

# MANUAL

## Daylight-compensation control in reverse proportion to daylight (type: AQ NP-S)

### Operation

The AQ NP-S controls fluorescent lamps with electronic ballasts with 1 – 10 V interface or electronic transformers for low-voltage halogen lamps with 1 –10 V interface as well. Together with the light sensor and the electronic ballasts it forms a control circuit which adjusts the artificial light in reverse proportion to the daylight. The sensor acquires the daylight level which is processed through the AQ NP-S. Through the control voltage the electronic ballast is addressed to the daylight. If the daylight increases the control voltage decreases and consequently also the brightness of the connected lamps (and reverse).

With the potentiometers 'low' and 'high' the threshold values of the control ranges (dimming ranges) which shall be adjusted are determined. With the 'low' potentiometer the threshold value for a minimum of artificial light (at much daylight) has to be adjusted (control voltage at the minimum). With the potentiometer 'high' the threshold value at a low daylight level has to be adjusted (max. control voltage).

Through the potentiometers min. and max. the control voltage range (1..10V) can be limited. With the potentiometer min. the minimum control voltage can be increased with the potentiometer max. the maximum control voltage can be reduced.

With the potentiometers 'bright' and 'dark' the delay time after which a new light value shall be achieved is determined. With 'bright' the delay time for the increasing control voltage is set and with 'dark' for a decreasing control voltage.

### Adjustment

At the beginning of the adjustment the potentiometers bright, minimum, and dark are to be set to the left stop, the potentiometers low and maximum to the right stop. The potentiometer high is turned into a middle position. These settings provide a low delay time for all adjustments.

First of all with the potentiometer low the threshold value for the highest daylight level which is required as upper limit level is adjusted. The light sensor must acquire the full daylight level (bright). The potentiometer low has to be turned as long to the left as the artificial light burns at that brightness level which is required for the respective daylight level.

As a next step the potentiometer high determines the threshold value for the lower daylight level which is required as the lower threshold value. The light sensor acquires a low daylight level. The potentiometer high has to be turned as long to the left unless the artificial light achieves just the light level to be required for the maximum brightness (e.g. achieving full brightness).

With the potentiometers minimum and maximum the respectively required artificial light level can be adjusted (e.g. 20 %, 80 % etc.). Finally the delay times for 'bright' and 'dark' shall be set in order to avoid visible external interferences at the light sensor.

### Light sensor

Applicable are the ALTENBURGER light sensors types LF/a-d and w. Please refer to our AQ-catalogue, e.g. LF/w, order- no. 51.21.006.

Preferably the light sensor should be mounted outside the building or inside a room, however close to a window. It may not receive any artificial light.

### Safety- and installation requirements

- The AQ NP-S may be installed and put into operation only by skilled, designated electricians.
- Wiring, mounting and other work may be performed only in a voltage free state.
- Applicable safety instructions and regulations for the prevention of accidents have to be observed.

## Technical data

Designation	: daylight-compensation control in reverse proportion to daylight
Type	: AQ NP-S
Order-No.	: 50.14.130
Power supply	: 230 V ~ 50/60 Hz
Protection	: 6 A external
Power consumption	: max. 3,5 VA
Ambient temperature	: 0... + 45°C (air-convection at vertical mounting position)
Input	: light sensor (photo resistor)
Low-voltage interface	: 1...10 V
Control current	: max. 200 mA (equivalent to approx. 300 dimmable electronic ballasts)
Delay times	: 3 – 180s (depending on light level changings and control range)
Protection class	: II (protective insulation)
Protective type	: IP 20
Terminals	: screw terminals for 0,5 – 2,5 mm <sup>2</sup> for single wires or litz wires with sleeve
Supply wires	: min. 1,5 mm <sup>2</sup> , max. 100 m (terminals 1 – 4)
Control wires	: min. 0,5 mm <sup>2</sup> , max. 100 m (terminals 5 – 14) No protective low-voltage, base insulation according to IEC 664, 10/92
Mounting	: base of the module suitable for DIN rail systems (plug-on device)
Functional part	: to be plugged on to the base
Dimensions	: W x H x D = 105 x 85 x 67 mm
Weight	: 390 g
Contamination grade	: 2 dry, non-conducting according to IEC 664, 10/92
Wiring	: please refer to wiring diagrams – <b>in case of miswiring malfunctioning or damage possible</b>
Requirements	: EMC according to EN 50082-1, 03/93 Low-voltage according to IEC 669-2-1,01/94 CE

### Accessories:

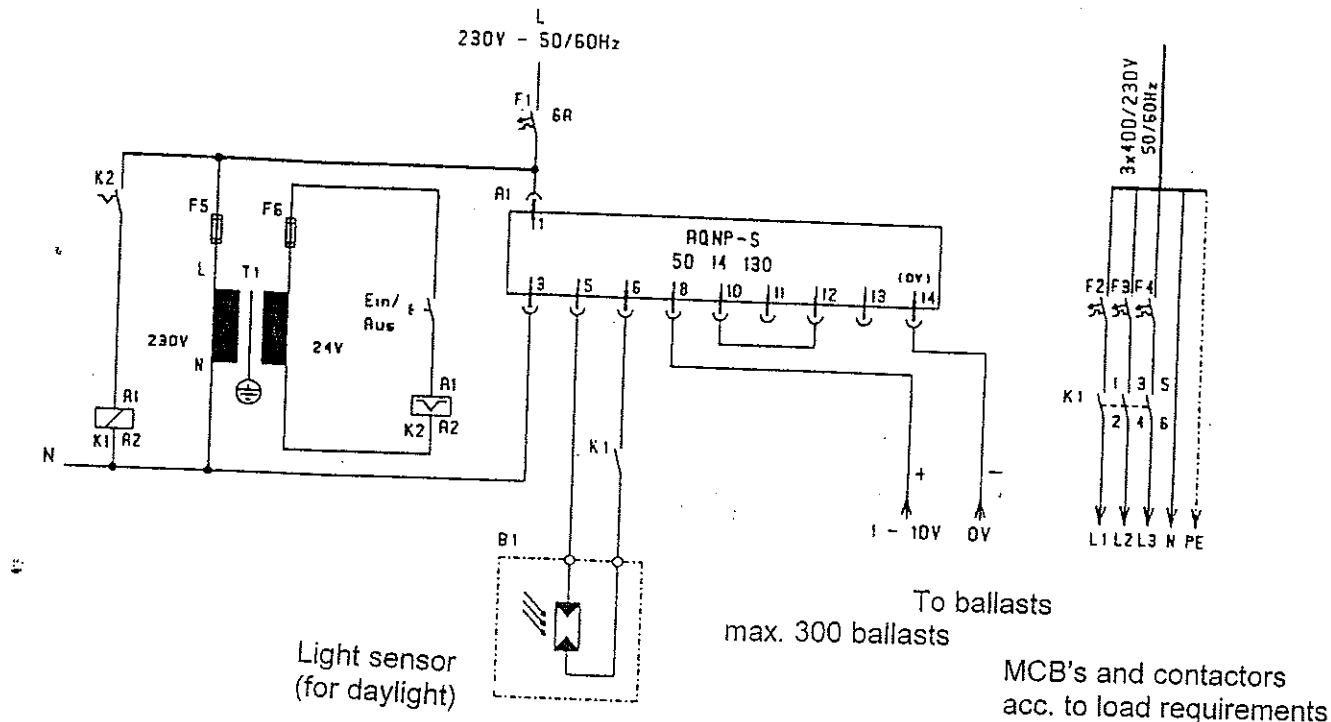
Light sensor LF (a-d, w)  
Control panel FA/UP  
Control panel FAD/UP

### Additional information: see Sticker at the base plate

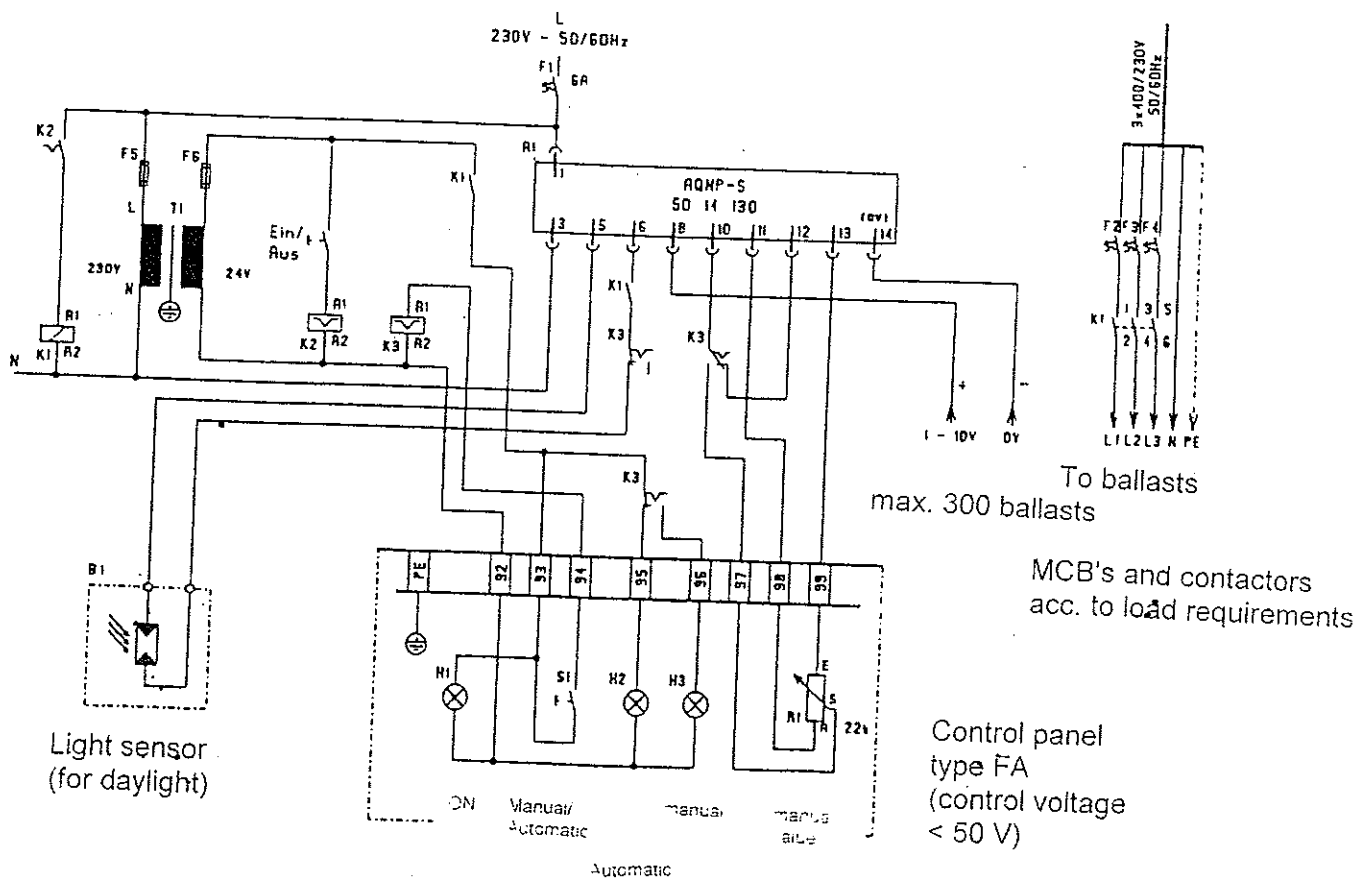
Terminals 11 and 13 may be wired according to wiring diagrams.

Wiring diagrams

Daylight compensation control in reverse proportion to daylight AQ NP- S with ON/OFF (24V)



Daylight compensation control in reverse proportion to daylight AQ NP- S with ON/OFF (24V) with changeover to manual control via control panel FA



Daylight compensation control in reverse proportion to daylight AQ NP- S with changeover to a manual control with control panel FAD with ON/OFF (24V)

