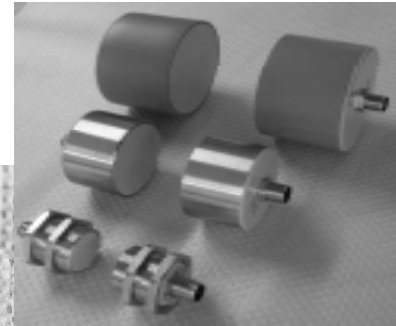
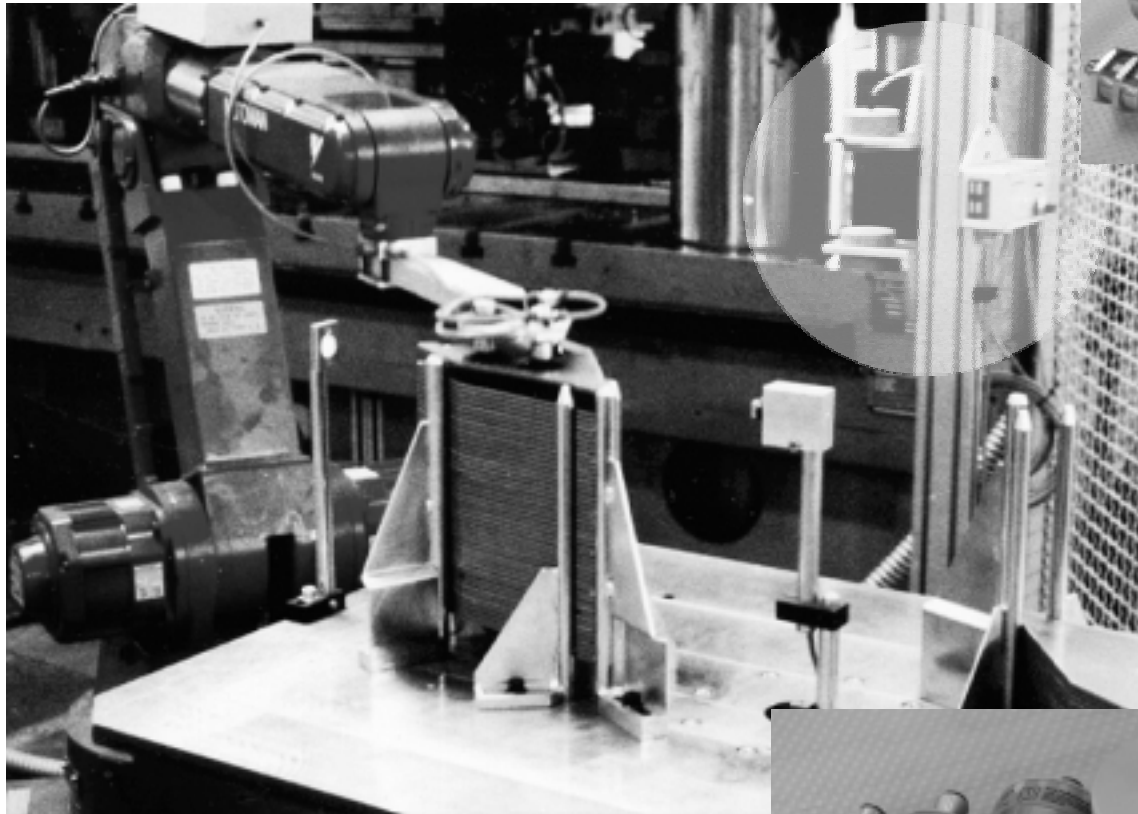




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Disclaimer: All information is given in good faith but without warranty.



Double Sheet Sensors monitor the sheet separation on automatic metal sheet- destackers, - robots, -feeders, -handling equipment etc.

Abb.1



These sensors are useful for low price and simply double sheet monitoring as all functions are integrated in the sen-

sors. No additional, external amplifiers controllers or switching boxes are necessary. The sensors are for 24 VDC supply designed. We deliver digital sensors with 2 transistor output switches with teach-in programmable sheet thickness limits and also analog sensors with sheet thickness relatet analog voltage outputs from 0 - 10 VDC. These analog sensor may be used in connection with PLCs or IPC controllers that have 0- 10 VDC sensor inputs. In this configuration the PLC / IPC many be programmed according the the sheet working machines / process features as simple double sheet detector with one ore more fixed or adjustable local (operator- panel) or remoted thickness limits, as sheet thickness comparator, thickness limit switch and so on.The sensors are connected via a M 12 x 1 male connector for 24 VDC supply, the 2 digital outputs or the 0- 10 VDC analog voltage output. There are single sided, sheet touching sensors for magnetic and non magnetic (stainless-) steel sheets as well as both sided, touch less sensors for magnetic- , non-magnetic-, aluminum and other non-ferrous metal sheets available.

Fig. 1. shows an example for a single side sensor fixed closed to a vacuum gripper of a sheet de-stacker to watch these stages: Vacuum gripper / sensor on top of stack: Stack present / last sheet on stack / no sheet on stack anymore? Vacuum gripper / sensor lift off from stack: No sheet -/ single sheet- / double sheet picked up? During sheet feed: Sheet still present / sheet lost? Sheet target: Sheet successful placed / released?



Safety- information: The double sheet detector sensor output contact is often used for stopping sheet transfers or sheet working machines. After removing the (double) sheets from the sensor(s) the sensor output switches back in the no sheet / one sheet position. The control circuit must work so that the transfers / machines do not restart automatically to avoid dangerous situations.

Sensor arrangements:

Fig.2 Sensor position singlesided sensor related to the sheet edges.

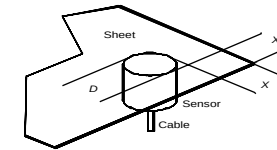
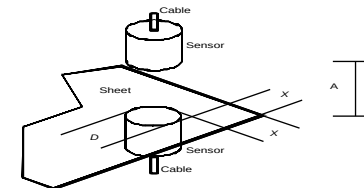


Fig.3 Sensor position bothsided sensors related to the sheet edges. Keep X constant if X is smaller than the sensors diameter D.



Sensor connection

Fig.4 Connection example for digital sensors with sheet thickness teach-in programming on a PLC

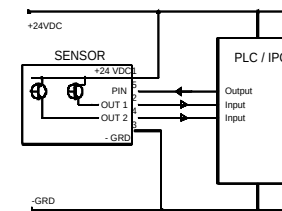
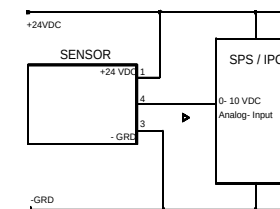


Fig.5 Connection example for analog sensors with 0- 10 VDC output on a PLC with 0- 10 VDC analog input.





Double Sheet Sensors Type overview

3

1. Digital sensors with transistor switch output

Sheet material *1)	Steel (magnetic, ferritic)						Stainless steel (non- magnetic, austenitic)		
Sheet monitoring	singlesided, sheet touching			bothsided, touchless			singlesided, sheet touching		bothsided, touchless
Single sheet thickness (mm)	1	2	3	0,8	1,5	3	1,5	3	3
Sensor- Type *2)	S 1.0P3S	S 2.0P3S	S 3.0P3S	SIZ 30PSS+ SIZ 30P3SE	SIZ 54PSS+SIZ 54P3S	SIZ 75PSS+SIZ 75P3SE	SIE 1.5P3S	SIE 3.0P3S	SIE 30PSS+SIZ30P3SE
Datas page	4			5			6		7
Sensor- fig.									

2. Analog sensors with 0 - 10 VDC analog voltage output

Sheet material *1)	Steel (magnetic, ferritic)							Stainless steel (non- magnetic, austenitic)		
Sheet monitoring	singlesided, sheet touching				bothsided, touchless			singlesided, sheet touching		bothsided, touchless
Einfach- Blechdicke max.(mm)	0,5	1	2	3	0,8	2	3,0	1,5	3	3
Sensor- Type *2)	S 0.5AS	S 1.0AS	S 2.0AS	S 3.0AS	SIZ 30PPS+ SIZ 30AS	SIZ 54PSS+SIZ 54AS	SIZ 75PSS+SIZ 75AS	SIE 1.5AS	SIE 3.0AS	SIE 30PSS+SIZ30AS
Datas page	8				9			10		11
Sensor- fig.										

*1) Please inquire for other sheet materials. *2) Many other sensors- types available, please ask.



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