



PCS Polytec Compact Spectrometer
Inline near-infrared spectrometer
for process control
Product brochure



Inline process control for cost-efficient production

Measuring parameters:

- Moisture content
- Fat / Oil content
- Starch
- Ash
- Sugar
- Protein content
- Salt
- and more

Process applications:

- Conveyor belt
- Pipeline
- Storage container
- Hopper
- and more

Increase your productivity and reduce the costs of continuous quality inspection.

With the PCS system, the precise real-time monitoring minimizes process deviations, ensures compliance with product specifications and improves consistency and quality. This reduces scrap and rework costs, resulting in significant savings and a fast return on investment (ROI) with the PCS system.



Food

Control of formulation, mixing and drying processes through real-time measurement of typical, product-relevant parameters



Animal feed and pet food

Monitoring moisture, protein and fat in the production of pet food



Snacks

Optimize the addition of flavours and salt in the production of fried food to save on expensive ingredients



Dairy products

Measurement of moisture in frying oil and butter production or process optimization for milk powder production



Grain processing

Monitoring of gluten and starch separation to maximize yield, regulation of the ash content to improve product quality

Your 5 advantages of our single-point NIR solution

The compact, modular and cost-effective NIR spectrometer is the perfect choice for your process applications. Its versatile sensors to production tasks increase productivity, simplify quality control and optimize integration – even in demanding industrial environments.

Fully automatic Measurements in the 24/7 production Process



for continuous quality control.



Increased productivity

through the fastest NIR measurements in the industry.



Reliable results

in the toughest industrial environments with IP66 and IECEx.



Unbeatable price-performance ratio

for Single-point measurements ensures rapid amortization of the investment.



Simplest System integration

with the most compact and modular dispersive NIR process spectrometer.

PCS: Our compact spectrometer for optimum process control

The Polytec PCS is a cost-efficient and reliable NIR spectrometer that is equipped with more than 40 scans per second enables precise, automated process control. It measures parameters such as moisture, oil content, protein/protein content, fiber content, starch and ash content, even in low concentrations.

Automatic calibration and referencing of sensors for maximum accuracy and reliability.

Robust industrial design for use in harsh conditions. Protected against dust, vibration, temperature fluctuations and moisture.

High-speed measurements (> 40 scans/sec.) for more homogeneous measurement results and more stable analyses.

Real-time monitoring for immediate process optimization.

Flexible use of measuring units depending on the task and installation requirements.

Seamless integration into existing process control systems such as Modbus, Ethernet, OPC-UA.

PCS

Polytec Compact Spectrometer





High-quality optical components make the PCS robust against environmental influences such as vibrations, temperature fluctuations and humidity. The system performs automatic dark correction with the aid of a physical shutter, ensuring high precision and long-term stability in 24/7 operation.

Parameters	
Size	280 x 180 x 101 mm
Weight	5.3 kg
Measuring heads	approx. 3.5 kg
Ambient temperature	+5 ... 40° C
Spectral range	950 nm - 1700 nm
Connections	SMA fiber optic connection with protective conduit fitting
Interfaces	Ethernet, OPC, Modbus
Protection class	PCS module IP66

* Abhängig von Sensorkopf / Anwendungsanforderungen

Compact, reliable measuring heads for optimum process integration

Distance measuring head – Probe for Non-contact measurements



Reflectance probe for measurements above conveyor belts and endless conveyors

Combined lighting and sensor unit for distances from 100 to 500 mm.

- Automatic system referencing
- 20 mm measuring spot size
- Integrated 20 W tungsten halogen light source for sample illumination
- SMA 905 fiber optic connection
- Industrial protection class IP64
- Housing made of stainless steel or anodized aluminium

Contact probe – Probe for measure- ments over short dis- tances



Reflectance probe for measurements on pipes, chutes, hoppers or storage tanks

Combined lighting and sensor unit for distances from 0 to 50 mm

- Automatic system referencing
- Integrated 10 W tungsten-halogen light source for sample illumination
- ATEX and IECEx 
- SMA 905 fiber optic connection
- Industrial protection class IP66 / IP68
- Stainless steel or anodized aluminium case with sapphire window
- Process-optimized flange and adaptation interfaces

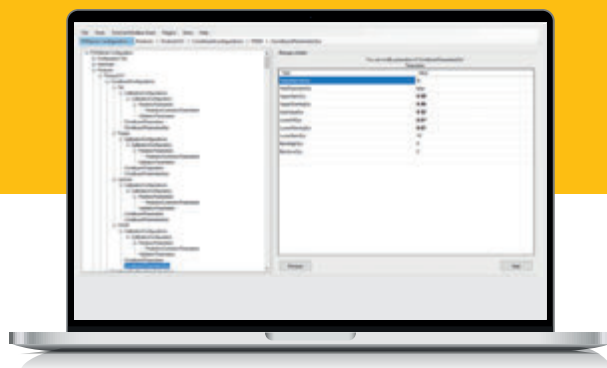


Easy to integrate

The measuring heads are easy and reversible integrated into the production process using adapters and flanges. Various brackets are available for the distance measuring head, allowing users to install the measuring head at the optimum distance from the material to be analyzed above the conveyor belt. For applications on pipelines using the contact sensor, they connect the measuring head with tri-clamp flanges. Various connection systems with hygienic designs are available.

Integrated data analysis system with user-friendly software

Polytec can supply the PCS with a fully integrated data analysis system. Together with the pre-installed software for quantitative analyses with a graphical user interface, the generated measurement data can be called up at any time. Individual product parameters are displayed visually, and deviations can be seen in the trend chart.



PAS-GUI

The process software with graphical interface enables the display and evaluation of analysis results in real time.

- Designed for simultaneous analysis of multiple measuring points in the processes.
- Real-time display of measurement results with trend chart
- Display of analysis results with automatic warning if limit values are exceeded
- Online adaptation of the calibration curve using inclination and slope (Bias & Slope)
- Various trigger modes and server functionality
- Access to all previous measurement and reference results as well as data export and report functions

PAS-SERV

The PAS SERVER software package is used for routine inline analysis in process environments.

- Fully automatic system operation
- Various user interfaces (clients or via PLC)
- Sophisticated data pre-treatment
- Chemometric standard predictions (DLL)
- Warning and alarm thresholds
- Supports numerous analog and digital PLC interfaces



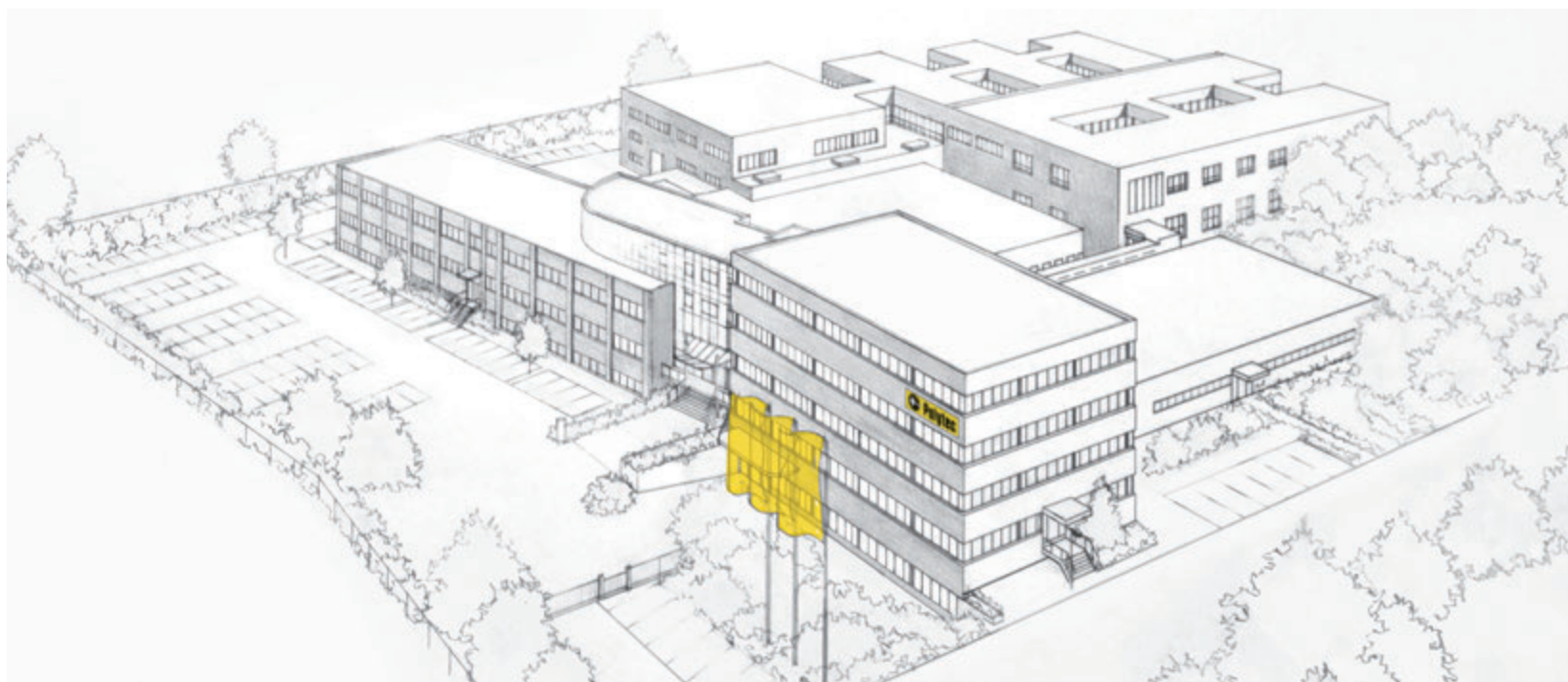
Remote Control

The system status is displayed via the remote-control. Self-test functions and integrated sensors in the PCS base module provide up-to-date data on the system status, which is displayed via color-coded LED indicators on the panel. An additional trigger function sends sampling information to the software, allowing the user to take a sample from the running production, which is used to reference and adjust the calibration. The associated reference spectrum is stored separately from the measurement data and can be easily extracted by the PCS for data pre-processing. The remote control is placed directly at the sampling point.



Data transmission

Standard communication interfaces and protocols such as Ethernet, MODBUS and OPC client are available to transfer generated measurement data from the PCS to a process control environment.



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