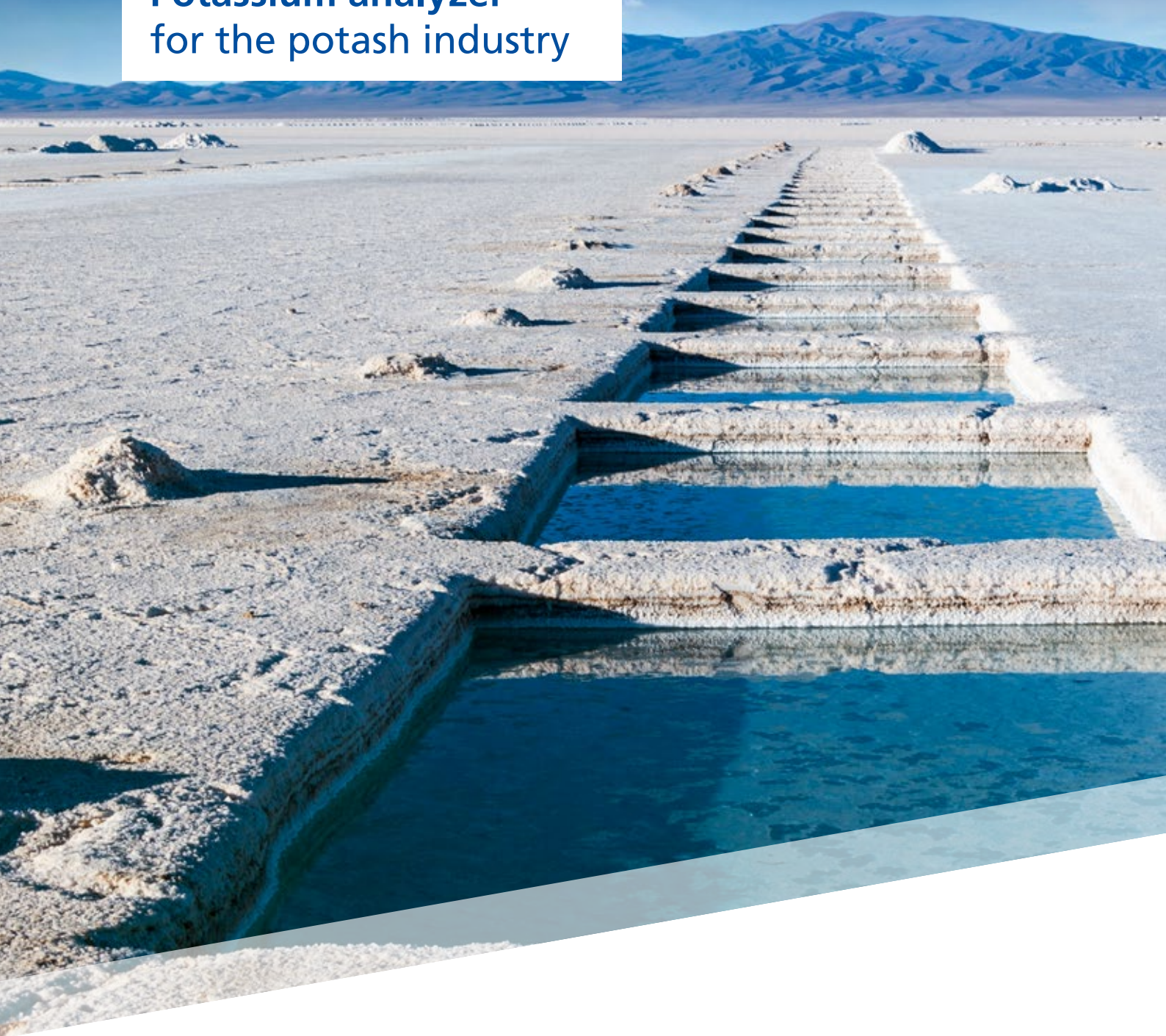


# POTASSIUM CONTENT MEASUREMENT

Potassium analyzer  
for the potash industry



 **BERTHOLD**



# MEASURING THE POTASSIUM CONTENT

Potassium content measurement for the potash industry is one of the most difficult and challenging measurements in the mining industry. It is however essential in the potash production process.

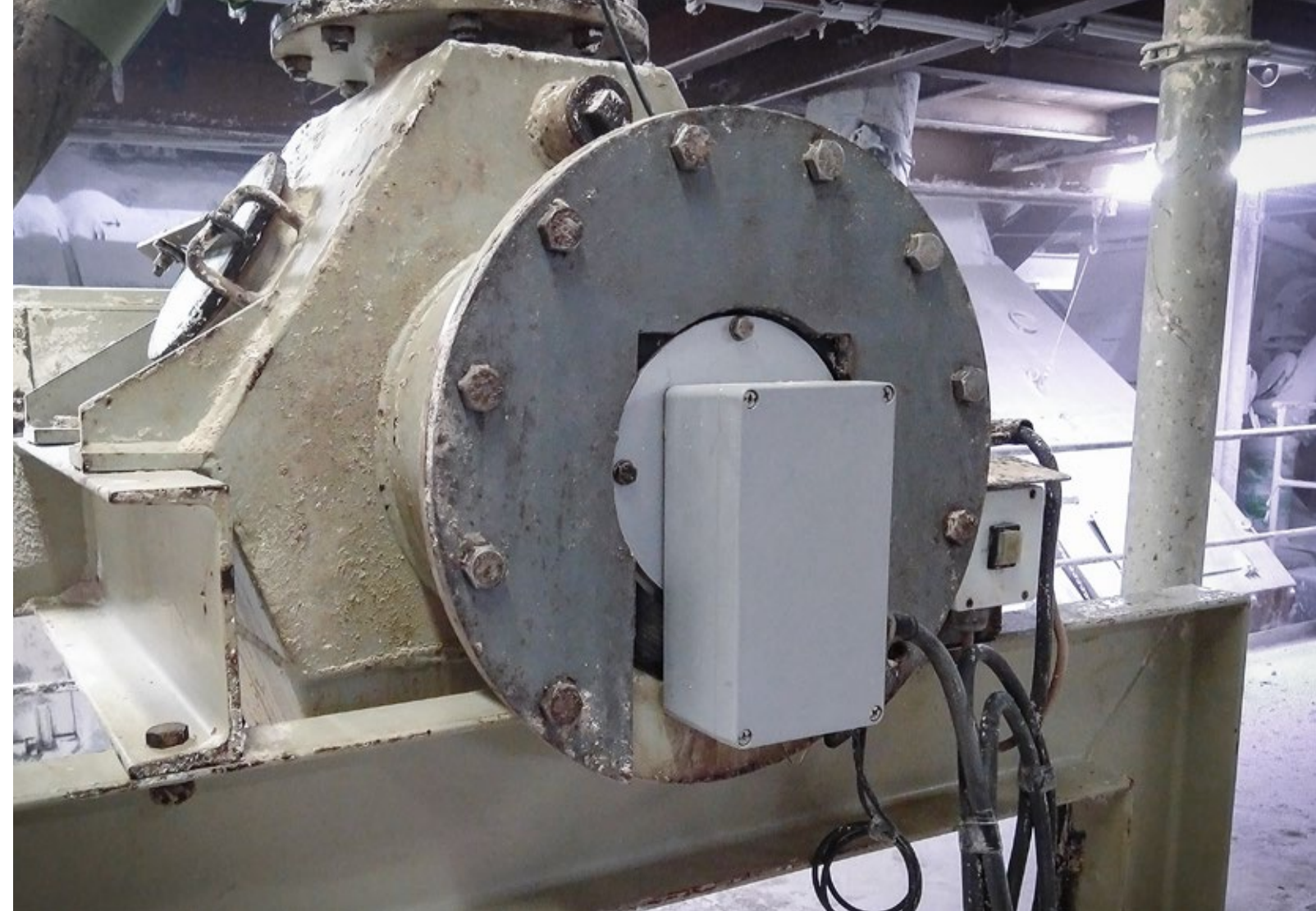
Potassium contains the radioactive isotope K-40. This isotope is only found in extremely small quantities in the ore itself. The detection of the K-40 requires an extremely sensitive and superior stable measurement system, which must be capable to suppress the inherent background radiation in order to obtain an optimal signal-to-noise ratio. Through the detection of K-40, the concentration of  $K_2O$  or  $KCl$  can be measured. Berthold has the perfect solution for the challenging task providing accurate potassium measurements with the potassium analyser LB 474.

The system is non-contacting, which virtually eliminates maintenance and costly downtime. Applying highly sensitive, stable and rugged detectors is fundamental for achieving a precise measurement. The LB 474 potassium analyser uses three different types of detectors depending on the process conditions and the mechanical arrangement.

When maximum sensitivity is required, Berthold's SuperSENS detector is used. Due to its compact design this is the ideal solution for maximum sensitivity.

For surface mounted applications on vessels or belts typically maximum sensitivity combined with high stability is required. Here Berthold's dedicated potassium detector with its large 125/50 CrystalSENS is the preferred solution.

For tanks with suspension, the better solution is an immersion tube installed in the center of the tank. In the immersion tube you can either install the immersion type of the SuperSENS or, if immersion tubes with smaller diameters are required, Berthold's 50/50 CrystalSENS is the right choice. The signal-to-noise ratio of this arrangement is unrivalled and therefore offers unmatched accuracy and measurement stability.



## Advantages

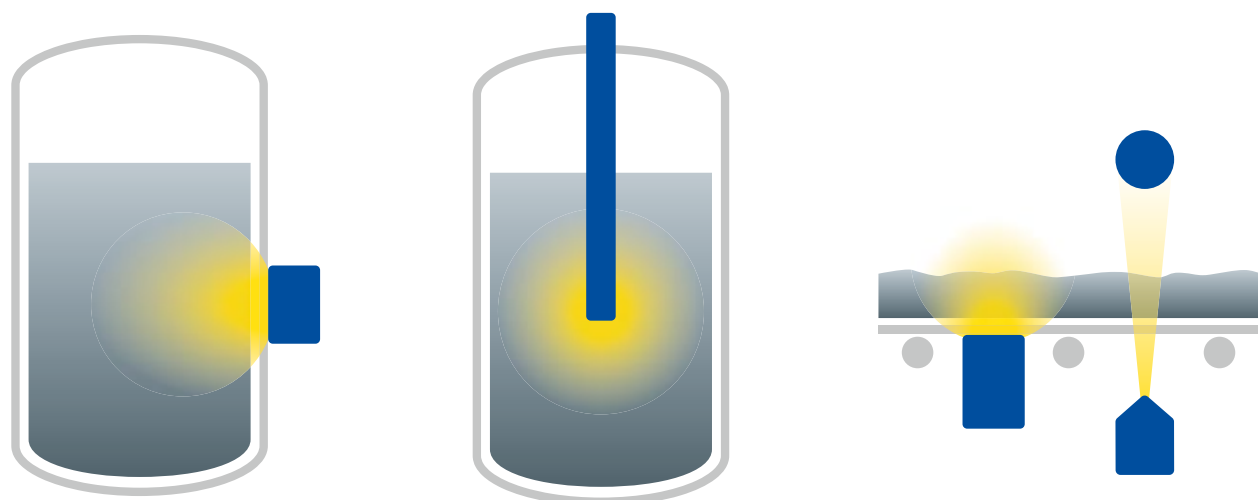
- Outstanding sensitivity
- Proven industrial measurement technology
- Real-time measurement during running operation
- High measurement stability through patented gain control
- No wear as measurement is contactless
- Easy installation on existing vessels

## Features

- Online display in  $\%KCl$  or  $\%K_2O$
- Enhanced diagnostics
- Event log, change and data log
- Various menu languages
- Installation in wall housing or 19" frame
- Detectors available in stainless steel
- Optionally with HART connection
- NRTL approval

## LB 474 Potassium Analyzer

An easy to use electronics interface provides real time measurement readouts in  $\%KCl$  provided online as 4...20 mA current output



**Surface mount probe**  
Accuracy approx.  $\pm 0.05\% K_2O$

**Insertion into dip tube**  
Accuracy approx.  $\pm 0.045\% K_2O$

**Conveyor belt mounting**  
Accuracy approx.  $0.5 \dots 0.7\% K_2O$   
belt load dependent





## THE EXPERTS IN MEASUREMENT TECHNOLOGY

Berthold Technologies stands for excellent know-how, high quality and reliability. The customer is always the focus of our solution. We know our business!

Using our varied product portfolio, our enormous specialized knowledge and extensive experience, we develop suitable solutions together with our customers for new, individual measurement tasks in a wide variety of industries and applications. Berthold Technologies is specialised in radiometric process measurements for 70 years. This is our core competence with state-of-the-art and cutting edge products and solutions covering a vast range of industries and applications.

### **We are here for you – worldwide!**

The engineers and service technicians from Berthold Technologies are wherever you need them. Our global network assures you fast and above all competent and skilled assistance in case of need. No matter where you are, our highly qualified experts and specialists are ready and waiting and will be with you in no time at all with the ideal solution for even the most difficult measurement task.

**Berthold Technologies GmbH & Co. KG**

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