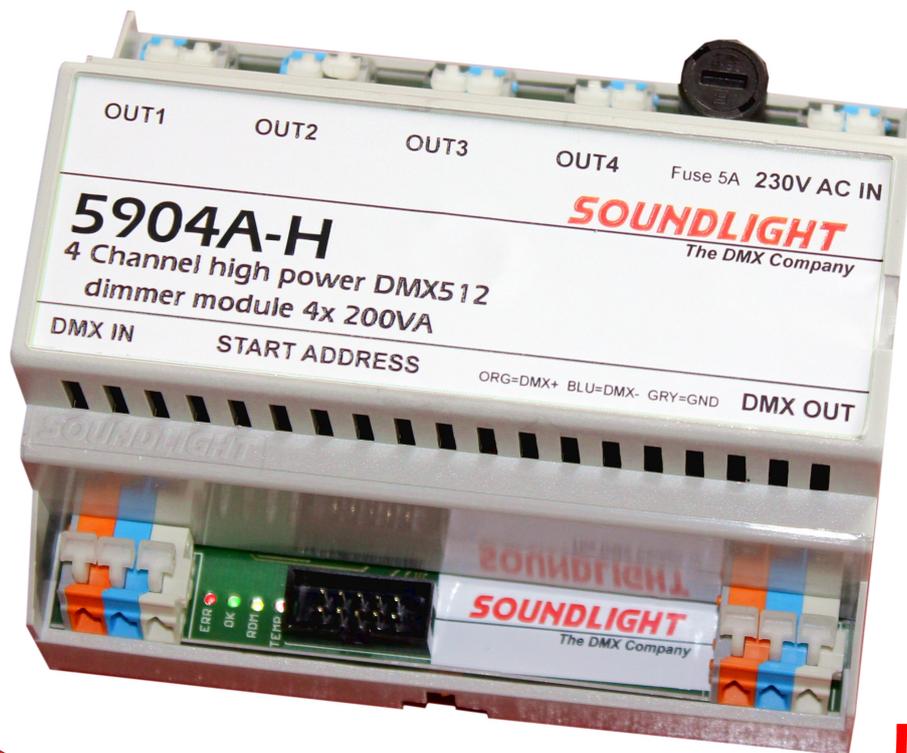


OPERATING MANUAL

DMX Dimmer 5904A-H

VERSION Mk1.3



RoHS
compliant

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SOUNDLIGHT *The DMX Company* Bennigser Strasse 1 D-30974 Wennigsen Tel. 05045-912 93-11

Thank you for choosing a SOUNDLIGHT device.

The SOUNDLIGHT DMX Dimmer 5904A-H is a universal tool to dim incandescent lights due to USITT DMX512/1990, ANSI E1-11 DMX512-A, DIN 56930-2 and ANSI E1-20 DMX RDM control.

- **universal protocol decoding**
Recognizes all variants of the protocol as defined by USITT / ESTA / DIN
- **future-proof**
The unit is software controlled and can easily be adapted to any change in protocol definition.
- **signal feed-thru**
The DMX data input is fed to DMX THRU terminals. This allows easy integration in complex multi-device wirings.
- **simple supply**
The power supply is from standard voltage 230V AC.
- **signal loss**
In the case of a loss of the drive signal a pre-definable action will be taken.
- **cost-effective**
The SOUNDLIGHT 5904A-H is a cost-effective solution for many purposes.

General

The DMX dimmer 5904A-H is ideally suited for all kinds of high voltage incandescent lights, but can also be used with dimmable LED replacement lamps. Please see chapter "Incandescent and LED lamps" below for more information.

Nomenclature

These symbols are used within this manual:



DANGER ! May cause harm to user and/or equipment



INFO: How to setup your device



INFO: Status information

Unpacking

Please unpack carefully and check that all items are intact. When leaving our factory, the interface has been in good condition. In case of damage during transport please notify the carrier immediately. Please note that specific deadlines may apply to claim transport damages. We will only be able to replace goods damaged during transit if we receive a written and signed confirmation issued by the freight forwarder. Make sure you receive such a document and send to us a.s.a.p.

When unpacking, you should identify these items:

- * the interface 5904A-H RDM
- * this manual

Please note that a start address programming adaptor (3000P) is NOT included with DIN rail mount devices. All settings can be performed using DMX RDM. Alternatively, a programming adaptor, which can be used to set DMX start address, DMX personality and DMX HOLD mode, must be ordered separately. If you already have it, there is no need to buy again: the start address board can be used for all our DMX interfaces, pcb and DIN rail mount alike. See chapter „Accessories“.

Installation

The dimmer 5904A-H clips directly onto standard DIN rail 35mm. First clip onto the upper rail, then gently press down until snap-in mechanism locks. To unmount, gently pull the yellow lever using a suitable screwdriver and remove the dimmer.

Connectors

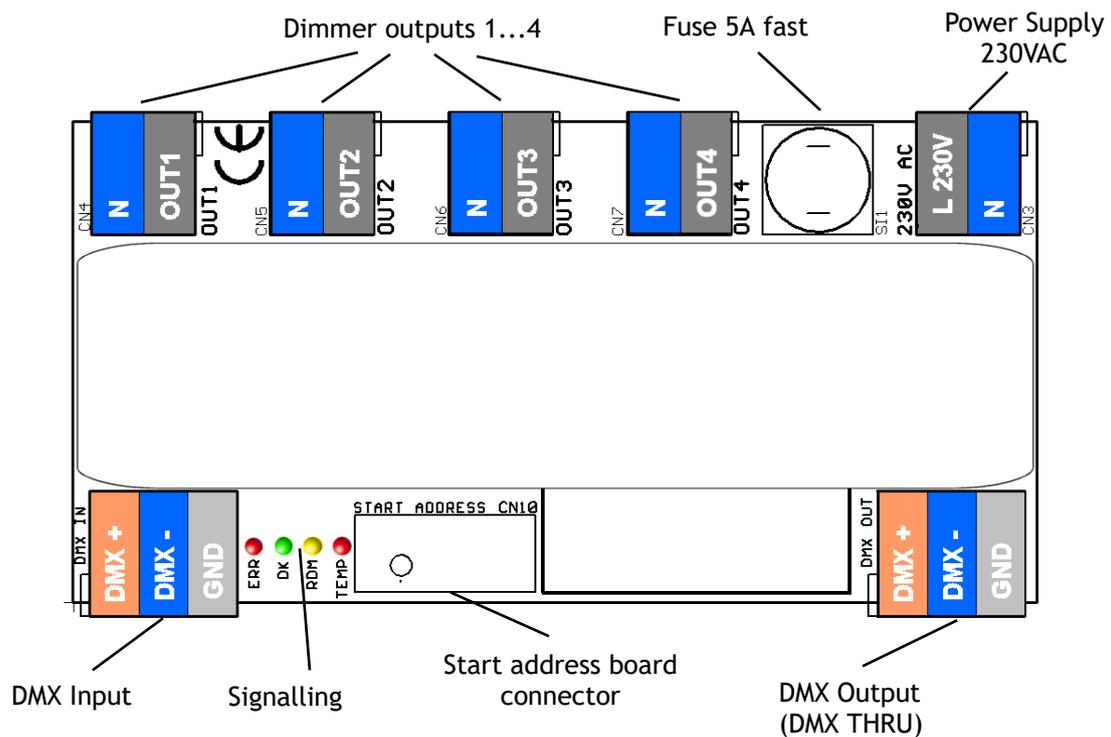
The dimmer 5904A-H Mk1 consists of 7 terminal blocks. Terminals are based on screwless WAGO cage clamp technology, which prevents loose connections and guarantees safe electrical contact at all times. Use a standard **flat blade** screw driver and press the lever to open the terminal, insert wire and release. Do **not** use a philipps or pozidrive screwdriver to prevent damage !. Though both, solid and stranded wires may be used we recommend to use stranded wires in combination with isolated ferrules whenever possible.



Please refer to the connector location outlined on page 4.

The dimmer 5904A-H consists of these inputs and outputs:

CN1, CN2	DMX INPUT (cage clamp), DMX OUTPUT (THRU)	
1	grey	Screen, GND
2	blue	-DMX
3	orange	+DMX



CN3 POWER SUPPLY 230V AC (cage clamp 2-polig)

Black L 230VAC 50 Hz
blue N

CN4-7 Power Output (cage clamp 2-polig)

Black L 230VAC 50 Hz
blue N

CN10 Address Board Connector (Pin Header 10pin)

to connect a optional start address board 3000P, 3003P, 3005P or 3006P

Signal Indicators

The status of the dimmer module is signalled with four indicator LEDs.



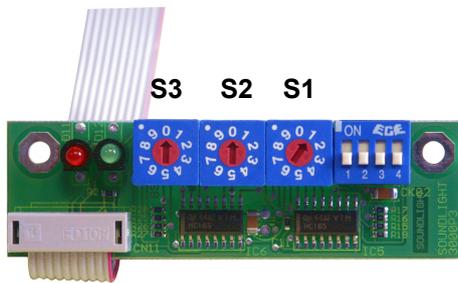
green: OK
A valid DMX control signal is present.

red: ERROR
normally: off
blinking: no valid DMX signal present

Yellow: RDM
Activated when a RDM programming has taken place. Eventually connected mechanical address switches (3000P) will be deactivated when this indicator comes on.

Red: Temp
Overtemperature Indicator. The dimmer will reduce total power automatically.
Recommendation: Reduce total load or increase ventilation.

DMX Start Address



The start address can be set by DMX RDM using the START_ADDRESS command (PID \$00F0). The start address defines the address of the first data slot used by the decoder. Valid start address settings include start addresses 001 thru 512- (number of slots used).



When using a mechanical start address board 3000P the coding switches give the start address directly. No binary conversion as needed with DIP switches necessary.

- S1: Ones
- S2: Tens
- S3: Hundreds

When setting the address to 000 (invalid setting for DMX data reception), all outputs will be set to „off“ regardless of DMX data. .

The decoder can be operated with or without start address board connected. **Please note that switches will get disengaged and the respective settings are overridden when programming is done via DMX RDM. To re-engage the switches, set the hundreds position to „9“ temporarily and wait for a programming cycle to complete.** A programming cycle is indicated by the red and the green LED blinking four times alternatively.

DMX HOLD Mode

The DMX HOLD mode defines the behaviour at signal loss. Signal loss is defined as loss of a valid DMX control signal for more than 1 second. There are three options present, which can be selected by RDM command DMX_HOLD (PID \$80F1):



Parameter Setting

00	all outputs to OFF	
01	all outputs to ON	
02	keep last look	All outputs will remain at the last valid level setting.

Setting the HOLD mode can also be performed using the DIP switches onboard the 3000P address board.

DIP-SWITCH 1:

HOLD MODE

keeps the actual level at signal loss

- ON: HOLD Mode activated („keep last look“)
- OFF: DIP switch 2 active

DIP-SWITCH 2:

SAFETY LEVEL

New level at signal loss when no HOLD mode activated

- ON: all outputs go to maximum level
- OFF: all outputs go to minimum level

DMX Personality

The different operating modes are also known as „DMX PERSONALITY“. The DMX personality can be set by DMX RDM using command DMX_PERSONALITY (PID \$00E0) or a external address board. There, DIP switches 3 and 4 will set the personality.



DIP-SWITCH 3: Personality

DIP-SWITCH 4: Personality

S3	S4	Personality	Description
OFF	OFF	1	4-channel mode
OFF	ON	2	4-channel mode plus master
ON	OFF	3	2-channel mode (1/2 and 3/4)
ON	ON	4	1-channel mode (all outputs synchronously)

When using a start address board the set start address and personality, the address board may remain connected or can be detached at your option. All settings are retained in nonvolatile memory within the host device 5904A-H.

Incandescent and LED Lamps

The 5904A-H is intended for use with high voltage incandescent lamps. Retrofit LED lamps can be used, provided that they are allowed for use with dimmable equipment. Non-dimmable LED replacement lamps can get **damaged** or even **explode** when operated with dimmers. The 5904A-H uses leading edge dimming technology.



Even though LED lamps are declared dimmable, the result or overall behaviour may not be satisfying. Since LED replacement bulbs contain electronic circuitry to maintain constant LED current with varying supply voltage, this behaviour is strictly adverse to attempting a reduction of light output with dimming.

We recommend to use **Philips MasterCandle 4W Order Code 9290002718B** (pictured left), which allow smooth dimming down to zero. Each output can be loaded with up to 4 LED lamps.

Flicker-free or smooth performance with other types of replacement bulbs cannot be guaranteed.

Ventilation

The dimmer 5904A-H produces some heat and needs free air ventilation. Please make sure that the ventilation grilles are not blocked, fresh air is available at all times and exhaust air can escape unobstructed. Overtemperature will be signalled by the TEMP Led indicator and cause the dimmer to reduce the dimming level automatically until the maximum temperature is met. Ventilation must be optimized if the TEMP indicator comes on frequently.

Technical Data

Dimensions:	110 mm x 86 mm
Mounting:	DIN rail 35mm, width 6.5 units
Power supply:	230V AC 50 Hz max. 800VA
DMX IN:	USITT DMX512/1990, DIN56930-2, DMX512-A: 1 Unit Load ANSI E1-20 DMX RDM compatible
Output:	0...230V AC, max. 200VA resistive load or dimmable LED replacement bulbs max. 50W total
Operating temperature:	0...+50°C
Storage Temperature:	-10...+70°C
Order Code:	5904A-H

CE CONFORMITY



This DMX interface is microprocessor controlled and uses high frequency (8 MHz quartz). The interface has been tested in our EMC lab to comply with EN55015 and IEC65/144.

To ensure the best performance regarding radiated and conducted emissions we suggest to install the interface in a closed, conductive (e.g. metal) housing, which must be connected to GND.

Please make sure that shielded data cable is used and the shield is connected properly to the GND pin. Shield must never make contact to other signal lines.

FCC STATEMENT

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

FCC Caution: Any change or modification to the product not expressly approved by SLH could void the user's authority to operate the device.

DISTURBANCES

If a trouble-free operation cannot be guaranteed, disconnect the relay card interface and secure it against unwanted operation. This is especially necessary, when

- the unit has visible damages;
- the unit does not operate;
- internal parts are loose;
- connection cables show visible damages.

LIMITED WARRANTY

This DMX interface is warranted against defects in materials and workmanship for a period of 12 months, beginning with the date of purchase. The warranty is limited to repair or exchange of the hardware product; no further liability is assumed. SOUNDLIGHT is not responsible for damages or for loss of data, sales or profit which arise from usage or breakdown of the hardware product. In Germany, SOUNDLIGHT will repair or replace established defects in hardware, provided that the defective part is sent in, freight paid, through the responsible dealer along with warranty card and/or sales receipt prior to expiration of warranty.

Warranty is void:

- when modifying or trying to repair the unit without authorisation;
- modification of the circuitry;
- damages by interference of other persons;
- operation which is not in accordance with the manual;
- connection to wrong voltage or current;
- misuse.

SERVICE

There are no parts within the DMX decoder 5904A-H which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.

END OF LIFETIME



When the useful lifetime of this product has been reached, it must be disposed of properly. Electronic devices must not be placed in domestic waste. Consult your local authorities to find the nearest collection point of used electric and electronic devices. SOUNDLIGHT is a WEEE registered company (Reg No. DE58883929).

INTERNET-HOTLINE

Please check our internet domain <http://www.soundlight.de> for new versions, updates etc. If you have any comments which may be worth considering, please send a message to **support@soundlight.de**. We will check your message and reply accordingly.

Updated and foreign language manuals can be downloaded from www.manuals.soundlight.de

The 5904A-H product page can be found at www.soundlight.de/produkte/5904a-h

ACCESSORIES

To set the DMX start address and change the operating parameters, a DMX RDM controller or a start address board is needed. These boards are optionally available:

DMX START ADDRESS BOARD 3000P

www.soundlight.de/produkte/3000p

Three address BCD switches and a DIP switch to set operating parameters. This is the standard board, which is compatible with all our decoders (both PCB and DIN rail mount)

DMX START ADDRESS BOARD 3006P

www.soundlight.de/produkte/3006p



Start address board with LCD display and rotary encoder to set the DMX start address. Address is retained in non-volatile onboard memory.

DMX RDM CONTROLLER GET/SET USBRDM-TRI

www.soundlight.de/produkte/usbrdm-tri

Intelligent controller software for use on Windows machines. Complete with USB connected interface connecting to DMX responders or introduce RDM control when working with other DMX control gear.

Start address boards are not contained with DIN rail mount decoders and must always be ordered separately!

DMX RDM

All information regarding DMX RDM can be found on our RDM Homepage:

<http://www.rdm.soundlight.de>

A RDM manual and all product manuals can be downloaded from our manuals site:

<http://www.manuals.soundlight.de>

Find the dimmer product page at:

<http://www.soundlight.de/dimmer>