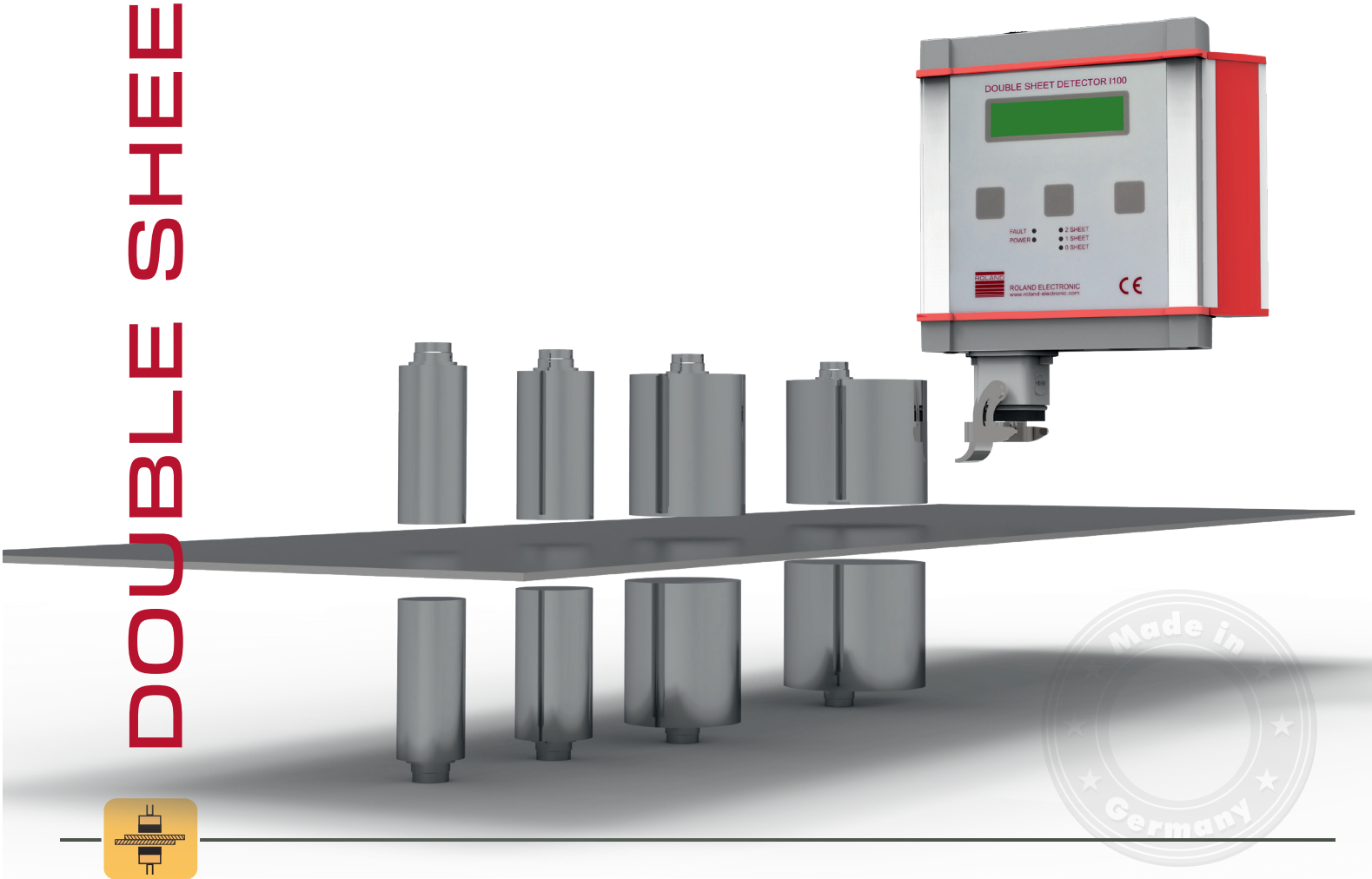
ROLAND
sensor technology

DOUBLE SHEET DETECTION

I100 DOUBLE SHEET

DUAL HEAD SYSTEM, NON-CONTACTING, FOR FE UND NF

- Dual head sensors (transmitter / receiver), inductive
- Non-contact double sheet control of
  - Ferrous-material 0.05 - 4.0 mm (0.02 - 0.16 in) single sheet
  - Non-ferrous-material 0.05 - 12.0 mm (0.02 - 0.50 in) single sheet
- Easy set-up by key operation or via control input
- LCD display for visualization of nominal / current values, operational / error message, key allocation
- Compact enclosures for DIN-rail mounting, protection class IP00 or for machine frame mounting in protective enclosure, protection class IP54



I100 DOUBLE SHEET

Application

When feeding sheets automatically, more than one sheet can be inadvertently fed into the processing machine. This can result in damage of the machine and tools, expensive repairs and production loss. The dual head Double Sheet Detector I100 has been designed to prevent such events.

Sensor mounting

The sensors can be installed in any position: horizontally or vertically. Transmitter and receiver must be aligned to each other "face-to-face".

- Preferably, sensors should „stick out" when mounted in steel brackets.
- Use plastic brackets for flush mounting.
- Recessed mounting of the sensors is not recommended, because dirt and chippings can collect on the sensor surface.

Measurement principle

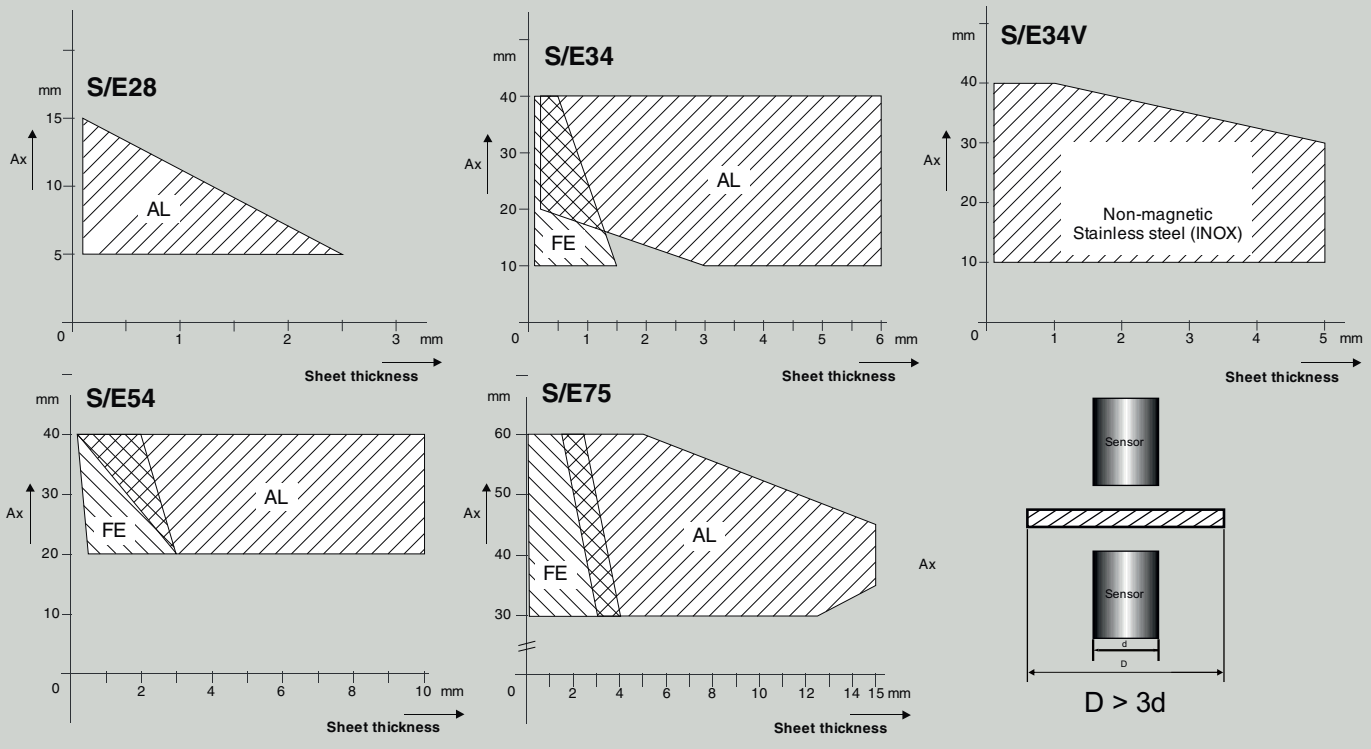
The system functions according to the transmission principle. The transmitter emits an alternating electrical field, the receiver on the other side of the sheet electronically detects the signal attenuated by the sheet. The receiver signal is processed in the control unit and made available to the machine control as switching signals.

Sensor diagrams

The measurement range depends on the sensor gap (Ax) and the type of material: ferrous (FE) or non-ferrous.

The shaded areas designate the working range of Ax for a particular type of material and sheet thickness; respectively the maximum and minimum sheet thickness to be controlled of a particular material for a given transmitter / receiver distance Ax.

The designated values are standard values, variations are possible due to material differences and installations of the sensors. Special sensor types, e.g. for special materials, can be delivered on request.



Measurement target

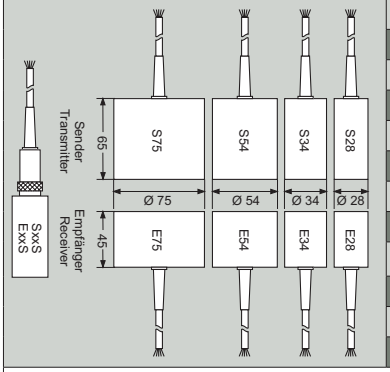
Length and width of the sheet to be monitored should be at least 3 times the sensor diameter. In this case reliable double sheet control according to the conditions sketched out in the figure above is provided.

Measurement time

The measurement time depends on the sensor diameter. The minimum dwell time is approximately equal to the sensor diameter in milliseconds (ms). The interval between two measurement cycles and the switching of the respective output is about the same as the minimum dwell time.

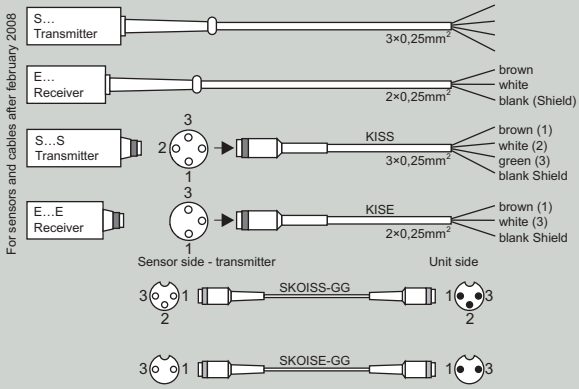
DUAL HEAD SYSTEM, NON-CONTACTING, FOR FE AND NF

Sensors



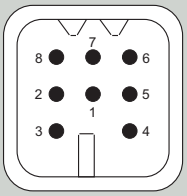
S/E28	S/E34	S/E54	S/E75	S/E28S	S/E34S	S/E54S	S/E75S
Pair of sensors, with fixed cable				Pair of sensors, with connecting socket			
Single sheet thickness corresponding to the sensor diagrams							
Switching time:							
30 ms	35 ms	55 ms	75 ms	30 ms	34 ms	54 ms	75 ms
Diameter:							
Ø 28 mm	Ø 34 mm	Ø 54 mm	Ø 75 mm	Ø 28 mm	Ø 34 mm	Ø 54 mm	Ø 75 mm
Length: Transmitter: 65 mm / Receiver: 45 mm							
Sensor weight approx.:							
0.15 kg	0.32 kg	0.38 kg	1.1 kg	0.15 kg	0.32 kg	0.38 kg	1.1 kg
Ambient temperature: 0° - 50°C during operation							
Protection class: IP65							

Cable



Supply plug

S0003515

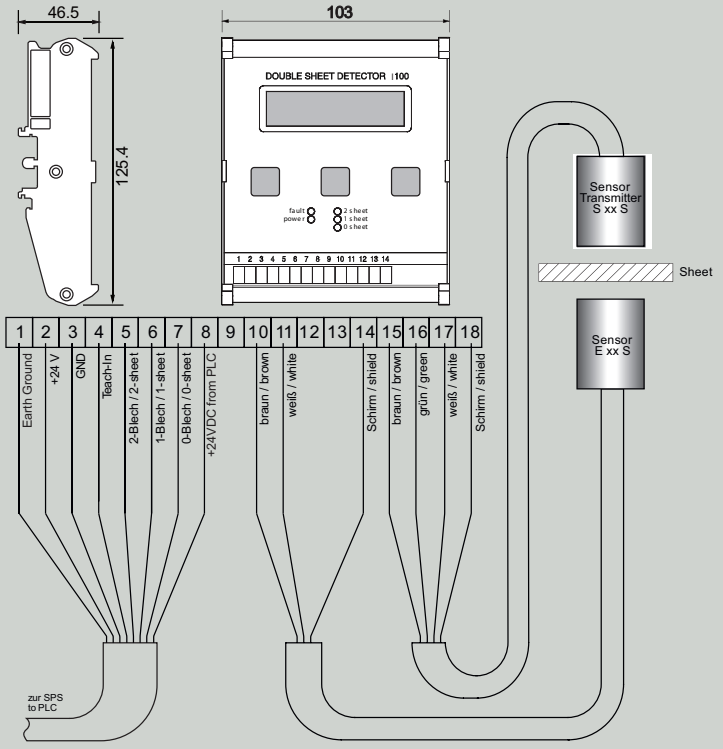


Enclosure HAN 3A,
EMI-Type,
metrical 7-pin insert and PE

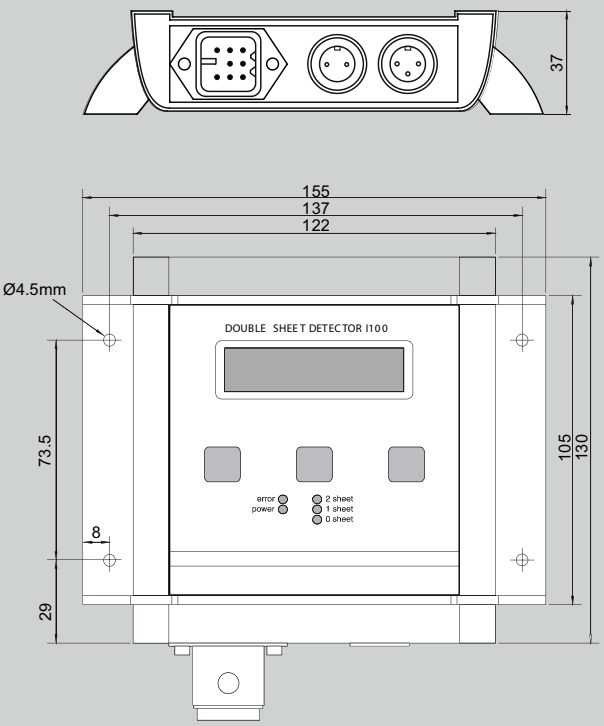
Pin 1	+24VDC
Pin 2	GND
Pin 3	Teach-In
Pin 4	2-sheet
Pin 5	1-sheet
Pin 6	0-sheet
Pin 7	+24VDC
Pin 8	Earth ground

Dimensions

I100



I100- S



Technical Data

	I100	I100-S
Supply voltage	24 VDC (+6V / - 4V) / 110 mA	
Power consumption	approx. 2,7 W @ 24V	
Fuse	375 mA / slow-blow / size 5 x 20 mm	
Power / Switching indication	5 LEDs	
Display	LCD, 2 lines, 16 digits each	
Ambient temperature	0° - 50°C during operation	
Switching outputs 0- 1 - 2 - Sheet	Opto coupler outputs, output sourcing (PNP)	
Temperature drift of switching point	± 0.02% / °C	
Switching capacity / Measurement period	max. 30 V, max 10 mA / depending on sensor	
Enclosure	For DIN-rail mounting (EN50022, BS5584)	For machine frame mounting
Protection class	IP00	IP54
Weight	approx. 0.2 kg	approx. 0.6 kg
Connections	Terminal Block / Plug connection	
Dimensions (H x W x D)	125.4 x 103 x 46.5	130 x 155 x 37mm

Order Information

Control unit	
Part no.	Description
I100	Control unit, for dual head sensor arrangements, operating voltage 24VDC, for DIN-rail mounting (EN50022, BS5584), protection class IP00
I100-S	Control unit, for dual head sensor arrangements, operating voltage 24VDC 24 V DC, or machine frame mounting

Sensors			
Part no.	Description	Part no.	Description
S/E28	Pairs of sensors, fixed cable with open wire ends for terminal block wiring. Standard cable length is 2 meters, lengths up to 20 meters made to order.	**S/E34S**	Pairs of sensors, with terminal plug for connecting the sensor cable (please order cable separately).
S/E34		**S/E34VS_16kHz**	
S/E34V_16kHz		**S/E54S**	
S/E54		**S/E75S**	
S/E75		**S/E28S**	
Note: S = Transmitter, E = Receiver, V = for stainless steel			

Cables* (for pluggable sensors)			
Part no.	Description	Part no.	Description
KISS-G	For connection of the transmitter	**SKOISS-GG**	For connection for transmitter to the I100-S
KISE-G	For connection of the receiver	**SKOISE-GG**	For connection for receiver to the I100-S
*** Standard length of cables is 2m, lengths up to 20m upon order, larger lengths upon request.**			

Accessories (for I100-S)	
Part no.	Description
S0003515	Supply plug set, complete
S0003517	Plug set, for sensor cables with open wire ends

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