

PTS-DR200



Time Server with DIN Rail

- Compact DIN Rail installation design
- High Precision Reference Clock as Absolute Time Source (GPS, BDS, GLONASS)
- Relative Reference Time and External Time Synchronization (PTP, IRIG-B)
- High precision stable OCXO oscillator with excellent time keeping performance
- Support PTP, NTP/SNTP, IRIG-B, PPS, TOD output
- Report time status by SNMP, IEC61850 MMS, IEC60870-5-104, and DNP over TCP etc.
- Support Web, SNMP etc. management system

Overview

PTS-DR200 is a multifunction time server. PTS-DR200 is designed for DIN Rail Mount requirements. It is a compact and provides nanosecond accuracy time service for any industry fields. It supports GPS (Global Positioning Service), BDS (Chinese Satellite System), and GLONASS (Russian Satellite System) as sky time sources and PTP (Precision Timing Protocol), IRIG-B as ground time sources. Based on the multiple time source input PTS-DR200 has multi-time source selection logical and Sky-Grounding time backup function inside. It also supports PTP (Precision Timing Protocol), NTP (Network Time Protocol), IRIG-B, 1PPS, 1PPM, 1PPH and TOD etc. time synchronization signal output as time synchronization purpose. PTS-DR200 supports TMS (Time Management System) features to report PTS-DR200 time status by IEC61850, IEC60870-5-104, SNMP, Modbus TCP, DNP over TCP etc. It also can generate accurate GOOSE signal to trigger an event to monitor IED time status in power system and provides GOOSE subscriber to send time status by IEC61850 MMS. The default embedded WEB service provides system management and also support SNMP management.

Functions

Time Reference

Supports GPS, BDS, GLONASS
Supports PTP input
Supports IRIG-B optical input and IRIG-B TTL input

Time Synchronization

- ▼ Supports PTPv2
- ▼ Supports PTP Grandmaster
- ▼ Supports PTP Slave
- ▼ Supports PTP BC
- ▼ Supports NTP/SNTP Server
- ▼ Supports IRIG-B demodulated output (B000~B007 Format; TTL, RS485 and Optical output)

- ▼ Supports IRIG-B modulated output (B120~B127 Format)
- ▼ Supports TOD serial time coding (RS232 and RS485 Interface; TOD, NMEA-RMC, NMEA-ZDA and Customized Serial Message)

Time Signal Conversion

IRIG-B to PTP, NTP/SNTP and TOD
PTP to NTP/SNTP, IRIG-B and TOD

Time Management

GOOSE publisher by PPS, PPM as time trigger
GOOSE subscriber to do time measurement
Report time status by IEC61850 MMS, IEC60870-5-104, DNP over TCP etc.

Device Management

Supports SNMP v1/v2c/v3, (no trap)
Supports WEB configuration and maintenance

Product Specifications

Satellite Receiver

Channel
▼ 72 channels satellite receiver
▼ GPS L1 C/A, GLONASS L1, BeiDou(BDS) B1
Sensitivity
▼ Tracking Sensitivity:-167dBm
▼ Acquisition Sensitivity:-160dBm

Input Interface

Satellite	3.3V DC, BNC connector
TTL	BNC connector, IRIG-B, one port
Fiber	
▼ Multi-mode, 850nm, ST connector, IRIG-B, one optional port	

Network Interface

Ethernet

- Two 100/1000M Ethernet ports
- RJ45 or 100M SFP or 1000M SFP ports

PTP v2

- Grandmaster, Slave and Boundary clock
- E2E, P2P
- 802.3, IPv4

NTP/SNTP

NTP/SNTP Server Mode

Output Interface

TTL(BNC)

- BNC connector, IRIG-B or PPS software configurable, two ports

TTL(Terminal)

- Terminal connector, IRIG-B or PPS software configurable, four ports

Fiber

- Multi-mode, 850nm, ST connector, IRIG-B or PPS software configurable, one optional port

TOD

- RS232/RS485, RJ45, 1PPS+TOD, one port

IRIG-B Modulated

- Terminal connector, IRIG-B modulated signal, peak to peak 3~12V and modulated ratio 3:1~6:1 software configuration, two ports

Contact

- Terminal connector, Maximum 300VDC, 10mA, PPS or PPM software configurable, two ports

Alarm Interface

Relay

- NC and NO relay alarm contact, 3-pin 5.08mm-spacing plug-in terminal block, 250 VAC Max, 3 A Max

Maintenance Interface

Console

RS232, RJ45, one port

Display

LED

- System alarm: ALARM
- Antenna status: ANT
- Antenna fix: FIX
- Time lock status: LOCK

LCD

Display Date and Time

Power Supply

Input

- 100-240VAC,50/60Hz;110-220VDC(85-264VAC/85-300VDC)
- 24VDC(21.6-26.4VDC)
- 48VDC(43.2-52.8VDC)

Terminal

- 3-pin 7.62 mm-spacing plug-in terminal block

Consumption

<20W

Physical Characteristics

Housing

Metal

Cooling

Natural cooling, fanless

Dimensions(WxHxD)

- 102×140×149mm (4.02×5.51×5.87 in.)

Weight

<2Kg(4.41pound)

Environmental Limits

Operating temperature

-20°C~+70°C (-4°F to 158°F)

Storage temperature

-30°C~+80°C (-22°F to 176°F)

Ambient Relative Humidity

5% to 95% (non-condensing)

Quality Assurance

Warranty

5 years

Approvals

Please visit www.kyland.com for the latest news

Time Accuracy

PTS-DR200 Time Server

PPS

Fiber≤60ns
TTL≤60ns
RS485≤0.5μs
Contact≤3μs
Fiber≤60ns
TTL≤60ns
RS485≤0.5μs
Modulated≤3μs

IRIG-B

TOD

RS232≤5ms
RS485≤5ms

1PPS+TOD

≤60ns

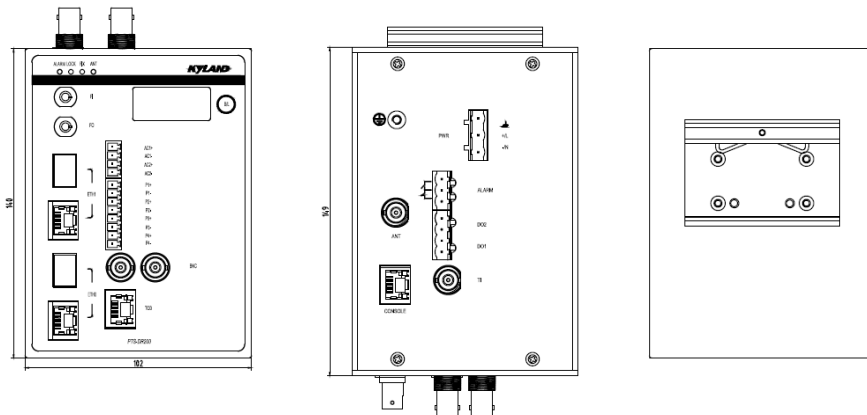
NTP

≤50μs

PTP

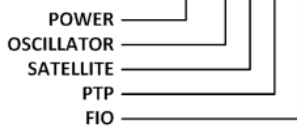
≤50ns

Mechanical Drawing



» Ordering Information

PTS-DR200-C-DDDD



Power

3	48VDC(43.2-52.8VDC) Single
5	24VDC(21.6-26.4VDC) Single
7	100-240VAC,50/60Hz;110-220VDC(85-264VAC/85-300VDC) Single

OSCILLATOR

1	TCXO(<55µs/1h)
2	OCXO(<12µs/12h)
3	OCXO(<6µs/24h)

SATELLITE

1	GPS/BDS/GLONASS Configurable
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PTP

0	N/A
1	PTPv2

FIO

0	N/A
1	F1 (ST 850nm MM) + FO (ST 850nm MM)

SOFTWARE Description

N/A	WEB (Default)
PTS-DR200-S1	WEB + SNMP
PTS-DR200-S2	WEB + IEC60870-104 + DNP TCP
PTS-DR200-S3	WEB + IEC60870-104 + IEC61850 MMS
PTS-DR200-S4	WEB + TMS GOOSE Trigger + IEC61850 MMS

ANTENNA

PTS-ANT-GPS-BDS-TNC	GPS/BDS, TNC Female Connector
PTS-ANT-GPS-BDS-N	GPS/BDS, N Female Connector
PTS-ANT-GPS-BDS-GLN_TNC	GPS/BDS/GLONASS, TNC Female Connector
PTS-ANT-GPS-BDS-GLN_N	GPS/BDS/GLONASS, N Female Connector
PTS-ANT-CABLE-15	Coaxial Cable (15 meters)
PTS-ANT-CABLE-30	Coaxial Cable (30 meters)
PTS-ANT-CABLE-50	Coaxial Cable (50 meters)
PTS-ANT-CABLE-80	Coaxial Cable (80 meters)
PTS-ANT-CABLE-100	Coaxial Cable (100 meters)
PTS-ANT-AMPLIFIER	Antenna Amplifier
PTS-ANT-lightning	BNC Female to Male Connector

Order Information Description

	Order Information	Description
Example	PTS-DR200-3-1111	48VDC, GPS/BDS/GLONASS, TCXO, PTPv2, FIO
	PTS-DR200-S1	WEB + SNMP
	PTS-ANT-GPS-BDS-GLN_TNC	GPS/BDS/GLONASS, TNC Female Connector
	PTS-ANT-CABLE-50	Coaxial Cable (50 meters)