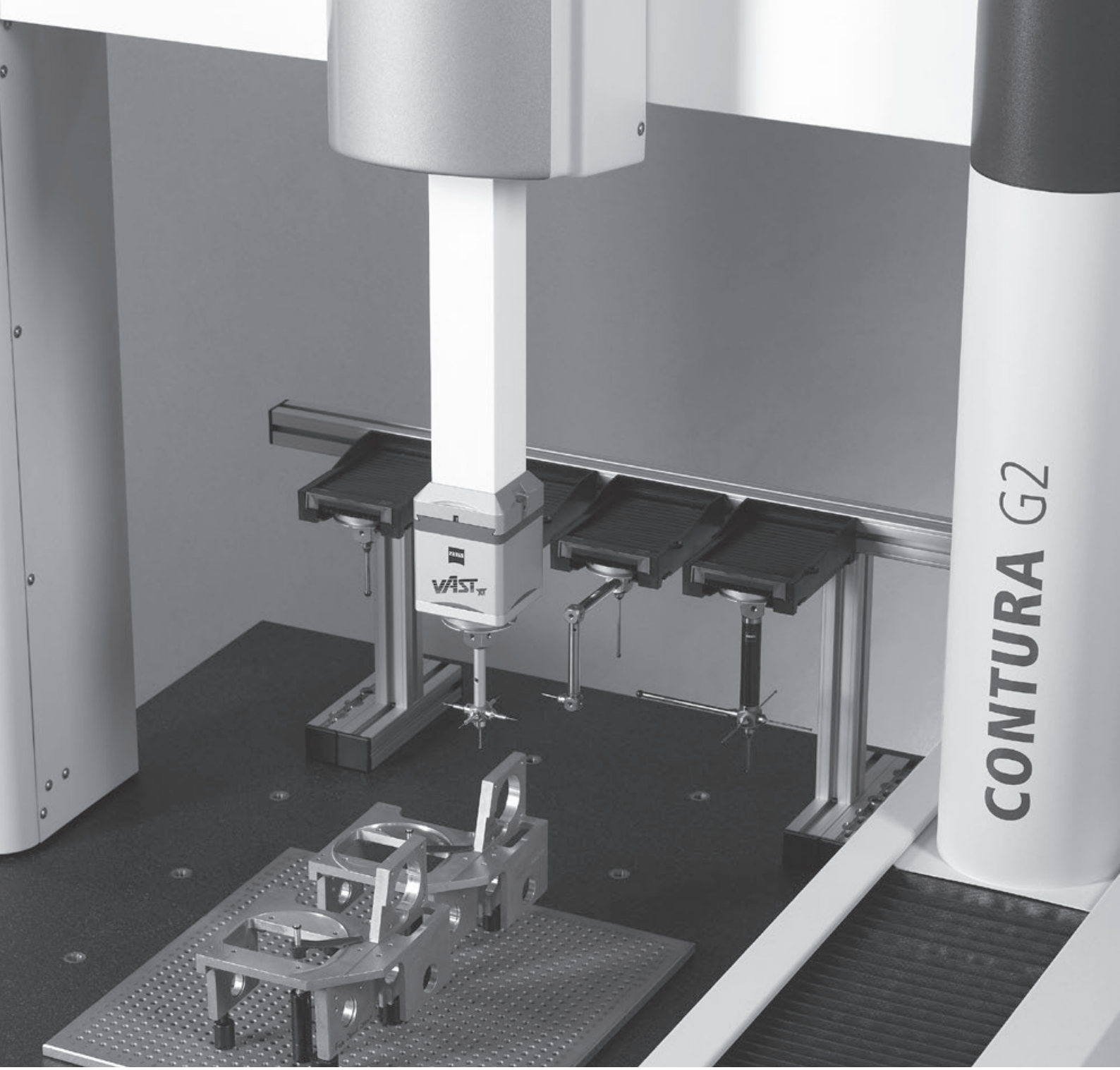


CONTURA® G2
Specifications

Version: October 2016

ZEISS CONTURA G2 active sensors and accuracy

ZEISS VAST XT gold[1] 	Active scanning and multipoint sensor. Scanning measuring rate up to 200 points/s. Variable measuring force (50-1000 mN) for data acquisition. Maximum stylus length = 500 mm, maximum weight = 500 g including stylus adapter; minimum stylus tip diameter = 0.5 mm.			
			7/7/6 to 7/10/6	10/12/6 to 10/16/6
Length measurement error[2] MPE complies with ISO 10360-2:2009	E0/E150	in µm	1.8 + L/300	1.9 + L/300
Repeatability range of E0 MPL complies with ISO 10360-2:2009	R0	in µm	1.4	1.5
Scanning error MPE complies with ISO 10360-4:2000	THP	in µm	2.5	3.0
Required measuring time MPT	τ	in s	68	68
Form measurement error[3] MPE for roundness complies with ISO 12181 (VDI/VDE 2617 sheet 2.2)	RONt (MZCI)	in µm	1.8	1.9
Single stylus form probing error MPE complies with ISO 10360-5:2010	PFTU	in µm	1.8	1.9

ZEISS CONTURA G2 navigator sensors and accuracy

ZEISS VAST XT gold[1] 	ZEISS VAST XT gold with navigator technology to increase measuring performance.		
			7/7/6 to 7/10/6
Length measurement error[2] MPE complies with ISO 10360-2:2009	E0/E150	in µm	1.5 + L/333
Repeatability range of E0 MPL complies with ISO 10360-2:2009	R0	in µm	1.2
Scanning error MPE complies with ISO 10360-4:2000	THP	in µm	1.5
Required measuring time MPT	τ	in s	50
Form measurement error[3] MPE for roundness complies with ISO 12181 (VDI/VDE 2617 sheet 2.2)	RONt (MZCI)	in µm	1.5
Single stylus form probing error MPE complies with ISO 10360-5:2010	PFTU	in µm	1.5

1) ZEISS VAST gold: acceptance test with stylus length of 60 mm and tip diameter of 8 mm
2) Measuring length L in mm.
3) Roundness in Scanning Mode for V_{scan} = 5 mm/s, filter 50 UPR, gage calibration.
4) Measuring location near the calibration position to document sensor properties.

ZEISS CONTURA G2 direct sensors

ZEISS VAST XXT[1] ZEISS XDT 	ZEISS VAST XXT TL3: scanning and multiple-point sensor ZEISS XDT TL3: multiple-point sensor (See ZEISS CONTURA G2 RDS sensors and accuracies, ZEISS VAST XXT and ZEISS XDT for accuracies)

ZEISS CONTURA G2 RDS sensors and accuracy

ZEISS RDS-C-CAA 	Dynamic ZEISS RDS articulating unit for optical and contact sensors. Front-to-back and lateral tilt range of ±180°, large measuring range, rotation increments of 2.5°, CAA correction for automatic qualification of all 20,736 angular positions for scanning sensors (ZEISS VAST XXT TL3) and multiple-point sensors (ZEISS XDT TL3).

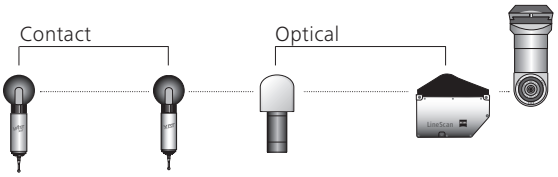
ZEISS VAST XXT[1] ZEISS XDT 	ZEISS VAST XXT TL3 on ZEISS RDS scanning and multiple-point sensor ZEISS XDT TL3: multiple-point sensor Scanning measuring rate up to 150 points/s. Stylus length with module: TL3 = 30-150 mm, maximum stylus weight = 15 g TL3 maximum sensor extension = 100 mm, minimum stylus tip diameter = 0.3 mm			
			7/7/6 to 7/10/6	10/12/6 to 10/16/6
Length measurement error[2] MPE complies with ISO 10360-2:2009	E0	in µm	1.8 + L/300	1.9 + L/300
Scanning error MPE complies with ISO 10360-4:2000	THP	in µm	3.5	3.8
Required measuring time MPT	τ	in s	68	68
Form measurement error[3] MPE for roundness complies with ISO 12181 (VDI/VDE 2617 sheet 2.2)	RONt (MZCI)	in µm	1.8	1.9
Single stylus form probing error MPE complies with ISO 10360-5:2010	PFTU	in µm	1.8	1.9

ZEISS ViScan[4] 	Optical 2D image sensor with autofocus on ZEISS RDS. Working distance (depending on lens): 75-90 mm.			
			7/7/6 to 7/10/6	10/12/6 to 10/16/6
Length measurement error[2] MPE complies with ISO 10360-7: 2011	EB(XY)	in µm	10[5] + L/300	10[5] + L/300
MPE probing error of the image editing system as per ISO 10360-7:2011	PFV2D	in µm	10[5]	10 [5]

ZEISS LineScan[4] [6] 	Optical laser triangulation scanner on ZEISS RDS-C. Maximum working distance: 73 mm. Maximum transmission rate: 250,000 points/s, 1000 profiles/s.			
			7/7/6 to 7/10/6	10/12/6 to 10/16/6
Probing error[7] MPE complies with VDI/VDE 2617 sheet 6.2	PF (OT)	in µm	50	50
Dispersion on sphere	1 Sigma	in µm	10	10

1) ZEISS VAST XXT: acceptance test with TL3 module; stylus length of 50 mm and stylus tip diameter of 3 mm.
2) Measuring length L in mm.
3) Roundness in Scanning Mode for Vscan = 5 mm/s, filter 50 UPR, gage calibration.
4) The use of optical probes requires calibration with contact probe (ZEISS VAST XXT) Temperature range of 18-26°C.
5) Measured with ZEISS ViScan 1x lens
6) Laser class 2M: the accessible laser beam lies in the visible spectral range that is safe for the eye at a short exposure time (0.25 s) as long as the cross section is not reduced by optical instruments (e.g. magnifiers, lens elements, telescope).
7) Probing tolerance on suitable sphere (30 mm diameter) with matte surface.

Overview

	navigator and active	direct		ZEISS RDS			
							
	ZEISS VAST XT gold	ZEISS VAST XXT	ZEISS XDT	ZEISS VAST XXT	ZEISS XDT	ZEISS ViScan	ZEISS LineScan
Single point	■	■	■	■	■	■	
Passive scanning		■		■			
Active scanning	■						
Optical scanning					■		■
Rotatable/ tiltable				■	■	■	■
Max. stylus length [1]	500 mm	250 mm [2]	150 mm [5]	250 mm [2]	150 mm [5]		
Max. stylus weight [1]	500 g	15 g [2]	15 g [5]	15 g [2]	15 g [5]		
navigator [4]	■						

Technical features

Length measuring system	Photoelectric reflected light system, 0.2 µm resolution
Controller	Type: ZEISS C99 Protection type: IP22
Accessories (optional)	Multi-sensor Rack for storage of stylus systems

Environmental requirements[3]

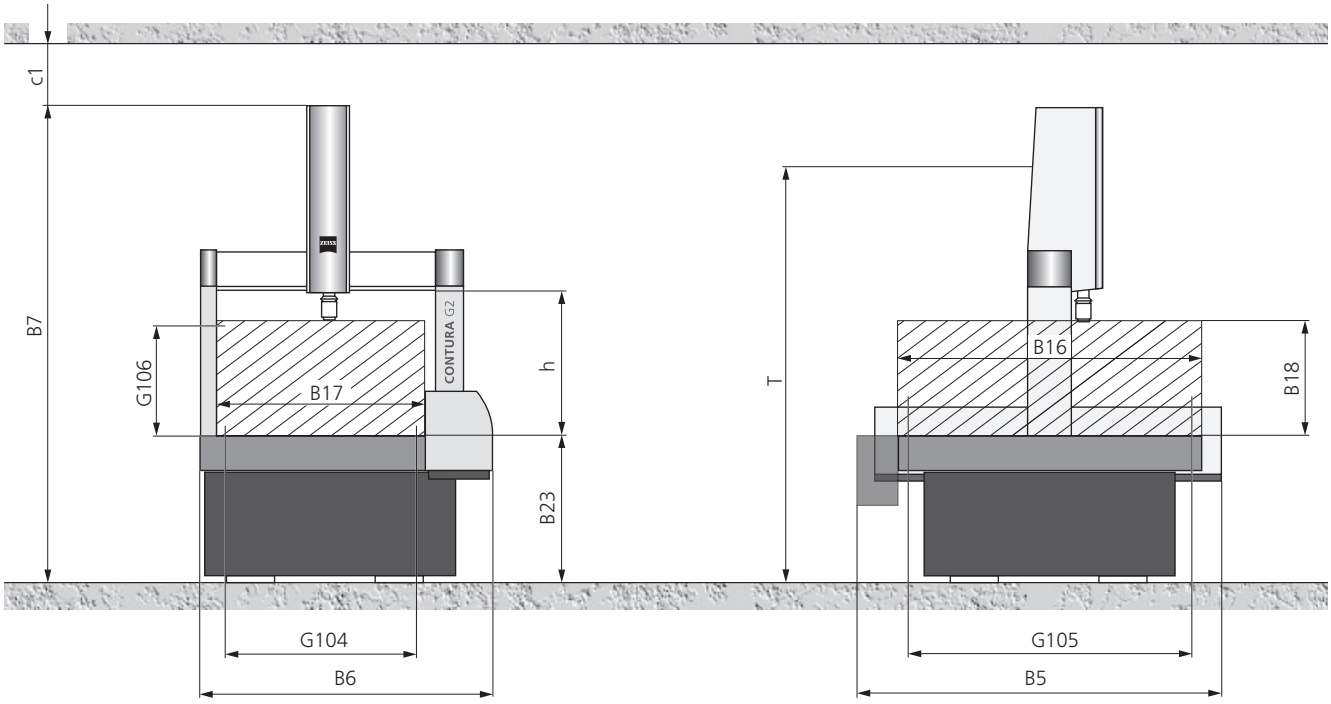
Relative humidity	30-60% (without condensation)	
Measuring reference temperature	18°C to 22°C, HTG option: 18°C to 26°C	
	Per day:	1.5 K/d
	Per hour:	1.0 K/h
	Spatial:	1.0 K/m
Floor vibrations	ZEISS CONTURA G2 is equipped with passive vibration damping (limits upon request). Upon request, we can provide assistance for vibration studies.	

Readiness for operation

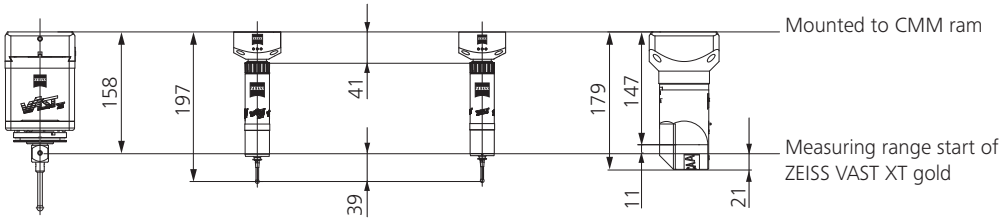
Relative humidity	30-60% (without condensation)	
Ambient temperature	+17°C to +35°C	
Power rating	ZEISS C99L	100-240V VAC ~ (±10%, -15%); 50-60 Hz (±3.5%) Max. power consumption 600 VA Typical power consumption: 200 W
Compressed air supply	Supply pressure min. 6 bar, max. 8 bar, pre-cleaned. Max. consumption: 30 l/min at 5.5 bar pressure. Air quality complies with ISO 8573 Part 1: Class 4, i.e. Paragraph. 6.1: max. particle size 15 µm, max. dirt particle concentration 8 mg/m³ Paragraph 6.2: max. compressed air dew point +3°C Paragraph 6.3: max. oil concentration of 5 mg/m³ If the air supply does not comply with the above requirements, an additional air filter unit and, if necessary, a membrane dryer must be inserted in the compressed air line.	

1) Depending on the application, limiting the parameters for a stylus system may be useful.
2) ZEISS VAST XXT: depending on model. TL 2: 125-250 mm 10 g. TL 3: 30-250 mm 15 g.
3) To ensure specified accuracies.
4) Only ZEISS CONTURA G2 navigator
5) Only TL3

ZEISS CONTURA G2 sizes	Dimensions in mm													Weight in kg	
	Measuring range			Overall measuring machine dimensions			Working range (Max. workpiece size)				Table height	As-sembly space	Trans-port height[2]	Measuring machine	Max. work-piece
	X axis	Y axis	Z axis	Length	Width	Height	Length	Width	Height	Height	Height	Height	Height		
	G104	G105	G106	B5	B6	B7	B16	B17	B18	H	B23	c1	T		
7/7/6	700	700	600[1]	1556	1430	2800	1039	920	716[1]	845	850	≥200	2200	1280	560
7/10/6	700	1000	600[1]	1861	1430	2800	1344	920	716[1]	845	850	≥200	2200	1550	730
10/12/6	1000	1200	600[1]	2060	1743	2800	1544	1225	716[1]	845	850	≥200	2200	2310	1150
10/16/6	1000	1600	600[1]	2460	1743	2800	1944	1225	716[1]	845	850	≥200	2200	2810	1500



ZEISS VAST XT gold ZEISS VAST XXT direct ZEISS XDT direct ZEISS RDS-C



Note: the given dimensions and weights are approximate values. Subject to change. Actual appearance of specific sizes may vary from illustration.
Dimensioning based on DIN 4000-167:2009.

1) Applies to ZEISS VAST XT gold. The measuring range (G106) and the maximum workpiece height (B18) are reduced by at least 50 mm when other probes are used.
2) Transport height of the secured machine group without pallet or Z mast. When transporting without foundation, deduct 600 mm from the transport height.

System description

Operating mode	Motorized/ CNC
Sensor mounts	Fixed/ ZEISS RDS
Software	ZEISS CALYPSO, ZEISS GEAR PRO, ZEISS HOLOS

Dynamics

Travel speed	Motorized	Axes	0 to 70 mm/s
	CNC	Vector	max. 478 mm/s
Acceleration		Vector	max. 1.85 m/s^2
Scanning speed[1)]			max. 125 mm/s

Approvals

Regulations	ZEISS CONTURA G2 complies with EC machine directive 2006/42/EC and EMC directive 2004/108/EC.
Disposal	ZEISS products and packaging returned to us are disposed of in accordance with applicable legal provisions.

Certification/accreditation

Quality management system	ISO 9001:2008, VDA 6, Parts 4, 2. Version 2005
Environmental management system	ISO 14001:2004
Occupational health & safety management systems	BS OHSAS 18001:2007
Accredited	ISO / IEC 17025:2005

1) For ZEISS CONTURA G2 navigator.

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