Because every fraction of a second counts -









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hopf is the leading center of expertise for time and frequency solutions, time reference systems and time distribution applications. Since 1972, German quality and innovation have distinguished our well established products which are used and trusted in numerous industries in more than 130 countries around the world.

Our in-house development, production and sales as well as our lean organization and short lines of communication guarantee the consistent **high quality of our products at competitive prices**.

Our innovative products are **used by well-known companies across the globe** to implement highly-precise signals for synchronization and time stamping of industrial automation applications, public safety solutions, computer networks in data centers and financial markets or to successfully implement business-critical projects in the energy and public infrastructure sectors.

By constant communication with our customers, continuous cooperation, support in all matters and through a network of like-minded partners, **we remain at the cutting edge of customer needs worldwide**.

Our customers are our partners – whatever we can do for them, we do! And that's quite a lot after more than 50 years.

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Key competences

Time Reference Systems

Master clock systems and network time server appliances for the output of highly-precise signals for synchronization and time stamping of mission-critical public infrastructure and industrial applications, energy protection, smart grid and substation automation applications as well as communication technology for Information Technology (IT) and Operation Technology (OT) networks

Time Distribution Systems

Signal and protocol converters for distribution and conversion of electrical and optical signals or time protocols

Accessories

Antenna systems with mounting material, surge protective devices, and cabling for receiving highly-precise time signals from terrestric and GNSS-based signal sources

Secondary Clocks

Analogue and digital clock displays announcing information about time and date for public infrastructure facilities





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Our claim

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- Maximum Quality
- High Reliability
- Well-balanced cost-benefit ratio
- Flexible and highly customizable solutions
- Excellent customer service and support based on more than 50 years of experience

Solutions







8100 Product Series

The 8100 product series are modular time reference systems supporting the Global Navigation Satellite Systems (GNSS) GPS, Galileo, GLONASS, and BeiDou for precise and reliable time synchronization at highly competitive pricing which is especially well suited for critical infrastructure applications.

Key Features

- > 1U fully modular subrack for 19-inch rack mounting
- > LCD information display and LEDs for system status
- > Redundant power supply option
- > Hot-plug capable field-replaceable units (FRU)
- > Extended temperature range for reliable operation between 40° and +70°C
- > GPS, Galileo, GLONASS, and BeiDou time sources for reliable satellite synchronization
- > Synchronization of IEC 61850 compatible devices
- > Typical NTP time stamp accuracy <30 µs
- Precision Time Protocol (PTP) Grandmaster with peak time stamp accuracy ±100 ns, support for IEC 61850-9-3:2016
 Power Utility Automation Profile, IEEE C37.238-2017 Power Profile

Enhanced IT/OT Security

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- Separation of the diagnostic and operational / productivity network for enhanced security
- Role based access control (RBAC) with support of LDAP and RADIUS authentication according to IEC 62351-8:2020
- Built-in firewall for provision of barrier against network-based intrusions
- Certificate signed configuration files and firmware packages

System Configuration and Monitoring

8100 Product Series Time Reference System

- huma® web edition, HTTPS web interface
- > Integrated event log
- Diagnostics and monitoring via SNMP v2c and v3 read operations
- Event notification using SNMP traps, email messaging and / or external SYSLOG server



8030HEPTA Product Series

The 8030HEPTA product series are network time server systems in 1U subrack for 19inch rack mounting supporting various time synchronization sources. The network appliances feature precise and reliable time synchronization at highly competitive pricing for business critical applications in the energy and automation industry.

1 network time server module

integrated into the base system by default

- > 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- > Network Time Protocol Version 4 (RFC5905)

2 extension slots for isolated and mutually independent modules for enhanced security

- > Network time server 8030NTS/M
- > IRIG-B modulated / AM
- > IRIG-B demodulated / DCLS
- > PPS / cyclic pulses
- > DCF77 (77,5kHz / pulse)
- > Serial time datagram





Integrated features

- > System monitoring / Alarming
- > Static Routing Table
- > IEEE 802.1Q Tagged VLAN
- > Network Interface Bonding / Teaming

Optional activations

- IEC 62439-3 Parallel Redundancy Protocol (PRP)
- > IEEE 1588 Precision Time Protocol (PTP) Grandmaster
- > SIMATIC NET SINEC H1 time datagram

Time source options

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- > GPS
- > GNSS
- > IRIG-B
- > NTP / PTP

Power supply options

- > 100-240VAC
- > 100-250VDC, redundant
- > 18-36VDC, redundant
- > 36-76VDC, redundant

8030NTS Product Series

The 8030NTS product series are network time server systems in housing for DIN rail mounting supporting various time synchronization sources. The network appliances feature precise and reliable time synchronization at highly competitive pricing for business critical applications in the energy and automation industry.

1 network time server module integrated into the base system by default

- > 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- > Network Time Protocol Version 4 (RFC5905)

1 extension slots for isolated and mutually independent modules for enhanced security

- > Network time server 8030NTS/M
- > IRIG-B modulated / AM
- > IRIG-B demodulated / DCLS
- > PPS / cyclic pulses
- > DCF77 (77,5kHz / pulse)
- > Serial time datagram





Integrated features

- > System monitoring / Alarming
- > Static Routing Table
- > IEEE 802.1Q Tagged VLAN
- > Network Interface Bonding / Teaming

Optional activations

- > IEC 62439-3 Parallel Redundancy Protocol (PRP)
- IEEE 1588 Precision Time Protocol (PTP) Grandmaster
- > SIMATIC NET SINEC H1 time datagram



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Time source options

- > GPS
- > GNSS
- > IRIG-B
- > NTP / PTP

Power supply options

- > 100-240VAC
- > 100-250VDC
- > 18-36VDC
- > 36-76VDC

6890 Product Series

The 6890 product series are fully featured network time server systems for NTP (Network Time Protocol) supporting the Global Navigation Satellite Systems (GNSS) GPS, Galileo, GLONASS, and BeiDou for precise and reliable time synchronization at highly competitive pricing.

Network time server in compact housing for DIN rail mounting

- > 2 ethernet interfaces 10/100/1000 Mbit/s autosensing
- > Network Time Protocol Version 4 (RFC5905)

Integrated features

- > System monitoring / Alarming
- > Static Routing Table
- > IEEE 802.1Q Tagged VLAN
- > Network Interface Bonding / Teaming

Optional activation

 IEC 62439-3 Parallel Redundancy Protocol (PRP)



Redundant power supply

- > PoE (Power over Ethernet)
- > 24VDC

Extension modules

> 2 channel IRIG-B / 1 channel PPS output







8024 Product Series

Cost-effective clock system with GPS only or GNSS (GPS, Galileo, GLONASS) receiver module and expansion slot for output modules in housing for DIN rail mounting

- Serial time datagrams
 - > hopf Standard (6021)
 - > hopf Master/Slave
 - > hopf Binär
 - > IEC-103 (ASDU Type 6)
 - > Trimble Time String (TSIP)
 - SINEC H1 Extended (Meinberg Standard String)
 - > SAT 1703 / SICAM RTU
 - > ABB Melody
 - > ABB Freelance
- IRIG-B
 - > modulated / AM (B12x)
 - > demodulated / DCLS (B00x)
 - > IEEE 1344 / IEEE C37.118
 - > AFNOR NF S87-500



- DCF77 (77,5kHz / pulse)
- PPS, cyclic pulses
- Power supply options
 - > 100-240VAC
 - > 100-250VDC
 - > 18-36VDC
 - > 36-76VDC
- Time distribution over multimode fiber optic
 - > modulated / AM (B12x)
 - > demodulated / DCLS (B00x)
 - > IEEE 1344 / IEEE C37.118
 - > AFNOR NF S87-500





FO multimode

Accessories

- GPS / GNSS / DCF77 antenna systems
 - > Mounting kit for flat roof and wall mounting
 - > Mounting kit for pole mounting with upright or angled bracket
 - > Antenna available with heating for harsh environment with ice and snow
- Surge protective devices
- Amplifier for looping into the antenna cable
- Signal splitter devices
- LSZH (low loss zero halogen) antenna and patch cable



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Output B



Secondary Clocks

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- Analogue clock displays
 - > Standard sizes 30/60 cm (11.81/23.62 inch) diameter
 - > Standard synchronization via NTP
 - > Standard power supply PoE (Power over Ethernet)
 - > Available with / without seconds hand
 - > Outdoor displays available with / without background lighting
- Digital clock displays

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- > Various sizes for indoor and outdoor usage available
- > Standard synchronization via NTP
- > Standard power supply PoE (Power over Ethernet)







Unlimited flexibility

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GERMANY

Selected projects

- Seattle City Light
- Cape Canaveral
- Shenzhen Western Power Plant
- Metro Guangzhou
- Kowloon–Canton Railway Corporation (KCRC)
- MRT Bangkok (รถไฟฟ้ามหานคร)
- NTPC (राष्ट्रीय ताप विद्युत निगम लिमिटेड)
- National Air Traffic Control Services London
- European Space Operation Center (ESOC)
- Turów Power Plant
- TEIAS (Türkiye Elektrik İletim A.Ş.)
- Australian and New Zealand Telecom
- ESKOM
- Société Tunisienne de l'Electricité et du Gaz (STEG)
- (أكملت المؤسسة العامة القطرية للكهرباء والماء) KAHRAMAA
- Oman Electricity Transmission Company SAOC (OETC)
- SOHAR Power (شركة صحار للطاقة)
- Rehab CCGT Power Plant
- Dubai Electricity and Water Authority (هيئة كهرباء و مياه دبي)
- Ministry of Electricity and Water
- Ulubelu Geothermal Power Plant



USA USA China China Hong Kong Thailand India Great Britain Germany Poland Turkey Australia South Africa Tunesia Qatar Oman Oman Jordan UAE **Kuwait** Indonesia



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Building trust together.

Certificate

Quality Austria has issued an IQNET recognized certificate that the organization:

hopf Elektronik GmbH

DE-58511 Lüdenscheid, Nottebohmstraße 41 for the following scope:

Time reference systems and electronic components

EAC: 29, 33, 35

has implemented and maintains a

QUALITY MANAGEMENT SYSTEM

which fulfils the requirements of the following standard

ISO 9001:2015

Issued on: Validity Date: Ouality Austria certified since:

2025-12-05 2018-01-30

2022-11-29

Registration Number: AT-14218/2

Signatures removed for security reasons

Alex Stoichitoiu President of IQNET Mag. Friedrich Khuen-Belasi Authorised Representative of Quality Austria



This attestation is directly linked to the IQNET Member's original certificate and shall not be used as a stand-alone document

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Management

Erich RUPRECHT Wolfgang KANOVSKY

Chief Executive Officer Chief Technology Officer

