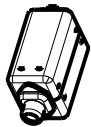
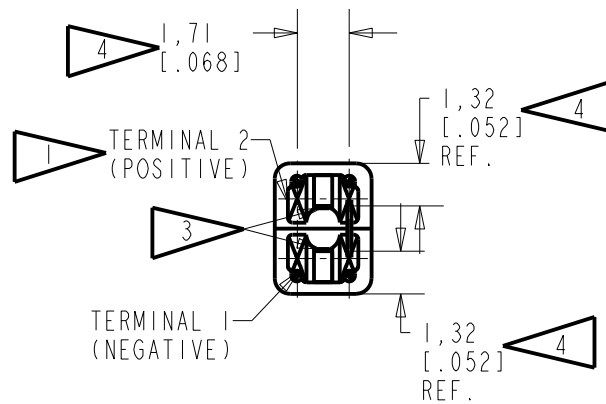
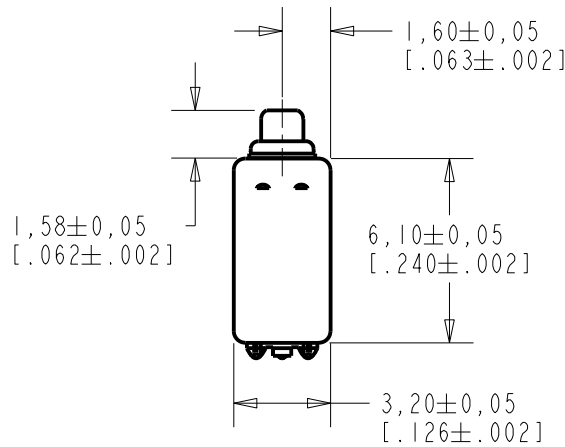


**GR-31459-000**

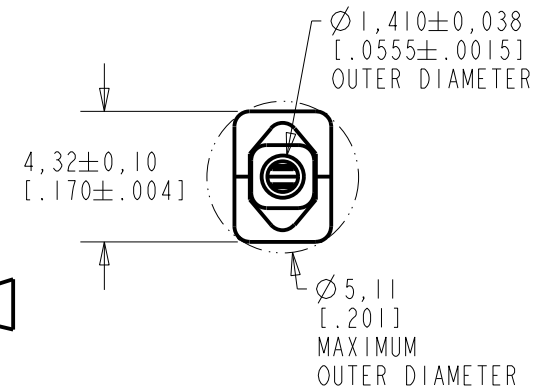
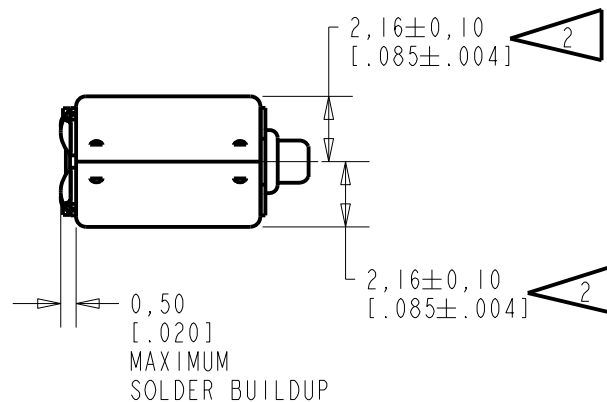
**SHT 1.1**

NOTES:

- 1 A POSITIVE GOING VOLTAGE AT TERMINAL 2, RELATIVE TO TERMINAL 1, CAUSES A DECREASE IN PRESSURE AT THE SOUND OUTLET.
- 2 LOCATED FROM TWO SURFACE FOR CUSTOMER CONVENIENCE. ONLY APPLICABLE FROM ONE SURFACE, NOT TO BE USED TOGETHER.
- 3 TERMINAL ELECTRICALLY CONNECTED TO CASE.
- 4 DIMENSION TO APPROXIMATE CENTER OF TERMINAL PAD.



SCALE 2:1  
 NOMINAL WEIGHT 0.25 GRAMS  
 DIMENSIONS IN MILLIMETERS [INCHES]



Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
D	CI0116745	4-29-15	<b>Active</b>	<b>D</b>
SCALE: 4:1			DR. BY: LSY	DATE: 7-27-11
DO NOT SCALE DRAWING			CK. BY: GJP	DATE: 7-29-11
TITLE: RECEIVER		GR-31459-000	APP. BY: GJP	DATE: 7-29-11
OUTLINE DRAWING		SHT 1.1		

**KNOWLES ELECTRONICS**  
 ITASCA, ILLINOIS U.S.A.

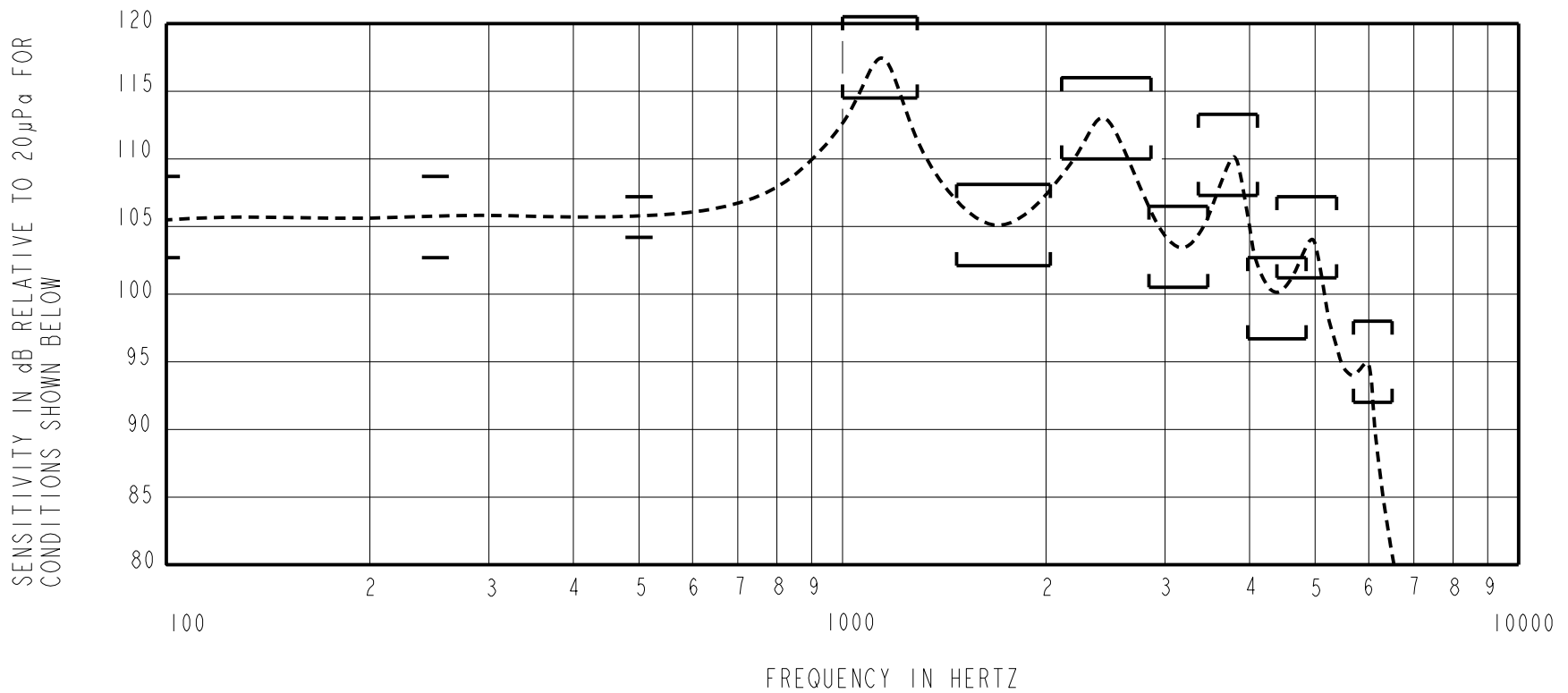
THIS IS A PAIR OF RECEIVERS WITH VERY LOW VIBRATION IN ALL DIRECTIONS, AND A QUADRAPOLE MAGNETIC RADIATION PATTERN.

NO DAMPING

GR-31459-000

SHEET 2.1

CONSTANT VOLTAGE DRIVE CONDITIONS



ACOUSTICAL

SENSITIVITY  
 DEVICE WILL PRODUCE THE SPL LISTED BELOW UNDER TEST CONDITIONS DESCRIBED IN TABLE 4. NOMINAL SENSITIVITY AT 500Hz IS dB RELATIVE TO 20µPa. ALL OTHER VALUES IN dB RELATIVE TO THE SENSITIVITY AT 500Hz.

LIMIT TYPE	FREQUENCY (Hz)	MINIMUM	NOMINAL	MAXIMUM
REL	100	-3.0	-0.5	+3.0
REL	250	-3.0	-0.3	+3.0
REF	500	-1.5	105.7	+1.5
PEAK	1000 - 1290	+8.8	+11.8	+14.8
VALLEY	1475 - 2030	-3.6	-0.6	+2.4
PEAK	2110 - 2860	+4.3	+7.3	+10.3
VALLEY	2840 - 3470	-5.2	-2.2	+0.8
PEAK	3360 - 4110	+1.6	+4.6	+7.6
VALLEY	3975 - 4850	-9.0	-6.0	-3.0
PEAK	4390 - 5380	-4.5	-1.5	+1.5
PEAK	5700 - 6500	-13.7	-10.7	-7.7

TABLE 1

TOTAL HARMONIC DISTORTION  
 DEVICE WILL NOT EXCEED TOTAL HARMONIC DISTORTION LEVELS LISTED BELOW.

FREQUENCY (Hz)	AC DRIVE (Vrms)	DC BIAS (V)	LIMIT (%)
391	0.112	0	3
586	0.112	0	3
391	0.224	0	8
586	0.315	0	10

TABLE 2

MAXIMUM OUTPUT LEVEL

POWER (mW)	500 Hz SPL (dB)	REQUIRED VOLTAGE (Vrms)	Peak SPL (dB)	REQUIRED VOLTAGE (Vrms)
10	120.1	0.703	135.9	0.925

TABLE 3

TEST CONDITIONS

NOMINAL SOURCE VOLTAGE	0.112 Vrms, 0 mA DC BIAS
SOURCE IMPEDANCE	<1 Ohm
TUBING	8 mm X 1 mm ID + 28 mm X 1.5mm ID EAR HOOK SIMULATOR + 25 mm X 2 mm ID TUBE + 18 mm X 3 mm ID TUBE
COUPLER CAVITY	2 CM <sup>3</sup> , SIMULATED ANSI S3.7 TYPE HA-3 (IEC 60318-5)
MAXIMUM DRIVE VOLTAGE	1.55 Vrms

TABLE 4

ELECTRICAL

DC RESISTANCE @ 20°C	40.9 Ohms ± 10%
IMPEDANCE @ 500 Hz	57.2 Ohms ± 15%
INDUCTANCE @ 500 Hz	10.8 mH TYPICAL
CAPACITANCE @ 10 MHz	2.9 pF TYPICAL

TABLE 5

ISOLATION: CASE WILL BE ELECTRICALLY ISOLATED FROM THE COIL CIRCUIT.

MECHANICAL

PORT LOCATION: 12S

SOLDER TYPE: SAC305

TEMPERATURE

OPERATING: SENSITIVITY WILL NOT VARY MORE THAN +1/-3 dB AT 500 Hz FROM -17°C TO 63°C

STORAGE: -40°C TO 63°C

SHOCK RESISTANCE: 90% SURVIVAL RATE WITH THD @ 1/3 PEAK FREQUENCY LESS THAN 10%, THD @ 1/2 PEAK FREQUENCY LESS THAN 20% AND LESS THAN 3dB CHANGE IN SENSITIVITY AT 1kHz WHEN SUBJECTED TO 14,100 G.

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Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
			<b>Active</b>	<b>D</b>
D	CI0116745	4-29-15		
WHEN TEST LIMITS ARE USED TO ESTABLISH INCOMING INSPECTION ACCEPTANCE/REJECTION CRITERIA, CORRELATION OF TEST EQUIPMENT WITH KNOWLES IS ALSO REQUIRED FOR ELIMINATION OF EQUIPMENT AND TEST METHOD VARIATION			DR. BY	DATE
TITLE: <b>RECEIVER</b> PERFORMANCE SPECIFICATION			LSY	7-27-11
			GR-31459-000 SHT 2.1	
			CK. BY	DATE
			GJP	7-29-11
			APP. BY	DATE
			GJP	7-29-11