



# PRRS-7391

time synchronization device

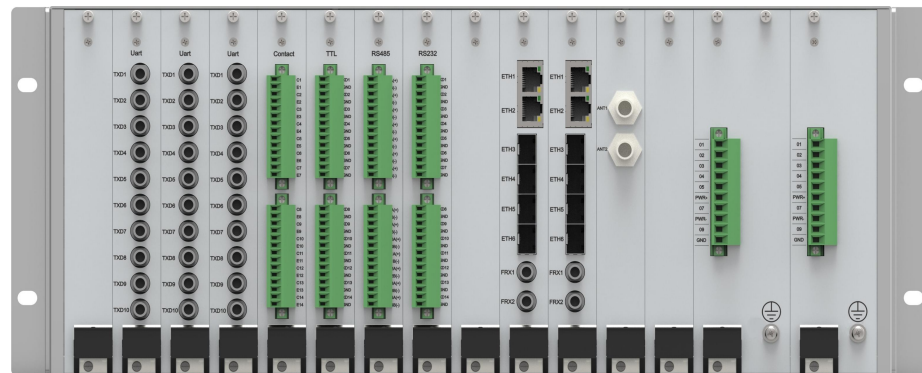


## General Application

PRRS-7391 time synchronization device applies to substations and power plants with the voltage grade ranking at or above 10KV, which provides time and synchronization source for various secondary equipment in the plants and stations, such as dispatch automation system, microcomputer relay protection device, fault recorder, event sequence recording device, tele-control device (RTU), computer data exchanging network, intelligent electronic device (IED), etc.



❖ Front Panel



❖ Rear Panel

## Features

Item	Feature
Remote supervision	This device supports local SCADA and remote control center communication in using of protocols such as IEC 61850 to realize the device running status supervision.
Time service	This device supports GPS (Global Positioning System) and BDS (BeiDou Navigation Satellite System). In addition, it supports antenna transmission time delay compensation.
Signal reception	Provides 2 reception channels for IRIG-B signal via its optical port. In addition, it supports antenna transmission time delay compensation.
Standards	IEEE 1588V2 protocol (BC mode and OC mode), SNTP/NTP protocol.
Synchronization	Supporting PPS (Pulse Per Second), PPM (Pulse Per Minute), PPH (Pulse Per Hour), IRIG-B signal, timing message (serial), SNTP/NTP timing message (network), IEEE 1588 signal, etc.
HMI	Provides 5.7" LCD and navigation keypad for the display of real time, satellite tracking status, IRIG-B inputting status, current clock source, etc.

## Specifications

### PPS/PPM/PPH

Item	RS-485/422	TTL	Contact	Optical
Rising edge (Max.)	50ns	50ns	50ns	50ns
Accuracy (Max.)	100ns	100ns	100ns	100ns
Pulse width	100ms	100ms	100ms	100ms

### IRIG-B DC Code

Item	RS-485/422	TTL	Contact	Optical
Rising edge (Max.)	50ns	50ns	\	50ns
Accuracy (Max.)	100ns	100ns	\	100ns
Format	1. For IRIG-B code, 1 frame per second, 100 code elements per frame and 10ms per code element; 2. Code element information of IRIG-B code includes time zone information, time quality information, leap second identification information, and SBS information.			

## Specifications

### Serial Port Timing Message

Baud rate	1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps	
Data format	Data bits	8
	Stop bit	1
	Parity	Odd or Even
Message format	Motorola binary format	
Transmission period	1s	
Accuracy	Max.3ms	

### Network

SNTP/NTP	Max.100μs
IEEE1588	Max.1μs

### GPS Receiver

Frequency	1575.42MHz	
Sensitivity (max.)	Tracking -133dBm Acquisition -130dBm	
Satellites quantity	Max.12	
Acquisition time(max.)	TTFH-hot	5S (with current almanac,position,time and ephemeris)
	TTFH-cold	10min(no stored information)
	Reacquisition	1s
Accuracy	Max.50ns	

### Internal Clock

Accuracy	±1ppb
Timekeeping Performance	Max.3×10 <sup>-10</sup> (1μs/h)

## Specifications

### BDS Receiver

Frequency	1561.098MHz	
Sensitivity (max.)	Tracking -133dBm Acquisition -130dBm	
Satellites quantity	Max.12	
Acquisition time(max.)	TTFH-hot	5S (with current almanac, position, time and ephemeris)
	TTFH-cold	10min(no stored information)
	Reacquisition	1s
Accuracy	Max.50ns	

### RS-485/ 422 Port

Type	Differential
Transmission distance	≤ 500m
Timing standard	IRIG-B(DC)
Safety level	Isolation to ELV level

### Optical-coupled Contact

Operating voltage	Max.220Vdc
Operating current	Max.50mA
Transmission distance	Max.300m
Safety level	Isolation to ELV level