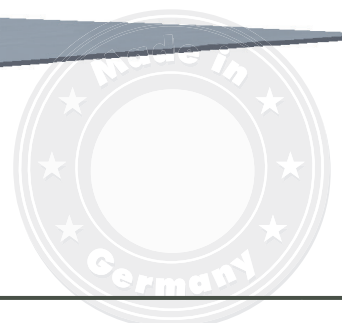




E20 DOUBLE SHEET

SINGLE SIDE SYSTEM, CONTACTING

- Double sheet control of ferrous materials
- No force after measurement
- Exchangeable sensors for double sheet control from 0.1 to 12 mm (.004 to 0.472 in.) sheet thickness
- Optional version 4P allows the connection of up to 4 sensors
- 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:
 - opto coupled RS232 interface
 - all common fieldbus technologies



E20 DOUBLE SHEET

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 E20 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 (E20-4P). The system can also be used for Hidden Parts Detection. The sensor switching is controlled either sequentially by the PLC or automatically in the new sequencer mode. This function eliminates the time-consuming switching of the measuring channel or the program by the PLC. A measurement of 4 separate sheets of 1.0 mm thickness with the P42AGS sensor and a 120% double sheet threshold takes less than 305 ms by using the sequencer. In contrast the same measurement with program switching by the PLC takes more than 700 ms.

Function:

The double sheet detector is based on the electromagnetic principle. It monitors ferromagnetic sheets with single sided sensors and exerts forces 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. The control unit is available in 3 versions B, C and fieldbus, for feature see below. All systems can store 255 parameters sets (thicknesses). The features and the version are included in the system description. Standard systems have a 24 V parallel interface for selection of the 255 parameter sets (programs). For fieldbus systems the selection of programs is done via fieldbus.

Standard Version:	Fieldbus-Version:
<p>Program-number: 1-1 Sensor-number: 0.50 Nominal thickness: -EIN Measurement: 80% < S2=0.51 > 120%</p> <p>Lower Limit, Actual measurement, Upper Limit</p>	<p>Program number: 1-1 Sensor-number: 0.80 Type of material: FE=1.00mm Nominal thickness: < 1.0 2 > Measurement: -ein 1.20</p> <p>Fieldbus status: Profibus ONLIN E // Bus-Typ: DP Actual measurement: C lose d Upper limit: 1 Bus-address: 1</p> <p>Lower limit</p>
<p>E20-xx-x-x-xx</p> <p>Number of sensors: -- : 1 sensor, 4P : up to 4 sensors Version: B : Standard, C : Data backup via RS232 Outputs: O : Opto coupler, R : Relais Enclosure: -- : Wall mount, FP : Panel mount</p> <p>Example: E20-C-O for one sensor, data backup / remote control via RS 232, optocoupler signal</p>	<p>E20-xx-xx-S</p> <p>Number of sensors: -- : 1 sensor, 4P : up to 4 sensors Fieldbus: PR : Profibus, xx : all common fieldbusses Enclosure with plug connection</p> <p>Example: E20-4P-PR-S for up to 4 sensors, data backup / remote control via fieldbus, these systems have always signal outputs with optocoupler and are completely equipment with connectors</p>

Dimensions		
E20 [WxHxD]	E20-4P [WxHxD]	E20-(4P)-PR-S [WxHxD]
140x140x71 mm	180x140x71 mm	225x240x71 mm

Sensor cable / Accessories (Dimensions)

Sensor cable

Cable: CPS-5-GOIL for P42GS and P75VGS
Straight receptable

Cable: CPM12S-G for P30GS and P42AGS
Straight receptable

Clamping bracket SHX

Cable: CPS-5-WOIL
Right angle receptable

Plug width: 30 mm

Cable: CPM12S-W
Right angle receptable

Plug width: 20 mm

Sensor bracket:

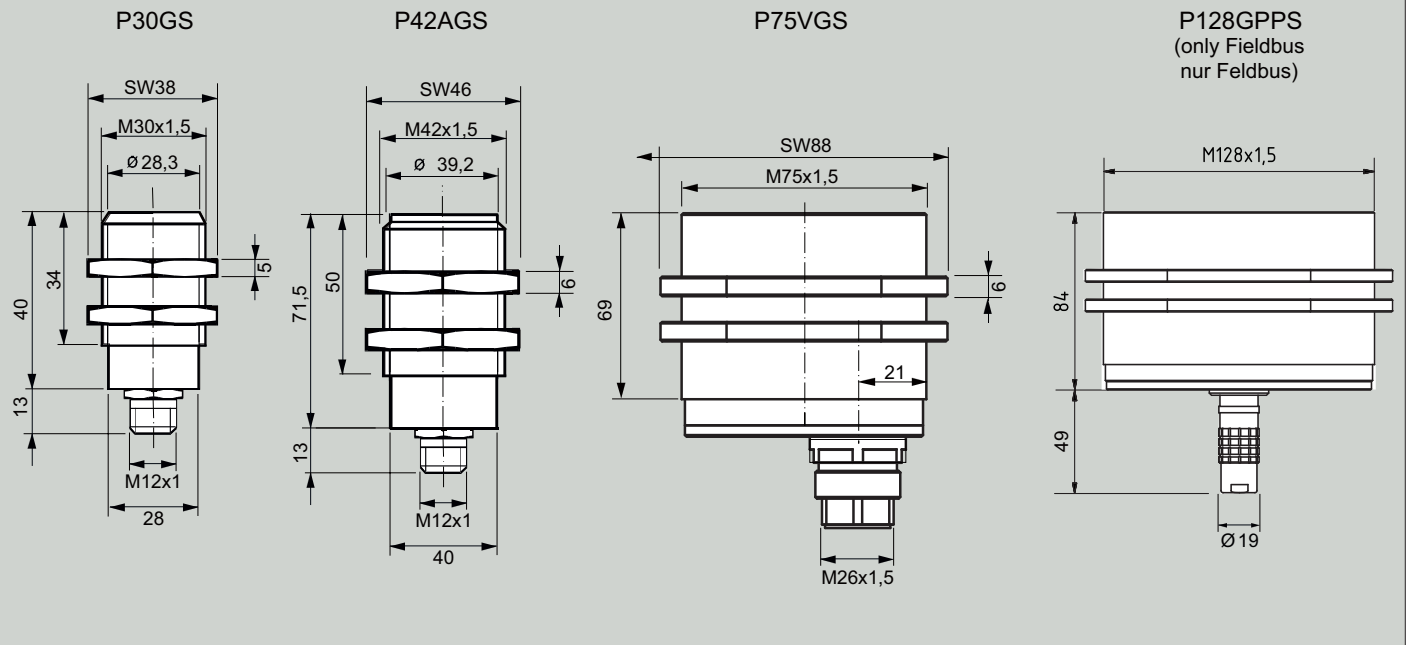
Spring loaded sensor bracket with vacuum cup SHX42 for sensor P42(A)GS (also available: spring loaded bracket SHS; without vacuum cup available as type SH...GS)

approx. \varnothing 110

A max. 120

SINGLE SIDE SYSTEM, CONTACTING

Sensors:



Measurement time:

The table below shows the reaction time of the system when detecting Double Sheet with the maximum sheet thickness applicable to each sensor and a selected upper switching limit of 120%.

The times for 2, 3 and 4 sensors apply to the **sequenzer mode**.

Sensor	Max. sheet thickness [mm]	Measurement time [ms] with max. sheet thickness and 120 % double sheet threshold			
		1 Sensor	2 Sensors	3 Sensors	4 Sensors
P30GS	2,5	55	105	160	215
P42AGS	4	80	180	280	375
P75VGS	6,5 (8*)	450	800	1220	1620
P128GPPS	11 (12*)	1150	1600	2050	2500

Air gap behaviour:

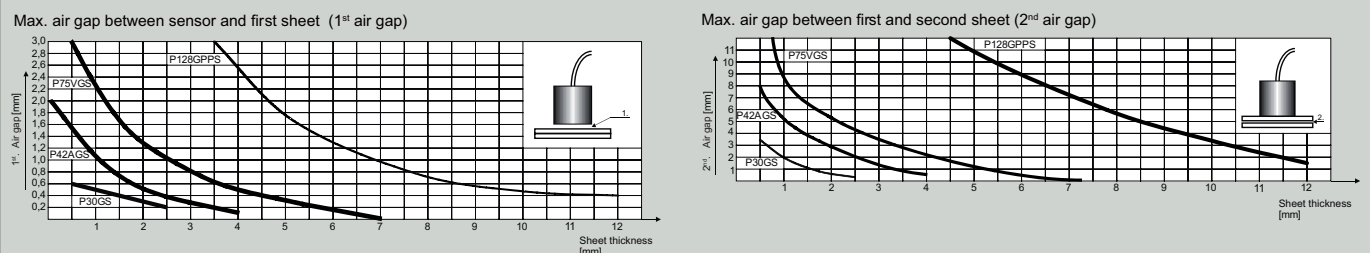
The new Double Sheet Detector E20 has a much improved air gap tolerance especially in conjunction with the new sensor P42AGS. There are two types of air gaps in case of double sheet control.

First there is the air gap between sensor and sheet surface (1st air gap) and the air gap between the first sheet and the second sheet (2nd air gap). The diagrams show the relationship.

Example for 1st air gap with sensor P42AGS: According to the diagram, if processing a sheet of 2.0 mm (.08 in.) an air gap of 0.5 mm (.02 in.) can be tolerated with a double sheet threshold of 120 %.

Example for 2nd air gap and sensor P42AGS with 2.0 mm (.08 in.) sheet thickness and a double sheet threshold of 120 %; an air gap of up to 3.0 mm (.12 in.) can be tolerated.

Attention ! The performance data of both diagrams **cannot** be combined !



*0 air gap



Technical Data

E20			
Operating voltage:	24 V DC \pm 4 V	Ambient temperature:	0 - 50° C
Power consumption:	< 120 W	Weight:	approx. 1.5 kg (3.3 lbs)
Protection category:	IP 65	Signal inputs:	galvanically isolated 24 VDC with joint common
	Version B		Version C, Fieldbus
SignalOutputs:	dry two way contacts		galvanically isolated with optocoupler
Max. switching voltage:	250 V AC		50 VAC
Max. switching current:	1 A		0.15 A
Max. switching power:	240 W / 200 V A		100 mW

Order Information

E20 Fieldbus version		Wall mount enclosure		Panel mount (FP)	
Part no.	Description	Part no.	Description	Part no.	Description
E20-XX-S	1 Sensor	E20-XX-S-FP	1 Sensor	E20-XX-S-FP	1 Sensor
E20-4P-XX-S	4 Sensoren	E20-4P-XX-S-FP	4 Sensoren	E20-4P-XX-S-FP	4 Sensoren

XX: DN=DeviceNet (B-Coding), DNT=DeviceNet (A-Coding), COP=CANopen (A-Coding), CP=CANopen (B-Coding), CC=CC-Link, IN= INTERBUS, PR=PROFIBUS DP, PN=PROFINET IO, EN=EtherNet/IP, ET=EtherCAT

E20 IO version		Wall mount enclosure		Panel mount (FP)	
Part no.	Description	Part no.	Description	Part no.	Description
E20-B-O E20-B-R E20-C-R E20-C-O	1 Sensor, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup	E20-B-O-FP E20-B-R-FP E20-C-R-FP E20-C-O-FP	1 Sensor, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup	E20-B-O-FP E20-B-R-FP E20-C-R-FP E20-C-O-FP	1 Sensor, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup
E20-4P-B-O E20-4P-B-R E20-4P-C-R E20-4P-C-O	4 Sensors, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup	E20-4P-B-O-FP E20-4P-B-R-FP E20-4P-C-R-FP E20-4P-C-O-FP	4 Sensors, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup	E20-4P-B-O-FP E20-4P-B-R-FP E20-4P-C-R-FP E20-4P-C-O-FP	4 Sensors, (O) = Opto coupler; (R) =Outputs Relais; (B) = no data backup; (C)= with data backup

Sensors			
Part no.	Description	Part no.	Description
P30GS*	Electro magnet up to 2.5 mm**	P75VGS	Electro magnet up to 6,5 mm**
P42AGS	Electro magnet up to 4.0 mm**	P128GPPS	Electro magnet up to 12,0 mm**

* The sensor P30GS should only be used in case of confined space situations. The standard sensor should be P42AGS ** single sheet thickness

Sensor cable					
For P30GS + P42AGS:		For P128GPPS:		For all other sensors:	
Part no.	Description	Part no.	Description	Part no.	Description
CPM12S-G*** / SM12CP-G****		CPS-GOIL	Straight receptacle	CPM12S-W	Right angle receptacle
SM12CPM12S-GG	SM12CPPPS-GG	SM12CPS-GG	Fieldbus technology, straight receptacle	SM12CPM12S-GW	SM12CPPPS-GW
		SM12CPS-GW	Fieldbus technology, right angle receptacle		

Standard cable length is 5 meters. Customized lengths up to 50 meters can be ordered; larger lengths upon request. *** Coupling joint to sensor **** Evaluation electronic to coupling joint

Accessories			
Part no.	Description	Part no.	Description
SH42GS*	Spring loaded sensor brackets with vacuum cup (excepting SH42GS) for P42GS and P42AGS *no vacuum cup	SHK	Clamping bracket for SH42GS, SHS42GS (-85), SHS42G-FB (80)
SHS42GS / SHS42GS-85		SHX-AZ2-25	Adaptor (Shank) 25 mm for SHX42 / SHX42-DL
SHS42G-FB / SHS42G-FB80		2395110	Rubber lips for vacuum cup
SHX42 / SHX42-DL		RPP1000	Software for parameter back up on a PC (Version C only)

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