

PTS-DR200

DIN Rail Time Server



- 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, NTP/SNTP)
- 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

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

Time Synchronization

- ▼ Support PTPv2
- ▼ Support PTP Grandmaster
- ▼ Support PTP Slave
- ▼ Support PTP BC
- ▼ Support NTP/SNTP Server
- ▼ 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; 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

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

Maintenance Interface

Console RS232, RJ45, one port

Display

LED System alarm: ALARM
 Antenna status: ANT
 Antenna fix: FIX
 Time lock status: LOCK
 Display Date and Time
 LCD

Power Supply

Input
 ▼ 220AC/DC(85-264VAC/85-300VDC)
 ▼ 24VDC(18-36VDC)
 ▼ 48VDC(36-72VDC)
 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)

» Precise Timing Solutions

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
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Approvals

Please visit www.kyland.com for the latest news

» Time Accuracy

PPS

- ▼ Fiber≤60ns
- ▼ TTL≤60ns
- ▼ RS485≤0.5μs
- ▼ Contact≤3μs

IRIG-B

- ▼ Fiber≤60ns
- ▼ TTL≤60ns
- ▼ RS485≤0.5μs
- ▼ Modulated≤3μs

TOD

- ▼ RS232≤5ms
- ▼ RS485≤5ms

1PPS+TOD

≤60ns

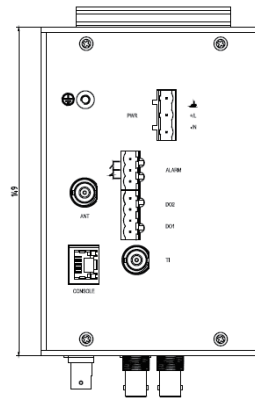
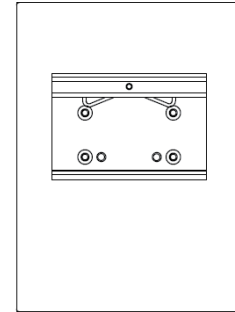
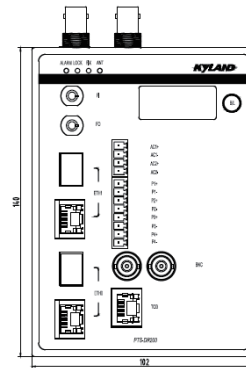
NTP

≤50μs

PTP

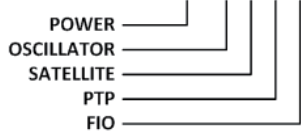
≤50ns

» Mechanical Drawing



➤ Ordering Information

PTS-DR200-C-DDDD



Power

3	48VDC(36-72VDC) Single
5	24VDC(18-36VDC) Single
7	220AC/DC(85-264VAC/85-300VDC) Single
A	12-36VDC 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	FI (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-LIGHTING	BNC Female to Male Connector

Order Information Description

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)