

User Manual

CIRCLE LINE

230VAC

190420-00





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General

Digital clock is for indoor application with time display that has 4 digits and colon as time. The digits consist of 7 segments.

The Digital clock can be configured to show the time/date/temperature alternately in 0-25sec intervals. Temperature sensor is not included. It is an option.

The programming are made by push buttons, located at one side of the cover.

The digital clock can operate stand alone with a built in quartz crystal as time reference or synchronised by minute impulses, TC or DCF.

If the function is activated in summer and winter time, this takes place on the last Sunday in March and the last Sunday in October, respectively.

The clock has adjustable light intensity.

If power failure occurs the display is turned off. An internal clock counts the time for approx. 48 hours.

After power failure the display is turned on and correct time is shown.

If not specified in order the clocks are preset from factory in impulse Synchronisation mode.

Safety

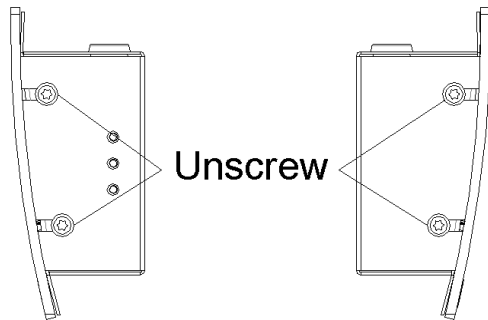
Installation and maintenance of this device must be performed by accredited personnel.

This product must not be installed by unauthorized users/operators. Electrical installation of the equipment must comply with applicable electrical standards.

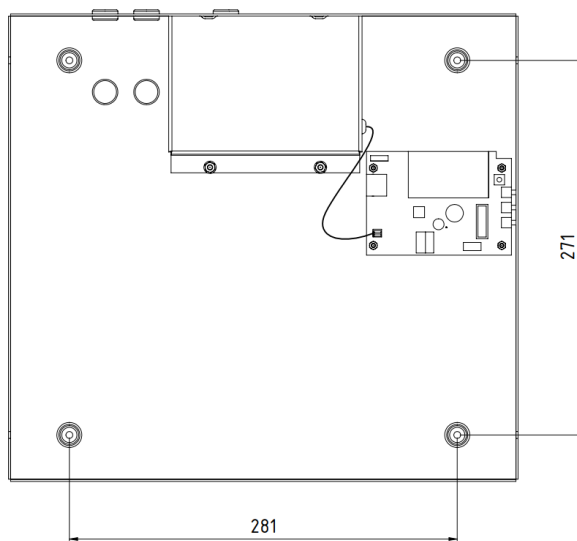
Installation

Wall mounted

- Unscrew 4 screws, 2 pieces on each side.

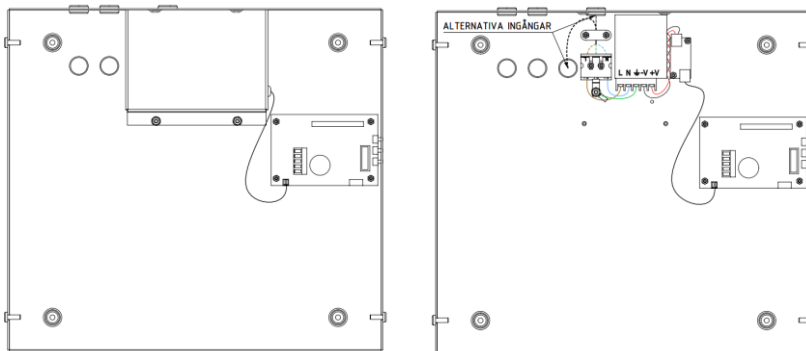


Remove the front and mount the back plate on the wall, using 4 screws suitable for the wall.
We recommend $\varnothing 4$ mm and 30mm long screws.



Connection

- The connections are made on the inside of the back plate. Unscrew the cover and put aside without damaging the wire.
- If operated by synchronisation, check the strapping according to the drawing page 6. Connect the cables according the schema page 5 and 6.
- Disconnect power before hard installation. The cable must be double-insulated and stripped to a maximum of 3 cm. It must also be secured with the cable relief.
- Connect the power 230VAC, 50Hz.
When the clock is permanently installed a readily accessible disconnect device shall be incorporated in the fixed wires (2-polar, 3mm contact gap).
- Screw back the inner cover
- Skruva tillbaka inre skydd
- Reassemble the front



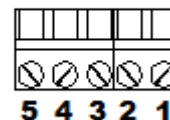
Connection Synchronisation wire

TC/MIN-imp 3,4

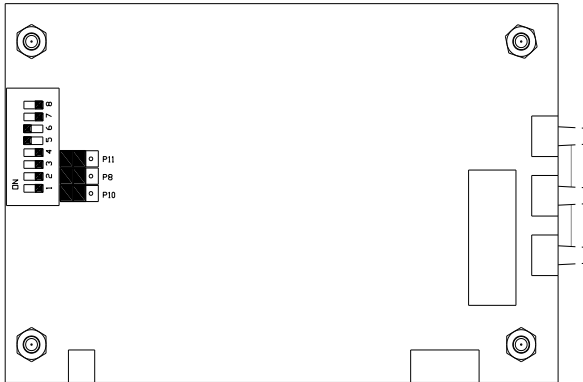
DCF 2-line 3 – V+, 5 – GND

DCF 3-line 3 – V+, 4 – DCF, 5 – GND

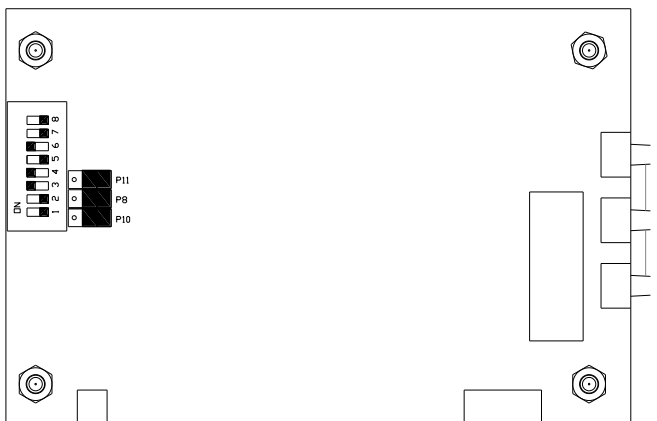
Sync. input



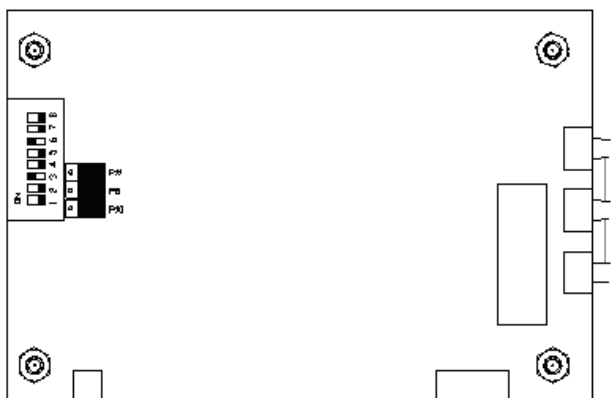
Strapping/DIP switch setting for TC / MIN-impulse (default)



Strapping/DIP switch setting for DCF-radio (2 –wire) computer board



Strapping/DIP switch setting for DCF-radio (3 –wire) computer board





The DIP-switch on the computer board should be set as follows:

Dip 1:	OFF	Display format is HH:MM.
	ON	Display format is HH:MM:SS.
Dip 2:	OFF	always OFF
Dip 3:	OFF	TC/Min impulse-synchronisation. (default)
	ON	DCF synchronisation.
Dip 4:	OFF	TC/Min impulse or 3-wire DCF synchronisation. (default)
	ON	2-wire DCF synchronisation.
Dip 5:	OFF	DCF synchronisation.
	ON	TC/Min impulse synchronisation.(default)
Dip 6:	OFF	½ Min impulse synchronisation.
	ON	TC/Min impulse synchronisation or DCF synchronisation. (default)
Dip 7:	OFF	always OFF
Dip 8:	OFF	always OFF



Synchronisation

Stand-alone

If the clock does not have an external synchronisation, it operates Stand-alone

Minute impulse

Make the strapping according to the drawing for strapping page 6.

Connect the minute impulse wire according to the schema page 5.

The clock can be set in synchronisation or slave mode.

Synchronisation mode:

Set the clock for synchronisation, mode InSy See programming page 10.

Set time and wait for next minute impulse. The clock will be synchronised

Slave mode:

Set the clock for slave, mode InSL See programming page 10.

Set time and wait for next minute impulse. The clock operates as a slave clock.

TC

Check the strapping according to the drawing for strapping page 6.

Connect the TC wire according to the schema page 5.

Set the clock for synchronisation, function DCF See programming page 10.

When a correct time message appears the clock sets the time.

The clock will blink colon when it is in sync and accepts transmitted code.

DCF

Check the strapping according to the drawing for strapping page 6.

Connect the DCF wire according to the schema page 5.

Set the clock for synchronisation, function DCF See programming page 10.

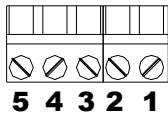
When a correct time message appears, the clock sets the time.

The clock will blink colon when it is in sync and accepts transmitted code.

Connection temperature sensor (this is an option).

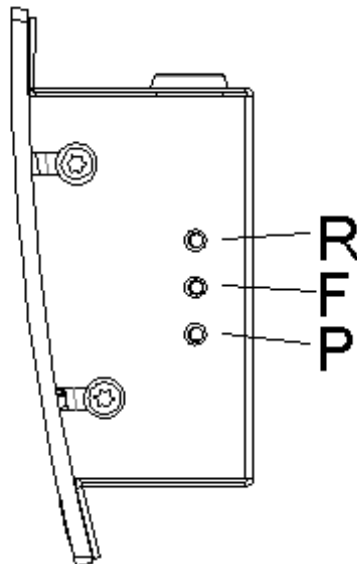
Temperature sensor connection

1. Brown
2. Black
5. Screen



Programming

The programming is made by push buttons (see below).



R (Return) Enter the base mode (display time)

F (Function) Next function / Accept displayed value

P (Program) Enter the displayed function / Increase displayed value.



Programming time

Push [F] until display shows:

ti ne

Push [P] display shows:

yy 95

year.

Push [P] until desired year (00-99)

Accept with [F].

Display shows:

nn 1

month.

Push [P] until desired month (1-12).

Accept with [F].

Display shows:

dd 1

day

Push [P] until desired date (1-31).

Accept with [F].

Display shows:

hh 12

hour

Push [P] until desired hour (0-23). Accept with [F].

Display shows:

nn 07

minute

Push [P] until desired minute (00-59). Push [F] for synchronisation and the clock starts

Display shows:

ti ne

Push [R]. The Programming is finished.

Display shows:

12 : 07



Setting light intensity

The light intensity for the digits can be adjusted in 8 levels.

An automatic dimmer function regulates the light intensity.

Push [F] until display shows:

di sp

Push [P]

Display shows:

di 1

Light intensity 1 (weakest) - 8 (strongest)

Push [P] for desired light intensity. Accept with [F].

Display shows:

Sy nc

Push [R] for entering base mode or push [F] for next function.

Setting synchronisation

Synchronisation for this model is minute impulse, TC, DCF (or stand alone).

Push [F] until display shows:

Sy nc

Push [P] until desired synchronisation.

no sy

No synchronisation, stand alone

dcf

TC or DCF

InSy

Impulse synchronisation

InSL

Impulse slave

Push [R] for entering base mode or push [F] for next function.



Setting alternating time, Loop time

Push [F] until display shows:

LooP

Push [P].

Display shows:
seconds.

L1 4

Alternating time for display time is 4

Push [P] for desired alternating time (0-25). Accept with [F].

Display shows:
seconds.

L2 0

Alternating time for display temp. is 0

Push [P] for desired alternating temperature (0-25). Accept with [F].

Display shows:
seconds.

L3 4

Alternating time for display date is 4

Push [P] for desired alternating time (0-25). Accept with [F].

Push [R] for entering base mode or push [F] for next function.

Setting Correction value for the temperature sensors.

With this function the temperature sensors can be adjusted ± 9 °C.

Push [F] until display shows:

Corr

Push [P]:

Display shows:

C1 0

Push [P] for desired correction value (± 9 °C). Accept with [F].

Push [R] for entering base mode or push [F] for next function.



Setting DLS-function.

With this function the DLS can be activated.

Push [F] until display shows:

Push [P].

Display shows:

Or:

Push [P] for DLS or not.

Push [R] for entering base mode or push [F] for next function.

Setting 12/24 h format.

With this function the format 12/24 hours display can be set.

Push [F] until display shows:

Push [P].

Display shows: 12 hour format

Or: 24 hour format

Push [P] for desired format.

Push [R] for entering base mode or push [F] for next function.



Technical specification

General

Art. no.:	190420-00
Denomination:	Circle Line
Mounting/Installation:	Single sided, wall mount
Digits:	Single line red LED. Indicating time in HH:MM
Digit height:	50 mm
Synchronisation:	Polarised 24V impulse 1/1, TC, DCF
Accuracy:	0,1 sec/24 h at 22° C (free-running mode)
Internal time keeping during power failure:	48 hours (display is turned off)
Time format:	12- or 24-hour format selectable. Alternatively showing date: day and month.

Measure range

temperature sensor: -30°C till +60°C

Accuracy

temperature sensor: +/- 1°C

Temperature

measurement: En gång per minut

Power supply

Supply voltage: 100-240VAC 50/60Hz

Power consumption: 0,35A

Environmental

Temperature range: 0°C to +40°C.

IP class: IP 20

Moisture range: 20-90%RH, non-condensing

Housing

Housing: Aluminium