

DIN rail mount enclosure IP00



Machine frame mount enclosure IP65

NON-CONTACT INDUCTIVE TRANSMITTER / RECEIVER PRINCIPLE

- 5 interchangeable pairs of sensors
- Single sheet thickness range
 - Ferrous material .05 - 4 mm (.002in. - .16in.)
 - Non-ferrous material .05 - 12 mm (.002in. - .50in.)
- Reliable double sheet control even with vibrating and fluttering sheets over the whole air gap between the sensors
- Teach-in set-up by key operation or via control input
- LCD display of nominal and actual values as well as operational and fault messages
- Compact enclosure for DIN-rail mounting, protection class IP00
or
protective enclosure for machine frame mounting, protection class IP65

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.



WARNING! These devices do **NOT** include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. Never use these products as sensing devices for personnel protection. Their use as a safety device may create an unsafe condition which could lead to injury or death.

Sensors

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. Brackets made of electrically highly conductive metals (e.g. aluminum, copper, brass), should not be used, because they degrade the sensor performance.

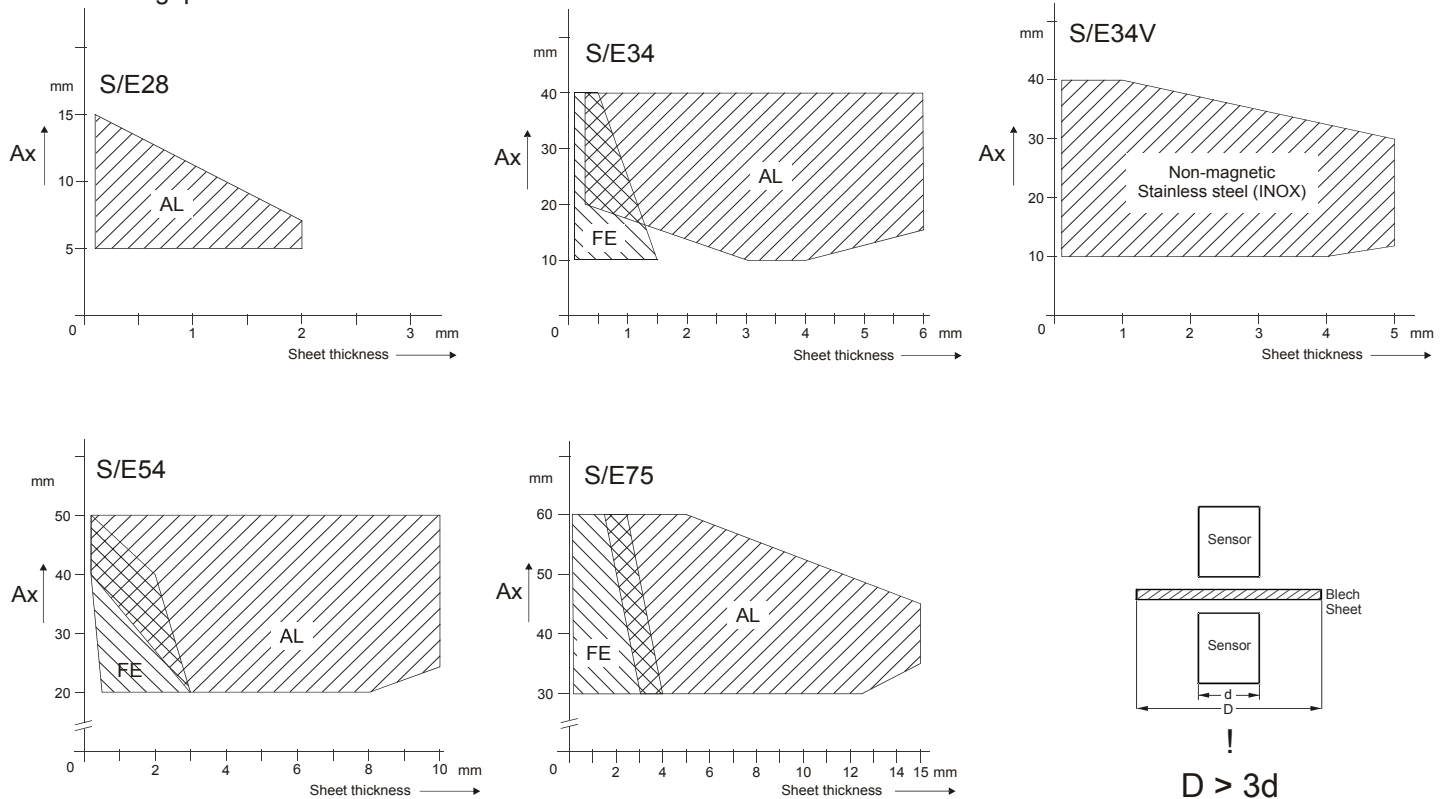
Sensor diagrams

The measurement range depends on the sensor gap (A_x) and the type material.

The shaded areas designate the working range of A_x 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 A_x .

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.

A_x = Sensor gap



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 diagram above is provided.

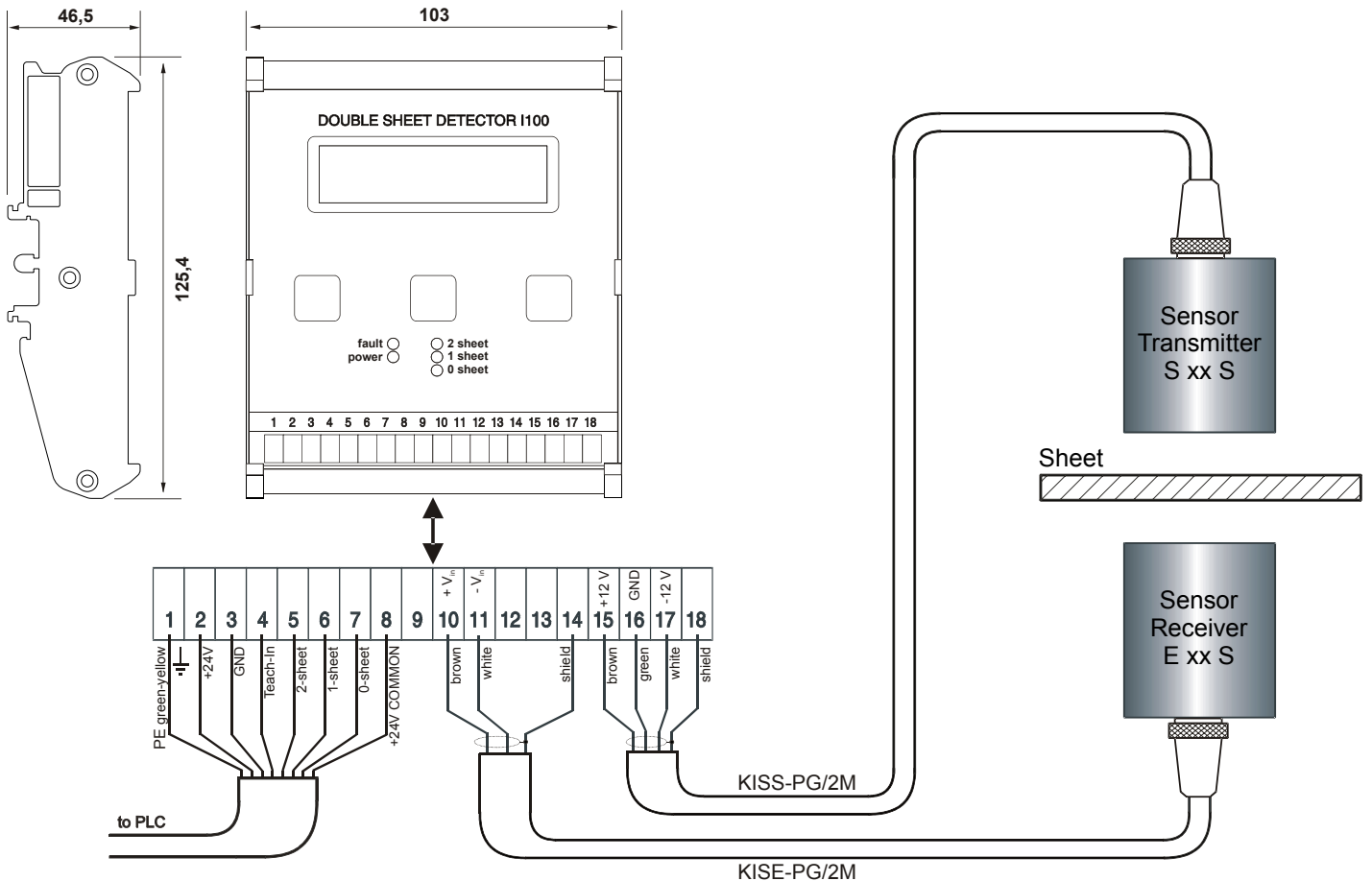
Measurement time:

This 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.

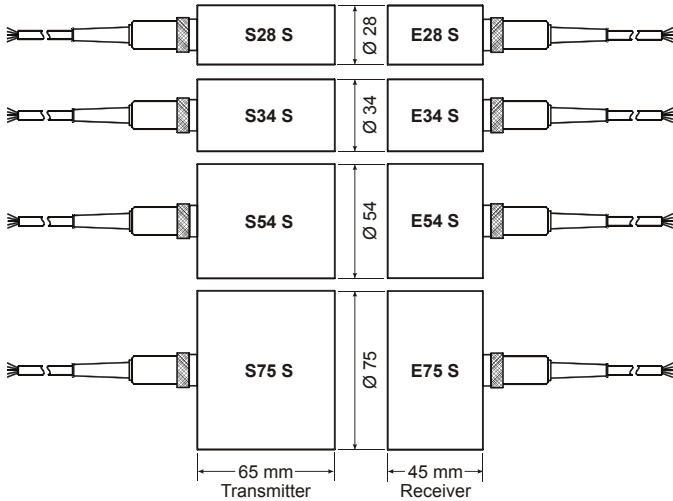
Technical data

Supply voltage	24 V DC / 110 mAmps.
Power consumption	approx. 2.5 VA
Fuse	375 mAmps. slow-blow size 1206 (SMD)
Power / Switching indication	5 LEDs
Display	LCD display, 2 lines, 16 chars. each
Ambient temperature	0° - 50°C (32° - 122°F) during operation
Switching outputs 0-1-2 - Sheet	Open Emitters (NPN) of opto coupler outputs
Temperature depending drift of switching point	± 0,02 % / °C
Switching capacity	max. 50V, max. 50mAmps.
Measurement period	The min. dwell time of the sheet between the sensors is roughly equal to the sensor diameter in milliseconds, e.g. for S28 = 30 ms..
Enclosure	I100: for DIN-rail mounting (EN50022, BS5584) I100-IP65: plastic enclosure for machine frame mounting, with transparent lid
Class of protection	I100: IP 00 I100-IP65: IP65
Weight	approx. 0,2 kg (0.44 lbs)
Connections	Terminal block wiring
Dimensions (I100)	125,4 × 103 × 46,5 mm (H × W × D)

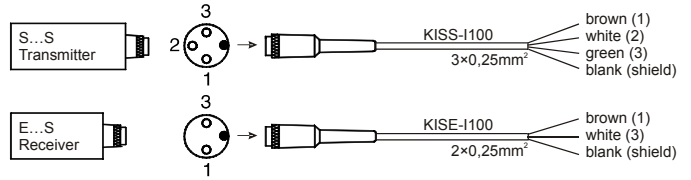
Dimensions of control unit and connections



Dimensions of sensors



Cables



Sensor data

Pair of sensors, with connecting socket	S/E28S	S/E34S	S/E54S	S/E75S	
Single sheet thickness	Please refer to sensor diagrams				
Switching time	30	35	55	75	ms
Diameter	28	34	54	75	mm
Length	Transmitter: 65		Receiver: 45		mm
Weight of sensor appr.	0,28	0,40	0,90	1,80	kg
Operating temperature	0 - 50 °C (32 °F - 122 °F) on operation				
Class of protection	IP 65				

Order information

Control units	
Part name	Comment
I100	Control unit, for dual head sensor arrangements, operating voltage 24 V DC.
I100-IP65	As I100, but unit mounted in plastic enclosure for machine frame mounting, with transparent lid, protection class IP65

Sensors	
Part name	Comment
S/E28S	Pair of sensors, with terminal plug for connecting the sensor cable (order cable separately).
S/E34S	
S/E34V_16kHz	
S/E54S	
S/E75S	
(S = Transmitter, E = Receiver, V = for Stainless Steel)	

Cables (for pluggable sensors)	
Part name	Comment
KISS-PG/2M	For connection of transmitter
KISE-PG/2M	For connection of receiver
Standard length of cables is 2m, lengths up to 20 m upon order, larger lengths upon request.	

Abbreviated Set-up / Teach-in instructions

(for detailed instructions refer to the Operating manual)

1. Set the sensor distance (Ax) according to the statements in the sensor diagrams.
2. Put a sheet with nominal thickness fully into the gap between the sensor heads (see connection sketch).
3. Press the SETUP key and then the NEW key, a new Teach-In procedure will then be performed.
4. The green LED (1-SHEET) lights up now, the measuring value is stored.
5. Functional check:
If a second sheet is placed in front of the sensor (double sheet condition), the red LED (2-SHEET) lights up. If both sheets are removed, the red LED (0-SHEET) lights up.