ALTENBURGER
ELECTRONIC GMBH

# AQAD-S MANUAL

## General

The AQAD-S is a daylight-dependent control for fluorescent lamps or low-voltage electronic transformers with an interface of 1 -10 V it processes the signal from a light sensor (type LF/w/D or another suitable one).

With the potentiometer at the module the light level to be kept constant is to be set. The AQAD-S continuously compares the set light level with the actual light level which is supplied as control voltage by the sensor. If the daylight at the sensor exceeds the set light level
the module reduces the light level of the connected lamps and finally switches it OFF.

### Setting of the light level to be kept constant

It is recommended to set the required light level with a potentiometer at a situation without daylight or just a small portion. It should be observed that the illumination inside the room is not set to 100 % brightness. With a quick turning of the potentiometer the long delay time for an adjustment of the lighting would be reduced. For a few seconds the required brightness can be set without delay. Adjacent the normal delay time of the constant light control between 30 and 60 secs. is achieved again.

### ON/OFF switching

The AQAD-S has an integrated relay with a switch capacity of 10A. For higher loads external relays or contactors can be connected.

### Manual ON/OFF switching

Through the connection of an external pushbutton the latching relay in the AQAD-S is activated, switching the lighting ON and OFF. This operation however is only possible if the light level at the sensor falls below the set value.

### Automatic ON/OFF switching

If no artificial light is required the constant light control reduced the light level to the minimum brightness. After a delay time of 2 – 4 min. lighting switches OFF. Also a manual switch ON is not possible. As soon as the daylight falls below the set light level lighting switches ON again.

### Switch ON interlock

In order to avoid a switch ON (e.g. in the evening) an interlock at the AQAD-S can be activated. In this case the switch 'Wiedereinschaltsperre' is set to 'Ein'. In this state the controls switch the light only OFF, however not ON again. This can be done manually.

### Safety- and installation requirements

The general safety instructions have to be observed. The AQAD-S may be installed and put into operation only by a qualified electrician. Any work maybe performed only under voltage- free conditions

## Sensors

For the acquisition of light all ALTENBURGER sensors with the letters .../D (please refer to the AQ-catalogue can be used.) In connection with the constant light control they have a measuring range of approximately 50 ...1200 Lux. As the sensor acquires the brightness in the room indirectly the actual range of control is exceeded by the factor 1,2 to 3 (depending on the mounting of the sensor and the reflections inside the room). The acquisition angle of the light is 90°.

## Recommended sensors

As wall recessed sensor for the 1-hole mounting, protection type IP 40, type LF/d/D, Order-no.51.21.011

As wall mounted sensor with swivelling angle, protection type IP 55, type LF/w/D, Order-no.51.21.010

## Mounting of the sensor

The sensor should be mounted at the ceiling close to the lamps. A direct access of daylight or lamps to the respective sensor should be avoided. The best mounting is in the midst of a room, directed to the floor or a workplace.

It is possible to connect 2 or 3 sensors to 1 AQAD-S. This is advisable in large rooms. The working range of the sensors however is reduced through parallel connections (2 sensors = approx. 25 ...600 lux, 3 sensors = approx. 17...400 lux).

## Set point device

As set point devices generally all ALTENBURGER control modules can be used being suitable for electronic ballasts with 1-10V interface (e.g. type AQS – see catalogue AQ). This makes also a combination with the auditorium control (e.g. Altenburger type NS4WV-S) possible. For the manual ON /OFF switching all customary pushbuttons can be connected (also several ones in parallel).

## Presence detection

To the AQAD-S also motion sensors can be connected. They are activating the illumination as soon as somebody enters the room and switches it off after a delay time when no longer motion is recognized. The presence detection is super-ordinated to the constant light control.

## For the selection of motion sensors the following has to be observed

- The sensors must be suitable for internal use without an own light sensor.
- It should have a presettable delay time so that an unrequired switch off is avoided
- Only those motion sensors with a 3-wire connection shall be used. No base load to be required.

# Technical data

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| Designation | : constant light control ALTOMAT |
| Type | : AQAD-S |
| Order-No. | : 50.14.116 |
| Dimensions | : DIN rail type WxH x D = 105 x 85 x 67 mm |
| Weight | : 320 g |
| Ambient temperature | : 0... + 45°C (air-convection at vertical mounting position) |
| Terminals | : screw terminals for 0,5 – 2,5 mm² for single wires |
| Max. wire length | : 100 m |
| Power supply | : 230 V ~ 50/60 Hz, DC not permitted (destruction) |
| Power consumption | : 2 W |
| Range of control voltage | : < 30V, DC<br>**No protective low-voltage, base insulation according to IEC 664, 10/92** |
| Adaption of control output | : 30 – 60s (control deviation) |
| Switch OFF delay time | : 2 - 4 min. (control deviation) |
| Switch ON delay time | : 3 - 20 secs (control deviation) |
| Load capacity of control output | : max. 200 mA<br>(equivalent to approx. 200 dimmable electronic ballasts or transformers or 100 signal amplifiers) |
| Switch contact | : 10A, 230V ~, 50/60 Hz (approx.30 electronic ballasts – 58W) |
| Protection class | : II (protective insulation) |
| Protective type | : IP 20 |
| Contamination grade | : 2 dry, non-conducting according to IEC 664, 10/92 |
| Requirements | : EMC according to EN 50082-1, 03/93<br>Low-voltage according to IEC 669-2-1,11/94 |

**Accessories:**

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| Light sensor AP – IP 40 – LF/a/D | 51.21.007 |
| Light sensor AP – IP 55 – waterproof LF/b/D | 51.21.008 |
| Light sensor UP – IP 40 – for 55 Ø box LF/c/D | 51.21.009 |
| Light sensor AP – IP 55 – swivelling LF/w/D | 51.21.010 |
| Light sensor UP – IP 40 – for 1-hole mounting LF/d/D | 51.21.011 |

**Wiring of the module:**

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|---|---|
| Connection of the supply: | L (1), N (3) |
| Control and load connection: | please refer to wiring diagrams |