

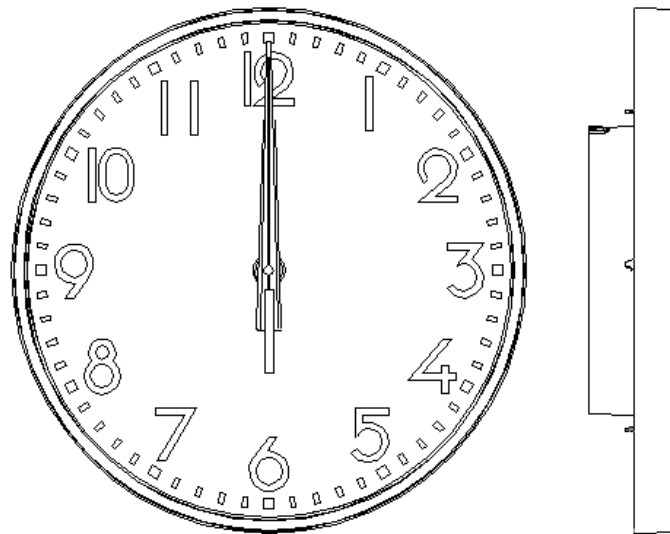
KNX SLAVE CLOCK  
**User Manual**

Document: DOK11027en01.doc  
Author: CF  
Date: 2018-06-11  
Page: 1 (7)

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# User Manual

## Westerstrand KNX Slave Clock



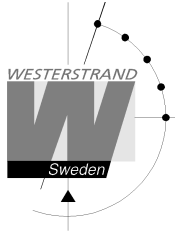
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**WESTERSTRAND URFABRIK AB**

P.O. Box 133  
SE-545 23 TÖREBODA

Tel. +46 506 48000  
Fax. +46 506 48051

Internet: <http://www.westerstrand.se>  
E-mail: [info@westerstrand.se](mailto:info@westerstrand.se)



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Page: 2 (7)

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## List of contents

|   |          |
|---|----------|
| <b>GENERAL DESCRIPTION .....</b>        | <b>3</b> |
| <b>INSTALLATION .....</b>               | <b>3</b> |
| <b>KNX CONFIGURATION .....</b>          | <b>4</b> |
| DESCRIPTION OF GROUP OBJECTS .....      | 5        |
| DESCRIPTION OF PARAMETERS.....          | 6        |
| <b>CLEANING THE CLOCK EXTERIOR.....</b> | <b>7</b> |
| <b>TECHNICAL DATA .....</b>             | <b>7</b> |

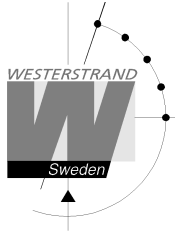
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## General description

Westerstrand's KNX analogue slave clock provides the possibility to create a time distribution system with high accuracy and high reliability through a KNX network.

The clock is intended for connection to a 2-wire bus that combines power supply and KNX communication. A built-in microprocessor receives time telegram from a KNX master clock, reads the position of the hands, and sets the clock to the correct time.

## Installation

1. When the clock is wall mounted use the cable inlets, see fig. 1.
2. Measure and assemble an appropriate mounting screw (not included).
3. Connect the KNX bus to the black/red connector on the back of the clock.
4. The clock will start to reset itself to 12:00.
5. Configure the clock with the ETS software. The KNX connector, LED and programming buttons are located on the back of the clock.
6. After the configuration is downloaded, the clock will again reset itself to 12:00, and then wait for a time telegram. If the parameter "Send Time Request at Startup" has been enabled, the clock will send a time request to the master clock. This requires that the master clock is configured to receive time requests.
7. As soon as a valid time telegram has been received, the hands will step forward to the correct time.

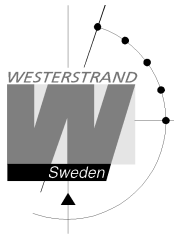
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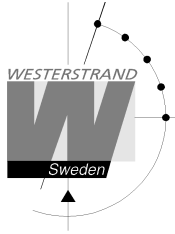


## KNX configuration

The clock must be configured with ETS4/5 before use. The available group objects and parameters are listed below:

| Group Objects |               |                |           |         |                     |   |    |   |   |     |          |
|---------------|---------------|----------------|-----------|---------|---------------------|---|----|---|---|-----|----------|
| ID            | Object        | Datapoint Type | Direction | Size    | Configuration Flags |   |    |   |   |     |          |
|               |               |                |           |         | U                   | T | RI | W | R | C   | Priority |
| 1             | DateTime      | 19.001         | Input     | 8 bytes | 1                   | 0 | 0  | 1 | 0 | N/A | Low      |
| 2             | Time          | 10.001         | Input     | 3 bytes | 1                   | 0 | 0  | 1 | 0 | N/A | Low      |
| 4             | Time Request  | 1.001          | Output    | 1 bit   | 0                   | 1 | 0  | 0 | 0 | N/A | Low      |
| 5             | Timeout Alarm | 1.005          | Output    | 1 bit   | 0                   | 1 | 0  | 0 | 0 | N/A | Low      |

| Parameters                   |   |   |                            |
|------------------------------|---|---|----------------------------|
| Parameter                    | Description                               | Range   | Default                    |
| SCLOMode                     | Clock Mode                                | ReadOnly  | 1=Slave                    |
| System Clock Timeout         | Timeout period                            | 3-1445  | 21 (minutes)               |
| Clock Type                   | Type of clock, Date and time or only time | -Analogue<br>-Digital – Time only<br>-Digital – Time and date | Analogue                   |
| Time Format                  | Datapoint type used                       | -DPT 10.001<br>-DPT 19.001                                    | DPT 19.001                 |
| Send Time Request at Startup | Ask master clock for time at startup.     | -No<br>-Yes   | No                         |
| Send Alarm at Timeout        | Send Alarm on KNX bus at Timeout          | -No<br>-Yes   | No                         |
| Timeout Action               | Behaviour at timeout                      | -Continue using local clock<br>-Reset to 12:00                | Continue using local clock |



## Description of Group Objects

### **ID 1: DateTime**

The clock receives time with datapoint type 19.001 and synchronises the local clock accordingly.

### **ID 2: Time**

The clock receives time with datapoint type 10.001 and synchronises the local clock accordingly.

### **ID 3: Date**

Not used in analogue clocks

### **ID 4: Time Request**

To speed up installation, the clock can be set to send a time request at startup. If the master clock can receive and respond to the request, it will immediately transmit the time. This way the installer can quickly see if the clock is working or not.

### **ID5: Timeout Alarm**

The slave clock will expect time messages with the interval set with the parameter "System Clock Timeout". If there are no messages within this time, an alarm can be sent on the KNX bus. If parameter "Enable Timeout Alarm" is set to "Yes", the clock will set this group object to '1'. When the clock again receives time messages, it will reset the alarm by setting the group object to '0'.

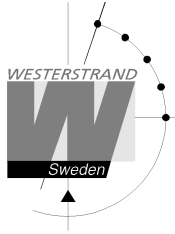
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## Description of Parameters

### **SCLOMode**

SCLOMode is a read only parameter that indicates that the clock is a slave clock.

### **System Clock Timeout**

The timeout period is set using the System Clock Heartbeat parameter. The default value is 21 minutes. The timeout value should be set using the following formula:

$$\text{System Clock Timeout} = (\text{System Clock Heartbeat} \times 2) + 1$$

Where System Clock Heartbeat is the transmission interval set in the master clock.

### **Clock Type**

There are two types of slave clocks, the digital that can show both date and time and the analogue which can only display time. For the analogue clock, select "Analogue".

### **Time Format**

The clock can receive time in two different formats, datapoint type 10.001 or 19.001. The default datapoint type is 19.001.

### **Send Time Request at Startup**

As default, the slave clock will not send any time requests. To force the slave clock to send a request at startup, select "Yes".

### **Send Alarm at Timeout**

Select "Yes" if the clock should send an alarm on the KNX bus at timeout. The default is "No".

### **Timeout Action**

As default, the timeout action is "Free run". This means that clock will keep running using the local clock in the case of a timeout. If "Reset to 12:00", the clock will instead reset itself to 12:00.

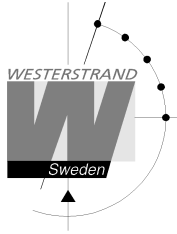
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## Cleaning the clock exterior

A clean clock is always a more representative product. The exterior should regularly be cleaned to maintain the clock in good condition.

### *Cleaning solutions*

Never apply cleaning solutions directly to components. Solutions are always sprayed on a cloth, and then the cloth is used to wipe the component. Almost any type of household cleaner can be used to clean the outside of the clock case. The cleaner should not dissolve or scratch the finish. When rubbing alcohol is used with cotton swabs, the swabs should be moist, not dripping with solution. Avoid ammonia-based cleaners.

## Technical data

Temperature range: 0°C to +40°C.  
Humidity: 0-95% non-condensing  
Supply voltage: KNX bus voltage SELV DC 29V  
KNX bus current consumption: 30mA

Housing  
Material: ABS / Aluminium  
Protection class: IP20  
Size: Ø 400 mm

KNX Bus electrical safety: SELV DC 29V  
Pollution degree: 2  
Intended use: Indoor, wall mount

Part numbers: KX4041448-00: Grey, A-type dial  
KX4041448-90: White, A-type dial  
KX4043448-00: Grey, H-type dial  
KX4043448-90: White, H-type dial

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