

ISIS-Series Loudspeakers

ISIS W-102M and ISIS 102M 10" two-way, medium dispersion ISIS W-102W and ISIS 102W 10" two-way, wide dispersion ISIS W-122M and ISIS 122M 12" two-way, medium dispersion ISIS W-152M and ISIS 152M 15" two-way, medium dispersion

User Manual







Important Safety precautions & Explanation of symbols

- 1- Read these instructions.
- 2- Keep these instructions.
- 3- Heed all warnings.
- 4- Follow all instructions.
- 5- Clean only with a dry cloth.
- 6- Install in accordance with QSC Audio Product's instructions and a licensed, professional engineer.

7- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

- 8- Only use attachments/accessories from QSC Audio Products, Inc.
- 9- Use only with mounts or brackets specified by QSC Audio Products.
- 10- Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in this manual.

WARNING! Before placing, installing, rigging, or suspending any speaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage. Any missing, corroded, deformed or non-load rated component could significantly reduce the strength of the installation, placement, or array. Any such condition severely reduces the safety of the installation and should be immediately corrected. Use only hardware which is rated for the loading conditions of the installation and any possible short-term unexpected overloading. Never exceed the rating of the hardware or equipment. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.

Warranty (USA only; other countries, see your dealer or distributor)

Disclaimer

QSC Audio Products, Inc. is not liable for any damage to amplifiers, or any other equipment that is caused by negligence or improper installation and/or use of this loudspeaker product.

QSC Audio Products 3 Year Limited Warranty

QSC Audio Products, Inc. ("QSC") guarantees its products to be free from defective material and / or workmanship for a period of three (3) years from date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use - provided the unit is returned to our factory or one of our authorized service stations via prepaid transportation with a copy of proof of purchase (i.e., sales receipt). This warranty provides that the examination of the return product must indicate, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. QSC shall not be liable for incidental and/or consequential damages. This warranty gives you specific legal rights. This limited warranty is freely transferable during the term of the warranty period.

Customer may have additional rights, which vary from state to state.

In the event that this product was manufactured for export and sale outside of the United States or its territories, then this limited warranty shall not apply. Removal of the serial number on this product, or purchase of this product from an unauthorized dealer, will void this limited warranty.

Periodically, this warranty is updated. To obtain the most recent version of QSC's warranty statement, please visit www.qscaudio.com.

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Introduction

Thank you and congratulations on your purchase of QSC's ISIS multipurpose loudspeakers. These products represent the state-ofthe-art in lightweight SR (sound reinforcement) loudspeaker systems. To get the most from your investment, we encourage you to review this manual carefully.

The ISIS 102M, ISIS 102W, ISIS 122M, and ISIS 152M loudspeaker systems are full range, high output, two-way designs delivering superior sound quality and high SPL in a lightweight, all-weather cored composite enclosure.

The ISIS W-102M, ISIS W-102W, ISIS W-122M, and ISIS W-152M loudspeaker systems are wooden enclosure versions and are essentially identical with the exceptions of weight and weather resistance. These models offer an economical alternative to the cored composite enclosures in high quality 13 to 18 ply baltic birch.

Applications include flown arrays, yoke mounting, foldback stage monitors, and portable event use (pole mount). Hardware options make the ISIS loudspeakers versatile and easy to reconfigure for mobile and touring sound companies. These loudspeakers make an excellent choice for a wide variety of SR applications.



Do not install wooden enclosure models in exterior environments unless fully shield from the weather.

Product Features (ISIS 102M (handle on top) and ISIS W-102M (side recess) shown)

Note: Models featuring cored composite enclosures have a carrying handle on their top, whereas wooden enclosure models have a handling recess on the side of the enclosure. A wooden enclosure is shown at the far right, below. Other views are of a cored composite enclosure.









- 1- High-frequency driver/waveguide assembly (102W waveguide differs)
- 2- Low-frequency driver
- 3- Removable metal/foam grill
- 4- Fly track (top and bottom of cabinet)
- 5- Carrying handle
- 6- Rear pick-point
- 7- Connection panel with two Speakon® connectors wired in parallel and crossover mode selector switch
- 8- Pole cup (bottom of cabinet)

Note- Standard model shown. Custom product options may include hardware and connector variations.

Coverage Angles

102M/122M/152M- These models are equipped with 60° conical waveguides. HF coverage remains constant regardless of cabinet orientation.

102W- Before mounting the loudspeaker, determine the mounting orientation and desired coverage angles. As supplied from the factory, the loudspeaker's coverage angles are 150° (horizontal) x 50° (vertical) with the cabinet oriented vertically. The waveguide can be rotated to interchange the coverage angles.

Rotating the Waveguide to Alter HF Coverage Pattern (102W only)

1- Remove the grill. It is held in place by eight cap head screws.

2- Remove the four waveguide retaining screws. A #2-size Phillips screwdriver is recommended.

3- Reach into the waveguide's port and pull gently to remove the waveguide. Be careful not to damage the connections, wiring, or the gasket between the waveguide and the cabinet. The aluminum spacer ring must remain in place.

4- Rotate the waveguide 90° clockwise or counterclockwise and set it back in place. Make certain the wiring is not stressed or pulled loose from its connections when rotating the assembly.

5- Before reinstalling the waveguide mounting screws, lift the assembly a small distance and make sure that the gasket and spacer ring are properly in place. Reposition, if required. Set the waveguide in place and install the screws. We recommend the use of removable thread sealant to prevent the screws from loosening. Do not overtighten.

6- Replace the grill. We recommend the use of removable threadlocker to prevent the screws from loosening. Do not over-tighten.

Waveguide slot vertically oriented: (102W only; as shipped from factory)

Waveguide slot horizontally oriented: (102W only; requires waveguide rotation)





Select the Desired Crossover Mode

All models are equipped with a Crossover Mode switch. Before using, set the Crossover Mode switch to the desired position using a flat-tip screwdriver. The switch has a slotted shaft; insert the screwdriver tip into the slot and turn the shaft so the slot points to the desired mode. Do not change switch positions with power applied.

FULL RANGE: This setting uses the internal crossover network. Connect the full-range input signal to Speakon pins 1+ and 1-.

BI-AMP: This setting bypasses the internal crossover network and connects Speakon pins 1+ and 1- to the low-frequency (LF) driver and pins 2+ and 2- to the high-frequency (HF) driver. Signal processing ahead of the amplifier is required; the HF driver can easily be damaged if full range program is applied! Use a four-wire cable and an amplifier configured to operate in bi-amp mode.



BIAMP OPERATION- Signal processing ahead of the amplifier is required; the HF driver can easily be damaged if full range program is applied!

Make the Required Connections

All models are equipped with two Neutrik NL4-series airtight Speakon connectors. The two connectors are wired in parallel, allowing for multiple cabinets to be connected in parallel by plugging one cabinet into another with a suitable cable

Connector pinout is determined by the Crossover Mode switch setting. Full Range selection uses Speakon pins 1+ and 1-. Bi-amp selection uses pins 1+ and 1- for the LF driver. 2+ and 2- for the HF driver. There are pinout charts printed on the connector plate.



Maintain proper speaker and amplifier connection polarity throughout the entire system. All positive-marked loudspeaker terminals should be connected to positive-marked amplifier output terminals. This will provide the best possible low-frequency output from your system.

Speakon plug pinouts- The Speakon plugs that are connected to the loudspeaker cabinets should conform to the pin outs shown at right. The connectors are shown from the wire-insertion end and show the inside of the disassembled Speakon plug.



BI-AMP







Recommended Fastener Torque

Fly track to cabinet-4.52 Nm (40 in-lb) Pole cup to cabinet- 1.92 Nm (17 in-lb) Waveguide to cabinet- 1.92 Nm (17 in-lb) LF driver to cabinet- 1.92 Nm (17 in-lb) Grill to cabinet-1.01 Nm (9 in-lb) Connector plate to cabinet-1.01 Nm (9 in-lb)



All fasteners should be checked for tightness before loudspeaker use. If any fastener is loose or is removed for any reason, ensure it is installed using a torque-limiting tool to avoid cabinet damage. Fly track hardware is safetycritical and should be carefully checked before suspending or rigging the cabinet.

ISIS 102M Dimensions (ISIS 102W similar)



ISIS W-102M Dimensions (ISIS W-102W similar)



ISIS 122M Dimensions



ISIS W-122M Dimensions



ISIS 152M Dimensions



ISIS W-152M Dimensions



ISIS 102M and ISIS W-102M Specifications

102M Full Range Specifications (Crossover Mode switch set to Full Range, Passive)

Frequency Range (free field)	Frequency Respons	- ;e (-6 dB) 3ange (-10 d	60-19k Hz B) 50-20k Hz
Maximum Output	Usable frequency f	ange (10 a	
Calculated Continuous rms Output	118 dB SPI		
Calculated Maximum Peak Output	124 dB SPI		
Continuous Noise Exposure Level	116 dBA SPI		
Impedance			
Nominal	8 ohms		
Minimum	6 7 ohms @ 3 kHz		
Maximum	50 ohms @ 35 Hz		
Power Rating			
rms Power Handling	300 Watts 100hrs	IFC 268-5 5	50-20kHz_6 dB crest factor
Recommended Amplifier Power	600 Watts	120 200 0, 0	
Sensitivity			
1 W, 1 m free field	93 dB SPL		
Nominal Coverage, -6 dB	Conical 60°		
Directivity Index & Q	Frequency (Hz)	DI (dB)	۵
	500	3.6	2.3
	1000	7.7	5.9
	2000	9.6	9
	4000	10.7	11.7
	8000	9.8	9.6
	16000	9.3	8.5
102M Bi-Amp Specifications (Crossover Mode switch set	to Bi-Amp, LF= low	/ frequenc	y transducer, HF= high frequency transducer)
Frequency Range (free field)	LF	•	HF
Frequency Response (-6 dB)	70-6.5k Hz		 640-17k Hz
Usable (-10 dB)	50-7k Hz		520-19.3k Hz
Maximum Output			
Calculated Continuous rms Output	119 dB SPL		127 dB SPL
Calculated Maximum Peak Output	125 dB SPL		133 dB SPL

	Calculated Maximum Peak Output	125 dB SPL	133 dB SPL
	Continuous Noise Exposure Level	117 dBA SPL	
Imp	edance		
	Nominal	8 ohms	8 ohms
	Minimum	7.9 ohms @ 280 Hz	9.2 ohms @ 3.1 kHz
	Maximum	53 ohms @ 35 Hz	67 ohms @ 460 Hz
Pov	ver Rating		
	rms Power Handling (2 hrs., 6 dB crest factor, within usable freq. range)	300 W	80 W
	Recommended Amplifier Power	600 W	160 W
Sen	sitivity		
	1 W, 1 m, free field, within usable freq. range	94 dB	108 dB

102M Bi-Amp with recommended DSP Parameters (QSC DSP configurations are available at the QSC website www.qscaudio.com) Frequency Range (free field)

riequency nange (nee neiu)			
Frequency Response (-6 dB)	55-19k Hz		
Usable (-10 dB)	50-20k Hz		
Nominal Coverage, -6 dB	Conical 60°		
Directivity Index & Q (free field)	Frequency (Hz)	DI (dB)	۵
	500	4	2.5
	1000	9.3	8.6
	2000	13.3	21.6
	4000	10.8	11.9
	8000	9.8	9.6
	6000	9.5	8.9
Physical			
Weight	Cored Composite:	16.8 kg ne	et, 19.1 kg gross (37 lbs. net, 42 lbs. gross)
-	Wood:	21.3 kg ne	et, 23.6 kg gross (47 lbs. net, 52 lbs. gross)

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ISIS 102W and ISIS W-102W Specifications

Full Range Specifications (Crossover Mode switch set to Full Range, Passive)

Frequency Range (free field)	Frequency Response (-6 dB) 60-20k Hz
	Usable Frequency Range (-10 dB) 50-21k Hz
Maximum Output	
Calculated Continuous rms Output	117.5 dB SPL
Calculated Maximum Peak Output	123.5dB SPL
Continuous Noise Exposure Level	116 dBA SPL
Impedance	
Nominal	8 ohms
Minimum	7.8 ohms @ 180 Hz
Maximum	50 ohms @ 35 Hz
Power Rating	
rms Power Handling	300 Watts, 100hrs, IEC 268-5, 50-20kHz, 6 dB crest factor
Recommended Amplifier Power	600 Watts
Sensitivity	
1 W, 1 m free field	93 dB SPL
Nominal Coverage, -6 dB, waveguide as factory mounted	150° horizontal by 50° vertical
Directivity Index & Q	Frequency (Hz) DI (dB) Q

ΕN

	8000	6.2	4.2
	16000	10.7	11.7
Bi-Amp Specifications (Crossover Mode switch set to Bi	-Amp, LF= low	frequen	cy transducer, HF= high frequency transducer)
Frequency Range (free field)	LF .	•	HE
Frequency Response (-6 dB)	70-6.5k Hz		415- 20.5k Hz
Usable (-10 dB)	50-7k Hz		355-20.7k Hz
Maximum Output			
Calculated Continuous rms Output	120 dB SPL		122 dB SPL
Calculated Maximum Peak Output	126 dB SPL		128 dB SPL
Continuous Noise Exposure Level	119 dBA SPL		
Impedance			
Nominal	8 ohms		8 ohms
Minimum	7.6 ohms @ 330 H	Z	7.4 ohms @ 550 Hz
Maximum	56 ohms @ 35 Hz		57.2 ohms @ 855 Hz
Power Rating			
rms Power Handling (2 hrs., 6 dB crest factor, within usable freq. range)	300 W		80 W
Recommended Amplifier Power	600 W		160 W

500

1000

2000

4000

2.6

4.8

7.7

12.4

103 dB

4.2 6.8

8.9

10.9

Bi-Amp with recommended DSP Parameters (QSC DSP configurations are available at the QSC website www.qscaudio.com)

94 dB

Aunh A	VILLIEU	Johnnenueu	
Frequency	Range (fi	ree field)	
-			

1 W, 1 m, free field, within usable freq. range

Sensitivity

	Frequency Response (-6 dB) Usable (-10 dB)	55-19k Hz 45-20k Hz		
Dir	ectivity Index & Q (free field)	Frequency (Hz)	DI (dB)	Q
		500	3.8	2.4
		1000	10.3	10.7
		2000	6.6	4.6
		4000	10.3	10.6
		8000	6.4	4.4
		6000	10.7	11.7
Phv	vsical			
We	ight	Cored Composite: Wood:	16.8 kg net, 21.3 kg net,	19.1 kg gross (37 lbs. net, 42 lbs. gross) 23.6 kg gross (47 lbs. net, 52 lbs. gross)

ISIS 122M and ISIS W-122M Specifications

Full Bange Specifications (Crossover Mode switch set to Full Bange, Passive)

Frequency Range (free field)	Frequency Respons Usable Frequency F	e (-6 dB) Range (-10 d	60-19k Hz B) 50-20k Hz
Maximum Output		-	
Calculated Continuous rms Output	120 dB SPL		
Calculated Maximum Peak Output	126 dB SPL		
Continuous Noise Exposure Level	119 dBA SPL		
Impedance			
Nominal	8 ohms		
Minimum	6.8 ohms @ 15k Hz		
Maximum	58 ohms @ 30 Hz		
Power Rating			
rms Power Handling	350 Watts, 100hrs,	IEC 268-5, 5	50-20kHz, 6 dB crest factor
Recommended Amplifier Power	700 Watts		
Sensitivity			
1 W, 1 m free field	95 dB SPL		
Nominal Coverage, -6 dB	Conical, 60°		
Directivity Index & Q	Frequency (Hz)	DI (dB)	Q
	500	4.4	2.8
	1000	7.9	6.1
	2000	9.5	8.8
	4000	12.0	15.7
	8000	11.2	13.2
	16000	9.6	9.1
Bi-Amp Specifications (Crossover Mode switch set to Bi-An	np, LF= low freque	ency trans	sducer, HF= high frequency transducer)
Frequency Range (free field)	<u> </u>		HE
Frequency Response (-6 dB)	70-3.9k Hz		600-19k Hz
Usable (-10 dB)	50-4k Hz		500-20k Hz
Maximum Output			
Calculated Continuous rms Output	121 dB SPL		127 dB SPL
Calculated Maximum Peak Output	127 dB SPL		133 dB SPL
Continuous Noise Exposure Level	120 dBA SPL		
Impedance			
Nominal	8 ohms		8 ohms
Minimum	7.9 ohms @ 305 Hz		8.5 ohms @ 4k Hz
Maximum	52 ohms @ 32 Hz		69.0 ohms @ 450 Hz
Power Rating			
rms Power Handling (2 hrs., 6 dB crest factor, within usable freq. range)	350 W		80 W
Recommended Amplifier Power	700 W		160 W
Sensitivity			
1 W, 1 m, free field, within usable freq. range	96 dB		108 dB
Bi-Amp with recommended DSP Parameters (OSC DSP con	figurations are avai	ilable at th	e QSC website www.qscaudio.com)

dio.com) Frequency Range (free field)

Frequency Response (-6 dB) Usable (-10 dB)	55-19k Hz 45-20k Hz		
Directivity Index & Q (free field)	Frequency (Hz)	DI (dB)	Q
	500	4.5	2.8
	1000	12.2	16.4
	2000	9.7	9.3
	4000	12.3	17.7
	8000	11.0	12.5
	6000	9.8	9.6
Physical			
Weight	Cored Composite: Wood:	15.4 kg ne 23.6 kg ne	rt, 18.6 kg gross (34 lbs. net, 41 lbs. gross) rt, 26.8 kg gross (52 lbs. net, 59 lbs. gross)

Specifications are subject to change without notice.

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ISIS 152M and ISIS W-152M Specifications

Full Range Specifications (Crossover Mode switch set to Full Range, Passive)

Frequency Range (free field)	Frequency Respons	e (-6 dB)	55-20k Hz
	Usable Frequency F	Range (-10 d	B) 45-20.7k Hz
Maximum Output		Jerres	
Calculated Continuous rms Output	120.5 dB SPL		
Calculated Maximum Peak Output	126.5 dB SPL		
Continuous Noise Exposure Level	120 dBA SPL		
Impedance			
• Nominal	8 ohms		
Minimum	6.3 ohms @ 16.4k H	Ηz	
Maximum	52 ohms @ 23.6 Hz		
Power Rating			
rms Power Handling	350 Watts, 100hrs,	IEC 268-5, 5	50-20kHz. 6 dB crest factor
Recommended Amplifier Power	700 Watts		
Sensitivity			
1 W, 1 m free field	95.5 dB SPL		
Nominal Coverage, -6 dB	Conical, 60°		
Directivity Index & O	Frequency (Hz)	DI (dB)	0
	500	57	37
	1000	89	77
	2000	12.2	52 1
	4000	12.2	16.9
	8000	10.5	11.2
	16000	9.3	8.4
Bi-Amp Specifications (Crossover Mode switch set to Bi-Am	p, LF= low freque	ency trans	sducer, HF= high frequency transducer)
Frequency Range (free field)	LE		HE
Frequency Response (-6 dB)	60-2.6k Hz		630-16k Hz
Usable (-10 dB)	50-3.7k Hz		450-20.7k Hz
Maximum Output			
Calculated Continuous rms Output	121 dB SPL		127 dB SPL
Calculated Maximum Peak Output	127 dB SPL		133 dB SPL
Continuous Noise Exposure Level	120 dBA SPL		
Impedance			
Nominal	8 ohms		8 ohms
Minimum	7.8 ohms @ 55 Hz		9.2 ohms @ 5.1k Hz
Maximum	40 ohms @ 25 Hz		77 ohms @ 440 Hz
Power Rating			
rms Power Handling (2 hrs., 6 dB crest factor, within usable freq. range)	350 W		80 W
Recommended Amplifier Power	700 W		160 W
Sensitivity			
1 W, 1 m, free field, within usable freq. range	96 dB		108 dB

Bi-Amp with recommended DSP Parameters (QSC DSP configurations are available at the QSC website www.qscaudio.com)

Frequency Range (free field)			
Frequency Response (-6 dB)	50-20k Hz		
Usable (-10 dB)	45-21k Hz		
Directivity Index & Q (free field)	Frequency (Hz)	DI (dB)	Q
	500	5.1	3.4
	1000	12.0	16.0
	2000	9.6	9.1
	4000	12.9	19.7
	8000	10.5	11.2
	6000	9.3	8.4
Physical			
Weight	Cored Composite:	22.2 kg ne	et, 25.4 kg gross (49 lbs. net, 56 lbs. gross)
	Wood:	28.1 kg ne	et, 31.3 kg gross (62 lbs. net, 69 lbs. gross)

Specifications are subject to change without notice.

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This page is intentionally blank so that each model's performance curves appear on facing pages.



ISIS 102M Full Range (passive) Setting, Response and Impedance vs. Frequency



ISIS 102M Full Range (passive) Setting, Horizontal and Vertical Beamwidth vs. Frequency

ISIS 102M Performance Curves (ISIS W-102M similar)



ISIS 102M Bi-Amp Setting, Individual Driver Response and Impedance vs. Frequency









⁽¹⁾ QSC DSP configurations with the recommended signal processing are available at http://www.qscaudio.com Download from Www.Somanuals.com. All Manuals Search And Download.



ISIS 102W Full Range (passive) Setting, Response and Impedance vs. Frequency



ISIS 102W Full Range (passive) Setting, Horizontal and Vertical Beamwidth vs. Frequency

ISIS 102W Performance Curves (ISIS W-102W similar)



ISIS 102W Bi-Amp Setting, Individual Driver Response and Impedance vs. Frequency









(1) QSC DSP configurations with the recommended signal processing are available at http://www.qscaudio.com Download from Www.Somanuals.com. All Manuals Search And Download.



ISIS 122M Full Range (passive) Setting, Response and Impedance vs. Frequency





ISIS 122M Performance Curves (ISIS W-122M similar)



ISIS 122M Bi-Amp Setting, Individual Driver Response and Impedance vs. Frequency









⁽¹⁾ QSC DSP configurations with the recommended signal processing are available at http://www.qscaudio.com Download from Www.Somanuals.com. All Manuals Search And Download.



ISIS 152M Full Range (passive) Setting, Response and Impedance vs. Frequency

ISIS 152M Full Range (passive) Setting, Horizontal and Vertical Beamwidth vs. Frequency





ISIS 152M Bi-Amp Setting, Individual Driver Response and Impedance vs. Frequency









⁽¹⁾ QSC DSP configurations with the recommended signal processing are available at http://www.qscaudio.com Download from Www.Somanuals.com. All Manuals Search And Download.

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