

/ Perfect Welding / Solar Energy / Perfect Charging



WIRES**ENSE**

THE WIRE ELECTRODE
ACTS AS A SENSOR



WANT TO KNOW MORE?

/ Visit the website

IDENTIFYING AND ADAPTING COMPONENT AND CLAMPING TOLERANCES. WITHOUT OPTICAL MEASURING DEVICES.

Component deviations such as varying air gaps or clamping tolerances can impair the perfect weld seam in automated manufacturing. In some cases, minimal material differences or imprecise clamping devices can have a negative influence on the welding result and cause costly and time-consuming rework.

With WireSense, these problems are a thing of the past.

WIRESENSE uses the wire electrode as a sensor.

And delivers a corresponding signal to the robot by precisely scanning the component in advance of performing the weld, so that the robot can adapt its program to the current component position.

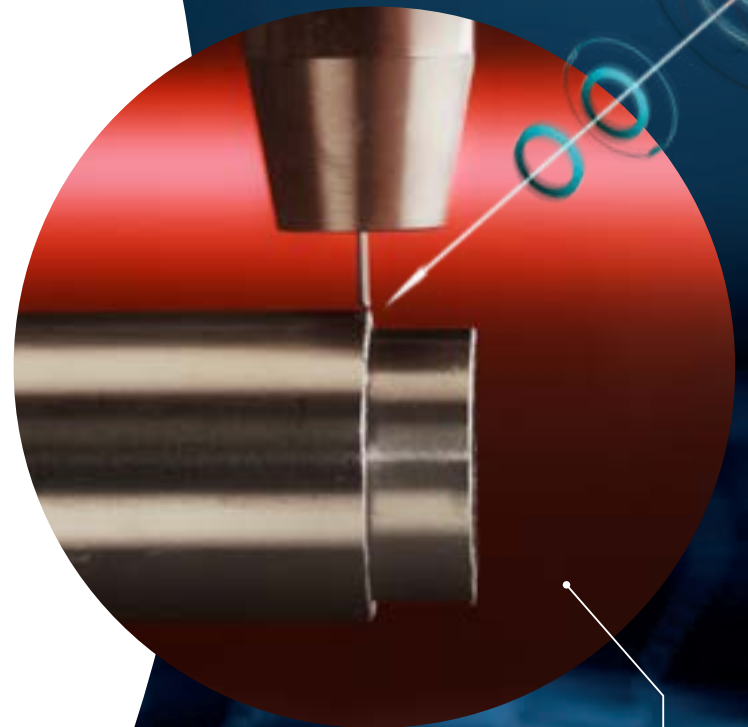
EFFICIENT
ADJUSTMENT OF
THE WELD SEAM
POSITION

UP TO
100%
LESS REWORK

POTENTIAL
SAVINGS OF
UP TO
€20,000*

What's your welding challenge?

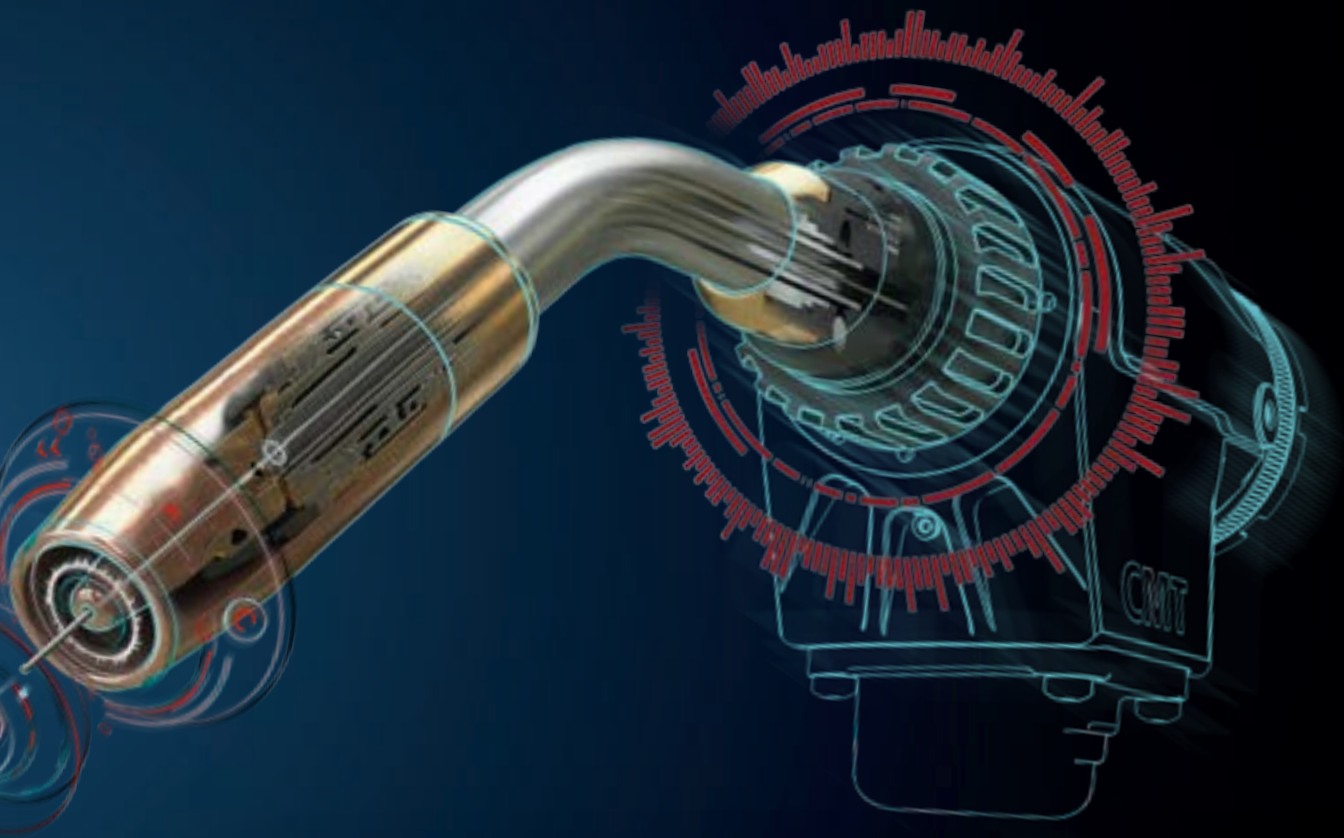
Let's get connected.



PRECISE DETECTION OF THE EDGE

/ High-precision edge detection ensures that the weld seam is in exactly the right place.

/* compared to purchasing an optical measuring device.

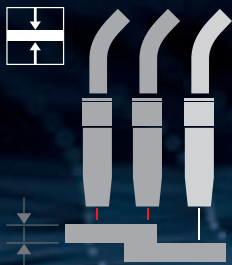


ADVANTAGES



EDGE DETECTION

- / Detection of the edge position for optimal positioning of the welding start point and end point
- / Component and clamping tolerances can thus be compensated for



HEIGHT MEASUREMENT

- / Detection of an unwanted air gap
- / Detection of sheet thicknesses between 0.5 and 20 mm, both for steel and stainless steel as well as aluminum
- / High-precision measurement and speed



WIRE = SENSOR

- / No additional optical measuring devices required
- / Excellent component accessibility
- / No wear
- / No maintenance or cleaning costs
- / No calibration between sensor and TCP required
- / Potential savings of up to €20,000

REQUIRED HARDWARE FOR WIRESENSE

/ Drive unit Robacta Drive CMT
/ Wire buffer CMT



4 ADAPTATION OF THE ROBOT PROGRAM

/ At the same moment of signaling (edge detection), the robot can compare its current position data with the original component position and adjust it if necessary.

/ The height value transmitted to the robot by WireSense can also be used to measure a possible air gap. With a corresponding change in the welding parameters/welding program (job function), the robot reacts adequately to any gap depth.

WIRESENSE PROCESS:



1 DEFINE THE SCANNING AREA

/ The desired area for scanning the component is programmed using the robot controller.



2 SCANNING

/ The robot activates the scanning, which is carried out in the specified area using the WireSense function.



3 SIGNAL TRANSFER TO ROBOT

/ At the moment of edge detection, the signal, including a height value, is output from the intelligent TPS/i power source to the robot.



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THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 4,760 employees worldwide and 1,253 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com

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