

# Acoustic Components

Boom Microphones and Sensors



## W Series



- Designed for customers who are looking for small footprint and lightweight platform with waterproofing to 1m (based on IP67 rating)
- Plastic head design with metal flexible boom
  - Available in 4.2mm down to 2.7mm diameter metal flexible boom
- Security, Police, Fire dispatchers and other lightweight communication headsets
  - SWAT, SRT, HRT, Bike Patrol, Motorcycle Patrol, Mounted and Marine Patrol, K9 Officer
- Designed for the NR and WP elements, but can also accommodate EK and EA series

Model	*Rating	<sup>†</sup> Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-DW-30294-000	3m	WP-25993-D63	Noise Canceling	140	60	4.2	2-WIRE
FB-BW-30335-000	3m	WP-25993-D63	Noise Canceling	160	60	2.7	2-WIRE
FB-DW-30296-000	3m	WP-25993-000	Noise Canceling	140	60	4.2	3-WIRE
FB-DW-30293-000	IP54 <sup>‡</sup>	NR-25994-D63	Noise Canceling	140	60	4.2	2-WIRE
FB-BW-30330-000	IP54 <sup>‡</sup>	NR-25994-D63	Noise Canceling	160	60	2.7	2-WIRE
FB-DW-30295-000	IP54 <sup>‡</sup>	NR-25994-000	Noise Canceling	140	60	4.2	3-WIRE

\*Rating done to IP67 test criteria <sup>†</sup>WP-Series elements are waterproof <sup>‡</sup>Splashproof meeting IP54 test criteria

## E Series



- Designed for customers who are looking for small footprint and lightweight platform
- Plastic head design with metal flexible boom
  - Available in 4.2mm down to 2.7mm diameter metal flexible boom
- Internal Security, Telemarketing and office communications, Police and Fire dispatchers and other lightweight applications
  - Non-emergency Service personnel, Inside Customer Service and Sales communications
- Designed for standard ECM elements
  - Uni-directional, Noise Canceling, Omni Directional

Model	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-AE-30389-000	MB6022NSC-0C	Noise Canceling	127 (positionable cable)	60	2.7	2-WIRE
FB-AE-30209-000	MB6022ASC-1	Omni-directional	127 (positionable cable)	60	2.7	2-WIRE
FB-DE-30290-000	MB6022NSC-0C	Noise Canceling	140	60	4.2	2-WIRE
FB-DE-30291-000	MB6022ASC-1	Omni-directional	140	60	4.2	2-WIRE
FB-DE-30292-000	MB6022USC-3	Uni-directional	140	60	4.2	2-WIRE

## I Series



- Designed for military customers who are looking for a noise canceling non-power element in robust platform with waterproofing options from 1m down to 10m (based on IP67 rating)
  - Also available in Omni Directional
  - Meets MIL-STD-810F standards
- Plastic head design with metal flexible boom
  - Available in 5.9mm down to 4.2mm diameter metal flexible boom
- Military forces, Special Operations, Security and Police and other military communication headsets
  - Mounted and un-mounted ground forces, armor units
- Designed for the BJ series elements

Model	*Rating	Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-EI-30026-000	1m	BJ-28471-000 (150Ω Impedance)	Noise Canceling	172	60	5.4	2-WIRE
FB-EI-30426-000	1m	BJ-28486-000 (30Ω Impedance)	Noise Canceling	172	60	5.4	2-WIRE

\*Rating done to IP67 test criteria

## O Series



- Designed for military customers who are looking for a noise canceling electret element in a metal EMI shielded housing
  - Available in Omni Directional
  - Waterproof options down to 3m using WP elements
- Metal head design with metal flexible boom
  - Available in 8.0mm down to 4.2mm diameter metal flexible boom
- Military forces, Special Operations, Security, Fire and Police and other communication headsets
  - Over the ear, earcup or helmet designs for mounted and non-mounted ground forces
- Designed for the EK, NR and WP elements series

Model	*Rating	<sup>†</sup> Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-DO-23511-000	3m	WP-23501-000	Noise Canceling	142	150	4.2	2-WIRE
FB-DO-25946-000	3m	WP-23501-000	Noise Canceling	54	30	4.2	2-WIRE
FB-HO-25624-000	3m	WP-23501-000	Noise Canceling	142	160	5.0	2-WIRE
FB-FO-25581-000	n/a	EK-23024-000	Omni-directional	104	140	5.9	2-WIRE

\*Rating done to IP67 test criteria <sup>†</sup>WP-Series elements are waterproof

## M Series



- Designed for military customers who are looking for a noise canceling electret element in robust waterproof housing
  - Available in Omni Directional
  - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810F)
- Plastic head design with metal flexible boom
  - Available in 6.0mm down to 2.7mm diameter metal flexible boom
- Military forces, Special Operations, Security, Fire and Police and other high end communication headsets
  - Over the ear, earcup or helmet designs for mounted and non-mounted ground forces
- Designed for EK, NR and WP series elements

Model	*Rating	<sup>†</sup> Microphone Element	Directivity	Boom Length Tip-To-Tip (mm)	Exit Wire Length (mm)	Nominal Boom Diameter (mm)	Microphone Configuration
FB-EM-30342-000	1m	NR-25994-D63	Noise Canceling	167	60	5.4	2-WIRE
FB-EM-30343-000	3m	WP-25993-D63	Noise Canceling	167	60	5.4	2-WIRE
FB-EM-30344-000	10m	NR-25994-D63	Noise Canceling	167	60	5.4	2-WIRE
FB-EM-30345-000	20m	NR-25994-D63	Noise Canceling	167	60	5.4	2-WIRE
FB-EM-30346-000	1m	EK-23132-C36	Omni-directional	167	60	5.4	2-WIRE
FB-EM-30348-000	10m	EK-23132-C36	Omni-directional	167	60	5.4	2-WIRE
FB-EM-30349-000	20m	EK-23132-C36	Omni-directional	167	60	5.4	2-WIRE

\*Rating done to IP67 test criteria <sup>†</sup> WP-Series elements are waterproof

## F Series



- Designed for ruggedized panel mounted applications for outdoor microphone and sensor applications
  - Available in Omni Directional
  - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810F)
- Police and Military forces, Special Operations, personalized shot detection systems
  - Sensor arrays for vibration acoustic signatures and triangulation systems
- Designed for the EK, NR and WP elements series

Model	*Rating	Microphone Element	Directivity	Exit Wire Length (mm)	Sensor Diameter (mm)	Microphone Configuration
VEK-F-30350-000	1m	EK-23132-C36	Omni-directional	200	16	3-WIRE
VEK-F-30351-000	10m	EK-23132-C36	Omni-directional	200	16	3-WIRE
VEK-F-30352-000	20m	EK-23132-C36	Omni-directional	20	16	3-WIRE
VEK-F-30460-000	1m	EK-23132-C36	Omni-directional	10	16	3-WIRE
VEK-F-30300-000	20m	EK-23132-C36	Omni-directional	8	16	3-WIRE
VEK-F-30470-000	1m	EK-26899-P58	Omni-directional	174 (Shielded)	16	3-WIRE

\*Rating done to IP67 test criteria

## H Series



- Designed for ruggedized fixed position and mounted applications for outdoor sensor arrays for vibration, acoustic signatures and triangulation systems
  - Available in Omni Directional
  - Waterproof options from 1m down to 20m (per IP67, IP68 and MIL-STD-810F)
- Conductive plastic housing designed to pass MIL-STD-810F EMI shielding housing with shielded cable assembly
  - Available with extra high SPL circuit design
  - Custom PCBA options available within the housing cavity
- Military, homeland security, border patrol, Police and local municipality applications
  - Electronic fence, ground sensor / vibration sensor technology, human, light and heavy armored vehicle, helicopter sensors
- Designed for EK, NR, GH and WP series elements

Model	*Rating	<sup>†</sup> Microphone Element	Directivity	Sensor Length (mm)	Sensor Diameter (mm)	Exit Wire Length (mm)	Microphone Configuration
VWP-H-30109-000	3m	WP-30113-P03	Omni-directional	21	12.7	211	3-WIRE
VEK-H-30320-000	1m	EK-23169-P03	Omni-directional	21	12.7	211	3-WIRE
VEK-H-30108-000	1m	EK-26899-P03	Omni-directional	21	12.7	211	3-WIRE

\*Rating done to IP67 test criteria <sup>†</sup>WP-Series elements are waterproof

## Elements

Series		Size (mm)	Directivity	Port Location	Sensitivity @ 1kHz	Input-Referred Noise Level (typical)
<b>FG</b>		2.59 dia. x 2.59	Omni	Front	-53dB	27dB
<b>EM</b>		3.61 x 3.61 x 2.21	Omni	Front	-52dB	24.5dB
<b>NR</b>		4.00 x 5.59 x 2.28	Noise Canceling	Front Top/Bottom	-52dB	N/A
<b>EA</b>		5.56 x 3.98 x 2.21	Omni	Front Top/Bottom	-59dB	25dB
<b>EK/EL</b>		5.56 x 3.98 x 2.21	Omni (EK) Uni (EL)	Front Top/Bottom	-53dB -52dB	24dB N/A
<b>BJ</b>		7.87 x 5.59 x 4.01	Omni Noise Canceling	Front Top/Bottom	-75dB	0
<b>WP*</b>		4.00 x 5.59 x 2.28	Omni Noise Canceling	Top/Bottom Top/Bottom	-53dB -54dB	24dB N/A

## Options

### Bulkhead / Boom End Connectors

- 4mm & 6mm with washers and Teflon threaded lock nuts
- Soldered on housing capture / anchors for mechanical design and/or boom over molding

### Cable Assemblies

- Ultra thin 36 AWG "Litz" cable (multiple color configurations available)
- Standard hook up wire 28 to 34 AWG (multiple color configurations available)
- RFI / EMI shielded in 2 and 3 conductor + shield configurations (UL-758) 26 to 32 AWG
- Custom electrical end terminations / connectors (male and female configurations)

### Upgrades

- Moisture resistant wind shields / screens (treated)
- Custom Logo Marking options
- Up-graded Flexible Metal Gooseneck Material

Additional custom design options are available. Please contact your local sales representative for further information.

**FB-F I -30026-000**



**1**  
**Product Description**  
FB: Flexible Boom

**2**  
**Boom Diameter**

A: 2.3mm OD Positionable Cable  
B: 2.7mm OD Gooseneck (w/shrink tube)  
D: 4.2mm OD Gooseneck (w/shrink tube)  
E: 5.4mm OD Gooseneck (w/shrink tube)  
F: 5.9mm OD Gooseneck (w/shrink tube)

**3**  
**Head Series**

E: Plastic ECM Housing  
I: BJ Housing  
M: NR/WP Waterproof Housing  
O: Original Housing  
W: Plastic Housing w/ Sinter Disc

**4**  
**Model #**  
Knowles Internal  
Reference Only

**VWP-F-30109-000**



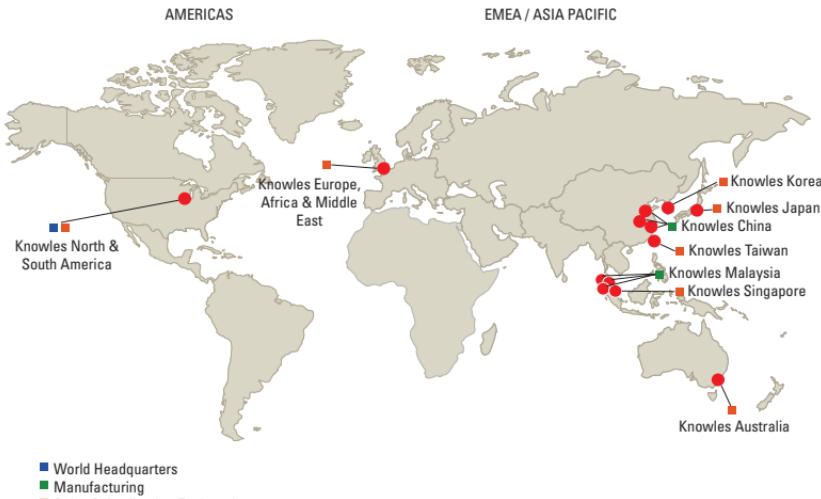
**1**  
**Product Description**  
V: Value Added

**2**  
**Element Series**  
EK, EA, WP

**3**  
**Housing Series**  
B: Over Molded  
C: Custom Design  
F: Plastic Fixed Housing  
H: ESD Shielded Plastic

**4**  
**Model #**  
Knowles Internal  
Reference Only

# Globally Positioned



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**AMERICAS:**

1151 Maplewood Drive  
Itasca, IL 60143  
U.S.A.  
Phone: 630-250-5930  
Fax: 630-250-5932

**EUROPE:**

York Road, Burgess Hill  
West Sussex, England  
RH15 9TT  
Phone: 44-1444-235432  
Fax: 44-1444-248724

**JAPAN:**

5/F YK Bldg. 2-16  
Sangenjaya 2-Chome  
Setagaya-Ku, Tokyo, Japan  
154-0024  
Phone: 81-3-5779-8503  
Fax: 81-3-5779-8523

**KOREA:**

#1212 Dongbu Root Bldg.,  
16-2, Sunae-Dong  
Bundang-Ku Sungnam-Shi,  
Kyunggi-Do  
Korea, South  
Phone: 82-31-712-2223  
Fax: 82-31-712-3314

**ASIA:**

5F, No. 129, Lane 235,  
Bauchiao Rd.  
Shindian City, Taipei 23145  
Taiwan  
Phone: 886-2-8919-1799  
Fax: 886-2-8919-1798



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