



Battery operated
Wireless Clock
TECHNICAL MANUAL



General

The Wireless clock, which is a part of Westerstrand Wireless Clock System, is a fully automatic battery operated analogue clock with built in microcontroller and UHF receiver.

Technical data

UHF Receiver	
Frequency	869.525 MHz
Sensitivity	1 μ V (-107 dBm)
Demodulation	FSK +/- 25 kHz
Operating voltage	2.2V to 5V

Batteries

The clock can work with two types of batteries, Alkaline batteries (1.5V) or Lithium batteries (3.6V).

The major advantages of **Alkaline** batteries are:

Low cost

High energy density

The capacity of, alkaline batteries, are depending of the temperature.

Therefore alkaline batteries should only be used in environments where the temperature is stable.

The major advantages of **Lithium** batteries are:

Wide temperature range: -55°C - +85°C

High cell voltage: 3.6V

High energy density: nominal 16.5Ah

Superior shelf life and reliability

The following configurations can be used:

Estimated running time		
2 alkaline batteries 1.5V size LR20/D	1 lithium battery 3.6V size LR20/D	2 alkaline batteries 3.6V size LR20/D
2.5 years	2.5 years	5 years

Remark : The selection between lithium and alkaline batteries are done by DIP-switches inside the movement, see page 7.

Factory setting is alkaline batteries.



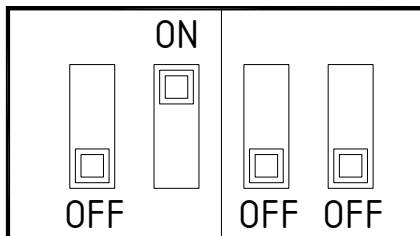
Installation

1. Set the internal DIP-switch according to the battery type used. See below.
2. Insert the batterie(s).
3. Now the hands will step forward to 12-position and wait for correct time signal.

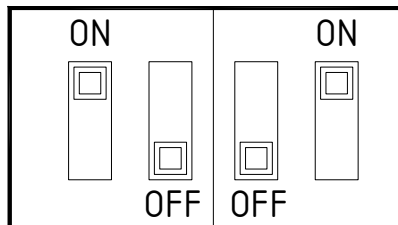
Selection of battery type

To change the DIP-switch setting for battery type, loosen the two screws and remove the movements back cover. The switches are located in the middle of the PC-board. Use a small screwdriver or a pencil to move the switches.

Alkaline battery



Lithium battery



Synchronisation

When the clock has received and accepted a time message, it will step forward to correct time by rapid impulses. After reception of a time message the clock will go into sleep mode and turn off the receiver. The clock will wake up every even hour, 12.00, 14.00, 16.00 etc, and synchronise again.

Automatic feedback control of the hands, at 12.00 and 00.00.

In case the UHF-signal would disappear, the clock continues by means of the built-in quartz crystal.