

# PTS-DR200

## DIN-Rail time servers



### » 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.

### » Key Features

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,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

## » Product Specifications

### >Functions

#### -Time Reference

Support GPS, BDS, GLONASS

Support PTP input

Support IRIG-B optical input and IRIG-B TTL input

#### -Time Synchronization

Support PTPv2

Support PTP Grandmaster

Support PTP Slave

Support PTP BC

Support IRIG-B demodulated output (B000~B007 Format; TTL, RS485 and Optical output)

Support IRIG-B modulated output (B120~B127 Format)

Support TOD serial time coding (RS232 and RS485 Interface,RS232 customizable; TOD, NMEA-RMC, NMEA-ZDA and Customized Serial Message)

Support NTP/SNTP service

#### -Time Signal Conversion

IRIG-B to PTP ,NTP and TOD

PTP to NTP,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

Support SNMP v1/v2c/v3, (no trap)

Support 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 : 5V 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(RS232 customizable), RJ45, 1PPS+TOD, one port

IRIG-B Modulated : 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 :

110-220VAC/DC(85-264VAC/85-300VDC) ,47-63Hz

24VDC(18-36VDC)

48VDC(36-60VDC)

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**

CE, FCC

EMC: EN 55032, EN 55035, EN 61000-6-4, EN 61000-6-2

IEC 62368-1, EN 62368-1

**>Time Accuracy**

**-PPS**

Fiber  $\leq 60\text{ns}$

TTL  $\leq 60\text{ns}$

RS485  $\leq 0.5\mu\text{s}$

Contact  $\leq 3\mu\text{s}$

**-IRIG-B**

Fiber  $\leq 60\text{ns}$

TTL  $\leq 60\text{ns}$

RS485  $\leq 0.5\mu\text{s}$

Modulated  $\leq 3\mu\text{s}$

**-TOD**

RS232  $\leq 5\text{ms}$ (RS232 customizable)

RS485  $\leq 5\text{ms}$

**-1PPS+TOD**

$\leq 60\text{ns}$

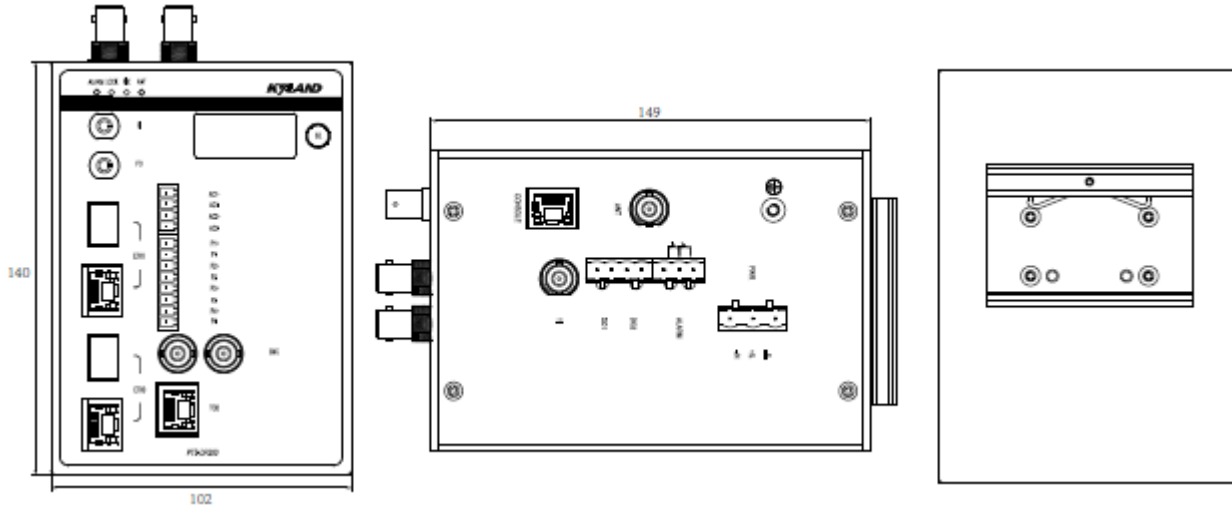
**-NTP**

$\leq 50\mu\text{s}$

**-PTP**

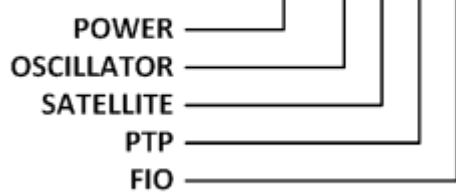
$\leq 50\text{ns}$

**» Mechanical Drawing**



» Ordering Information

**PTS-DR200-C-DDDD**



<b>Power</b>	
3	48VDC Single
5	24VDC Single
7	110-220VAC/DC Single
<b>OSCILLATOR</b>	
1	TCXO(<55µs/1h)
3	OCXO(<6µs/24h)
<b>SATELLITE</b>	
1	GPS/BDS/GLONASS Configurable
<b>PTP</b>	
1	PTPv2 (ETH0/ETH1)
<b>FIO</b>	
0	N/A
1	FI (ST 850nm MM) + FO (ST 850nm MM)

**SOFTWARE**

PTS-DR200-S1	WEB + SNMP
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**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) (N Male to BNC Male Connector)
PTS-ANT-CABLE-30	Coaxial Cable (30 meters) (N Male to BNC Male Connector)
PTS-ANT-CABLE-50	Coaxial Cable (50 meters) (N Male to BNC Male Connector)
PTS-ANT-CABLE-80	Coaxial Cable (80 meters) (N Male to BNC Male Connector)
PTS-ANT-CABLE-100	Coaxial Cable (100 meters) (N Male to BNC Male Connector)
PTS-ANT-AMPLIFIER	Antenna Amplifier (BNC Female to Male Connector)
PTS-ANT-LIGHTING	Lighting Arrester (BNC Female to Male Connector)
PTS-ANT-BNC-J/BNC-K-30cm	Lightning protection device feeder 30 centimeters
PTS-ANT-MOUNT-BASE	Base Mount accessory for antenna
PTS-ANT-MOUNT-HOOP	Hoop Mount accessory for antenna

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