12. Electric Clock (dia. 52 mm)

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See file ‘Installation Instructions (MA)’.

12. Electric Clock (dia. 52 mm)

12.1 General Informations

The electric clock has been designed for land-bound vehicles or stationary systems only (with the exception of motorcycles).

The instrument has an analog display (hours and minutes hands).

Designation of function (Quartz crystal movement)

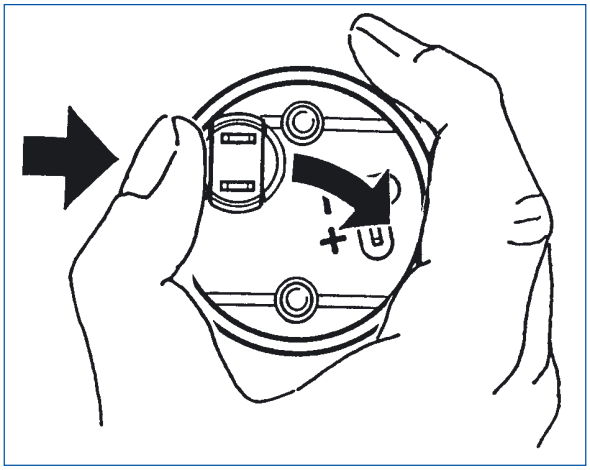
The electronic circuit with quartz, stepping motor and reduction gears is the main component of the quartz clock.

A circuit board carries the quartz, the integrated circuit and the other electronic components.
The time is determined in an electronic circuit by high-frequency oscillation of a quartz crystal. This sustained oscillation(4.19 MHz) is optained by application of an alternating voltage, and stabilizes the oscillator circuit.
The high oscillating frequency thus stabilized by the quartz cryystal is adjusted, and is stepped down to the 0.5 Hz frequency needed for the stepping motor.
The stepping motor has a rotor driven by current pulses of alternating polarity. The rotor steps are transmitted to the reduction gears, thereby driving the minutes and hours hands.

Illumination

– New generation:
  The instrument is illuminate by a light bulb on the circuit board.
– Old generation:
  The instrument is illuminate by a light bulb, which is plug in a lamp socket.

The lamp socket is clipped in.
To replace the lamp bulb, carefully, with the thumb, push the lamp holder out to the side.



12. Electric Clock (dia. 52 mm)

12.2 Technical Data

New generation

Operating voltage: 9V to 16V or 18V to 28V

Current consumption at 13,5V: < 10mA at room temperature
Current consumption at 26V: < 23mA at room temperature

Operating temperature: – 40°C to + 85°C
Storage temperature: – 40°C to + 90°C

Vibration resistance (acc. to IEC 60068 part 2-6):
2g, 25 Hz to 500 Hz, 24h x, y, z

Physical shock (acc. to IEC 60068 part 2-27):
100g, 6ms, 2times x, y, z

Accuracy: ± 5s per day at room temperature

Protection: IP40 DIN 40050 from the front

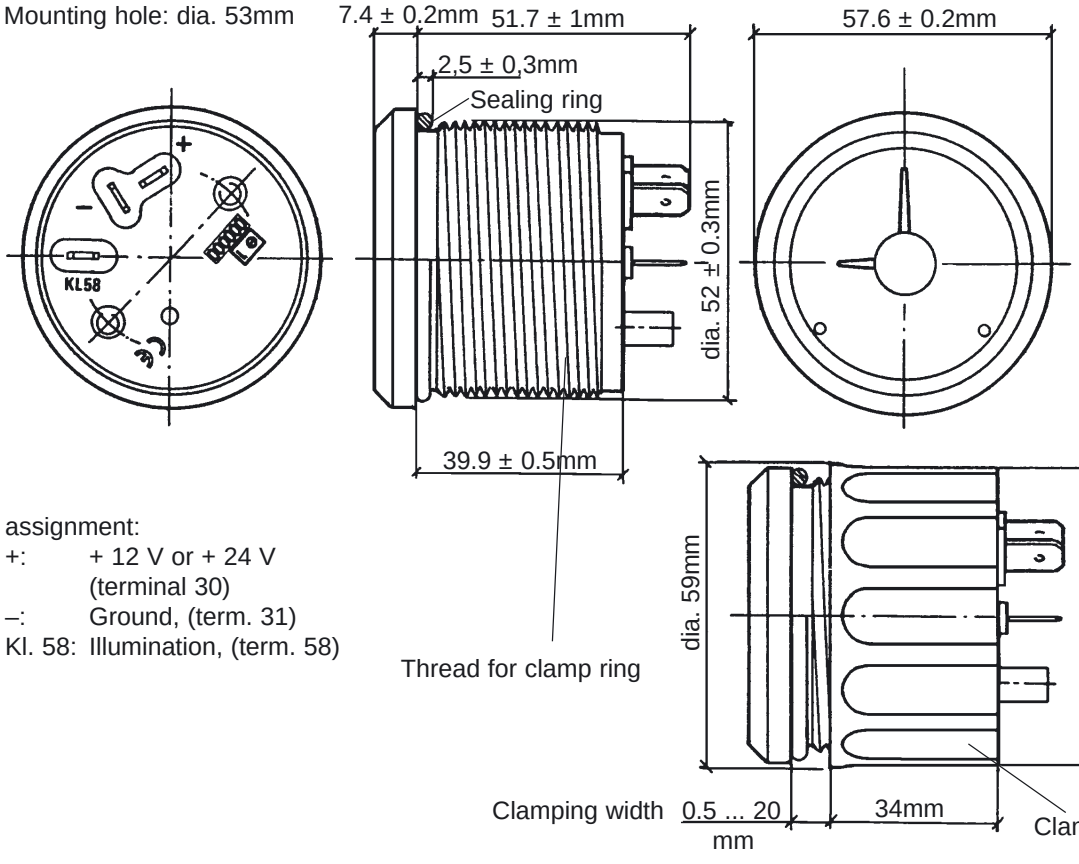
CE-approved, KBA-approval

Connections: blade terminals 6.3 x 0.8mm acc. to DIN 46244 (reverse-polarity protection)

Illuminated (white)

VDO cockpit vision

VDO cockpit international



Pin assignment:
Pin +: + 12 V or + 24 V (terminal 30)
Pin –: Ground, (term. 31)
Pin Kl. 58: Illumination, (term. 58)

12. Electric Clock (dia. 52 mm)

12.2 Technical Data

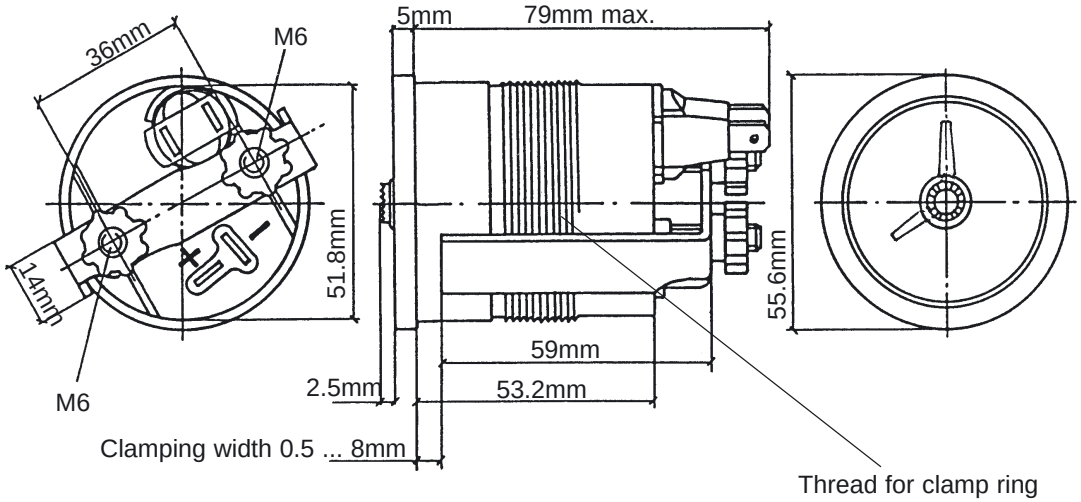
Old generation

VDO cockpit vision

Backlight

Rated voltage:	12 V or 24 V
Current consumption:	< 3.1 mA (at 12 V)
Operating temperature:	– 40°C . . . + 80°C
Illumination:	1 light bulb 12 V, 2 W or 24 V, 2 W, 2 colour caps, green and red
Protection:	IP40 DIN 40050 from the front
Running precision:	< = 1 sec / 24 h at + 23°C ± 3 °C

Mounting hole: dia. 53mm



Pin assignment:
Pin +: + 12 V or + 24 V terminal 30
Pin –: Ground, terminal 31

12. Electric Clock (dia. 52 mm)

12.2 Technical Data

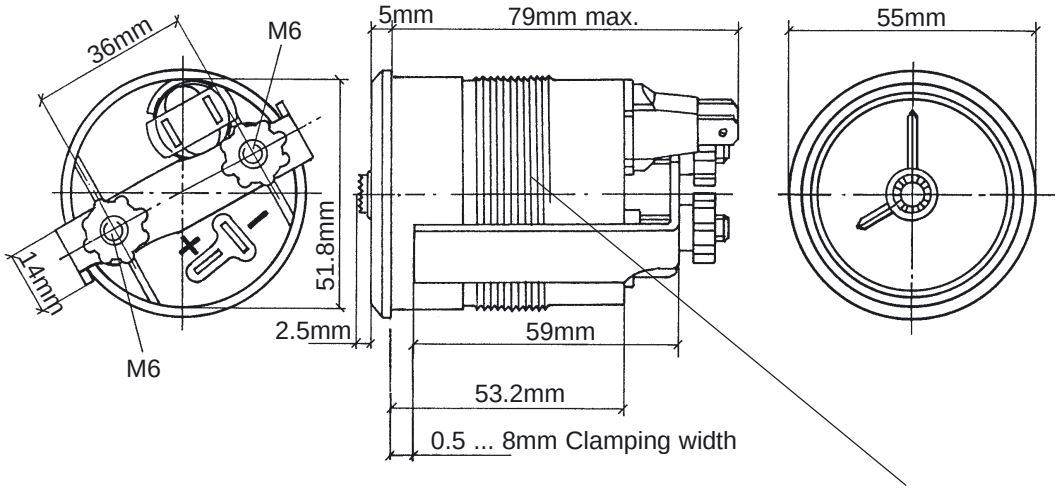
Old generation

VDO cockpit international

Floodlight

Rated voltage:	12 V or 24 V
Current consumption:	< 3.1 mA (at 12 V)
Operating temperature:	– 40°C ... + 80°C
Illumination:	1 light bulb 12 V, 2 W or 24 V, 2 W
Protection:	IP40 DIN 40050 from the front
Running precision:	< = 1 sec / 24 h at + 23°C ± 3 °C

Mounting hole: dia. 53mm

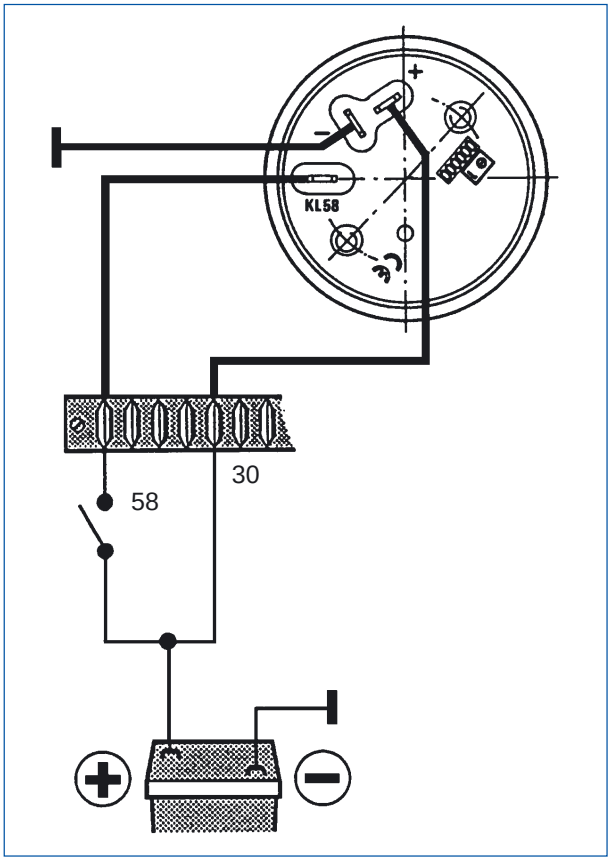


Pin assignment:
Pin +: + 12 V or + 24 V
terminal 30
Pin –: Ground, terminal 31

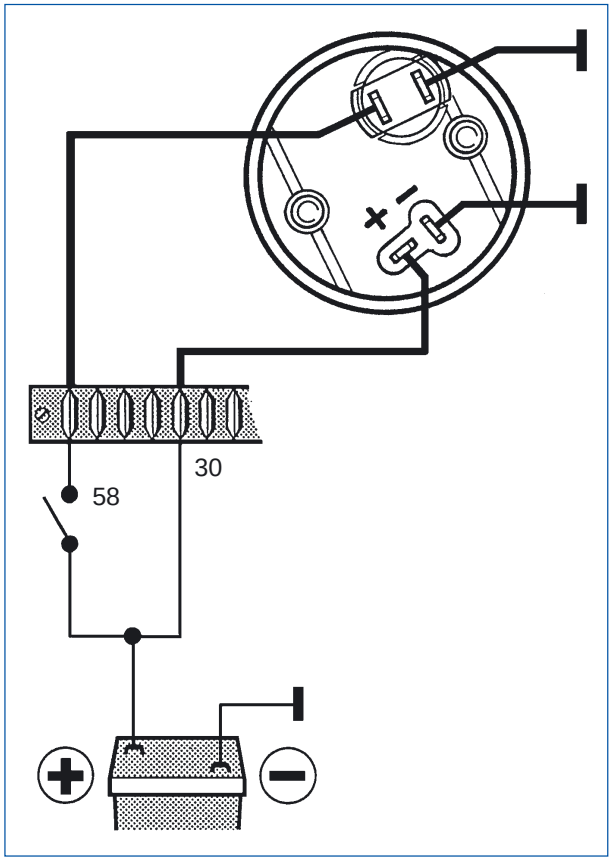
12. Electric Clock (dia. 52 mm)

12.3 Wiring Diagram

New generation



Old generation



12. Electric Clock (dia. 52 mm)

12.4 Setting

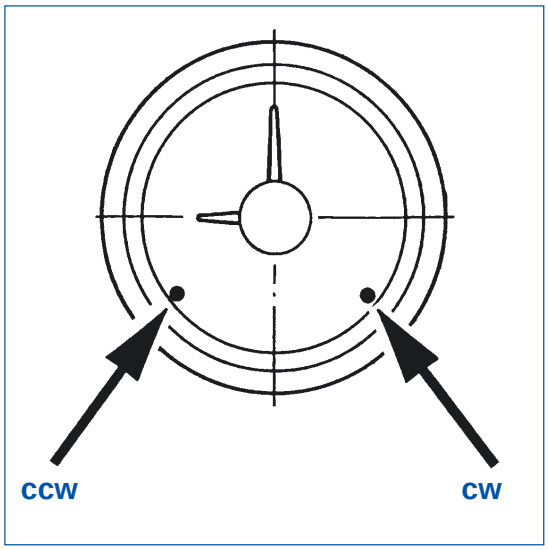
New generation:

The clock can be set by pressing two buttons:
the left button moves the pointer counterclockwise,
the right button moves the pointer clockwise.

The pointer moves in minutes by shortly pressing one button. If the button is being pressed longer than one second the pointer moves in minutes for 5 seconds and then continues at a higher speed.

If the pointer has moved 360 angular degrees, it stops shortly and then moves at higher speed. This function is useful when setting summer and winter time.

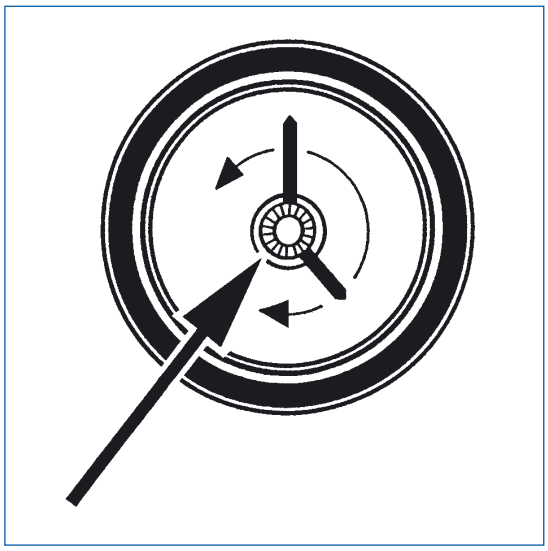
Setting is finished as soon as the button is released.



Old generation:

The electric clock is set with a rotating button in the lens center.

Push the button and turn (any direction).



12. Electric Clock (dia. 52 mm)

12.5 Instruments Survey

– New generation:

VDO cockpit vision

Dial Imprint	Special feature	Part No.
3, 6, 9, 12 VDO	12 V white illumination	**370-214-031-002K**
3, 6, 9, 12 VDO	24 V white illumination	**370-214-031-004K**

VDO cockpit international

Dial Imprint	Special feature	Part No.
3, 6, 9, 12 VDO	12 V	**370-214-031-001G**
3, 6, 9, 12 VDO	24 V	**370-214-031-003G**

– Old generation (phaseout):

VDO cockpit vision (Durchlicht)

Dial Imprint	Special feature	Part No.
3, 6, 9, 12 VDO	12 V	**370-012-001K**
3, 6, 9, 12 VDO	24 V	**370-022-001C**

VDO cockpit international (Auflicht)

Dial Imprint	Special feature	Part No.
3, 6, 9, 12 VDO	12 V	**370-032-001G**
Ground: white Imprint black 3, 6, 9, 12 VDO	12 V red illumination	**370-032-003G**
3, 6, 9, 12 VDO	24 V	**370-032-004G**