MANUAL

SDU/SIN/NET/RPS

Sinus-Signal Distribution Unit

4th December 2017

Meinberg Radio Clocks GmbH & Co. KG

Front view (Frontansicht) SDU/SIN/NET/RPS

SDU-R/SIN/NET/RPS

Power 1 Power 2

MEINBERG
Signal Distribution Unit

In 1
In 2
Remote
Init

Auto
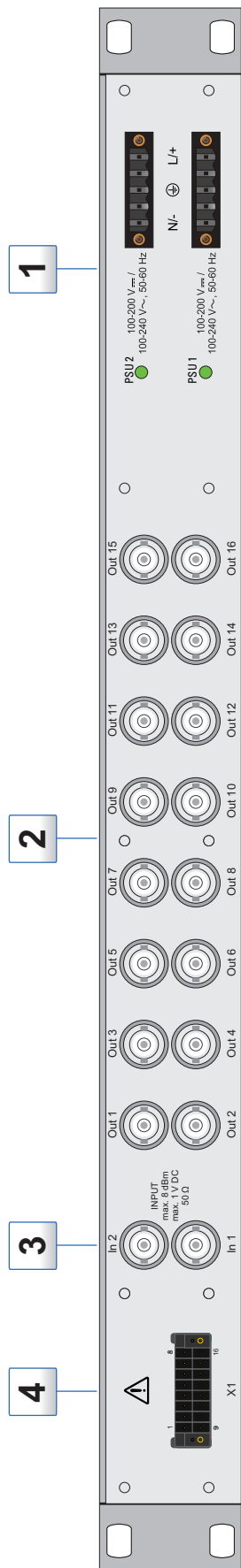Manual In 1 In 2 ACO LAN

1 **2** **3** **4**

ENGLISH
1. Power LEDs / operating mode (green)
2. Switch Unit - Status LEDs, Switches for
   Auto or Manual Mode / Input Signal 1 or 2
3. ACO Button
4. Network Connector

DEUTSCH
1. Power LEDs / Betriebsanzeige (grün)
2. Umschalteinheit - Status LEDs, Schalter für
   Auto- oder Manual-Modus / Eingangssignal 1 oder 2
3. ACO Taster
4. Netzwerk-Anschluss

Rear view (Rückansicht) SDU/SIN/NET/RPS

1

2

3

4

PSU2 100-200 V $_{rms}$ / 50-60 Hz
100-240 V~ /

PSU1 100-200 V $_{rms}$ / 50-60 Hz
100-240 V~ /

N/- ⊕ L/+

Out 15 Out 13 Out 11 Out 9 Out 7 Out 5 Out 3 Out 1

Out 16 Out 14 Out 12 Out 10 Out 8 Out 6 Out 4 Out 2

INPUT
max. 8 dBm
max. 1 V DC
50 Ω

In 2 In 1

X1

ENGLISH
1. Power supply connectors
2. 1 – 25 MHz sine wave outputs
3. 1 – 25 MHz sine wave inputs
4. DMC connector X1

DEUTSCH
1. Anschlüsse für Spannungsversorgung
2. 1 – 25 MHz Sinus - Ausgänge
3. 1 – 25 MHz Sinus - Eingänge
4. DMC Anschluss X1

Table of Contents

1 Imprint

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Date: 2017-10-27

2 Safety Instructions for Building-in Equipment

This building-in equipment has been designed and tested in accordance with the requirements of Standard IEC60950-1 "Safety of Information Technology Equipment, including Electrical Business Equipment".

During installation of the building-in equipment in an end application (i.e. rack) additional requirements in accordance with Standard IEC60950-1 have to be taken into account.

- The building-in equipment is a class 1 – equipment and must be connected to an earthed outlet (TN Power System).
- The building-in equipment has been evaluated for use in office environment (pollution degree 2) and may be only used in this environment. For use in rooms with a higher pollution degree more stringent requirements are applicable.
- The building-in equipment may not be opened.
- Protection against fire must be assured in the end application.
- The ventilation opening may not be covered.
- The equipment/building-in equipment was evaluated for use in a maximum ambient temperature of 50°C (40 °C by using Rubidium).
- For safe operation the building-in equipment must be protected by max 16 A fuse in the power installation system.
- Disconnection of the equipment from mains is done by pulling the mains plug.

2.1 Used Symbols

Nr.	Symbol	Beschreibung / *Description*
1	===	IEC 60417-5031 Gleichstrom / *Direct current*
2	∿	IEC 60417-5032 Wechselstrom / *Alternating current*
3	⏚	IEC 60417-5017 Erdungsanschluss / *Earth (ground) Terminal*
4	�earth	IEC 60417-5019 Schutzleiterklemme / *Protective Conductor Terminal*
5	⚡	Vorsicht, Risiko eines elektrischen Schlages / *Caution, possibility of electric shock*
6	⚠	ISO 7000-0434 Vorsicht, Risiko einer Gefahr / *Caution, Danger*
7	♻	2002/96/EC Dieses Produkt fällt unter die B2B Kategorie. Zur Entsorgung muss es an den Hersteller übergeben werden. *This product is handled as a B2B category product. In order to secure a WEEE compliant waste disposal it has to be returned to the manufacturer.*

CE label
This device follows the provisions
of the directives 93/68/EEC

CE

3 The Rackmount System SDU/SIN/NET/RPS

The SDU/SIN/NET/RPS is a distribution unit, designed to provide 16 buffered 1 – 25 MHz sine wave signals with low additive phase noise.

The SDU/SIN/NET/RPS distributes the input signals, which is provided to one or both inputs. If the unit is used in redundant mode, the internal decision logic, monitors both signals and chooses one input for distribution automatically. The input signal can also be selected manually with the switch on the front panel.

The monitor program Meinberg *"Device Manager"* shows the level of all inputs and outputs, status of the power supplies and the internal system temperature.
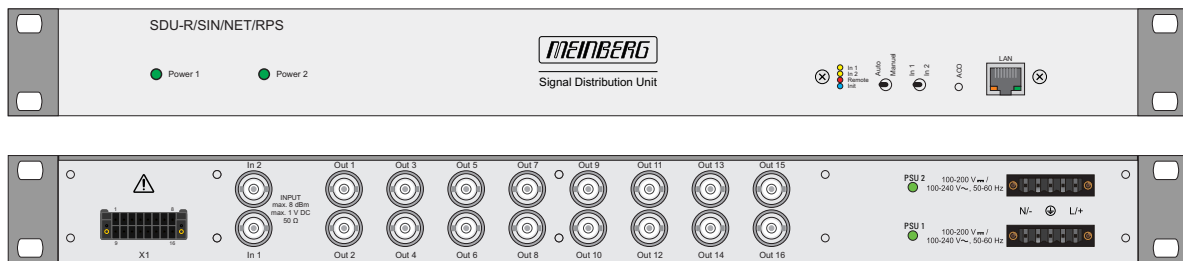
4 Attachment: Technical Information

4.1 Technical Specifications SDU/SIN/NET/RPS

Mechanical:

Heigth:	43.7 mm
Width:	483 mm
Depth:	285 mm
Rack mounts:	19-inch rack mount option
Weight:	4.1 kg

Environmental:

Operating temperature:	0 °C to 50 °C
Storage temperature:	– 20 °C to + 75 °C
Relative humidity:	max. 85% non-condensing
Protection rating:	IP30
Operating altitude:	up to 2000 m

EMC Directives:

IEC/EN 61000-6-3	Generic standard emission
IEC/EN 55032	Emission requirements
IEC/EN 61000-6-2	Generic standard immunity
IEC/EN 55024	Immunity characteristics

4.2 Front Panel and Rear Panel Connectors

Name	Type	Signal	Cable / connection
Front Panel			
Network	RJ45	Ethernet	CAT5 network cable
Rear Panel			
Power supply	5pin. DFK male	100 – 240 V AC 100 – 240 V DC	5pin. MSTB clamp
X1	16pin DMC Connector	Relay / Error In	16pin. MSTB clamp
1 – 25 MHz Sinus In	BNC female	1 – 25 MHz sine wave, – 8 to + 8 dBm	shielded coaxial line
1 – 25 MHz Sinus Out	BNC female	1 – 25 MHz sine wave, into 50 Ω	shielded coaxial line

4.3 Power Connector

Operational
Voltage:

$U_N = 100 - 240$ V$\sim$
$I_N = 0.5$ A$\sim$
$f_N = 50 - 60$ Hz

$U_{max} = 90 - 254$ V$\sim$
$f_{max} = 47 - 63$ Hz

$U_N = 100 - 200$ V$\overline{}$
$I_N = 0.5$ A$\overline{}$
$U_{max} = 90 - 240$ V$\overline{}$

Pin Assignment:

1: VCC − (N$\sim$)
2: not connected
3: GND (Ground)
4: not connected
5: VCC + (L$\sim$)

Output
Current:
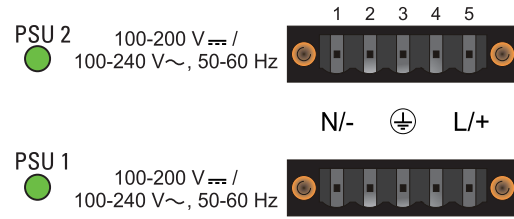
max. 10.0 A
min. 0.15 A

Input Fuse:

IEC 127,
T, 2.5 A, H, 250 V AC

Connectors:

input IEC 320 AC inlet

PSU 2   100-200 V$\overline{}$ /
100-240 V$\sim$, 50-60 Hz

1 2 3 4 5

N/-   ⏚   L/+

PSU 1   100-200 V$\overline{}$ /
100-240 V$\sim$, 50-60 Hz

4.4 Frequency Sine Input

Frequency: 1–25 MHz sine wave

Level: –8dBm – +8dBm

Connector: BNC, female

Cable: shielded coax line

In 2

INPUT
max. 8 dBm
max. 1 V DC
50 Ω

In 1
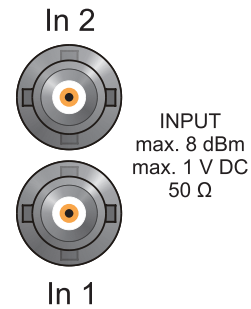
4.5 Frequency Sine Output

**Frequency:**   1–25 MHz sine into 50 Ω

Connector Type: BNC female

Gain: 0 dB

Cable: coaxial, shielded data line

Out x

4.6 DMC X1 Connector

Connector Type: 10pin DMC male connector

Pin Assignement X1:   Pin 01:   REL–COM
                          Pin 02:   N.C.
                          Pin 03:   N.C.
                          Pin 04:   N.C.
                          Pin 05:   N.C.
                          Pin 06:   ERROR–IN–1_+
                          Pin 07:   GND
                          Pin 08:   ERROR–IN–2_+
                          Pin 09:   REL–NC
                          Pin 10:   REL–NO
                          Pin 11:   GND
                          Pin 12:   N.C.
                          Pin 13:   GND
                          Pin 14:   ERROR–IN–1
                          Pin 15:   GND
                          Pin 16:   ERROR–IN–2

1   8

9   16
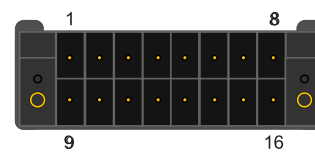
X1

5 Quick Start Guide for Initial Operation

After the SDU/SIN/NET/RPS was connected to the power supply and the network, it can be configured and monitored by using Meinberg's Device Manager program.

The Meinberg Device Manager program can be downloaded here:

Windows: https://www.meinbergglobal.com/download/utils/windows/mbgdevman_setup.exe
Linux: https://www.meinbergglobal.com/download/utils/linux/mbgdevman.tar.gz
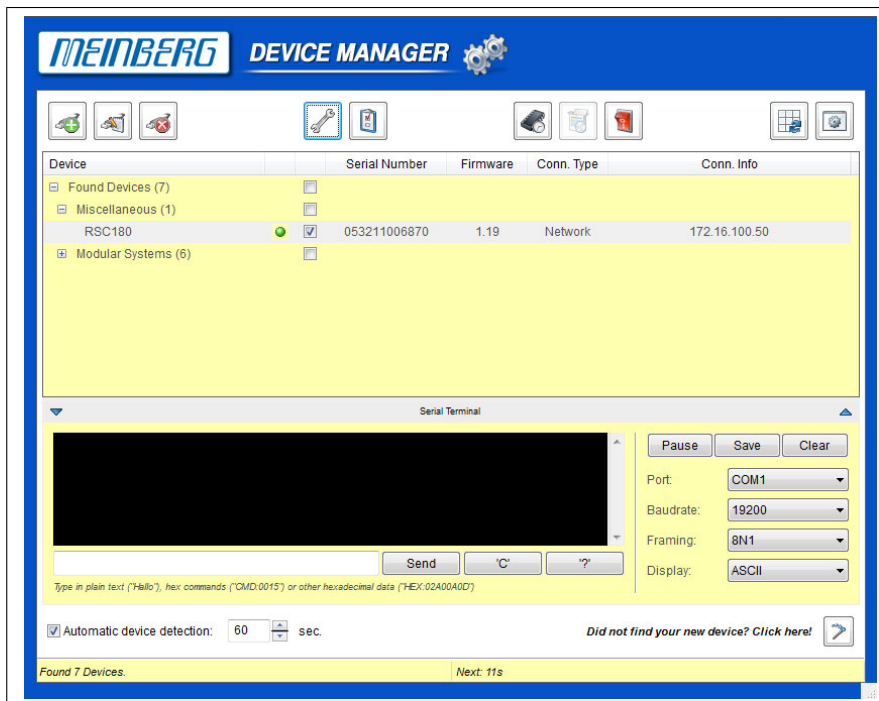
Configuration via the Network with the MEINBERG DEVICE MANAGER
After starting the *"mbgdevman"* all devices found in the network will be shown in the main window. By selecting the icon on the left side of the entry, all network addresses can be displayed. The LED icon indicates the status of the device. After selecting the checkbox, the edit / delete buttons are activated in the top left of the window.

The upper part (center) of the window also contains the buttons "Edit Device" and "Status". The Edit button opens the "Device configuration" window. All important settings can be made for all of the listed devices, or for the selected system:

SYSTEM SETTINGS

Switch Method   Remote Controlled /
                     Front Panel Switch

Master Clock   Clock 1 / Clock 2
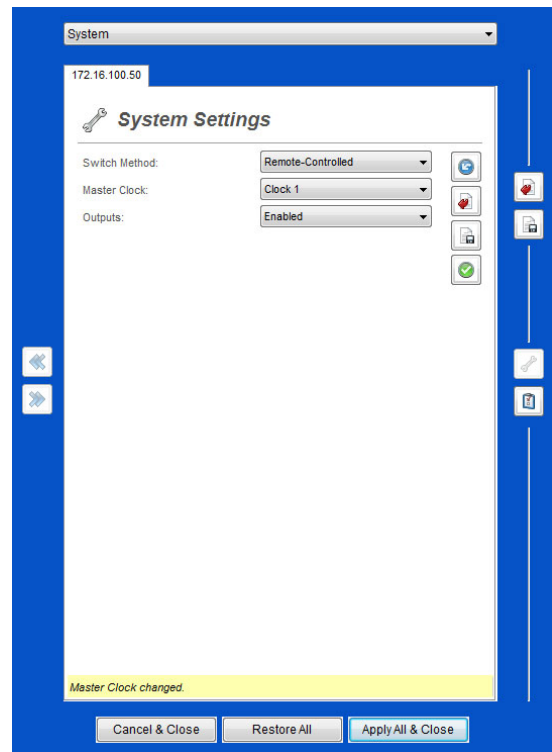
Outputs   Enabled / Disabled

SYSTEM STATUS

Switch Method   Remote / Front Panel Switch
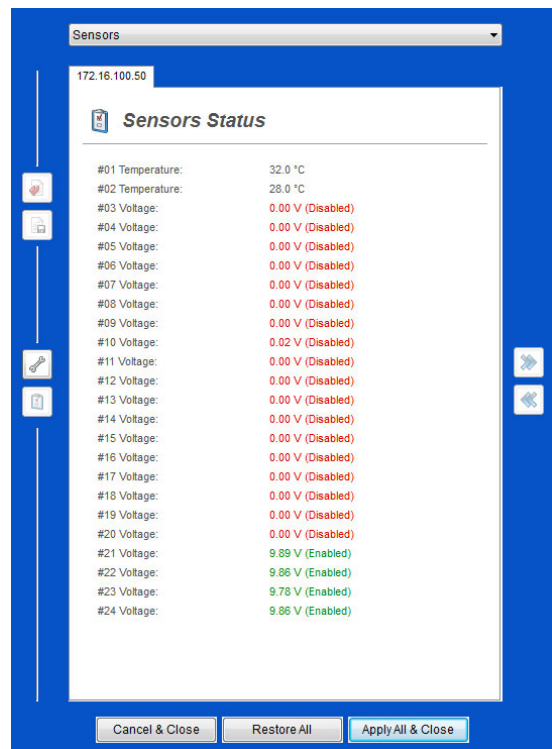
Master Clock   Clock 1 / Clock 2

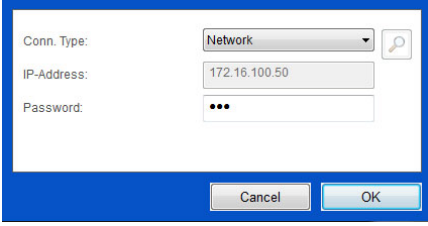**Power Supply**   PSU 1 / PSU 2

SENSOR STATUS

Temperature

Voltage

With double-clicking on the device entry you can adjust the connection type (in case of an RDU unit, only the "Network" connection type is possible). Here you can also set a new password (default: mbg). By default, the DHCP service is enabled so that an IP address is assigned automatically.

If no DHCP server could be found or no IP address has been assigned via DHCP by any other reason, a fallback IP address 169.254.xxx.yyy will be set automatically (Zeroconf [1]).

Conn. Type:	Network	
IP-Address:	172.16.100.50	
Password:	●●●	
	Cancel	OK

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[1]Zeroconf: If a computer configures a link local IP address, it selects an IP address between 169.254.1.0 and 169.254.254.255 by using a random number generator.

6 Declaration of Conformity

Konformitätserklärung
Doc ID: SDU/SIN/NET/RPS-2017-10-27

Hersteller   Meinberg Funkuhren GmbH & Co. KG
Manufacturer   Lange Wand 9, D-31812 Bad Pyrmont

erklärt in alleiniger Verantwortung, dass das Produkt,
declares under its sole responsibility, that the product

Produktbezeichnung   SDU/SIN/NET/RPS
Product Designation

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt
to which this declaration relates is in conformity with the following standards

EN55032:2012, Class B	Limits and methods of measurement of radio interference characteristics of information technology equipment
EN55024:2010	Limits and methods of measurement of Immunity characteristics of information technology equipment
EN 61000-3-2:2006 (+A1:2009 +A2:2009)	Electromagnetic Compatibility (EMC) Limits for harmonic current emissions
EN 61000-3-3:2008	Electromagnetic Compatibility (EMC) Limitation of voltage fluctuation and flicker in low-voltage supply systems
EN 60950-1:2006 (A11:2009 + A1:2010 + A12:2011 + AC:2011 + A2:2013)	Safety of information technology equipment
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

gemäß den Richtlinien 2014/30/EU (Elektromagnetische Verträglichkeit), 2014/35/EU (Niederspannungsrichtlinie), 2011/65/EU (Beschränkung der Verwendung bestimmter gefährlicher Stoffe) und 93/68/EWG (CE Kennzeichnung) sowie deren Ergänzungen.
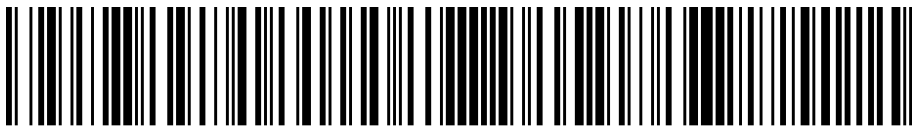*following the provisions of the directives 2014/30/EU (electromagnetic compatibility), 2014/35/EU (low voltage directive), 2011/65/EU (restriction of the use of certain hazardous substances) and 93/68/EEC (CE marking) and its amendments.*

Bad Pyrmont, 2017-10-27

Günter Meinberg
Managing Director

SDU_SIN_NET_RPS_QSG_27102017