PRESENTATION

Compact and modular, the Netsilon time server combines the accuracy of a master clock with the secure approach of data networks:

- **Very high precision** internal clock regulated by its **OCXO** quartz.
- Priority order for the different synchronisation references (input).
- Modular design allowing a wide variety of input/output signals (up to 4 expansion cards).
- Network security management: Enable/disable encryption, authentication, and access protocols.
- Alarm information available as SNMP traps and email.

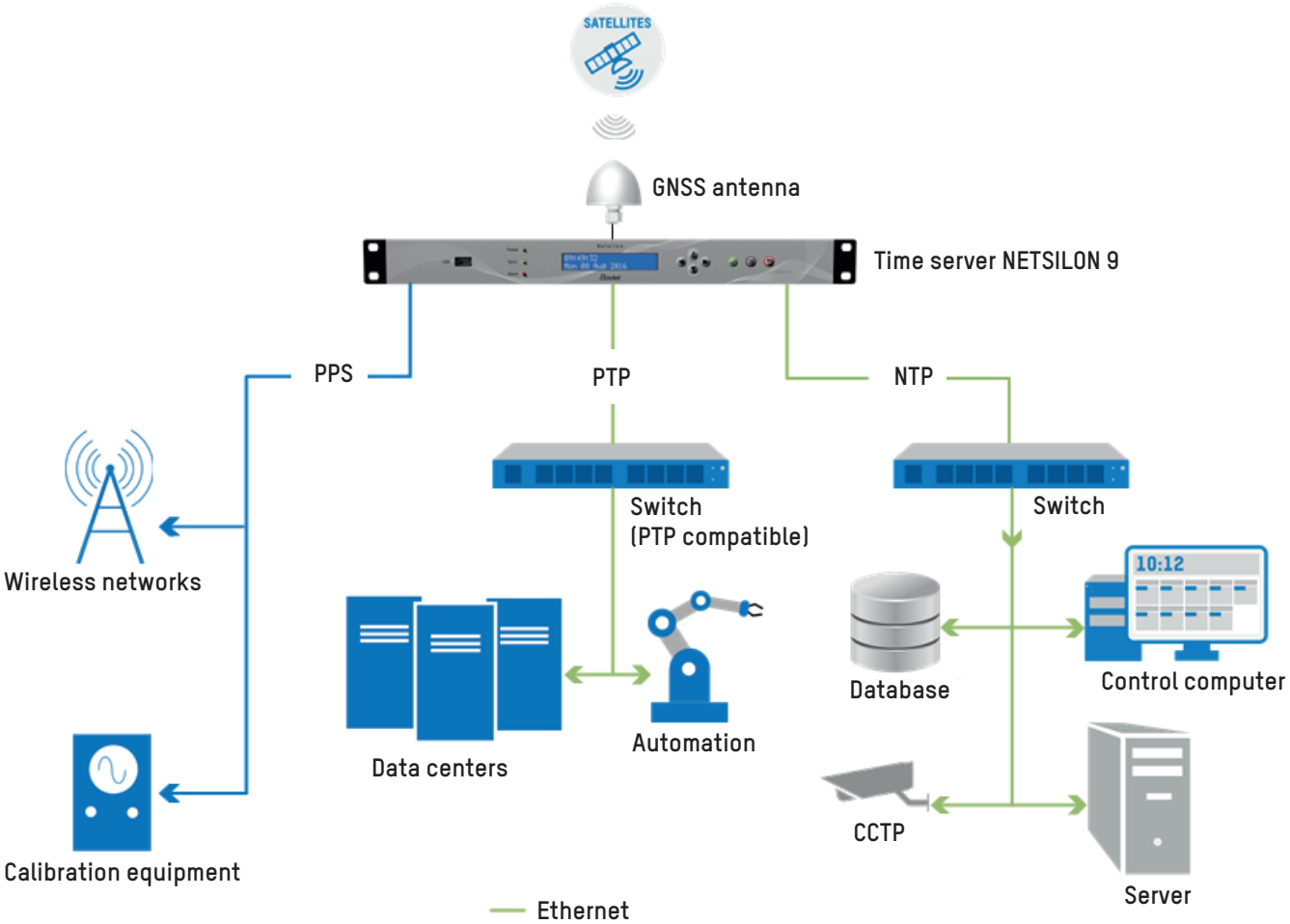
Warranty: 3 years.



APPLICABLE STANDARDS

- EN 55024 (2010)
- EN 55032 (2012)
- EN 60950
- EN 61000-3-2 (2014)
- EN 61000-3-3 (2013)
- EN 61000-6-2 (2005)
- EN 50121-4 (2006)
- EN 62311 (2008)

EXAMPLE OF INSTALLATION



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REFERENCE SIGNALS

	STANDARD	OPTION
Inputs	- GNSS (GPS-GLONASS-GALILEO-BeiDou) - NTP	- NTP - PTP
Outputs	- NTP - 10 MHz - PPS	- NTP - PTP - AFNOR

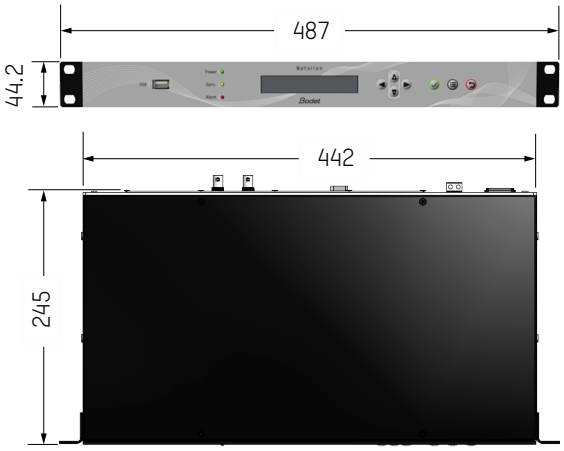
SPECIFICATIONS

	TYPICAL VALUES OF THE OCXO QUARTZ
10 MHZ FREQUENCY OUTPUT	
Accuracy (average after 24h when GPS)	$1x10^{-11}$
Medium Term Stability (without GPS after 2 weeks of GPS synchronisation	$1x10^{-9}$/day
Short Term Stability (Allan Deviation)	
1 sec	$1x10^{-11}$
Temperature Stability (peak to peak)	$1x10^{-9}$
Phase noise (dBc/Hz) - typical	
@10 Hz	-125
@100 Hz	-145
@1 kHz	-155
Signal waveform and levels	Sine wave, +13 dBm/50 ohm , BNC

PPS OUTPUT	
Accuracy to UTC (1 sigma locked to GPS)	±50 ns
Holdover after 24h (after 2 weeks of GPS synchronisation at constant temperature)	±15 µs
Signal waveform and levels	TTL ($5V_{p-p}$) 50 ohm, BNC

MECHANICAL CHARACTERISTICS

Construction	Metal case – 1 U rack – 19″
Operating temperature	From 0 °C to +50 °C
Humidity rating	0-90 % without condensation
Protection rating	IP41
Weight	2.5 kg
Dimensions	See illustration below



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ELECTRICAL CHARACTERISTICS

Power supply	DC only: 18-36 VDC (5,5A) or AC only: 85-264VAC; 1,9-0,75A or AC + DC	**FANLESS**
MTBF	100,000 hours	

COMMUNICATIONS

Network port	RJ45, 10/100/1000 BASE-T
Configuration serial interface	RS232, DB9 connector
Front panel	USB socket (Enable/Disable) for saving and updating software Keyboard (lockable) and LCD screen for network configuration

NETWORK CHARACTERISTICS

PROTOCOLS

NTP V2, V3, V4	Conforms with RFC 1305 and 5905. Supports Unicast, Broadcast, Multicast, Anycast, MD5 authentication + integrity, peering and Autokey.
Number maximum of NTP requests per second (All Ethernet ports combined	7 000
Maximum number of NTP clients (typical)	32 000
SNTP V3, V4	Conforms with RFC 1769, 2030, 4330 and 5905.
TIME PROTOCOL	Conforms with RFC 868.
DAYTIME PROTOCOL	Conforms with RFC 867.

COMMUNICATION

HTTP/HTTPS	Conforms with RFC 2616.
SSH	SSH v1.3, SSH v1.5, SSH v2 (openSSH).

MANAGEMENT

IP	IPv4, IPv6 : Dual stack

SERVICES

DHCP	DHCPv4, DHCPv6, Autoconf & Slaac
SMTP	Mail forwarding

SUPERVISION

SNMP	v1 (RFC 1157), v2c (RFC 1901-1908) and v3 (RFC 3411-3418)
Relay contact/External input	Sending and receiving of alarms

SECURITY FEATURES

- Enable/disable protocols
- Protection by single authentication (login + password)
- DES and AES encryption
- SHA-1, MD5 authentication
- TLS encryption
- SCP: secured copy of Netsilon files in SSH session
- SFTP: secured transfer of Netsilon files in SSH session

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REFERENCES

• **907 910**	NETSILON 9 (100-240 VAC)
• **907 911**	NETSILON 9 (18-36 VDC)
• **907 912**	NETSILON 9 (100-240 VAC + 18-36 VDC)

EXPANSION CARDS

• **907 920**	NETWORK CARD (RJ45) *(2 ports)*
• **907 921**	NETWORK CARD (SFP) *(2 ports)*
• **907 922**	PTP CARD (RJ45+SFP+SMA) *(1x connector of each)*
• **907 940**	AFNOR CARD *(2 outputs)*

ACCESSORIES

• **907 970**	Bodet GNSS synchronisation antenna
• **907 975**	Surge protector
• **907 976**	Interface GNSS for standard RF antenna

EXPANSION CARDS

NETWORK CARD (RJ45)	
Number of ports	2
Connector type	RJ45, 10/100/1000 BASE-T
NTP requests/sec (max)	7 000 (All Ethernet ports combined)
Management	IPv4, IPv6
Mode	anycast, multicast, unicast
Max no of cards	2, max. 5 ports (1 Eth0 standard + 2x on 2 option cards)

NETWORK CARD (SFP)	
Number of ports	2
Connector type	SFP - Giga Ethernet
Standards	Compatible SX/LX
NTP requests/sec (max)	7 000 (All Ethernet ports combined)
Management	IPv4, IPv6
Mode	anycast, multicast, unicast.
Max no of cards	2, that is 4 ports SFP max.

PTP/SyncE CARD (RJ45+SFP)	
Number of ports	1
Operation	Automatic selection of master or slave mode (1 or 2 steps)
Time resolution	± 8 ns
Master mode capacity	Up to 32 slaves in unicast at the rate of 128 frames per second
Management	IPv4, IPv6
Mode	multicast, unicast
Connector type	Gigabit SFP/RJ45 combo port
Max no of card	1
Norme	IEEE-1588 V2

AFNOR CARD	
Number of outputs	2 (independent)
Signal type	Amplitude modulation (RS485)
Connector type	Terminal block
Max no of cards	4

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