8029HEPTA
Industry

hopf
Elektronik GmbH

Standard

Because every fraction of a second counts

industrial time synchronization requiring minimum space

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hopf Elektronik GmbH

Nottebohmstraße 41
58511 Lüdenscheid
Germany

Phone: +49 (0)2351 93 86-86
Fax: +49 (0)2351 93 86-93

E-mail: info@hopf.com
http://www.hopf.com

http://www.facebook.com/hopfelektronik

http://twitter.com/hopfelektronik

www.linkedin.com/company/hopf-elektronik-gmbh

Individuality by flexibility – and the price is unbeatable!

▶ the **19" 1RU/84HP** space-saving rack (Slim Line) with 1 integrated independent NTP time server by default is the ideal solution for the synchronization of industrial applications and networks

▶ if necessary **you can add up to 2 mutually independent NTP time server** when placing your order

▶ <u>optional signal output modules:</u>
at time of purchase 2 free slots can be equipped with additional signal output modules

* IRIG-B (analogue / digital)
* DCF77 pulse
* cyclic pulses

(find more details regarding the equipment of the slots on page 4)

▶ **simple, complete and safe operation and parameterisation** (password protection and activatable https protocol) via a **password-protected WebGUI** (optional SSH/Telnet)

▶ **current status bar** easily available **via WebGUI**

▶ important information for implementing and about operating status available via **LC-display** (2 x 40) and **status-LEDs** at the front panel (if WebGUI-access is not available)

▶ improved security ensured by

* symmetric keys   * access restriction
* autokey   * deactivation of non-used network protocols

▶ **SyncOFF Timer** (reception failure bypassing) for accurate operation even based on difficult reception conditions

▶ **synchronization status output** via optical coupler

▶ **GPS antenna circuit** with **potential isolation** and **antenna circuit control** (supervision if antenna input is open or short-circuited)

▶ By GPS time synchronization and the worldwide used time protocol NTP the time server 8029HEPTA Industry turns into a **highly accurate NTP Stratum 1 time server**.

▶ synchronization of **IEC 61850** compatible devices via NTP/SNTP

▶ **automatic switch-over of summer/winter time**

▶ **high freewheel accuracy** provided by GPS supported regulation of the internal quartz basis

▶ **redundant multiple validation** of the synchronization signal for an error-free and leap-free signal evaluation

▶ maintenance-free, **buffered backup clock** for at least three days

▶ **automatic handling of the leap second**

Learn more online at:
www.hopf.com/en/8029hepta.html

The highly-precise 8029HEPTA Industry is the ideal space-saving solution in the field of time synchronization. Companies working in these branches trust our modular solution which can be specified when placing the order:

▶ Industry
▶ Energy supply
▶ Automation

compact and flexible

The 8029HEPTA Industry combines two positive attributes in its space-saving 1RU/84HP rack:

▶ extensive options of configuration
▶ scores of functions

Due to these attributes you can easily specify the functions of your individual 8029HEPTA Industry when placing your order.

Please let us know your requirements – we would be glad to forward an individual offer to you!

front view 8029HEPTA Industry with 3 mutually independent NTP time server, display and status-LEDs

The modular 8029HEPTA Industry will enable you to assemble an individual time synchronization solution based on your specific requirements.

On purchase you decide on,

which external time source you want to work with:

▶ GPS as time source applicable worldwide (immediately available)

▶ IRIG-B as a group of time codes converting time into a continuous binary data stream (on demand)

which power supply should be configured for you:

▶ 100 – 240V AC

▶ 110 – 250V DC

▶ 24V DC

▶ 48V DC

which kind of quartz chrystal should be integrated in your system:

▶ standard quartz chrystal

▶ VCTCXO quartz chrystal

which antenna set you need for using the 8029HEPTA Industry as a GPS time server

▶ no antenna set necessary

▶ GPS antenna set consisting of

*   25 m cable without indirect lightning protection (set 01)
*   25 m cable with indirect lightning protection   (set 02)
* 100 m cable with indirect lightning protection   (set 03)
*   50 m cable with indirect lightning protection   (set 04)
* 200 m cable with indirect lightning protection   (set 05)

which additional signal output modules (incl. physical signal output and plug-in connection) you optionally want to have integrated in your system. 1 independent NTP time server is integrated in your system by default – you can specify on purchase if you need slots 1, 2 and 3 to be equipped with the following optional signal output modules:

slot 1 (optional)
You can additionally integrate up to 2 mutually independent NTP time server in your system.

slot 2 (optional)
You can use this slot to be equipped with the signal output of IRIG-B analogue and/or IRIG-B digital. You choose if the signal output of IRIG-B analogue / digital should be configured twice or four times in this slot or if you need a combination of these two output signals.

slot 3 (optional)
You can use this slot to be equipped with the signal output of DCF77 pulse and/or cyclic pulses. You choose if the signal output of DCF77 pulse or the signal output of cyclic pulses should be configured twice in this slot or if you need both of these two output signals in one slot (each configured twice).

the following information applies to slot 2 and 3:

You can also specify the kind of physical signal output

* electrical, signal level TTL
* electrical, signal level 5V active
* electrical, signal level 24V active
* electrical, signal level RS422
* optical, multimode fiber optic λ = 820nm

as well as the suitable kind of plug-in connection

* BNC connector
* plug-in screw terminal
* F-ST (bayonet nut coupling)

Don't hesitate to have a look @ our 8029HEPTA-configurator at **www.hopf.com/en/8029hepta.html** and combine the signal output modules mentioned above to create your very own 8029HEPTA Industry!

The 8029HEPTA Industry is ideal for everyone searching space-saving and budget-friendly solutions with scores of functions.

The functions of your 8029HEPTA Industry:

permanent interfaces:

- ▶ 1x Ethernet 10/100 MBit autosensing via RJ45
- ▶ 1x USB-Port for update and recovery function
- ▶ 1 x optical coupler for synchronization status output
- ▶ **optional**: additional signal outputs

      * up to 2 additional mutually independent
        NTP time server can be integrated
      * IRIG-B (analogue / digital)
      * DCF77 pulse
      * cyclic pulses

network protocols:

- ▶ http / https
- ▶ DHCP
- ▶ Telnet
- ▶ SSH
- ▶ NTP / SNTP

time protocols:

- ▶ RFC5905 NTP / SNTP server version 4

      * Broadcast / Multimode
      * client for additional NTP server (redundancy)
      * symmetric key / autokey
      * access restrictions

- ▶ RFC-868 TIME server
- ▶ RFC-867 DAYTIME server

rear view 8029HEPTA Industry with 3 mutually independent NTP time server, 2 x IRIG-B analogue (BNC connector), 2 x IRIG-B digital (plug-in screw terminal) as well as 2 x DCF77 pulse and 2 x cyclic pulses (fiber optic in each case)

configuration channels:

- ▶ http / https WebGUI (Browser Based)
- ▶ Telnet
- ▶ SSH
- ▶ **hmc** (**hopf** Management Console / network configuration)

additional features:

- ▶ http / https with easy-to-handle web-interface and configurable security banner
- ▶ update function via TCP/IP
- ▶ Fail-safe
- ▶ Watchdog function
- ▶ management of the system

You need a more **flexible** solution regarding **time synchronization**?!

The slots of the 8029HEPTA Industry can optionally be equipped with

▶ additional mutually independent NTP time server   (see example 1)

▶ an individual combination of different signal outputs – based on your specific requirements (see example 2)

example 1 – the 8029HEPTA DataCenter:

Have a look @ our 8029HEPTA DataCenter with its up to 7 mutually independent NTP time server for the highly-precise network synchronization.

Companies working in these fields trust our 8029HEPTA DataCenter:

▶ Data center

▶ Energy supply

▶ Industry

▶ Transportation and Infrastructure

▶ Automation

▶ Building technology

▶ Public sector

rear view 8029HEPTA DataCenter with a total of 7 mutually independent NTP time server

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example 2: 8029HEPTA in its most flexible way:

Based on your specific requirements you want to combine different signal outputs

in ONE application?!

If yes, **hopf** is the perfect partner for you - we are looking forward to answering all your questions!

Please let us know your requirements via **info@hopf.com** - our sales team will be glad to send you an individual offer!