

## Double Sheet Detector R 1000 Series E10

Electro magnetic principle -  
microcontroller based

**NOW AVAILABLE:**

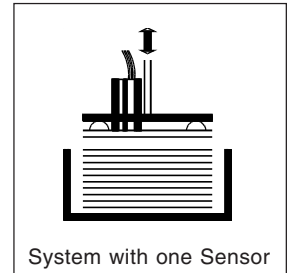
- ▶ Panel mount
- ▶ Fieldbus technology

One - sided contact double sheet control of ferrous materials

No force after measurement

3 exchangeable linearized sensors for double sheet control  
of 0,1 to 6,0mm (.004 to 0.240") sheet thickness

Optional version 4P allows the connection of up to four sensors



- Calibration **without** sheet samples
- Digital display of sheet thickness and operations parameter
- Programmable for 255 different sheet thicknesses
- Monitoring of over gauge and under gauge limits
- Monitoring of operating voltage and measuring time
- Opto coupled 9 respectively 11-Bit PLC input interface
- Selectable interfaces:
  - Data communication via optional opto coupled RS 232 interface (download)
  - Relay or opto coupled output for under gauge, nominal gauge, over gauge and enable



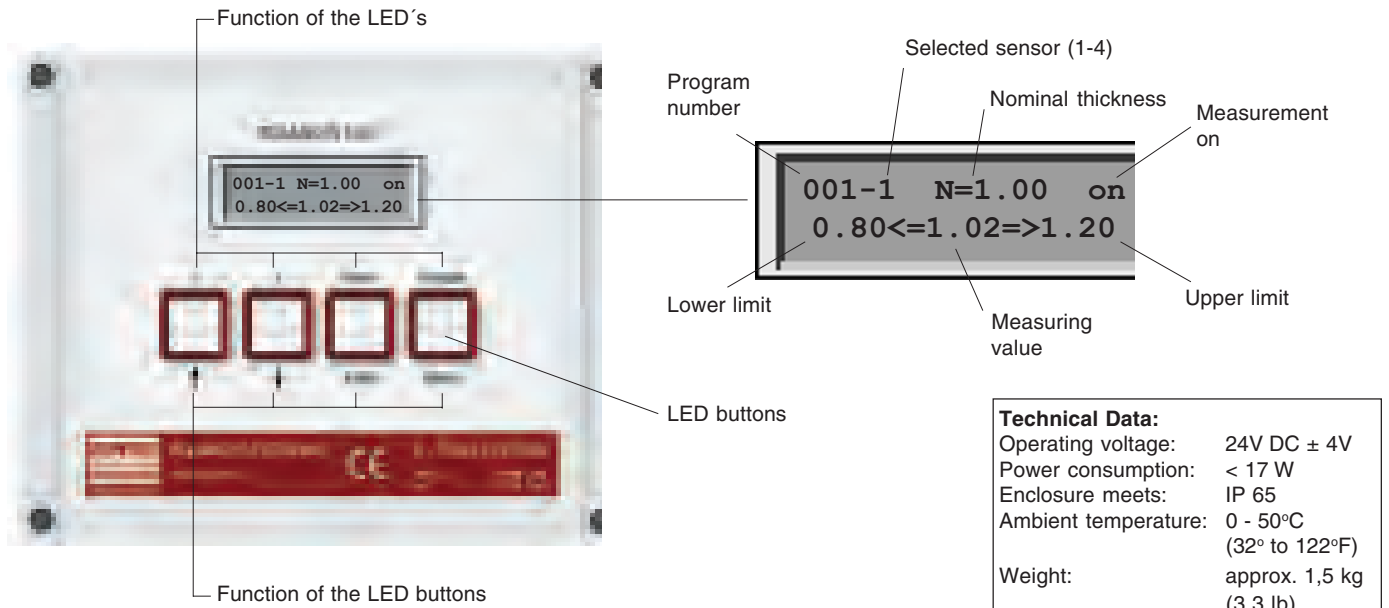
**WARNING!** These devices do **NOT** include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. Never use these products as sensing devices for personnel protection. Their use as a safety device may create an unsafe condition which could lead to injury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

**Description:**

When sheets are fed automatically, two or more sheets may be fed inadvertently into a processing machine. This can damage tools, cause halt in production or result in expensive repairs. The double sheet detector E10 can reliably prevent this from occurring. In addition to the connection of one sensor an option is available to connect four sensors of the same type (E10 4P). Sensor switching is accomplished either separately sequentially via the PLC or via program selection. In the latter configuration the system is also used for Hidden Parts Detection.

**Function:**

The double sheet detector is based on the electromagnetic principle. It monitors ferromagnetic sheets with one-sided contact and exerts force during the monitoring process only. A change of the sheet thickness results in a change of induction. The system calculates the sheet thickness from this change. Corresponding to the pre-set limits 0-sheet, 1-sheet or 2-sheets signals are generated. One sensor can be connected to the control unit (type E10) or up to 4 sensors (type E10 4P). The control unit is available in 3 versions A, B and C.



<b>Technical Data:</b>	
Operating voltage:	24V DC ± 4V
Power consumption:	< 17 W
Enclosure meets:	IP 65
Ambient temperature:	0 - 50°C (32° to 122°F)
Weight:	approx. 1,5 kg (3.3 lb)
<b>Dimensions</b>	
<b>Unit E10:</b>	<b>Unit E10 4P</b>
Width:	140 mm / 180 mm
Height:	140 mm / 140 mm
Depth:	71 mm / 71 mm

**Memory and signal inputs:**

- Version A: Memory for 255 parameter sets (thicknesses). Programming and addressing by push buttons. Measurement start via control input
- Version B: Memory for 255 parameter sets (thicknesses). Programming by push buttons Addressing with 9 respectively 11 data inputs opto coupled 24 VDC with joint common
- Version C: Memory for 255 parameter sets (thicknesses). Programming by push buttons Addressing with 9 respectively 11 data inputs opto coupled 24 VDC with joint common 1 opto coupled RS 232 interface for bidirectional data communication with a PLC or a PC

**Signal outputs**

Signal outputs: dry two way contacts  
 Maximum switching voltage: 250 V AC  
 Maximum switching current: 1 A  
 Maximum switching power: 240 W / 200 VA

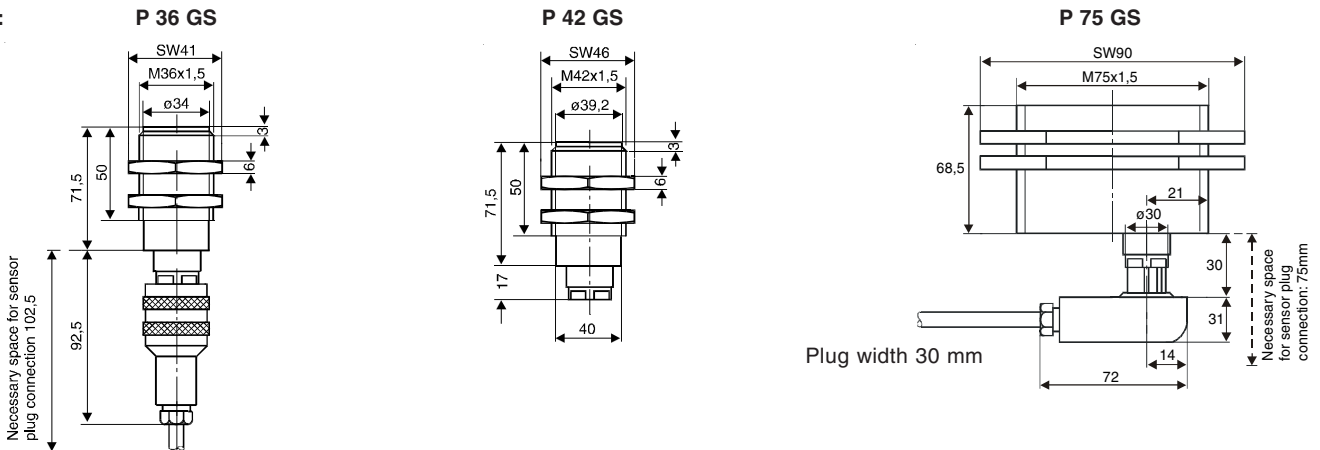
**Relay version (Version A and B):**

dry two way contacts  
 250 V AC  
 1 A  
 240 W / 200 VA

**Optocoupled version (Version B and C):**

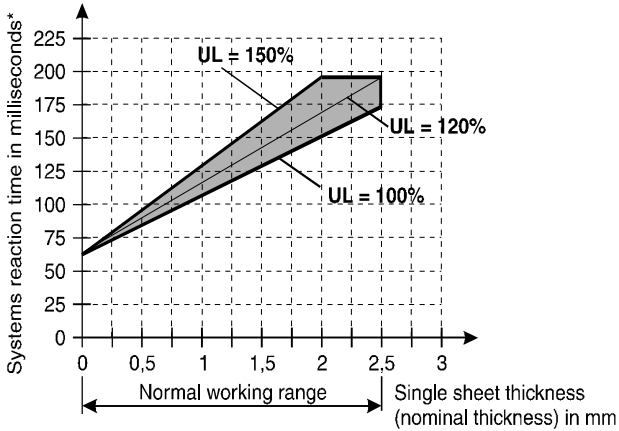
Emitter and collector  
 50 V DC  
 150 mA  
 100 mW

**Sensors:**

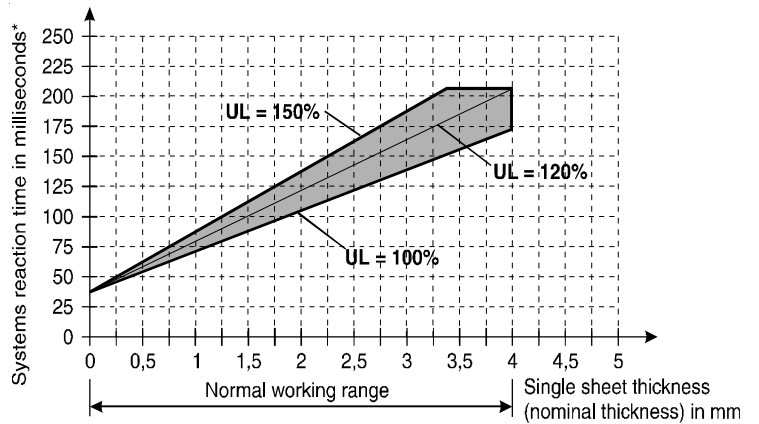


**Sensor Diagrams:** Systems reaction time with upper switching limits (UL) at 150%, 120% and 100% of nominal sheet thickness

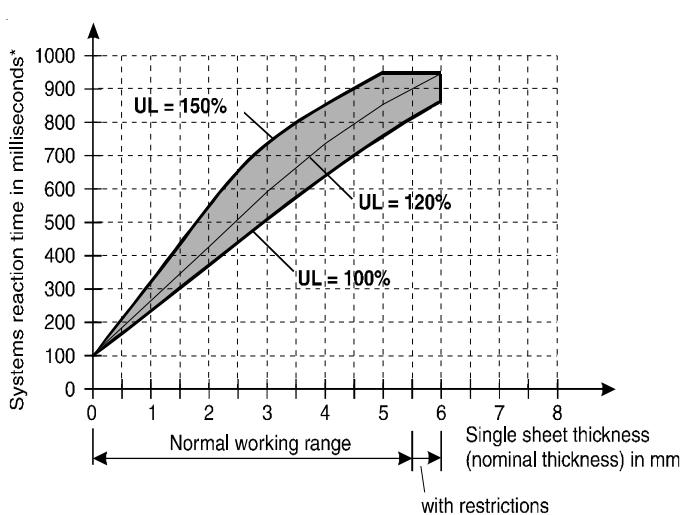
**P 36 GS**



**P 42 GS**

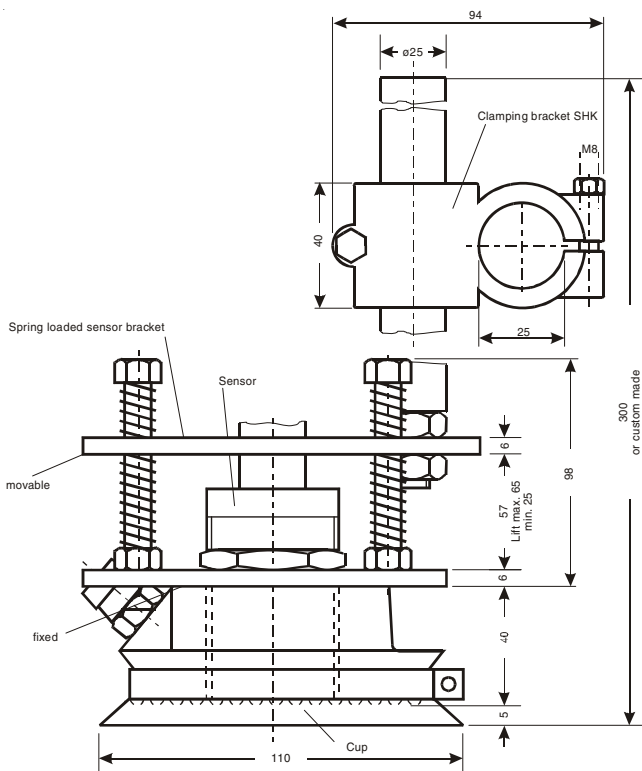


**P 75 GS**



**Spring loaded sensor bracket with vacuum cup SHS for sensors P 36 GS and P 42 GS**

(also available without vacuum cup as type SH...GS)



**Order data:**

**Control unit for the connection of one sensor:**

E 10 A - R:	Manual operation	Relay-Version
E 10 B - R:	Control via PLC	Relay-Version
E 10 B - O:	Control via PLC	Opto coupler-Version
E 10 C - O:	Download via PLC	Opto coupler-Version

**Control unit for the connection of up to four sensors:**

E 10-4P-B - R:	Control via PLC	Relay-Version
E 10-4P-B - O:	Control via PLC	Opto coupler-Version
E 10-4P-C - O:	Download via PLC	Opto coupler-Version

**Control unit with central sensor cable for the connection of up to four sensors**

E 10-4P-B - R - Z:	Control via PLC	Relay-Version
E 10-4P-B - O - Z:	Control via PLC	Opto coupler-Version
E 10-4P-C - O - Z:	Download via PLC	Opto coupler-Version

**Sensors:**

- P 36 GS Electro-magnet up to 2,5 mm single sheet thickness (The sensor P 36 GS should only be used in case of confined space situations. The standard sensor should be P 42 GS)
- P 42 GS Electro-magnet up to 4,0 mm single sheet thickness
- P 75 GS Electro-magnet up to 6,0 mm single sheet thickness

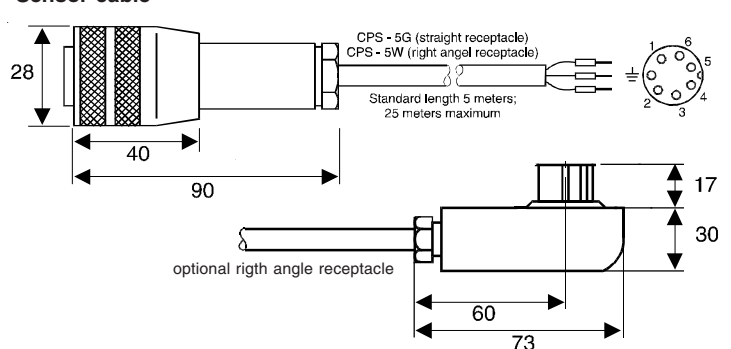
**Sensor cable:**

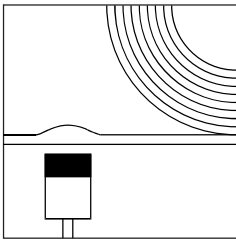
- CPS - 5 - G Oil: Straight receptacle (Standard cable length 5m)
- CPS - ... - G Oil: Straight receptacle (Cable up to 25m made to order; for longer cables enquire)
- CPS - 5 - W Oil: Right angle receptacle (Standard cable length 5m)
- CPS - ... - W Oil: Right angle receptacle (Cable up to 25m made to order; for longer cables enquire)

**Special accessories:**

- SH 36 GS: Spring loaded sensor bracket for P 36 GS
- SH 42 GS: " " " " P 42 GS
- SHS 36 GS: " " with vacuum cup for P 36 GS
- SHS 42 GS: " " with vacuum cup for P 42 GS
- SHK: Clamping bracket
- 2395110: Rubber lips for vacuum suction cup
- PWS E10: Program selection box
- RPP: Software (DOS) for parameter back up (Version C only)

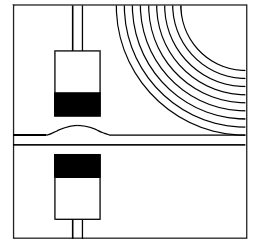
**Sensor cable**





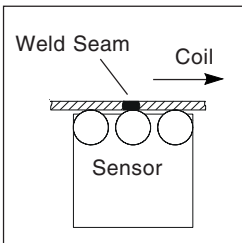
From a broad product program suitable sheet thickness measurement and sheet thickness control instrument can be selected

- For ferrous and non ferrous materials
- non contact or contact measurement
- Simple units for limit control
- Sophisticated systems with elaborate documentation satisfying SPC requirements



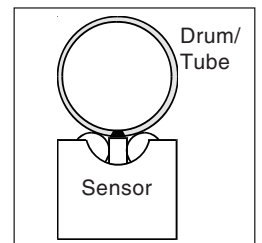
Thickness measurement IDM60

**PRODUCT PROGRAM WELD SEAM DETECTION**



A product family is available to satisfy varying requirements

- For ferrous materials and austenitic stainless steel.
- For over lapped weld seams with two sensor system for non ferrous and ferrous materials
- For OEM's and retrofitting.
- Application examples: tubes, containers, drums, wheel rims, coils



Weld seam detector SND 30