DATASHEET

Time Sync
A-TSM/B

The Time Sync module provides Precision Time Protocol (PTP - Grand Master) and NTP Time services. This enables precision time synchronization for Logix Controllers and HMI systems. It can also provide GPS position and velocity data. The module uses an on-board GPS receiver to provide accurate time and position information.

Because the module is stand-alone and connects to various devices over an Ethernet network the module can be placed as close as possible to the antenna position removing the need for costly low-loss coaxial cables that was traditionally needed to connect the GPS antenna to the module. The on-board GPS receiver also provides velocity and odometer reading allowing the user to implement the module in various vehicle and tracking applications. The GPS accuracy information provided allows the user/controller to make calculated decision when looking at the position, velocity, or odometer information.

A built-in webserver provides detailed diagnostics of system configuration and operation, including the display of GPS time, position, and velocity without the need for any additional software.

Features

❖ Support for Legacy PLC5/SLC time synchronization

❖ 1588 Precision Time Protocol (PTP) master

❖ 1588 PTP Network Transport UDP or IEEE802.3

❖ Network Time Protocol (NTP) master or slave

❖ High accuracy time synchronization (onboard GPS receiver)

❖ Isolated GPS Receiver

❖ Position, Velocity and odometer readings

Configuration

❖ The Slate Configuration Utility software is used for configuration and troubleshooting of the module. The stand-alone configuration utility allows users to define the setup and configuration of the Time Sync module, connections with controllers and devices.

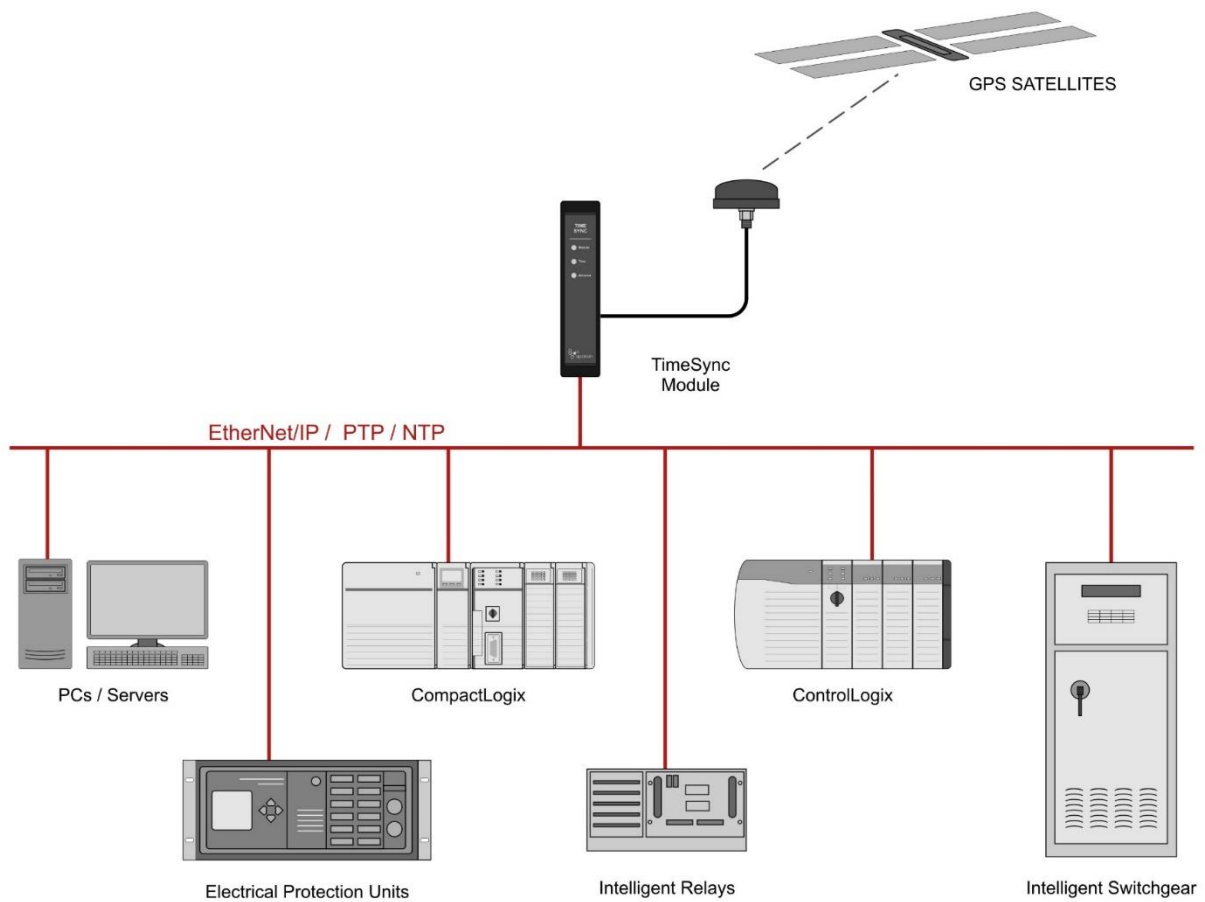❖ The configuration utility can be downloaded from www.prosoft-technology.com

Figure 1 - Example of a typical network setup for a timing application

The module can synchronize various devices across various platforms over traditional Ethernet using 1588 PTP and NTP.

With position, velocity, and odometer information, various tracking and positioning applications can be implemented.
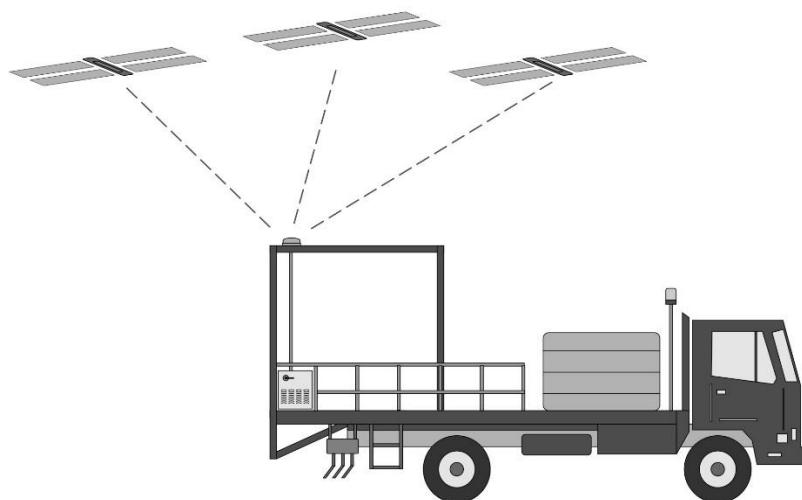

Figure 2 - Example of a typical position and velocity application

Specifications

Ethernet

Specification	Rating
Connector	RJ45
Conductors	CAT5 STP/UTP
ARP Connections	Max 20
TCP Connections	Max 20
CIP Connections	Max 10
Communication Rate	10/100 Mbps
Duplex Mode	Full / Half
Auto-MDIX Support	Yes

GPS

Specification	Rating
Antenna Port	SMA-Female
Supported Constellations	GPS / QZSS, GLONASS, SBAS, BeiDou
Velocity Accuracy	0.05 m/s
Heading Accuracy	0.3 degrees
Horizontal Position Accuracy	2.5 m (Autonomous) 2.0 m (SBAS)
Accuracy of Time Pulse Signal	60 ns
Altitude Limit	50,000 m
Velocity Limit	500 m/s

GPS Antenna

Specification	Rating
Antenna Connector	SMA-Male
Cable Length	3 m
Cable Type	RG174
Antenna Type	Active
Active Gain	27dB (Typical)
Noise Figure	1.5 (Maximum)
Voltage	2.7 to 5.5 VDC
Temperature	-35 to +85 °C

1588 PTP / NTP

Specification	Rating
NTP support (PC time synchronization)	Yes
1588 PTP Grandmaster support	Yes
1588 PTP Management Support	Yes
1588 PTP End-to-End (E2E) Delay Mechanism Support	Yes
1588 PTP Peer-to-Peer (P2P) Delay Mechanism Support	Yes
1588 PTP / NTP GPS clock source support	Yes
1588 PTP Holdover reporting support	Yes
1588 PTP Network Transport	IPv4 UDP IEEE802.3

Legacy Device Time Synchronization

Specification	Rating
Allen-Bradley PLC5 time synchronization	Yes
Allen-Bradley SLC time synchronization	Yes
Modbus Device register updating	Yes
Legacy Device Auto Time Zone support	Yes

Hardware

Specification	Rating
Power Supply	Input: 10 to 32 VDC, (80 mA @ 24VDC)
Power Consumption	1.9 W
Dimensions (H x W x D)	101.0 x 22.5 x 120.0 mm
Connector	3-way terminal
Conductors	24 to 18 AWG
Enclosure Rating	IP20, NEMA/UL Open Type
Temperature	-20 to 70 °C
Humidity	0 to 95% RH, non-condensing
Earth Connection	Yes, terminal based
Emissions	IEC61000-6-4
ESD Immunity	EN 61000-4-2
Radiated RF Immunity	IEC 61000-4-3
EFT/B Immunity	IEC 61000-4-4
Surge Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

Agency Approvals & Certifications

Please visit our website: www.prosoft-technology.com

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Ordering Information

To order this product, please use the following:

Time Sync

A-TSM/B

To place an order, please contact your local ProSoft Technology distributor. For a list of ProSoft Technology distributors near you, go to:
www.prosoft-technology.com
and select *Where to Buy* from the menu.