SyncroNode

User Manual & Terms of Use

◧ ABOUT US

Syncronorm GmbH are highly motivated producers of high-end multimedia show design software, which features a most unique real-time 3D visualizer. Our dynamic & experienced team thereby operates on a world-wide scale, providing you with the best software & hardware solutions fitting to your dedicated project. From show-design, training-programs, instant support & consulting to continuously soft- & hardware development, the team at Syncronorm is eager to realize your visions. Syncronorm provide the most established & renowned products for the entertainment- & water-show sectors within the industry and beyond.

SYNCRONODE

The SyncroNode is an intelligent node unit fully compatible with the V:Nano multimedia show controller. Connected via Ethernet the SyncroNode features a total of 4 DMX/RDM lines and is suitable for live operation. It is used for stable DMX signal distribution and supports up to 1024 DMX-RDM channels directly. Mounted on a DIN-Rail system, installation goes easily by the hand. Software updates can be applied via Ethernet.

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WELCOME TO SYNCRONORM

You made a great choice by purchasing Syncronorm's SyncroNode hardware unit. Prior to commissioning the unit, please read the following instructions of use carefully and fully familiarise yourself with the unit. Ensure that all work on and with this unit is only carried out in accordance to these instructions. Adhere to the safety information for the correct and safe use of the unit. Keep these instructions in a safe place! Please also hand over the instructions, when passing the unit on to a new owner.

Preface

This document is a guideline for controlling the hardware of Syncronorm's show design & control software Depence. The information contained in this manual will give you a sufficient understanding of this product, helping you to use the unit correctly and effectively. Adhere to all instructions contained in this manual, when installing and operating this unit. Every person working with this equipment must read this manual before installation and commissioning of the equipment/device. Every person working with this device/equipment must read the manual before starting to work. Even personnel working with this device only occasionally must read and understand this manual before beginning to work. This manual must always be available at the site, where the device is located. Every user of this device must be aware of the location of the manual.

Checking the Scope of Delivery

Please check that the scope of delivery is complete. Keep the packaging for later transport. If components are damaged or missing, contact your Syncronorm supplier. To download the current software and firmware, visit the Syncronorm website at *www.syncronorm.com*.

Intended Use

The SyncroNode Ethernet DMX-RDM node is a standalone entertainment controller for fountains and light control. The SyncroNode, in the following referred to as „unit", may only be used as specified as follows:

• The SyncroNode is an intelligent node for the V:Nano Multimedia Show Controller via Ethernet.

■ SAFETY INSTRUCTIONS

Safety Information

• READ ALL INSTRUCTIONS BEFORE USING (THIS UNIT).
• SAVE THESE INSTRUCTIONS.
• Special regulations apply for electrical installation in outdoor spaces. Only a qualified electrician may perform the electrical installation.
– The qualified electrician has the necessary professional training, knowledge and experience to perform electrical installation in outdoor spaces. The electrician can detect potential dangers and knows how to adhere to regional and national standards, regulations and directives.
– For your own safety, please consult a qualified electrician.
• Only connect the unit if the electrical data of the unit and the power supply match.
• Do not use the unit as a toy. Close attention is necessary when the product is used by or near children.
• Do not use the unit, if electrical lines or the housing are damaged.
• Never carry out technical changes to the unit.
• Only carry out work on the unit that is described in this manual.
• Always unplug the unit before working on it.
• Protect disconnected plug connectors from moisture.
• Only use original spare parts and accessories.
• Should problems occur, please contact the authorised customer service or Syncronorm GmbH.

Dangers resulting from non-adherence to the Safety Information

Please note that Syncronorm GmbH assumes no liability for damage, downtimes or malfunctions resulting from non-adherence to this installation and operating manual. By ignoring or not adhering to all of the safety information contained in this manual, you could endanger people, the environment and the system of this unit. For example, non-adherence to the safety information contained in this manual can lead to the following dangerous occurrences:
• A malfunction of important features of this unit
• Danger for persons due to electric shock

Safety-conscious Operation

As a user of this unit, ensure that you follow all safety information contained in this manual. Follow the accident prevention regulations at all times. If the unit is used in a location where internal regulations, operating and safety instructions apply, ensure that these regulations and instructions are also adhered to.

SAFETY INSTRUCTIONS

Safety Information regarding Maintenance, Inspection and Installation Work

It is the owner/user's responsibility to ensure that all maintenance, inspection and installation work is carried out by authorized and qualified personnel, who have read and understood this manual. Only carry out maintenance work on this unit, when the unit system is switched off. Ensure that no pressure is applied to the unit and it is disconnected from the power supply (voltage-free) before carrying out maintenance or repair work.

Ensure that small malfunctions are immediately rectified by authorized personnel to avoid possible future damage, malfunctions and/or downtimes of the unit system. Certain maintenance work may require safety barriers to be removed and/or deactivated. If this is the case, ensure that all safety and protective devices/guards are re-installed and/or reactivated after completing the maintenance work.

Optional retrofitting and Production of Spare Parts

Changes or modifications to the device are only permitted after consultation with the manufacturer. Original spare parts and accessories approved by the manufacturer provide safety. We wish to stress that all parts and accessories not supplied by Syncronorm GmbH have neither been tested nor approved by Syncronorm GmbH. For this reason, the installation and/or use of such products can, under certain circumstances, negatively affect the specifications for the device. This could also lead to restrictions of the active and/or passive safety of the device. Syncronorm GmbH assumes no liability for damage resulting from the use of parts and accessories other than original Syncronorm GmbH parts.
In this case all guarantee expires.

Dangers encountered by the Combination of Water and Electricity

• The combination of water and electricity can lead to death or severe injuries from electrocution, if the unit is incorrectly connected or misused.
• Prior to reaching into the water, always switch off the mains voltage to all units used in the water.
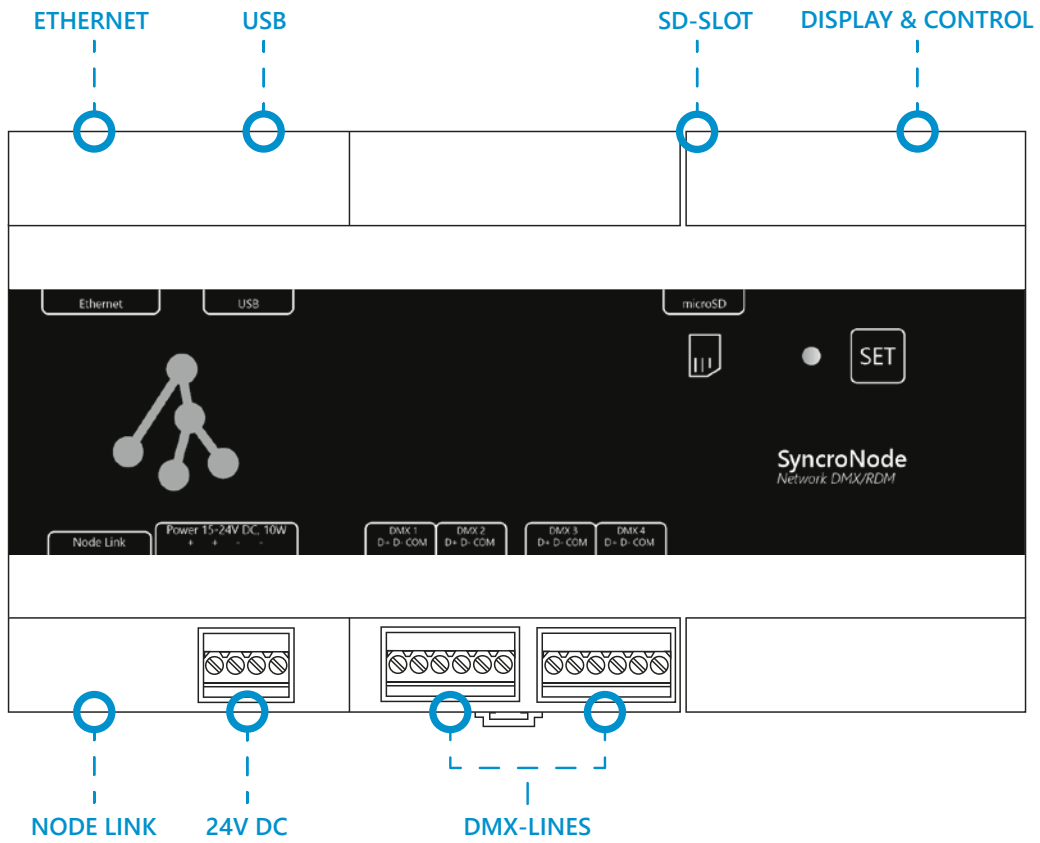
Assembly

Fastening variants:
• Installation on cap rail 35 mm × 7.5 mm (according to EN 50022).
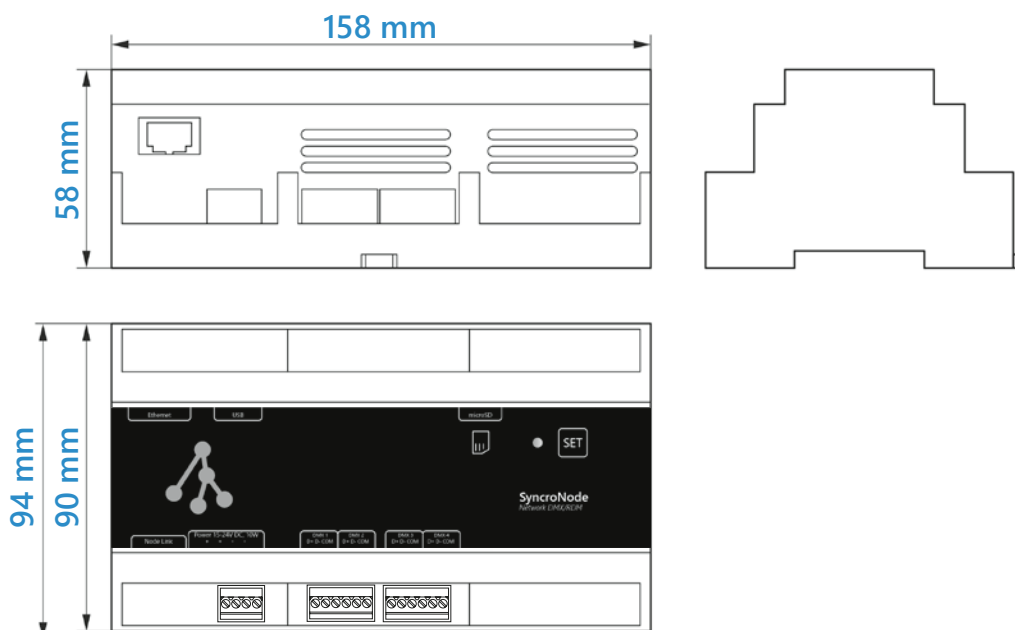• Wall mounting with screws.
Ambient conditions:
• Dry, dust-free, no direct sunlight.

OVERVIEW

Front

ETHERNET USB SD-SLOT DISPLAY & CONTROL

NODE LINK 24V DC DMX-LINES

Dimensions

158 mm

58 mm

94 mm 90 mm

OVERVIEW

Technical Data

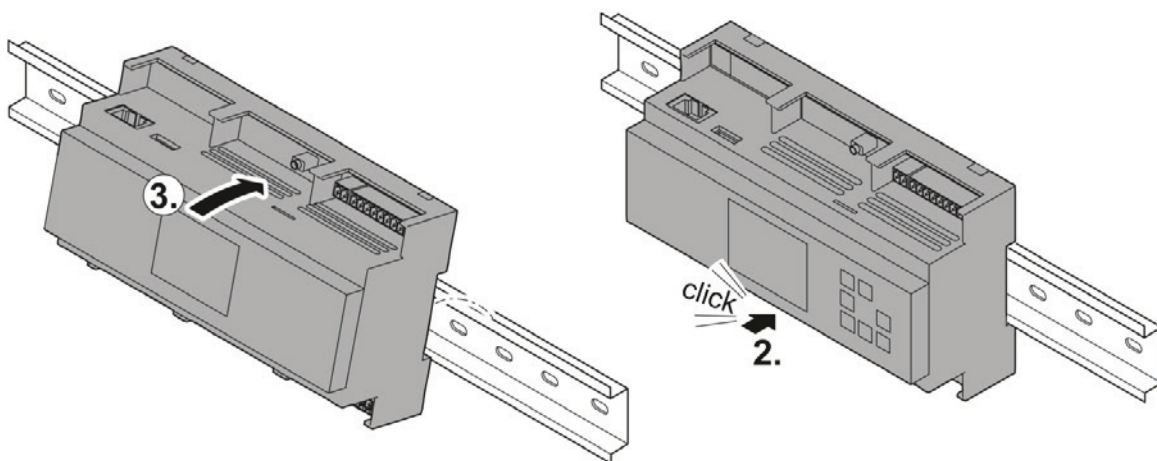|	SyncroNode
Dimensions	158x94x58mm
Weight	0.33kg
Protection Class	IP20
Operation Temperature	0...40° / 0...80% humidity
Power Supply	24V DC
Certification	CE
Outputs	4x Output DMX-RDM
Inputs	1x USB 2.0
	1x Node Link RJ45 (10/100 MBit)
	1x Ethernet RJ45 (10/100 MBit)
Memory	micro SD Card (FAT32 max 32GB)
Scope of delivery	SyncroNode unit, Documentation
Order Number	SN-STNODE

INSTALLATION

Installation on Cap Rail

Unpack carefully and get the SyncroNode device out of the cardboard box. Remove the packing material from the device.
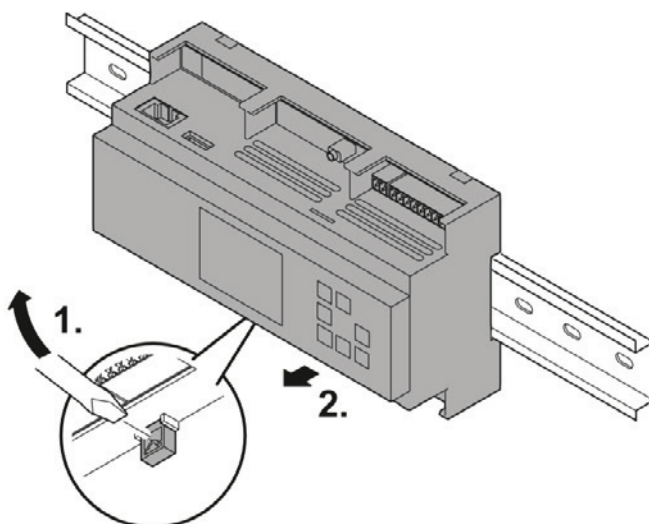
The housing is suitable for installation on a cap rail 35 mm × 7.5 mm.

• Installation:
    - Attach the housing to the cap rail and push against the housing until the lug at the bottom engages.
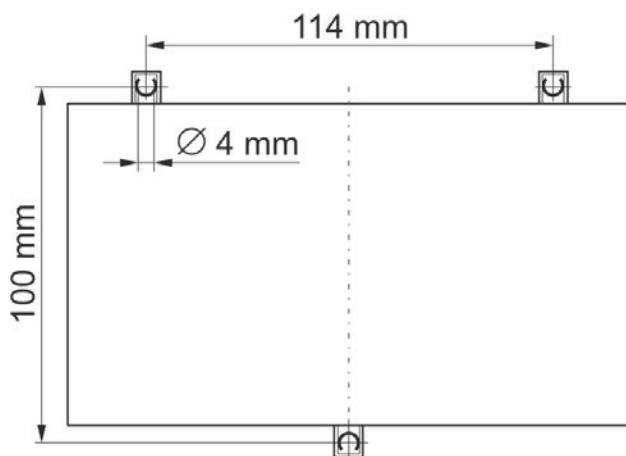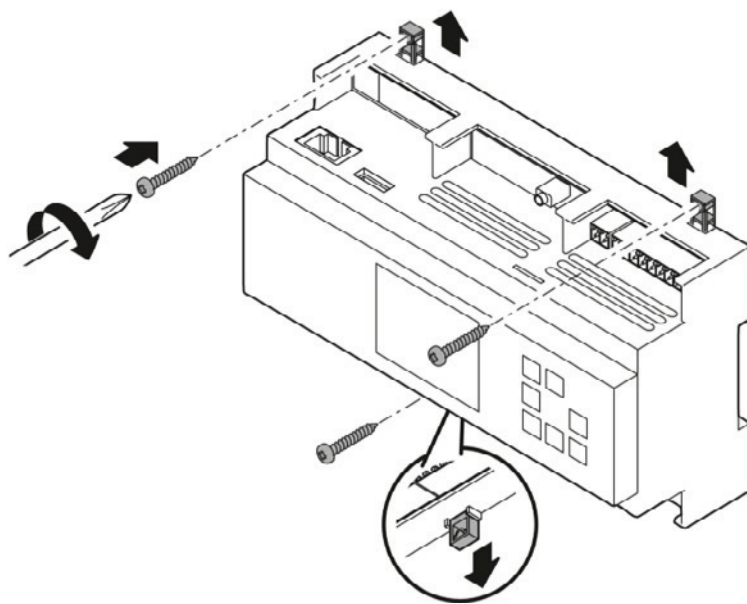

Disassembly

• Disassembly:
    - Use a screwdriver to pull on the lug at the bottom and remove the housing from the cap rail.

INSTALLATION

Wall Mounting

• How to proceed:
- Pull the three lugs from the housing until the screw holes are visible.
- The lug at the bottom is also used to unlock the housing during cap rail mounting. Pull on this lug with force until it disengages from its position and the screw hole is accessible.
- Use suitable installation material for the installation surface to securely fasten the housing.
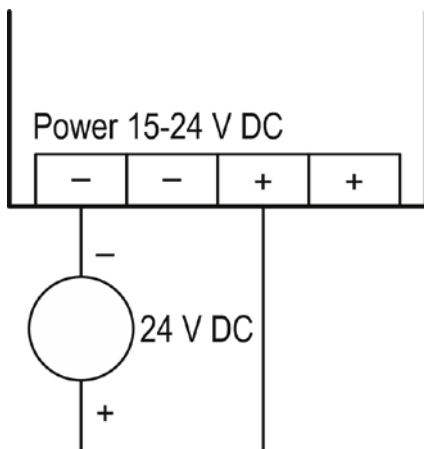
▰ ELECTRICAL CONNECTION

Voltage Supply

Hazardous electrical secondary voltage of power packs without electric insulation.
This may lead to severe injuries or death.

Only use power packs with electric insulation!

Features of external voltage supply:
- Electronic power pack with DC decoupling between primary and secondary side
- Output voltage: 24 V DC
- Maximum residual ripple of the output voltage: 5 %

CONNECTORS

DMX Connection

Features:
• Four DMX/RDM lines
• 32 DMX-compatible units can be connected to each DMX/RDM line

DMX1			DMX2			DMX3			DMX4		
D+	D-	COM	D+	D-	COM	D+	D-	COM	D+	D-	COM

microSD Card Slot

Features:
• Supports microSD cards
• Memory size: max. 32 GB, file system: FAT32
• Interface for the transfer of show files, show planner, music files and software updates.
• Only remove or insert the microSD card during active operation when no show is being played.

USB Connection

Features:
• Supports USB 2.0
• Memory size: max. 32 GB, file system: FAT32
• Interface for the transfer of show files, show planner, music files and software updates.
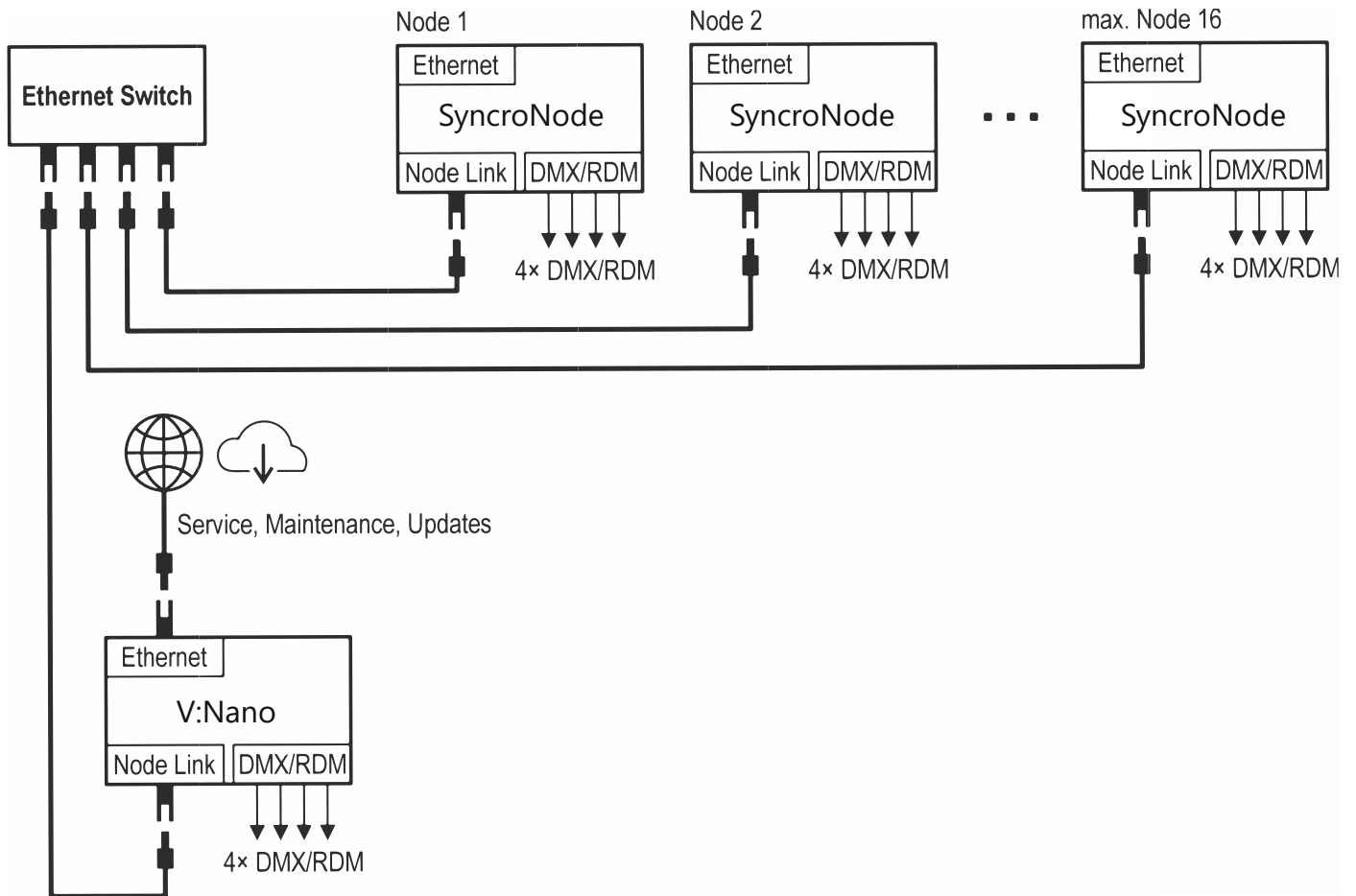
Ethernet Connection

Features:
• RJ45 socket
• 10/100 Mbit/s Ethernet
• Internet connection

Node Link

Features:
• RJ45 socket
• 100/1000 Mbit/s Ethernet, protocol: O-Net
• Connection with SyncroNode
• Using the Ethernet switch, up to 16 SyncroNode can be connected (cascading)

CONNECTORS

Node 1

Ethernet
SyncroNode
Node Link	DMX/RDM

4× DMX/RDM

Node 2

Ethernet
SyncroNode
Node Link	DMX/RDM

4× DMX/RDM

• • •

max. Node 16

Ethernet
SyncroNode
Node Link	DMX/RDM

4× DMX/RDM

Ethernet Switch

Service, Maintenance, Updates

Ethernet
V:Nano
Node Link	DMX/RDM

4× DMX/RDM

▰ SWITCHING ON

Switching on the Voltage Supply

1. The LED first lights up purple, then white.
   – The unit starts. The start takes approx. 20 s.
2. The LED slowly flashes green.
   – The unit has been started successfully.
3. The LED lights up blue.
   – The node has successfully connected to the controller

◢ OPERATION

Operating and Display Elements

Display Button	Function	Controller	Node
◯	LED, operating display, status display	✓	✓
◀ ▶	Left arrow button: Go to previous menu Right arrow button: Go to next menu	✓	✗
▲ ▼	Arrow button up: Select previous menu item / decrease value Arrow button down: Select next menu item / increase value	✓	✗
⌂	Home button: Return to "Home" menu	✓	✗
✓	Confirm input	✓	✗
SET	Press and hold button for 5 seconds to restore factory settings, then restart	✗	✓

Status Displays

Status LED	Description	Controller	Node
Flashing green	No nodes connected	✓	✗
Blue light	Normal operation, nodes connected or operation without nodes	✓	✗
Flashing blue rapidly	The discovery function has been activated in the controller to identify the node	✗	✓
Purple light	The unit is in starting phase 1	✓	✓
White light	The unit is in starting phase 2	✓	✓
Red light	CPU malfunction	✓	✓
Flashing red	Malfunction in the show application	✓	✓
Yellow light	Firmware update for the CPU active	✓	✓

⚠ **For further commands and display values, please see the Syncronorm V:Nano Multimedia Show Controller manual.**
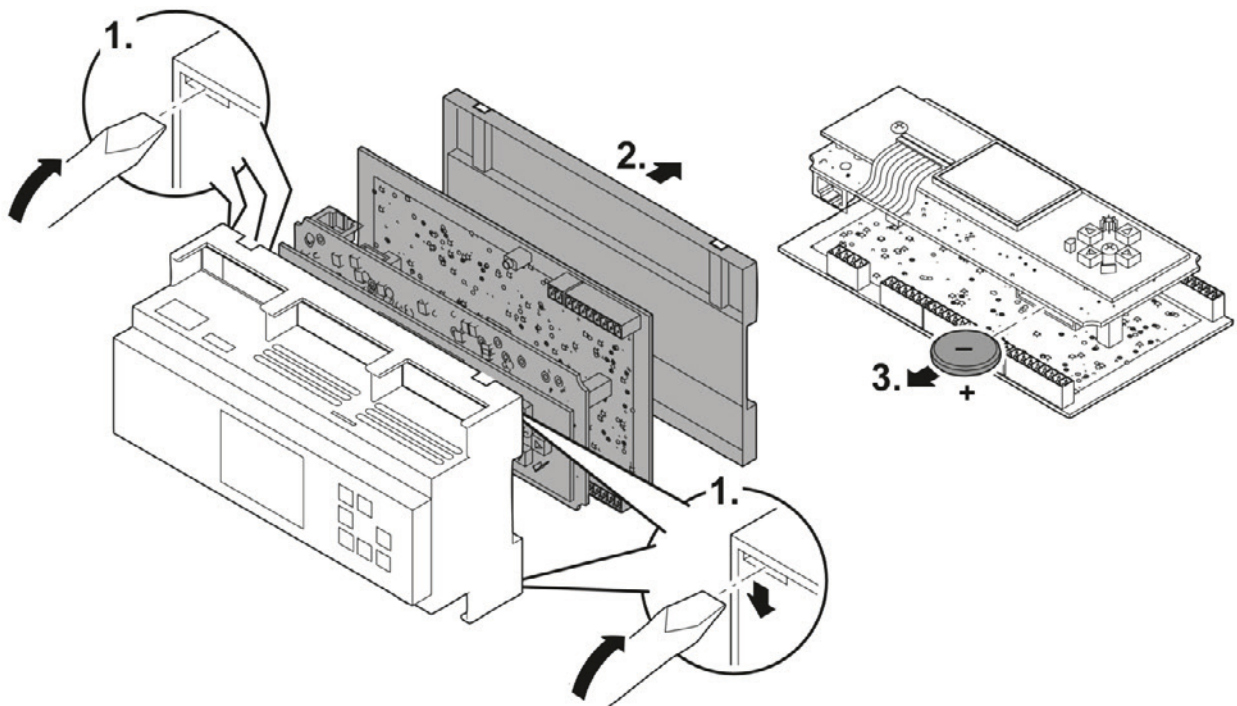
◢ MAINTENANCE

Maintenance & Cleaning

Do not use aggressive cleaning agents or chemical solutions. These agents can damage the housing, impair the function of the device and harm animals, plants and the environment.
• Clean the unit from the outside only with a damp cloth or a dry dusting brush.

Changing the Battery

The battery in the SyncroNode buffers the voltage for the electronic system to prevent data loss in the event of a longer supply voltage failure. The battery should only be replaced by an expert.

• Prior to starting work, switch off the voltage supply.
• Pull all plug connections, remove the inserted microSD card if applicable and remove the hous-ing from the cap rail or wall.
• Carefully remove the rear panel of the housing.
• Carefully remove the electronic module from the housing.
• Do not touch electronic components.
• Push the used battery out of the holder and insert the new battery.
  – Required battery type: CR2032
  – When inserting the battery, ensure correct polarity. The plus pole of the battery must make contact with the holder.
• Fit the electronic module in the housing in reverse order.
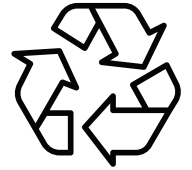
MAINTENANCE

Malfunction Remedy

Malfunction	Possible Cause	Remedy
• No Display	• No Voltage Supply	• Check Connection
		• Switch on Voltage Supply
	• Supply Voltage incorrectly connected (poles versed)	• Correctly connect Supply Voltage
• No DMX signal on Universe 1	• DMX Cable incorrectly connected	• Check DMX Cable Connection on the V:Nano
	• DMX Ports are set to an incorrect Universe	• In the "Settings" menu, under "Universe DMX", check the Universe patching
• RDM not functional	• DMX cable incorrectly connected	• Check DMX Cable Connection on the V:Nano
	• The DMX Units do not support RDM	• Use RDM-compatible Units
	• A splitter between the units and the V:Nano is not RDM-compatible	• Use an RDM-compatible Splitter
	• RDM is deactivated	• In the "Settings" Menu, activate RDM
• One digital output is always activated	• Manual setting of the "Toggle Out" function is given priority over control via V:Nano software	• In the "I/O Ports" menu, reset the output using the "Toggle Out" function
• The time and date are displayed incorrectly after the power supply is inter-ru	• The internal buffer battery is fault	• Replace buffer battery

◢ DISPOSAL

Protecting the Environment

For the transport and Protective packaging, environmentally friendly materials have been choosen that can be supplied normaly recycling.
Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling
This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE).

Disposal

Do not dispose of this unit with household waste.
Dispose of the unit by using the return system provided for this purpose.

Disposal of Batteries:
Do not dispose of batteries with household waste.
• Only dispose of batteries by using the return system provided for this purpose.
As the end user you are legally obligated to return dead batteries. Return is free of charge.
• Return batteries to where you bought them or dispose of batteries using the public return and recycling systems in your town or municipality.

Labelling of batteries containing harmful substances
PB = Battery contains lead
Cd = Battery contains cadmium
Hg = Battery contains mercury
Li = Battery contains lithium

GUARANTEE

Syncronorm GmbH assures a 12 month manufacturer's guarantee for this specific Syncronorm unit, purchased by you. This guarantee only exists in accordance to the specific guarantee conditions lad down as follows:

The guarantee period starts with the purchase from a Syncronorm GmbH specialist dealer. In the event of a resale, the guarantee period will not start again.
If services by Syncronorm GmbH are provided under the terms of this guarantee, this does not lead to extension or renewal of the guarantee period. Your legal rights as a purchaser, especially those ensuing from the warranty, persist. They are not restricted by this guarantee.

Syncronorm warranties are limited to our product only and do not extend to any direct, indirect or subsequential loss under any circumstances.

Misusage of the device leads to a loss of guarantee!

Guarantee Conditions

SYNCRONORM GmbH guarantees impeccable, purpose-related properties and workmanship, expert assembly and proper functionality. Subject to our discretion, the guarantee refers to free-of-charge repair or free-of-charge supply of spare parts or of a replacement unit respectively. Should the unit type concerned no longer be manufactured, we reserve the right, at our discretion, to supply a replacement unit from our range that is closest to the type subject to complaint. Claims, the origin of which can be traced back to installation and operating faults as well as lack of care, e.g. the use of unsuitable cleaning materials or negligent maintenance, use other than that intended, damage due to accidents, falls, impact, effect of frost, cutting plugs, shortening cables, calcium deposits or improper attempts to repair the unit, are not covered by our guarantee. We hereby refer to the proper use as specified in the instructions of use that form an integral part of the guarantee. Wearing parts such as bulbs etc. are exempted from the guarantee.

The refund of costs for removal and installation, checks, claims for lost profit and damages are exempted from the guarantee together with further reaching claims for damages and loss of whatever nature caused by the unit or its use. The guarantee is only valid in the country in which the unit was purchased from a Syncronorm GmbH dealer. This guarantee is governed by German law under the exclusion of the agreement of the United Nations covering contracts, governing the international sale of goods (CISG) regulations. Guarantee claims can only be brought forward by presenting the sales receipt to

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59755 Arnsberg | Germany

by returning the unit or part of the unit's subject of complaint to us, freight free, at your own risk, accompanied by a copy of the original purchase receipt from the Syncronorm GmbH specialist dealer, this guarantee document and written information of the fault encountered.

YOUR NOTES

#liquidinspiration