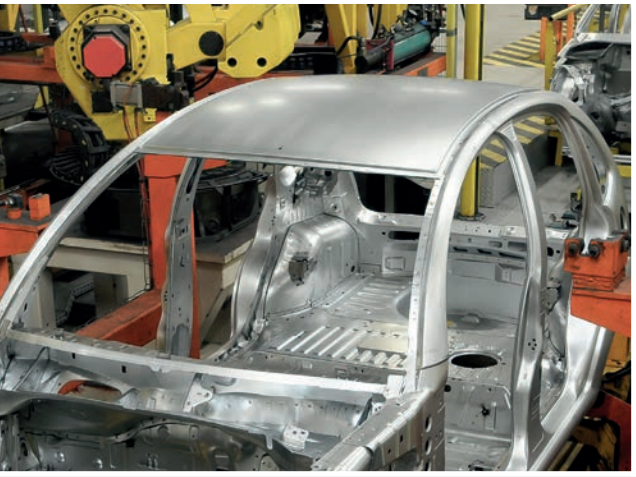
ROLAND®

ROLAND ELECTRONIC

Innovation IS OUR LIFE

HIGHLY SPECIALIZED SYSTEMS
FOR FACTORY AUTOMATION AND QUALITY CONTROL

PRODUCT CATALOG




DOUBLE SHEET CONTROL • WELD SEAM DETECTION • THICKNESS MEASURING • NON-DESTRUCTIVE MATERIAL TESTING

ROLAND®

ABOUT US

We develop, produce and distribute highly specialized systems for factory automation and quality control since 1965.
Our sensors and controllers solve tasks that are not solvable with standard sensors.

COMPETENCY

Our customers appreciate the decades of experience in the “Magnetic Technologies” that have made us an indispensable partner for the Metal Processing Industry.

INNOVATIONS

Innovations with high customer value are our strength. Our own developments are always focused on our core competencies.
We use the latest sensor and communication technologies.

Our investments are above average for the development, so that new improved products come into being.

QUALITY

Our heart beats for quality “Made in Germany”.
Since 1995, our company is certified to ISO 9001.

As owner of a flexible, modern company, we provide our customers with the certainty that they can count on our expertise and our presence in the future.

Ralf Wilms

Joachim Manz

Marcus Bartle

CUSTOMER FOCUS

Our sales and service is on site at our customers day by day.

ROLAND Application Laboratory determines the most secure and safest solution for your new application.

TECHNOLOGIES

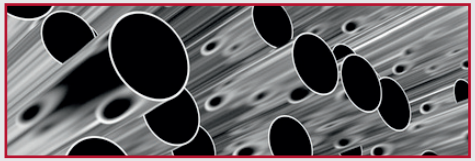
Our core competencies are: magnetic flux, eddy current and induction. With these technologies, we build sensors for very special detection tasks.

We apply latest laser technology where the advantages of optical technology are required.

GLOBAL

Our global sales and service network ensures that we are where our customers are. We speak their language and give successful advice due to the high competence of our staff and sales partners.

Tube Manufacturing



Automotive Suppliers

General Sheet Metal Processing

Automotive

Home Appliances

Battery Market

OUR MARKETS

Metal Packaging

Tire Industry

Photovoltaic Industry

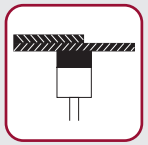
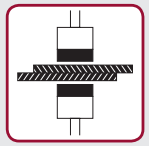
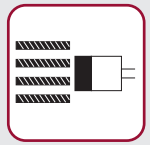
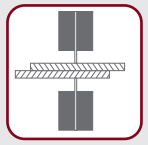
Cable & Wire Industry

Pharma Industry

... and many more, such as:
Metall Fitting Industry,
Lighting, Cabinett & Furniture,
Construction Vehicles, etc

DOUBLE SHEET DETECTION SYSTEMS

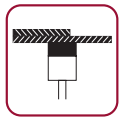
- Inspection of sheet thickness and output of a warning signal when detecting double sheet.
- Protects your machinery from expensive tool damage and loss of production.

Single Side contacting sensors	Dual Head non-contacting sensors	Edge Detection non-contacting sensors	Dual Head Optical non-contacting sensors
			
Recommended for destacking robots	Recommended for conveyor belts	Recommended for destackers	Recommended for highspeed conveyor belts / very small parts

For better understanding:

- Measuring range refers to 1 sheet.
- Steel also applies to magnetic stainless steel.
- Measuring ranges für many other metals are listed in the manuals.
- Many other sensors with their measuring ranges are described in our manuals.
- The measuring time may change depending on material thickness and operation mode; see our manuals for further details.

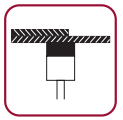
R100



A100

Technology		Permanent magnetic	
Sensor		T04	TN40S
Meas. range	Steel magn. [FE]	0.04 ... 1mm	0.3 ... 3.6mm
	Aluminum [NF]	--	--
	Stainl. steel aust [NF]	--	--
	Non-metals	--	--
Air gap		0	
Particularity		Sheet is attracted by the sensor	
Measuring time		15ms	

R100



I100-S-WI

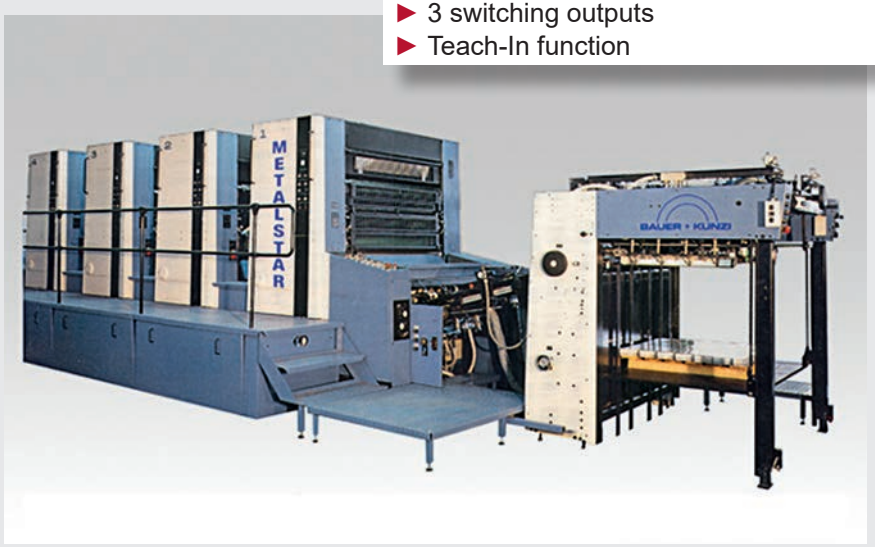
Technology		Inductive transmission process
Sensor		WI42GS
Meas. range	Steel magn. [FE]	0.15 ... 0.25 (0.4mm, depending on alloy)
	Aluminum [NF]	0.05 ... 0.4mm
	Stainl. steel aust [NF]	0.5 ... 3mm
	Non-metals	--
Air gap		Max. 2mm
Particularity		Distance to the sheet up to 2mm possible
Measuring time		30ms

DOUBLE SHEET DETECTION SYSTEMS
COMPACT UNITS R100

- Cost-effective solutions for many industries.
- One side contacting or double-sided non-contacting measurement.
- Fast reaction.

THE ROLAND PLUS

- Alpha numeric display
- 3 switching outputs
- Teach-In function



Double sheet detection in a blank destacker of a metal sheet printing press (*Source: Bauer + Kunzi*)

Compact Units R100
1 Sensor channel
1 Program
3 Outputs / 1 Input
Cable length maximum 20m

R100

XA100 + AA Eagle Eye

Technology		Eddy current	
Sensor		AA90X60-453F2S	AA150X100-902F8S
Meas. range	Steel magn. [FE]	0.2 ... 4mm	0.4 ... 8mm
	Aluminum [NF]	0.2 ... 4mm	0.4 ... 8mm
	Stainl. steel aust [NF]	0.2 ... 4mm	0.2 ... 8mm
	Non-metals	--	--
Air gap		5mm	15mm
Particularity		Sensor with 20mA analog output	
Measuring time		< 20ms	

R100

I100

Technology		Inductive transmission process	
Sensor		S/E34	S/E75
Meas. range	Steel magn. [FE]	0.05 ... 1 (1.5)mm	0.1 ... 3 (4)mm
	Aluminum [NF]	0.2 ... 6mm	3 ... 5 (15)mm
	Stainl. steel aust [NF]	--	--
	Non-metals	--	--
Air gap		10 ... 40mm	30 ... 60mm
Particularity		Sensor distance up to 80mm	
Measuring time		18 ... 75ms	

R100

Variants

DOUBLE SHEET DETECTION SYSTEMS
MODULAR UNITS R1000

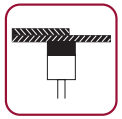
- R1000 systems are optimized in all their components to achieve highest security and reliability.
- Perfect for press lines with fast cycle times.
- 9 of the 10 of the world's largest automotive manufacturers use R1000.

Modular Units R1000
255 Programs
1 to 4 sensor channels
Parallel interface to the PLC, 9 fieldbus systems
Cable length maximum 50m

THE ROLAND PLUS
- Full control by PLC
- All leading fieldbus interfaces
- Dynamic measurement and Teach-In

Jumbo Press Line (*Source: Müller Weingarten / Schuler*)

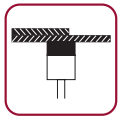
R1000



E20

Technology		Electro magnetic	
Sensor		P42AGS	P128GPPS
Meas. range	Steel magn. [FE]	0.2... 4mm	1... 12mm
	Aluminum [NF]	--	--
	Stainl. steel aust [NF]	--	--
	Non-metals	--	--
Air gap		0mm	0mm
Particularity		Wall mount enclosure or font panel mounting	
Measuring time		80ms (at 4mm steel)	

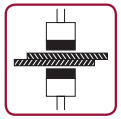
R1000



UDK20

Technology		Electro magnetic + inductive
Sensor		PW42AGS
Meas. range	Steel magn. [FE]	0.2 ... 4mm
	Aluminum [NF]	0.2 ... 4mm
	Stainl. steel aust [NF]	0.2 ... 2mm
	Non-metals	--
Air gap		0mm
Particularity		Wall mount enclosure or font panel mounting
Measuring time		80ms

R1000



I20

Technology		Eddy current	
Sensor		IS/IE20-30GS	IS/IE42-30GS
Meas. range	Steel magn. [FE]	0.05 ... 4mm	0.15 ... 8mm
	Aluminum [NF]	0.05 ... 5 (16)mm	0.1 ... 10 (16)mm
	Stainl. steel aust [NF]	0.2 ... 5 (16)mm	0.5 ... 10 (16)mm
	Non-metals	--	--
Air gap		40mm	80mm
Particularity		Wall mount enclosure or font panel mounting	
Measuring time		Starting from 2ms	

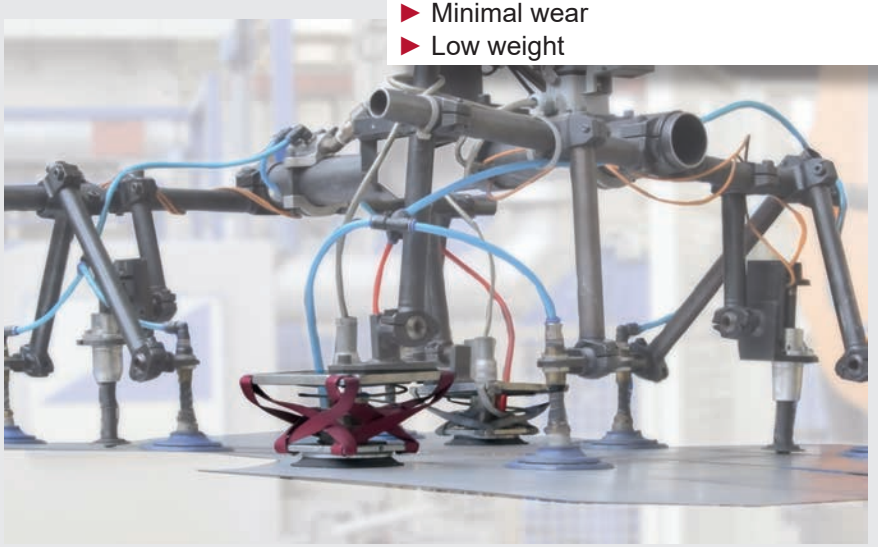
SENSOR BRACKETS

- Spring loaded sensor brackets for various applications.
  The following overview indicates the advantages of each sensor bracket.

	SHX 42	SHS42GS	SHS42G-FB	SH42GS
For vertical destacker	+	+	+	+
For robot loader and high speed linear destackers	+	o	o	– –
For inclined sheet stacks	+ +	o	+	–
Suction delay time	0.1s	0.1s	0.5s	- - -
Notes	Highest tilt flexibility, highest spring travel. Rigid during approach For high lateral acceleration (< 2g)	Strong hold on even sheets due to suction cup	Suited for utmost sensor contact on inclined or undulated sheet stacks	For narrow sheets and applications where weight is critical

THE ROLAND PLUS

- High flexibility
- Minimal wear
- Low weight



Sensor bracket SHX42 (*Source: Automotive*)

R1000

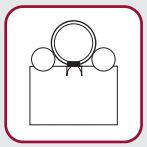
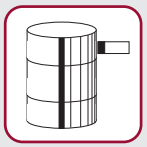
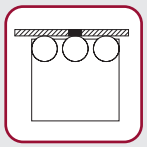
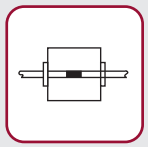
L20			SHX42 *SHX42-DL		SHS42GS	SHS42G-FB	SH42GS
Technology		Laser triangulation	Spring loaded sensor bracket with flat suction cup and lateral clearance. Extreme flexibility.		Spring loaded sensor bracket with flat suction cup	Spring loaded sensor bracket with bellow suction cup	Spring loaded sensor bracket
Sensor		LAAS40(+)					
Meas. range	Steel magn. [FE]	0.3 ... 15mm	Suited for: P42GS, P42AGS, PW42GS, PW42AGS				
	Aluminum [NF]	0.3 ... 15mm	Sensor mounting: Thread M42 x 1.5				
	Stainl. steel aust [NF]	0.3 ... 15mm	Total height (unloaded)	120mm	114mm	128mm	69mm + sensor
	Non-metals	0.3 ... 15mm	Spring travel (approx.)	70mm	26mm	37mm	26mm
Air gap		40mm sensor distance	Weight	0.85kg	1.2kg	1.2kg	0.7kg
Particularity		ALL non-transparent + non-reflecting materials	Press. force (at 1/2 spring travel)	approx. 25N	approx . 48N	approx. 60N	approx 48N
Measuring time		10ms	Ø of suction cup (mm)	115 / *105	110 / 85 (SHS42GS-85)	100 / 80 (SHS42G-FB80)	--

WELD SEAM DETECTION SYSTEMS

- Detection of the position of a weld seam by flux leakage or by eddy current.
- For all tube processing machinery that require a precise weld seam position.
- For all punching and cut to length facilities working with welded coils.

THE ROLAND PLUS

- Detection of invisible weld seams
- Highest reliability against wrong positioning
- Easy adaptation to different tubes

Longitudinal weld seam detection at tubes	Longitudinal weld seam detection at drums	Cross weld seam detection at coils	Cross weld seam detection of narrow strips	Butt weld seam and butt joint detection at tubes
				
Recommended for Automotive Industry	Recommended for Metal Packaging Industry	Recommended for Steel Service Centers	Recommended for Stamped Parts Manufacturers	Recommended for Tube and Pipe Coating Plants

SND40 for Tubes

Technology	Flux leakage and eddy current
Material	All metals [FE and NF]
Wall thickness	0.1 ... 12.5mm
Diameter	5 ... 1000mm
Rotation speed	1 ... 300U/min or 0.01 ... 10m/s
Type of Weld Seam	All weld seams

SND40 for Coils

Technology	Flux leakage and eddy current
Material	All metals [FE and NF]
Mat. thickness	Depending on material
Material width	Min. 100mm
Velocity	0.01 ... 10m/s
Type of Weld Seam	All weld seams

SND8S + NS11

Technology	Magnetic flux leakage
Material	Steel, tinplate
Wall thickness	0.1mm ...
Diameter	50 ... 1000mm
Velocity	0.01 ... 5m/s
Type of Weld Seam	All except laser weld seams

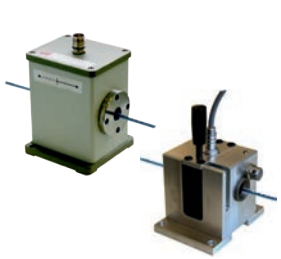
WELD SEAM DETECTION SYSTEMS

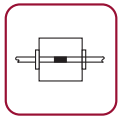
- Send your sample to the ROLAND Application Laboratory and you will receive a report about which device combination will fit best tasks.
- Wide range of applications for our systems:
  Automotive / Metal packing / Construction vehicles / Steel Service Center / Steel Furniture / Lighting ...

Tube bending machine with automatic loader (*Source: Lang Tube Tec)*

XA100 + NS9N-AAD-SC

Technology	Eddy current
Material	All metals (FE and NF)
Mat. thickness	0.5 ... 4mm
Material width	5 ... 30mm
Velocity	Max. 5m/s
Type of Weld Seam	All





UFD40

Technology	Eddy current
Material	All metals
Wall thickness	Up to solid material
Diameter	1 ... 90mm
Velocity	0.01 ... 10m/s
Type of Weld Seam	All

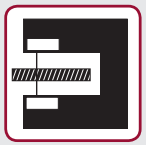
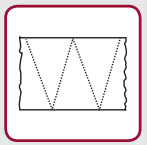
We are also specialized in:

Butt weld seam and butt joint detection at sheets

- Recommendation for equipment of surface finishing and coating
  cable connections at strands and cables
- Recommendation for cable production

LASER THICKNESS MEASURING SYSTEMS

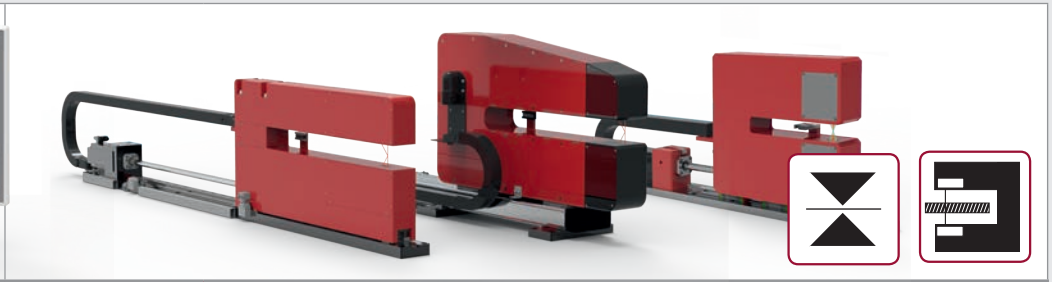
- Continuous measurement of thickness of ferrous and non-ferrous metals by proven technologies.
- For blanking presses, slitting lines, cut-to-length lines, scroll shears and other coil processing machinery.
- Non-contacting sensors, laser based.

Static measuring / dynamic measuring	C-Frame non-contact	With traversing unit
		

THE ROLAND PLUS

- Traversing thickness gauging
- Integrated guiding
- Full automatic calibration (nulling)

Longitudinal slitting line (*Source: Kohler Maschinenbau)*



LTM-ECO		LTM-BASE		LTM-SMART / LTM-MAXI / LTM-ULTRA	
Technology	Laser triangulation (static)	Technology	Laser triangulation (static)	Technology	Lasertriangulation (static & dynamic) + multi color confocal method (LTM-ULTRA)
Material	All metals	Material	All metals	Material	All metals, all materials (LTM-ULTRA)
Measuring range	0.2 ... 15mm	Measuring range	0,05 ... 8mm	Measuring range	0.015 ... 8mm / 0.05 ... 8mm / 0.01 ... 3mm
Resolution	1µm	Resolution	0,1µm	Resolution	0.1µm
Accuracy	+/- 6µm	Accuracy	+/- 1,0µm	Accuracy	+/- 0.5µm resp. +/- 1.0µm (LTM-SMART) , +/- 1.0µm (LTM-MAXI), 0.25µm (LTM-ULTRA)
Traversing area	-- (Static measurement)	Traversing area	-- (Static measurement)	Traversing area	150/300/450mm (LTM-SMART + LTM-ULTRA) 150/300/450/600/800/1000mm (LTM-MAXI)
Integrated guiding	--	Integrated guiding	Integrated	Integrated guiding	No, required by the ambient installation
Autom. inline calibr.	Yes	Autom. inline calibr.	Yes	Autom. inline calibr.	Yes

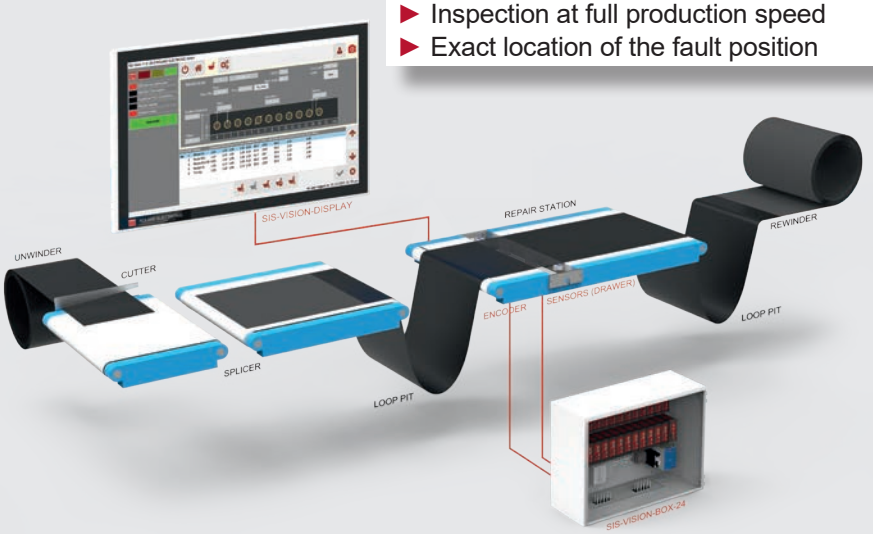
NON DESTRUCTIVE MATERIAL TESTING
STEEL CORD INSPECTION

- Spacing control in steel cord cutting and splicing facilities during production of tires. Detects faults and quality defects.
- Coverage up to 100% of steel cord width by an array of up to 24 sensors.

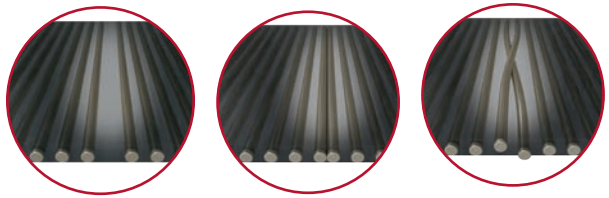
SIS VISION – Successor of SIS G3	Additional components
• Non destructive testing of Steel Cord Belts in real time • For LTR, TBR, PCR and dump truck tires • Exact fault position	• **SIS-VISION-BOX** Switch cabinet up to 24 sensor modules • **SIS-ACU** Angle Control Unit, full automatic adjustable sensor bracket • **SIS-Calibrator** Functional test

THE ROLAND PLUS

- Easy integration into cutting line
- Inspection at full production speed
- Exact location of the fault position



Steel Cord Inspection System (*Source: ROLAND ELECTRONIC*)

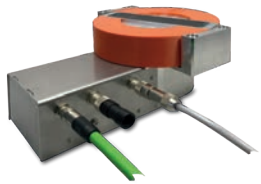


SIS VISION, The Magic Eye

Technology	Magnet inductive
Width	50 ... 4800mm cord belt (others by request)
Inspection width	1440mm (at 24 sensors)
Belt thickness	1 ... 10mm (others by request)
Wire Ø	0.5 ... 8mm (others by request)
Wire angle	15° ... 90°
Sensors	1 - 24
Velocity	0.5 ... 100m/min

The SIS VISION system consists of sensors, the corresponding hardware, software and a touch-screen. By selecting the number of sensors and arranging them optimally and simply in the customer's system, the entire cord width can be reliably monitored online and at full production speed.

With the new technology, the wire distances as well as the wire position and wire density (EPDM = „Ends Per Decimeter") are reliably evaluated.



SIS-ACU

Technology	Magnet inductive

Simplified integration of Steel Cord Inspection System in breaker lines.
Full automatic adjustable sensor bracket.
Intuitive mounting for integrators - no special machinery required.

Turn-key solution, configuration and setup via SIS VISION

Wide range adjustable ± 75°	
Particularity	No PLC necessary

SIS-Calibrator

Technology	Mechanical

Function test of the sensors

Checking the uniform signal amplification of each sensor

A predefined bug is sent to each detected sensor.

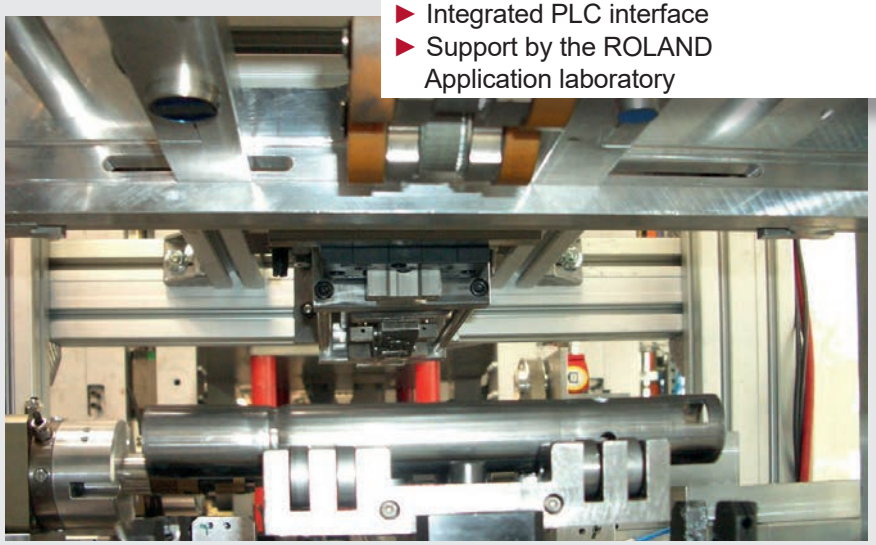
Temperature	0° - 50°C (32° - 122°F)
Suited for	Steel Cord Belt, only 90°

NON DESTRUCTIVE MATERIAL TESTING
EDDY CURRENT INSPECTION SYSTEMS

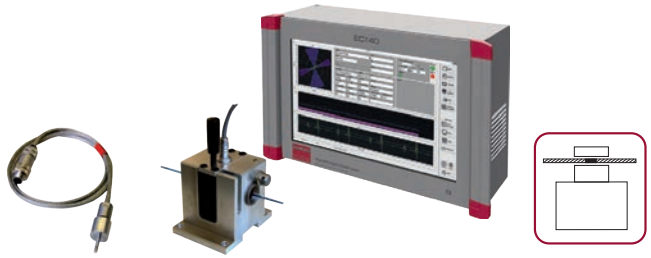
- Detection of defective spots, cracks, holes, notches, interruptions, welding defects, welding points, cable connections, alloy changes, etc. by eddy current.
- For the inspection of semi-finished bars, tubes, wires, cables directly within the production line.

THE ROLAND PLUS

- Fully graphical user interface
- Integrated PLC interface
- Support by the ROLAND Application laboratory



Crack test of automotive components (*Source: König Metall)*



UFD40	
Technology	Eddy current
Frequency range	0.8 ... 800kHz in steps
Measuring channels	1 diff. or 2 diff.
Operating unit	External PC
Encoder input	No
Product velocity	0.6 ... 600m/min
Fault classification	No
Quality protocolling	No

ECT40	
Technology	Eddy current
Frequency range	1 ... 2000kHz stepless
Measuring channels	2 diff. or 1 diff + 1 absolute
Operating unit	Integrated PC 21” or external PC
Encoder input	Yes
Product velocity	0 ... 600m/min
Fault classification	Yes
Quality protocolling	Yes, acc. to SEP 1925/1927, EN 10246-2/-3

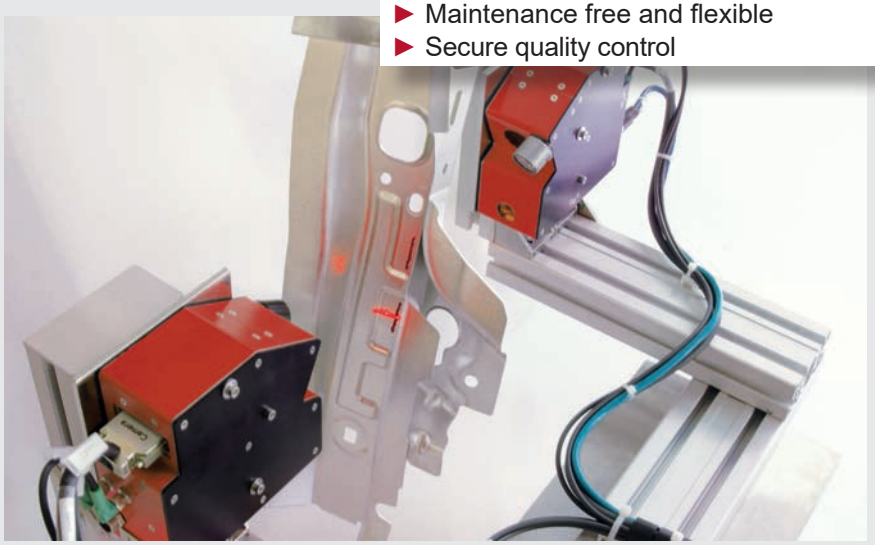
Sensors		
Encircling coil sensors with fixed diameter	Diameter	5 / 13 / 20 / 40 / 60mm
Encircling coil sensors with exchange coil	Diameter	1-15mm in steps of 1mm 16-90mm in steps of 2mm
	Option	Premagnetization
Segment coils	In preparation	
Sensor probes	Track width	1.6 ... 16mm

NON DESTRUCTIVE MATERIAL TESTING
WELD SEAM GEOMETRY INSPECTION

- Inspection of mechanical weld seams for pores, craters,cracks and geometrical irregularities.
- Inspection performed by 3D laser sensors, which are transported over the finished weld seam and therefore scan the surface and the geometry from one or both sides.
- The comprehensive TIVIS® software package logs and evaluates the recorded 3D data regarding faults and other deviations.

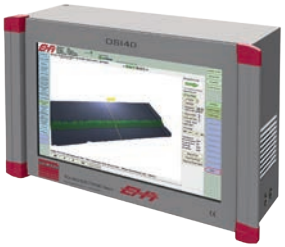
THE ROLAND PLUS

- Double-sided 3D scanning
- Maintenance free and flexible
- Secure quality control



Weld Seam Geometry Inspection at automotive components (*Source: EHR®*)

EHR® GmbH & Co. KG



EHR® AluCheck

Technology	Laser triangulation
Application	Mechanical weld seams on aluminum or steel
Sensor types	2D, 2D/3D, 3D, transmitted light, incident light
Sensor channels	2x Cameralink, 1x GigE
Visualization	Touch screen PC
Robot connection	Fieldbus
Working area	137.5mm, working distance, +/- 10mm

OSI40

Technology	Laser triangulation
Application	PC based system for surface inspection with TIVIS® software
Display	21” Full HD
Operation	Touch screen, mouse, keyboard
Sensor channels	GiGE to EHR® AluCheck
PLC connection	Fieldbus
Host connection	Ethernet Gigabit
I/O channel	Nanotec, linear axis

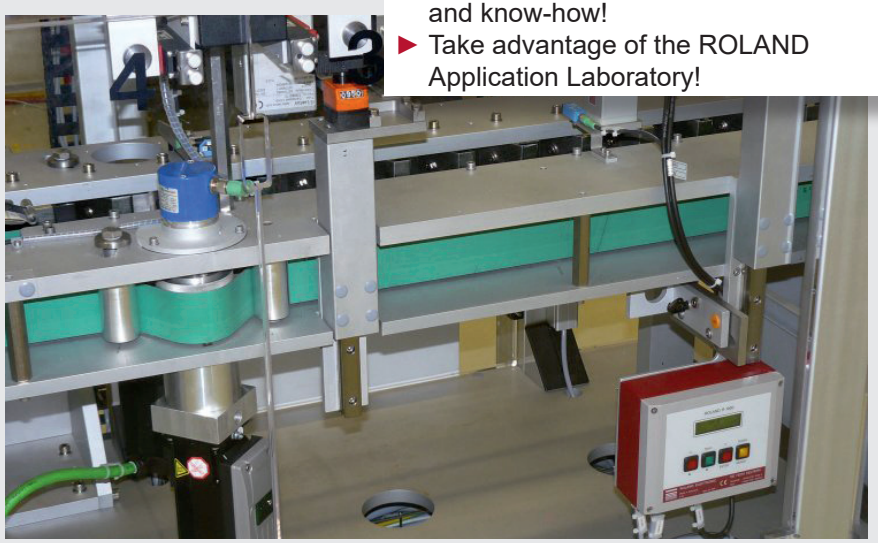
SPECIAL APPLICATIONS

- The special know-how of ROLAND ELECTRONIC in the field of eddy current, induction,
  and magnetic flux leakage offers solutions for very special tasks.

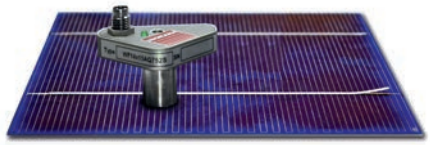
I10KV	WF14	I20
Pharma Blister content verification	**Double Layer Detection during production of batteries or solar cells**	**Hardening Control at metallic small parts**
Fast detection of incorrect package filling conditions in the cartoner	Sensors for the direct mounting into the vacuum gripper	Fast sorting of parts depending on condition: hardened / not hardened

THE ROLAND PLUS

- Take advantage of our knowledge and know-how!
- Take advantage of the ROLAND Application Laboratory!



Pharma Blister content verification (*Source: IWK)*



I10KV		WF14		I20	
Technology	Eddy current	Technology	Eddy current	Technology	Eddy current
Blister pack – Number	Up to 10 aluminum blister per pack	Sensor variants available for	Solar cells, mono/multi crystalline, 100 ... 300µm or Li-Ion electrodes	Sensor principle	2-sided, non contacting
Blister pack – Area	Min. 30 x 60mm blister area				
Blister pack – Height	Max. 100mm packing height	Sensor principle	Single side, contacting	Suited for	Small parts made of steel such as. screws, nuts, washers, balls, stamped parts etc.
Blister pack – Others	As well as ALU / PVC blister and Alu / Alu blister	Air gap	1mm	Measuring time	2 ... 250ms
Programs	255	Reaction time	28ms	Programs	255
Velocity	500pck/min	Output	0 ... 10V / 4 ... 20mA	Teach-In	Yes

OUR CUSTOMERS (EXCERPT)

REFERENCES

ROLAND ELECTRONIC

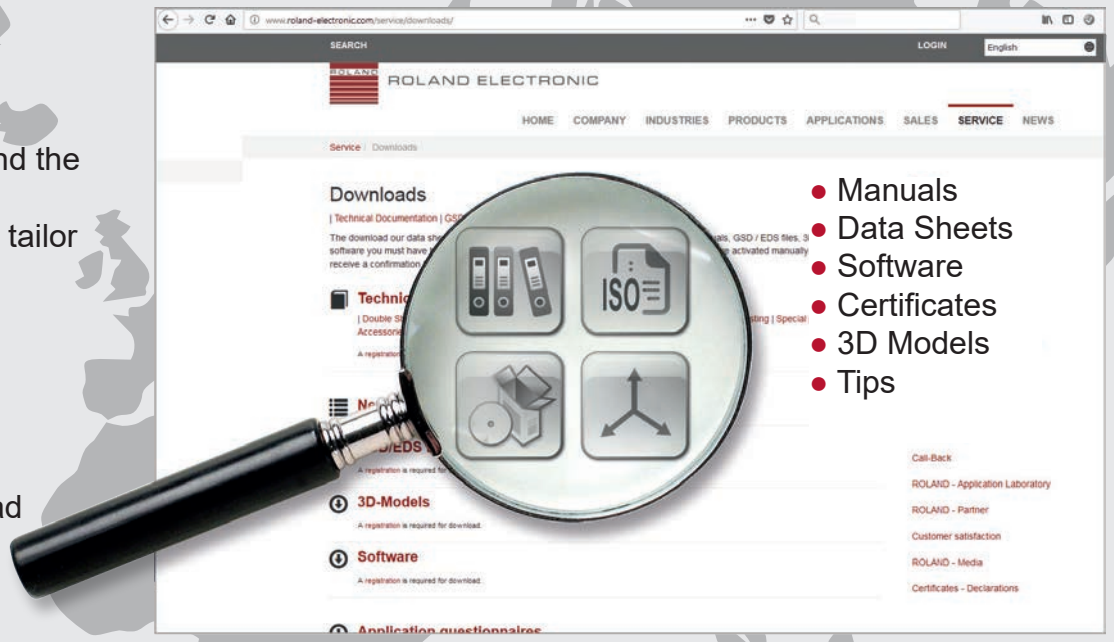
SUPPORT ANY TIME

- Take advantage of our website for detailed information around the clock.
- Send us details of your specific tasks and we will offer you a tailor made solution.

Offer
technical consultancy

Application
questionnaires

Register
for download



Your local representative:

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Scan the appropriate QR code and you will be redirected to the appropriate website.

Revision 2.0, January 2021 - Subject to technical modification and error. Technical data is intended for information purposes only. Detailed and latest information can be found in our manuals.