

## TRION-TIMING

## Timing and synchronization module

- **Timing input:** GPS, PPS or IRIG code A or B; AC, DC
- **Timing output:** Isolated IRIG output
- **GPS position:** 1 Hz update rate (requires GPS antenna)
- **Additional features:** 8x DIO, 1x counter, 1x AUX



TRION-TIMING specifications		
<b>IRIG input specifications</b>		
Supported codes	IRIG code A or B; AC or DC	
Compatibility (AC code)	0.5 V <sub>p-p</sub> to 10 V <sub>p-p</sub>	
Ratio (AC)	3:1 ±10 %	
Compatibility (DC code)	DC Level Shift TTL / CMOS compatible	
Impedance	20 kΩ	
<b>IRIG output specifications</b>		
Supported codes	IRIG code B, DC	
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	
<b>GPS specifications</b>		
General	12 channel, L1 frequency receiver	
PPS accuracy	100 ns	
Refreshrate	1 Hz	
Position accuracy	Horizontal CEP	
Autonomous	3.0 m	
Differential	1.0 m	
Trigger accuracy	1 μsec	
Clock accuracy locked	without drift	
Clock accuracy unlocked	<10 ppm	
Input Connector GPS	SMA for GPS antenna, BNC for IRIG I/O	
<b>Digital I/O specifications</b>		
Number of channels	8	
Compatibility (input)	CMOS/TTL	
Compatibility (output)	TTL, 20 mA	
Overvoltage protection	±30 V	
Connector	SUB-D-15 socket	
<b>Counter specifications</b>		
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 SUB-D-15 socket as Digital I/O	
<b>AUX specifications</b>		
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	
<b>General specifications</b>		
Power consumption	5 W	
Temperature Range	0 to 50 °C	
Weight	Appr. 240 g	

## Cables for TRION-TIMING 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

## Options for TRION-TIMING modules

Options	
GPS-ANT-1	GPS antenna for TRION-TIMING or DEWE-CLOCK, for fixed installation
GPS-ANT-2	GPS antenna for TRION-TIMING or DEWE-CLOCK, for mobile applications



**GPS-ANT-1**  
GPS antenna for  
fixed installations



**GPS-ANT-2**  
GPS antenna for  
mobile installations