FH6D | Optical Seam Measurement

The FH6D sensor is designed to measure the position of features or seams before they are processed. It can be used to measure the position of seams ('Finding') in laser and arc welding processes and can also be used in other industrial applications such as sealing or adhesive application. The FH6D is used to measure the position of the feature and then transfer the measured position to the controller.

Triangulation sensor - optical position measurement

FUNCTION DESCRIPTION

The optical triangulation sensor measures the shape of the seam at the joint or feature. It then uses advanced algorithms to measure the position of the seam or feature and then transmits this information, along with information such as the gap and orientation of the surface to the robot controller. The sensor is robust and designed for industrial use. It includes a filter for reducing extraneous light that helps ensure the sensor operates correctly when working very close to bright processes and has powerful signal processing features to improve its performance on reflective surfaces.

AREAS OF APPLICATION

- Automated production processes: welding, adhesives, sealant, etc.
- Interfaces:
  - FANUC
  - KUKA
  - Universal machine interface using XML/UDP
  - Universal analogue / digital machine interface

PROPERTIES

- Seam detection of standard joint types (e.g. fillet or T-joint)
- Measurement of deviations in the workpiece
- Applicable to all popular materials and also reflective surfaces.
- Immune to electromagnetic effects (EMI)
- Optical filters to minimize sensitivity to extraneous light
- Spatter shield with quick change protective window
- Splash-proof housing
- Air cooling integrated into the sensor head

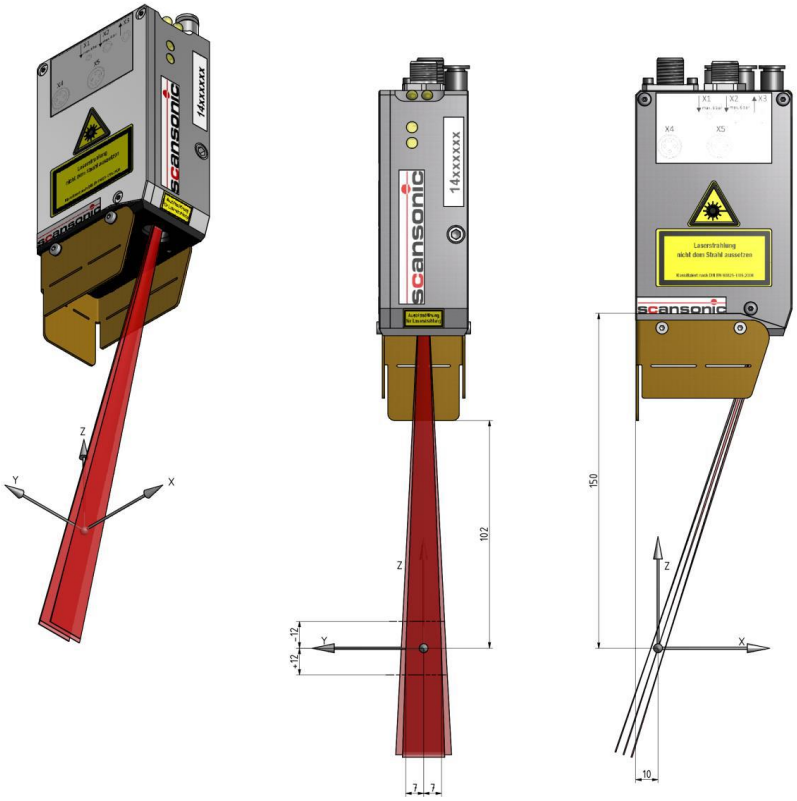
ADVANTAGES

- High reliability by use of state-of-the-art camera technology
- Works with reflective surfaces such as stainless steel or aluminium
- Three laser lines to ensure excellent measurement stability
- Simple to operate

FH6D with welding torch

TECHNICAL DATA

Model	FH6D-150-CFAE
Measuring lines	3
Measuring range (W x H)	16 mm x 24 mm
Resolution at TCP	0.03 mm x 0.07 mm
Working distance sensor head to workpiece (z = 0 mm)	150 mm
Working distance from sensor edge rear side (x = 0)	10 mm
Work area in Y around TCP (Z = 0 mm)	± 7 mm
Workspace in Z around TCP (Y = 0 mm)	± 12 mm
Work area in Y (at Z = -12)	± 6,5 mm
Work area in Y (at Z = 12)	± 7,5 mm
Operating Temperature Range	+10°C to +45°C
Laser Power	50mW
Laser Safety Class	3R
IP Protection Class (with connectors mated)	IP64
Dimensions	70 x 40 x 100 mm
Mass	0.53 kg



Model	FH6D-150-KFAE
Measuring lines	3
Measuring range (W x H)	55 mm x 80 mm
Resolution at TCP	0.08 mm x 0.12 mm
Working distance sensor head to workpiece (z = 0 mm)	150 mm
Working distance from sensor edge rear side (x = 0)	10 mm
Work area in Y around TCP (Z = 0 mm)	± 27,5 mm
Workspace in Z around TCP (Y = 0 mm)	± 45 mm
Work area in Y (at Z = -12)	± 20 mm
Work area in Y (at Z = 12)	± 35 mm
Operating Temperature	+10°C to +45°C
Laser Power	50mW
Laser Safety Class	3R
IP Protection Class (with connectors mated)	IP64
Dimensions	70 x 40 x 100 mm
Mass	0.53 kg