



TRION-VGPS-20/100-V3



DEWETRON

- ▶ Position, speed and displacement module
- ▶ 20/100 Hz GPS receiver
- ▶ Supports differential GPS (SBAS) and GLONASS as a standard
- ▶ GPS or IRIG timing, 8x DIO, 1x counter, 1x AUX
- ▶ PTP / IEEE 1588
- ▶ Isolation: 350 V_{DC}



Module specifications

TRION-VGPS-20/100-V3 specifications	
GPS specifications	
Supported GNSS signals	<ul style="list-style-type: none"> – GPS: L1 C/A, L1C – SBAS: L1, L5 – GLONASS²⁾: L1 C/A
Number of channels	555
Horizontal position accuracy	<ul style="list-style-type: none"> – Single point L1: 1.5 m – Single point L1/L2: 1.2 m – SBAS: 60 cm
Refresh rate	<ul style="list-style-type: none"> – TRION-VGPS-20-V3: 20 Hz – TRION-VGPS-100-V3: 100 Hz
Time to first fix	<ul style="list-style-type: none"> – Cold start³⁾: <40 s (typical) – Hot start⁴⁾: <19 s (typical)
Signal lost recovery	<ul style="list-style-type: none"> – L1: <0.5 s (typical) – L2: <1.0 s (typical)
Time accuracy ⁵⁾	240 ns
Heading accuracy	0.1° (typical)
Velocity accuracy	<0.03 m/s RMS
Velocity limit ⁶⁾	515 m/s
GPS antenna	Incl. (5 m cable); supports GPS L1, GLONASS G1, SBAS (WAAS, EGNOS, MSAS)
Input connector GPS	SMA for GPS antenna
PTP / IEEE 1588	
IP Mode	Multicast
Protocol	UDP / IPv4; ETH
Delay mechanism	End-to-end, peer-to-peer
IP address method	DHCP

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TRION-VGPS-20/100-V3 specifications		
RJ-45 Ethernet		10/100 Mbit Ethernet connection; only for synchronization, no data transfer possible.
Programmable correction limit		10 ns to 500 ms
IRIG input specifications		
Supported codes		IRIG code A or B; AM or DC (A007, A127, B007, B127)
Compatibility (AM code)		0.5 Vp-p to 10 Vp-p
Compatibility (DC code)		DC level shift (edge detection); TTL / CMOS compatible
		Low: <1.5 VHigh: >3.5 V
Impedance		20 kΩ
Isolation voltage		350 V _{DC}
Connector		BNC
IRIG output specifications		
Supported codes		IRIG code B, DC (B007)
Digital I/O specifications		
Number of channels		8
Compatibility (input)		CMOS/TTL, weak pull-up 100 kΩ to +5 V
		Low: <0.8 VHigh: >2.0 V
Compatibility (output)		TTL, 20 mA
Overvoltage protection		
– Input mode		±30 V _{DC}
– Output mode		-0.5 to +5.5 V; short circuit protected
Connector		D-SUB-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		Typical 10 ppm (DEWE2); 2 ppm (DEWE3); (defined by the backplane)
Maximum input frequency		10 MHz
Overvoltage protection		±30 V _{DC} , 50 V _{PEAK} (for 100 ms)
Sensor power supply		5 V (600 mA) and 12 V (600 mA)
Connector		On same D-SUB-15 socket as Digital I/O
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 _{DC}

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TRION-VGPS-20/100-V3 specifications	
Connector	SMB socket
General specifications	
Typical power consumption	5 W
Temperature Range	0–50 °C
Weight	Approx. 240 g

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- 1) Typical values. Performance specifications subject to GNSS system characteristics, Signal-In-Space (SIS) operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference

3) Typical value. No almanac or ephemerides and no approximate position or time.
- 4) Typical value. Almanac and recent ephemerides saved and approximate position and time entered.