

TruServices

## Monitoring for TruPrint



### Intelligent digitalization for your additive manufacturing system



#### Keeping an eye on everything

Using production key figures and condition monitoring to keep an overview of your equipment



#### Produce reliably and cheaply

Early error detection and notification enable a fast reaction



#### Increased efficiency

Optimize your processes long-term with better transparency



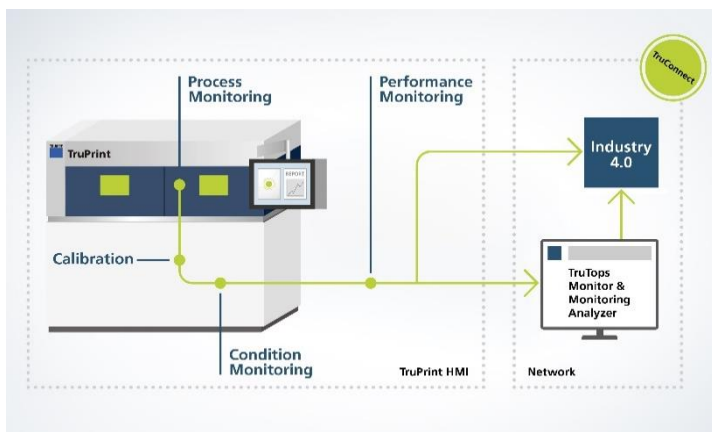
#### Quality verification

Benefit from information available for verification of build part quality



#### Individual analysis

Only view the key figures relevant for your build job and analyze these



## Efficient production thanks monitoring

Our intelligent monitoring solutions enable you to easily monitor, analyze and calibrate the LMF process in TruPrint machines. You can then produce even more efficiently and achieve higher component quality.

**Monitoring solutions** This includes the solutions Process, Condition and Performance Monitoring. The results are displayed directly on the HMI and evaluated offline.

With TruTops Monitor you not only get access within the network but also the possibility of remote access to the machine.

Alternatively you can use the standardized OPC UA Monitoring interface for the connection to your own software.

## Process Monitoring

Verification of build part quality

Process Monitoring focuses on the build process. **Powder Bed Monitoring** monitors the powder bed during the scanning process. This provides monitoring of the build part quality - layer-by-layer. Fast automatic error identification increases production efficiency. An integrated high-resolution camera and automatic image processing monitor the powder bed and enable a precise view of each powder layer. Missing powder is detected by the automatic recoating option and the affected layer is automatically corrected by a new powder recoating. With the **Melt Pool Monitoring** the melting pool of each laser is monitored by means of sensors. This allows you to detect process deviations at an early stage and visualize critical areas on the parts. Benefit from a detailed quality check and documentation layer by layer. The data can be evaluated with the Monitoring Analyzer.

## Condition Monitoring

Maintaining an overview of the machine conditions and process environment

A wide variety of data concerning the current condition of the TruPrint machines is gathered by Condition Monitoring. This is documented and can be used for quality control purposes. Analyze only information that is relevant for the application. Indicators for the build chamber such as moisture and protective gas speed, or for the ambient conditions such as temperature or oxygen level are recorded.

## Performance Monitoring

Generating productivity analyses and individual reporting

Use Performance Monitoring to keep an overview of all of the key productivity figures, status and consumption data for the TruPrint machine. Assess the machine performance right at the machine HMI and benefit from the complete overview of the LMF process. The key figures help to achieve profitable production. For every build job, you can configure an individual report and have it displayed at the HMI.

## Connectivity

Flexibility by monitoring in the network

TruTops Monitor provides not only transparency but also remote access via PC or tablet. Analysis of live machine data and machine utilization reports will enhance your industrial additive manufacturing operations. Error notifications via e-mail allow you to adapt your process as quickly as possible. Furthermore, an OPC UA interface provides full flexibility to connect to your own software solution or use the monitoring file interface for the automatic export of monitoring data to your file system.



## Calibration

Verifying machine performance

Various options are available for your TruPrint to meet verification requirements. Laser power calibration, which is also for multilasers, focus position measurement and scan field calibration, enables you to measure, recalibrate when necessary, and document your measurement results.

This product range and information may vary depending on the country. Please get in touch with your local contact person, if the product is available in your country.