Instructions

Analogue clock

With GPS synchronisation

WESTERSTRAND URFABRIK AB

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General

Westerstrand analogue clock is constructed to meet the high demands required in an outside environment.
Special care has been taken to achieve reliability, availability and maintainability.
The housing is built up with a aluminium housing combining strength and light weight.
The Platform Clock is an analogue clock with sweeping hour hand, stepping minute hand and sweeping second hand if there is one.
Round outdoor clocks with diameter 400 mm, 600 mm. and 900mm.
Console mounted single, double sided clocks or single sided wall mounted clocks.
The clock is equipped with control electronics for reception of time code from a GPS receiver and controlling the movements.
The clock movements, which are connected to the electronics via RJ45 connectors, do not contain any electronic except for the hand sensors.
The GPS receiver is designed for outdoor installation.

Functional description control electronics and movement

Start up

When the power is connected to the electronics, the hands will step forward to 12-position. When a GPS time signal is received and accepted the hands will step forward to correct time.
If not the hands will wait in 12-position.

Failure GPS time code

If the GPS time signal is lost, or faulty, the control electronics will keep the clock running using the internal quartz crystal as time reference. After 12-hours of lost signal the hands will rapid impulse to 12-position, stop there, and wait for a valid signal.

Power failure

During a power failure the minute and hour hand will stop. When power is back the hands will step forward to 12-position. When a GPS time signal is received and accepted the hands will step forward to correct time.
If not the hands will wait in 12-position.

Control of hand position

The position of the minute hand is checked once every hour at minute 00. If correct time and the position of the shaft do not correspond the hand is corrected by stopping or stepping the hand.
The electronics check the position of the hour hand once every 12-hour.
If the clock has Seconds, the location is checked once every minute

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Installation

Mechanical installation

1. Mark and drill holes for the bracket in the wall or ceiling.
2. Pull the cable through the bracket plate.
3. Fasten the bracket plate to the wall or ceiling with screws suitable for the wall or ceiling material.
4. Be sure to tighten the screws carefully and check the stability of the bracket.

Note! If not correctly attached the bracket can cause damages!

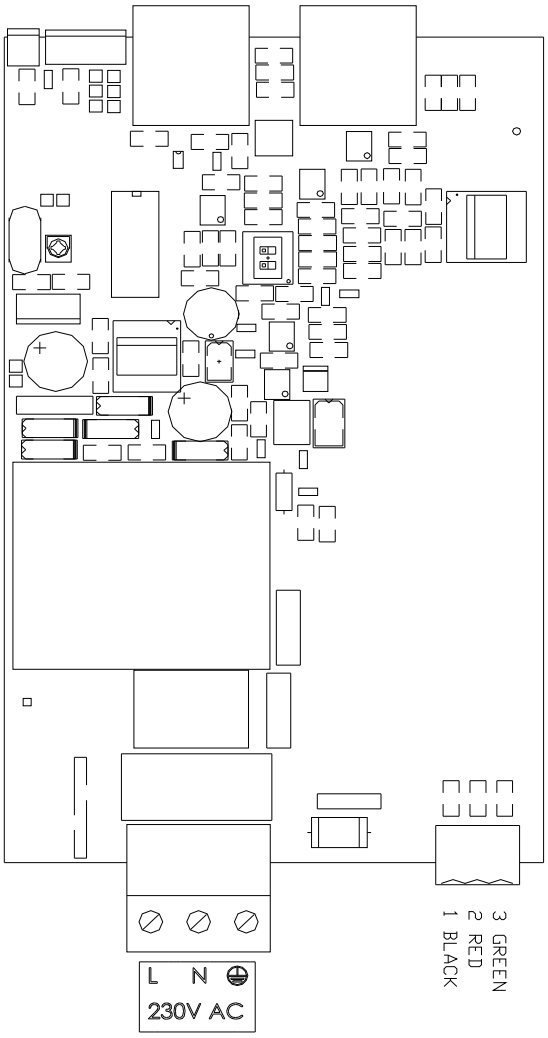
Electrical installation

Note! The clock has to be mounted with an external safety switch
Note! Always use cables of sufficient size and suitable for the intended environment.

1. Loosen the screws holding the clock side.
2. Open the clock side and disconnect the cable for the movement.
3. Connect cables for the illumination and electronics according to the connection label.
4. Connect the cable for the movement.
5. Remount the clock side. Make sure that the plug-in cables are not getting jammed or leaned on the dial.
6. Turn on the mains for the clock.

Connection GPS antenna on computer board

1 = GND (black)
2 = VCC (red)
3 = RX (green)



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Technical data

Design:	Round double sided with mounting bracket for either wall mounting or hanging/standing installation. Single sided for wall mounting.
Size:	400 mm. 600 mm. and 900 mm.
Housing:	Aluminium.
GPS:	Protocol NMEA 0183 (GPRMC)
Power electronic:	230V AC / 50Hz 4.5VA
Temperature range:	–20 ºC till +50 ºC.
IP classification (Outdoor models only):	IP44, provided that the installation meets IP44 requirements.
Fuse:	Max. 10A

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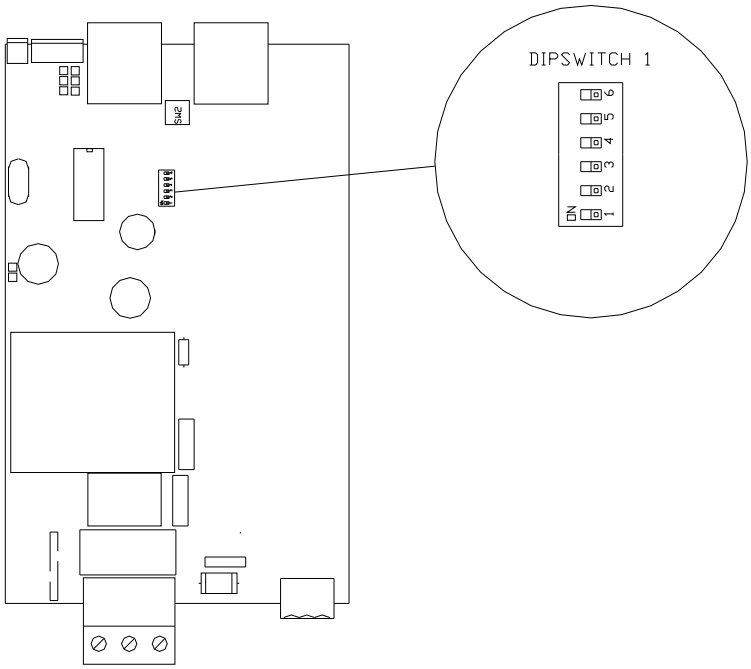
Setting Time zone/country
The time zone is set on the clocks computer board via a dipswitch
GPS receiver sends UTC time.
The program converts UTC to LT time depending on the DIP switch setting



UTC-offset	Dip-switch mode (SW1)						
	1	2	3	4 (*)	5	6	
0	OFF	OFF	OFF	OFF	OFF	OFF	**UTC**
0	OFF	OFF	OFF	**ON**	OFF	OFF	**England**
+2	**ON**	OFF	OFF	**ON**	OFF	OFF	**Finland**
+1	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**Central European Time (CET) (default)**
+1	**ON**	**ON**	**ON**	OFF	OFF	OFF	**UTC+1**
+2	**ON**	OFF	OFF	OFF	OFF	OFF	**UTC+2**
+3	OFF	**ON**	OFF	OFF	OFF	OFF	**UTC+3**
+4	**ON**	**ON**	OFF	OFF	OFF	OFF	**UTC+4**
+5	OFF	OFF	**ON**	OFF	OFF	OFF	**UTC+5**
+6	**ON**	OFF	**ON**	OFF	ON	ON	**UTC+6**
+7	OFF	**ON**	**ON**	OFF	OFF	OFF	**UTC+7**

(*) If Dip-switch 4 is **ON** means DLS rules for Europe.

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