SIGMA

Sigma H master clock

Installation and start-up instructiond

The document concerns the following products:

907411	**Sigma H wall - 110/230V**
907412	**Sigma H wall - 24V**
907413	**Sigma H rack - 110/230V**
907414	**Sigma H rack - 24V**
907416	**Sigma rack - 36/72V**

Upon receipt, always check the product for damage during shipment. If any is found, you may file a damage claim with the carrier.

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SIGMA H

Installation and start-up instructions

1) General

The Sigma is a master clock which can be used to control receiver clocks.

The SIGMA has functions which can be programmed from the technician menu.
On first installation, it is essential to program the technician menu (see page 21) before the customer menu.
It is also essential when installing the SIGMA to program the technician functions in the order in which they appear in the menu.

This product must be installed in a residential, commercial or light industry environment.
Bodet declines all responsibility in the event of an accident resulting from use not in accordance with the recommendations of this manual.

CAUTION :
Any modification on the product renders the guarantee null and void.

Checking the equipment:

      One SIGMA master clock.
      This instruction manual.

To verify the model of the master clock, press the ⊘ key.

```
    SIGMA H
```

2) Safety rules

• **Maintenance of this equipment must be carried out by qualified personnel.**

• If the SIGMA is connected to the 230 V mains power supply, its installation must comply with the European standard IEC 364 (NFC 15.100 for France).

⚠ **PROTECTIONS** :

• 110-230V version: the mains supply for this device must include a neutral phase circuit breaker of maximum 6 A C curve, rapidly accessible upstream from the supply.

• 24V DC version: the SELV 24 V power supply for this device must include a protection of maximum 6 A.

• 36-72V DC version: the SELV 36-72 V power supply (according to NFC 15-100) for this device must include a protection of maximum 6 A.

• The circuit breaker must be switched off during maintenance operation. Refer to labels in the product.

• All cables must be attached either to the wall (wall-mounted version) or to the frame of the cabinet (Rack version) before being connected to the various terminals strips, to prevent any pulling on these terminal strips. In addition, the wires of each terminal strips must be attached to each other to maintain the various isolations if an initial fault occurs.

• The time distribution cables must not run alongside high power mains cables (to avoid interference with communication between the SIGMA and the clocks).

• The SIGMA must be attached (to the wall or on its support) before being switched on.

• "Rack" models must be mounted in a slide-in unit for 19" cabinets or racks. These components will provide mechanical, electrical and fire protection (only the front panel may remain accessible).

- **IMPORTANT: before any installation, refer to the "technical characteristics" paragraph.**
-

⚠ **Caution :**
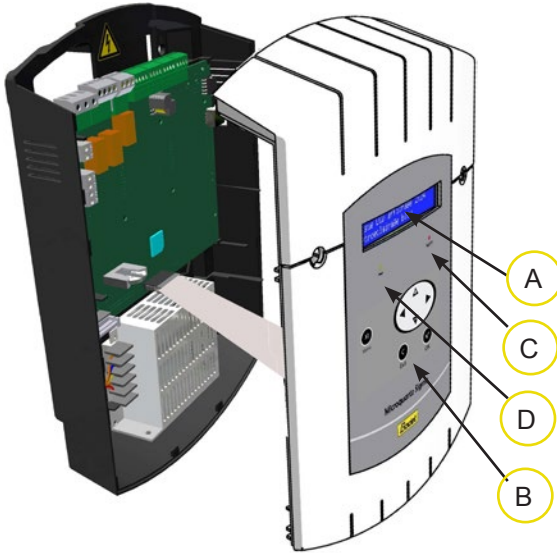

- In case of replacement of the CR2032 battery, it is IMPERATIVE to respect the polarity following the opposite indications.

- There is risk of explosion if the battery is replaced by a battery of incorrect type.

- Dispose of used batteries according to the instructions of the manufacturer.
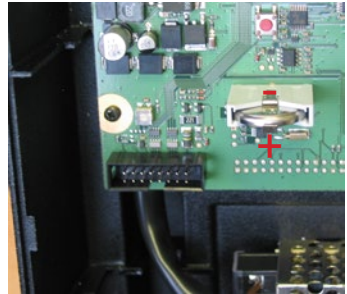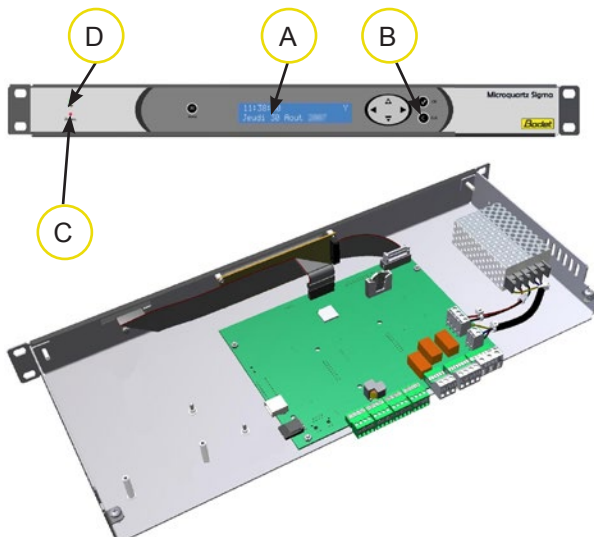
3) Description

Wall box

A) LCD screen

B) Keypad (see page 14)
C) Alarm indicator light (red LED)
D) Mains indicator light (green LED)

19" Rack

4) Installation

4.1 Mechanical installation

Choose a room with low temperature variations away from any source of electrical interference (contactors, motors, etc.).
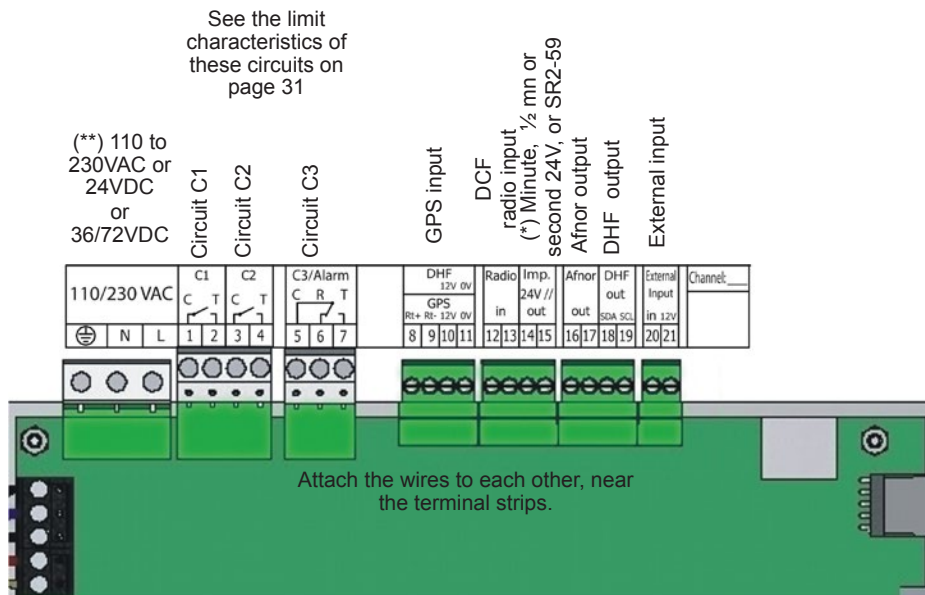

WALL-MOUNTED version: Unscrew the 2 screws on the front, remove the cover (for the lower cover, press on the 2 clips (N) and slide it upwards). Disconnect the flat jumpers (Q) (be careful to connect them the same way round on reassembly) and attach the SIGMA to the wall. When your unit is in place, remove the protective film on the keypad.

RACK version: Install the rack in its slot in an electrical bay or cabinet.
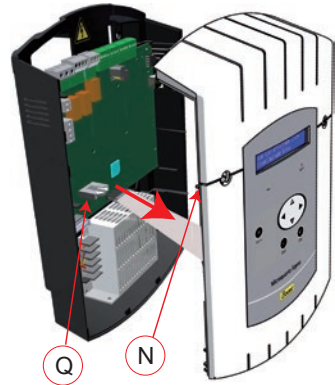
4.2 Electrical connections

Connect the cables (mains power supply, impulse line or AFNOR output and radio synchronisation input, depending on the model) to the corresponding terminal strips as shown in the figure below.
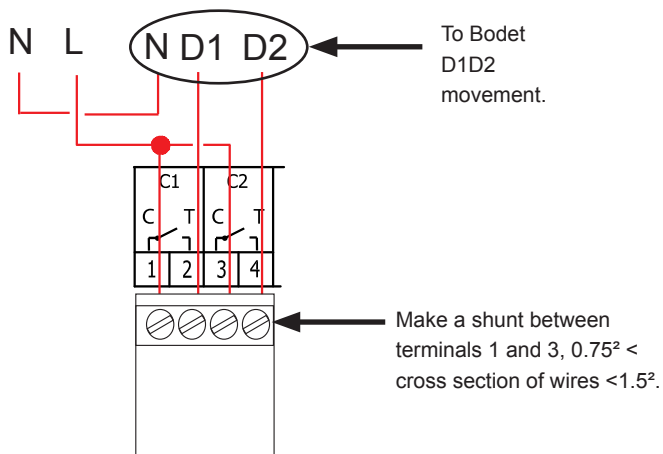

See the limit characteristics of these circuits on page 31

(**) 110 to 230VAC or 24VDC or 36/72VDC — Circuit C1 — Circuit C2 — Circuit C3 — GPS input — DCF radio input (*) Minute, ½ mn or second 24V, or SR2-59 — Afnor output — DHF output — External input

Attach the wires to each other, near the terminal strips.

(*) See page 25, the "Time outputs" menu to set this output (Pulse minute, ½ minute, second 24V or power TBT 24VDC 1A).
(**) depending on the SIGMA model.

RACK version: The mains power supply, impulse line and AFNOR output and radio synchronisation input terminal strips are directly accessible at the rear of the Rack slide-in unit.

Connection for D1D2 distribution :
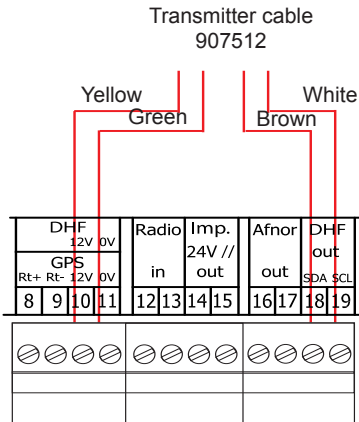
D1 D2 uses the relays of circuits 1 and 2

N   L   (N D1 D2) ← To Bodet D1D2 movement.

Make a shunt between terminals 1 and 3, 0.75² < cross section of wires <1.5².

⚠ Circuits must be protected by fuse disconnector or circuit breaker 4A maximum. Indicate on the label above the terminal block the location of these protections.
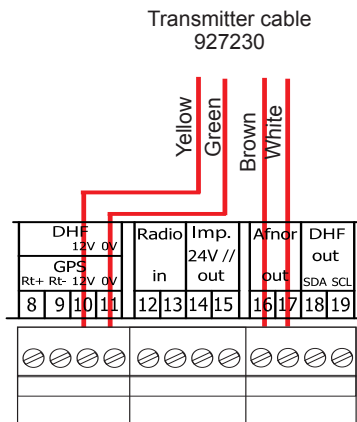
Connection of DHF transmitter :

There are two types of DHF transmitters.
DHF transmitter "Time and relays", reference 907512, for SIGMA master clocks.

Transmitter cable
907512

Yellow   White
Green   Brown

DHF 12V 0V		Radio	Imp. 24V // out		Afnor	DHF out
GPS Rt+ Rt- 12V 0V		in			out	SDA SCL
8	9	10	11	12	13	14	15	16	17	18	19

DHF transmitter "Time", reference 927230, for master clocks SIGMA, DELTA, ALFA, etc.
Note: the INIT mode must be activated directly from a DIP switch on the electronic card of this transmitter (not from the master clock).

Transmitter cable
927230

Yellow
Green
Brown
White

DHF 12V 0V		Radio	Imp. 24V // out		Afnor	DHF out
GPS Rt+ Rt- 12V 0V		in			out	SDA SCL
8	9	10	11	12	13	14	15	16	17	18	19

5) Installation examples

5.1 Set the 24V impulse output

Connect the 24V impulse clock line to the terminals 14 and 15.

Switch on the SIGMA.

Access to the technician menu (see page 21).

Access to the menu "Time outputs".

Use the navigation keys to :

```
Impuls 01:MIN 1.2s ↕
START  00:00  P+  OK
```

- Select the type of distribution (minute, 1/2 minute, second),

- Enter the impulse duration,

- Enter the time indicated by the slave clocks.

Select Start" and validate with the key ✓.

When confirming, the catching-up of time will begin (fast impulses) or will wait if the catching-up time is superior to the waiting time.

5.2 Set the DHF output

Connect the DHF transmitter to the DHF output (see page 11).

Switch on the SIGMA.

Access to the technician menu (see page 21).

Access to the menu "Time outputs".

Use the navigation keys to :

```
DHF  03 :  INIT  ↕
125mW channel:2  OK
```

- Select the transmission power (25, 125 or 500mW),

- Select the transmission channel (see DHF transmitter instructions),

- Set the SIGMA to "Init" mode,

- When the clocks are synchronised, set the DHF output of the SIGMA to "Start" mode (automatic return from "Init" to "Start" mode after 4 hours).

Validate with the key ✓.

5.3 Set a 24V TBT output

The 24V must be connected to the terminals 14 and 15.

Switch on the SIGMA.

Enter the technician menu (see page 21).
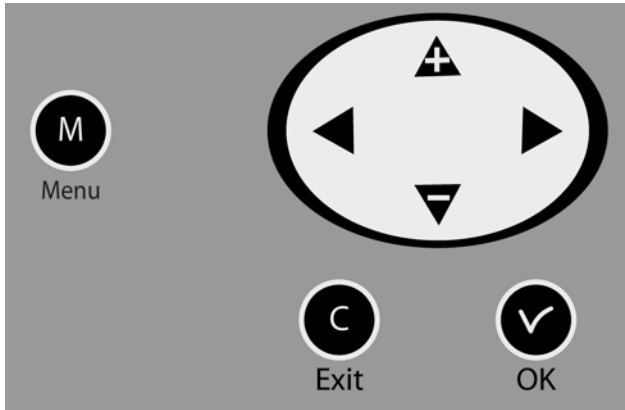
Enter the "Time outputs" menu.

Use the navigation keys to select : TBT24V.

```
Impuls 01: TBT24V  ⬍
STOP           OK
```

Caution : this output is protected ; if the current is too high, an alarm will go off and the output will stop supplying 24V.

6) Keypad: Key functions

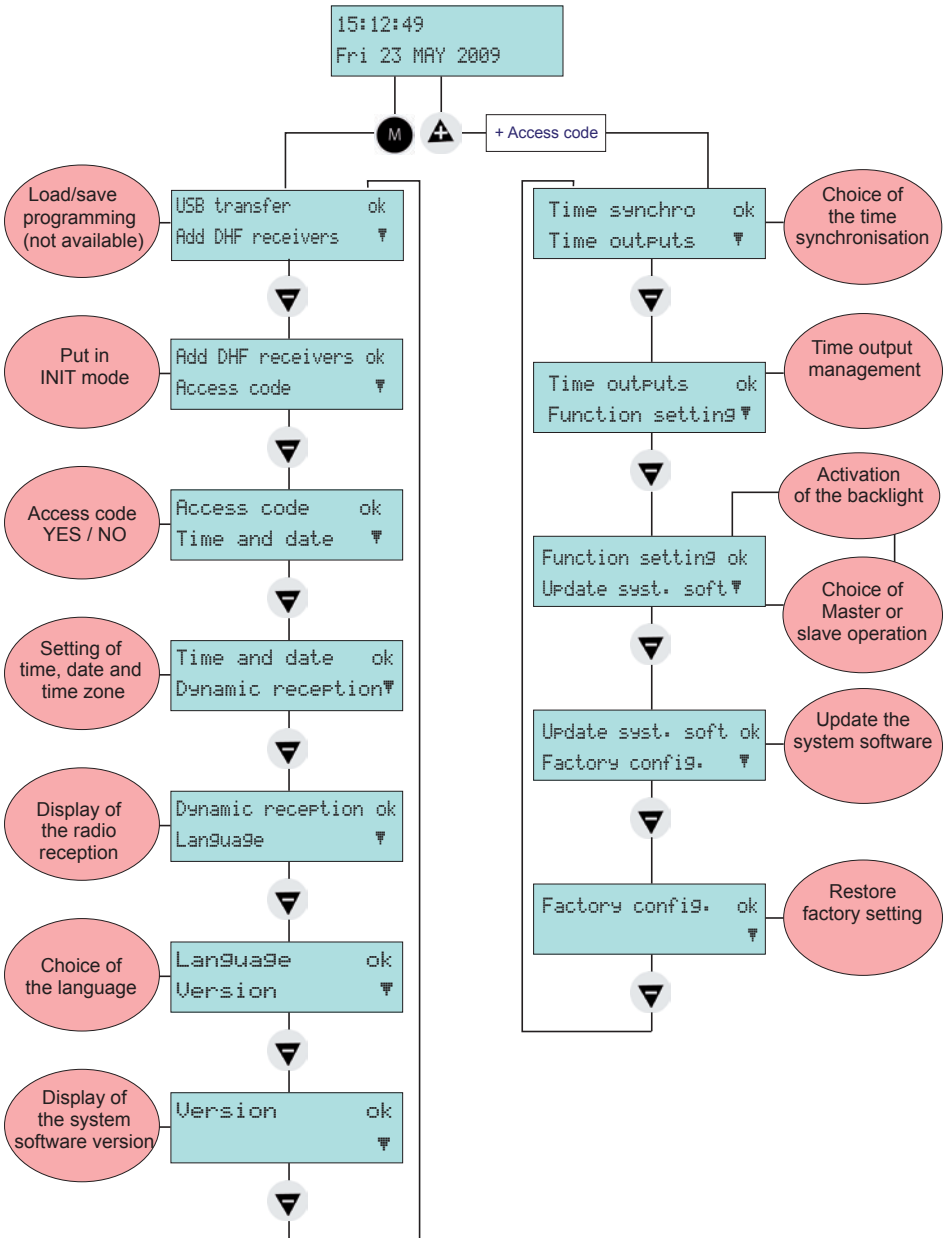
Keys   **Functions**

 Menu key.

 Correction key.

 Validation key.

 , , , Navigation keys.

Note: exit from the menus is automatic if a key has not been pressed for one minute in the customer menu or for 5 minutes in the technician menu.

Synoptic diagram of the programming

```
15:12:49
Fri 23 MAY 2009
```

M ▲ + Access code

Load/save programming (not available)
```
USB transfer     ok
Add DHF receivers ▼
```

Put in INIT mode
```
Add DHF receivers ok
Access code       ▼
```

Access code YES / NO
```
Access code      ok
Time and date    ▼
```

Setting of time, date and time zone
```
Time and date    ok
Dynamic reception▼
```

Display of the radio reception
```
Dynamic reception ok
Language          ▼
```

Choice of the language
```
Language         ok
Version          ▼
```

Display of the system software version
```
Version          ok
                 ▼
```

Choice of the time synchronisation
```
Time synchro     ok
Time outputs     ▼
```

Time output management
```
Time outputs     ok
Function setting ▼
```

Activation of the backlight

Choice of Master or slave operation
```
Function setting ok
Update syst. soft▼
```

Update the system software
```
Update syst. soft ok
Factory config.   ▼
```

Restore factory setting
```
Factory config.  ok
                 ▼
```

7) Main menu programming

7.1 Standby state
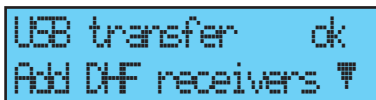
■ In normal functioning the SIGMA displays the time and date :
ᴪ is the radio signal indicator, which
flashes if reception is poor.

```
10:54:32          ᴪ
Fri 22 MAY 2014
```

7.2 User menu

To access the user menu, press the menu key (M).
Enter the user access code if necessary (see
page 21).

```
USB transfer    ok
Add DHF receivers ▼
```

Access the menu options using the ▼ key
and validate with ✓.

The user menu options are :

       1/ USB loading and backup (not available),

       2/ Add DHF receivers,

       3/ Customer menu access code,

       4/ Time and date / time changeover,

       5/ View dynamic reception,

       6/ Language choice,

       7/ System version.

7.3 USB loading and backup

This menu is visible on the LCD screen of
the master clock Sigma H but is unused.

```
USB transfer     ok
Add DHF receivers ▼
```

In the case of a validation of the item with the key ✓,
The following screen is displayed :

```
Connect USB key then
press ok      exit C
```

The option is not available, the following
message appears:

```
USB KEY NOT
DETECTED
```

7.4 Adding DHF receivers

To put the SIGMA in "DHF initialisation" mode
and enable synchronisation of a new clock,
validate the initialisation mode with the ✓
key,

```
Add DHF receivers ok
Access code       ▼
```

The following screen is displayed :
Select "ACTIVE" mode using the ▽ and
🔺 keys and validate with the ✓ key.

```
Init mode:ACTIVE ⬍
Add receivers    ok
```

The "init" display mode will appear alternately with the normal display during
this period (4 hours).
It is possible, once the receivers DHF initialized, to stop this mode in this
menu.

7.5 Access code

To enter or remove the SIGMA access code, validate the option with the ✓ key,

The following screen is displayed :

```
Access code      ok
Time and date     ▼
```

Choose the option you require and validate it with the ✓ key.

The access code is fixed, △ , ▶ , ◀ , ▼ .

```
Access code: Yes ↕
                ok
```

If there are 3 attempts with the wrong access code, an alarm message appears. The keyboard is locked for 10 minutes. It is possible to unlock it from the technician menu.

7.6 Time and date

To change the time or the date of the SIGMA, validate the option with the ✓ key,

```
Time and date    ok
Dynamic reception ▼
```

The following screen is displayed :

```
Time zone : LONDON ↕
(GMT + 00:00)     ok
```

You have access to the time zone selection.
The time zone selection allows you to automatically manage winter/summer time changeovers.
If the zone is not available in the 20 pre-programmed towns or time zones (See Appendix page 33), select "PROG" mode which is programmed in the technician menu.

```
Time zone :PROG   ↕
(GMT)             ok
```

"PROG" mode allows you to configure personalised time zone differentials and time changeovers.
By default it is in "PROG" mode.

The hour is flashing: set the hour using the ▼ and ▲ kevs and move on to the minutes with the ▶ key.

```
Time 10:12:00    ↕
Date 14/01/14 ok
```

Proceed in the same way for the date.
Validate with the ✓ key. If the time has been changed, the seconds are reset to 0.
When confirming, the catching-up of time will begin (fast impulses) or will wait if the catching-up time is superior to the waiting time.

7.7 Dynamic radio reception

To view the dynamic reception of the SIGMA, validate the option with the ✓ key,

If the reception is correct, the time and date are constructed automatically.

If the SIGMA is synchronised by a GPS antenna, the time displayed is GMT.

```
Dynamic reception ok
Language          ▼
```

```
GMT : 10:12
14/01/14      exit C
```

If the SIGMA is synchronised by a DCF antenna, the radio time is displayed.

```
 10:12
14/01/14      exit C
```

7.8 Language

To select the language of the SIGMA, validate the option with the ✓ key,

Select the SIGMA display language from the different options available.

The languages available are : FRENCH, ENGLISH, SPANISH, GERMAN, DUTCH, PORTUGUESE, NORWEGIAN, DANISH, ...

```
Language          ok
Version           ▼
```

```
Language:ENGLISH  ⬍
                  ok
```

7.9 Version

To view the version of the SIGMA, validate the option with the ✓ key,

```
Version           ok
                  ▼
```

The following screen is displayed :

```
SIGMA H Version
V1.1E06 25/04/2016 ok
```

8) Technician menu programming

The technician menu is accessible via an access code sent to the approved persons.

Press one of the navigation keys for a few seconds.

A code is then requested.

```
Enter TECHNICIAN code
       ****
```

The technician code is a fixed code, ▲ , ▶ , ▼ , ◀ and Ⓜ .

You then have access to the technician menu with the ▼ key.

The options in the technician menu are :

```
Time synchro      ok
Time outputs      ▼
```

    1/ Time synchro,

    2/ Time output and DHF management

(impulses, D1 D2, Afnor, DHF) and output time zone differential,

    3/ Function assignment,

    4/ CPU hardware software download (.cod extension),

    5/ Restore factory configuration.

Validate the selected option with ✓ key.

To exit the technician menu, use the Ⓒ key.

8.1 Time synchronisation menu

To configure the time synchronisation of the SIGMA, validate the option in the
technician menu with the 🅥 key,
The following screen is displayed :

```
Time synchro    ok
Time outputs     ▼
```

Select the time synchronisation mode from
the following options:

```
Synchro:EXTERNAL ⬍
                 ok
```

> **DCF Radio**,
> **Minute radio** (mode used for countries receiving the DCF radio signal
> but for which the time is different from Paris/Berlin [only minute is
> synchronised, date and hour must be set manually]),
> **EXTERNAL** (mode used for synchronisation from a Sigma "Master"
> which transmits a GPS signal simulation from an ASCII extension card),
> **NONE**: if you choose to have no synchronisation, the radio pictogram is
> not displayed.
> **GPS**,
> Remark : all the synchronisation options are proposed without checking
> that an antenna is connected (by default, the configuration is DCF
> mode).
> In case of synchronisation input failure, an alarm message is sent. This
> alarm is triggered after 24 hours without synchronisation.

Select the synchronisation mode with the ▼ and ▲ keys and validate with
the 🅥 key.

```
Prog. time change:Yes⬍
                    ok
```

The following screen is displayed if "Prog"
mode has been validated in the customer
menu (see "Time and date", page 19) :
This menu can be used to program non-standard winter/summer time
changeovers.

8.1.1 Programmable time changeover

This menu can be used to program the summer/winter time changeover dates.
It allows you to define the start of the winter period and then the start of the summer period.

`Prog. time change:Yes⬍`
`                       ok`

To program the summer/winter time changeovers, validate with the ✓ key.

`Last Sun OCT.03h ⬍`
`Winter time ch. ok`

- Set the start date of the winter period using the ▼ and ▲ and ▶ key.
In order:
The "Rank" flashes. The Rank designates the order number of the day of the week in the month[1] (1 to 5 depending on the month) (rank 5 always indicates the last week).
The "day" flashes.
The "month" flashes.
The "time" flashes.
Validate with the ✓ key.

`4th   Sun   OCT 3H ⬍`
`                     ok`

- Set the start date of the summer period using the ▼ and ▲ and ▶.
Validate with the ✓ key.

`Last Sun MAR.02H ⬍`
`Summer time ch. ok`

Whatever the synchronisation mode (radio GPS), this forces the automatic time changeover for radio DCF.
Set the start date of the winter period and then the summer period using ▼ and ▲ and ▶ keys.
Validate with the ✓ key.

---

1   Example of Rank calculation: the second Monday of the month or the second Thursday of the month have rank "2", while the last Tuesday of June has rank "5" as there are no more than 5 weeks in a month.

8.1.2 Setting the time base

This menu can be used to set the drift of the time base. This can be useful when the master clock has no external synchronisation.

To access this menu, you need to have selected "None" mode in the external synchronisation menu.

Drift:+0.0sec/day ↕
Time base setting ok

Set the drift using the ▼ and ▲ keys and validate with the ✔ key. This correction is not taken into account when the master clock is synchronised.

8.2 Time output management menu

This menu can be used to view all the time outputs, modify their status (Start/Stop), configure the DHF distribution in Init mode and configure the "impulse" and "D1D2" distribution.

This menu allows you also to configure the impulse output (Impuls 01) to provide TBT 24VDC (1A) power supply.

To go to the SIGMA time output management menu, validate the option in the technician menu with the ✓ key,

```
Time outputs      ok
Function setting ▼
```

The following screen is displayed :

```
D1D2 minute:06s   ⬍
START  00:00      ok
```

You can view the different options and change the values using the ▼ and ▲ keys.

You can go through the different outputs by validating using the ✓ key.

```
Afnor 02:   START  ⬍
                   ok
```

The 3 outputs (Impulse 01, Afnor 02 and DHF03) are not programmable with a time zone differential.

```
DHF  03 :  INIT  ⬍
125mW channel:2 ok
```

The placing of a DHF output in "INIT" status is active for 4 hours before return to START mode (The init mode display is alternating with the normal display during this period).

This menu can be used to set the power of the DHF output with a choice of 25mW / 125mW (by default) / 500mW and assign the system address from 1 to 4 (2 by default).

Buzzer mode allows you to activate a buzzer on the secondary transmitters in order to identify them.

For an "impulse" or "D1D2" output, the ✓ key can be used to go to the configuration menu.

```
D1D2 minute:06s   ⬍
START  00:00      ok
```

Remark: the "D1D2" menu appears only if the relays have been assigned to the D1D2 distribution.

Use the ▶ key to move on to the next parameter:
Choice of impulse length.

Minute 24V standard impulse length (factory configuration) of 1.2 seconds variable from 0.5 to 5 seconds,
Second 24V standard impulse length (factory configuration) of 0.3 seconds variable from 0.1 to 0.9 seconds,
D1D2 standard impulse length (factory configuration) of 6 seconds, variable from 1 to 10 seconds.

Use the key to move on to the next parameter:

Choice of status ("Start"/"Stop").

Circuit stopping must be confirmed.

Use the ⓒ key to return to the previous screen.

Caution STOP mode ok
on D1D2 output exit C

8.3 Function setting menu

This menu can be used to define whether the master clock functions as a master or as a secondary clock (slave).
It can also be used to activate the backlight of the display screen.

To go to the SIGMA function setting menu, validate the option in the technician menu with the ✓ key,

```
Function setting ok
Update syst. soft ▼
```

The following screen is displayed :

```
Function : MAIN    ↕
                  ok
```

The master clock is configured in master mode by default.

```
Function : BACK-UP ↕
                  ok
```

If you configure it in "slave" mode (BACK-UP) to assign it as a secondary master clock, then the external input (see below) displays BACK-UP and cannot be modified.

```
Ext. input: MAIN
                  OK
```

The following screen can be used to activate or deactivate the idle screen backlight (by default, the backlight is lit, therefore value set to No).

```
Backlight off : NO ↕
                  ok
```

8.4 CPU software download menu

This menu is visible on the LCD screen of
the master clock Sigma H but is unused.

```
USB transfer     ok
Add DHF receivers ▼
```

In the case of a validation of the item with the key ✓,
The following screen is displayed :

```
Connect USB key then
press ok      exit C
```

The option is not available, the following message appears:

```
USB KEY NOT
DETECTED
```

8.5 Factory setting restoration menu

This menu can be used to reinstall the initial factory setting.
To go to this SIGMA menu, validate the
option in the technician menu with the ✓
key,

```
Factory config.   ok
                  ▼
```

The following screen is displayed :
To reinstall the factory configuration, validate
with the ✓ key.

```
Restore config : No ↕
factory configuration ok
```

9) Alarm messages

By default, the alarm configuration is :

   - Activated: if an alarm is present, a message is displayed on the readout,
   - Alarm relay: relay 3 is activated if an alarm is triggered.

If an alarm is active, the display alternates between the date and the alarm message. Press the ▶ key to view additional information on this alarm.

```
10:54.32          Ψ
Alarm :output 01 ►
```

Example :

```
24v overload on 01
18/12/07 10:54.32 dk
```

If several alarms are active simultaneously, the display is:

```
10:54.32          Ψ
Alarms           ►
```

Press the ▶ key to view the additional information.

Press the ▼ key to view the following alarms.
The alarms are displayed in chronological order.

```
Alarm :output 01 ►
Alarm :output 03 ▼
```

To acknowledge an alarm, press ✓.

Except for Afnor, DCF and GPS synchronisation failures where alarm is activated after 24 hours, other alarms are activated immediately.

Alarm message	Meaning
user code fail.	The user code has been entered three times incorrectly; the keyboard is blocked for 10 minutes.
tech.code fail.	The technician code has been entered three times incorrectly; the keyboard is blocked for 10 minutes.
battery failure	The lithium battery used to save configuration data is defective; replace the battery after making a backup of configuration data.
24V bat.failure	The 24V power supply is faulty; check the 24V battery backup.
master failure	The main master clock is defective; control the main master clock. If a Sigma SWITCH is used, the stand-by master clock will automatically take over.
sync. failure	The synchronisation source is faulty. This alarm is triggered after 24 hours without synchronisation.
24V overload	The impulse line is overloaded; check the impulse line or reduce the number of clocks.
24V pulse fail.	The impulse output is defective.
Afnor failure	The AFNOR output is defective.
DHF failure	The DHF output is defective.

10) Technical characteristics

	Designation	Characteristics
Electrical	Backup	Permanent backup of all parameters in case of mains failure. Automatic resetting of receiver clocks to correct time after mains restoration.
	Time base	Quartz, accuracy 0.1 seconds per day between 20 and 25°.
	Power supply	115 or 230 V AC ± 10% 50/60 Hz or 24 V DC, or 36/72VDC (depending on the model).
	Maximum consumption	25W, 50W for the model 36/72VDC.
	Mains terminals	Cross section 1.5², maximum baring 6 mm.
	Earth terminal	Rack: rigid or flexible cable with end piece with cross section 1² to 1.5² Wall-mounted: rigid wire 1² to 1.5² bared 6 mm.
	Other terminals	Cross section 1.5² maximum, bared 6 mm.
	Electrical isolation	Class 1.
	Mains power supply system	TT or TN system.
Relays	Control circuit (relay) isolation	Galvanic isolation.
	Circuit operating voltage	Either SELV* or LV** with common phase (230 V maximum between the 2 circuits).
	Relay breaking capacity	240V AC 1A.
	Usefulness of indicator light (of each circuit)	1) Lit when contact closed. 2) Used to indicate the current circuit programming.
	Types of relays	Double-throw (SPDT) on circuit 3. Normally open (SPNO) on circuits 1 and 2.
Outputs	Synchronisation	Depending on model, on DCF, MSF or GPS antenna.
	Minute or half minute parallel polarised impulse distribution	1 output 24V 1A, configuration in minute, ½ minute or second impulse or SR2-59 or TBT 24V power supply.
	D1D2 distribution	One output (D1 D2 uses the relays of circuits 1 and 2).
	AFNOR coded time distribution	One output, standard NFS 87 500A (no programming is necessary) (SELV).

Mechanical	Protection index	Wall-mounted : IP41 / Rack : IP 20		
	Operating temperature	0 to 50°C		
	Keypad locking	By access code		
	Dimensions		WALL-MOUNTED version	19» RACK Version
		Width	220 mm	483 mm (1 width)
		Height	322 mm	44 mm (1 U)
		Depth	83 mm	200 mm
	Weight		0,8 kg	1,4 kg

* SELV: safety extra low voltage (voltage < 42.4 V peak or 60 V continuous).

**LV: low voltage > 42.4 V peak or 60 V continuous.

11) Appendix: Time Zones predefined

Time Zone	City	State	UTC offset	-> Summer time	-> Winter time
01	London, Dublin, Edinburgh, Lisbon	England, Ireland, Scotland, Portugal	0	Last Sun. Mar. (01:00)	Last Sun. Oct. (02:00)
02	Brussels, Amsterdam, Berlin, Bern, Copenhagen, Madrid, Oslo, Paris, Rome, Stockholm, Vienna, Belgrade, Bratislava, Budapest, Liubliana, Prague, Sarajevo, Sofia, Vilnius, Warsaw, Zagreb	France, Belgium, Netherlands, Germany, Switzerland, Denmark, Spain, Norway, Italy, Sweden, Austria, Serbia, Slovakia, Hungary, Slovenia, Czech Republic, Bosnia, Poland, Croatia	+1h	Last Sun. Mar. (02:00)	Last Sun. Oct. (03:00)
03	Athens, Istanbul, Minsk, Helsinki, Riga, Tallinn, Kaliningrad	Finland, Greece, Turkey, Belarus, Latvia, Estonia, Lithuania, Bulgaria, Romania, Ukraine	+2h	Last Sun. Mar. (03:00)	Last Sun. Oct. (04:00)
04	Moscow, St. Petersburg, Volgograd, Abu Dhabi, Muscat, Baku, Tbilsi, St Denis	Russia, United Arab Emirates, Georgia, Oman, Réunion	+4h	none	none
05	Mumbay, Calcutta, Madras, New Delhi, Colombo	India, Sri Lanka	+5h30	none	none
06	Bangkok, Hanoï, Jakarta, Hovd , Christmas Island	Thailand, Vietnam, Indonesia (Java), Mongolia, Australia	+7h	none	none
07	Beijing, Chongping, Hong Kong, Singapore, Taipei, Urumqi	Taiwan, Singapore, Malaysia, Hong Kong, China, Australia, Mongolia, Indonesia (Bali)	+8h	none	none
08	Tokyo, Osaka, Sapporo, Seoul	Japan, South Korea, North Korea	+9h	none	none
09	Adelaide	Australia	+9h30	1st Sun. Oct. (02:00)	1st Sun. April (03:00)
10	Melbourne, Sydney, Canberra, Hobart	Australia, Tasmania	+10h	1st Sun. Oct. (02:00)	1st Sun. April (03:00)
11	Honiaria, Noumea	Solomon Islands, New Caledonia	+11h	none	none
12	Honolulu, Hawaii, Papeete, Tahiti	USA, France	-10h	none	none

Time Zone	City	State	UTC offset	-> Summer time	-> Winter time
13	Los Angeles (Pacific Time), Victoria, Tijuana, Mexicali	USA, Canada, Mexico	-8h	2nd Sun. Mar. (02:00)	1st Sun. Nov. (02:00)
14	Denver (Mountain Time), Edmonton	USA, Canada	-7h	2nd Sun. Mar. (02:00)	1st Sun. Nov. (02:00)
15	Chicago, Austin (Central Time), Winnipeg	USA, Canada	-6h	2nd Sun. Mar. (02:00)	1st Sun. Nov. (02:00)
16	New York (Eastern Time), Quebec, Toronto	USA, Canada	-5h	2nd Sun. Mar. (02:00)	1st Sun. Nov. (02:00)
17	Fort de France, Basse-terre, La Paz, Manaus, Georgetown	Martinique, Guadeloupe, Bolivia, Brazil, Guyana	-4h	none	none
18	Santiago	Chile	-4h	2nd Sun. Oct (00:00)	2nd Sun. Mar. (00:00)
19	Cayenne	Guyanea	-3h	none	none
20	The Azores, Ittoqqortoormiit	Portugal, Greenland	-1h	Last Sun. Mar. (00:00)	Last Sun. Oct. (01:00)

12) What to do if ...? Check that …

What to do if ...?	Check that … (see page 7 for references)
The green LED does not light up when the unit is switched on.	>Check that the mains is present (D). >Check that the terminal strips (K) are correctly positioned on the printed circuit. >Check that the flat cable (Q) of the keypad is correctly connected on the terminal strip on the printed circuit.
The mains is present but there is no secondary voltage.	>Check that the terminal strip is correctly positioned on the printed circuit. >Replace the transformer after checking that there is no short-circuit.
No message appears when the unit is switched on.	>Check that the flat cable (Q) of the display is correctly connected on the terminal strip on the printed circuit.
Nothing happens when a key is pressed on the keypad.	> It is possible that the key has not been pressed long enough. >Check that the flat cable (Q) of the keypad is correctly connected on the terminal strip on the printed circuit. > Check that the keypad is not locked (incorrect access code entered).
With an antenna connected, the "radio" pictogram is still flashing.	>Check that a radio synchronisation antenna is connected to the unit and that its LED is flashing. > Wait at least 4 minutes.
Drift of the time base.	>Refer to the section on setting the time base drift (page 24).
Considerable drift (> 0.5 seconds per day) of the time base.	>Send the equipment back to the BODET maintenance department.
An alarm is displayed.	>To acknowledge the alarm, after setting the problem with this alarm, press the button and confirm . If the problem persists, call for Bodet technical support.

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