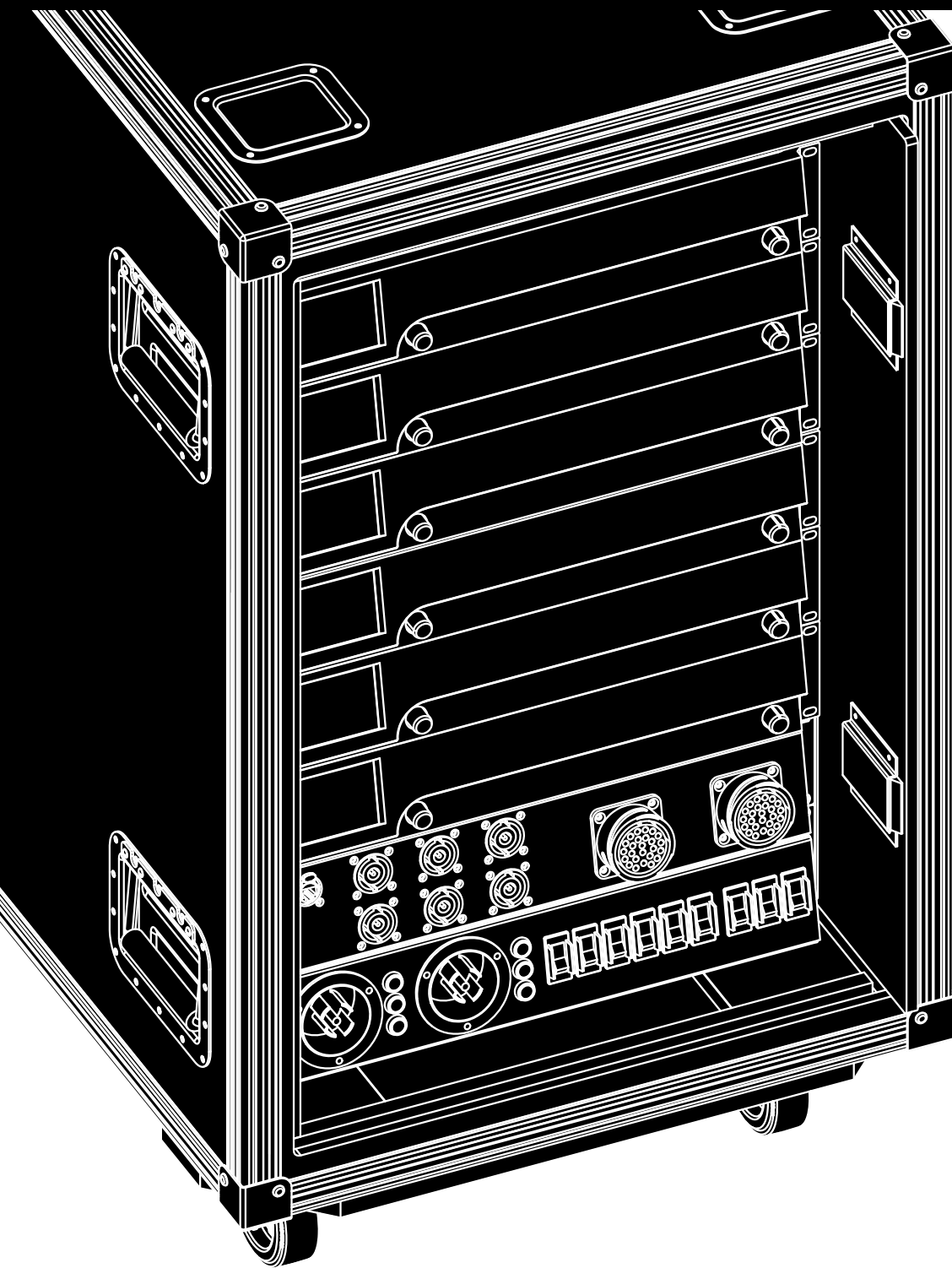


# D

## **Z5576.050** **Manual 1.1 en**



## **General information**

Z5576.050 Manual

Version: 1.1 en, 04/2018, D2029.US .01

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**Keep this manual with the product or in a safe place so that it is available for future reference.**

We recommend you to regularly check the d&b website for the latest version of this manual.

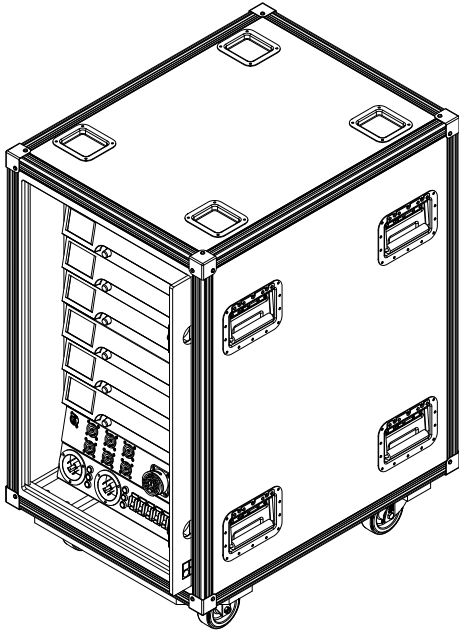
When reselling this product, hand over this manual to the new owner.

If you supply d&b products, please draw the attention of your customers to this manual. Enclose the relevant manuals with the systems. If you require additional manuals for this purpose, you can order them from d&b.

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## 1. Z5576.050 D80 Touring rack assembly 18 RU - NEMA



### 1.1. Intended use

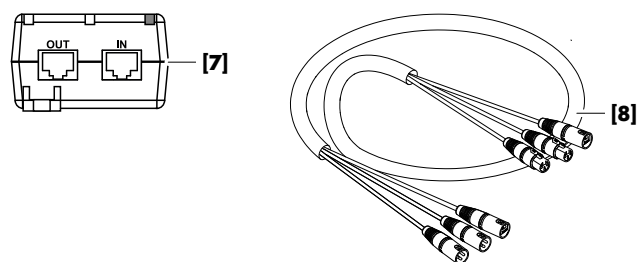
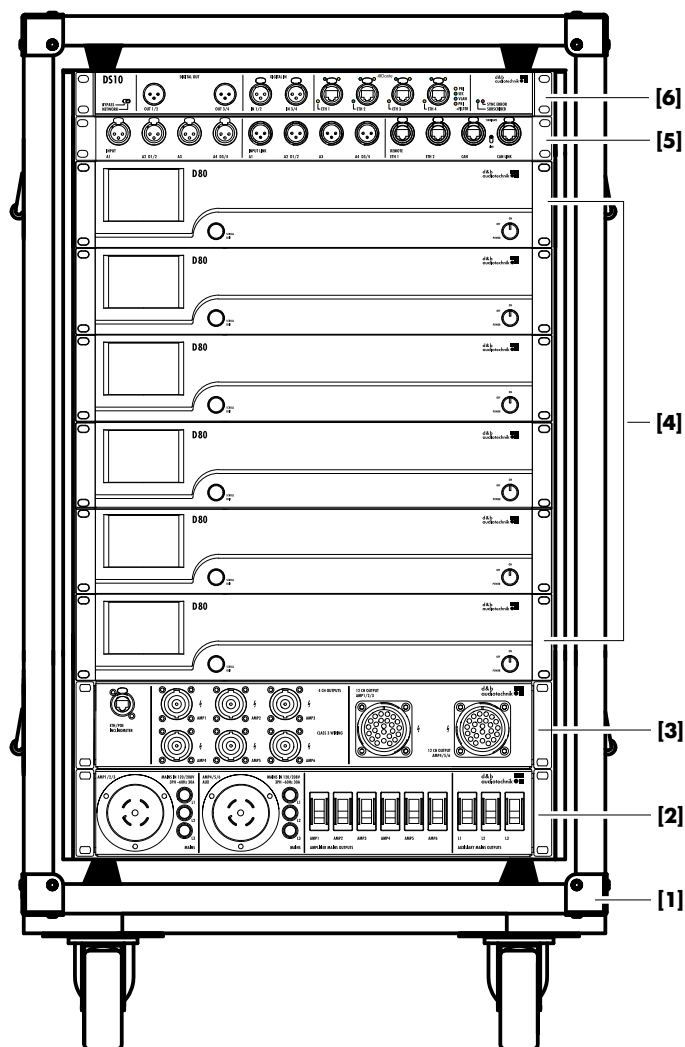
The d&b Z5576.050 D80 Touring rack assembly NEMA is intended for large scale mobile sound reinforcement applications. It is designed as a closed and prewired 18 RU system rack, providing mains power distribution and connector interfaces for 6 x D80 amplifiers.

For this purpose, the touring rack is equipped with a 2 x 30 A NEMA mains power distribution device (Z5577.001) as well as a loudspeaker connector panel (Z5578).

In addition the Z5578 loudspeaker connector panel incorporates a POE (**P**ower **O**ver **E**thernet) enabled etherCON® (RJ 45) connector for the direct connection of an inclinometer.

Also incorporated is an I/O panel (Z5338), which serves as a connector interface for both analog and digital audio signals as well as four network connectors for either Ethernet or CAN-Bus remote capabilities.

In addition, a d&b DS10 Audio Network Bridge (Z4010) is included to allow direct connection to the Dante audio network.



## 1.2. Scope of supply

Before starting up, please verify the shipment for completeness and proper condition of the items.

If there is any sign of obvious damage, do not operate the rack assembly and contact your local dealer from whom you received the rack assembly.

Pos.	Qty.	d&b Code	Description
[1]	1	Z5576.050	Touring rack assembly 18 RU NEMA - with shock mounted 19" frame.
Including:			
[2]	1	Z5577.001	Mains power distributor 2 x 30 A NEMA.
[3]	1	Z5578.000	LS Connector panel 2 x LKA 25 / 6 x NL8.
[4]	6	Z2710	D80 Amplifier*.
[5]	1	Z5338	I/O Panel.
[6]	1	Z4010	DS10 Audio Network Bridge.
[7]	1	E8106	POE ( <b>P</b> ower <b>O</b> ver <b>E</b> thernet) injector device. (Mounted at the top left rear of the rack assembly).
[8]	1	Z5333	Rack link cable [8].
		D2029.US .01	Z5576.050 Manual.

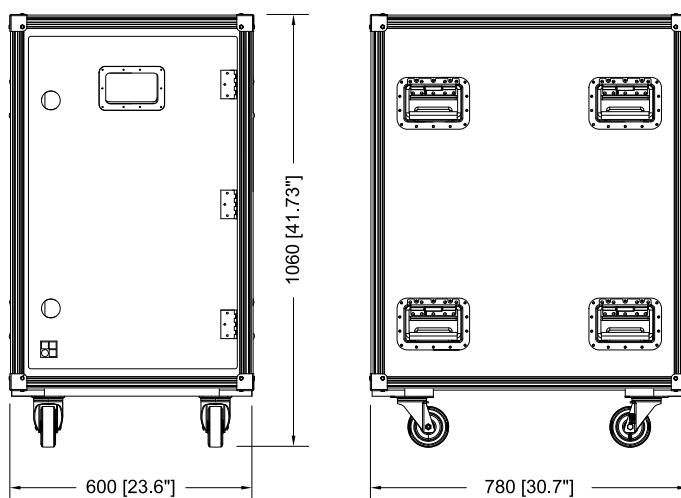
\*To be ordered separately

## Dimensions and weight

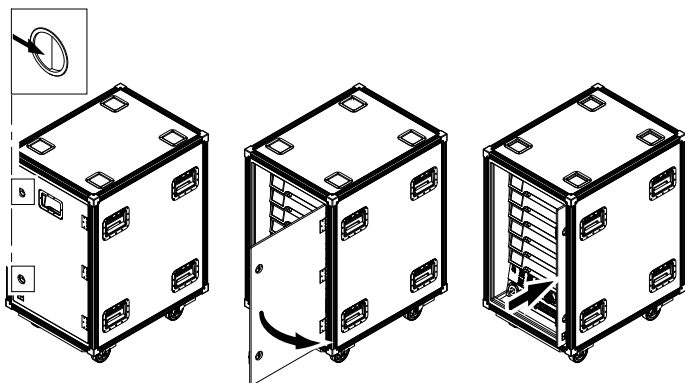
Height x width x depth ..... 1060 x 600 x 780 mm

..... 41.73 x 23.6 x 30.7"

Total weight (incl. all amps) ..... 210 kg / 463 lb



## 2. Handling, cooling and placement



### 2.1. Handling

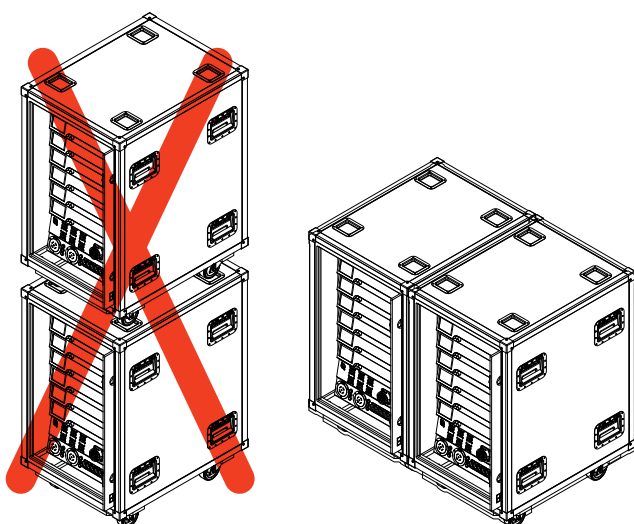
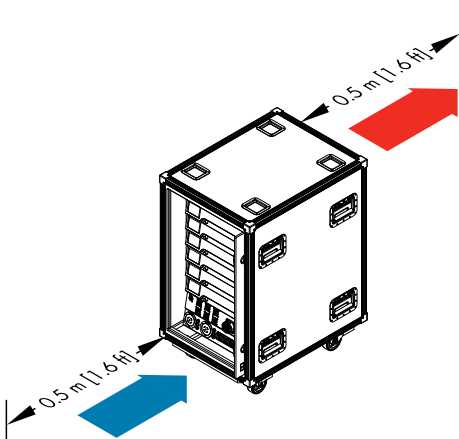
The touring rack is equipped with two sliding doors allowing quick and easy access to the front and rear panels of the devices.

1. Unlock the both door lock mechanisms.
2. Open the door and ...
3. push the door into its park position.

### 2.2. Cooling and placement

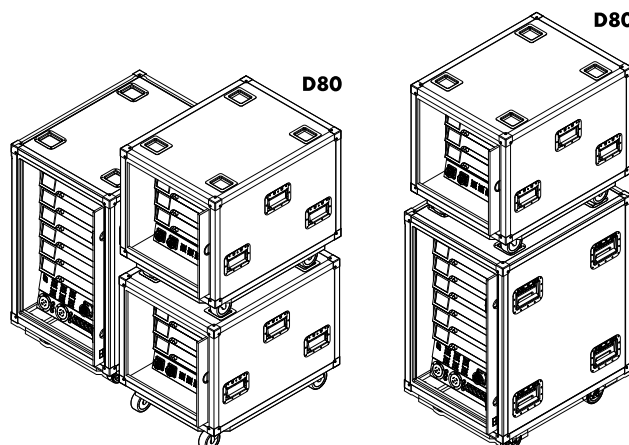
When using the d&b Z5576.050 Touring rack assembly, make sure to provide sufficient space of 0.5 m (1.6 ft) at the front and rear of the touring rack to ensure adequate cooling airflow.

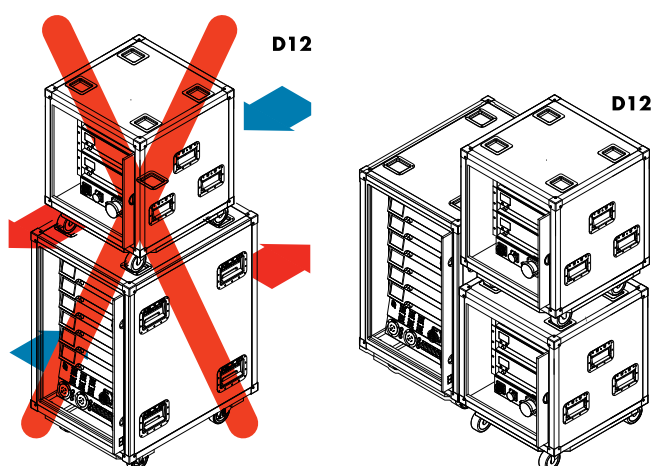
**Make sure** both the front and rear doors are opened and pushed into their park position to provide sufficient cooling.



Do **not stack** Z5576.050 Touring rack assemblies. The rack assemblies can be positioned side by side.

They can also be combined with Z5330 D80, or Z5560 D20 Touring rack assemblies, either side by side or with a maximum of **one** of these Touring racks positioned on top, as shown in the graphic below (Shown with: Z5330 D80 Touring rack assembly. The same applies to Z5560 D20 Touring rack assembly.)

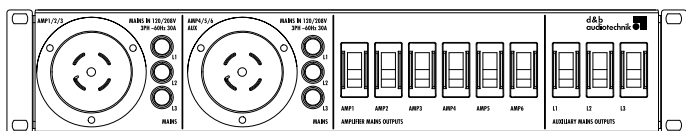




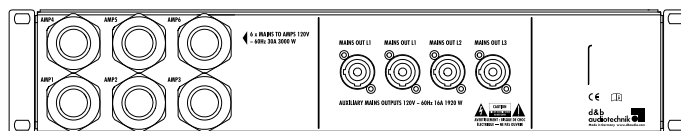
When combining Z5576.050 Touring rack assemblies with Z3010 D12 Touring rack assemblies or any other rack assembly that produces an opposing airflow, observe the following restrictions:

- Do **not stack** D12 Touring racks or any other rack assemblies with opposing airflow on top of the Z5576.050 Touring rack.
- Z5576.050 D12 Touring rack assemblies can be positioned side by side.

### 3. Z5577.001 Mains power distributor 2 x 30 A NEMA



Z5577.001 Front panel



Z5577.001 Rear panel

#### 3.1. Intended use

The Z5577.001 Mains power distributor is designed and dimensioned to provide and distribute the mains power supply necessary for **one** Z5576.050 Touring rack assembly.

It is a protective class 1 unit with IP class 20 (NOT rain-, drip-, or splash-proof!).

The Z5577.001 Mains power distributor must not be used for any other purpose or outside the system rack.

#### 3.2. Front panel

##### 3.2.1. MAINS IN



#### WARNING!

Potential risk of electric shock.

The mains power distributor is a protective class 1 unit. A missing earth (ground) contact may cause dangerous voltages in the housing and controls and may lead to electric shock.

- Connect the unit to mains power supplies with protective earth only.
- If there is any sign of obvious damage to the power cord and/or NEMA mains connector socket, do not use the unit and replace it before further use.
- Do not connect or disconnect the NEMA mains connector under load or live.
- Please ensure the NEMA mains connector is properly connected and locked.
- Please ensure the mains connector is accessible at any time to disconnect the unit in case of malfunction or danger.

The Z5577.001 Mains power distributor is supplied with two NEMA 30 A 3ØY 120/208 VAC male connector socket that except a corresponding NEMA female connector. Each connector socket provides mains power, necessary for three D80 amplifiers.

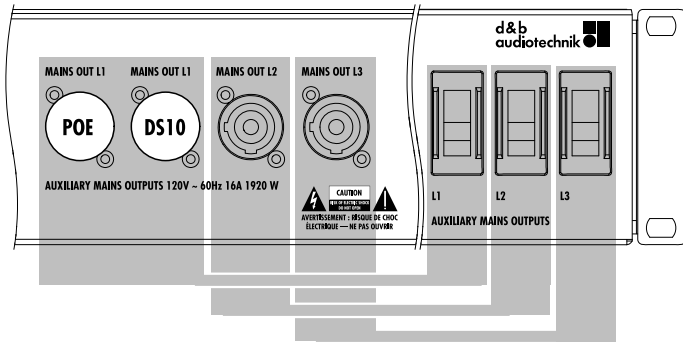
#### Required mains supply network configuration:

30 A 3ØY 120/208 VAC ~60 Hz.

For each connector socket three corresponding mains indicators display the presence of the onsite mains supply lines (phase conductor L1-L2-L3) when connected to the onsite mains power supply.

Each connector socket is equipped with dedicated circuit-breakers (30 A / B-Frame type). Please refer to the assignment as shown in the graphic opposite.





### 3.3. Rear panel

#### 3.3.1. AUXILIARY MAINS OUTPUTS

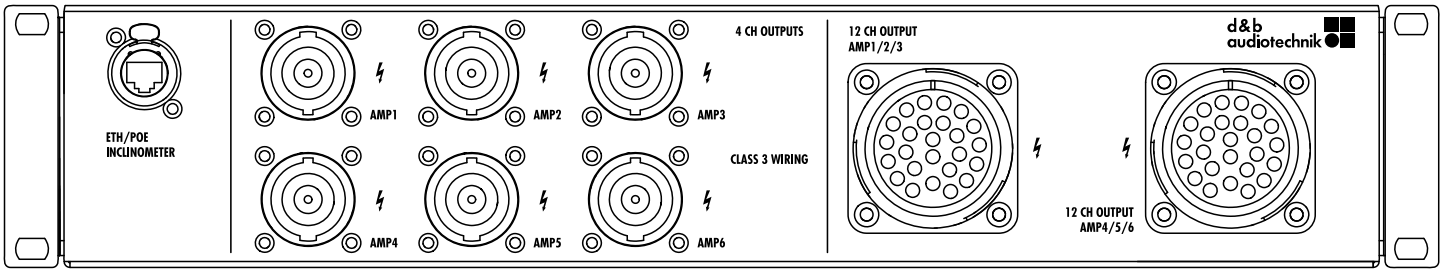
On the rear panel, four auxiliary mains outputs (120 V / ~60 Hz / 1920 W - powerCON® sockets) are provided.

Two of these sockets are used to apply mains supply for the DS10 and the POE injector device.

The remaining sockets are intended for the connection of low current devices such as notebooks or additional Ethernet switches.

The sockets are equipped with dedicated circuit-breakers (16 A / C-type). Please refer to the assignment as shown in the graphic opposite.

4. Z5578 LS connector panel 6 x NL8 / 2 x LKA25



4.1. Intended use

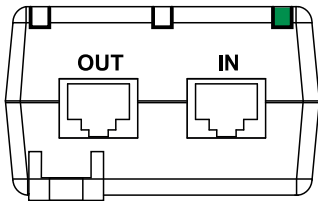
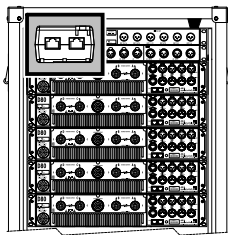
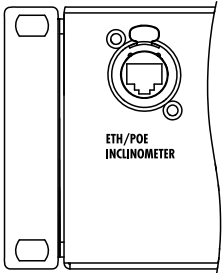
The Z5578 Loudspeaker connector panel acts as a connecting interface providing all output channels of each amplifier on its dedicated NL8 socket (4 channels) and two LKA25 connector sockets (12 channels each), which directly integrate into the d&b MC24 multicore system.

It is a class 3 wiring unit with IP class 20 (NOT rain-, drip-, or splash-proof!).

The Z5578 Loudspeaker connector panel must not be used for any other purpose or outside the system rack.

4.2. ETH/POE INCLINOMETER

A POE (Power Over Ethernet) enabled etherCON® (RJ 45) connector is available. It is intended to feed an inclinometer which is integrated in the flying frame for vertical aiming of the entire array.



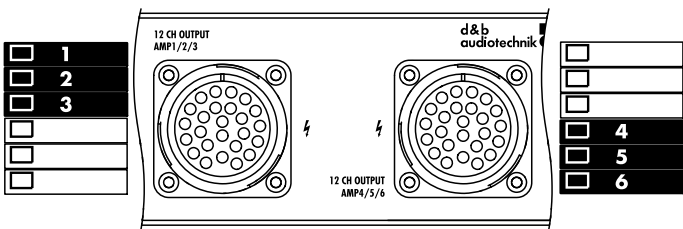
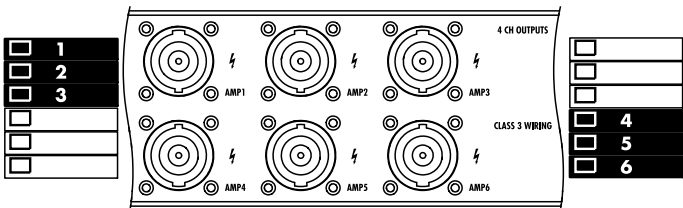
E8106 POE Injector device

In connection with the ETH/POE INCLINOMETER socket, a corresponding IEEE802.3af compliant and prewired POE Injector device is mounted at the top left rear of the rack assembly. The device features an LED indicator providing the following status information:

- Solid green:** Valid IEEE802.3af load detected and connected "ON".
- Flashing green:** Power "ON" ready for connection.
- Flashing green/red:** Invalid load connected.
- Flashing red:** Error.

E8106 Technical specifications

Output voltage .....	56 VDC (±5%)
Minimum load .....	10 mA
Maximum load .....	350 mA
Pin assignment .....	Pin 3/6: +   Pin 1/2:-
Compliance .....	IEEE802.3af



### 4.3. 4 CH OUTPUTS

#### NOTICE!

The 4 CH OUTPUTS connectors are only intended as an interface to loudspeaker multicores such as the d&b Z5343.xxx and breakout adapters such as d&b Z5347.xxx.

Each of the 4 CH OUTPUTS connectors represents the 4 CHANNEL OUTPUT of the respective D80 amplifier.

Each connector carries the output signals of all four channels of the amplifier with the following pin assignment.

1+/- = Channel A pos. / neg.	2+/- = Channel B pos. / neg.
3+/- = Channel C pos. / neg.	4+/- = Channel D pos. / neg.

### 4.4. 12 CH OUTPUT

Two 12 CH OUTPUT multipin connectors (LKA25) are provided to allow efficient system wiring using the d&b MC24 multicore system (Z5328.xxx MC24 LKA25 F/M Multicore, Z5325.000 Break-out adapter LKA25M to 6 x NLT4M, Z5327.000 Break-out adapter LKA25M to 12 x NLT4M and Z5326.000 Break-in adapter 3 x NLT8F to LKA25F).

The d&b MC24 Multicore System combines a 12 amplification channels (24 lines 4 mm<sup>2</sup>) cable with an LKA25 F/M connector

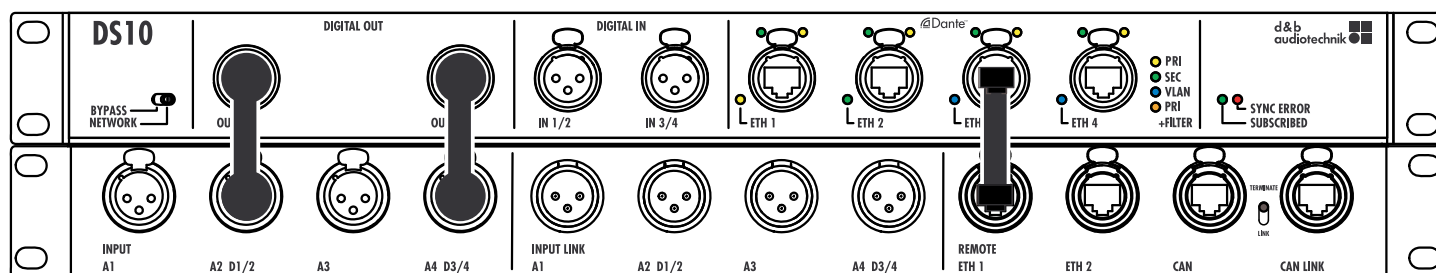
For this reason, each connector of the loudspeaker connector panel carries the output signal of twelve (12) amplifier channels.

The assignment of the respective amplifiers to the corresponding connector is shown in the graphic opposite.

Pin equivalents of the LKA25 connectors and the corresponding 4 CHANNEL OUTPUT (NL8) connector of the respective amplifier are listed in the following table:

12 CH OUTPUT AMP 1/2/3			12 CH OUTPUT AMP 4/5/6		
LKA25	NL8	Amplifier	LKA25	NL8	Amplifier
A	1+	<b>AMP 1</b> <input type="checkbox"/> 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	A	1+	<b>AMP 4</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4 <input type="checkbox"/> <input type="checkbox"/>
B	1-		B	1-	
C	2+		C	2+	
D	2-		D	2-	
E	3+		E	3+	
F	3-		F	3-	
G	4+		G	4+	
H	4-		H	4-	
I	1+	<b>AMP 2</b> <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	I	1+	<b>AMP 5</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5 <input type="checkbox"/>
J	1-		J	1-	
K	2+		K	2+	
L	2-		L	2-	
M	3+		M	3+	
N	3-		N	3-	
O	4+		O	4+	
P	4-		P	4-	
Q	1+	<b>AMP 3</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Q	1+	<b>AMP 6</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6 <input type="checkbox"/>
R	1-		R	1-	
T	2+		T	2+	
U	2-		U	2-	
V	3+		V	3+	
W	3-		W	3-	
X	4+		X	4+	
Y	4-		Y	4-	

## 5. DS10 and I/O panel



### 5.1. DS10 configurations

The DS10 in combination with the I/O panel is supplied in a pre-wired configuration.

The digital outputs (OUT 1/2 and OUT 3/4) are linked to the corresponding input sockets (A2 D1/2 and A4 D3/4) of the I/O panel to feed the digital audio signals to the amplifiers.

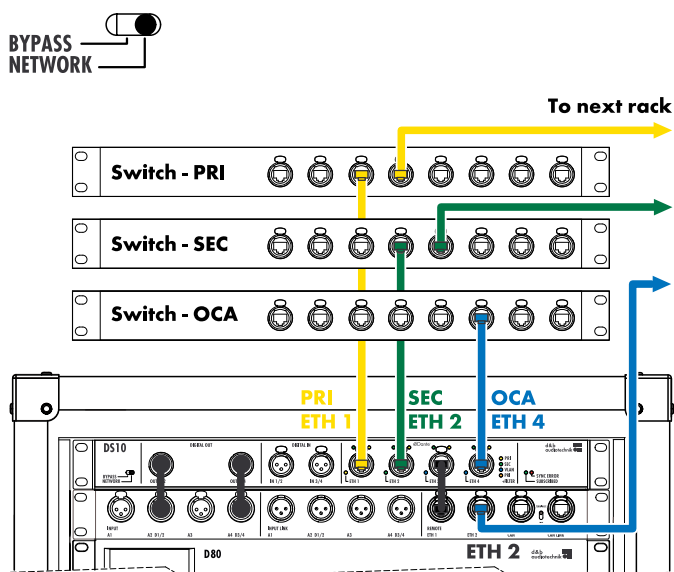
In addition, the ETH 3 connector of the DS10 is linked to the ETH 1 connector of the I/O panel to provide access to the amplifiers.

The DS10 in combination with the I/O panel allows various configurations. Two recommended configurations are detailed below.

**Note:** For detailed information on how to configure the DS10, please refer to the DS10 manual, which can be downloaded from the d&b product page at [www.dbaudio.com](http://www.dbaudio.com).

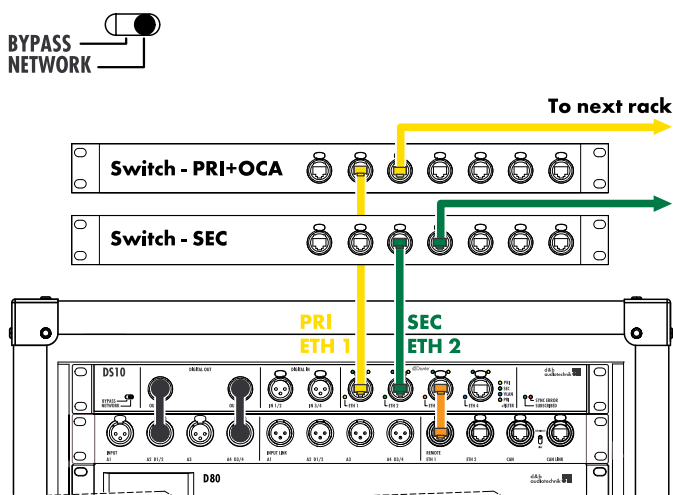
Ensure the BYPASS/NETWORK switch of the DS10 is set to NETWORK.

#### PRI + OCA on separate LANs DS10 mode\*: Redundant + VLAN

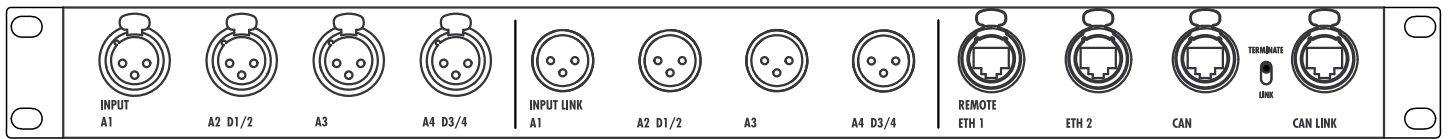


\* DS10 factory default configuration

#### PRI + OCA on the same LAN DS10 mode: Redundant + Multicast Filter



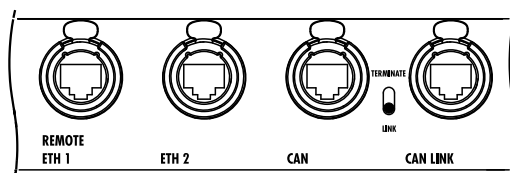
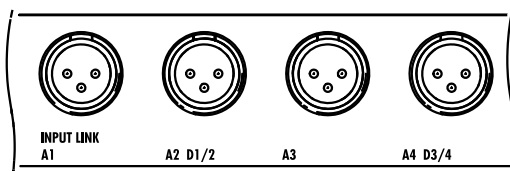
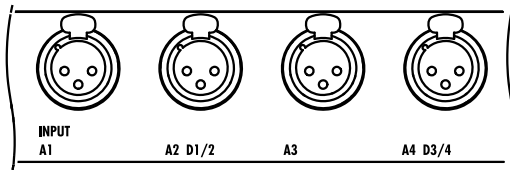
## 5.2. I/O panel



For systems not using Dante audio, inputs and input links can be directly connected to the I/O panel

### 5.2.1. INPUT section

The INPUT section represents the input connectors of the first amplifier while the other amplifiers are linked within the rack. The INPUT section allows both analog and digital audio signals to be fed to the amplifier.



### 5.2.2. INPUT LINK section

The INPUT LINK section represents the link output connectors of the last amplifier and allows the linking of further system racks using the enclosed rack link cable (Z5333 Rack link).

### 5.2.3. REMOTE section

The REMOTE section allows the daisy chaining of rack assemblies within a remote network using the enclosed rack link cable (Z5333 Rack Link).

For detailed specifications, please refer to the following sections:

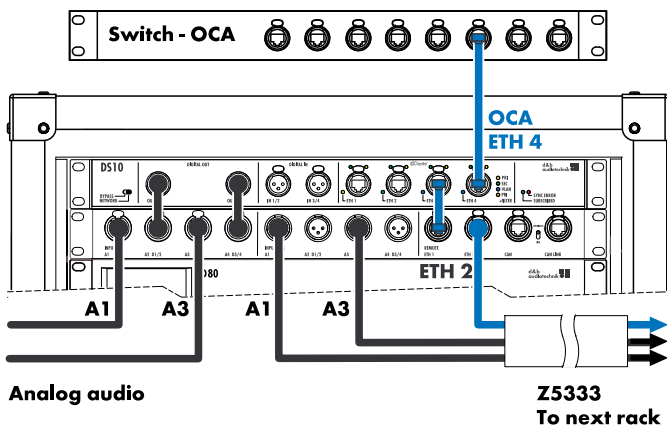
- ⇒ Ethernet network
- ⇒ CAN-Bus network

### Ethernet network

For remote purposes via Ethernet/OCA, it is strongly recommended to use the prewired configuration in combination with the DS10 when linking entire rack assemblies, as shown in the graphic opposite.

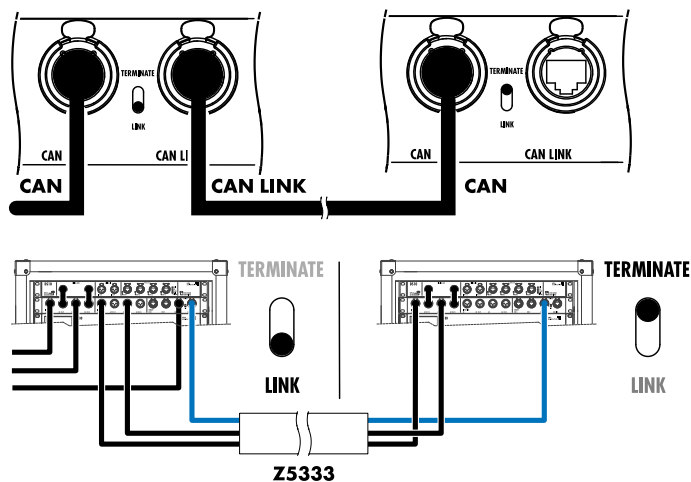
It is recommended to link a maximum of up to 6 rack assemblies in this way.

Do not link/daisy chain entire rack assemblies using the ETH 1/ETH 2 connector sockets of the I/O panel.

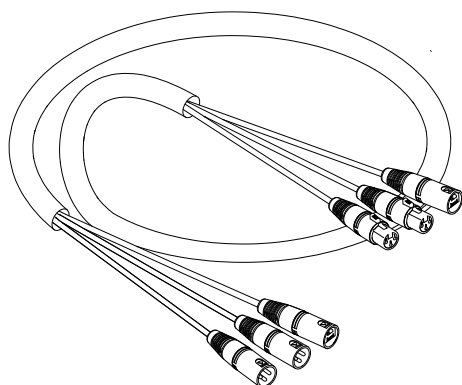


**I/O panel, rack link example:**  
2ch Analog audio and Ethernet/OCA  
**DS10 mode:** Redundant + VLAN

#### CAN-Bus



**I/O panel, rack link example:**  
2ch Analog audio and CAN



#### CAN-Bus network

##### CAN

Represents the CAN input of the first amplifier while the other amplifiers are linked within the rack.

##### CAN LINK

Represents the CAN output of the last amplifier.

##### TERMINATE/ LINK

The built-in termination switch allows two settings:

1. **LINK:** In system racks, at the start of and within a CAN-Bus segment, set the switch to LINK.
2. **TERMINATE:** On the last system rack of a CAN-Bus segment, set the switch to TERMINATE

**Note:** A detailed description of remote control via the d&b Remote network (CAN-Bus) is given in the technical information TI 312 (d&b code D5312.EN) which can be downloaded from the d&b website at [www.dbaudio.com](http://www.dbaudio.com).

#### 5.3. Z5333 Rack Link

The rack link cable allows multiple system racks to be linked together.

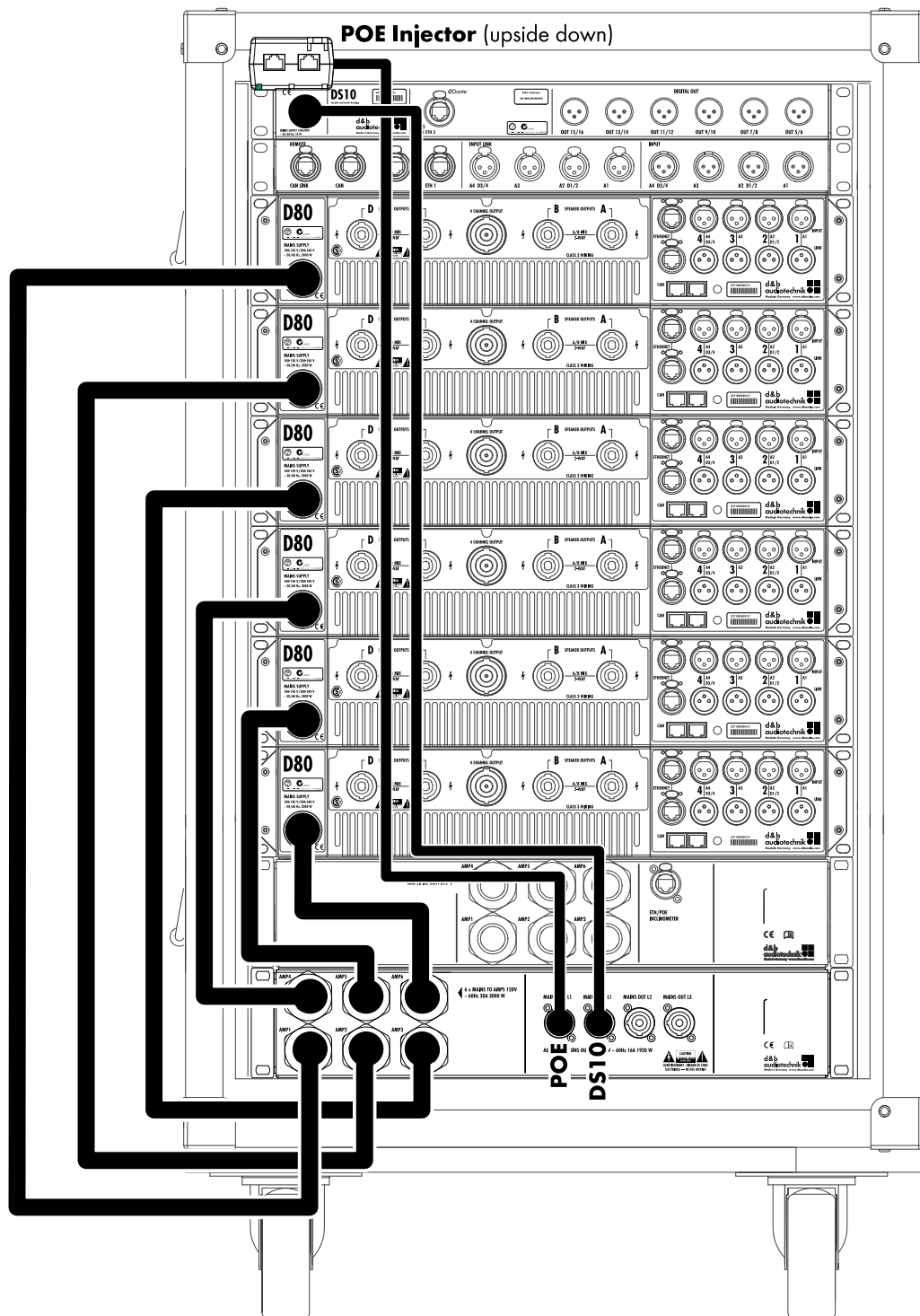
It is suitable for both analog and digital audio signals as well as for network wiring (Ethernet or CAN-Bus networks).

##### Technical specifications

Audio connector .....	2 x XLR female to 2 x XLR male
.....	with color markup
Audio signal capability .....	Analog
.....	Digital AES3
Network connector .....	etherCON
Network cable .....	CAT 5E STP
Length .....	2 m / 6.5 ft

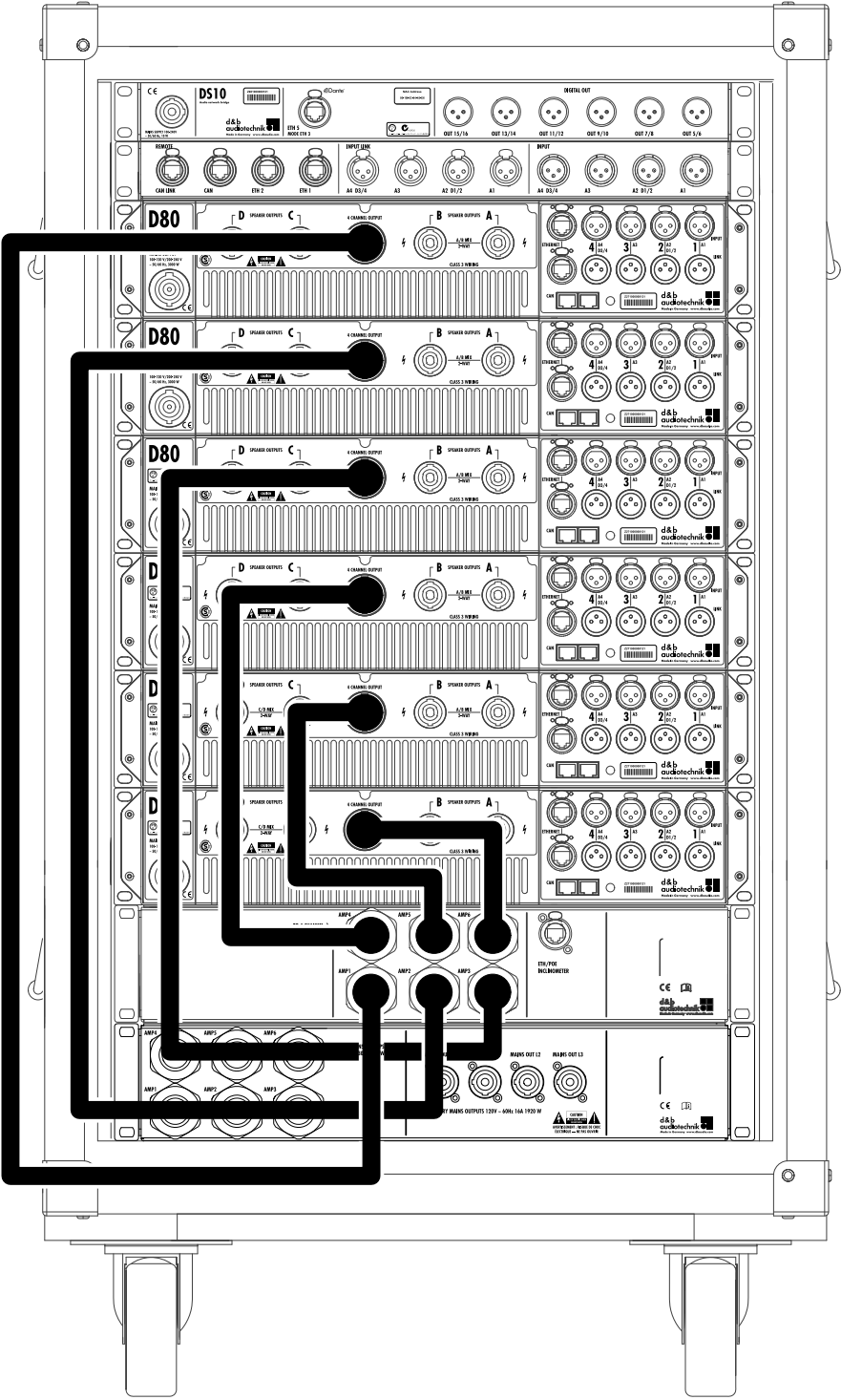
## 6. Rack wiring diagrams

### Mains power connection and internal mains supply distribution

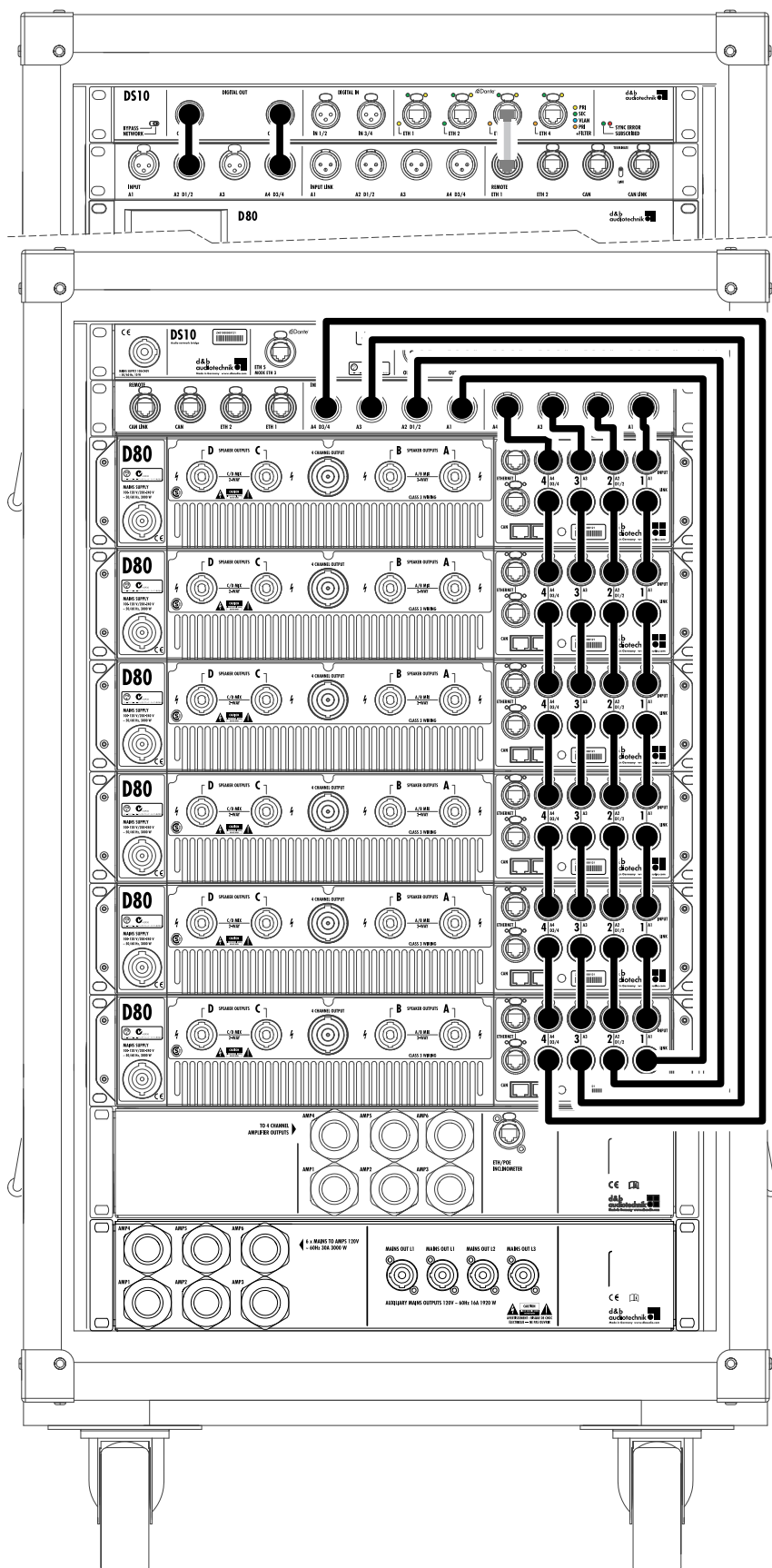




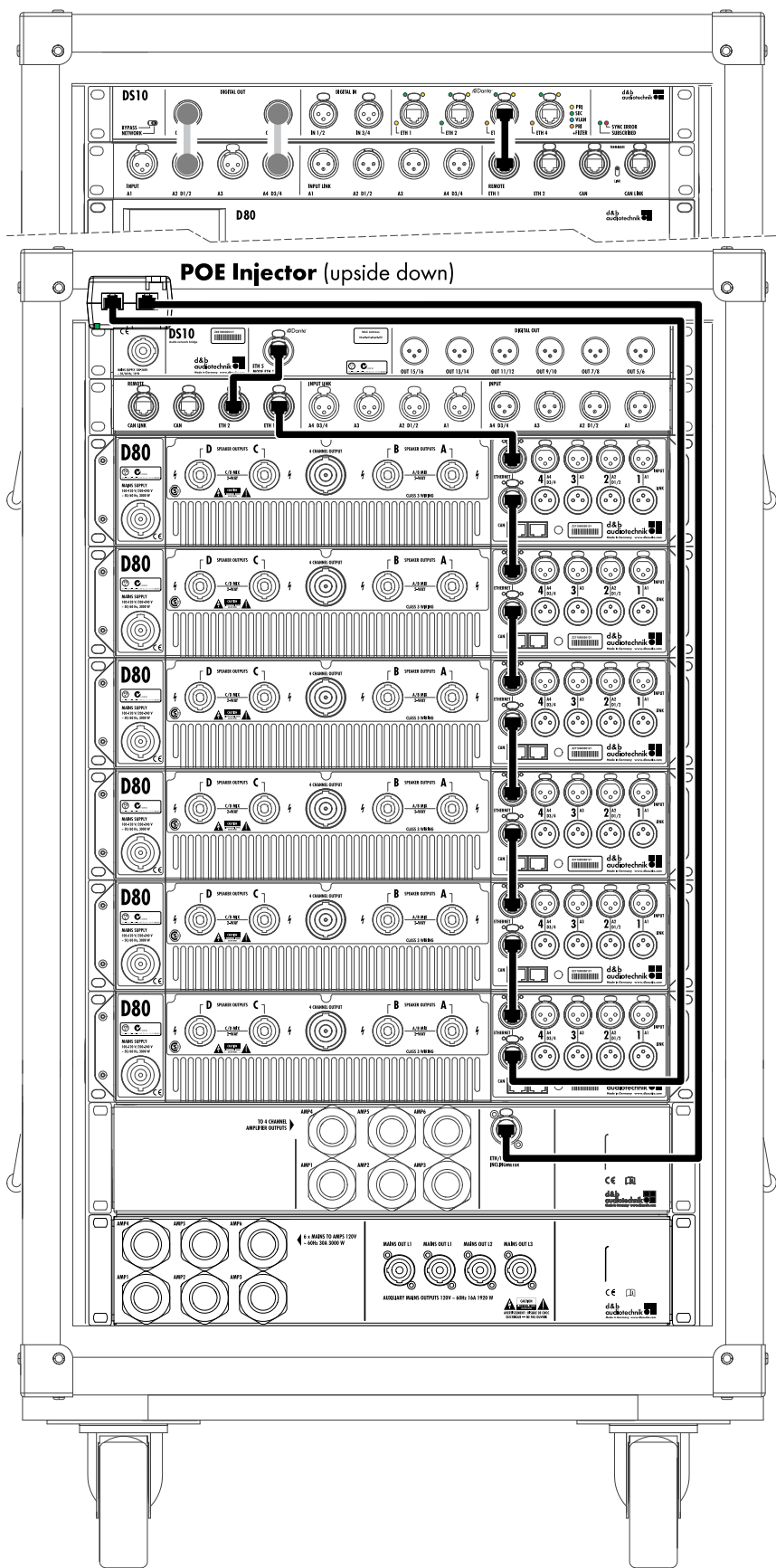
Internal 4 CHANNEL OUTPUT wiring



## Internal audio INPUT and LINK wiring



Internal Ethernet wiring and POE injection



Internal CAN-Bus wiring

