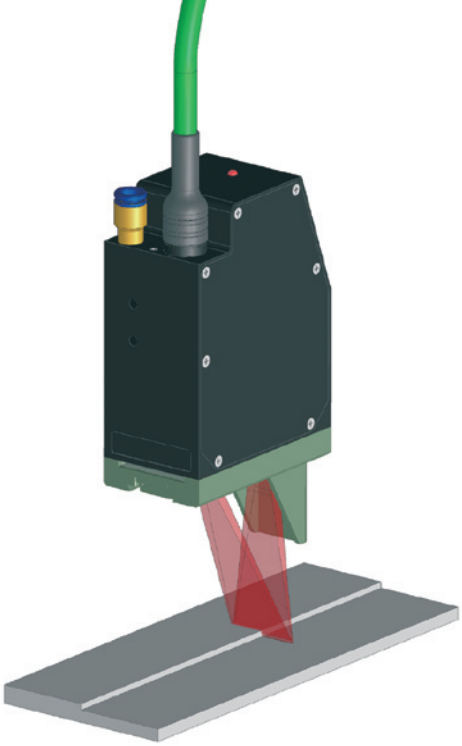

Falldorf Sensor

ProfileSensor S5

To assure optimal results in industrial welding applications S5 sensors are used for seam inspection and seam tracking. The measurement principle of the sensor head is triangulation: A laser light line is projected across the joint or seam and viewed from a direction different to the direction of projection. A variation of the distance to the surface causes a shift of the imaged line at the detector. This means the sensor can acquire the joint profile (before welding) or seam profile (after welding).

The use of an electronic imager with a very high dynamic range and readout speed allows the precise evaluation of profiles for varying surface conditions.

Applications

Welded seam inspection, inspection of adhesive beads
Seam tracking via CNC / Robot / dedicated tracking axis
Topography inspection

The sensor is equipped with an internal cross jet in front of a removable protective glass window. For cooling in very hot environments a water-cooled plate is available.

Field of View / Resolution

standard models (or custom specific)	stand-off [mm]	horizontal field of view [mm]	vertical field of view [mm]	horizontal resolution [µm]	vertical resolution [µm]	speed EC version [profiles /s]	speed HS version [profiles /s]
PS5/37/4/3	37	4	3,0	15	20	20	200 - 900
PS5/46/8/5	46	8	5	20	22	20	200 - 600
PS5/56/12/10	56	12	10	25	45	20	200 - 600
PS5/56/12/10	56	12	10	50	90	20	1200 - 2400
PS5/100/20/20	100	20	20	32	73	20	300
PS5/130/30/60	130	30	60	80	110	20	300

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ProfileSensor S5

Computer (Industrial PC)

Interfaces
to PLC
to external axes
to robot / CNC

digital I/O (24 V), Profibus
DC motor supply, incremental encoder, limit switches (seam tracking)
RS232 / RS422 / Profibus / Ethernet (seam tracking)

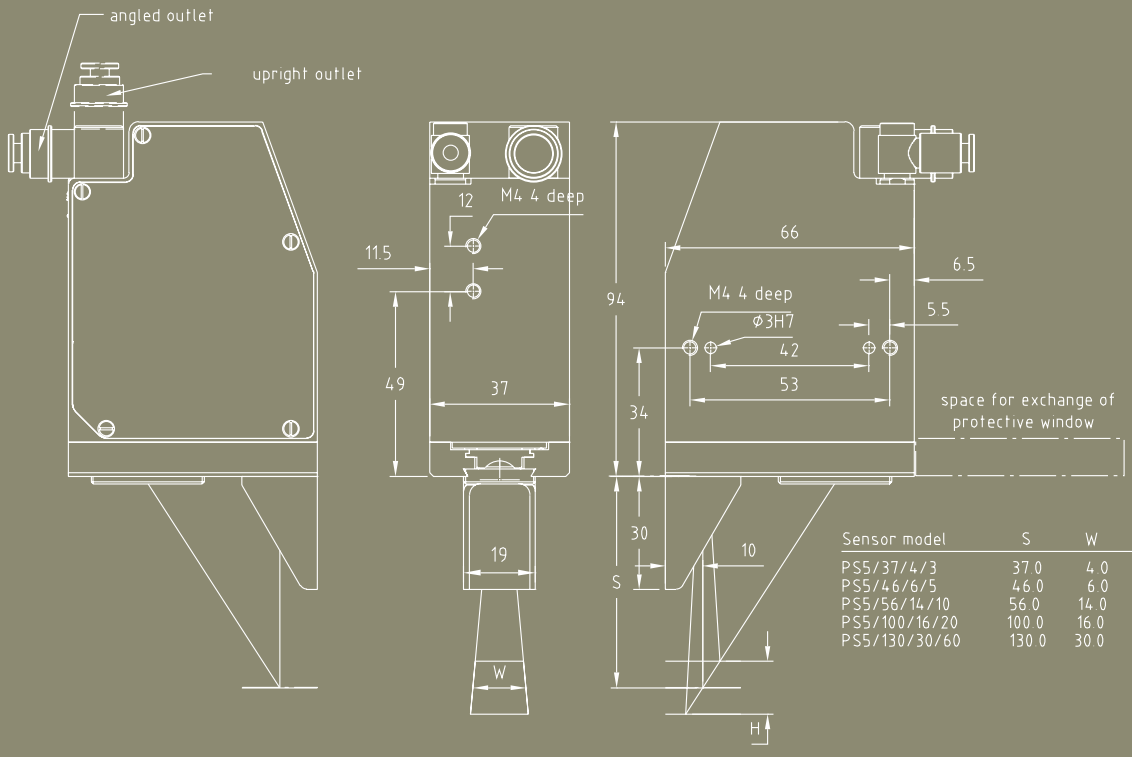
An on-line evaluation of joint position, gap width and height mismatch is performed. The joint position is supplied either to an external axis drive or to a robot controller. The gap width information may control a wire feeder.

Software for Seam Tracking

An on-line evaluation of seam-overfill, -underfill, -angle and -position is performed. All parameters will be compared against limits and may lead to failure signals. Custom specific extensions can included on a modular basis, either by the customer or by Falldorf. Evaluation data sets for different weld types can be selected. Inspection results may trigger machine functions after the end of inspection.

Software for Seam Inspection

The seam image is displayed as real time profile line. All calculated seam parameters are displayed graphically. Measurements are stored in a circular buffer on harddisk.



Sensor model	S	W	H
PS5/37/4/3	37.0	4.0	3.0
PS5/46/6/5	46.0	6.0	5.0
PS5/56/14/10	56.0	14.0	10.0
PS5/100/16/20	100.0	16.0	20.0
PS5/130/30/60	130.0	30.0	60.0