

COORDINATE MEASURING MACHINE

SF 1210

Technical Data - PRELIMINARY -

TDA_SF1210_04-2020_EN | Valid as of: April 2020



Short description

- CNC coordinate measuring machine in portal design for touch-trigger, scanning and optical probe systems.
- Ergonomic loading from four sides.
- Resistant to shop-floor conditions.

Applications fields

- Designed for production quality control and analysis. Also well suited for reverse engineering and model construction.
- Geometric components and free-form surfaces.
- Series and individual measurements.

Equipment

- High precision linear bearing guides in all axes.
- Elastomer vibration damping system.
- Optional active pneumatic vibration damping system available (also retrofittable).
- Compact control panel with a central located progressive joystick with "mouse function" and programmable function keys. Selectable joystick axis assignment. Control panel optionally also available as "wireless".
- Protective bellow covers for the X and Y axis.
- High dynamic servo drives with following error monitoring and combined friction/form locking transmission.
- 3-axis continuous path control with intelligent "lookahead function" for application-optimized travel paths.
- Automatic temperature compensation including temperature sensors on device axes and work piece.
- Two-stage speed selection and variable speed adjustment (override 0 to 100%) enable a sensitive movement in joystick and CNC mode.
- Automation ready.

Probe systems

- **PH10M PLUS / PH10T:** 2 axis motorized rotary swivel head that can be indexed in 7.5 degree steps up to 720 reproducible positions.
 - **TP20:** Touch trigger probe system with interchangeable modules.
 - **TP200:** High precision touch trigger probe system with interchangeable modules.
 - **SP25M:** High precision flexible scanning probe with interchangeable modules that can be used for scanning or touch probes.
 - **SHAPETRACER:** Optical 3D line scanner for contactless measurement and processing of data point clouds.
- **PH20:** Motorized stepless 5 axis touch trigger system employs "head touch" method to decrease measurement times in CNC mode.
- **REVO:** High-end measuring system with stepless, active measuring axes for real 5-axis and active head scanning, conventional scanning and single point probing, also with large extensions and roughness measurement, for highest measuring throughput and complex contours.
- **SP80:** Measuring probe head with interchangeable modules for highest precision with large probe system lengths that can be used for scanning or single point probing.

Device Type			SF 1210 Premium - PRELIMINARY -			SF 1210 Standard - PRELIMINARY -		
Measuring range								
Measuring range with probe system PH10M PLUS	X	[mm]	1200					
	Y*	[mm]	1500					
	Z	[mm]	1000					
Weight								
Device weight		[kg]	6800					
Maximum workpiece weight		[kg]	1000					
Connection values								
Electrical		Electricity quality according to EN 60204-1:2006						
		Single phase alternating current (1P+N+PE), 115/230 V ± 10 %, 50/60 Hz, max. 1500 VA						
Pneumatic		Supply pressure 6 ... 10 bar, pre-filtered						
Passive**		Compressed air quality according to DIN ISO 8573-1:2010 [5:4:4]						
Air consumption	Passive**	[Nl/min]	max. 100					
Accuracies***								
			SP25M / SP80 / REVO	TP200	PH20 /TP20	SP25M / SP80 / REVO	TP200	PH20 / TP20
Limit value single stylus probing error ¹	$P_{FTU, MPE}$	[µm]	3.9	4.2	4.4	4.9	5.2	5.4
Limit value repeatability range ²	$R_{0, MPL}$	[µm]	2.9	3.1	3.2	3.5	3.7	3.8
Limit value length measurement error ² (Standard-temperature range)	$E_{0, MPE} / E_{150, MPE}$	[µm]	3.9 + L/300	4.2 + L/300	4.4 + L/300	4.9 + L/300	5.2 + L/300	5.4 + L/300
Limit value length measurement error ² (Extended temperature range)	$E_{0, MPE} / E_{150, MPE}$	[µm]	4.4 + L/200	4.7 + L/200	4.9 + L/200	5.4 + L/200	5.7 + L/200	5.9 + L/200
Limit value scanning probing error ³	MPE_{THP}	[µm]	4.2	-	-	5.2	-	-
Limit value scanning test duration	MPT_{τ}	[s]	72	-	-	72	-	-
Measuring system			Photoelectric reflected light system, optical division 40 µm, resolution 0.05 µm					
Permitted environmental conditions								
Operating temperature		[°C]	15 ... 35					
Standard temperature range for $E_{L, MPE}$		18 ... 22 °C, $\Delta T: 1^{\text{K}}/_{\text{h}}, 1^{\text{K}}/_{\text{m}}, 2^{\text{K}}/_{\text{d}}$						
Extended temperature range for $E_{L, MPE}$		18 ... 28 °C, $\Delta T: 2^{\text{K}}/_{\text{h}}, 1^{\text{K}}/_{\text{m}}, 4^{\text{K}}/_{\text{d}}$						
Relative humidity		[%]	30 ... 90 (non-condensing)					
Max. operating altitude		[m]	2000 above N.N.					
Dynamic****								
Joystick mode	v_{max}	[mm/s]	0 ... 100 (normal), 0 ... 20 (creep mode)					
CNC mode	v_{max}	[mm/s]	300 axis related, 520 vectorial					
CNC mode	a_{max}	[mm/s ²]	577 axis related, 1000 vectorial					
1: according to DIN EN ISO 10360-5 / Limit value single stylus probing error $P_{FTU, MPE}$			3: according to DIN EN ISO 10360-4 / Limit value scanning probing error MPE_{THP}					
<ul style="list-style-type: none"> • SP25M with Module SM25-1 and stylus Ø 4 x < 30 mm • TP200 with Standard Force Module and stylus Ø 4 x < 30 mm • PH20 with Standard Force Module and stylus Ø 4 x < 10 mm 			<ul style="list-style-type: none"> • SP80 with stylus Ø 5 x 50 mm • REVO with RSP3-3 and stylus Ø 4 x < 30 mm 			<ul style="list-style-type: none"> • SP25M with Module SM25-1 and stylus Ø 4 x < 30 mm • SP80 with stylus Ø 5 x 50 mm • REVO with RSP3-3 and stylus Ø 4 x < 30 mm 		
2: according to DIN EN ISO 10360-2 / Limit value length measurement error $E_{L, MPE}$			<ul style="list-style-type: none"> * Further measuring ranges available on request. ** With elastomer vibration damping system. *** Accuracy values are achieved by incorporating of the temperature compensation. **** Depending on the used controller. 					
<ul style="list-style-type: none"> • SP25M with Module SM25-1 and stylus Ø 4 x < 30 mm • TP200 with Standard Force Module and stylus Ø 4 x < 30 mm • PH20 with Standard Force Module and stylus Ø 4 x < 30 mm 			<ul style="list-style-type: none"> • SP80 with stylus Ø 5 x 50 mm • REVO with RSP3-3 and stylus Ø 4 x < 30 mm 					

Table 1: Technical Data SF 1210

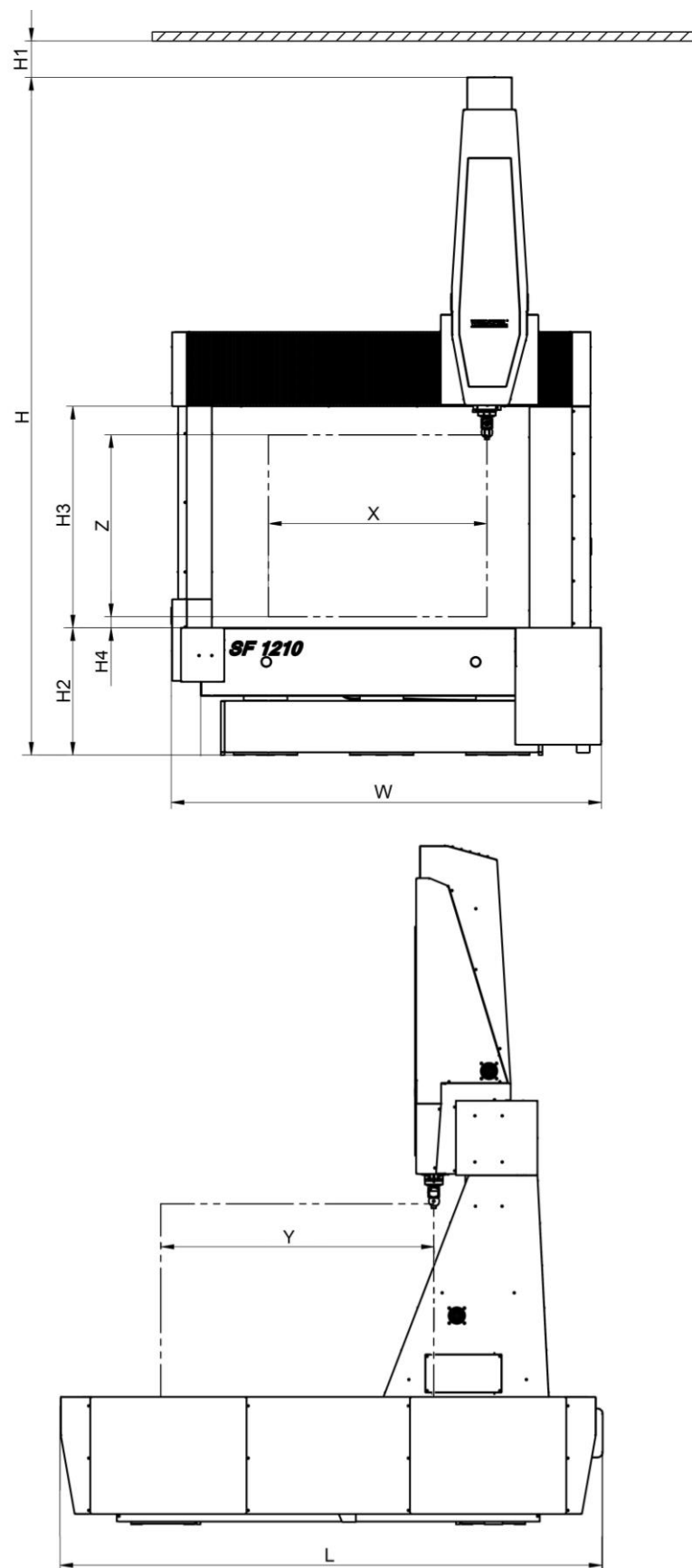


Figure 1: Layout SF 1210

Dimensions		Value	Units
Measuring range with probe system PH10M PLUS	X	1200	mm
	Y	1500	mm
	Z	1000	mm
Overall dimensions	L	2976	mm
	W	2362	mm
	H	3728	mm
Minimum distance to the ceiling	H1	≥ 200	mm
Minimum distance to the wall		≥ 500	mm
Space requirements (computer table excluded)	Length (L + 1000)	3976	mm
	Width (W + 1000)	3362	mm
	Height (H + H1)	3928	mm
Heights	H2	700	mm
	H3	1218	mm
	H4	62	mm
* Depending on the used probe system.			

Table 2: Dimensions SF 1210

INNOVATION MEETS TRADITION

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power generation and medicine. WENZEL looks at today on an installed base of more than 10,000 machines worldwide. Subsidiaries and agencies in more than 50 countries support sales and provide after-sales service for our customers. The WENZEL Group today employs more than 600 people.



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