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	
– GPS	L1 C/A, L1C
– SBAS	L1, L5
– GLONASS[2)]	L1 C/A
Number of channels	555
Horizontal position accuracy	
– Single point L1	1.5 m
– Single point L1/L2	1.2 m
– SBAS	60 cm
Refresh rate	
– TRION-VGPS-20-V3	20 Hz
– TRION-VGPS-100-V3	100 Hz
Time to first fix	
– Cold start[3)]	<40 s (typical)
– Hot start[4)]	<19 s (typical)
Signal lost recovery	
– 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

Tab. 66: Module specifications

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 V	High: >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 V	High: >2.0 V
Compatibility (output)		TTL, 20 mA	
Overvoltage protection – Input mode – Output mode		 ±30 V_{DC} -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)		LVTTL	
Compatibility (output)		LVTTL, 10 mA	
Overvoltage protection		±20 V_{DC}	

Tab. 66: Module specifications

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

Tab. 66: Module specifications

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.