

These operating instructions apply for: Type AP 115



Important Note:

Before use of the Netter electronic timer type AP 115 read this operating instruction carefully and store afterwards.

Netter GmbH does not accept responsibility for damage or injury resulting from technical modifications to the product, or failure to observe the instructions and warnings in this operating manual.

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Contents







1	GENERAL NOTES	3
2	TECHNICAL DATA	3
3	DESIGN AND FUNCTION	4
4	SAFETY	4
5	TRANSPORT AND STORAGE	5
6	INSTALLATION	5
6.1	Mounting the electronic timer	5
6.2	Electrical Connection	6
6.3	Adjustments for DC or AC Connection	6
7	START-UP / OPERATION	7
8	SERVICE, MAINTENANCE	8
9	TROUBLESHOOTING	8
10	SPARE PARTS	8
11	APPENDIX	8
11.1	Waste disposal	8
11.2	Enclosures	8

Scope of Delivery



Check the packaging for possible signs of transport damage. In the event of damage to the packaging, check that the contents are complete and undamaged. If there is any damage, inform the shipping agent. Compare the scope of the delivery with the delivery note.

The following instruction and warning symbols are used in these operating instructions.

	Note on important procedures		Warning of dangerous electric voltage
	Important note on procedures to be especially observed		Disconnect unit from power supply, pull electric plug
	Warning of a danger spot		Environmentally friendly disposal

1 General Notes

Netter Type AP 115 electronic timers comply with the directive for electromagnetic compatibility 93/97/ EWG and the low voltage directive 93/68/EWG. Standards DIN EN 61010-1 and DIN EN 61326-1 have been particularly observed.

Electronic timers are used anywhere where a procedure needs to be time-controlled.

AP 115 electronic timers are suitable for timed activation of electric external vibrators, solenoid valves and motor overheating protection.

With these timers, it is possible to switch electric vibrators, pneumatic vibrators, pneumatic impactors and other drives on and off, exact to the second.

By selecting suitable pause times, the operation is optimised, drive energy can be saved and the noise level lowered.

Special features:

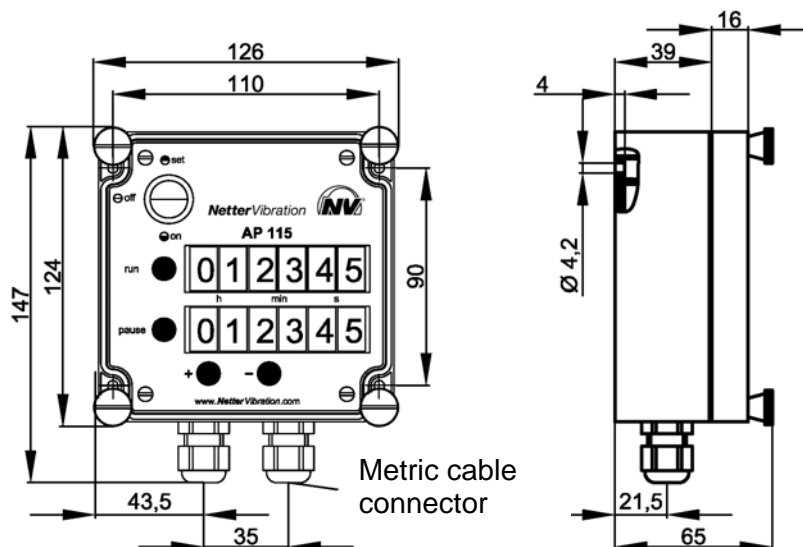
- Digital adjustment, exact to the second
- Dust and water-splash protected
- Protection type IP 65, radio interference suppression
- Operation mode: electronic, non-contact
- Direct control

2 Technical Data



Duty time (run):	Exact to the second, up to max. 99h 59min 59s
Pause time (pause):	Exact to the second, up to max. 99h 59min 59s
Own consumption:	7.5 VA
Operating voltage AC:	100V to 240V
Switching voltage AC:	100V to 240V
Switching current AC:	max. 1A or
Operating voltage DC:	24V ± 5%, inverse polarity protection
Switching voltage DC:	24V ± 5%
Switching current DC:	max. 2A
Ambient temperature:	-20°C to +40°C The operating temperatures must not be exceeded or fallen short of.

Dimensions

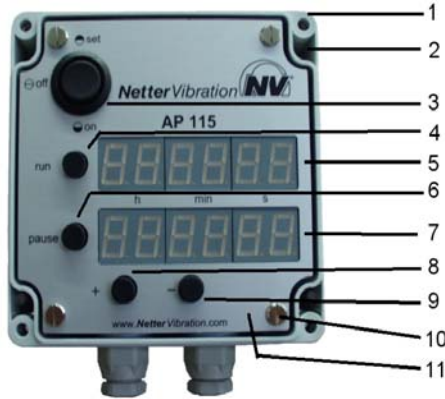


3 Design and Function

The electronic timer consists of two basic components:

- Voltage supply with electronic switching unit and
- Display unit with operating elements.

The sequence begins with the duty time (run), which can be adjusted from 1 s to



99 h. During this time the supply voltage is applied to the timer output.

When the duty time ends, the pause time of 1 s to 99 h is run (pause), then the duty time, etc.

The elapsed time is visible on the display. The respective time digits are brightly illuminated when active.

- 1 Housing
- 2 Mounting bores
- 3 Selection switch: **set / off / on**
- 4 **run** Duty time adjustment
- 5 Duty time display
- 6 **pause** Pause time adjustment
- 7 Pause time display
- 8 + increases the selected time value
- 9 - decreases the selected time value
- 10 Front panel attachment
- 11 Front panel Cover (not illustrated)

4 Safety



Voltage-carrying components can cause serious or fatal injury.



The electronic timer are built in accordance with the current EC directives. Mounting, installation, start-up and maintenance may only be conducted by an authorized specialist.

During installation and operation of electronic timer, the regulations and directives defined by the local electro-technology associations (e.g. VDE) and the recognized accident prevention rules must be observed.



Duty time (run): Exact to the second, up to max. 99h 59min 59s

Pause time (pause): Exact to the second, up to max. 99h 59min 59s

Own consumption: 7.5 VA

Operating voltage AC: 100V to 240V

Switching voltage AC: 100V to 240V

Switching current AC: max. 1A
or

Operating voltage DC: 24V \pm 5%, inverse polarity protection

Switching voltage DC: 24V \pm 5%

Switching current DC: max. 2A

Ambient temperature: -20°C to +40°C

The operating temperatures must not be exceeded or fallen short of.



Modifications to the device can alter the characteristics of or destroy the electronic timer, and result in the rejection of all warranty claims.



When working on electronic timer, they must be safely disconnected from the electric power supply. Please proceed as follows:

1. Switch off main switch
2. Protect against being inadvertently switched on
3. Ensure unit is voltage-free

Main switch with padlock



A suitable supply cable should be used during installation. Cables and earthing conductors must be connected according to the respective regulations.

The electric lines must be carefully routed. It must be ensured that cables cannot be worn through by vibrating components.

It should be checked that the electric lines and their connectors are in perfect working condition at regular intervals (generally every six months).

Any faults which are discovered must be immediately remedied.

Protect cables from high temperatures, lubricants and sharp edges.



If, following a voltage interruption, power is again applied to the power supply connection SK1, and the selection switch is set at the **on** position, the next cycle will always begin with the set duty time.

Outputs SK2 or SK3 are immediately energized.

5 Transport and Storage



Check the packaging for possible signs of transport damage. In the event of damage to the packaging, check that the contents are complete and undamaged. If there is any damage, inform the shipping agent.

The electronic timer are packed ready-to-install.

The units should be stored in a clean, dry environment.

On state of supply the fuses are located in the AC sockets.

If electronic timer are in storage for longer periods, the temperature in the store-room must not be below -20°C or above 40°C and the relative air humidity must not exceed 60%.

When transporting electronic timer, it should be ensured that they are not subjected to severe impacts or vibrations.

6 Installation



During installation, the safety regulations in chapter 4 and the accident prevention rules must be strictly observed!

The system must be installed in accordance with local recognized regulations (e.g. VDE regulations).

6.1 Mounting the electronic timer

AP 115 electronic timer can be mounted in any position.

Dimensions: See Chapter 2 Technical Data.

The 4 bores for attachment of the unit are accessible once the crystal-clear cover has been opened.

The mounting surface must be even and level, in order to avoid damaging the housing.

6.2 Electrical Connection



WARNING:

The AP 115 must not be mounted or dismounted with voltage applied!
 Electrical installation of the AP 115 electronic timer may only be conducted by an authorized specialist.
 The specialist must work only with insulated tools, which are suitable for the application.

- Remove the crystal-clear cover by loosening the 4 knurled head screws.
- Unscrew the 4 slotted screws **10** in the front panel **11**.
- Lift off the front panel **11**.
- The timer can now be connected via the terminal strip.

The operating voltage for the timer is also the supply voltage for the device to be controlled (solenoid valve, protection, vibrator, motor, etc.)

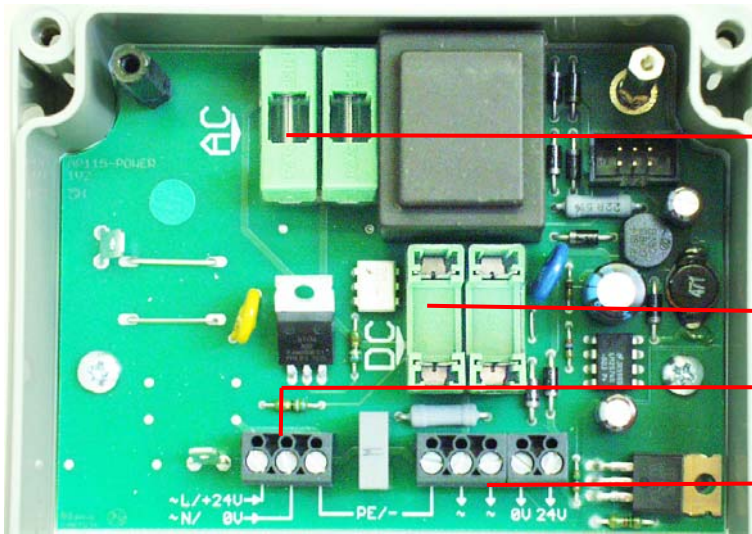
6.3 Adjustments for DC or AC Connection

The voltage is supplied via the power connection strip SK1 (DC or AC).

The output voltage is applied to terminal strips SK2 (AC) or SK3 (DC).

If a direct voltage (DC) is applied to SK1 the fuses (2.5 A/F) must be located in sockets S3 and S4. There should be no fuses in sockets S1 and S2 (see diagram)!

If an alternating voltage (AC) is applied to SK1 the fuses (2.5 A/F) must be located in sockets S1 and S2. There should be no fuses in sockets S3 and S4!



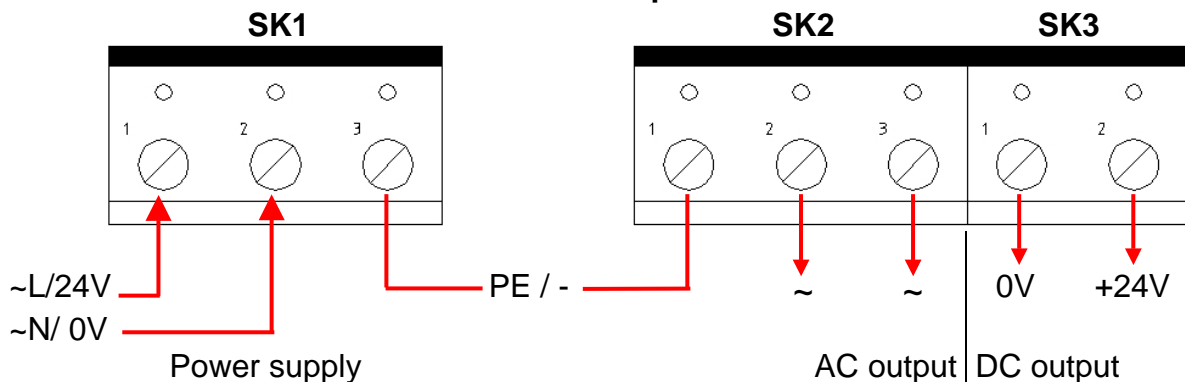
AC fuses S1 and S2

DC fuses S3 and S4

Power connection strip SK1 (DC or AC)

Output strip SK2 (AC), SK3 (DC)

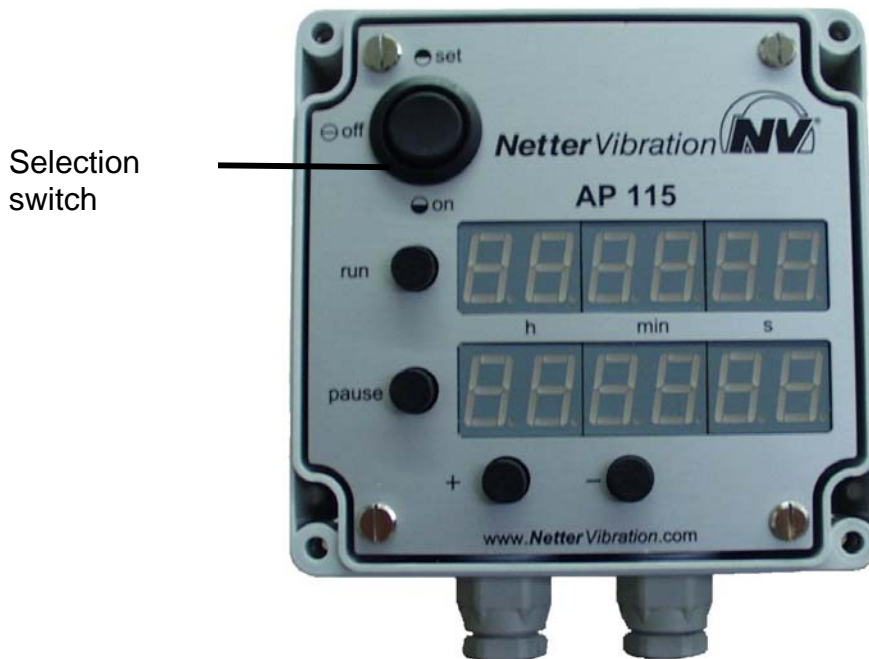
Terminal Strips



7 Start-Up / Operation



Please observe the safety regulations in chapter 4 during start-up.



Adjusting the Duty Time:

- Turn the selection switch to the **set** position. Outputs SK2 / SK3 are voltage-free.
- Press the **run** button and hold. The position to be adjusted is shown by two points. Select the position to be adjusted using **+** or **-** (seconds, minutes or hours) (points change).
- Release the **run** button and increase or decrease the time value using **+** or **-**.
- When the desired duty time has been set, this must be confirmed by pressing the **run** button again (at least 0.8 seconds).
- The values are stored when the points extinguish.
- When the selection switch is turned to the **on** position, the AP runs with the stored time values. A voltage is applied to outputs SK2 or SK3 while the duty time is running.

Adjusting the Pause Time:

- Turn the selection switch to the **set** position. Outputs SK2 / SK3 are voltage-free.
- Press the **pause** button and hold. The position to be adjusted is shown by two points. Select the position to be adjusted using **+** or **-** (seconds, minutes or hours) (points change).
- Release the **pause** button and increase or decrease the time value using **+** or **-**.
- When the desired duty time has been set, this must be confirmed by pressing the **pause** button again (at least 0.8 seconds).
- The values are stored when the points extinguish.
- When the selection switch is turned to the **on** position, the AP runs with the stored time values. Outputs SK2 / SK3 are voltage-free while the pause time is running.



If, following a voltage interruption, power is again applied to the power supply connection SK1, and the selection switch is set at the **on** position, the next cycle will always begin with the set duty time.

Outputs SK2 or SK3 are immediately energized.

8 Service, Maintenance



Please observe the safety regulations in chapter 4 when servicing the device.

If the timer is continually subjected to atmospheric influences the seal in the cover and the electric lines should be

regularly checked (at least every 6 months) for signs of porosity. All other parts are maintenance-free.

9 Troubleshooting



ATTENTION:

Troubleshooting of AP 115 electronic timer should only be conducted by an authorized specialist.

Fault	Possible Causes	Troubleshooting	Remedy
Timer doesn't start	Phase interruption	Check fuses and connection cables	Replace fuse or connection cable
	Power supply too low	Check power supply and cables	Apply correct power, replace cable
Display "E - 4"	Polarity of DC supply voltage is reversed	Check power connection	Connect power supply correctly

10 Spare Parts

When ordering spare parts (e.g. fuses), please give the following details:

1. Type of device
2. Position and description of part
3. Requested quantity

11 Appendix

11.1 Waste disposal

Material specifications:

	Electronic timer AP 115
Polycarbonate	Housing Cover crystal-clear



All devices can be disposed of through Netter GmbH.
The applicable disposal prices are available upon request.

11.2 Enclosures

Enclosure (s):

Declaration of Conformity



Additional information available upon request:
Brochure No. 35 and much more.