

# STRIP THICKNESS

## LASER GAUGES VTLG



### APPLICATION

- ▶ Metal strip

### FUNKTION

- ▶ On the upper and lower sides of a C-frame is a compact measuring head which both transmits the measurement beam and receives the reflected light.
- Both sensors measure the distance from the strip surface. The system then calculates the thickness of the strip from the measured distances and the distance between the two sensors.

### ADVANTAGES

- Installation directly in the mill possible
- Direct, absolute measurement irrespective of the alloy
- Precision up to one micrometer per millimeter of strip thickness



TYPE SERIES		VTLG				
PROCESS PARAMETERS						
Material to be measured	metal strip					
Strip speed	> 0 – 2,000					m/min
Max. strip temperature	180					°C
Residual moisture on the strip	200	500				mg/m <sup>2</sup> per side evenly spread, no drops
MEASUREMENT PARAMETERS	VTLG 101/1	VTLG 406/6 VTLG 806/6 VTLG 1206/6	VTLG 406/13 VTLG 806/13 VTLG 1206/13	VTLG 412/20 VTLG 812/20 VTLG 1212/20	VTLG 830/50 VTLG 1230/50	
Measurement range	0.003 – 2	0.015 – 6	0.015 – 6	0.1 – 12	0.1 – 30	mm
Air gap	10	65	135	205	500	mm
Measurement depth (- 30 mm = max. strip width at cross profile measurement)	100	VTLG 406/6: 480 VTLG 806/6: 880 VTLG 1206/6: 1,280	VTLG 406/13: 480 VTLG 806/13: 880 VTLG 1206/13: 1,280	VTLG 412/20: 480 VTLG 812/20: 880 VTLG 1212/20: 1,280	VTLG 830/50: 880 VTLG 1230/50: 1,280	mm
Max. pass line variation during measurement	2	6	8	8	40	mm
Measurement resolution	0.05	0.1	0.1	0.1	0.5	µm
Measurement accuracy ± 0,1 % of nominal value (at Ti ≥ 10 ms, Rz ≤ 1 µm, angularity error ≤ 1°), but not better than:	± 0,5	VTLG 406/6: ± 1 VTLG 806/6: ± 2 VTLG 1206/6: ± 3	VTLG 406/13: ± 15 VTLG 806/13: ± 2 VTLG 1206/13: ± 3	VTLG 412/20: ± 2 VTLG 812/20: ± 3 VTLG 1212/20: ± 4	VTLG 830/50: ± 5 VTLG 1230/50: ± 8	µm
Horizontal positioning	300	alternative: 700 1,000 1,300 1,500				mm
Vertical positioning	± 15	± 20				mm
Sampling rate (synchronous)	maximal 80					kHz
Averaging time Ti	1 – 1,000					ms
DIMENSIONS						
Width (installation space) in strip pass direction	100 (120)	170 (190)	195 (215)	195 (215)	200 (220)	mm
Height below pass line (max. vertical positioning)	120 (135)	190 (210)	190 (210)	290 (310)	465 (485)	mm
Width outside line	170	370	370	370	400	mm
LASER PARAMETERS						
Laser class	3B					
Power	15					mW
Wavelength	405					nm
Measurement spot diameter	0.1					mm
Life time (MTBF)	80,000					h
CONTROL						
Positioning accuracy	± 1	± 1				mm
Positioning speed	8	20				m/min
Adjustment speed	3	3				m/min
Cross profile measurement	6	12				m/min
Control unit	760 mm x 1,000 mm x 300 mm (H x W x D) with closed door, max. 10 m cable length to gauge					
CONNECTION DATA / CONSUMPTIONS / ENVIRONMENT						
Interfaces	alternative: PROFINET, PROFIBUS DP, TCP/IP, hardware (digital and analog in- and outputs)					
Power supply	3 x 380 – 460 V AC, 50 – 60 Hz, 3 kW					
Protection class	C-frame: IP65; control unit: IP55					
Environment	C-frame: 5 – 55 °C; control unit: 5 – 45 °C, relative humidity: 0 – 95 %					
Compressed air quality acc. 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					
Compressed air supply	pressure: min. 5 bar; consumption: max. 15 m <sup>3</sup> /h					
OPTIONS (FOR ALL VTLG-MODELS)						

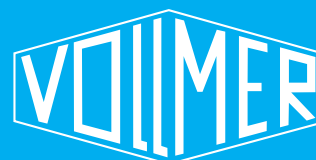
Data recording: VRecoS  
 Statistical evaluation: VGraph  
 Environment control unit > 45 °C: Air conditioner

DB VTLG|E|170920



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