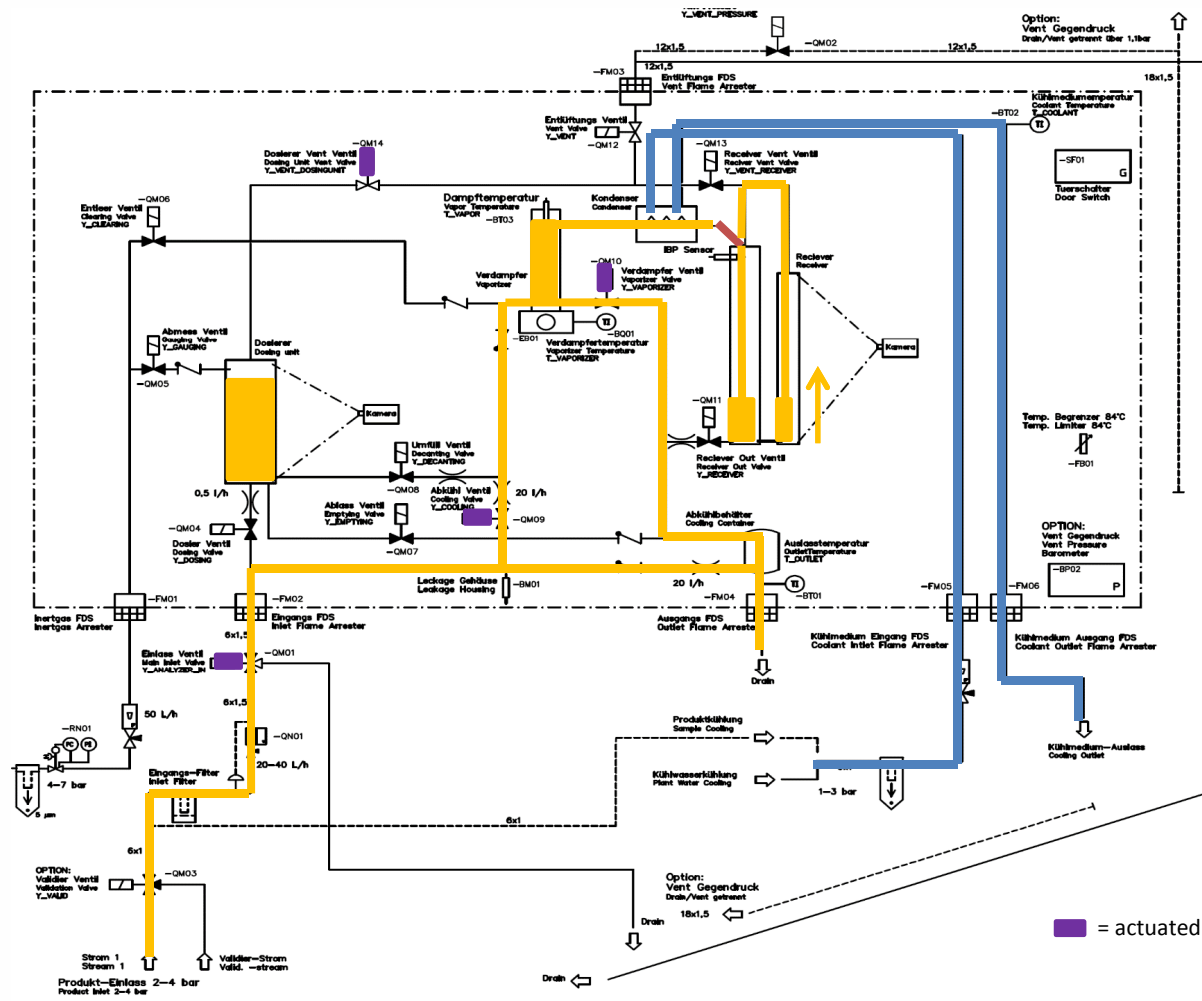
How it works? – Distill and refill



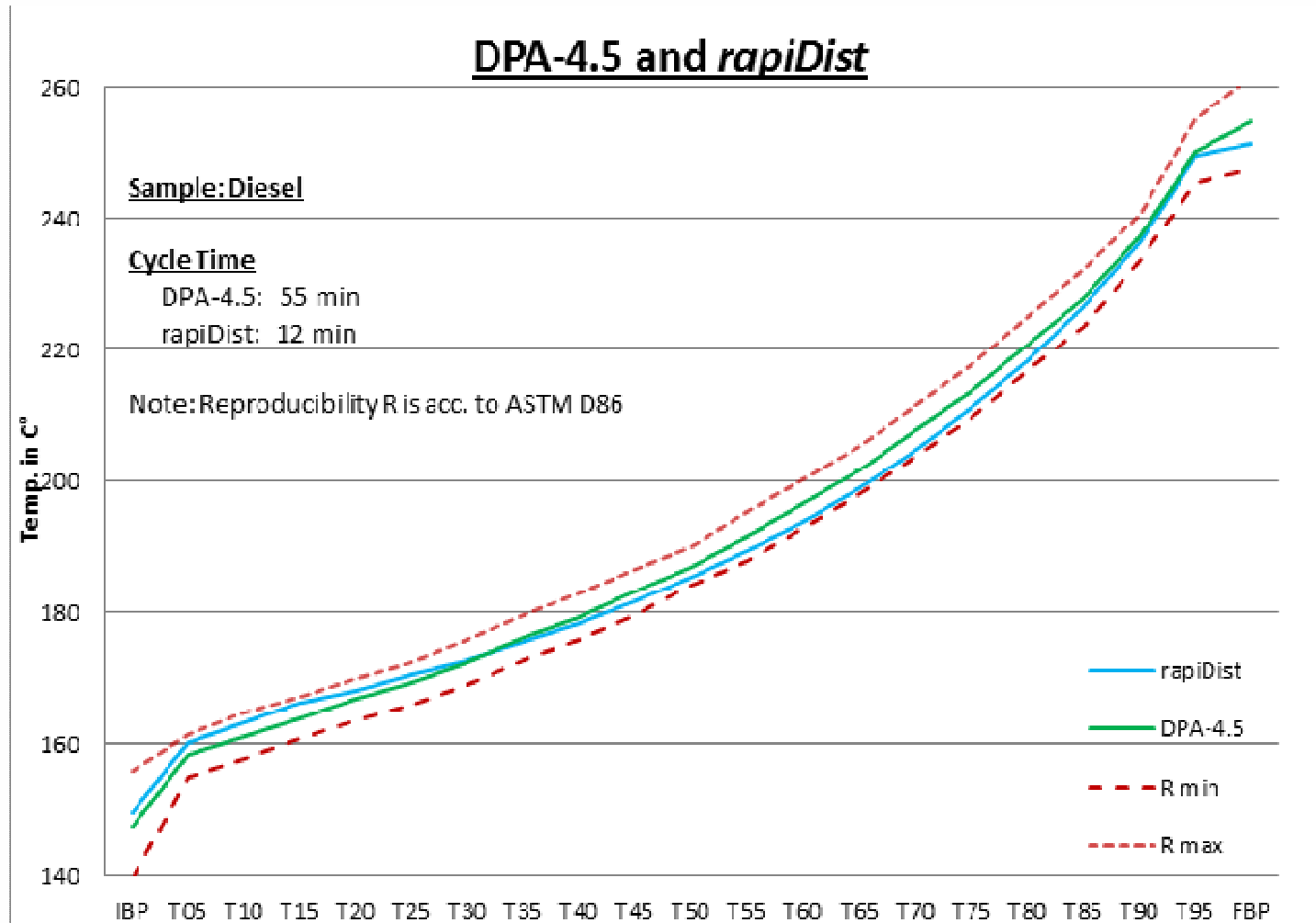
How it works? – Cooling and refill



How it works? – Flushing / Receiving

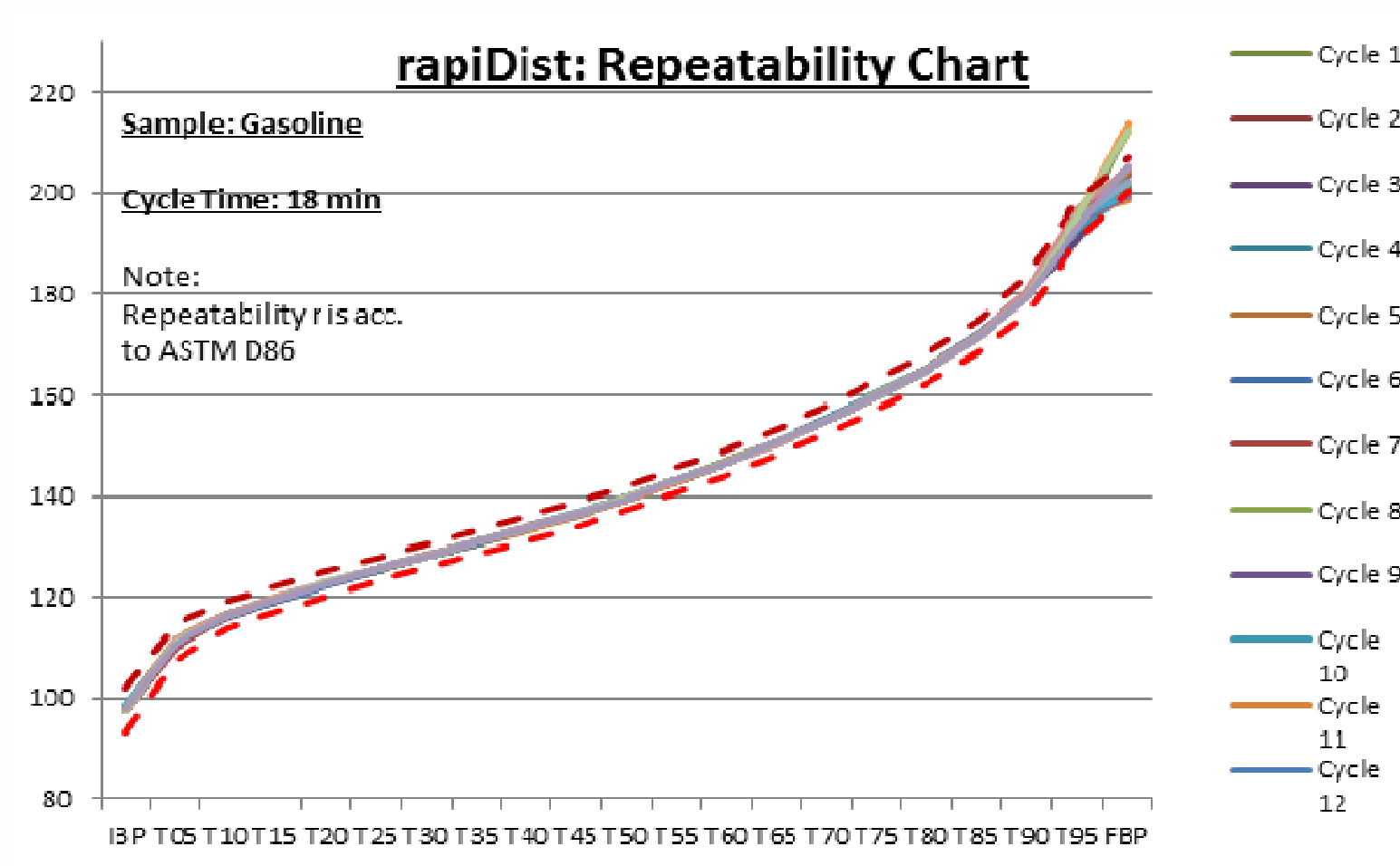


ASTM D86 vs. rapiDist-4 (R)



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ASTM D86 vs. rapiDist-4 (r)



What it looks like!

The rapiDist-4 with standardized sampling system and closed loop chiller FKS 1.4-KWS controlled by rapiDist electronics



NEW ANALYZER !!

Delivery commencing 2018

Summary



- The rapiDist-4 core components meet the ASTM D86 design specification.
- The rapiDist-4 results correlate with ASTM D86.
- Cycle times from IBP to FBP are from 10 – 15 minutes.
- This makes the rapiDist a valuable tool to control distillation towers (5%/ 95%), feedstocks for the petrochemical industry (naphtha), jet fuels, fuel oils, diesel and gasoline and optimize blending processes.
- Market launch is September 2017.
- Availability including all certificates will be early 2018.



THANK YOU!

Any Questions?



"You are completely free to carry out whatever research you want, so long as you come to these conclusions."