



ALTENBURGER
ELECTRONIC GMBH

ALTENBURGER Wi-Fi Lighting Controls

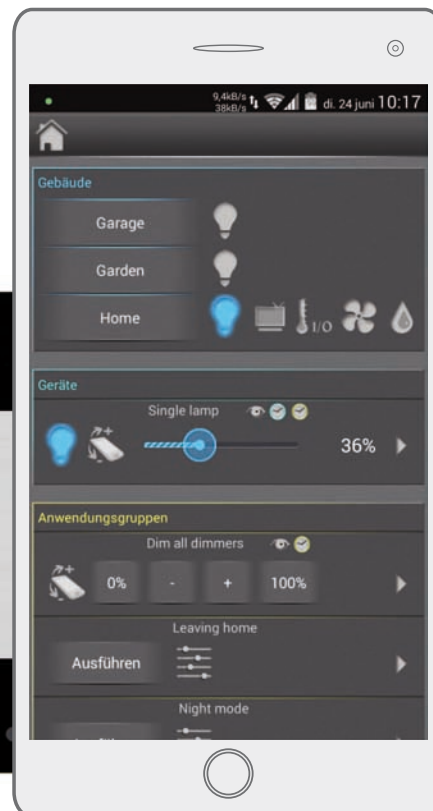
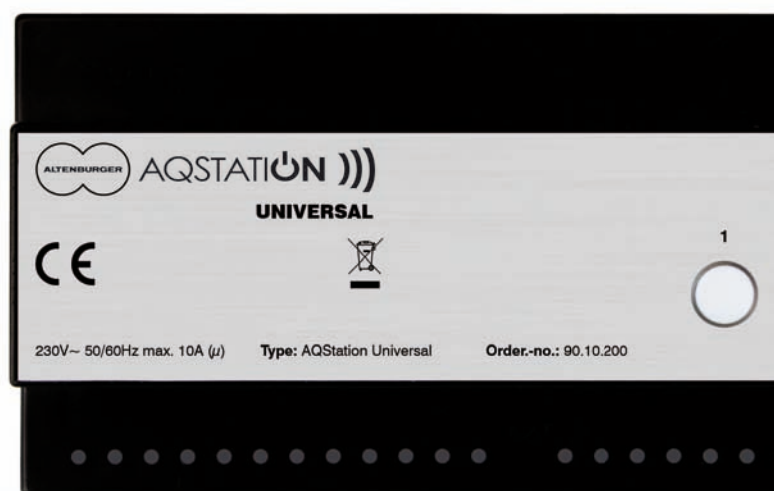


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Wi-Fi Lighting Controls



The AQStations are applicable for the comprehensive lighting control in residential areas as well as in public buildings, schools/universities, hospitals or hotels.

They are operating within the iOS and Android operating systems.

For the control all smartphones, tablets and All-in-One Android PCs are applicable. Required App can be downloaded free of charge at iTunes (Apple Store) or Google Play (App).

In its universal design (AQStation Universal) this system offers for each of its 3 outlets the interfaces of 0-10V, 1-10V and a 10A switch function. The outlets can be used in any order and composition.

In addition to switch-, dim-, time-, and time-interval controls programmable dimming control systems (programming of lighting scenes) can be processed with any number of lamps or circuits. For each light lamp or circuit a light level is selected and assigned to a lighting scene. Following a fade time (in seconds) is added to each scene. Any scene gets its identification. Such for each room or area scenes can be programmed in advance and later be selected according to the respective situation or atmosphere. A frequent new programming of scenes consequently is needless.

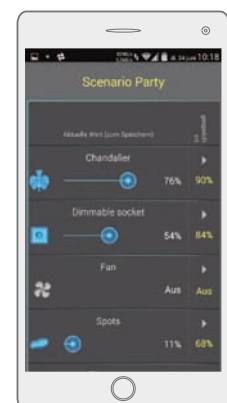
The system not only is suitable for new installations however for renovations and alterations as well.

Characteristics of the Wi-Fi AQStation System

- The AQStation System works Wi-Fi/LAN-based.
- The network structure is to be onset by the user according to the respective need.
- The system requires no central units like touch panels or automation processors. Costs consequently would not apply. Their functions are assumed by smartphones, tablets and large scale (e.g. 24“) All-in-one Android PCs.
- Software licences and costs for the programming of visualizations would not apply. The contractor can concentrate himself on his actual job.
- The software for the iOS (at App Store) and Android (at Google Play) operating systems is available free of charge.
- A high flexibility with a simple adaption to the extension of functions is ensured without outside help.
- Problem-free start with any new smartphone, tablet or AIO Android PC. Software setups are not necessary. The App is started and the visualization automatically is red out through the AQStation. A few seconds after the start the available control – and visualization tools can be identified. An additional initiation is not required.
- The Apps enable bidirectional controls with feedback status.
- All updates are free of charge
- There is a project synchronization of all connected actuators and consequently a comprehensive net working of smartphones, tablets and AIO Android PCs. Each smartphone/tablet recognizes automatically a new member and synchronizes the project in its App.
- Any number of lighting scenes, lamps, circuits, fade times from scene to scene can be stored and selected. Additionally fixed time schedules for the different scenes can be programmed.
- All applications can be achieved quite uncomplicated with the App. For the user programming knowledge is not required. The same applies for the re-programming. Even controls appearing quite complicated at first glance like programmable dimming controls, master- or group controls or time and time interval settings easily can be arranged.
- The AQStation modules require no bus-voltage supply. They just need a WiFi Router or a LAN-infrastructure as it is usual meanwhile in nearly any home and building.

- The internet control is based on the VPN (Virtual Private Network). The user has just to care for a VPN connection between his smartphone/tablet and his router. Today many router are available also for the VPN for Android and IOS.
- The local infrastructure of the system provides constancy against a ,single point of failure'.
- The control of those AQStation modules not yet having a network connection can be made with pushbuttons so that in any case a manual control is possible. The pushbuttons of the actuators can be used without network.
- Each pushbutton offers the following functions:

pressing the button continuously:	lighting goes up and down
release of pressure:	light motion stops
short pressure:	lighting switches ON or OFF
	into the stored light level
double pressing:	stores the light value
- The system frequently is extended with new Apps. For the user no extra cost would apply unless additional dimmers or components to be dimmed or switched shall be integrated.
- For the operation and visualization of the system smartphones, tablets and AIO Android PCs can be used.



The AIO Android PC has a multitude of functions. It is applicable as WiFi touch control, for videos, for surfing in the internet and it allows the direct transmission of smartphones and tablets onto the monitor. The device can be delivered with swivelling wall-fixation or swivelling table top fixture.

AQStation Universal



The Universal module has 3 interfaces:

- 0-10V
- 1-10V
- 10A output , voltage-free

The allocation of the 3 outlets is optional in the sequence as well as in the formation.

The combination interface of 0-10V/ 1-10V applies for all load dimmers (0-10V) and interface dimmers (1-10V). The switch outlet serves non-dimmable illuminations, and all kind of electrical and electro-thermic devices.

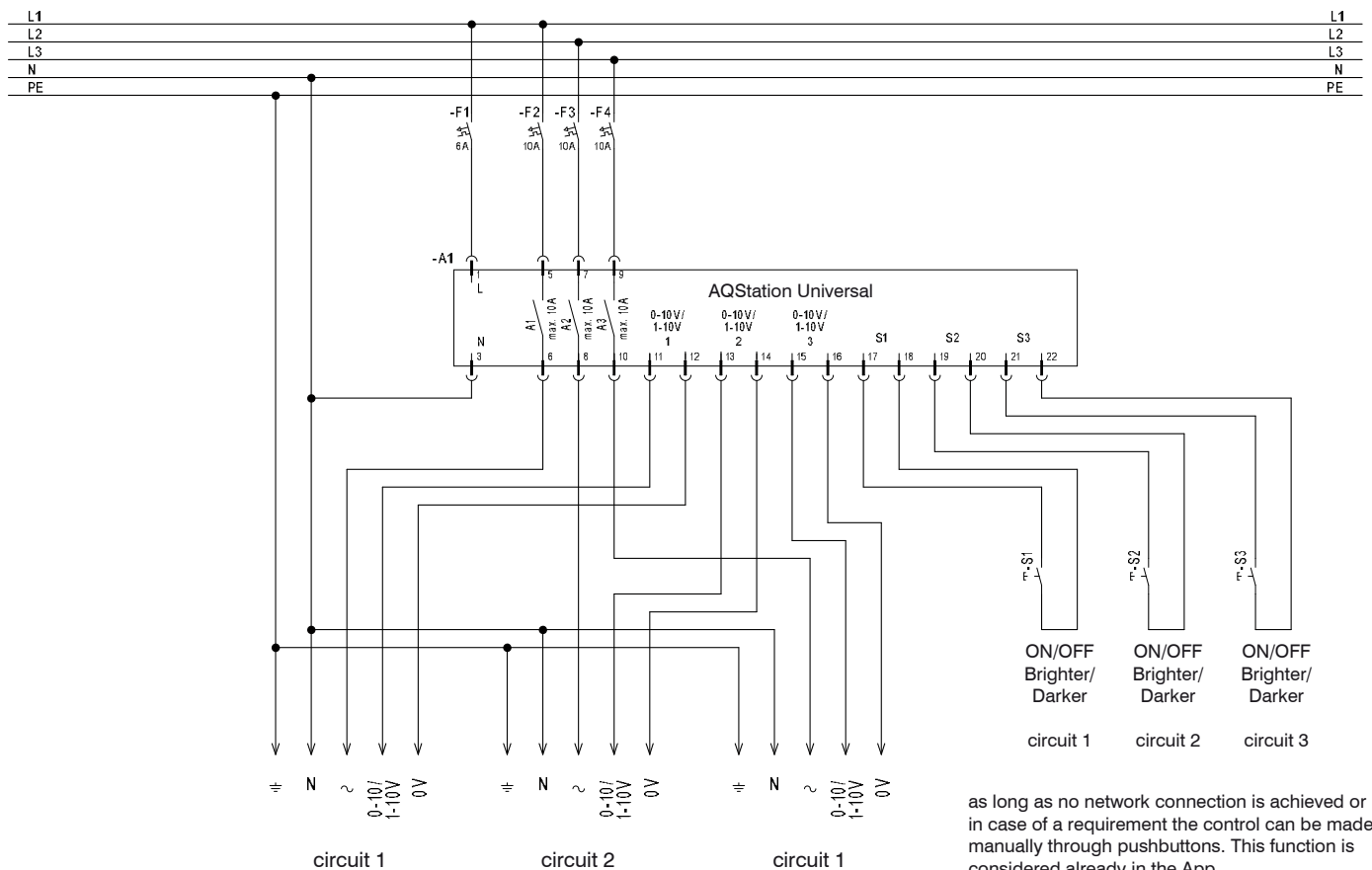
The 0-10V interface is capable for the control of up to 5 ALTENBURGER load dimmers independent of the type and load.

Each 1-10V interface is suitable for the control of up to 100 actuators/DALI ballasts in the broadcasting mode.

Technical Data - AQStation Universal

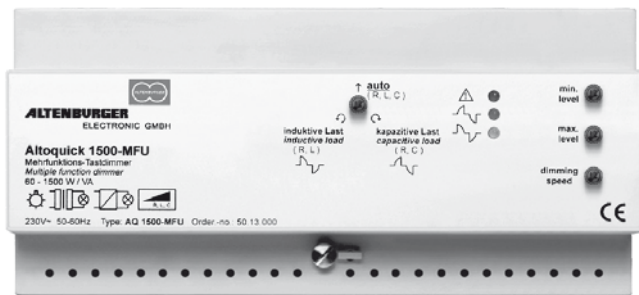
Designation	AQStation Universal
Type	AQS Universal
Order-Number	90.10.200
Supply voltage	230V~ 50/60 Hz, DC not permitted
Protection	external 6A
Mounting form	Din rail housing
Dimensions, weight	WxHxD=175 x 83,5 x 58 mm, approx. 200 gr
Internal displays	1x LED green (Wi-Fi state) 3x LED green (switch state) at pushbuttons
Internal controls	3x pushbuttons for the manual control (ON/OFF, BRIGHTER/DARKER) 1x pushbutton reset (setting at works, including Wi-Fi)
Wi-Fi	2,4 GHz 802.11n
LAN	RJ45, 100-MBit-Ethernet (Fast Ethernet)
Protection class	II (protective isolation)
Protective Typee	IP 20
Contamination degree	2 (dry not conducting)
Load contact (μ)	3x max. 10A at 230V ohmic load
Interface	3 x combination interface 0-10V/1-10V, 5mA active, 100mA passive
Qualification	CE, RoHS

Wiring diagram - AQStation UNIVERSAL



AQStation Universal in combination with load dimmers

The universal module is suitable for all ALTENBURGER load dimmers



The AQStation App offers a high degree of flexibility and different configurations. Optional the functions of the AQ-Station Universal and the corresponding dimmers can be supplemented by pushbutton panels to be operated manually (please refer to page 5).

In combination with load dimmers the the AQStation Universal controls:

- LEDs (230V)
- High-voltage halogen lamps
- Low-voltage halogen lamps with electronic transformers (phase-interval controlled mode)
- Low-voltage halogen lamps with wire-wound transformers (phase controlled mode) or with electronic transformers (phase interval controlled mode)
- Incandescent lamps

The universal module in combination with DALI-controls

DALI DIM/CONVERTER CONTROL

(Type: DC NV) 0-10V/1-10V analog -> DALI converter

The DCNV converts analog interfaces 0-10V/1-10V into DALI-interfaces

In combination with DALI-Dim/Converter controls (Type DCNV) the universal module via its 0-10V/1-10V interface is suitable for the control of up to 100 DALI ballasts or transformers in the broadcasting mode (all DALIs in one circuit combined).



Dim- and switch functions of the module:

Position 1

Analog control 1-10V with switch contact for the conversion into DALI signals.

Position 2

Analog control 1-10V without switch contact for the conversion into DALI signals.

Position 10

Analog control 0-10V with switch contact for the conversion into DALI signals.

System survey of the AQStation Universal in combination with the DIN rail type dimmers ALTOQUICK with load capacities up to 2 KW

for LEDs (230V) high-voltage halogen lamps, low-voltage halogen lamps with electronic transformers , incandescent lamps



0 - 10 V Interface

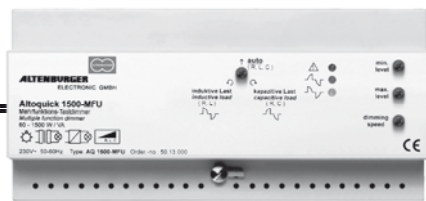


Phase-controlled (leading-edge) dimmer AQ 2 KW

Power-LEDs



Power-LEDs



Universal dimmer MFU 1,5 KW

Power-LEDs



Phase-interval controlled (trailing-edge) dimmer AQ-0 1,4 KW



Optional:

3-fold pushbutton control panel (1xper light circuit)
Functions: see page 5

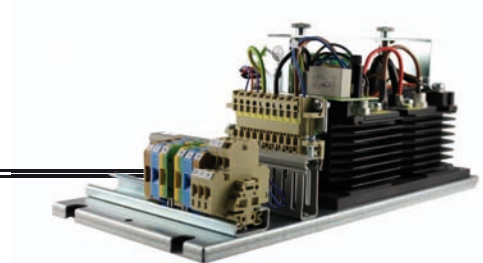
- DIN rail dimmers to be combined with the AQ Station Universal
- Universal dimmer 1,5 KW
 - Phase-interval controlled dimmer, 0,7 KW,
 - Phase-interval controlled dimmer, 1,4 KW,
 - Phase-controlled dimmer, 1,3 KW,
 - Phase-controlled dimmer, 2 KW,
 - type AQ 1500-MFU
 - type AQ-0 0,7 KW
 - type AQ-0 1,4 KW
 - type AQ 1,3 KW
 - type AQ 2 KW

System survey AQStation Universal in combination with backplate-mounted dimmers for distribution boards with load capacities up to 8 KW

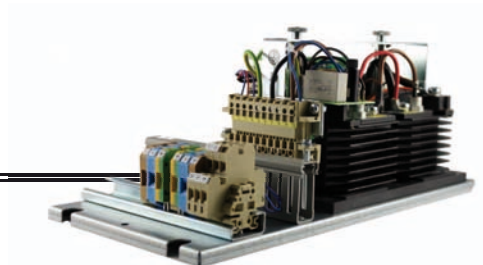
for LEDs (230V) high-voltage halogen lamps, low-voltage halogen lamps with electronic transformers , incandescent lamps



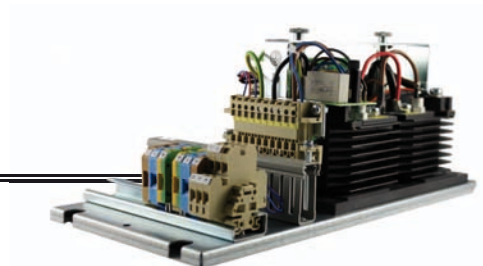
0 - 10 V Interface



TH-0 2KW-0 dimmer, operating in the phase-interval controlled (trailing edge) mode



TH 5KW dimmer operating in the phase-controlled (leading edge) mode



TH 8KW dimmer operating in the phase-controlled (leading edge) mode



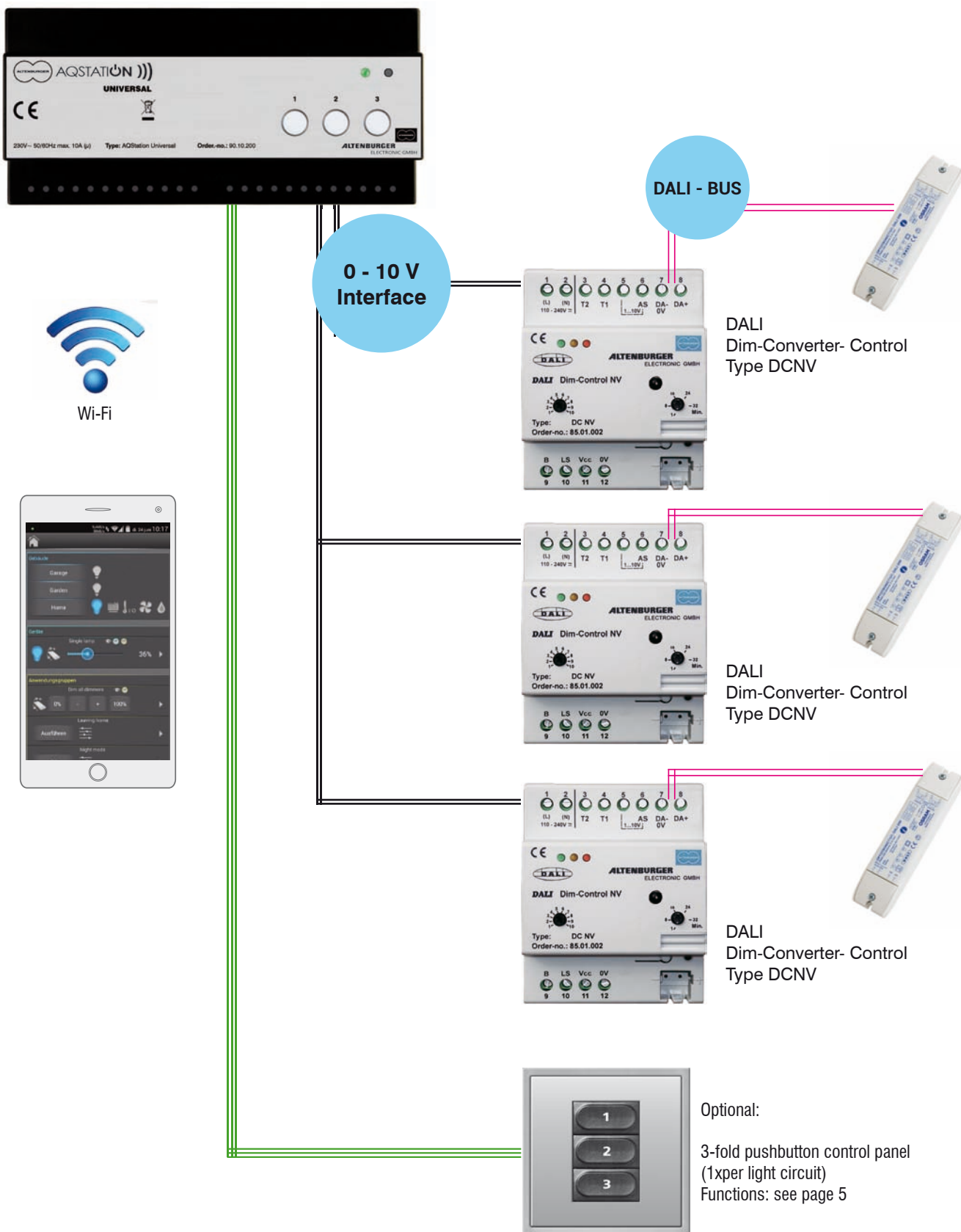
Optional:

3-fold pushbutton control panel (1xper light circuit)
Functions: see page 5

TH-load dimmers up to 2KW, Type TH-0 2KW in the phase-interval controlled mode for high-voltage halogen lamps, low-voltage halogen lamps with electronic transformers, Power LEDs, energy saving lamps, incandescent lamps.

TH 2,3,5 and 8KW load dimmers in the phase-controlled mode for high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, Power LEDs, energy saving lamps, incandescent lamps.

System survey AQStation Universal in combination with the DALI-Dim/Converter Control Type DCNV



Each outlet of the 0-10V/1-10V interface is able to control just one DCNV. If a DCNV is connected to several lighting circuits all of them are commonly controlled.

System survey AQSTATION UNIVERSAL in combination with electronic ballasts or transformers with 1-10V interface



Characteristics:
Identical with the control functions for load dimmers (see page 7 - 12)



0 - 10 V Interface



Electronic ballasts with 1-10 V interface



Electronic ballasts with 1-10 V interface



Electronic transformer with 1-10 V interface



Optional:
3-fold pushbutton control panel
(1xper light circuit)
Functions: see page 5

AQStation Dim 3x 250 W



3x 250 W dimmer

The **AQStation Dim 3x 250W** is particularly used in combination with lamp circuits of rather low load capacities (max. 250W per circuit). The module consequently is among others applicable for residential areas, hotels and restaurants, small scale conference rooms, nurseries and hospitals. The module allows the lighting control for each room from any place in a building by using a suitable router. An LED-indicates where lamps are burning. The modules offer numerous possibilities:

- Forming of lighting scenes being adapted to the respective situations, achieved with a programmable lighting control. Any individual lamp or circuit would be assigned to a scene. Each scene gets its fade time of any required length. Floor standing lamps, table lamps and other mobile lamps can be integrated into the system by using mobile AQStation Dimmer (see page 18).
- Interaction and monitoring of the lighting in nurseries, rest rooms or nursing homes.
- Just by moving the smartphone or tablet the intensity of lighting can be varied. Even han-

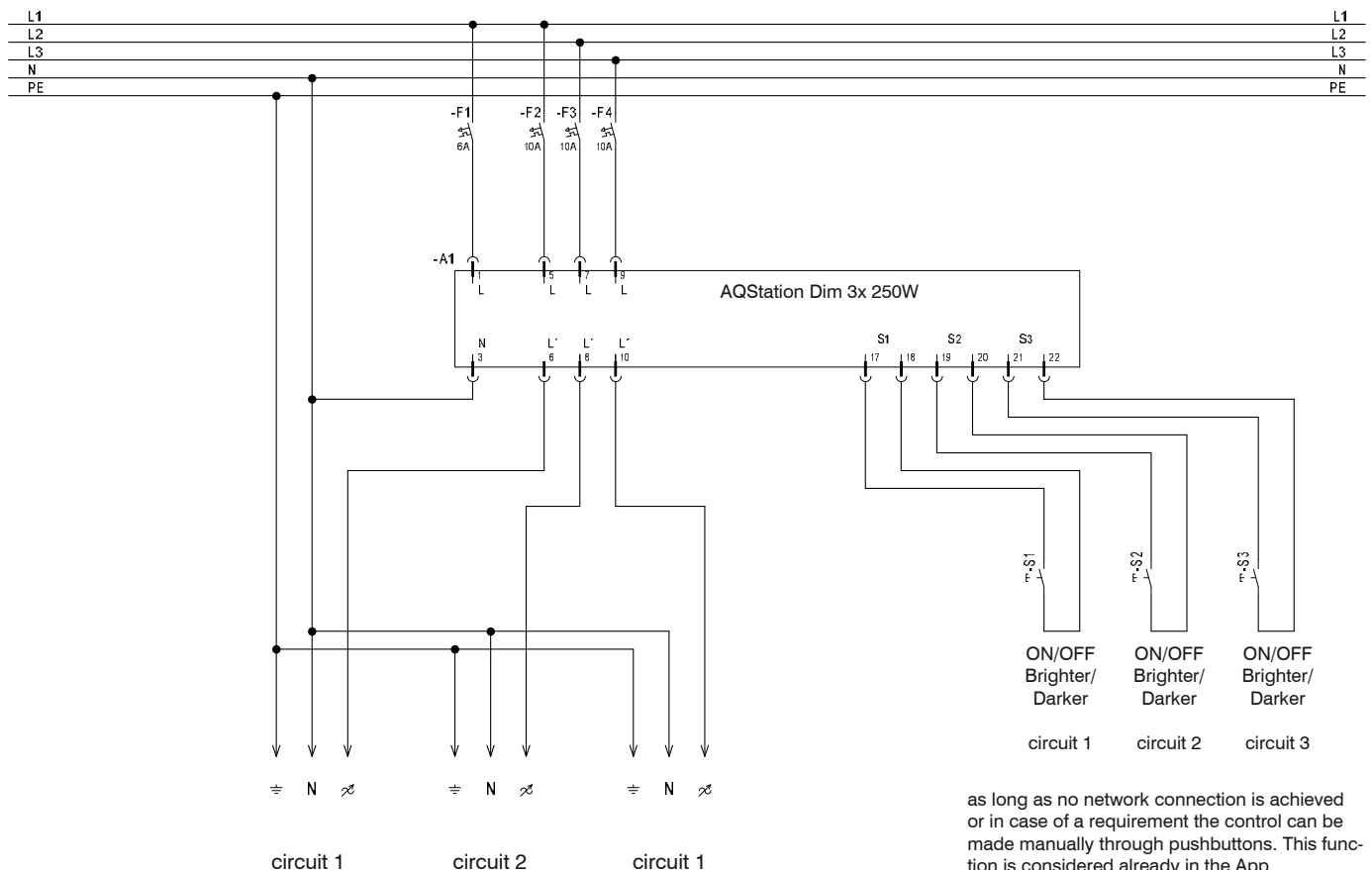
dicapped persons easily can operate a smartphone.

- The dimmers are operating in the phase-interval (trailing edge) controlled mode and are suitable for high-voltage halogen lamps, low-voltage halogen lamps with electronic transformers, Power-LEDs, incandescent lamps and energy saving lamps (230V).
- **Any number of AQStation Dim (3x 250W) can be switched in parallel. Such any number of lighting circuits can be operated and arranged in groups or scenes, with fade times, time settings, arrangement of time sequences etc. The non-limited number of modules also makes the control of large areas with numerous lamp circuits like conference rooms, auditoriums, lobbies, multi-purpose halls etc. possible.**

Technical Data - AQStation Dim 3x 250 W

Designation	AQStation Dim 3x250W
Type	AQS Dim 250W
Order-Number	90.10.100
Supply voltage	230V~50 Hz, DC not permitted
Protection	external 6A
Mounting Form	Din rail housing
Dimensions, weight	WxHxD=175 x 83,5 x 58 mm, approx. 200 gr
Internal displays	1x LED green (Wi-Fi state) 3x LED green (switch state) at pushbuttons
Internal controls	3x pushbuttons for the manual control (ON/OFF, BRIGHTER/DARKER) 1x pushbutton reset (setting at works, including Wi-Fi)
Wi-Fi	2,4 GHz 802.11n
LAN	RJ45, 100-MBit-Ethernet (Fast Ethernet)
Protection class	II (protective isolation)
Protective type	IP 20
Contamination degree	2 (dry not conducting)
Dimmer outlet	250W/VA (max. ~ 1,6A) - electronic current limitation (switch on, overload, shortcircuit current) - dim down when exceeding the maximum permissible temperature - switching off at impermissible high temperature (temperature-protection, permanent) - switching off when impermissible high current (microfuse, permanent) - switching off at impermissible voltage peaks (inductive load) switching ON again after disconnection of supply voltage
Load contact (μ)	max. 250W/VA (max 1,6 A~) ohmic load, capacitive load (incandescent lamps, electronic transformers)
Qualification	CE, RoHS

Wiring diagram - AQStation Dim 3x 250 W



AQStation Switch 3x 10 A



3x 10A switch

The **AQStation Switch 3x 10A** is a Wi-Fi switch module with 3x10A switch outlets. It switches all kind of lamps, suitable electro drives and electrotemperature devices within the respective load capacities.

As well as all other AQStations also this modules offer time and time interval controls. An LED indicator displays the state of control. The App offer a number of switch possibilities.

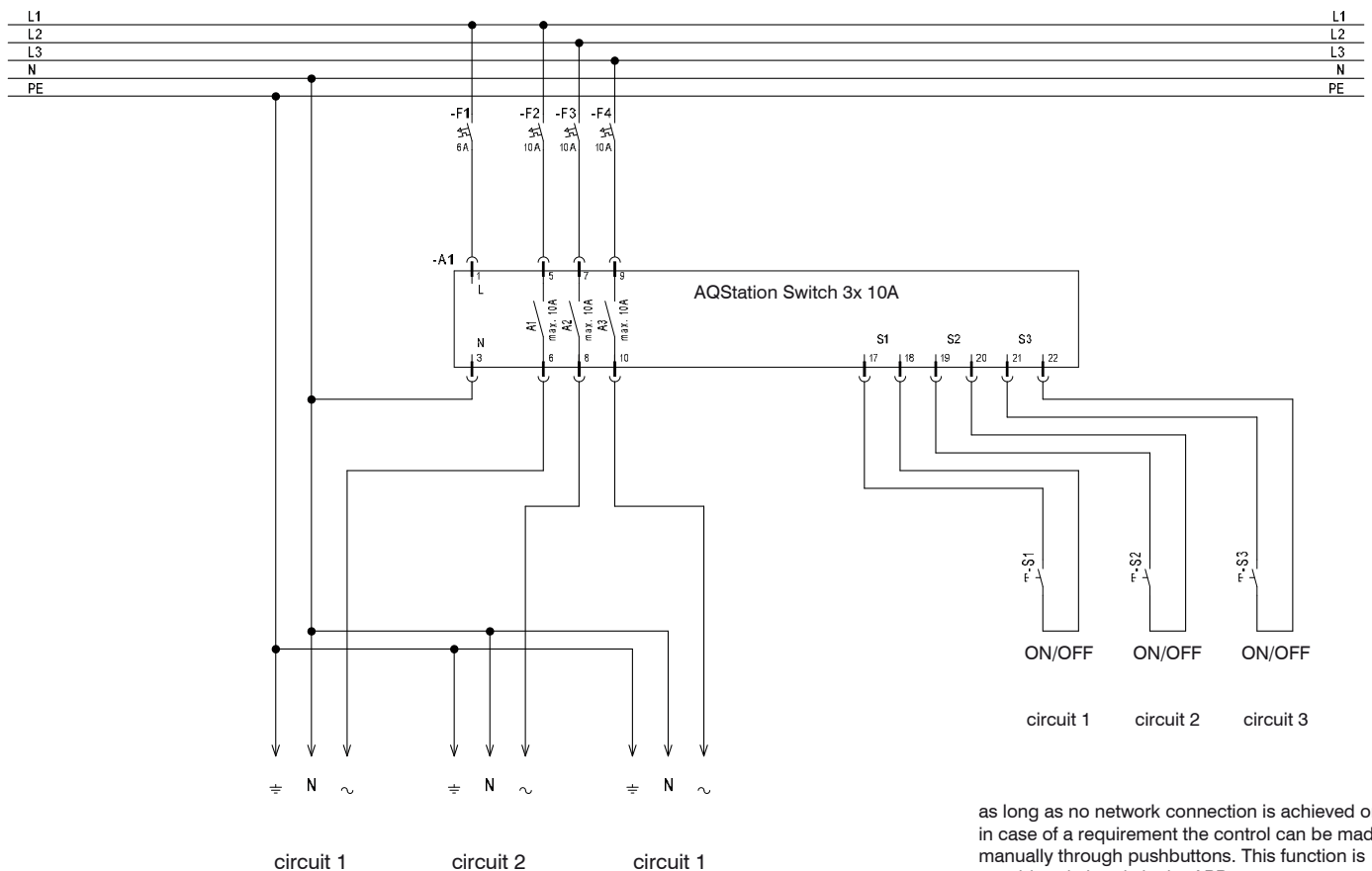
With the parallel application of additional switch stations nearly any number of operations can be realized.

The switch modules offer – as well as the dim-modules - to replace existing conventional circuits through Wi-Fi controls.

Technical Data - AQStation Switch 3x 10 A

Designation	AQStation Switch 3x10A
Type	AQS Switch 3x10A
Order-Number	90.10.000
Supply voltage	230V~50-60 Hz, DC not permitted
Protection	external 6A
Mounting Form	Din rail housing
Dimensions, weight	WxHxD=175 x 83,5 x 58 mm, approx. 200 gr
Internal displays	1x LED green (Wi-Fi state) 3x LED green (switch state) at pushbuttons
Internal controls	3x pushbuttons for the manual control (ON/OFF) 1x pushbutton reset (setting at works, including Wi-Fi)
Wi-Fi	2,4 GHz 80211n
LAN	RJ45, 100-MBit-Ethernet (Fast Ethernet)
Protection class	II (protective isolation)
Protective type	IP 20
Contamination degree	2 (dry not conducting)
Load contact (μ):	3x max. 10A at 230V ohmic load
Qualification	CE, RoHS

Wiring diagram - AQStation Switch 3x 10 A



Mobile AQStation Dim 350W



The **Mobile AQStation Dim 350W** is the Wi-Fi connection between a socket (230V, 50Hz) and one or more mobile lamps to be connected with their plugs to the Wi-Fi socket or connection plug boards.

The 350W dimmer in the AQStation works in the phase-interval controlled mode (trailing edge mode). It is suitable for high-voltage halogen lamps, power LEDs, energy saving lamps (230V), incandescent lamps and low-voltage halogen lamps with electronic transformers.

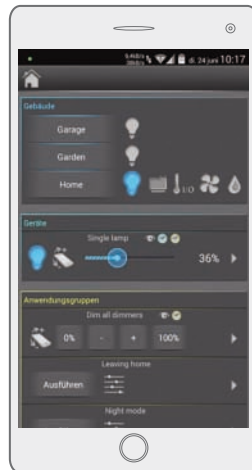
The connected lamps are controlled within the Wi-Fi net with smartphones and tablets. With the respective App and the connection of several AQStations at different sockets and lamps a multitude of lamps can be combined to different lighting scenes.

When using the respective router lamps can be connected in any distance from smartphones or tablets. Any lamp gets its own identification. A feedback indicates the state of control. Time controls or time processes are extending the dimmer functions. Such calm light conditions in nurseries, rest rooms, in kindergardens or nursing homes can be executed through a gradual reduction of the light intensity. In the plant breeding artificial day-/night intervals with respective dawn conditions can be arranged. The same applies for animal breeding stations.

Technical Data

Designation	AQStation Dimmer
Type	AQS Dimmer
Order-No.	Black: 90.00.100 White: 90.00.101
Supply voltage	230V~ 50Hz, DC not allowed
Protection	external 16A
Design	combined socket / plug-in module
Dimensions, weight	WxDxH= 121x66x56mm, approx. 200g
Internal indication	1x LED green (Wi-Fi state) 1x LED green (switch state) at the smartphone or tablet
Internal operation parts	1x pushbutton for the manual control (ON/OFF, BRIGHTER/DARKER) 1x pushbutton for reset (factory setting, incl. Wi-Fi)
Wi-Fi	2,4 GHz 802.11n
Operating temperature	0°C ... +30°C
Power input	< 2W
Protection class	I (electrical grounding)
Protection category	IP 20
Degree of contamination	2 (dry, not conducting)
Dimmer outlet	350W/VA (max 1,6A~) - electronic current limitation (inrush current-, overload-, short circuit current) - power reduction at exceeding the maximum permissible temperature - switch off at impermissible high temperature (temperature protection, permanent) - switch off at impermissible high current flow (microfusing, permanent) - switch off at impermissible high voltage peaks (inductive load), reclosing after isolation of the supply voltage
Load capacity	max.350W/VA (max.1,6A~) ohmic, capacitive load (incandescent lamps, electronic transformers)
Qualification	CE, RoHS

Mobile AQStation Switch 16A



The **Mobile AQStation Switch 16A** as well is a Wi-Fi connection via a socket and plug to one consumer loads. These can be house or kitchen equipment, fans, window and door controls and lighting of all kind.

In combination with adequate routers the devices to be controlled can be placed in any distance of the Wi-Fi controllers. A feedback indicates the state of control.

Technical Data

Designation	AQStation Switch
Type	AQS Switch
Order-No.	Black: 90.00.000 White: 90.00.001
Supply voltage	230V~ 50Hz, DC not allowed
Protection	external 16A
Design	combined socket / plug-in module
Dimensions, weight	WxDxH= 121x66x56mm, approx. 200g
Internal indication	1xLED green (Wi-Fi state) 1xLED green (switch state) at the smartphone or tablet
Internal operation parts	1x pushbutton for the manual control (ON/OFF) 1x pushbutton for reset (factory setting, incl.Wi-Fi)
Wi-Fi	2,4 GHz 802.11n
Operating temperature	0°C ... +30°C
Power input	< 2W
Protection class	I (electrical grounding)
Protection category	IP 20
Degree of contamination	2 (dry, not conducting)
Load contact L' (μ)	internal relay contact (closing contact), internally connected with L
Load capacity	max.16A~ ohmic load
Qualification	CE, RoHS

