

HUMIDITY MEASUREMENT IN BLAST FURNACE GAS



With the EE31-MFT with pressure-proof probe, stainless steel sinter filter and sensor coating, E+E Elektronik provides the optimum solution for this application.



Measurement setup

Measurement of the absolute humidity in blast furnace gas is necessary to determine its heating value for further use. Blast furnace gas is a by-product of blast furnaces and is produced by the reduction of iron ore to metallic iron.

Using ball valve measuring systems the pressure and temperature of the medium changes frequently, which has a direct effect on the absolute humidity.

Blast furnace gas consists of about 45-60% nitrogen; 20-30% carbon monoxide, 20-25% carbon dioxide, 2-4% hydrogen and a little methane. Because of its high nitrogen content, blast furnace gas has a very low heating value (approx. 93 BTU/ft³), but in spite of this it is used as a fuel in steel plants.

To determine the heating value, the blast furnaces are equipped with ball valve measuring stations to analyze the gas. In addition to the measurement of CO, CO₂, H₂ and CH₄, determining the absolute humidity is decisively important for determining the heating value.

• Application conditions

Measurement range: 0 - 300 g/m³, typical measurement value: 10 g/m³
Output: 4..0000.20 mA
Operating temperature: ~ 20 °C
Operating pressure: ~ 70 bar vacuum

• E+E Product



EE31-MFT

Humidity measuring transducers for high-humidity and chemical applications

High accuracy measurement of relative humidity, dewpoint and temperature even with high humidity close to the condensation point or with high levels of chemical contamination.