



# EK SERIES

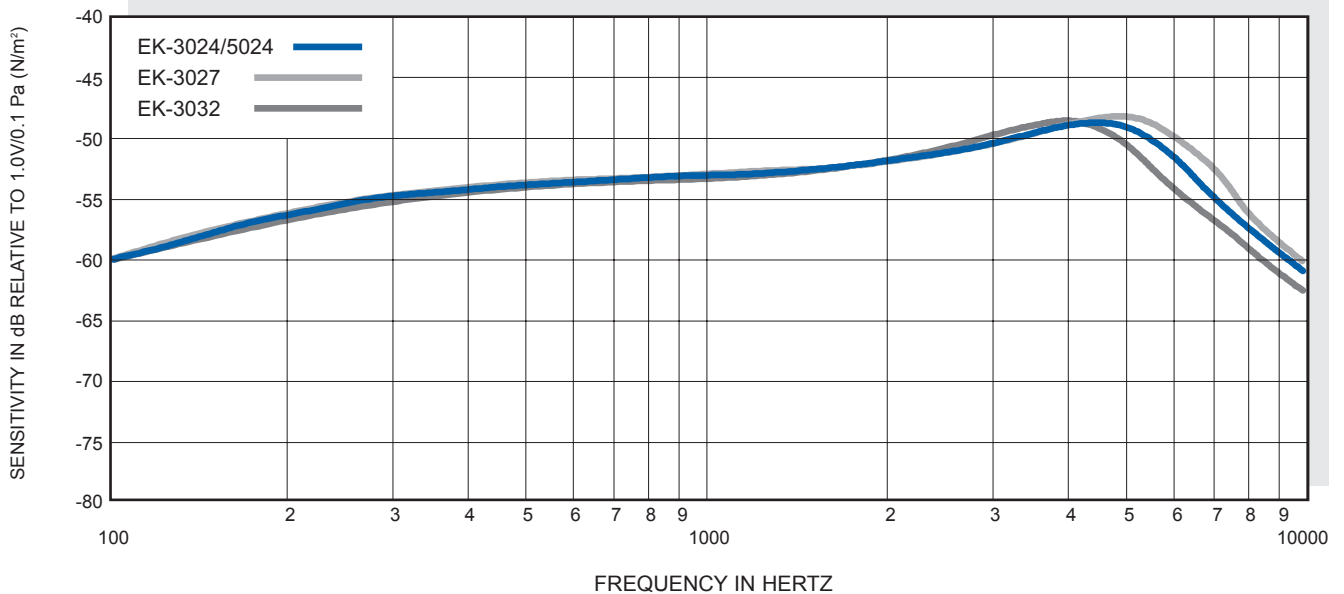


Actual Size

## Features

- Electret condenser microphone
- Lowest noise Knowles microphone
- Rugged construction to withstand severe environmental conditions
- High electroacoustic sensitivity
- High resistance to mechanical shock
- Low vibration sensitivity
- Various responses available
- Available with RFI suppression

## Standard Response



Open circuit sensitivity with 1.3VDC supply

*Knowles*

data sheet

**Power Requirements**

Supply Voltage ( $V_s$ )  
 range: 0.9 to 10V<sub>DC</sub>  
 typical: 1.3V<sub>DC</sub>

Quiescent Current Drain (@  $V_s = 1.3V_{DC}$ )  
 typical: 19μA  
 maximum: 50μA

**Performance**

Response/Sensitivity  
 see curves, pages 1, 4-6

Load Voltage ( $V_L$ )  
 range: 0.2 to 0.9V<sub>DC</sub>  
 typical: 0.5V<sub>DC</sub>

Sensitivity Range @ primary test frequency  
 Ski Slope and Step responses: ±3dB  
 all other responses: ±2dB

Output Noise Level  
 (A-weighted)  
 typical: -103dBV\*  
 maximum: -100dBV (Ski Slope models)

Low Supply Voltage Sensitivity Loss  
 ( $V_s$  reduced from 1.3 to 0.9V<sub>DC</sub>)  
 typical: 0.3dB  
 maximum: 3.0dB

Input-Referred Noise Level\*  
 (A-weighted, 1kHz ref.)  
 typical: 24dB SPL  
 maximum: 26dB SPL

Humidity Coefficient of Sensitivity  
 typical: 0.02dB per %RH  
 (in the absence of condensation)

Input-Referred Vibration Sensitivity\*  
 (1g acceleration, 1kHz ref.)  
 maximum: 62dB SPL

Output Impedance @ 1kHz  
 range: 2.8 to 6.8kΩ  
 nominal: 4.4kΩ

Temperature Range  
 operating: -17°C to 63°C  
 storage: -40°C to 63°C

Acoustic Polarity  
 Increased pressure at sound inlet  
 causes a positive going voltage to  
 appear at the output terminal, relative  
 to the negative terminal

ESD Tolerance  
 MIL-STD-750 Class 1 rating  
 EOS/ESD-S5.1-1993 Class 2 rating

Power Supply Feedthrough Attenuation  
 typical: 14dB, output-referred

\*For standard, damped, undamped, and broadband models only

**Mechanical**

Weight  
 0.13 grams

Case Material  
 Type 305 stainless steel

Dimensions  
 See outline drawings, page 7

Solder Content  
 Sn63Pb37

**Optional Soldering Fixture**

Base: ET-3042  
 Nest Plate: ET-800  
 Back Plate: ET-900

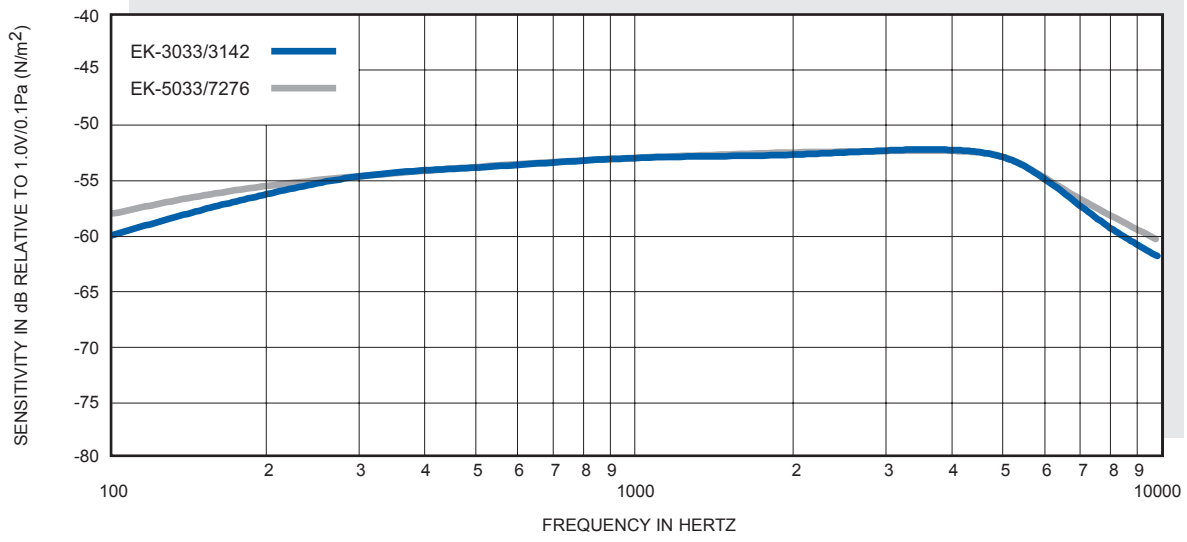
<b>Model</b>	<b>Port</b>	<b>Response</b>
EK-3024	12S	Standard
EK-3027	0KP	Standard
EK-3028	12S	6dB/octave Ski Slope
EK-3029	12S	12dB/octave Ski Slope
EK-3031	12S	Step
EK-3032	3S	Standard
EK-3033	12S	Damped Peak
EK-3091	0KP	12dB/octave Ski Slope
EK-3092	0KP	6dB/octave Ski Slope
EK-3103	0KPL	Broadband
EK-3115	12S	Step
EK-3132	Ka	Broadband
EK-3133	12SL	Broadband
EK-3142	0KP	Damped Peak
EK-5024	12S	Standard (Screenless)
EK-5033	12S	Damped Peak (Screenless)
EK-7136	12S	Undamped Peak
EK-7164	3S	Damped Peak
EK-7276	12S	Damped Peak
EK-9874	12S	12dB/octave Ski Slope

**Microphones are also available with RFI suppression filters.**

**Other model variations available upon request. Contact Knowles Electronics for details.**

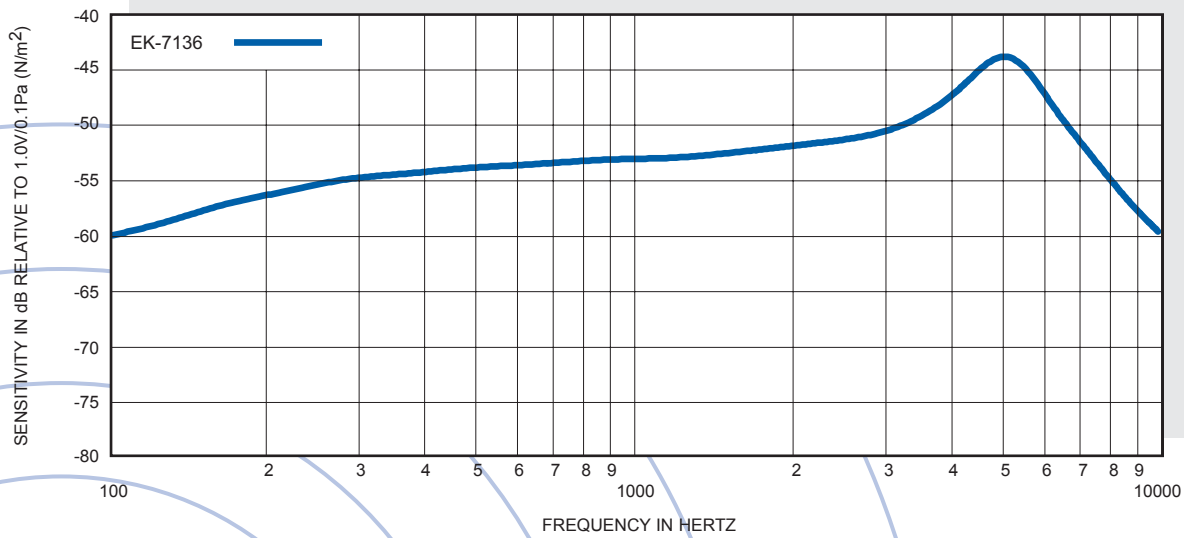


## Damped Peak Response



Open circuit sensitivity with 1.3VDC supply

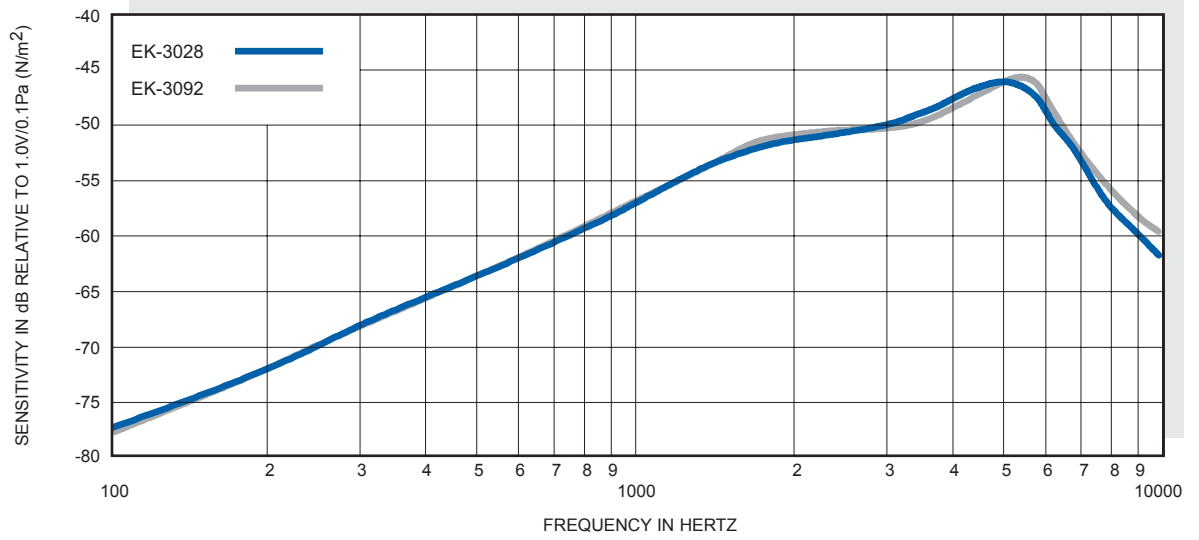
## Undamped Peak Response



Open circuit sensitivity with 1.3VDC supply

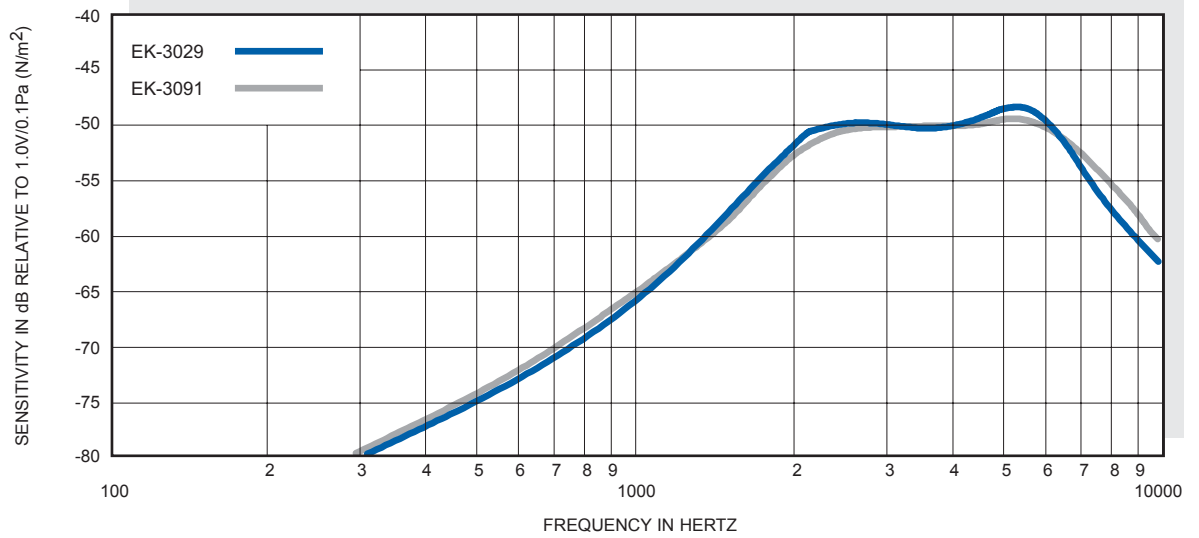


## 6dB/Octave Ski Slope Response



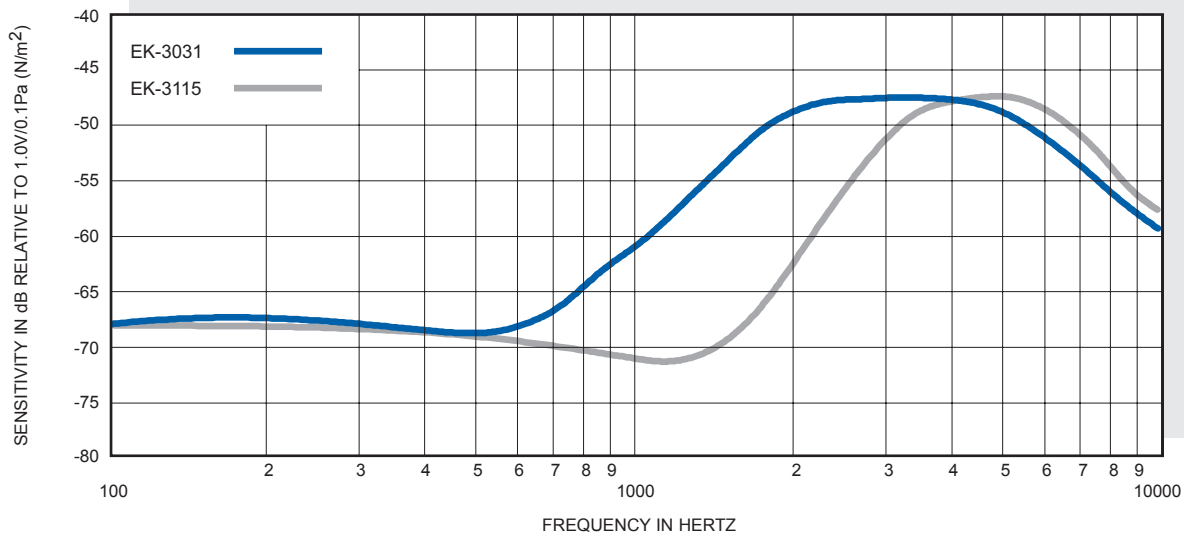
Open circuit sensitivity with 1.3VDC supply

## 12dB/Octave Ski Slope Response



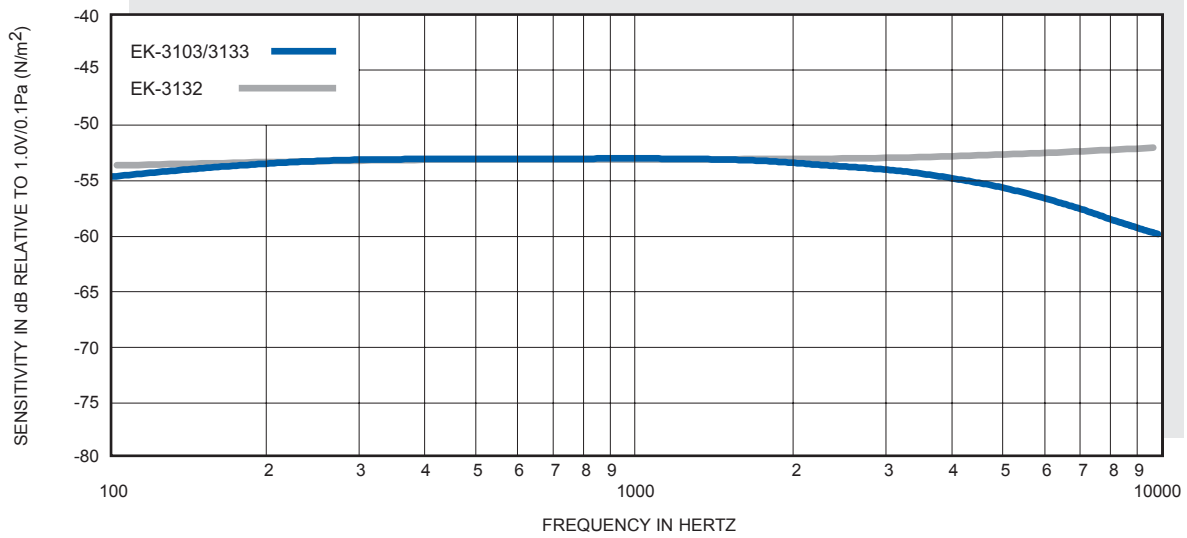
Open circuit sensitivity with 1.3VDC supply

## Step Response



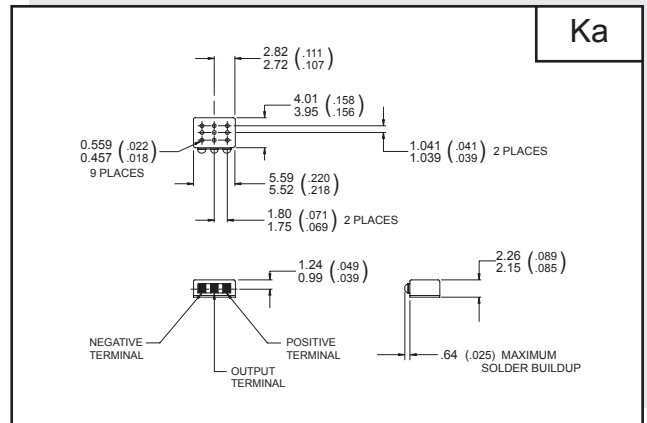
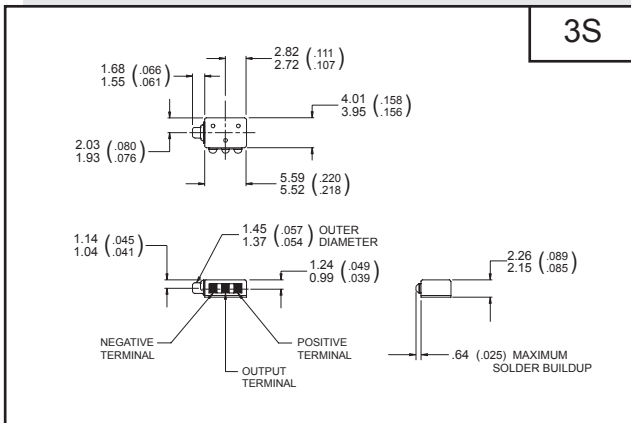
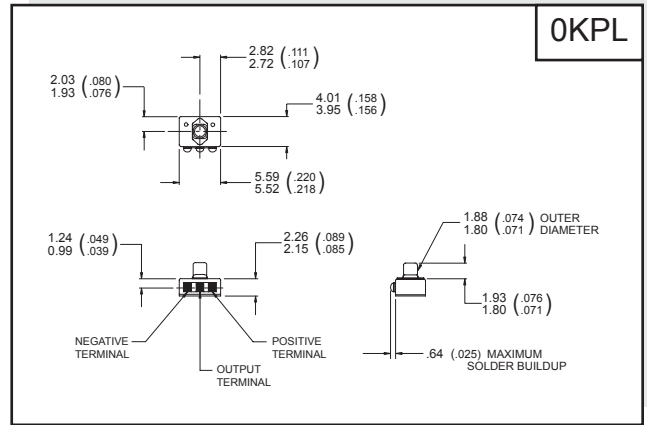
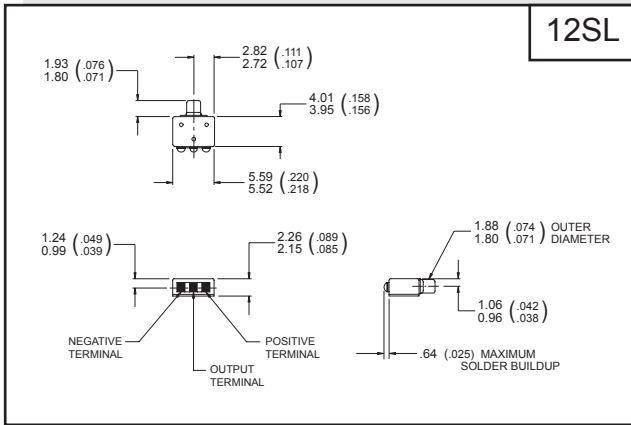
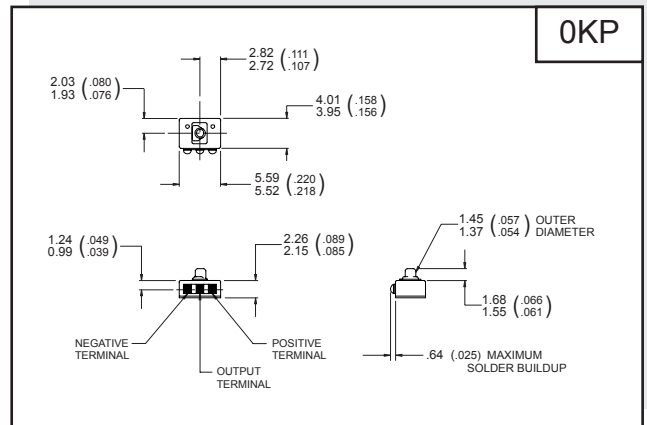
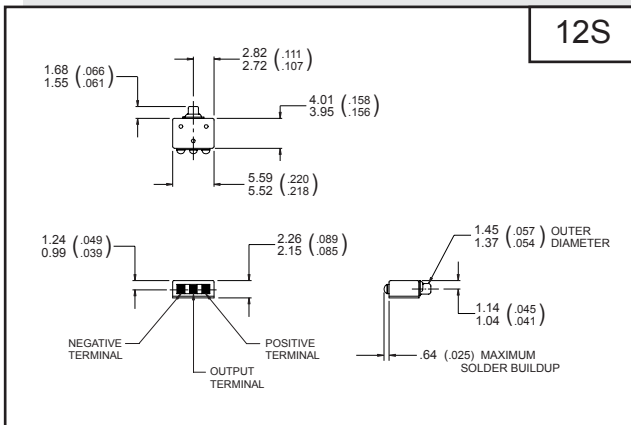
Open circuit sensitivity with 1.3VDC supply

## Broadband Response



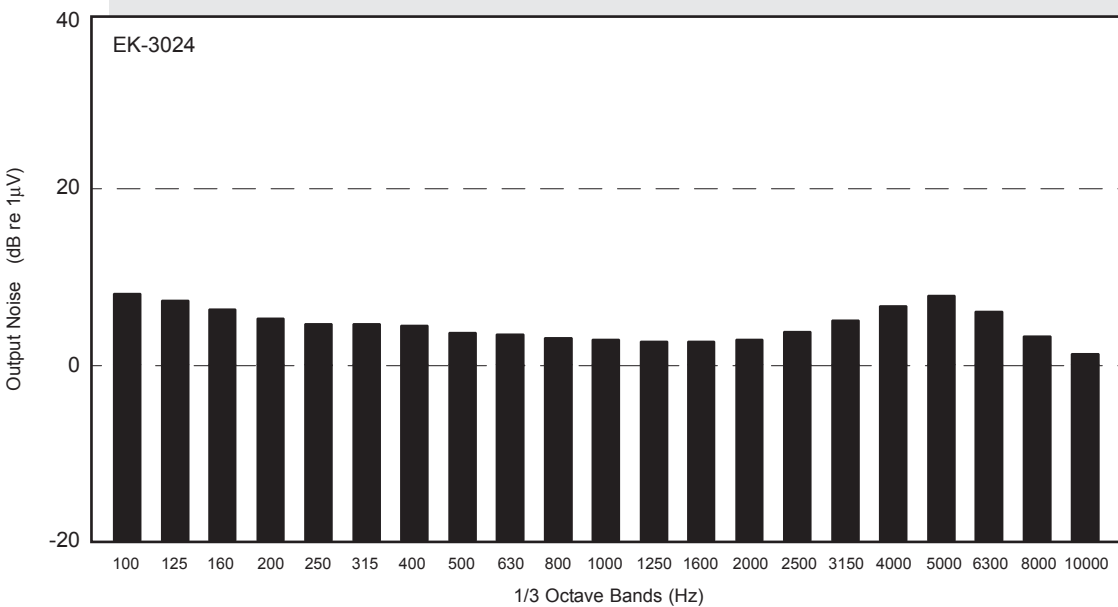
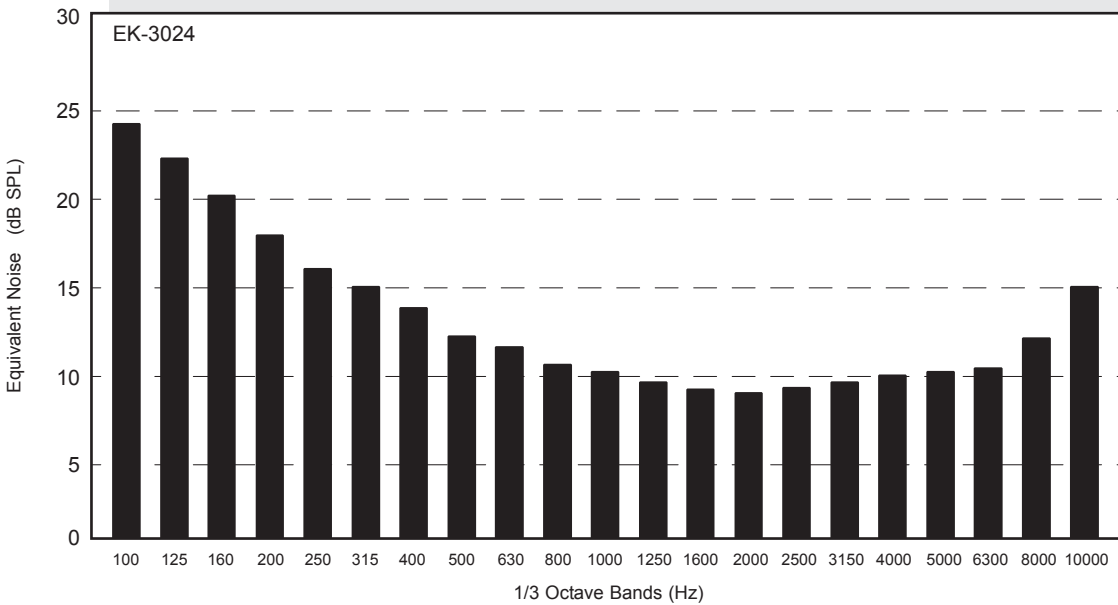
Open circuit sensitivity with 1.3VDC supply

# Signal Port Locations



Dimensions in millimeters (inches)

## 1/3 Octave Equivalent Noise & Output Noise



Knowles Electronics, Inc.  
1151 Maplewood Drive  
Itasca, Illinois 60143  
Phone: (630) 250-5100  
Fax: (630) 250-0575  
www.knowles.com

Knowles Europe  
York Road, Burgess Hill  
West Sussex, RH15 9TT, England  
Phone: (44) 1444 235432  
Fax: (44) 1444 248724

Knowles Electronics Taiwan, Ltd.  
53 Pao Hsing Road  
Hsin Tien City, Taipei, Taiwan  
Republic of China  
Phone: (886) 2 2911 4931  
Fax: (886) 2 2918 6868

Knowles Electronics Japan KK  
Kyodo Bloom Building  
19-1 Miyasaka 2-Chome  
Setagaya-Ku, Tokyo 156-0051, Japan  
Phone: (81) 3 3439 1151  
Fax: (81) 3 3439 8822

Micromax Pty. Ltd.  
P.O. Box 1238  
Wollongong N.S.W.  
2500, Australia  
Phone: (61) 2 4226 6777  
Fax: (61) 2 4226 6602

NOTE: Specifications are subject to change without notice. The information on this Data Sheet reflects typical applications. Specific test specifications defining each model are available by requesting Outline Drawing Sheets 1.1 and Performance Specifications Sheets 2.1 of that model number. Knowles' responsibility is limited to compliance with the Outline Drawing and the Performance Specification application to the subject model at time of manufacture.

**Knowles Electronics, Inc.**