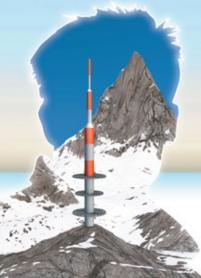
Leica Viva GNSS GS25 receiver

Datasheet









Proven Technology

Leica Viva GNSS is built on years of knowledge and experience – reliability and accuracy are the hallmarks of Leica Geoystems. You can trust even the most demanding tasks to the Leica Viva GS25. **Your benefit – complete confidence to maximize productivity.**



Extreme Reliability

Leica Viva GS25 is built to the highest standards for the most extreme environments. With its internal battery charger you can trust the Leica Viva GS25 to perform, whether on a glacier or in a desert. **Your benefit – trust in a sensor that can be used anywhere.**



Maximum Flexibility

Leica Viva GS25 provides you with maximum flexibility. Interfaces for PPS and Event together with a wide variety of communication options and data storage delivers you a totally modular solution. Your benefit – create a solution to fit any task.





Technical Specifications

1 1 1 1 1 1 1 1 1 1	Leica GS25 GNSS receiver	Leica GS25 B	asic		Leica GS25 Professional	
College		•			•	
Gallerin	GPS L5	0			•	
Company	GLONASS	0			•	
March						
Sept		0			0	
Time						
Name Color Name						
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Comment Comm		-				
Residency 0 0 0 0 0 0 0 0 0						
Size positioning: O O O O		-			· ·	
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MINA text	20 Hz positioning	0			•	
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Abdusted measurement engine Application for possessions of the posses	CNCC Porformance	1	 	technology:		
Max. smrtianeous tracked stabilities Up to 60 Stabilities signals from sing ColonAssis 1, 12 ColonAssis	GNSS	Grass technology	Advanced measurement engine Jamming resistant measurements High precision pulse aperture multipath correlator for pseudorange measurements Excellent low elevation tracking Very low noise GNSS carrier phase measurements with < 0.5 mm precision			
Satellite signals tracking - CRSS and a continue to the control of the control o			!	120 channels		
CLOWASS, S. 11, 12				neously on two free	quencies	
CONSTANTION CONTINUE CONTIN		Satellite signals tracking	• GLONASS: 11, L2 • BeiDou: B1, B2 • Galileo: E1, E5a, E5b, Alt-BOC			
Standard survey antennas Types		GNSS measurements	GPS: carrier phase full wave length, Code (C/A, P, C Code) GLONASS: carrier phase full wave length, Code (C/A, P narrow Code) Galileo: carrier phase full wave length, Code			
Types		Reacquisition time	<1 sec			
CASS technology	GNSS Antennas					
Satelline signal tracking			!		-	
Cround plane Built-in Cround plane Built-in Cround plane Built-in Cround plane Built-in Cround plane Dimensions (diameter x height) 170 mm x 02 mm 170 mm x			-		-	
Ground plane Built-In Ground plane Built-In Ground plane Dimensons (dameter x height) 27 mm x 0.2 mm 170 mm x 0.2 mm x 0.2 mm x 0.2 mm 170 mm x 0.2 mm x 0.2 mm 170 mm x 0.2 mm x 0.2 mm x 0.2 mm 170 mm x 0.2 mm x 0.2 mm 170 mm x 0.2 mm x 0.2 mm x 0.2 mm x 0.2 mm 170 mm x 0.2 mm		Satellite signal tracking				
Dimensions (diameter x height) 170 mm x 02 mm 170 mm x 02 mm x 02 mm 170 mm x 02 mm x 02 mm 170 mm x 02 mm 170 mm x 02 mm 170 mm x 02 mm x 02 mm x 02 mm x 02 mm 170 mm x 02 mm		Ground plane	!			
Weight						
Temperature operating			0.44 kg			
Temperature storage		Gain	29±3 dbi Typically 27 dbi		Typically 27 dbi	
Humidity 100% Protection against water, sand P68 according EC60529 and MIL STD 810F - 506.441, MIL STD 810F - 510.441 and MIL STD 810F - 512.441 Drops & topple over Withstands 1.5 m drop not hard surfaces and survives topple over from a 2 m pole onto hard surfaces and survives topple onto hard surfaces and survives		Temperature operating				
Protection against water, sand IPKB according IEC600529 and MILL STD 810F - 506.4-I, MILL STD 810F - 510.4-I and STD 810F - 510.4-I and MILL STD 810F - 510.4-I and STD 810F				-55° C to +85° C		
Mill STD 810 F - 512.4-1 Drops & topple over Withstands 1, and not pon toh hard surfaces and survives topple over from a 2 m pole onto hard surfaces Vibration Withstands whartions during operation on large civil construction machines Compliance with ISO9022-36-08 and Mill-STD 810F - 514.5-Cat24 Choke-ring antennas Types AR25 Satellite signal tracking GPS: 11, 12, 15 GCIONASS, Galileo, BeiDou GLONASS, Galileo, Bei						
Interest of the properties o			MIL STD 810F - 512.4-I			
Compliance with ISO9022-36-08 and MIL-STD 810F - 514.5-cat24 Types AR25 Satellite signal tracking GPS: L1, L2, L5		Drops & topple over	hard surfaces			
Types AR25		Vibration				
Satellite signal tracking CPS: L1, L2, L5 GLONASS, Gallieo, BeiDou Design Dome Margolin, JPL design Protection radome optional Dimensions (diameter x height) 380 mm x 200 mm Weight 7.6 kg Gain typically 40 dbi Accuracy (rms) Code differential with No 17 ppically 25 cm (rms) Accuracy (rms) with Real-Time-Kinematic (RTK) Standard of compliance Compliance with ISO17123 - 8 Single Baseline (<30 km) Horizontal: 8 mm + 1 ppm (rms) Network RTK Horizontal: 3 mm + 0.5 ppm (rms) Accuracy (rms) with Post Processing Static (phase) with long Horizontal: 3 mm + 0.1 ppm (rms) Vertical: 15 mm + 0.5 ppm (rms) Vertical: 3.5 mm + 0.4 ppm (rms) Vertical: 3.5 mm + 0.4 ppm (rms) Vertical: 5 mm + 0.5 ppm (rms) Vertical: 5 mm + 1 ppm (rms) Vertical: 8 mm + 0.5 ppm (rms) Vertical: 8 mm + 0.5 ppm (rms) Vertical: 8 mm + 0.5 ppm (rms) Vertical: 8 mm + 1 ppm (rms) Vertical: 15 mm						
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OTF range up to 70 km² Network RTK NetWork technology Leica SmartRTK technology Supported RTK network solutions VRS, FKP, iMAX						
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I Supported RTK network standards — I MAC (Master Applicance Concept) approved by RTCM SC 102		- ' '		+)	TCM CC 10/	
The finance is a f		эиррогеа ктК network standards	MAC (Master Auxiliary Conc	ept) approved by R	CICIVI SC 104	

Leica GS25 GNSS receiver				
Hardware	Weight & Dimensions			
	Weight (GS25)	1.84 kg		
d l	Dimension (GS25)	220 mm x 200 mm x 94 mm		
	Environmental specifications			
	Temperature, operating	–40° C to +65° C, compliance with ISO9022-10-08, ISO9022-11-special, MIL STD 810F – 502.4-II, MIL STD 810F – 501.4-II		
	Temperature, storage	-40° C to +80° C, compliance with ISO9022-10-08, ISO9022-11-special, MIL STD 810F – 502.4-II, MIL STD 810F – 501.4-II		
	Humidity	100%, compliance with ISO9022-13-06, ISO9022-12-04 and MIL STD 810F - 507.4-I		
	Proof against: water, sand and dust	IP68 according IEC60529 and MIL STD 810F – 506.4-I, MIL STD 810F – 510.4-I and MIL STD 810F – 512.4-I Protected against blowing rain and dust Protected against temporary submersion into water (max. depth 1,4 m)		
	Vibration	Withstands strong vibration during operating, compliance with ISO9022-36-08 and MIL STD 810F – 514.5-Cat.24		
	Drops	Withstands 1.0 m drop onto hard surfaces		
	Functional shock	40 g /15 to 23 msec, compliance with MIL STD 810F - 516.5-I No loss of lock to satellite signal when used on a pole set-up and submitted to pole bumps up to 150 mm		
	Power & Electrical			
	Supply voltage	Nominal 12V DC		
	-	Range 10.5 - 28V DC		
	Power consumption	Typically: 3.4 W w/o RTK		
	Internal power supply External power supply	Recharge & removable LI-lon battery, 4.8 AH / 14.8 V External power supply, battery can be charged inside the GS25		
	Certifications	Compliance to: FCC, CE		
Memory & Data Recording	Memory	Local approvals (as IC Canada, C-Tick Australia, Japan, China)		
	Memory medium	Removable SD card: 1 GB		
SD	Data recording			
	Type of data	Onboard recording of:		
		Leica GNSS raw data RINEX data		
	Recording rate	Up to 20 Hz		
User Interface	Buttons	• ON / OFF button		
osei iliteirace	Buttons	6 Function buttons		
	Display	High resolution display: • Easy switch between Rover / Base mode • Easy "Here" positioning functionality • Provides full status		
	to distance to disease.	• Indicator & configuration options		
	Led status indicator Additional user interface	Bluetooth®, position, RTK status, data logging, detailed power status Integrated web interface functionality provides full status indicator and configuration options		
Communications	Communication ports	3 x serial RS232 Lemo 1 x USB / RS232 Lemo 1 x Spin Lemo external power 1 x Bluetooth® port, Bluetooth® v 2.00 + EDR, class 2		
		1 x PPS output 1 x Event input		
	Simultaneous data links	Up to 3 data links can be attached and used simultaneously 2 real-time output interfaces via independent ports, providing identical or different RTK / RTCM formats		
	PPS output	Peak: 3.3 V=High Impedance: 50 Ω		
		Pulse length: 1ms		
	Event input	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse lenght: 125 ns at minimum Voltage: TTL level, ~ 5V, min. 3.3V Pin definition: Centre = signal, Case = ground		
	Event input Built in data links	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V		
		Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse lenght: 125 ns at minimum Voltage: TTL level, ~ 5V, min. 3.3V Pin definition: Centre = signal, Case = ground		
	Built in data links	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 – 470 MHz bandwidth • Transmit power. 0.5 – 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem External data links	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device • User exchangeable device • User exchangeable device		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem External data links Radio modems GSM / UMTS / CDMA phone modems Landline phone modems	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse length: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device • User exchangeable device • User exchangeable device		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem External data links Radio modems GSM / UMTS / CDMA phone modems Landline phone modems Communication protocols Real-Time data formats for data	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse lenght: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power. 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device • Dual-Band CDMA 1XRTT (800 / 1900 MHz) Support of any suitable UHF / VHF radio Support of any suitable Landline phone modem Leica proprietary formats (Leica, Leica 4G)		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem External data links Radio modems GSM / UMTS / CDMA phone modems Landline phone modems Communication protocols Real-Time data formats for data transmission and reception Real-Time data formats according RTCM standard for data transmission	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse lenght: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre = signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device • Dual-Band CDMA 1XRTT (800 / 1900 MHz) Support of any suitable UHF / VHF radio Support of any suitable Landline phone modem		
	Built in data links Radio modems 3G GSM / UMTS(HSDPA) phone modem CDMA phone modem External data links Radio modems GSM / UMTS / CDMA phone modems Landline phone modems Communication protocols Real-Time data formats for data transmission and reception Real-Time data formats according	Pulse length: 1ms Socket: LEMO ERN.OS.250.CTL Pulse type: TTL, positive or negative going pulse Pulse lenght: 125 ns at minimum Voltage: TTL level, - 5V, min. 3.3V Pin definition: Centre - signal, Case = ground Socket: LEMO HGP.00.250.CTL • Fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL, Pacific Crest and others • 390 - 470 MHz bandwidth • Transmit power: 0.5 - 1.0W • Fully integrated, fully sealed phone modem • User exchangeable device • User exchangeable SIM card • Tri-Band UMTS / HSDPA: 850 / 1900 / 2100 MHz • Quad-Band GSM / GPRS: 850 / 900 / 1800 / 1900 MHz • Fully integrated, fully sealed CDMA phone modem • User exchangeable device • Dual-Band CDMA 1XRTT (800 / 1900 MHz) Support of any suitable UHF / VHF radio Support of any suitable Landline phone modem Leica proprietary formats (Leica, Leica 4G) CMR, CMR+		

- Measurement precision, accuracy and reliability are dependent upon various factors including number of satellites, geometry, obstructions, observation time, ephemeris accuracy, ionospheric conditions, multipart etc. Figures quoted assume normal to favorable conditions. Times required are dependent upon various factors including number of satellites, geometry, ionospheric conditions, multipath etc. GPS and GLONASS can increase performance and accuracy by up to 30% relative to GPS only.

 A full Galileo and GPS L5 constellation will further increase measurement performance and accuracy.

 Might vary due to atmospheric conditions, signal multipath, obstructions, signal geometry and number of tracked signals.

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