

TH6D | Optical Seam Tracking

The TH6D is designed for optical seam tracking – following a seam or feature and correcting for variations in the part position while welding. The sensor is suitable for laser or arc welding and also supports tracking while sealing or during adhesive application. The active seam recognition can continuously detect the position of the workpiece and thus ensures that the tool is positioned accurately all the way along the seam.

FUNCTION DESCRIPTION

The optical triangulation sensor measures the shape of the seam. 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 to reduce extraneous light that helps to ensure that operations proceed properly when working very close to the process. Reliable seam tracking is supported by a powerful signal analysis feature, which is especially useful on reflective surfaces.

AREAS OF APPLICATION

- Automated production processes: welding, adhesives, etc.
- Interfaces to all popular robot controllers
- Universal analogue / digital machine interface available

PROPERTIES

- Seam tracking for standard joint types (e.g. fillet or T-joint)
- Active seam tracking for deviations in the workpiece
- Applicable on 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



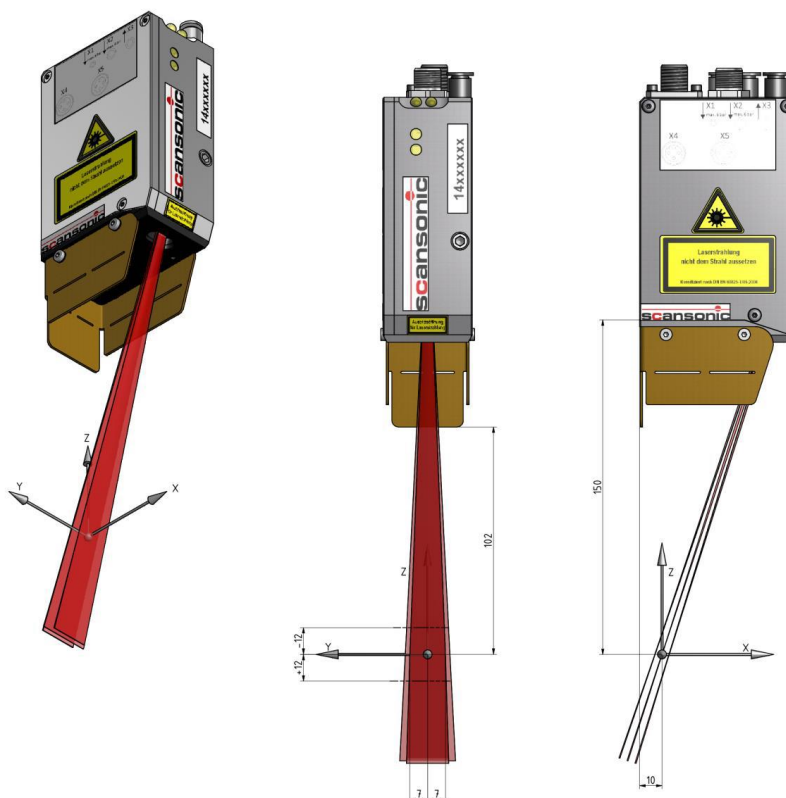
Seam tracking sensor using optical triangulation



TH6D mounted for seam tracking

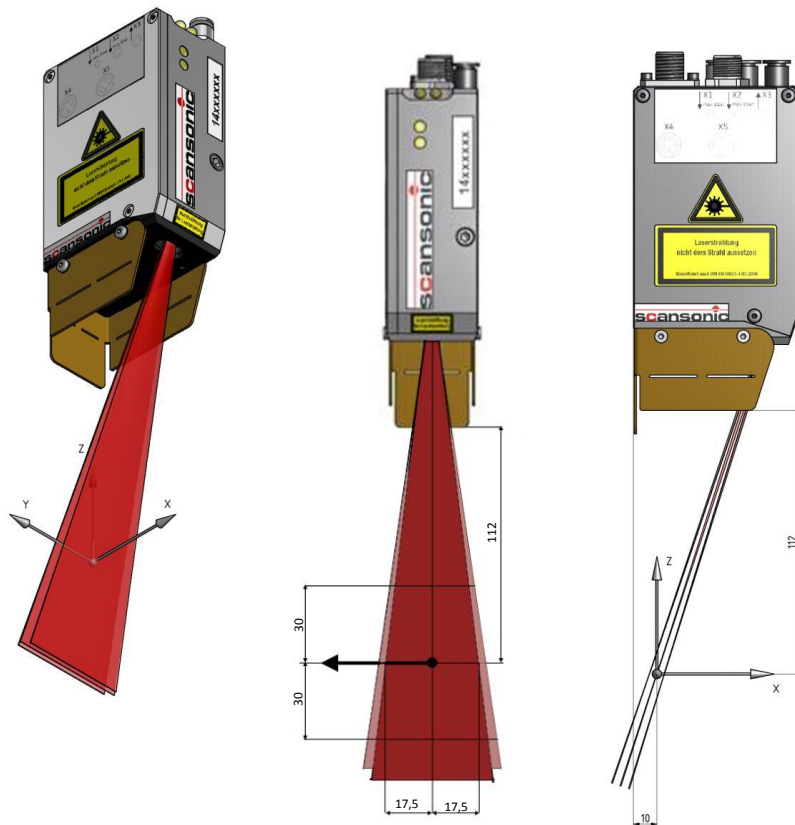
TECHNICAL DATA

Models	TH6D-150-CFAC	TH6D-150-CFMC
Measuring lines	3	3
Measuring range (W x H)	16 mm x 24 mm	16 mm x 24 mm
Resolution at TCP	0.03 mm x 0.07 mm	0.03 mm x 0.07 mm
Working distance sensor head to workpiece (z = 0 mm)	150 mm	150 mm
Working distance from sensor edge rear side (x = 0)	10 mm	10 mm
Work area in Y around TCP (at Z = 0 mm)	± 7 mm	± 7 mm
Workspace in Z around TCP (at Y = 0 mm)	± 12 mm	± 12 mm
Work area in Y (at Z = -12)	± 6,5 mm	± 6,5 mm
Work area in Y (at Z = 12)	± 7,5 mm	± 7,5 mm
Measurement rate	60 Hz	60 Hz
Operating Temperature	+10°C to +45°C	+10°C to +45°C
Laser Power	50mW	130mW
Laser Safety Class	3R	3B
IP Protection Class (with connectors mated)	IP64	IP64
Dimensions	70 x 40 x 100 mm	70 x 40 x 100 mm
Mass	0.53 kg	0.53 kg





Models	TH6D-150-GFAC	TH6D-150-GFMC
Measuring lines	3	3
Measuring range (W x H)	35 mm x 60 mm	35 mm x 60 mm
Resolution at TCP	0.06 mm x 0.10 mm	0.06 mm x 0.10 mm
Working distance sensor head to workpiece (z = 0 mm)	150 mm	150 mm
Working distance from sensor edge rear side (x = 0)	10 mm	10 mm
Work area in Y around TCP (at Z = 0 mm)	± 17,5 mm	± 17,5 mm
Workspace in Z around TCP (at Y = 0 mm)	± 30 mm	± 30 mm
Work area in Y (at Z = -12)	± 11,5 mm	± 11,5 mm
Work area in Y (at Z = 12)	± 18,5 mm	± 18,5 mm
Measurement rate	60 Hz	60 Hz
Operating Temperature Range	+10°C to +45°C	+10°C to +45°C
Laser Power	50mW	130mW
Laser Safety Class	3R	3B
IP Protection Class (with connectors mated)	IP64	IP64
Dimensions	70 x 40 x 100 mm	70 x 40 x 100 mm
Mass	0.53 kg	0.53 kg





Models	TH6D-150-KFAC	TH6D-150-KFMC
Measuring lines	3	3
Measuring range (W x H)	55 mm x 80 mm	55 mm x 80 mm
Resolution at TCP	0.08 mm x 0.12 mm	0.08 mm x 0.12 mm
Working distance from sensor head to workpiece (z = 0 mm)	150 mm	150 mm
Working distance from sensor edge rear side (x = 0)	10 mm	10 mm
Work area in Y around TCP (at Z = 0 mm)	± 27,5 mm	± 27,5 mm
Workspace in Z around TCP (at Y = 0 mm)	± 45 mm	± 45 mm
Work area in Y (at Z = -12)	± 20 mm	± 20 mm
Work area in Y (at Z = 12)	± 35 mm	± 35 mm
Measurement rate	60 Hz	60 Hz
Operating Temperature range	+10°C to +45°C	+10°C to +45°C
Laser Power	50mW	130mW
Laser Safety Class	3R	3B
IP Protection Class (with connectors mated)	IP64	IP64
Dimensions	70 x 40 x 100 mm	70 x 40 x 100 mm
Mass	0.53 kg	0.53 kg

