
The DKP-4016/4016W series keypanels delivers superior high-quality digital audio using OMNEO technology from Bosch with Dante audio over IP via either copper or fiber. The DKP-4016/4016W series keypanels delivers audio, free of noise, delay, and other artifacts present in legacy technology. This family of keypanels includes a rich set of connectors as standard, including **GPIO** (General Purpose Input and Output) and **RC** (Rear Connector) kit. As with other RTS products, emphasis is placed on backward compatibility with previous generations of matrices including analog technology.

The DKP-4016/4016W series utilizes the latest generation of wide angle TFT displays providing superior clarity, resolution, and longer display life delivering high-quality readability under a variety of lighting conditions.

Optionally, there are two (2) packages (Control and Audio) with additional features and functions, such as voice message, real-time control, keypanel mirroring, etc. For more information on these packages, see “Audio and Control Packages” on page 279.

Features

- Superior digital, high-quality audio over IP (Internet Protocol) included through OMNEO technology, the branded IP-based solution from Bosch.
- Advanced signal processing, delivering an audio experience, free of noise, echo, delay and other artifacts present in legacy technology.
- Backward compatible with legacy technologies, such as analog audio in USOC and 568-B formats.
- All previous optional hardware connectors (RC, GPI, etc) are now standard.
- New wide-angle high-definition display.
- Enhanced keypanel menus optimized for ease of use.
- For an additional price each, an Audio and/or Control add-on package is available for the DKP-4016/4016W, to greatly expand your keypanel and intercom system experience and capabilities. For more information on these packages, see “Audio and Control Packages” on page 279.

Specifications

LCD Display

DKP-4016/4016W

Active Area	120.10 mm (wide) x 35.86 mm (high)
Dot Resolution.....	576 x 172 pixels
Color Resolution	16-bit (64K) RGB color
View Angle.....	80 degrees (typical; all directions)

Power Supply:

Type:.....	Internal
AC Input:.....	100–240 VAC 50/60 Hz


General Purpose Inputs and Outputs:

Outputs

Type (relays).....	SPDT
Contact Rating.....	1AMP @ 30VDC

Inputs

Type.....	Optically Coupled
Input Voltage	5-18 VDC on A+

◆A+ is internally pulled to 5VDC. Connect K- to  to activate.◆

Inputs:

Matrix

Type.....	Balanced
Typical Input Level	+8 dBu
Typical Input Impedance.....	20 kΩ
Maximum Input Level.....	+20 dBu
Supported Bandwidth.....	100 Hz to 20 kHz

AUX

Type.....	Balanced
Typical Input Level	+8 dBu
Typical Input Impedance.....	20 kΩ
Maximum Input Level.....	+20 dBu
Supported Bandwidth.....	100 Hz to 20 kHz

Front Panel Mic

Type	Electret
Typical Input Level.....	-42 dBu
Typical Input Impedance	1 kΩ
Maximum Input Level.....	-25 dBu

Rear Panel Mic

Type	Electret
Typical Input Level.....	-42 dBu
Typical Input Impedance	1 kΩ
Maximum Input Level.....	-25 dBu

Left and Right Headset Mic - Electret

Typical Input Level.....	-42 dBu
Typical Input Impedance	1 kΩ
Maximum Input Level.....	-25 dBu

Left and Right Headset Mic - Dynamic

Typical Input Level.....	-50 dBu
Typical Input Impedance	600 Ω
Maximum Input Level.....	-25 dBu

Outputs:

Matrix

Type	Balanced
Typical Output Level	+8 dBu
THD+N%.....	<0.20%
Typical Output Impedance.....	600 Ω
Maximum Output Level	+20 dBu
Frequency Response	100 Hz to 20 kHz

MIC/LINE Out

Type	Balanced
Typical Output Level	+8 dBu
THD+N%.....	<0.20%
Typical Output Impedance.....	600 Ω
Maximum Output Level	+20 dBu
Frequency Response	100 Hz to 20 kHz

Headset - Left, Right

Maximum Output Power	125 mW for 32 Ω load
Earphone Impedance	16 Ω and above
THD+N%	<0.20%
Frequency Response	20 Hz to 20 kHz

Speaker - Rear

Maximum Output Power	5 W for 8 Ω load
Speaker Impedance	4 Ω and 8 Ω
THD+N%	<0.20%
Frequency Response	20 Hz to 20 kHz

Digital:**OMNEO Channels**

Typical OMNEO Latency	1 ms
Frequency Response	20 Hz to 20 kHz

Environmental:**Dimensions****DKP-4016/4016W**

3.60 in. H x 10.63 in. W x 9.35 in. D
(91.5 mm H x 270.1 mm W x 237.6 mm D)

Weight

DKP-4016/4016W	3.70 lb. (1.68 kg)
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Temperature

Operating	0° C to 55° C (32° F to 131° F)
Storage	-20° C to 70° C (-4° F to 158° F)

Power Consumption:**DKP-4016/4016W**

Nominal	25 Watts
Maximum	39 Watts
Maximum Volt Amp	63 VA

Certification:**CE Compliance**

- EMC
- EN55022 Class A
- VCCI Class A
- ICES-003
- FCC Part 15 Subpart B Class A
- AS/NZS CISPR22 Class A
- Korean KN 22
- EN 55024
- Korean KN 61000-4
- BSMI Class B

Safety

- UL 60950-4
- EN60950-1
- CB Report
- PSE

DKP-4016/4016W Block Diagram

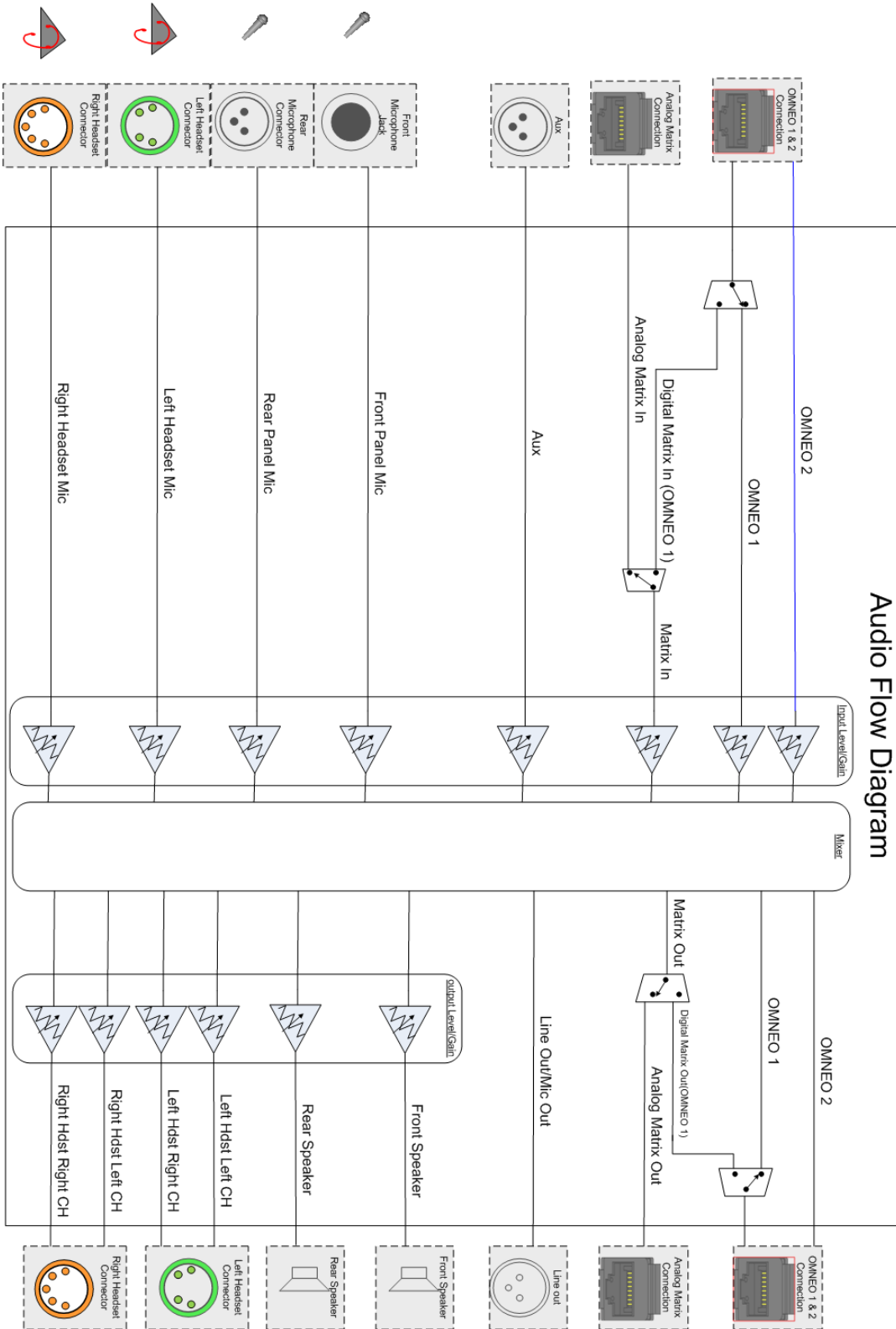


FIGURE 1. DKP-4016/4016W Audio Flow Block Diagram

a. Additionally licensed OMNEO channels 3-8 not shown.

Reference View – DKP-4016/4016W

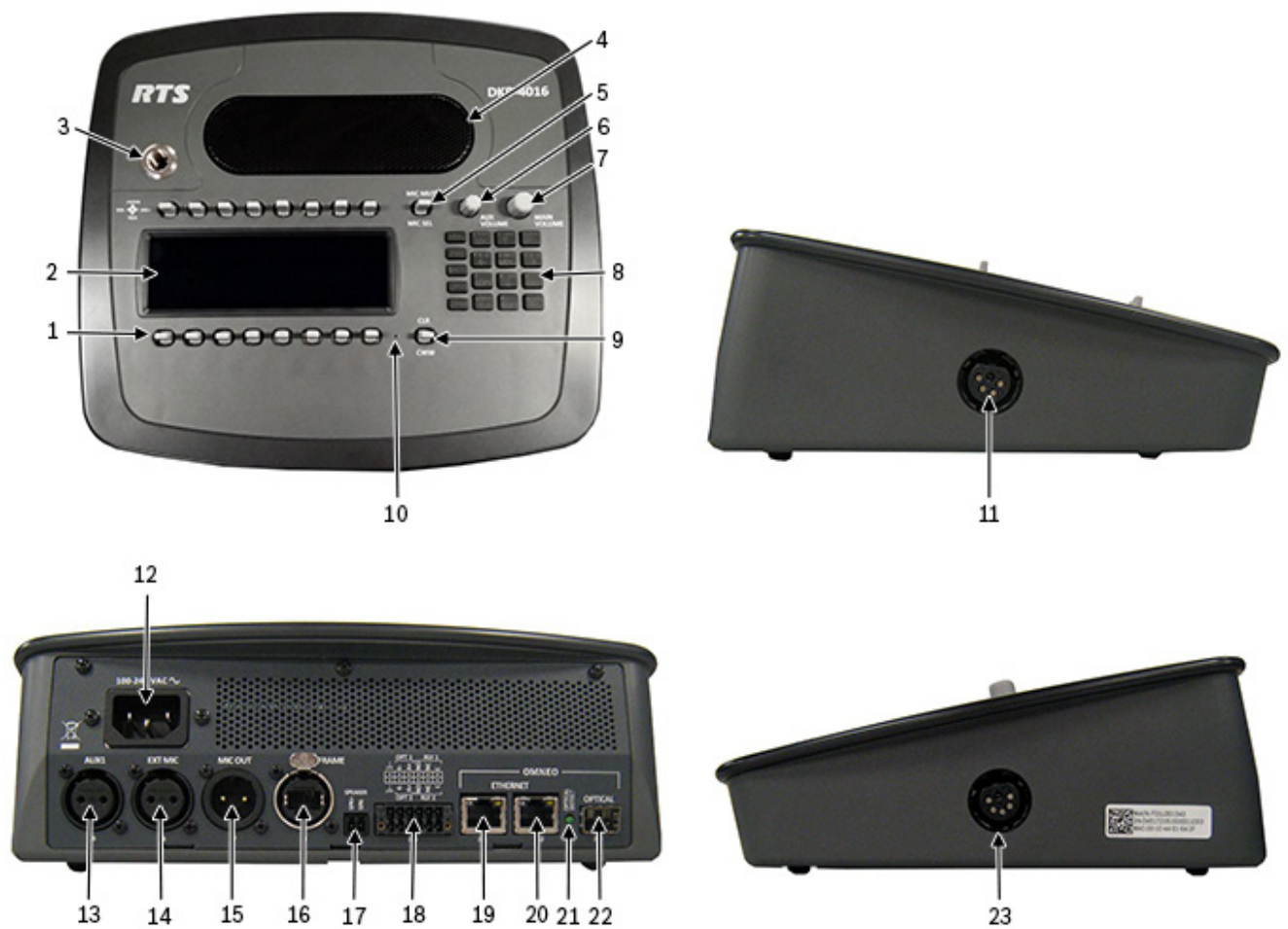


FIGURE 2. DKP-4016/4016W Reference View

- | | |
|--|---|
| 1. Multi-Directional Lever Keys | 16. FRAME Connector |
| 2. High Resolution, Wide-Angle LCD Display | 17. SPEAKER Connector (2-position Terminal Block) |
| 3. Microphone Connector | 18. GPIO Connector (12-position Terminal Block) |
| 4. Front Speaker | 19. OMNEO ETHERNET Connector |
| 5. MIC MUTE/MIC SEL Lever Key | 20. OMNEO ETHERNET Connector |
| 6. AUX VOLUME Knob | 21. OMNEO OPTICAL (fiber) Indicator LED |
| 7. MAIN VOLUME Knob | 22. OMNEO OPTICAL (fiber) Connector |
| 8. Keypad | 23. 5-pin Headset Connector |
| 9. CLR/CWW Lever Key | |
| 10. User Reset Hole | |
| 11. 4-pin Headset Connector | |
| 12. AC Power | |
| 13. AUX1 Connector | |
| 14. EXT MIC Connector | |
| 15. MIC OUT Connector | |

Connector Pinouts

Rear Speaker: J2	
Pin	Assignment
Pin 1	Rear Speaker -
Pin 2	Rear Speaker +

Aux1: J3	
Pin	Assignment
Pin 1	GND
Pin 2	AUX 1 IN +
Pin 3	AUX 1 IN -

Right Headset: J5 (Wallmount version – J15)	
Pin	Assignment
1	RIGHT_HS_MIC_IN -
2	RIGHT_HS_MIC_IN +
3	RIGHT_HS_COMMON
4	RIGHT_HS_L_OUT
5	RIGHT_HS_R_OUT

Left Headset: J15 (Wallmount version – J5)	
Pin	Assignment
1	LEFT_HS_MIC_IN -
2	LEFT_HS_MIC_IN +
3	LEFT_HS_COMMON
4	LEFT_HS_L_OUT

Rear Panel Mic: J6	
Pin	Assignment
1	REAR_PANEL_MIC_IN -
2	REAR_PANEL_MIC_IN +
3	GND

MIC OUT/LINE OUT: J7	
Pin	Assignment
1	GND
2	MIC_OUT/LINE_OUT +
3	MIC_OUT/LINE_OUT -

Matrix Connector: J8 ^a		
Pin	RJ-45	RJ-12
1	RS485 +	
2	RS485 -	RS485 -
3	FROM MATRIX +	FROM MATRIX +
4	TO MATRIX +	TO MATRIX +
5	TO MATRIX -	TO MATRIX -
6	FROM MATRIX -	FROM MATRIX -
7	RS485 +	RS485 +
8	RS485-	

a. Supports 568B and USOC wiring

GPIO Connector: J10	
Pin	Assignment
1	Chassis GND
2	OPTO2_CATHODE
3	OPTO2_ANODE
4	RELAY2_NO
5	RELAY2_NC
6	RELAY2_COM
7	Chassis GND
8	OPTO1_CATHODE
9	OPTO1_ANODE
10	RELAY1_NO
11	RELAY1_NC
12	RELAY1_COM

ETHERNET: J11	
Pin	Assignment
1	Data 1 +
2	Data 1 -
3	Data 2 +
4	Data 3 +
5	Data 3 -
6	Data 2-
7	Data 4+
8	Data 4-

ETHERNET: J12	
Pin	Assignment
1	Data 1 +
2	Data 1 -
3	Data 2 +
4	Data 3 +
5	Data 3 -
6	Data 2-
7	Data 4+
8	Data 4-

Front Panel Mic	
Pin	Assignment
Tip	REAR_PANEL_MIC_IN +
Ring	REAR_PANEL_MIC_IN -
Sleeve	CGND