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Rev. 0701

Flat sensor MESEP®

AR

Application

These flat sensors are detectors for all types of metal for the use in conveyor belts and chutes. Using them it is possible to inspect bulk material as well as finished goods. Foils or other roll goods can be led directly over the sensor and thus be detected on metallic contamination. The sensors serve for quality assurance as well as for machine protection. Beyond that the flat detectors are also appropriate for applications of the process control e.g. for object counting or for completeness checks. The flexible system of three different sensors allows variations in width. Starting from 95 mm there is no limit upwards. Moreover the sensors can be mounted above and below the conveyor belt (sandwich combination) in order to increase the sensitivity. In combination with the optionally available control unit conveyor plants and discharging units can be controlled directly.



Flat sensor MESEP® AR

Function & handling

The sensor has a dynamic working principle which means it only detects moving metallic pieces in the sensor range. If a non-moving metal piece is situated in the detection range, it does not excite a signal and therefore is not detected. Contrary to sensors with a static working principle this system allows operation with a much higher sensitivity. Thus even small metallic pieces can be detected dead reliable. The operation of the sensor requires a control unit. This realises the voltage supply for the sensors and allows the adjustment of all parameters. The detailed functioning and handling depends on the control unit.

Specific characteristics

- sensors endlessly alignable (>95mm)
- no metal-free zones necessary
- stable and shook-proofed aluminium housing
- easy mounting
- separate control electronics with freely adjustable functions
- protection class IP67
- sensitivity adjustable via control electronics



Rules for combining sensors

In order to avoid dysfunctions caused by the combination of several sensors please pay attention to the following facts:

1. Between sensors belonging to the same family of frequencies it is necessary to respect a minimum distance of 300mm (see illustration 1).
2. Flat sensors with different designs can be aligned without paying attention to the frequency (illstr. 2).
3. For sandwich combination it is necessary to respect a minimum distance of 40 mm between the upper and the lower sensors.

Rules for sandwich combination

For assembling flat sensors as a sandwich there are different possibilities:

1. Sensors with the same housing design are placed on top of each other in the same position (illstr. 3).¹
2. In one layer there are only broad sensors, in the other one only small sensors (illstr. 4).²

Combination examples

belt width [mm]	necessary flat sensors
95	95R
140	140
150 - 160 ³	95L-95R
195 - 200 ³	95L-140
240	240
250 - 260 ³	95L-140-95R
295 - 300 ³	95L-240
340	140-240
350 - 360 ³	95L-240-95R
395 - 400 ³	95L-140-240
440	240-240
450 - 460 ³	95L-140-240-95R
495 - 500 ³	95L-240-240
540	140-240-240
550 - 560 ³	95L-240-240-95R
595 - 600 ³	95L-140-240-240
640	240-240-240
650 - 660 ³	95L-140-240-240-90R
695 - 700 ³	95L-240-240-240
740	140-240-240-240
750 - 760 ³	95L-240-240-240-95R
795 - 800 ³	95L-140-240-240-240
840	240-240-240-240
850 - 860 ³	95L-140-240-240-240-95R
895 - 900 ³	95L-240-240-240-240
940	140-240-240-240-240
950 - 960 ³	95L-240-240-240-240-95R
995 - 1000 ³	95L-140-240-240-240-240
1.040	240-240-240-240-240

¹ Repeating a module number in such a construction is not allowed. Thus the maximum width is limited on 750 mm. 95'er modules in a sandwich basically should have different frequency numbers.

² In this case there is no limit set to the combination. But it is necessary to keep a distance of at least 600 mm between identical sensors. The modules 1F1 to 1F4 are applicable as in illustration 1.

³ Between a 95'er module and its' neighbour element it is possible to keep a crack of 5 mm which does have no influence on the sensitivity. By this the entire width can be varied accordingly.



Type	MESEP® AR 95R	MESEP® AR 95L	MESEP® AR 140	MESEP® AR 240
Mechanical data				
Dimensions	L x W x H: 205 x Width x 30 mm			
Housing	Aluminium; blue; powder-coated (active surface polyurethane)			
Weight	800 g		1.250 g	2.500 g
Electrical data				
Supply voltage	15VDC			
Output	Analog voltage output			
Electrical connection	PVC - cable; 2 m or 5 m			
Conditions of use				
Storage temperature	-10°C .. 70°C			
Operating temperature	-10°C .. 60°C			
Protection class	IP67			
Speed	1 - 120 m/min			
Sensitivity	(Maximum distance between the sensor and the test piece)			
Fe-plate 30 x 30 x 1mm	75 mm			
Fe-plate 12 x 12 x 1mm	55 mm			
Nut M6	45 mm			
Fe-ball Ø 7,0mm	35 mm			
Nut M4	35 mm			
Washer M4	29 mm			
Nut M2,5	26 mm			
Fe-ball Ø 4,5mm	24 mm			
Fe-ball Ø 3,0mm	15 mm			
Fe-ball Ø 2,5mm	10 mm			
Fe-ball Ø 2,0mm	5 mm			
Order information	(All order numbers for sensors with 2 m cable; 5m on request)			
Frequency group 1	08317690900	-	08317691000	08317691100
Frequency group 2	08317690930	-	08317691030	08317691130
Frequency group 3	-	08317690931	08317691031	08317691131
Frequency group 4	-	08317690932	08317691032	08317691132
Control unit	Standard		for top hat rail	with reverting contactor
	08349005000		08349005001	08349005002

Dimensions

