ROLAND®

50 1965 - 2015

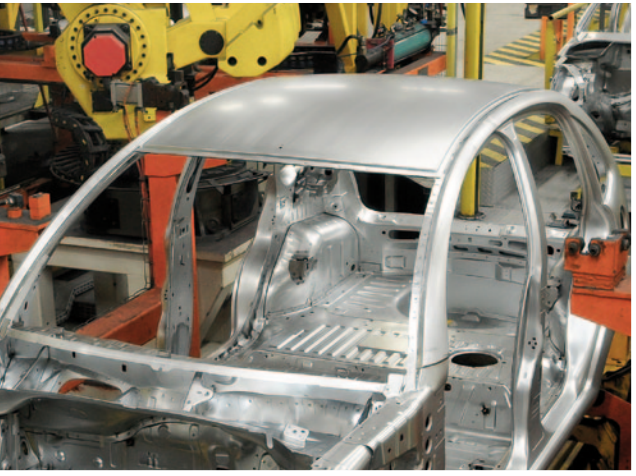
YEARS · JAHRE

ROLAND ELECTRONIC

JUBILÄUMSAUSGABE · ANNIVERSARY ISSUE

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

Reg.Nr. 005151 QM08

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

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

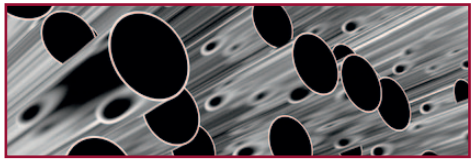
Our core competencies are: Magnetic Flux, Eddy Current and Induction. With these Technologies, we build sensors for very special detection tasks.

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

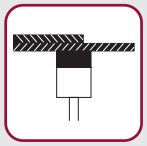
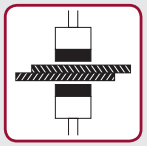
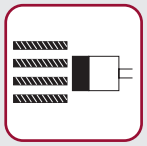
Cable & Wire Industry

Pharma Industry

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

DOUBLE SHEET DETECTION SYSTEMS

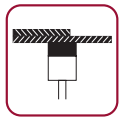
- Inspection of Sheet Thickness and output of a warning signal when detecting Double Sheet.
- Protects your machinery from expensive tool damage and loss of production.

Single Side contacting sensors	Dual Head non-contacting sensors	Edge Detection non-contacting sensors	Dual Head Optical non-contacting sensors	C-Frame non-contacting sensors
				
Recommended for destacking robots	Recommended for conveyor belts	Recommended for destackers	Recommended for highspeed conveyor belts / very small parts	Recommended for centering stations at bending machines

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.

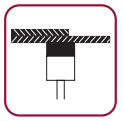
R100



A100

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

R100



I100-S-WI

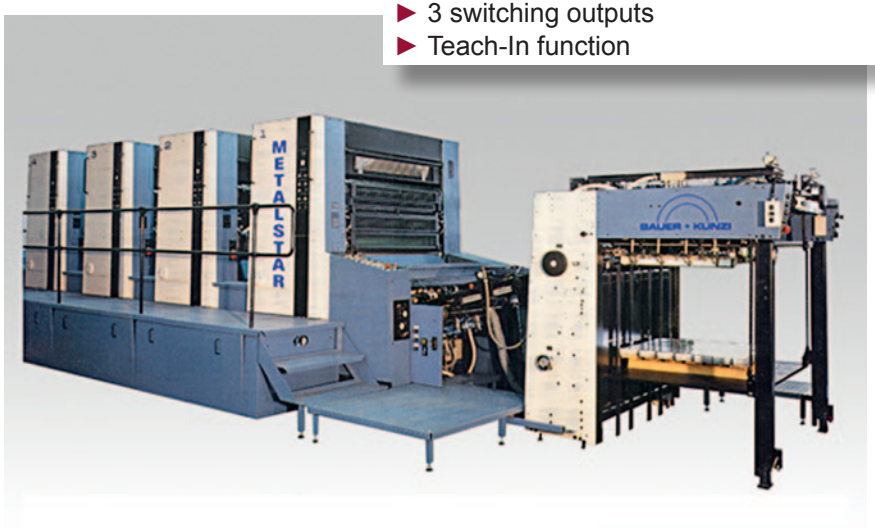
Technology		Inductive transmission process
Sensor		WI42GS
Meas. range	Steel magn. [FE]	0.15 ... 0.5 mm
	Aluminum [NF]	0.05 ... 0.4 mm
	Stainl. steel aust [NF]	0.5 ... 3 mm
	Non-metals	--
Air gap		Max. 2 mm
Particularity		Distance to the sheet up to 2 mm possible
Measuring time		30 ms

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

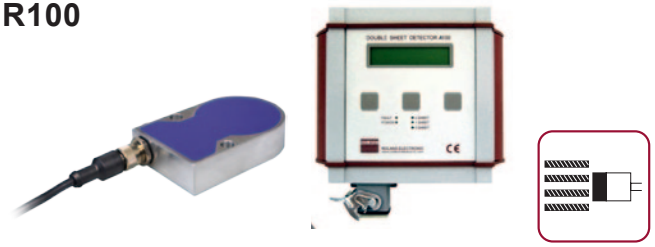


Double sheet detection in a blank destacker of a metal sheet printing press (*Source: Bauer + Kunzi*)

Compact Units R100

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

R100



XA100 + AA Eagle Eye

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

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 ... 6 mm	3 ... 5 (15) mm
	Stainl. steel aust [NF]	--	--
	Non-metals	--	--
Air gap		10 ... 40 mm	30 ... 60 mm
Particularity		Sensor Distance up to 80 mm	
Measuring time		18 ... 75 ms	

R100

C100

Technology		Capacitive	
Sensor		C100-10S	C100-20S
Meas. range	Steel magn. [FE]	0.2 ... 3.5 mm	0.4 ... 7 mm
	Aluminum [NF]	0.2 ... 3.5 mm	0.4 ... 7 mm
	Stainl. steel aust [NF]	0.2 ... 3.5 mm	0.4 ... 7 mm
	Non-metals	--	--
Air gap		10 mm	20 mm
Particularity		Double Sheet Detection and Thickness Meas.	
Measuring time		500 ms	

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.

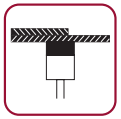
Modular Units R1000
255 Programs
1 to 4 Sensor channels
Parallel interface to the PLC, 9 Fieldbus Systems
Cable length maximum 50 m

THE ROLAND PLUS

- Full control by PLC
- All leading Fieldbus Interfaces
- Dynamic Measurement and Teach-In

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

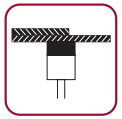
R1000



E20

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

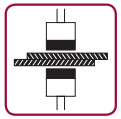
R1000



UDK20

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

R1000



I20

Technology		Eddy Current	
Sensor		IS/IE20-30GS	IS/IE42-30GS
Meas. range	Steel magn. [FE]	0.05 ... 4 mm	0.15 ... 8 mm
	Aluminum [NF]	0.05 ... 5 (16) mm	0.1 ... 10 (16) mm
	Stainl. steel aust [NF]	0.2 ... 5 (16) mm	0.4 ... 10 (16) mm
	Non-metals	--	--
Air gap		40 mm	80 mm
Particularity		Wall mount enclosure or font panel mounting	
Measuring time		Starting from 2 ms	

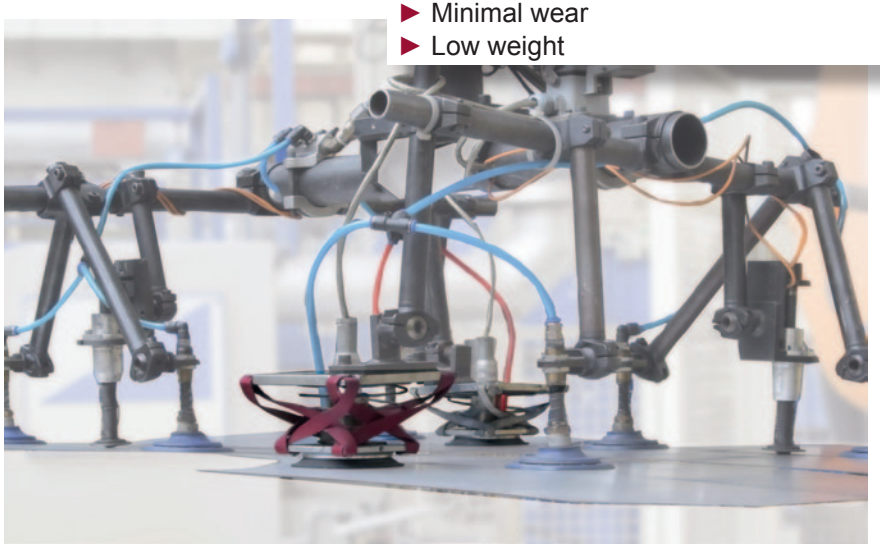
SENSOR BRACKETS

THE ROLAND PLUS

- High Flexibility
- Minimal wear
- Low weight

► 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	+	– –
For inclined sheet stacks	+ +	o	+	–
Suction delay time	0.1 s	0.1 s	0.5 s	- - -
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



Sensor bracket SHX42 (*Source: Automotive*)

R1000

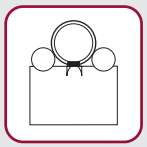
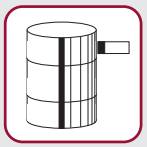
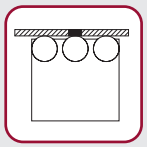
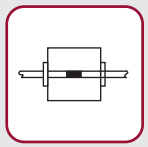
L20			SHX42		SHS42GS	SHS42G-FB	SH42GS
Technology		Laser triangulation	Spring loaded sensor bracket with flat suction cup and lateral clearance. Extreme flexibility.		Spring loaded sensor bracket with flat suction cup	Spring loaded sensor bracket with bellow suction cup	Spring loaded sensor bracket
Sensor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

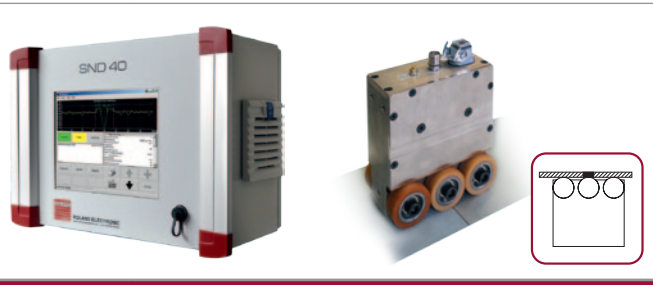
THE ROLAND PLUS

- 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 ... 12.5 mm
Diameter	5 ... 1000 mm
Rotation speed	1 ... 300 U/min or 0.01 ... 10 m/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. 100 mm
Velocity	0.01 ... 10 m/s
Type of Weld Seam	All weld seams

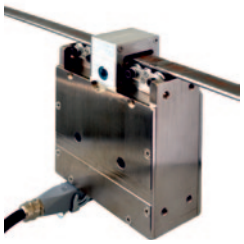
SND8S + NS11

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

WELD SEAM DETECTION SYSTEMS

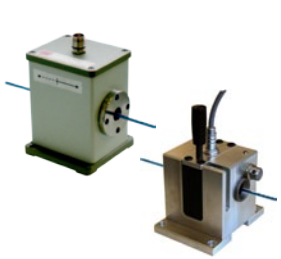
- ► Send your sample to the ROLAND Application Laboratory and you will receive a report about which device combination will fit best tasks.
- ► Wide range of applications for our systems:
  Automotive / Metal packing / Construction vehicles / Steel Service Center / Steel Furniture / Lighting ...

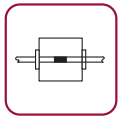
Tube bending machine with automatic loader (*Source: Lang Tube Tec)*



XA100 + NS9N-AAD-SC

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





UFD40

Technology	Eddy Current
Material	All metals
Wall thickness	Up to solid material
Diameter	1 ... 90 mm
Velocity	0.01 ... 10 m/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

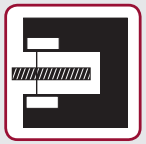
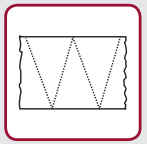
SHEET THICKNESS MEASURING SYSTEMS

- 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.

THE ROLAND PLUS

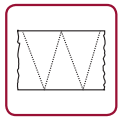
- Traversing thickness gauging
- Integrated guiding
- Full automatic calibration (nulling)

Longitudinal slitting line (*Source: Kohler Maschinenbau)*

Single Side Measuring sensors	C-Frame non-contact	With Traversing Unit
		

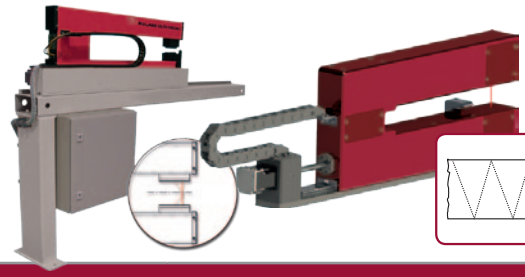
MDM60

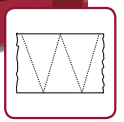
Technology	Magnet Inductive
Material	Steel, magnetic [FE]
Measuring range	0.05 ... 1.5 mm
Resolution	1 µm
Accuracy	1% v. MW
Traversing area	--
Integrated guiding	--
Autom. inline calibr.	No

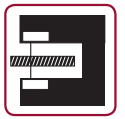


i!mensio Compact

Technology	Laser Triangulation
Material	All metals
Measuring range	0.2 ... 20 mm
Resolution	0.1 µm
Accuracy	+/- 3 µm (Linearity)
Traversing area	150/300/450 mm
Integrated guiding	Integrated
Autom. inline calibr.	Yes







i!mensio Mono/Smart

Technology	Laser Triangulation
Material	All metals
Measuring range	0.2 ... 20 mm
Resolution	0.1 µm
Accuracy	+/- 4 µm (Linearity)
Traversing area	150/300/450 mm / up to 1100 mm
Integrated guiding	No, required by the ambient installation
Autom. inline calibr.	Yes

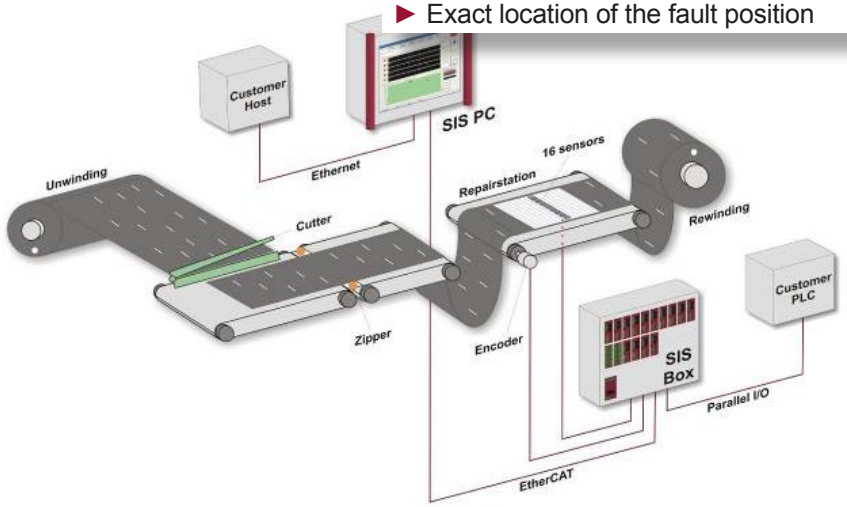
NON DESTRUCTIVE MATERIAL TESTING
STEEL CORD INSPECTION

- 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 16 sensors.

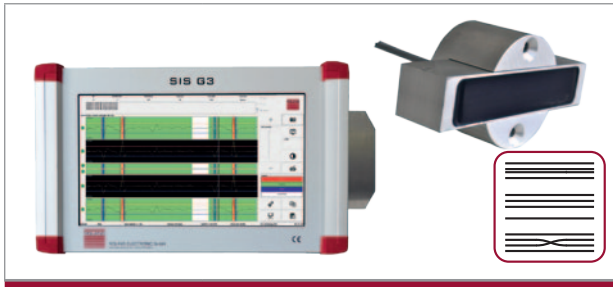
SIS G3	Additional components
• Non destructive testing of Steel Cord Belts in real time • For LTR, TBR, PCR and dump truck tires • Exact fault position	• SIS XP Optical Splice Kit • FKR-2-M Concentrator • SIS XP Calibrator • SCS20

THE ROLAND PLUS

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

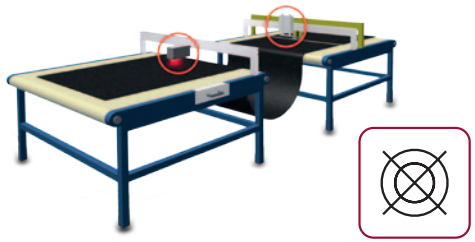


Steel Cord Inspection System (*Source: ROLAND ELECTRONIC*)



SIS G3 Successor of SIS XP

Technology	Magnet Inductive
Width	150 ... 1600 mm cord belt (others by request)
Inspection width	1120 mm (at 16 Sensors)
Belt thickness	1 ... 4 mm (others by request)
Wire Ø	0.2 ... 2 mm (others by request)
Wire angle	17° ... 90°
Sensors	1 - 16
Velocity	0.5 ... 60 m/min



SIS XP Optical Splice Kit

Technology	Optical
Camera based Splice marking and Splice detection in cutting and splicing facilities for steel cord. Full mobility over the whole cord width. Allows reduction of the sensitivity of the SIS XP sensors directly to the splice to eliminate the error message of overlapping splice.	
Camera	Vision Sensor, high speed.
Marking	Stamping unit, target

FKR-2-M Concentrator

Technology	Mechanical
Field concentrator. Mechanic construction, has a magnetic effect upon the sensors. Signal improvement expected: 80%	
Calibration of sensors	

SIS XP Calibrator

Technology	Mechanical

SCS20

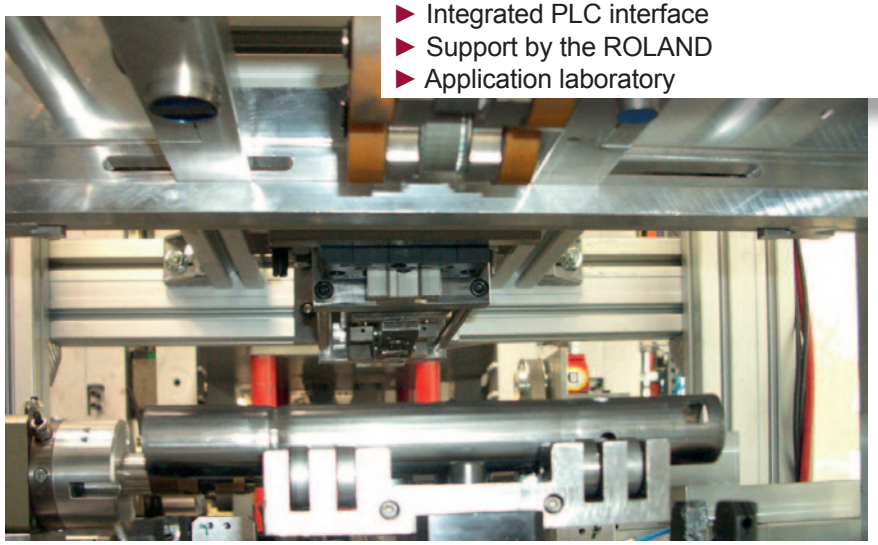
Technology	Mechanical + Inductive
SCS20 has 2 operation modes: Measuring of the EPI value on tension free cord material + Counting of wires while uncoiling the material.	
EPI range	30 ... 80
Velocity	1 … 25 m/min (Cord)
Target deviation	± 1 of 1000 Cords
Distance	3 … 6 mm (Cord - Sensor)

NON DESTRUCTIVE MATERIAL TESTING
EDDY CURRENT INSPECTION SYSTEMS

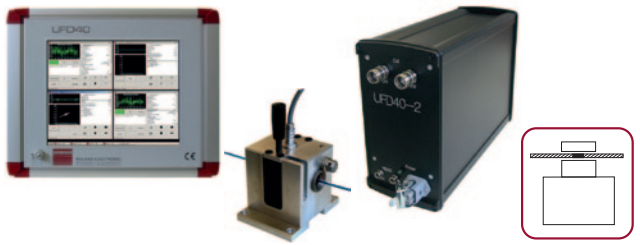
- Detection of defective spots, cracks, holes, notches, interruptions, welding defects, welding points, cable connections, alloy changes, etc. by Eddy Current.
- For the inspection of semi-finished bars, tubes, wires, cables directly within the production line.

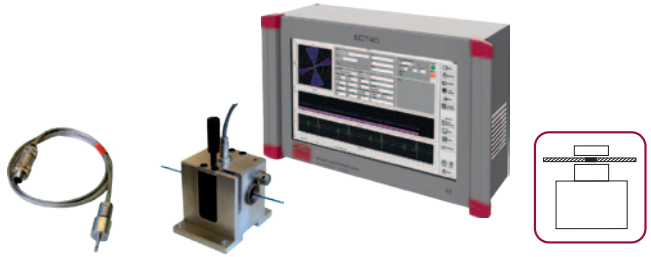
THE ROLAND PLUS

- 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 ... 800 kHz in steps
Measuring channels	1 diff. or 2 diff.
Operating unit	External PC
Encoder input	No
Product velocity	0.6 ... 600 m/min
Fault classification	No
Quality protocolling	No

ECT40

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

Sensors

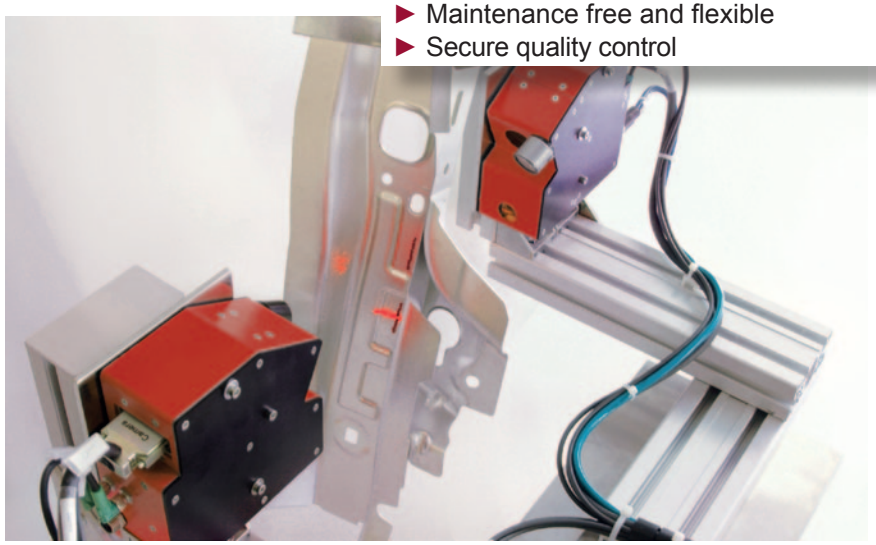
Encircling coil sensors with fixed diameter	Diameter	5 / 13 / 20 / 40 / 60 mm
Encircling coil sensors with exchange coil	Diameter	1-15 mm in steps of 1 mm 16-90 mm in steps of 2 mm
	Option	Premagnetization
Segment coils	In preparation	
Sensor probes	Track width	1.6 ... 16 mm

NON DESTRUCTIVE MATERIAL TESTING
WELD SEAM GEOMETRY INSPECTION

- Inspection of mechanical weld seams for pores, craters,cracks and geometrical irregularieties.
- 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 and other deviations.

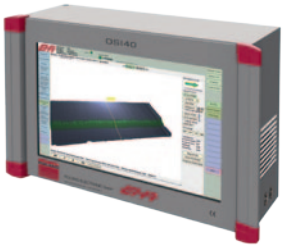
THE ROLAND PLUS

- 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	Touchscreen PC
Robot connection	Fieldbus
Working area	137.5 mm, working distance, +/- 10 mm

OSI40

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

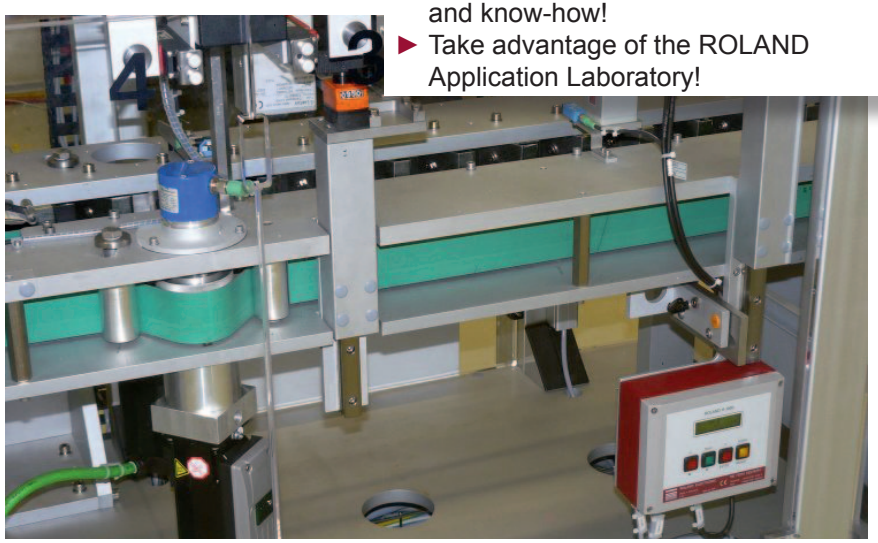
SPECIAL APPLICATIONS

- The special know-how of Roland in the field of Eddy Current, Induction, and Magnetic Flux Leakage offers solutions for very special tasks.

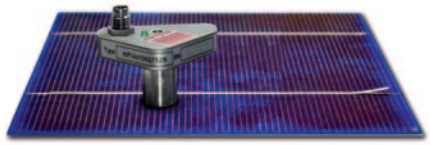
I10KV	WF14	I20
Pharma Blister Content Verification	**Double Layer Detection during production of batteries or solar cells**	**Hardening control at metallic small parts**
Fast detection of incorrect package filling conditions in the cartoner	Sensors for the direct mounting into the vacuum gripper	Fast 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

Technology		Eddy Current
Blister pack	Number	Up to 10 Aluminum blister per pack
	Area	Min. 30 x 60 mm Blister area
	Height	Max. 100 mm packing height
	Others	As well as Alu / PVC Blister and Alu / Alu Blister
Programs		255
Velocity		500 pck/min

WF14

Technology	Eddy Current
Sensor variants available for	Solar cells, mono/multi crystalline, 100 ... 300 µm or Li-Ion Electrodes
Sensor principle	Single side, contacting
Air gap	1 mm
Reaction time	28 ms
Output	0 ... 10 V / 4 ... 20 mA

I20

Technology	Eddy Current
Sensor principle	2-sided, non contacting
Suited for	Small parts made of steel such as. screws, nuts, washers, balls, stamped parts etc.
Measuring time	2 ... 250 ms
Programs	255
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

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- Software
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Your local representative:

Roland Partners

EHR® GmbH & Co. KG

Kurschat GmbH

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