Technical Data / Instruction Manual

DMX512-16B
Article no. 80027500

DMX512 Interface Module

ISYGLT®

Directory of Content

1. Notes on documentation

These instructions are intended for qualified personnel who are familiar with the assembly, installation and operation of the ISYGLT system. It is essential that you read these operating instructions through before commissioning and keep them accessible for further use.

SEEBACHER cannot accept any liability for damage or malfunctions resulting from failure to observe these instructions.

1.1. Retention of documents

These instructions and all other applicable documents are part of the product. They must be handed over to the device operator. The operator will store the documents so that they can be made available if necessary.

1.2. Symbols used

Observe the following safety and other instructions in the manual:

☞ Handling instruction
The hand indicates that you should carry out an act.

⚠ Danger!
Immediate danger to life!

⚠ Attention!
General notes, useful information and special features

2. Safety instructions

Observe the following general safety instructions when installing and commissioning the device:

Assembly and installation of the ISYGLT module may only be carried out by a qualified electrician. Other activities in connection with the ISYGLT module, such as assembly and installation of system components with tested standard plug connections, as well as operation and configuration of the ISYGLT module may only be carried out by trained staff.

Observe the electrical installation regulations of the country in which the device is installed and operated as well as its national accident prevention regulations. In addition, observe internal company regulations (work, operating and safety regulations).

Before working on the ISYGLT module system, it must be disconnected from the power supply and secured against being switched on again. After completion of the assembly, installation and maintenance work, an electrical check must be carried out! Check all protective conductor connections and the voltages at all connection plugs as well as at each individual module slot.

2.1. Intended usage

The module is exclusively suitable for regulation (control) in conjunction with ISYGLT system components. Any other use is not intended. The limit values stated in the technical data must not be exceeded under any circumstances. This applies in particular to the permissible ambient temperature range and the permissible IP protection type. For applications with a higher required IP protection type, the ISYGLT module must be installed in a housing or a cabinet with a higher IP protection type.

2.2. Predictable mishandling

The module must not be used in the following cases in particular:
• explosive area
When operating in explosive areas, sparking can lead to deflagration, fire or explosions.

2.3. Safe handling

This module corresponds to the state of the art and the recognised safety regulations. Each device is tested for function and safety before delivery.

Only operate this module in perfect condition in accordance with the operating instructions, the applicable regulations and directives of the country in which the device is installed and operated, and the applicable safety and accident prevention regulations.

The module is intended for distributor installation on a 35mm DIN rail according to EN 60715 in corresponding standard housings. Extreme environmental conditions impair the function of the product.
• Protect module from shocks
• Use module indoors only
• Protect module from humidity

In addition to these safety instructions, you must also observe the special safety instructions listed in the individual chapters for the individual acts.

2.4. Qualification of staff

Assembly, commissioning, operation, maintenance, decommissioning and disposal may only be carried out by qualified staff. Work on electrical parts may only be carried out by a trained electrician in accordance with the applicable regulations and directives. Other activities in connection with the ISYGLT module, such as assembly and installation of system components with tested standard plug connections, as well as operation and configuration of the ISYGLT module may only be carried out by trained staff.

2.5. Changes to the product

Unauthorized modifications to the ISYGLT module which are not described in this or the other applicable instructions can lead to malfunctions and are prohibited for safety reasons.

2.6. Use of spare parts and additional equipment

The module may be damaged if unsuitable spare parts and additional equipment are used. Only use original spare parts and additional equipment from the manufacturer.

2.7. Liability notes

SEEBACHER accepts no liability or warranty whatsoever for damage and consequential damage caused by non-compliance with the technical regulations, instructions and recommendations. SEEBACHER shall not be liable for any costs or damage incurred by the user or third parties as a result of the use of this equipment, in particular improper use of the equipment, misuse or malfunction of the connection, malfunction of the equipment or connected devices.

SEEBACHER accepts no liability for printing errors.

3. Warranty ⚠

We provide warranty within the framework of the statutory provisions. These are limited to the intended use of the module and refer to the repair or replacement of the ISYGLT module. Please send the device with an attached error description to our company address given below.

4. Declaration of Conformity ⚠

The valid declaration of conformity for the module can be requested from us free of charge by stating type and article no. as follows:
By phone: +49(0)8041/77776
By fax: +49(0)8041/77772
By mail: info@seebacher.de

5. Service address

Seebacher GmbH
Marktstrasse 57
83646 Bad Tölz
GERMANY

Phone: +49 (0) 80 41 / 77 77 6
Fax: +49 (0) 80 41 / 77 77 2

www.seebacher.de
info@seebacher.de

6. Maintenance / Care / Disposal ⚠

The product is maintenance-free. It is sufficient from time to time to remove any dust deposits. This may only be done in a power-free state.

Disposal (European Union)
Do not dispose of product in household waste! Products with this symbol

must be disposed of according to the EU directive WEEE 2012/19/EU on waste electrical and electronic equipment at the local collection points for waste electrical and electronic equipment!

7. Storage ⚠

The product must be stored in a dry place, protected from dirt and mechanical stress. After damp or dirty storage, the product may only be operated after a condition check by an authorised electrician.

8. Assembly ⚡

(Only by certified electrician!)
Mount the product only when it is in a power-free state!
Switch off the power supply, check that there is no voltage, secure against being switched on again!
The device may only be operated at voltages according to the technical data and loaded with the currents defined therein. Only use suitable equipment (system power supplies).

Check that there are no loose parts in the product. If this is the case and the presence of such parts is not explicitly described, do not install or commission the product.
Only use suitable cables and fixing screws.

Assembly site
• The product can be installed in any position in a casing to be determined by the electrician (junction box, distribution box, switch cabinet). Observe maximum ambient temperature!

Assembly steps
(Read completely before assembly!)
• Mount the device in a suitable casing.
• Make the electrical connections according to the wiring diagram.
• Configure the DIP switches according to your requirements.
• Only after a complete connection and a visual test by a qualified electrician, the system may be put under voltage.

9. Product description

Basics DMX

The basic philosophy of the DMX-BUS consists of a master (usually a control desk) and several slaves (dimmer, scanner, colour changer...). It is physically designed for 32 participants. If more participants are connected, a repeater or booster should be included.

As the designation DMX512 already indicates, up to 512 channels (8-bit values) can be transmitted. The required number of channels depends on the connected device. Dimmers require one DMX channel per dimming channel. Scanners or washlights require one channel per function (X, Y, zoom, shutter, colour, gobos, iris, effects...). If several masters are to be operated on one DMX-BUS, a merger is required. This merger brings together two or more DMX-512 masters (DMX-IN) to a common DMX-BUS (DMX-OUT). Here the higher level each per channel is forwarded.

ISYGLT DMX512-16B

With the DMX module, it is possible to connect building and stage technology (theatre technology) with each other. Depending on the application, the ISYGLT DMX512-16B module can be used as a DMX master, DMX slave, DMX / ISYGLT merger or DMX repeater (booster). Of course, combinations of these applications are also possible.

New 8/2016, version „V2"

The 16 dimming channels of ISYGLT can now be output to up to 256 DMX addresses. This was developed especially for light installations with many DMX terminals. In the hall mode the control is done by ISYGLT in grouped areas and in the show mode the single channels can also be accessed via a Merger, e.g. as a pixel matrix.

Applications:

DMX master

The ISYGLT system controls DMX devices such as dimmer packs, colour changers, scanners, washlights etc. with up to 16 DMX channels (expandable with further modules).

DMX slave

There is a stage system with DMX control desk. It should also be possible to control the lighting in the hall from the control desk. For certain events, however, the lighting needs to be able to operate autonomously by means of lighting scene control. The ISYGLT DMX512-16B module is used to read in and process up to 16 DMX channels (which can be extended by further modules).

DMX / ISYGLT merger

Up to 16 DMX channels can be transmitted with the ISYGLT DMX512-16B module. At the same time, it can be parameterised so that the remaining channels are passed through 1:1 from DMX-IN to DMX-OUT. To be able to realise this with other systems, you would need an additional merger. However, our module has integrated this on the software side. Thus several modules can be operated in series to increase the number of channels to be controlled by 16 each.

DMX repeater

The DMX-BUS is intended for up to 32 participants. The ISYGLT-DMX512-16B module can be one of 32 participants (DMX-IN). In turn, 32 new participants can be connected to the output.

DMX master merger slave application

The ISYGLT DMX512-16B module can read in up to 16 DMX channels from a lighting control desk. These can be further processed in the master (saving of scenes, evaluation of threshold values, etc.). Via software, it is then decided whether these are output 1:1 again at DMX-OUT, or whether scene control acts on the other modules from here. At the same time, the channels not used in the ISYGLT system but transmitted by the lighting control desk can be passed through. The integrated merger function allows further ISYGLT DMX512-16B modules to be operated in series at any time.

DMX special configurations

With the ISYGLT DMX512-16B module, all usual DMX-BUS configurations are possible! You can connect any mergers, boosters and other equipment with the module.

The DMX512-16B module uses 6 module addresses (4x DA-04 and 2x AD-08T) in the master. The DIP switch is used to set the address of the first DA-04 module.

Function displays

🔴	LED (red)	LED lights up when module OK and operating voltage is applied. LED flashes if the module is not parameterised or if parameters are defective.
🟡	LED Operating voltage / BUS (yellow)	LED lights up if the BUS is detected. LED flashes to indicate correct communication with the master via the BUS.
🟢	LED DMX-IN (green)	LED is off when no DMX signal is received. LED signals the reception of a valid DMX-512 signal by fast flashing (the LED is toggled at each start of the reception packet)

Connections
• 1 connection for the subnet (BUS A and B, RS-485)
• 1 connection for the operating voltage (Ub, 0V)
• 1 connection for DMX-IN (GND, DATA-, DATA+)
• 1 connection for DMX-OUT (GND, DATA-, DATA+)
• 2 P-COM connections (subnet and operating voltage)

Design
• plastic housing light grey, can be snapped onto 35mm DIN rail 3 HP

Special function DIP switches
DIP switch 8-pole (inside)
• S1 - no function (set the switch to OFF)
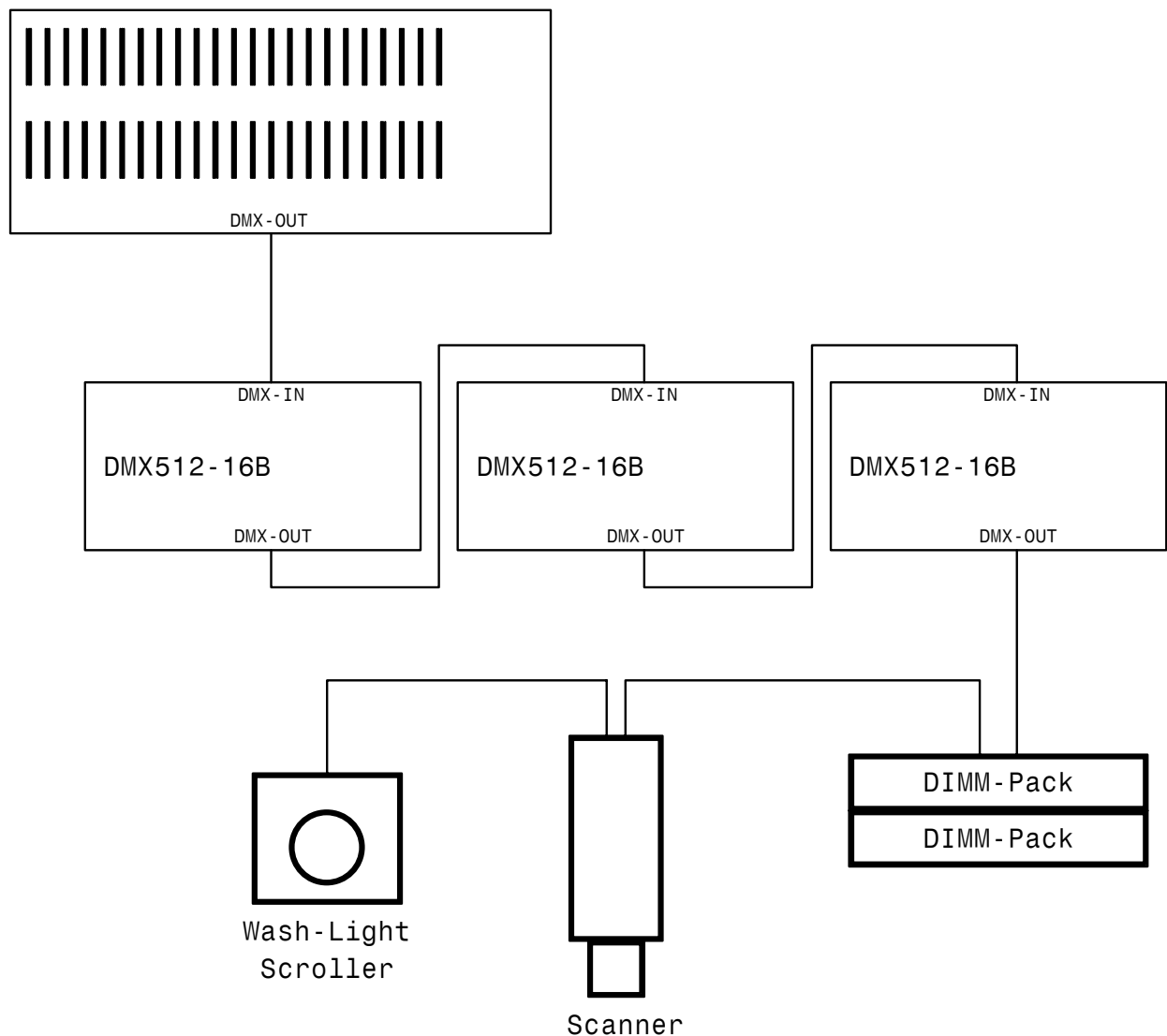• S2 to S8 - module address ISYGLT

DIP switch 2-pole (outside)
• Left = terminating resistor 120 Ohm for DMX-IN
• Right = terminating resistor 120 Ohm for DMX-OUT

Functional arrangement 1

All DMX512-16B modules are arranged in series. No merger is required, because each module only changes the channels assigned to it and passes all others through 1:1.

Note: The signal is delayed by one cycle (approx. 40ms) per module.
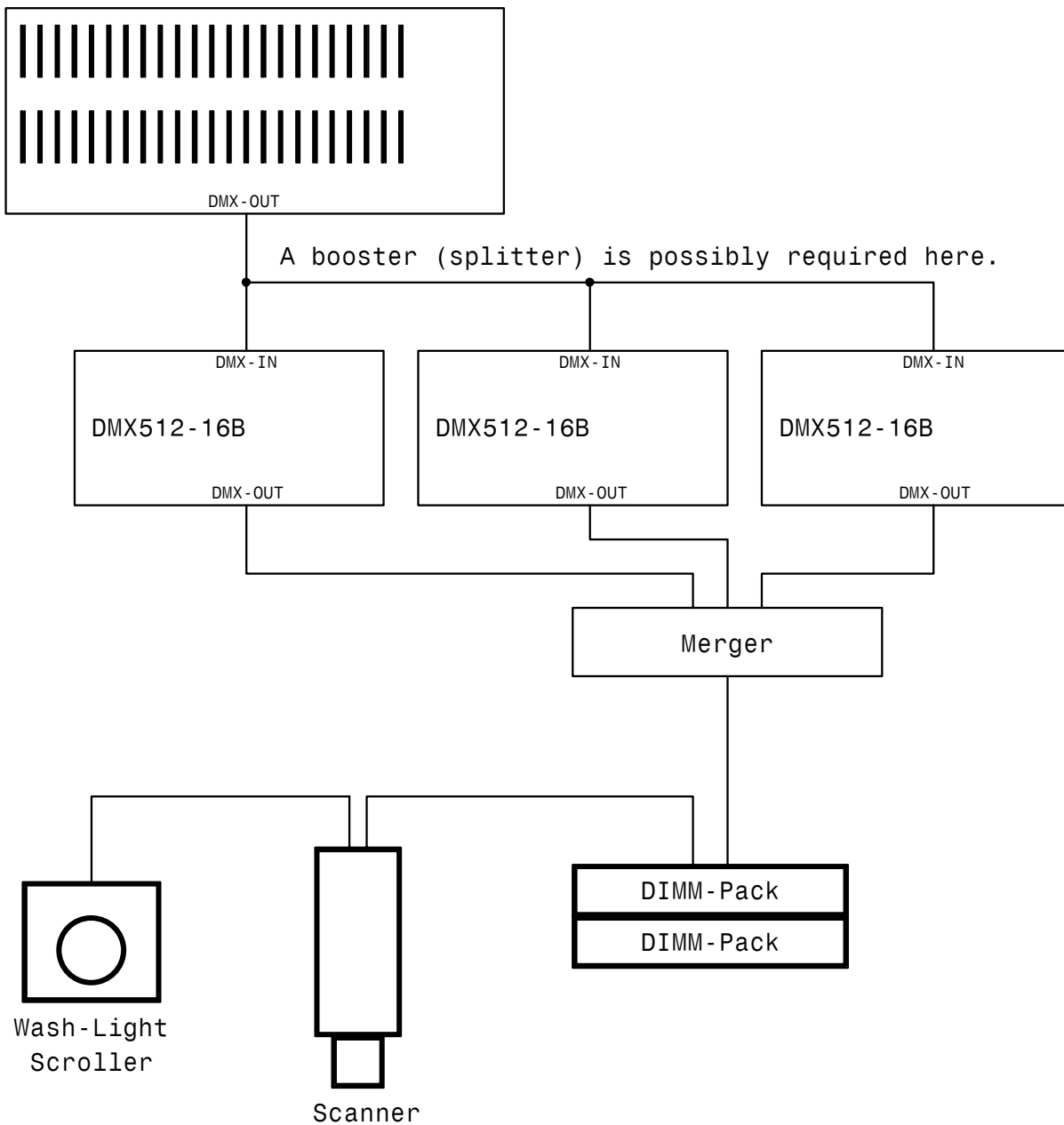
DMX-512 control panel

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DMX-OUT
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DMX-IN	DMX-IN	DMX-IN
DMX512-16B	DMX512-16B	DMX512-16B
DMX-OUT	DMX-OUT	DMX-OUT

Wash-Light
Scroller

Scanner

DIMM-Pack

DIMM-Pack

Functional arrangement 2

All DMX512-16B modules are arranged in parallel.

A merger (and possibly a booster) is required. Each module processes the channels assigned to it, all others are passed through 1:1.

The merger combines all modules and outputs the respective maximum value recorded for each channel.
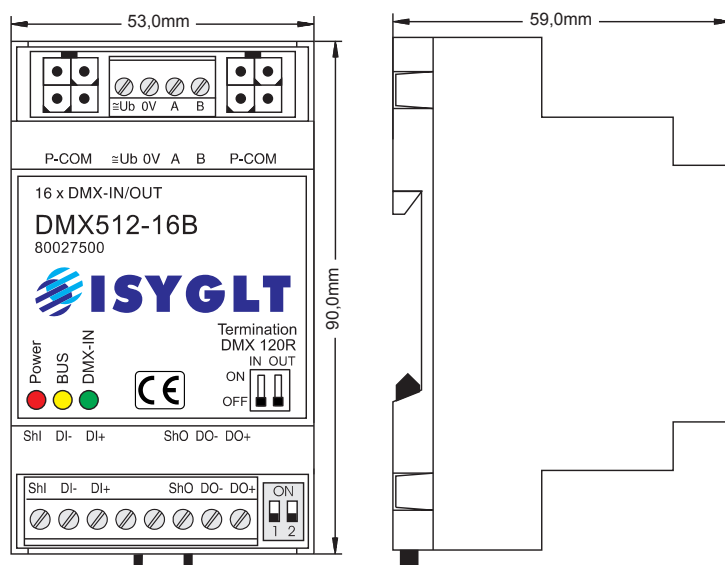
DMX-512 control panel

A booster (splitter) is possibly required here.

DMX-IN   DMX-IN   DMX-IN

DMX512-16B   DMX512-16B   DMX512-16B

DMX-OUT   DMX-OUT   DMX-OUT

Merger

DIMM-Pack

DIMM-Pack

Wash-Light
Scroller

Scanner

10. Technical data

Type designation	DMX512-16B
Article no.	80027500
Operating voltage	12V to 35V DC or 12V to 27V AC
Current consumption	70mA at 24V
DMX-IN	GND, DATA-, DATA+ (DMX 1990), GND DMX-IN is galvanically connected to GND DMX-OUT
DMX-OUT	GND, DATA-, DATA+ (DMX 1990), GND DMX-IN is galvanically connected to GND DMX-OUT
Subnet (RS-485)	max. 5.6V limitation by Z-diodes
Dimensions	WxHxD 53x90x59mm DIN rail mounting (3 HP)
Weight	120 g
Connection	Screw terminals 1.5mm² pluggable
Operating temperature	-10°C to +60°C
Storage temperature	-25°C to +70°C
Humidity	0-85% r. h. non condensing
Protection class	IP 20
Protection type	II
CE mark	Yes

10.1. Pin assignment

	Plug top
≅ Ub	Operating voltage
0V	0V Operating voltage
A	Subnet (BUS A, RS-485)
B	Subnet (BUS B, RS-485)

	Plug below
ShI	GND DMX-IN
DI-	DATA - DMX-IN
DI+	DATA + DMX-IN
	Frei
	Frei
ShO	GND DMX-OUT
DO-	DATA - DMX-OUT
DO+	DATA + DMX-OUT

View

11. Wiring diagram

+24V
0V=
BUS-A
BUS-B

Ub 0V BUS A BUS B

Address
1 2 3 4 5 6 7 8

ISYGLT-DMX512-16B

Art.-Nr.: 80027500

DMX-IN   DMX-OUT

ShI DI- DI+   ShO DO- DO+

XLR-5-pol.   1 2 3   1 2 3

DMX-IN   DMX-OUT
from light   to dimmers
control panel   or devices