System

# METPOINT® OCV


Measurement instrumentation

# Measurably constant quality: do not assume, be aware

## METPOINT® OCV makes the quality of your compressed air visible

BEKO

**“METPOINT® OCV gives us the surety of smoothly operating processes, and therefore perfect products. In this way, we can readily accept the confidence of our consumers.“**

# Anyone who warrants quality must be absolutely sure of the performance of his processes

Companies in all branches of industry increasingly have to face major challenges: the more critical consumers become, the more important transparency is in production. Simultaneously, processes are becoming increasingly complex. This particularly applies to the field of compressed-air processing.

The more sensitive your products, the higher the requirements placed on the processing of your compressed air. Quality management is particularly demanding where products come into direct contact with the process air.

Even the lowest levels of contaminations can impair process safety and compromise the quality of end products. The persons in charge, therefore, need the surety of reliable quality monitoring.

The METPOINT® OCV detects tiny oil residues in compressed air in the range of one thousandth of a mg/m³ and offers certainty regarding the purity of your compressed air. In this manner, you can meet stipulated standards and can responsibly accept the confidence of your customers.

# Highest purity? Anything but overconfident

Quality is a sensitive variable. This particularly applies where contamination sources occur in the system naturally. For example, during processing, compressed air always takes up certain amount of ambient hydrocarbon contamination.
The requirements for the absence of oil vary depending on the field of application. However, it is not unusual that processing to the highest level is required. In this exacting field, it is not sufficient to assume that your compressed air is clean: your customers expect the constantly high quality of your products.

At the same time you are usually obliged to provide evidence of compliance with the legally stipulated limit values. This is where the METPOINT® OCV from **BEKO** TECHNOLOGIES comes into its own: the TÜV-certified measurement instrumentation meets all the requirements of the measurement of gaseous residual oil and hydrocarbons within ISO 8573-1 of classes 1, 2, 3, and 4. Therefore, situation at the end of the process chain, METPOINT® OCV makes the quality of your compressed air visible.

## The METPOINT® OCV advantages at a glance

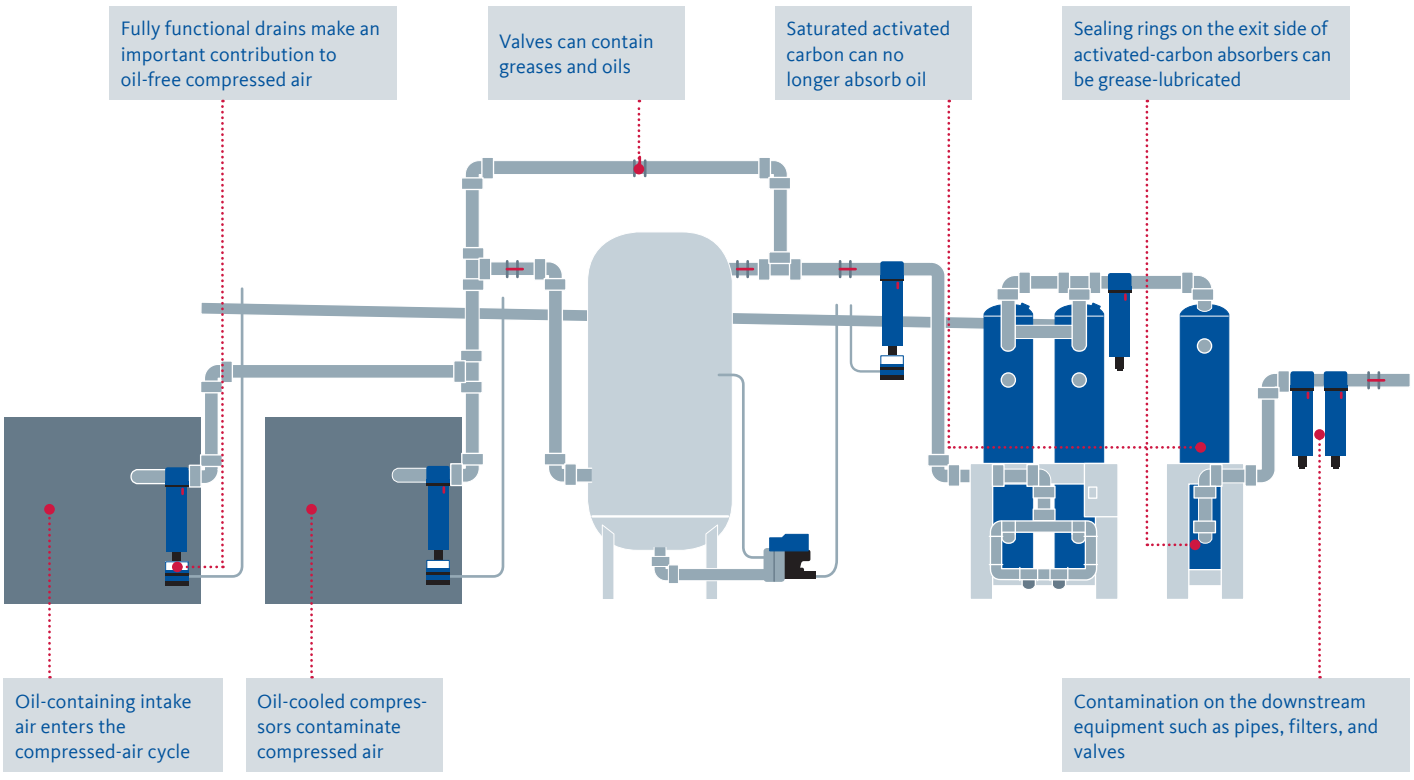
- **Continuous on-line measurement**
- **Easy data retrieval via the intuitive touch screen display**
- **Simple integration into a computer network with state-of-the-art IT connections**
- **Proven efficiency: TÜV certification in accordance with ISO 8573**


**Monitored oil-free status!** METPOINT® OCV is the first TÜV-confirmed online system in the world for the detection of the oil vapour content in compressed air and was certified by TÜV NORD in accordance with the requirements of ISO 8573.

# Contamination-free processes, contamination-free products METPOINT® OCV: for a clean conscience

At many points in the processing of compressed-air, there is the risk of contamination with hydrocarbons, particularly oil. In oil-injected compressors, oil vapour enters the compressed-air system as a result of the compression process. Further contamination can occur where oil and grease are employed as lubricants and sealing compounds . Even “oil-free“ compressors are no guarantor for “oil-free“ compressed air, since oil vapour already exists in the air that is drawn into the compressor. The vapour can be found in a concentrated form in the compressed air. Therefore, residual oil content cannot be avoided in standard applications. Where contaminants could enter a production process, then the company needs to be sure that accurate monitoring is in place to detect even the smallest traces of contamination. The METPOINT® OCV completely takes over the requirement to constantly monitor your compressed air and perform this task down to an accuracy of 0.001 mg/m³. The system ensures that you have contamination-free processes and therefore contamination-free products.

**Variables that influence the residual oil content of your compressed air:**
**Decisive parameters for the measurement with METPOINT® OCV**




# Air quality is not visible - but it is measurable

**The METPOINT® OCV continuously monitors and documents the residual oil content of the flowing compressed air. Even the smallest amounts of oil in the compressed-air will be detected and reliably determined. Time-intensive sampling and costly laboratory analyses are no longer required. The provided data gives early notice on the possible contamination of pipe-work and products. When critical points are reached in the system, you will be able to react immediately to deviations in a proactive manner. The METPOINT® OCV thus prevents damage to machines and plant, avoids high repair and reject costs and, not least, damage to products and therefore consumer confidence.**

**Highest compressed-air standard: reliable, measurable**

- Measurement of the residual oil content down to ranges of mere thousandths of mg/m³
- Continuous monitoring with the highest data precision
- Direct indication of deviations, short reaction times
- High benefit, low costs: pay back usually within the first year

The METPOINT® OCV protects your processes, the quality of your products and, therefore your company image and reputation.

**“The higher the demands are on the quality, the more serious even the slightest deviations will be. The METPOINT® OCV faces these demands with the highest precision.“**

As a partner for compressed-air processing, **BEKO** TECHNOLOGIES brings together practical requirements and technical possibilities. METPOINT® OCV offers precision measurement technology for all industrial sectors. We know: the higher the demands are on the purity of compressed air, the higher the requirements will be on the precision of the measurement equipment. Therefore, it was crucial to design sensors in such a manner that they work reliably in sensitive processes – for example in the food, pharmaceutical, electronics, and automotive industries. Through direct contact of compressed air with products, manufactured items are quickly contaminated: oil-containing compressed air becomes a risk for production plants, and even for health. The METPOINT® OCV gives you the ability to measure the safety of your compressed air at all sensivtive points in your production processes.

## Food industry

### Purity: for safe enjoyment

When it comes to food, hygiene is the primary requirement for ensuring the quality of processed products. Pneumatic processes and contactless transport of ingredients during food processing require absolutely clean compressed air. During filling, clean compressed air is just as indispensable as it is when, for example, glass bottles or plastic moulds are extruded using compressed air.
Our process technology allows for the made-to-measure processing of compressed air through the stages of condensate drainage, filtration, and drying. At the end of the process chain, METPOINT® OCV detects any vaporous residual oil content in the compressed air down to a range of thousandths of mg/m³.

## Pharmaceutical industry

### Purity: for stable recovery

In the production of pharmaceutical preparations, the strictest hygiene standards apply. This of course also applies to the compressed process air. The latter is usually employed in production of tablets: downstream of the tablet press, dust is removed using compressed air. It must be absolutely free from oil in order not to contaminate these sensitive products.

**BEKO** TECHNOLOGIES offers individual system solutions to prepare process air reliably free from oil. Evidence of hygienic safety is provided by the online quality monitoring system METPOINT® OCV.

## Automotive industry

### Purity: for a perfect finish

In no other field of the automotive industry are the demands on compressed-air quality as high as in the field of paint coating. The process air comes intensively into contact with the coating agent and the vehicle surface. Even the slightest contamination leads to costly imperfections in the surface finish of the vehicles. In this manner, enormous additional costs can arise in the production process.

Through the employment of water separators and fine filters for the separation of oil and ultrafine particles, BEKO products will optimally prepare the process air. Throughout the entire operating time of the painting plant, the METPOINT® OCV measures the residual oil content down to the range of a few thousandths of mg/m³.

## Electronics industry

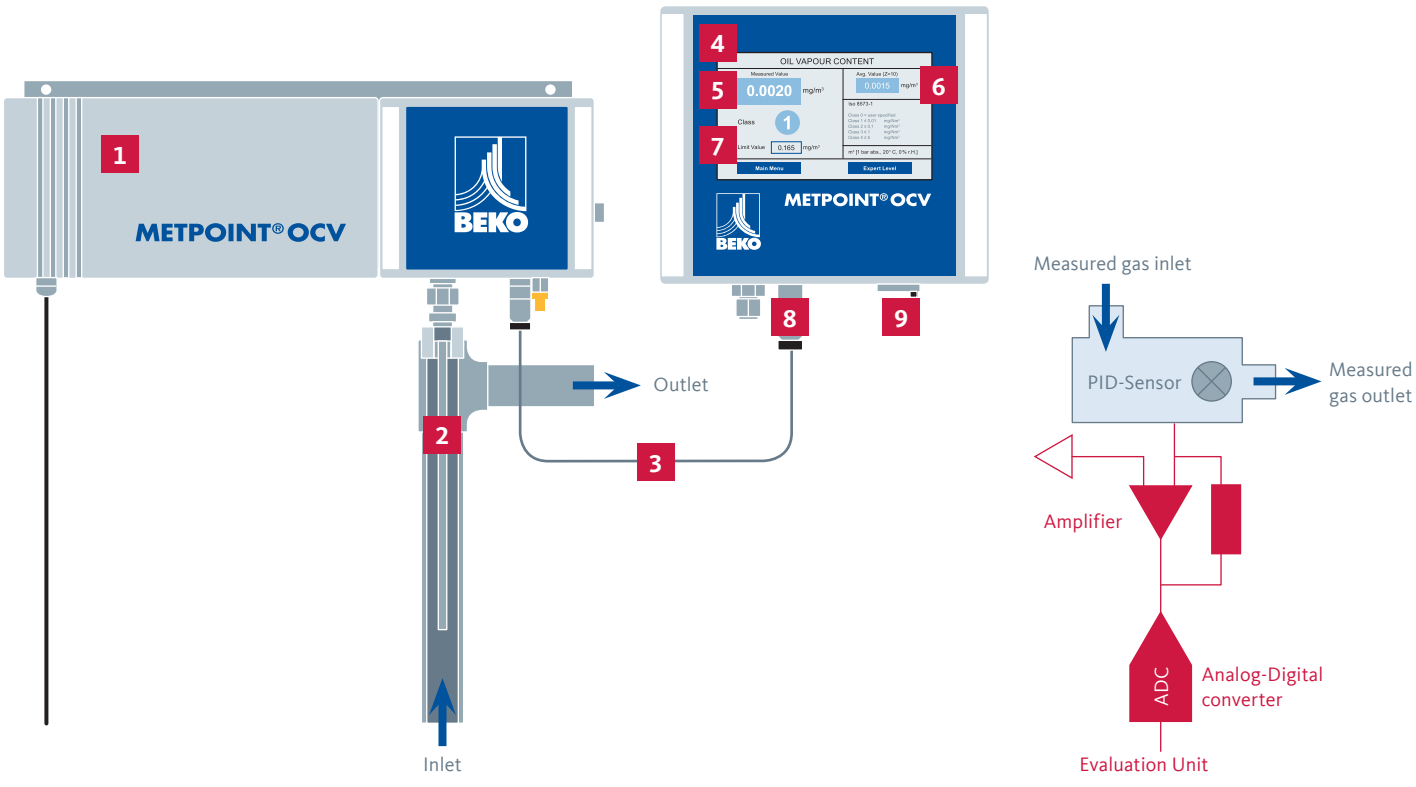
### Purity: for technology that works

In the electronics industry, compressed air is applied in diverse ways: as a transport and cleaning medium, or as an energy carrier for pneumatic tools. In every application, the demands on the purity of the compressed air are enormous. In the production of printed circuit boards, even the slightest contamination can lead to defective products and expensive reject rates. Absolutely oil-free compressed air ranks amongst the most important requirements for trouble-free manufacturing processese.

With optimally aligned system components, **BEKO** TECHNOLOGIES ensures perfectly processed compressed air over the entire process. The METPOINT® OCV continuously measures the vaporous residual oil content in the compressed air and makes quality visible.

# The principle of precision: the operating principle of the METPOINT® OCV

METPOINT® OCV detects and measures hydrocarbon vapours with a detection limit down to 0.0006 mg/m3. The measuring device consists of a sensor unit (1), a probe for the sampling (2), a signalling cable (3), and the evaluation unit with the touch screen display (4). Correct sizing of the sampling and measuring sections corresponds to the stipulations of ISO 8573. With the sampling probe (2), a partial volume flow is taken from the compressed air and supplied to the sensor unit during the measurement. Here, a photoionisation detector (PID) measures the hydrocarbon content by exposing the airflow to UV radiation. Wherever UV radiation comes into contact with hydrocarbon particles, it will ionise them, whereupon the particles become electrically conductive. This ionisation flow is then exactly measured where its strength proportionally corresponds to the hydrocarbon content. The result appears as a calculated numerical value on the touch screen display (5). Here, it is also possible to have the average of the past 10 measurements (6) and the limit value (7) also displayed. When this freely programmable value is exceeded, an alarm is triggered. In addition, the unit has a signalling cable (8) and an Ethernet interface (9). With its internal 2 GB of memory a recording capacity of up to 10 years of saved measuring results is available.




# Seamless transparency for the entire process chain

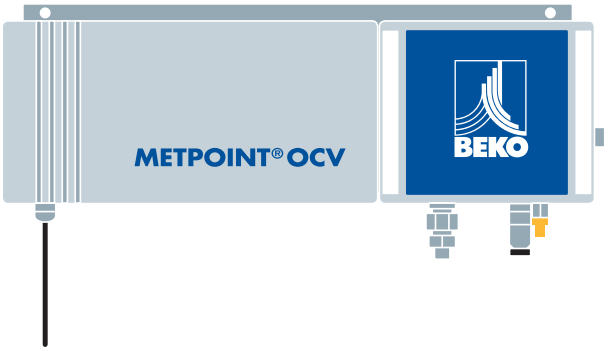
**METPOINT® types and applications**

In addition to the residual oil content, there are further variables influencing the efficiency of your processes and the quality of your compressed air. Humidity can cause severe consequential damage to production plants. Overload as a result of air velocities that are too high, and also or leaks, can decisively impair the profitability of the plant. The measurement instrumentation from **BEKO** TECHNOLOGIES supplies reliable data for the assessment and assurance of the compressed-air quality as well as for the identification of hidden cost drivers. The continuous monitoring of the compressed-air parameters offers process safety and serves to sustainably reduce the production costs. We understand the requirements for measurement technology in all aspects of compressed air processing

**Discover your possibilities:**

- **METPOINT® DPM** allows for continuous moisture monitoring
- **METPOINT® FLM** measures the volume flow
- **METPOINT® LKD** precisely and quickly detects every leak
- **METPOINT® PRM** offers perfect pressure monitoring
- **METPOINT® MMA** monitors the quality of breathing air
- **METPOINT® BDL** BEKO data logger

# METPOINT® OCV-Sensor-Unit

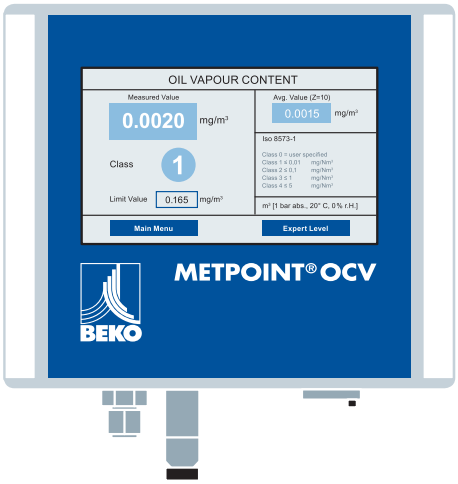



| Operation conditions | |
|---|---|
| Measuring-gas humidity | < 40 % rel. humidity, PDP max. +10°C |
| Operating pressure | 3 bar [g] ... max. 16 bar [g] |
| Ambient temperature | +5 ... +45 °C |
| Compressed air temperature at the inlet | +5 ... +55 °C |

* Other operating pressures on request

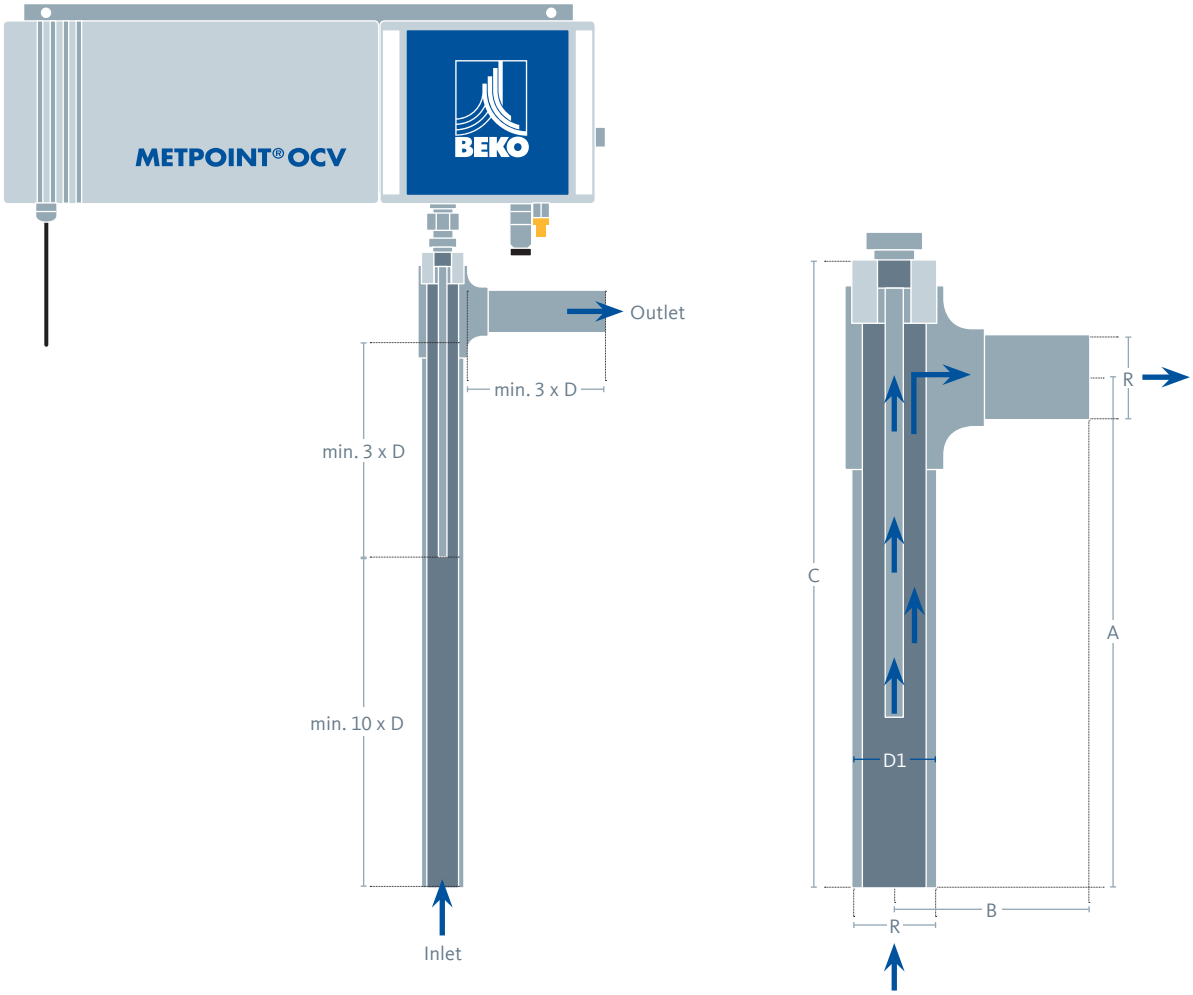
| Technical Data | |
|---|---|
| Dimensions (mm) | 487 x 170 x 120 (width \| height \| depth ) |
| Power supply | 230 VAC 50 Hz ±10 % or 115 VAC 60 Hz ±10 % |
| Medium | Compressed air free from aggressive, caustic, toxic, inflammable and fire-promoting components |
| Identifiable substances | Polyalfaolefins, aromatics, aliphatic hydrocarbons, hydrocarbons, functional hydrocarbons |
| Measurand | Residual oil content mg/m³ (based on standard cubic metres in accordance with ISO 1217; 1 bar, 20 °C, 0 % relative humidity) |
| Measuring range | ≤ 0,01 ... 5.000 mg/m³ residual oil content (according to ISO 8573-1) |
| Measurement accuracy | 0,003 mg/m³ |
| Detection limit (residual oil) | 0,0006 mg/m³ |
| Connection | G⅜" internal thread, please observe installation instructions |
| Installation requirements | Vertically in the rising main with an oil and grease free measuring section |
| Inlet zone | 10 x DN (min. 200 mm) / according to ISO 8573-2 |
| Outlet zone | 3 x DN (min. 100 mm) / according to ISO 8573-2 |

# METPOINT® OCV-evaluation unit




| Technical Data | |
|---|---|
| Operating temperature (°C) | +5 ... +50 |
| Storage temperature (°C) | +5 ... +50 |
| Dimensions (mm) | 230 x 200 x 120 (width \| height \| depth) |
| Outputs | Potential-free change-over contact, 230 VAC 5A or 30 VAC 2A, Analogously 4 ... 20 mA possible option, Ethernet interface |
| Power supply | 230 VAC 50 Hz or 110 VAC 60 Hz |
| Memory | 2 GB internal memory |

# METPOINT® OCV-Measuring section




| Measuring section | DN 20 ¾" | DN 25 1" | DN 32 1¼" | DN 40 1½" | DN 50 2" | DN 65 2½" | DN 80 3" |
|---|---|---|---|---|---|---|---|
| Type | MS-2016 | MS-2516 | MS-3216 | MS-4016 | MS-5016 | MS-6510 | MS-8010 |
| PN (bar [g]) | 16 | 16 | 16 | 16 | 16 | 10 | 10 |
| A (mm) | 430 | 480 | 550 | 600 | 905 | 1105 | 1155 |
| B (mm) | 120 | 120 | 130 | 180 | 190 | 260 | 320 |
| C (mm) | 475 | 530 | 610 | 670 | 980 | 1220 | 1270 |
| R | R¾" | R1" | R1¼" | R1½" | R2" | R2½" | R3" |
| D1 (ø mm) | 26,9 x 2,6 | 33,7 x 3,6 | 42,4 x 3,6 | 48,3 x 3,6 | 60,3 x 3,6 | 76,1 x 3,6 | 88,9 x 4,0 |

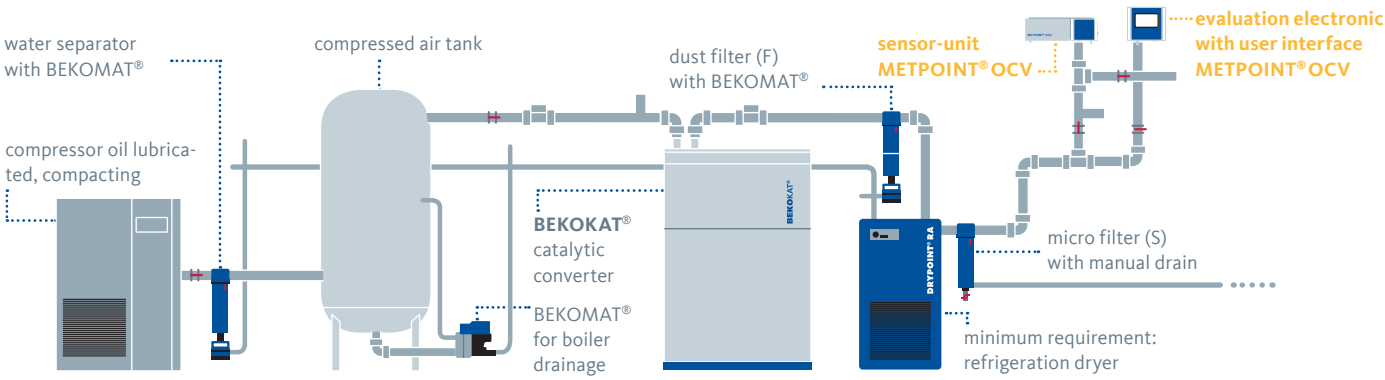
| Technical data | |
|---|---|
| Material | stainless steel oil- and grease-free |
| Connection for sampling probe E | ⅜" internal thread oil-free |
| Withworth tapered pipe thread | DIN 2999 |

# Quality with a system. Worldwide

We at **BEKO** TECHNOLOGIES develop, manufacture and distribute products and systems for an optimised compressed-air and compressed gas quality throughout the world. From the processing of compressed air and compressed gas through filtration and drying, via the proven condensate technology to instruments for the quality supervision and measurement. From the small compressed-air application to demanding process technology.

Since its founding, **BEKO** TECHNOLOGIES has continuously given decisive impulses to compressed-air technology. Our pathbreaking ideas have exerted considerable influence on the development. In order to keep this going, more than 10% of our employees work in the field of innovation. With this potential and with our personal commitment, we at **BEKO** TECHNOLOGIES stand for trend-setting technologies, products and services.

**METPOINT® OCV in compressed air system: Installation example with BEKOKAT®**




# The product and system categories

**Condensate drainage** | BEKOMAT®

**Filtration** | CLEARPOINT®

**Measurement technology**
METPOINT®

**Condensate processing**
ÖWAMAT® | BEKOSPLIT®

**Drying** | DRYPOINT® | EVERDRY®

**Process technology**
BEKOBLIZZ® | BEKOKAT®

**METPOINT® OCV** – measurement technology for monitoring, control and optimization of the compressed air system

**BEKO TECHNOLOGIES GmbH**
Im Taubental 7 | D-41468 Neuss

**Zentrale:** Fon +49 2131 988-0 | Fax +49 2131 988-900
**Vertrieb:** Fon +49 2131 988-1000 | Fax +49 2131 988-912
info@beko-technologies.com
www.beko-technologies.com

BLUECOMPETENCE Alliance Member
Partner der Nachhaltigkeitsinitiative des Maschinen- und Anlagenbaus

XPMO 002 INT | Stand 2013-09