



BATTERY OPERATED QUARTZ MOVEMENT TECHNICAL MANUAL

WESTERSTRAND URFABRIK AB

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General

The Quartz-movement is an analogue clock with a built-in high accuracy temperature compensated quartz crystal as a time base. The movement can control up to 3 slave movements connected to a special slave output.

Batteries

The movement 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 is 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:

Number of Movements (master + slaves)	Estimated running time		
	2 alkaline batteries 1.5V size LR20/D	lithium battery 3.6V size LR20/D	2 lithium batteries 3.6V size LR20/D
1	1 year	2 years	4 years
2	0.75 year	1.25 years	2.5 years
3	0.5 year	0.75 year	2 years
4	0.25 year	0.5 year	1 year

Remark : The selection between lithium and alkaline batteries are done by strap's inside the movement, see page 8.
The factory setting is alkaline batteries.

Installation

1. Mount the movement on the dial.
2. Mount the hands at 12-position.
3. Insert the batterie(s).
4. Set by using the setting wheel the hands to an even minute ahead of correct time.
5. Push the sync.button and release it when correct time = time of hands.

Technical data

Microcontroller	PIC16C558	
Temperature range	-20°C to +50°C	
Time accuracy	±1 min/yr	0°C to +40°C
	±4 min/yr	-20°C to +50°C
Size (h, w, d)	80 x 158 x 41 mm	

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Options

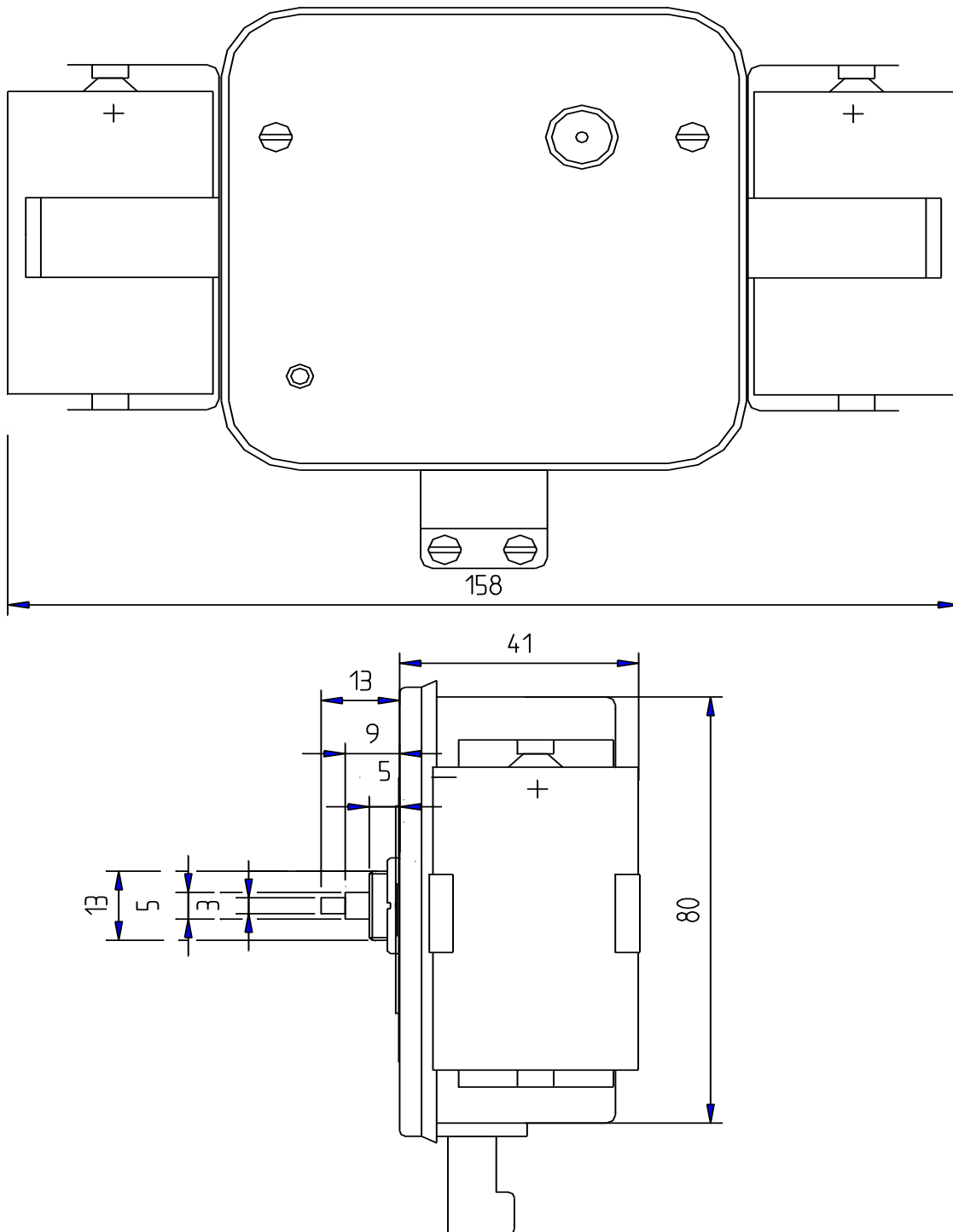
Alkaline battery

art. no. 113190-00 (2pcs 1.5V LR20/D)



113106-00

Maximum dial size 400 mm.



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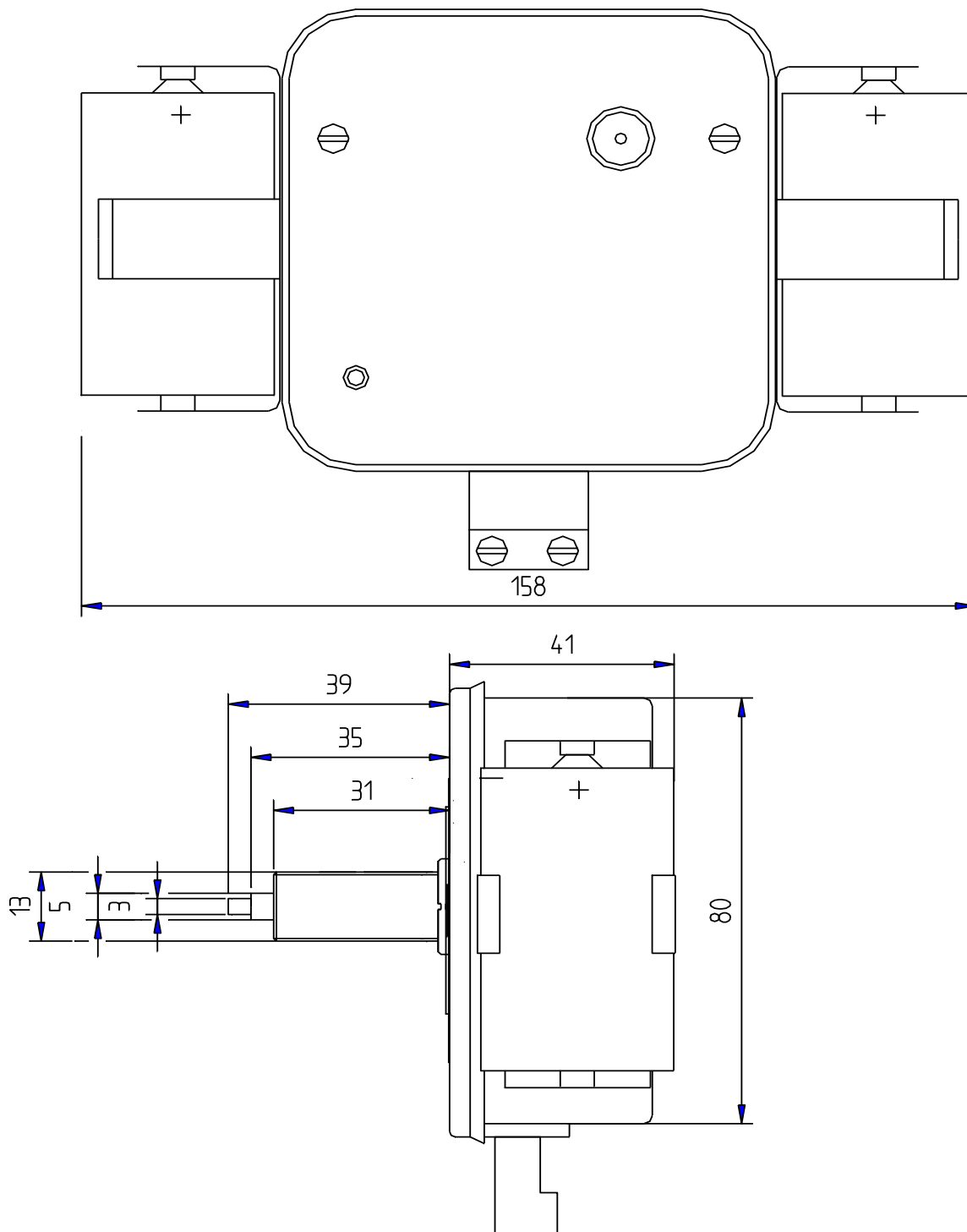
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113106-02

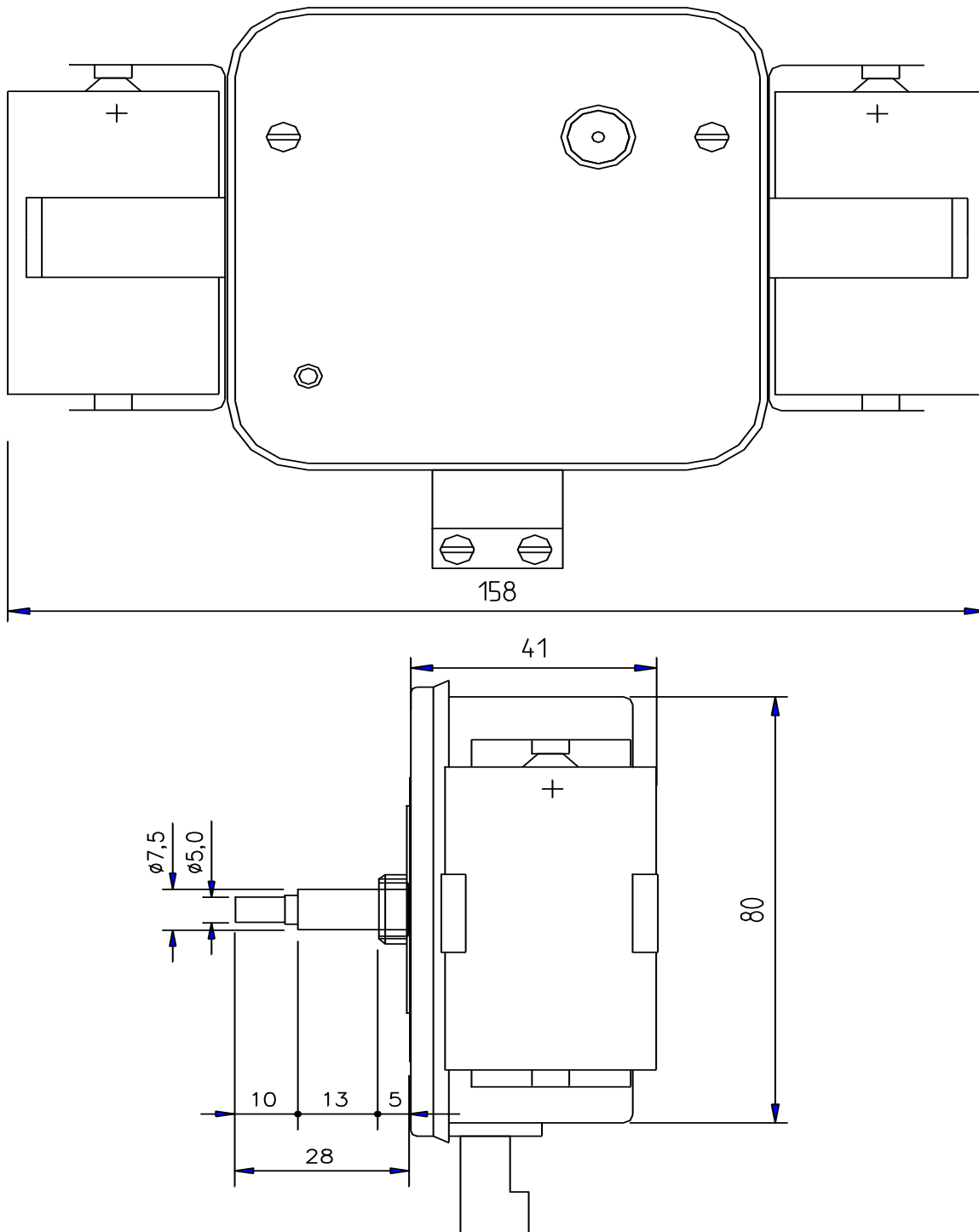
Maximum dial size 400 mm, max. with extended shaft.





113107-00

Maximum dial size 900 mm, max. minute hand 410 mm.



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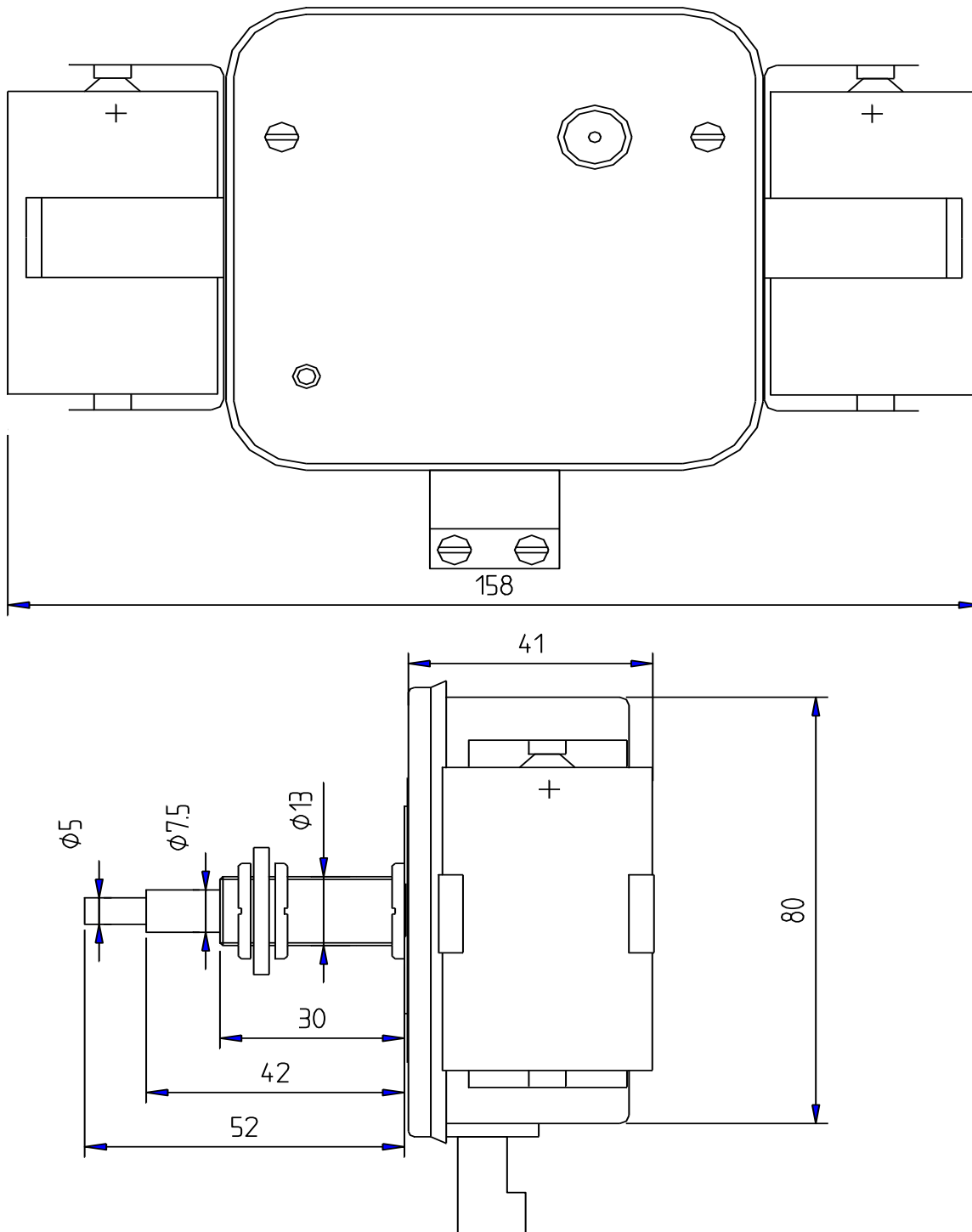
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Maximum dial size 900 mm, max. minute hand 410 mm, with extended shaft.



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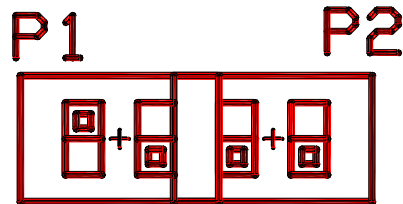
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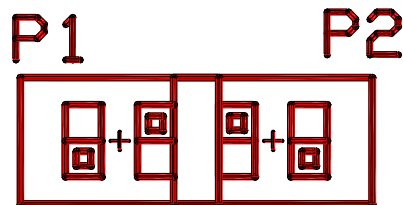
Strapping for battery options

To change the strapping for the battery, loosen the two screws and remove the cover. There you find the Pcboard with the straps.

Alkaline battery (default)



Lithium battery



Pcboard

