

*Measurement
Amplifiers*

A0-Function

The automatic transducer zero setting is started by a limit switch as soon as the gauge head is traversed off the strip into its rear limit position. The gap between the transducer tips is closed (strip thickness 0) and the VMF indicator sets itself to zero.

If the gauge is traversed automatically, the A0 cycle can be started by pressing a button:

- traverse gauge head off strip
- set measurement signal to zero
- traverse gauge on strip

Another option is a periodic operation. The A0-function is then started automatically after a pre-selected period of time.

FRIEDRICH VOLLMER GMBH
58093 Hagen

Nr	+A+B	u	MM	u	u.Tol.	+A+B	o.Tol.
!	um:	!	um!	!	-10.0	um	10.0
1!	0.0:	5!	0.0!	!	!	!	!
2!	0.3:	5!	0.1!	!	!	!	!
3!	0.4:	5!	0.1!	!	!	!	!
4!	-0.3:	5!	0.1!	!	!	!	!
5!	0.3:	5!	-0.1!	!	!	!	!
6!	-0.2:	5!	0.1!	!	!	!	!
7!	0.5:	5!	0.1!	!	!	!	!
8!	0.4:	5!	0.1!	!	!	!	!
9!	0.0:	5!	0.2!	!	!	!	!
10!	-0.6:	5!	-0.1!	!	!	!	!
11!	-0.5:	5!	0.2!	!	!	!	!
12!	0.2:	5!	0.0!	!	!	!	!
13!	0.1:	5!	0.0!	!	!	!	!
14!	0.8:	6!	0.0!	!	!	!	!
15!	-0.2:	6!	-0.1!	!	!	!	!
16!	-0.2:	6!	0.2!	!	!	!	!
17!	0.1:	6!	0.1!	!	!	!	!
18!	-0.4:	6!	0.0!	!	!	!	!

!	+A+B	...	um!	ns
<!	...	-10.0!	0:	
1!	-10.0	...	-0.0!	0:
2!	-0.0	...	-6.0!	0:
3!	-6.0	...	-4.0!	0:
4!	-4.0	...	-2.0!	0:
5!	-2.0	...	0.0!	13:*****
6!	0.0	...	2.0!	5:*****
7!	2.0	...	4.0!	0:
8!	4.0	...	6.0!	0:
9!	6.0	...	8.0!	0:
10!	8.0	...	10.0!	0:
>!	10.0	...	!	0:

n 18
Xquer 0.0 um
s 0.4 um
Xmax 0.8 um
Xmin -0.6 um
R 1.4 um
Cp# 8.0676
Cpk# 8.8331

Statistics

The digital VMF 1000 and 2000 measurement amplifiers include several important statistic features, such as mean value, range and cpk (only in the VMF 2000).

A statistics report can be printed via the amplifier's RS232 interface.

VMF Measurement

receive and amplify the measurement signals of Vollmer

The VMF 3/22 is an analog signal processor while the VMF

First, the nominal size is manually entered into the VMF vi from the mill control computer. Then the measurement is s between measured value and nominal size. Depending o interfaces and a number of additional functions available. selection of the numerous VMF features.

	VMF 3/22	VMF 1000
transducer stroke	± 1000 µm	± 2000 µm
works with '92 LVDTs	-	●
measurement range with sum measurement	1,6 mm	3,2 mm
selectable analog indicator ranges	± 10, 30, 100, 300, 1000 µm	± 1, 3, 10, 30, 100, 300, 1000, 3000, 10000 µm
digital indicator	-	● deviation from nominal size
analog outputs	2	1
RS 232	-	2
'spike' elimination	-	-
transducer value check	-	-
AS automatic symmetry adjustment	-	●
A0, automatic zero setting	(●)	●
zero point correction (meas./ref. function)	● (instantaneous)	-
statistic with print function	-	●
remote control input	-	●
semi-automatic calibration	-	(●)
digital I/O level optocoupled	-	-
I/O test	-	-
transducer signals can be viewed separately	-	●

(●) = with limitations

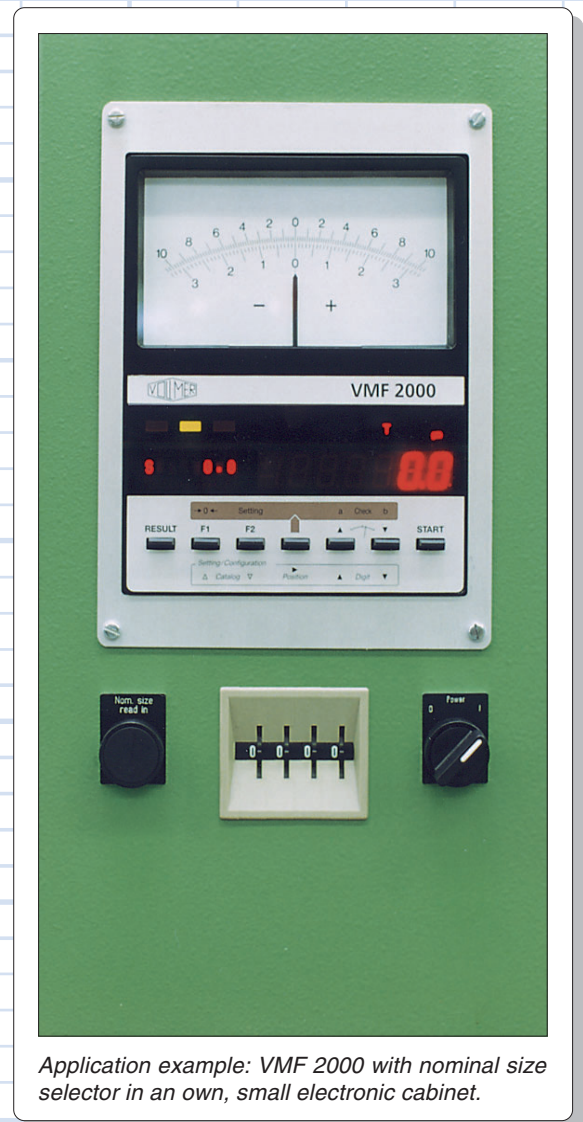
ent Amplifiers

r measurement transducers.

VF 1000 and the VMF 2000 are full digital units.

a thumb wheel switch or automatically transferred started and the analog indicator shows the deviation on the application there are more indications, data The tables below and on the following page show a

VMF 2000	
± 2000 µm	measurement range 1,6 mm (0.060") resp. 3,2 mm (0.125") without mechanical transducer adjustment
•	
3,2 mm	
± 1, 3, 10, 30, 100, 300, 1000, 3000, 10000 µm	
•	
meas. value or deviation from nominal	
3	connectors for recorder, remote indicator, V-Graph, control ...
2	communication with printer and PC
•	eliminates 'spikes'. Required for automatic thickness control
•	plausibility check of meas. Values. Required for automatic control
•	available in connection with HWST and / or PLC
•	zero setting of the transducers
• (in selectable steps)	required for tandem gauges
•	statistic measurement data evaluation with direct protocol printout from the VMF
•	
•	
•	
•	service function to check inputs and force output values
•	service function



Application example: VMF 2000 with nominal size selector in an own, small electronic cabinet.

'Spike' Eliminator

'Spikes' are sudden measurement signal peaks which are not caused by strip thickness variations. They are the result of extreme strip vibration or of mechanical impact, such as shears. The 'Spike' Eliminator filters out such peaks.

A 'Spike' Eliminator is absolutely necessary when the signal is fed into an automatic quick reaction control, such as position control, mass flow control or feed forward control.

AS: Automatic Symmetry Adjustment

If measuring in sum, the set of two transducers requires regular symmetry adjustment. If the gauge is equipped with AS, symmetry adjustment is performed by pressing a button. Without AS, the transducer tips need to be moved up and down manually.



**VMF
3/22**

**VMF
1000**

**VMF
2000**

VO	1. RS 232	-	●	●	communication to printer and PC
VO	2. RS 232	-	(●)	●	
O	1st analog output	●	●	●	measurement data transfer e.g. to recorder, V-Graph, automatic controlling, remote indicator
O	2nd analog output	●	-	●	
O	3rd analog output	-	-	●	
VO	in / output of nominal size or output of measurement value	-	-	●	
I	read in upper and lower tolerance limit	-	●	●	remote control for statistic functions
I	print / delete statistic	-	●	●	
I	read in value	-	●	●	
O	out of tolerance (status of the indicator lights)	-	●	●	remote indicator on control desk; VMF 2000 features a 24V classifier contact
O	remove nominal value and internal zero setting, set indicator to zero	(●)	●	●	A0 function
I	select analog indicator range	●	●	●	e.g. a single range input at operator's desk for all gauges on the mill; range dependent on tolerance limits; external setting possible etc.
O	selected indicator range (status)	●	●	●	
I	start symmetry adjustment	-	●	●	transducer symmetry adjustment, external operation possible
O	symmetry adjustment successfully performed and finished	-	●	●	
O	'spike' eliminator	-	-	●	'spike' elimination
O	'spike' elimination error	-	-	●	
I	reset 'spike' elimination	-	-	●	
I	switch on transducer value check	-	-	●	plausibility check of transducer measurement data
O	transducer value check	-	-	●	
O	error transducer value check	-	-	●	
I	start meas-/ref function	-	-	●	adjustment to tandem gauge, selectable step by step regulation
O	meas-/ref successful	-	-	●	
O	meas-/ref error	-	-	●	

01/01

Subject to change without prior notice

(●) = with limitations