

# ST Seam Tracking Sensor



**... universal optical sensors for all types of weld seams in automated weld processes**

Sensors of the ScoutVision ST-Series are contactless weld seam or weld bead seam tracking sensors with optical scanning. It is the newest solution for all robots and special machines for welding with control over the position of the torch or welding optic in MIG/MAG and Laser welding. ScoutVisions ST-Sensors are used in conjunction with robots or special machines to automate weld processes to provide advanced solutions for many complex and difficult applications.

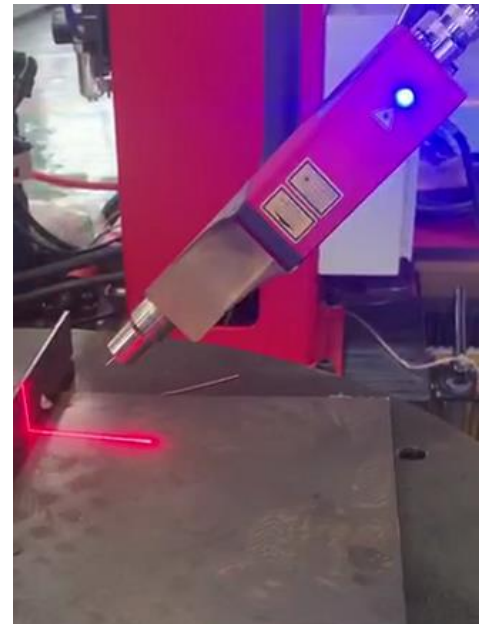
Typical applications are:

- ▶ small gap welding,
- ▶ welding of different types of seams,
- ▶ ground or highly reflective surfaces,
- ▶ fully automated self-adaptive multilayer welding process.

Seam tracking sensors of the ScoutVision ST series

offers the following advantages. :

- ▶ sensor parameter are programmable and the type of the weld seam is adaptable,
- ▶ large depth of field for deep welding of thick sheets,
- ▶ multi-layer and multiple welding applications,
- ▶ very little exposure to reflections.



## **Working principle :**

Sensors of the ST-Series projecting a high-intensity laser line onto the surface of the workpiece, which covers the entire area of the weld seam. A C-MOS camera images the seam synchronously with the laser so that the complete information of the three-dimensional seam cross-section of the welded connection is recorded.

The width of the measuring field and the scan type can be programmed by the user. The image of the sensor is analysed by the systems software. These software determine the exact position of the weld seam in advance during the welding process and transmits the horizontal and vertical positioning measurements to the motion control system, so that the welding torch is aimed precisely at the optimal welding position.

## **Weld application :**

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Sensors of the ST-Series can be used in all conventional welding processes, but are particularly suitable for processing large or deep weld joints such as submerged arc welding with a narrow gap and reflective surfaces.

Sensors of the ST-Series are suitable for:

- ▶ ScoutNavi ST is used for special machine application for welding automatization,
- ▶ ScoutVision ST for welding robot applications.

## Reliability:

Each component has been specially developed for the reliable use in an industrial welding environment.

The sensor has air cooling and an air curtain, which can be used in extremely harsh working environments.

## Flexibility:

Sensors of the ScoutVision ST-Series can be optimized and programmed for a variety of different component shapes sizes. With this function, sensors of the ScoutVision ST-Series can be used in almost all welding applications, regardless of the welding process.

## Specifications of the ST-Series

Sensor	ST20P	ST35	ST70
Nominal distance[mm]	150	150	150
Field of view 1[mm]	15	20	30
Field of view 2[mm]	40	60	80
Depth of field[mm]	50	130	170
Measurement accuracy[mm]	0.1	0.25	0.35

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<b>Measurement area</b>	depends on field of view an depth of field
<b>Gap area</b>	0.1 mm – 70 mm (depends on sensor type)
<b>Lead</b>	> 25 mm
<b>Wavelength</b>	660 nm (visible)
<b>Laser security</b>	Laser class 3B
<b>calibration</b>	with calibration plate
<b>Size[mm]</b>	40*60*110
<b>Weight</b>	520 g
<b>Industry</b>	cooling air, protection glass etc.

To improve your welding process, please contact:

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