

## TRION-VGPS-20 /-100 Position, speed and displacement module

- 20/100 Hz GPS receiver
- Supports differential GPS (SBAS) as a standard
- Optional GLONASS capability
- High accuracy speed and displacement measurement
- Additional features: GPS or IRIG timing, 8x DIOs, 1x CTR, 1x AUX
- Isolation: 350 V<sub>DC</sub>



GPS antenna



TRION-VGPS-20

TRION-VGPS-20 /-100		
Position, speed and displacement specifications		
Speed		
Accuracy	0.1 km/h ±0.05 % of range <sup>1)</sup>	
Min to max	0.1 km/h to 500 km/h	
Resolution	0.01 km/h	
Refresh rate	5 to 20 Hz	
Absolute position		
Accuracy	<40 cm CEP <sup>2)</sup>	
Refresh rate	TRION-VGPS-20: 1 to 20 Hz      TRION-VGPS-100: 1 to 100 Hz	
Resolution	<10 cm	
Latency time	<2 ms using DEWESoft™	
Displacement		
Accuracy	20 cm/km <sup>3)</sup>	
Refresh rate	1 to 20 Hz (refresh rates for speed & displacement up to 50 Hz)      TRION-VGPS-100: 1 to 100 Hz	
Connectors	SMA connector for GPS antenna, Lemo EGG.1B.304 for VGPS display	
IRIG timing specifications		
Input sources	IRIG code A or B; AM, DC or TTL	
Output signals	IRIG code B, DC	
Input specification	Compatibility (AM code)	0.5 V <sub>p-p</sub> to 10 V <sub>p-p</sub>
	Ratio (AM code)	3:1 ±10 %
	Compatibility (DC code)	DC level shift TTL / CMOS compatible
	Compatibility (TTL Code)	TTL
	Impedance	20 kΩ
Output specification		
Compatibility (DC code)	TTL, 20 mA	
Adjustment range	±150 ppm	
Clock accuracy IRIG locked	without drift	
Clock accuracy IRIG unlocked	<1 ppm (opt. 5 ppb)	
Max. cable length (IRIG)	1000 m, cable length delay compensation available	
Isolation voltage	350 V <sub>DC</sub>	
Connector	BNC socket	
GPS timing specifications		
Input	GPS antenna	
Trigger accuracy	100 ns	
Clock acc. GPS locked	without drift	
Clock acc. GPS unlocked	<1 ppm	
Digital I/O specifications		
Number of channels	8	
Compatibility (input)	CMOS/TTL	
Compatibility (output)	TTL, 20 mA	
Overvoltage protection	±30 V	
Connector	SUB-D-15 socket	
Counter specifications		
Number of channels	1 advanced counter or 3 digital inputs	
Counter modes	Event counting	Basic event counting, gated counting, up/down counting and encoder mode (X1, X2 and X4)
	Waveform timing	Period, frequency, pulse width, duty cycle and edge separation
	Sensor modes	Encoder (angle and linear), gear tooth with/without zero, gear tooth with missing/double teeth
Input signal compatibility	CMOS/TTL	
Counter resolution	32-bit	
Counter time base	80 MHz	
Time base accuracy	typ. 10 ppm (defined by the backplane)	
Maximum input frequency	10 MHz	
Overvoltage protection	±30 V permanent, 50 V peak (for 100 msec)	
Sensor power supply	5 V (600 mA) and 12 V (600 mA)	
Connector	On same SU B-D-15 socket as Digital I/O	

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AUX specifications	
Functionality	Camera trigger, trigger input/output, acquisition clock and programmable clock output
Compatibility (input)	LVTTTL
Compatibility (output)	LVTTTL, 10 mA
Overvoltage protection	±20 V
Connector	SMB socket
General specifications	
Power consumption	5 W (without sensor supply)
Temperature Range	0 to 50 °C
Weight	Appr. 240 g

<sup>1)</sup> Acquiring more than 6 satellites, averaged over 3 values

<sup>2)</sup> Acquiring more than 6 satellites, driving at constant speed

<sup>3)</sup> Circular Error Probable

- 40 cm differential operation using local base station
- 90 cm differential operation using BEACON
- 40 cm differential operation using local base station
- 1.8 m differential operation using SBAS
- 3 m autonomous operation

### Options for TRION-VGPS-20 /-100 modules

Options	
VGPS-OPT-GLONASS	Upgrade to add GLONASS tracking capability; includes receiver upgrade and changes the standard GPS antenna to a combined GPS/GLONASS antenna
VGPS-DISP	Bright, small, rugged LCD display with 2 m cable to VGPS sensor
CAL-VGPS-DATASTREAM	ISO 9001 compliant calibration report of a VGPS sensor; velocity and heading at different calibration points; includes only the serial datastream output

### Cables for TRION-VGPS-20 /-100 modules

TRION cables				
	Connector	Termination	Length	TRION modules
TRION-CBL-CAMTRG-03-00	SMB	To synchronize a DEWE-CAM-FW-70 via an AUX socket of TRION modules	3 m	TRION-BASE, TRION-TIMING, TRION-VGPS-x