

**+6X51**

## STRIP THICKNESS

### CONTACT GAUGES VBM

#### APPLICATION

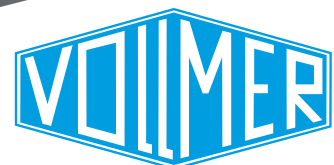
- ▶ Metal Strip

#### FUNCTION

- ▶ Two transducers contact the upper and lower side of the strip, the difference between the individual measurements is the absolute strip thickness. In complex measuring heads, in some cases with cardanic suspension, integrated heaters, pivot bearings and many other functions. This simple measurement principle is transformed into a high-precision measuring machine that reliably measures the strip thickness in the mill even at high strip speeds.

#### ADVANTAGES

- ▶ Direct, absolute measurement irrespective of the alloy
- ▶ Precision up to one micrometre per millimetre of strip thickness
- ▶ Correct results even with oiled strip



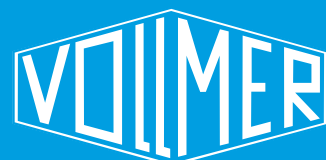
TYPE SERIES	VBM 1063		VBM xx65		
<b>PROCESS PARAMETERS</b>					
Material to be measured	metal strip				
Max. strip speed	500 m/min		1,000 m/min		
<b>MEASUREMENT PARAMETERS</b>					
Measurement depth (from the strip edge)	80 mm				
Positioning	manual				
Pass line variation	max. +/- 5 mm				
Measurement sensor	analog	digital	analog	spindle + analog	digital
Measurement range	0.1 - 3.2 mm	0.1 - 4.0 mm (up to 9.0 mm with reduced accuracy)	0.1 - 3.2 mm Version FM: 0.01 - 2.0 mm	0.1 - 10.0 mm	0.1 - 9.0 mm Version FM: 0.01 - 2.0 mm
Measurement resolution	0.0001 mm				
Measurement accuracy <small>T<sub>i</sub> &gt; 100 ms, measurement insert material: diamond, for strip temperatures &gt; 40 °C: only with heater controller</small>	+/- 0.1 % of nominal value but not better than +/- 0.001 mm		+/- 0.1 % of nominal value but not better than +/- 0.001 mm	+/- 0.15 % of nominal value but not better than +/- 0.001 mm	+/- 0.1 % of nominal value but not better than +/- 0.001 mm
Max. strip temperature	160 °C (up to 250 °C with reduced precision)	for strip widths: < 250 mm: 150 °C > 250 mm: 100 °C	160 °C (up to 250 °C with reduced precision)	for strip widths: <250 mm: 150 °C >250 mm: 100 °C	
Measurement amplifier type	VMF 1000 / 2000	VTS	VMF 1000 / 2000	VTS	
Sampling interval	1.6 ms	1.0 ms	1.6 ms	1.0 ms	
Averaging time T <sub>i</sub>	1.6 - 409.6 ms	1.0 - 2,000.0 ms	1.6 - 409.6 ms	1.0 - 2,000.0 ms	
<b>DIMENSIONS</b>					
Width (installation space) in strip pass direction	185 mm with option automatic traverse resp. strip detection 250 mm		160 mm		
Width outside line	220 mm		200 mm		
Height below pass line	175 mm		210 mm		
<b>CONNECTIONS / CONSUMPTIONS / ENVIRONMENT</b>					
Interfaces	PROFIBUS DP or hardware (digital and analog in- and outputs)				
Supply voltage	3 x 380 - 480 V AC, 50 - 60 Hz (with manual positioning, without option T: 110 - 230 V AC, 50 - 60 Hz)				
Installed load	4 kW				
Max. cable length between sensor and measurement amplifier	30 m	100 m	30 m	100 m	
Protection class	IP64				
Environment	Sensor system and pneumatics: 5 - 50 °C, control cabinet: 5 - 35 °C, Relative humidity: 0 - 95 %				
Compressed air quality acc. to DIN ISO 8573-1	Solids: quality class 5 = max. 40 µm, particle density < 10 mg/m <sup>3</sup> Water content: quality class 5 = 9.4 g/m <sup>3</sup> at 10 °C, Oil content: quality class 4 = oil content < 5 mg/m <sup>3</sup>				
Compressed air supply	Pressure: min. 4 bar, Consumption: max. 7 m <sup>3</sup> /h				
<b>OPTIONS</b>					
Measurement depth	VBM 2065: 180 mm, VBM 2565: 230 mm				
Positioning	Pneumatic or motorized, positioning accuracy: +/- 1 mm				
Traverse strokes	with manual positioning: 300 / 500 mm with motorized or pneumatic positioning: 400 / 600 / 800 / 1,000 / 1,200 mm				
Heater controller (T)	two-point controller				
Module for exchange	for VBM 1065 and VBM 2065				
Special design for foil measurement FM	for VBM 1065				
Automatic calibration plate swing-in device	for Series VBM xx65				
Further options	Automatic Gauge Control (AGC), data archiving (VRecoS), statistical evaluation (VGraph), pass schedule store, etc.				

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