

# 8030NTS/GPS

Network timeserver for DIN rail mounting

## Technical data.

General Data	
Housing:	for 35mm DIN Rail mounting according to DIN EN 60715 TH35
Protection class:	IP30
Weight:	approx. 0.8 kg
Dimensions:	Standard dimensions: W 100mm x H 105mm x D 130mm Please note: If you choose to equip your system with 1 additional independent NTP time server / with additional signal output modules, the system will be delivered with an extended mounting rail: 135mm x 105mm x 130mm
MTBF:	> 250,000h
Input Voltage (standard delivery):	100-240V AC (50/60Hz) 110-250V DC
Optional:	24V DC (18-36V DC) 48V DC (36-76V DC)
Temperature range:	Operation: 0°C to +50°C
	Storage: -20°C to +75°C
Humidity:	max. 95%, non condensing

LAN – ETH0/ETH1	
Network connection:	via LAN cable with RJ45 connector, male (recommended cable type CAT5 or better)
Request per second:	max. 3,000 requests (during operation in GigaBit networks under optimum network conditions)
Number of connectable clients:	theoretically unlimited
Network interface ETH0:	10/100/1000 Mbit/s autosensing
Ethernet compatibility:	version 2.0 / IEEE 802.3
Isolation voltage (network-to system-side):	1500 Vrms
Boot time:	typical: 35 seconds - When using static IP addresses for ETH0 and ETH1. Depending on the network configuration in use (e.g. DHCP) an extension of the boot phase can occur.



front view base system 8030NTS/GPS

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GPS Data (Module 8024GPS)	
Receiver type:	22 channel phase tracking receiver, C/A code
Evaluation:	L1 frequency (1,575.42MHz)
Sensitivity:	Tracking: -161dBm Cold Start: -148dBm
Synchronization time TTF (Time to First Fix):	<ul style="list-style-type: none"><li>• Warm start: &lt; 1 min.</li><li>• Cold start: &lt; 5 min.</li><li>• First initialization: &lt; 12.5 min. (without valid leap second information)</li></ul>
Antenna connection:	<ul style="list-style-type: none"><li>• Via BNC connector, female</li><li>• For active antennas, Ub = 5V DC / max. 70mA</li><li>• Antenna power feed via BNC connector, female of Module 8024GPS</li></ul>

Accuracy	
Internal PPS pulse on GPS reception (after 5min. GPS reception):	<u>Standard crystal:</u> < ± 30ns  <u>VCTCXO crystal:</u> < ± 15ns
VCO control of the internal quartz base:	<u>Standard crystal:</u> < ±0.030ppm  <u>VCTCXO crystal:</u> < ±0.015ppm
Freewheel accuracy:	<u>Standard crystal:</u> < ± 0.1ppm after at least 5min. GPS reception / T = +20°C Drift for T = +20°C (constant): - after 1h: 0.36msec. - after 24h: 8.64msec.  <u>VCTCXO crystal:</u> < ± 0.02ppm after at least 5min. GPS reception / T = +20°C Drift for T = +20°C (constant): - after 1h: 0.72µsec. - after 24h: 1.73msec.
Internal back-up clock (RTC):	±25ppm / for T = +10°C to +50°C (constant)

CE Conformity
<b>Electromagnetic Compatibility Directive – 2014/30/EU (formerly 2004/108/EC)</b>
EN 55022:2010 / AC:2011
EN 61000-3-2:2006 / A2:2009, EN 61000-3-3:2013
EN 55024:2010
<b>Low Voltage Directive – 2014/35/EU (formerly 2006/95/EC)</b>
EN 60950-1:2006 / AC:2011
<b>RoHS Directive – 2011/65/EU</b>
Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment

### Interfaces

- 2x Ethernet 10/100/1000 Mbit/s autosensing via RJ45
- 1x USB-Port for update and recovery function
- 1x optical coupler for synchronization status output
- **Optional:** additional signal output modules
  - \* 1 x additional independent NTP timeserver can be integrated
  - \* IRIG-B (analogue / digital)
  - \* DCF77 pulse
  - \* Cyclic Pulses
  - \* Serial Time Datagram

### Time Protocols

- NTPv4 Server
- NTP Broadcast
- NTP Multimode
- NTP Client for further NTP Server (redundancy)
- SNTP Server
- SINEC H1 time datagram – **optional**
- RFC-867 DAYTIME Server
- RFC-868 TIME Server
- Precise Time Protocol (PTP) according to IEEE 1588-2008 (**optionally activatable**)

### RFC Listing of Supported Protocols

- NTPv4 - Protocol and Algorithms Specification (RFC 5905)
- NTPv4 - Autokey Specification (RFC 5906)
- PPS API (RFC 2783)
- DHCP (RFC 2131)
- Time Protocol (RFC 868)
- Daytime Protocol (RFC 867)
- HTTP (RFC 2616)
- HTTPS (RFC 2818)
- SSH-2 (RFC 4250-4256, 4335, 4344, 4345, 4419, 4432, 4716, 5656)
- TELNET (RFC 854)
- SNMP (RFC 1213, RFC1901-1908) – **optional**
- SYSLOG (RFC 5424) – **optional**
- SMTP (RFC 5321) – **optional**

### Optionally activatable functions:

- VLAN support according to IEEE 802.1q
- Port Aggregation (NIC Bonding/Teaming) with support of IEEE 802.3ad trunks
- Parallel Redundancy Protocol (PRP) according to IEC 62439-3

**Customized system modifications are available upon request!**