STRIP EDGE POSITION DETECTION AND WIDTH MEASUREMENT

VRPD and VRPD/W

Application

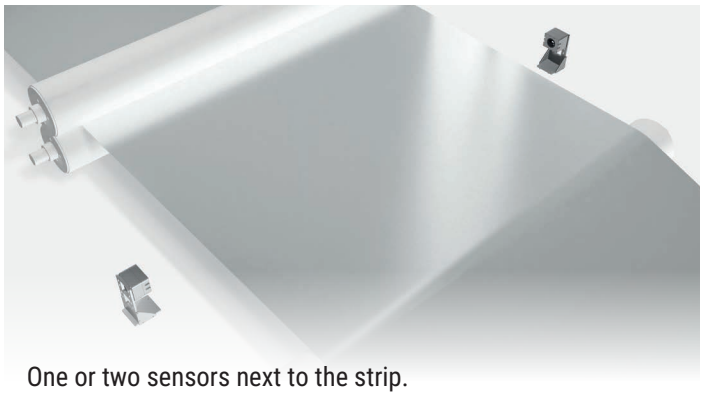
- Metal Strip

Function

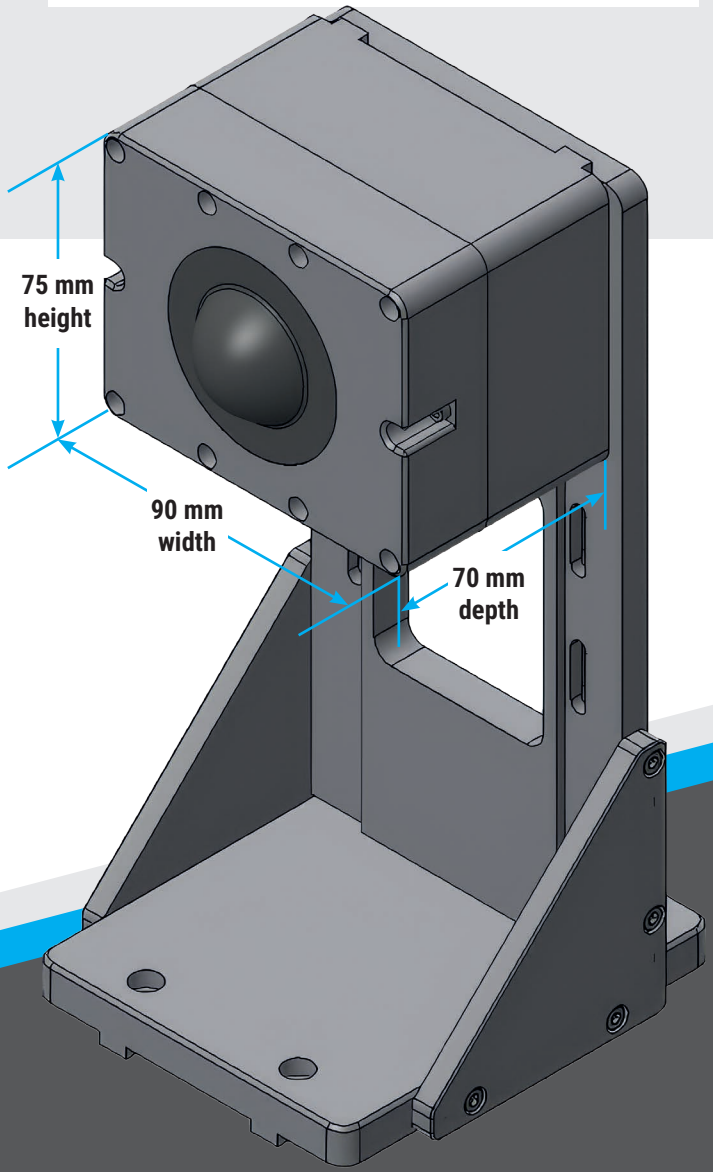
VRPD detects the edge of the strip, and VRPD/W also precisely measures the width of electrically conductive strips using radar-based sensors. Depending on requirements, one or two opposing sensors are used to continuously monitor both the strip position and width. The measured values are processed in real time at a high measurement frequency of 100 Hz, enabling an immediate response to process deviations. The system is suitable from minimum strip thickness 0.025 mm and offers flexible adjustment options for different strip widths and production conditions.

Advantages

- High Accuracy:
  Edge position detection ± 0.1 mm
  Width measurement ± 0.2 mm
- Fast reaction:
  Realtime measurement for process control
- Flexible installation:
  Adjustable sensor distance, 1 – 2 Sensors
- Robust:
  Dust and waterproof (protection class IP69)
- Easy integration:
  Standardized connections, compact design



One or two sensors next to the strip.
No fixtures above or below the strip.



Type series	VRPD and VRPD/W	
Process Parameters		
Material to be measured	metal strip	
Strip edge position detection	with 1 or with 2 opposing radar sensors	
Strip width measurement	with 2 opposing radar sensors	
Min. strip thickness	0.025	mm
Max. pass line variation during measurement	max. ± 15	mm
Sensor distance to the strip edge (L) (others possible after consultation)	strip thickness > 0.1 mm: 250 – 900 strip thickness < 0.1 mm: 250 – 700	mm mm
Measurement Parameters		
Accuracy strip edge position detection	± 0.1	mm
Accuracy strip width measurment	± 0.2	mm
Measurement frequency	100	Hz
Signal noise	± 5	µm
Dimensions / Installation		
Measurement axis of the sensor	5 mm over passline	
Required clearance around the measurement axis (r)	strip thickness > 0.1 mm: 35 strip thickness < 0.1 mm: 40	mm mm
Parallelism of the sensor to the strip axis	± 1°	
Alignment accuracy (with two sensors) relative to each other	± 2	mm
Radar sensor	75 mm x 90 mm x 70 mm (H x W x D)	
Per measuring station	1 signal evaluation unit	
Cable length sensor - signal evaluation unit	5 m (max. 10 m on request)	
Connection Data / Consumption / Environment		
Interface	Profinet	
Supply Voltage	24 V DC, 3A (wide-range power supply 110 – 230 V, 50 – 60 Hz and surge protection as separate accessory)	
Compressed air qualitiy acc. DIN ISO 8573-1 / Compressed air supply	Solids and water content: quality class 5 oil content: quality class 4 pressure: 1 – 5 bar, consumption: 0.1 m³/h	
Protection class	Radarsensor and signal evaluation unit: IP69	

