

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_{DC}



TRION-VGPS-20 /-100		
Position, speed and displacement specifications		
Speed		
Accuracy		0.1 km/h ±0.05 % of range ¹⁾
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 ²⁾
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 ³⁾
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 Vp-p to 10 Vp-p
	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 _{DC}
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

¹⁾ Acquiring more than 6 satellites, averaged over 3 values

²⁾ Acquiring more than 6 satellites, driving at constant speed

³⁾ 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