

What is synchronisation?

Synchronisation is the stage that occurs before time distribution when the master clock or time server retrieves a very precise time from satellites (GPS, Galileo, Beidou, GLONASS) or land antennas (DCF).

The master clock or time server receives the UTC message and distributes the information to the clocks. During the summer/winter time changeover, it transmits the UTC message after applying the time difference.

Bodet's two solutions

Master clocks

Master clocks distribute a precise, reliable time to the other clocks.

The Sigma software installed on a PC configures the master clock to distribute the time to the clocks.



● SIGMA H, P, C, Mod

Time servers

Time servers transmit extremely precise time information to devices connected to the IT network, including clocks.

Netsilon's on-board web server allows you to configure the time server. This web server is accessible to authorised users from any computer on the IT network.



● Netsilon 7, 9, 11



Supervised time distribution

In addition to providing synchronisation, supervised time distribution allows you to configure, track the status of and receive alerts from a remote fleet of clocks through the IT network.

It operates with any SNMP-compatible software that receives the messages sent by the supervised clocks: battery faults, alarm faults, impacts, etc.

Benefits

- Supervision through an IT network allows you to send as well as receive data. On many models, this same cable is used to provide power.
- Since the SNMP protocol is a standard, clock tracking integrates into any supervisory system.
- There is no limit to the number of clocks that can be synchronised.
- A maintenance operation can be initiated as soon as a problem appears for an optimal reaction time.



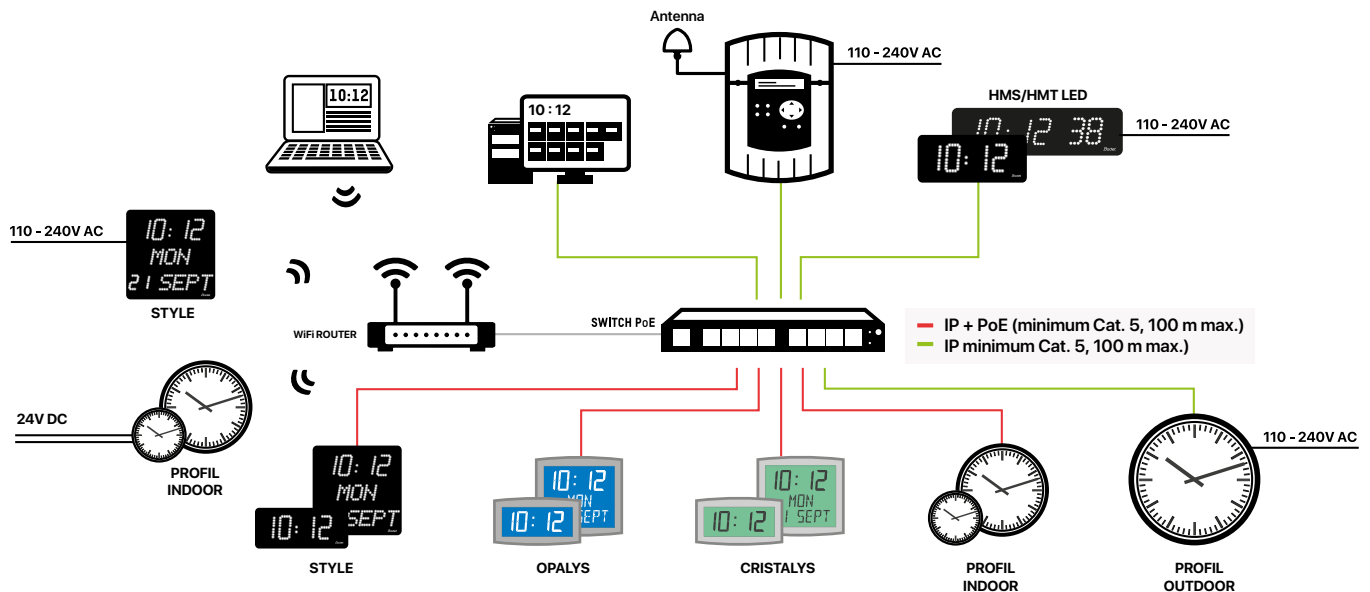
Time distribution

Time distribution consists of synchronising a network of clocks within one or more buildings via a master clock or a time server.



NTP: Ethernet Cable or Wi-Fi

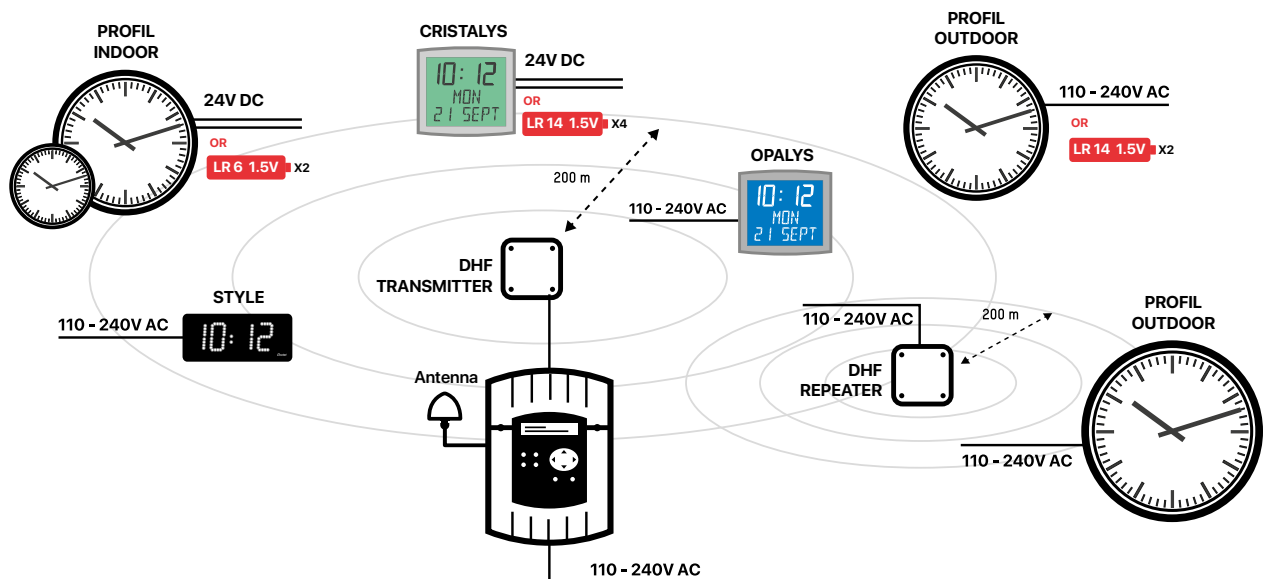
When connected to the IT network, slave clocks receive the NTP (Network Time Protocol) time message from the master clock or time server. Clocks can use a wired or Wi-Fi connection to the network. The time message is sent periodically (Multicast) or on request (Unicast).



DHF wireless



The master clock automatically synchronises the slave clocks with a standard (NFS 87-500-C) 869 MHz radio time message. If there is radio disturbance, the group continues to work on its own time basis.



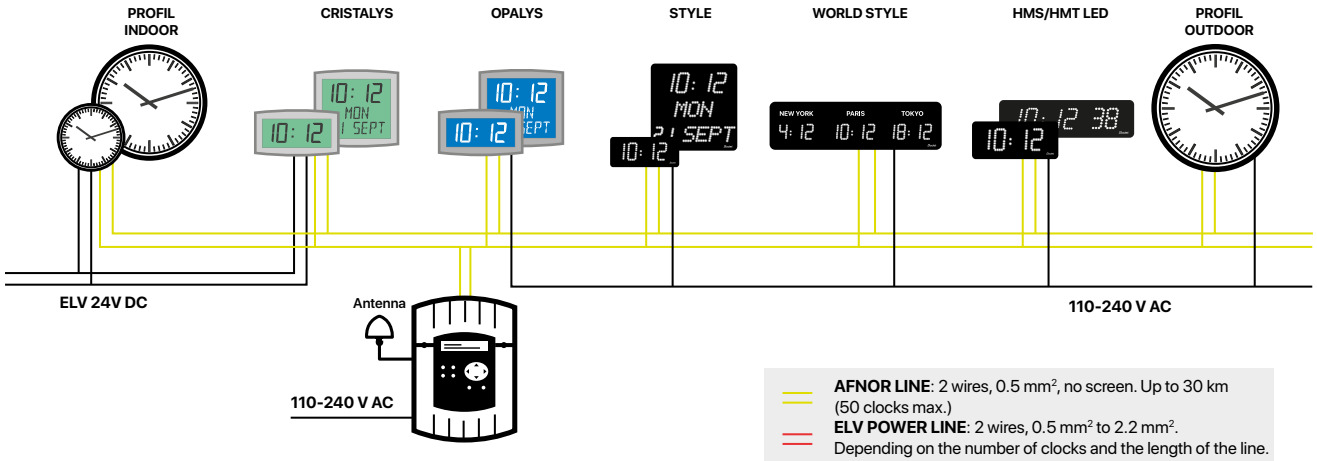
Free-field coverage: 1 km

Coverage inside buildings is limited by the structure and number of walls that the radio signal needs to pass through (100-200 m). The coverage zone can be extended using secondary transmitters. The number of slave clocks is unlimited.

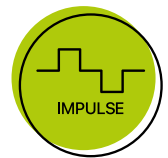


Time code/AFNOR

Time code distribution, also called AFNOR code, sends a complete time message over a wired line. This method of distribution is widely used in large installations (train stations, airports) and those that require long distances of cables (NFS 87-500 standard).



Impulse



The master clock sends electrical impulses every minute to the slave clocks on a distribution line. This method of distribution is often used in small and medium-sized installations.

