

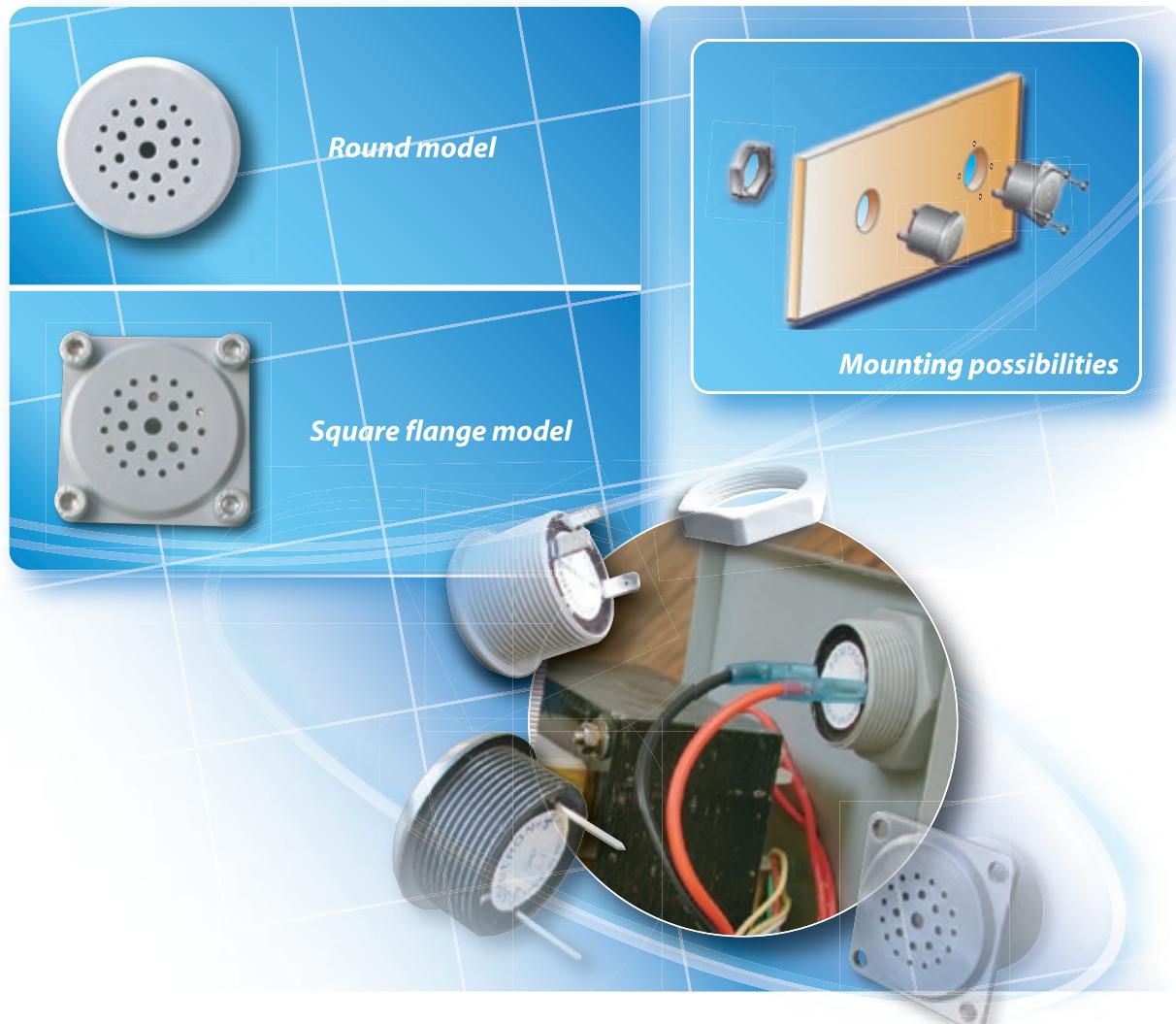
STANDARD SERIES



Since 1977, Sonitron continuously invested in research and development, optimising their standard series which are used today under the most extreme and difficult environmental circumstances, by clients such as the Nato, Airbus, Volvo Penta, Dräger, Knogo,...

During the last 30 years, the standard series have proved to be the prime alarm, giving your equipment an added value. Several thousands of clients all over the world have chosen for the reliability and the excellent quality of piezoceramic buzzers of Sonitron.

The range has recently expanded with a new 1700 Hz standard buzzer, which produces a very pleasant low frequency intermittent tone at reasonable sound output. Moreover, several of the standard buzzers are also available in a 110/220 VAC version.



INTRODUCTION



The standard series are based on the highest piezo technology and are considered as most robust series for industrial applications. The standard buzzers use a special shaped membrane (curved edge), which is fixed and glued into the housing. They are shock proof, as well as dust and waterproof (IP67). The different standard models cover a wide range of applications, offering functions such as continuous, intermittent, sweep and warbler, with a sound output more than 100 dB(A).

All standard buzzers are available with various mounting methods, such as PCB or panel mounting and therefore

are equipped with either pins or fast-on terminals. The standard series include military models, extra loud types, as well as models operating at very low voltage consumption (SC 0715 BL at 0.7V) and very low current (SP27 = 4,8 mA at 9V).

ADVANTAGES

- Extremely high sound pressure level with a very clear and penetrating sound output
- Solid state shock proof buzzer
- Dust and waterproof, rated to IP67
- PCB and panel mounting; pin or fast-on terminals
- Very high reliability
- Low power consumption
- Wide operating supply range
- Wide temperature range
- Electronics potted in epoxy
- Small in dimensions

APPLICATIONS

- Alarms
- Agricultural equipment
- Monitoring and test equipment
- Medical equipment
- Military equipment
- Trucks & automobiles
- Boats & airplanes
- Signalling & process control equipment
- Fire detectors
- Vending-machine
- Cockpit alarm
- Surveyance equipment
- Underground
- Traffic control
- Industrial washing machine

SPECIFICATIONS

Model	Function	Operating ** Voltage		Frequency ± 15% (Hz)	Pulse rate (Hz)	Operating Current (mA)	SPL (dB(A))*
		min. Vdc	max. Vdc			@ V min.	@ V max.
SC 235 A	contin.	2	35	2500	-	0.3	8.6
SC 235 B	contin.	2	35	3500	-	0.4	8.4
SXLC 515 C	contin.	5	15	3000	-	25	130
SCI 535 A1	multif.	5	35	2500	1	1.4	12.5
SCI 535 B1	multif.	5	35	3500	1	1.4	12.2
SXLI 515 C1	multif.	5	15	3000	1	13	70
SCI 535 A5	multif.	5	35	2500	5	1.4	12.5
SCI 535 B5	multif.	5	35	3500	5	1.4	12.2
SCR 535 A	multif.	5	35	2500	20	1.4	12.6
SCR 535 B	multif.	5	35	3500	20	1.4	12.6
SW 535 B	warbler	5	35	3500	-	1.3	10.6
SXLW 515 C	warbler	5	15	3000	-	30	120
SUC 516 A	contin.	5	16	2500	-	1.8	13.3
SUC 516 B	contin.	5	16	3500	-	0.8	13.0
SULC 516 B	contin.	5	16	3500	-	2.0	13.3
SULI 516 B1	intermit.	5	16	3500	1	1.2	11.6
SULI 516 B5	intermit.	5	16	3500	5	1.2	11.6
SUM 516 A1	multif.	5	16	2500	1	1.8	11.6
SUM 516 A5	multif.	5	16	2500	5	1.8	11.6
SULM 516 B1	multif.	5	16	3500	1	2.4	14.2
SULM 516 B5	multif.	5	16	3500	5	2.4	14.2
SC 0715 BL	contin.	0.7	15	3500	-	0.3	13.4
SXLP 515 C	sweep	5	15	3000	-	55	110
SP27	contin.	3.5	9	3500	-	1.6	4.8
SCI 535 1700	multif.	5	35	1700	1	1.4	12.2
							67

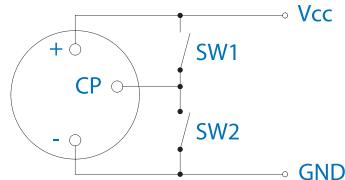
Operating temperature	-35°C to +75°C
Storage temperature	-40°C to +85°C
Life time (at 21°C)	See expected life time curve in addendum
Case material	ABS (UL rating: 94 HB)
Standard colour of case	Grey (except the SP27 which is black)
Terminal material	Tinned brass for both pin terminals and fast-on terminals
Supply voltage	The standard buzzers are not damaged by reverse voltage connection (except the SP27 types).
Mounting	PC-board: by soldering the terminals. Front panel mounting: the buzzers can be mounted in panels up to 14 mm thickness (SP27 max. 7 mm). They are locked with a locking pin (dimensions 0.8x2.3mm) and secured to the panel with a plastic nut. Foresee a hole of diameter 32 mm (1.14"). Maximum torque on plastic nut: 6 Nm (wrench size 38mm) The step of the thread is 1.5 mm

*All measurements are made @ 1 meter @ 12 Vdc in free air @21 °C, except for the SP27. Please note that for applications objects in close proximity of the buzzer or objects in a room cause reflections thereby increasing or decreasing the SPL. The weight of the standard buzzers varies from 13 g to 24 g.

**Operating voltage 110/220 VAC: see models on request.

MULTI-FUNCTIONALITY OF THE STANDARD SERIES

The standard series offer the client several functions in one single buzzer. The selection of a function is illustrated in the scheme below.



SW1	SW2	SCI 535	SCI 515	SCR	SU(L)M
open	open	intermittent	intermittent	cricket	intermittent
closed	open	stop	continuous	stop	stop
open	closed	continuous	stop	continuous	continuous

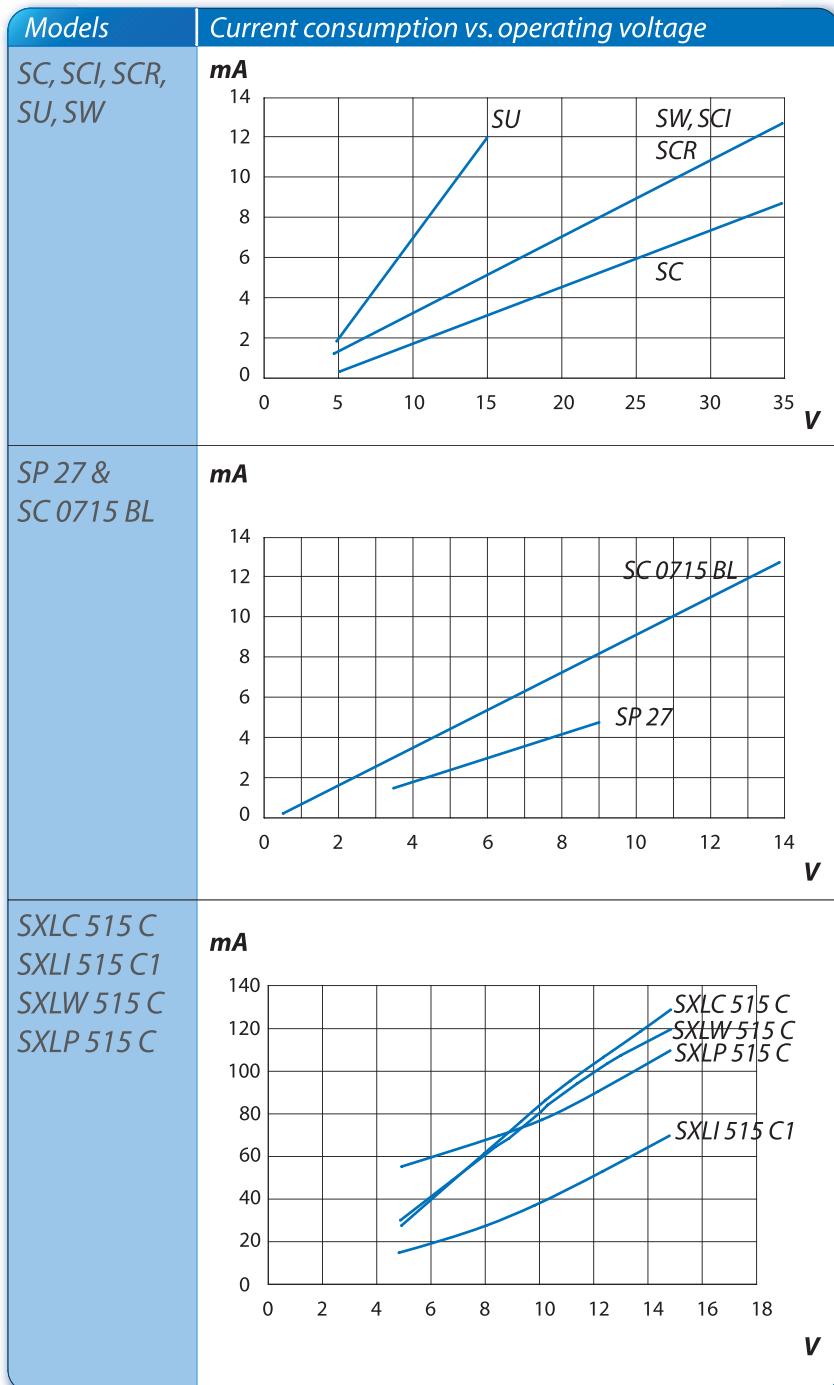
SELECTION GUIDE

The selection of an acoustic signal can be complex. That is why we present below our standard models with their most appropriate application.

SC 235 A SCI 535 A1/A5	General purpose buzzer with medium sound output for soft alarm in industrial and military applications where a high reliability is requested. These buzzers can be used in a wide supply voltage range.
SC 235 B SCI 535 B1/B5	General purpose buzzer with high sound output for low power consumption. Ideally suitable for alarm and industrial sound signals. These models combine high performances and great reliability. Today, the SC 235 B is considered as the most popular type.
SW 535 B SCR 535 A/B	A warbler or cricket tone with a special sound effect for warning and alerting devices.
SP 27	Small sized buzzer to be used in applications where space is limited. Max. supply voltage is 9 Vdc. See also information in addendum.
SUM 516 A1/A5	A universal buzzer type with a selection mode of three functions: continuous, intermittent or stop. High sound output for low power consumption and low supply voltages. This type can be used for multiple applications where a soft signal is required and a high reliability is a must.
SULM 516 B1/B5 SULC 516 B SUC 516 A/B SULI 516 B1/B5	A universal buzzer with a selection mode of different functions: continuous, intermittent or stop. High sound output at very low power consumption. It can be used in all alarm and warning signals where performance, power consumption and size are important. The SULI and the SUC models are simplified versions of the SULM 516 B5 that can be used when mode control is not required.
SC 0715 BL	Special loud buzzer that functions at very low voltage (0.7 Vdc), going up to 15 Vdc, producing 98 dB(A) @ 1 meter @ 12Vdc. Wide range of applications, including battery powered alarms.
SXLC 515 C SXLI 515 C1	Extreme loud buzzers for multiple applications requiring a high penetrating sound. The SXLI model has an intermittent sound, creating more attention.
SXLW 515 C SXLPI 515 C	Extreme loud buzzer with warbler or sweep tone. These buzzers produce a very aggressive sound. They are perfect alarm bells and warning devices for all kinds of applications.

ELECTRICAL PARAMETERS

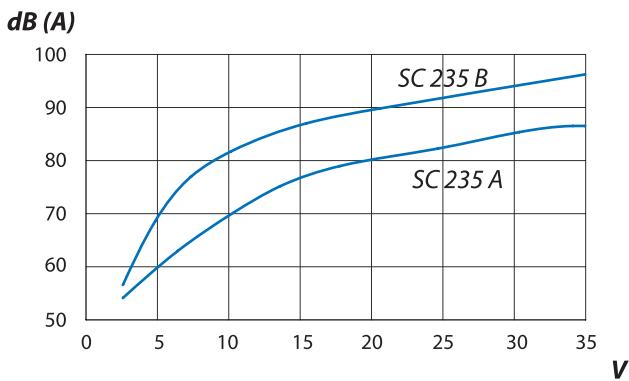
Current consumption vs. operating voltage



All measurements are made @ 12Vdc @ 1 meter in free air @ 21°C, except for the SP 27.

Sound pressure level vs. voltage

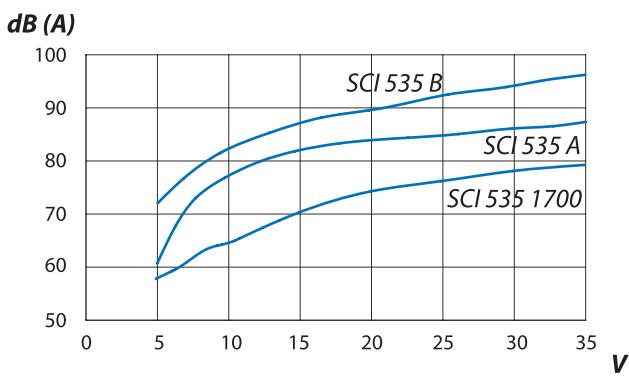
SC 235 A/B



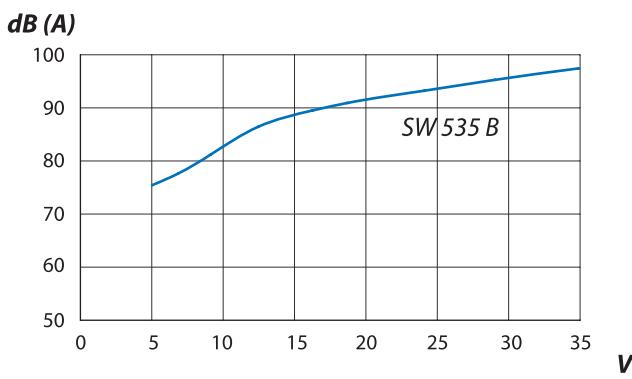
SCR 535 A/B



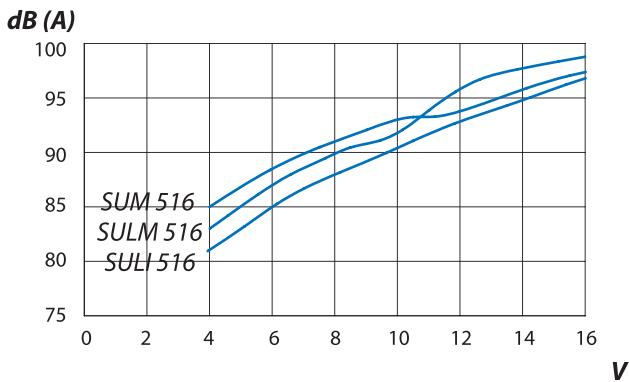
SCI 535 A/B



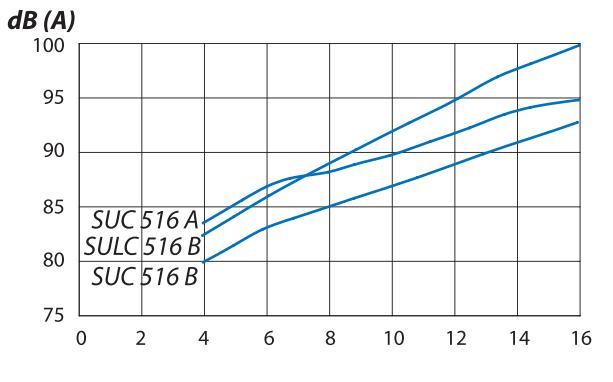
SW 535 B



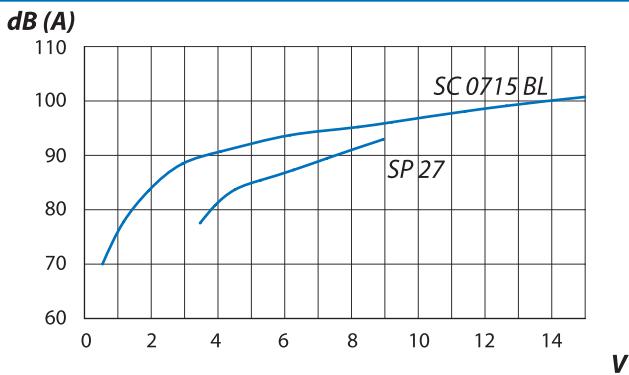
SUM 516 A1/A5, SULM 516 B1/B5, SULI 516 B1/B5



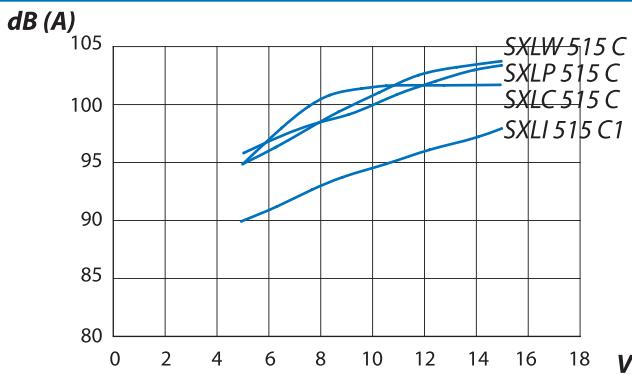
SULC 516 B, SUC 516 A/B



SP 27 & SC 0715 BL

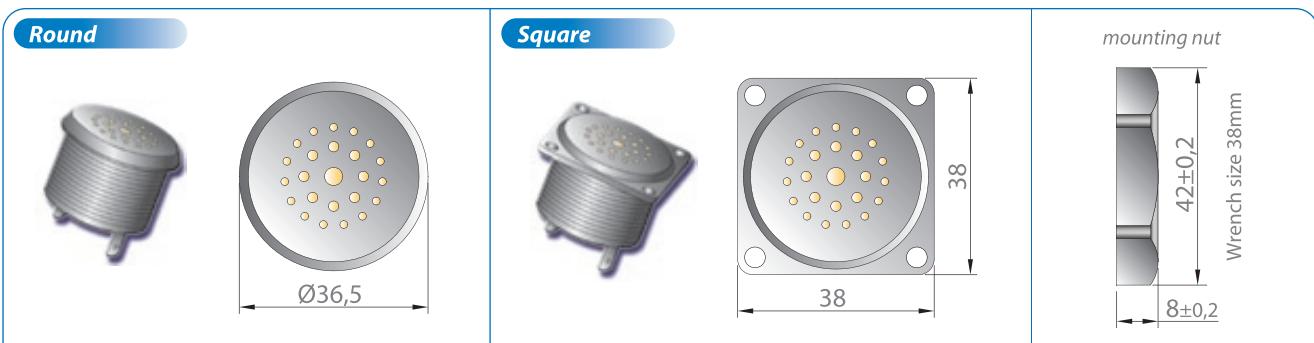


SXL 515 C, SXLI 515 C1, SXLW 515 C, SXLP 515 C

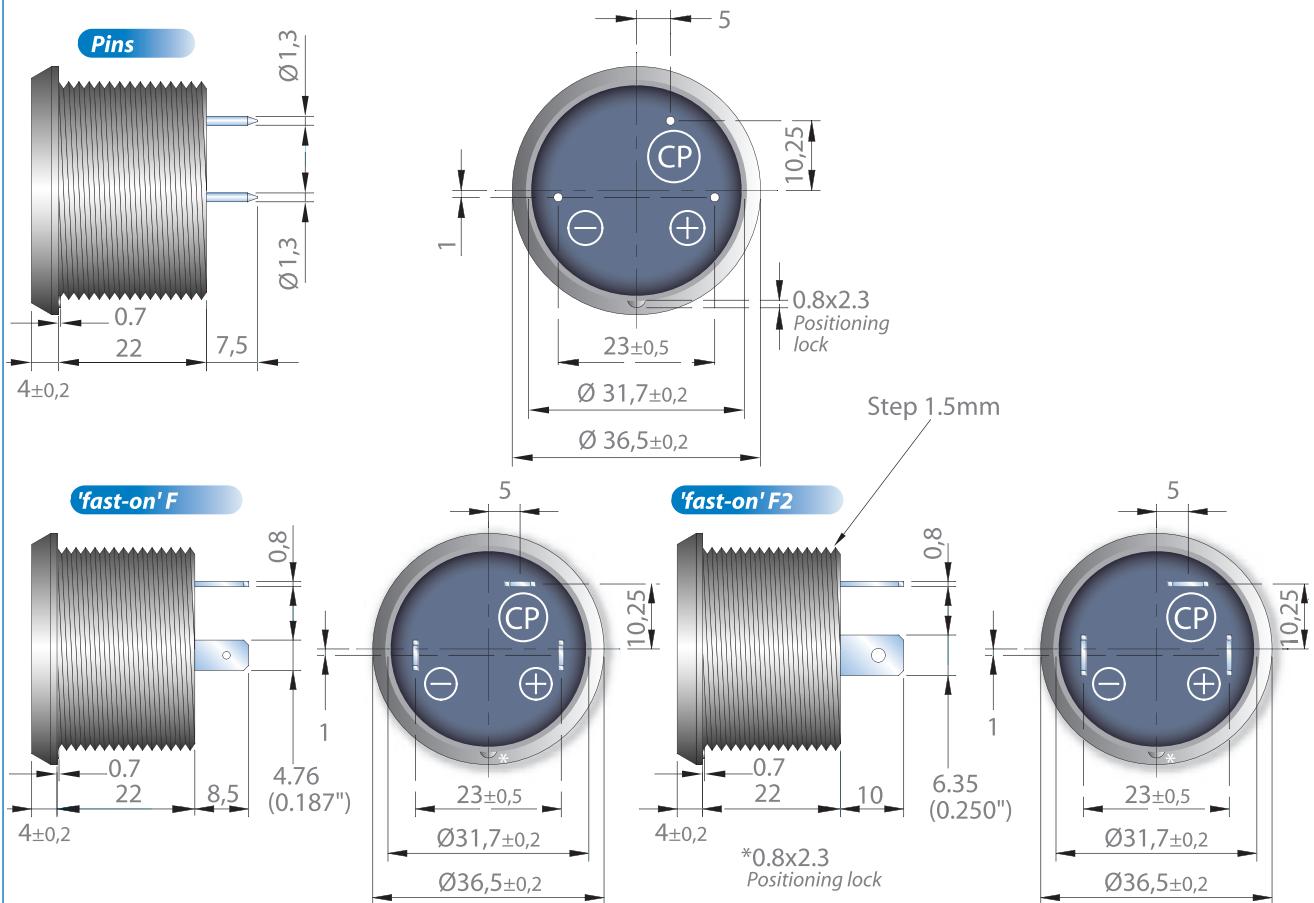


All measurements are made @ 12Vdc @ 1 meter in free air @ 21°C, except for the SP 27.

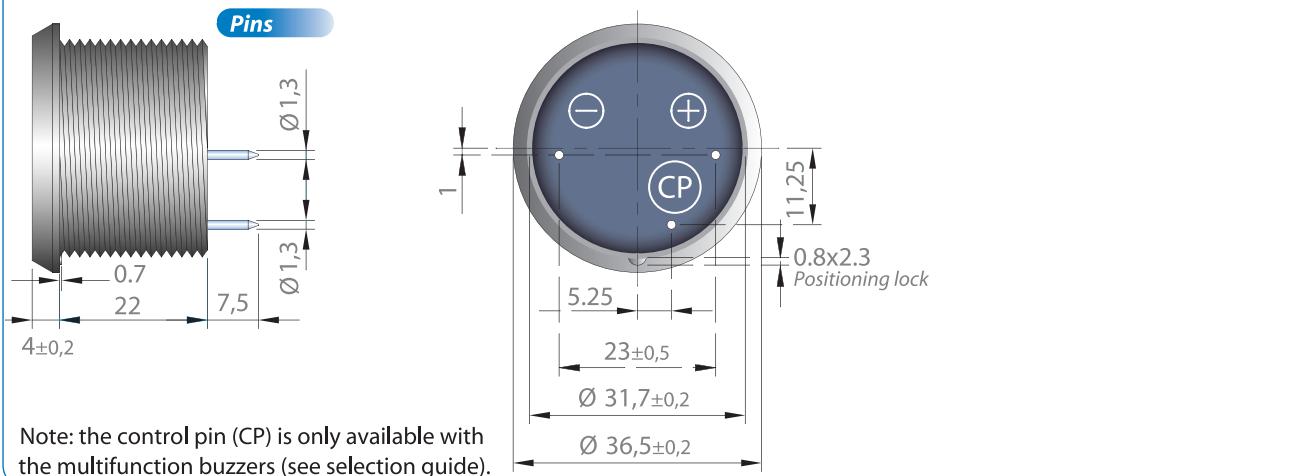
DIMENSIONS (All dimensions are in mm)



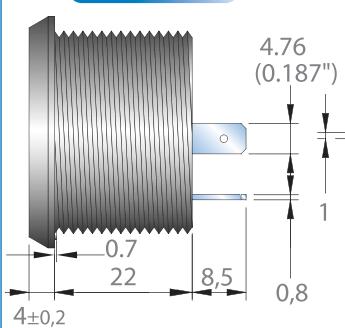
Models SC, SXLC, SCI, SXLI, SCR, SW, SXLW & SXLP



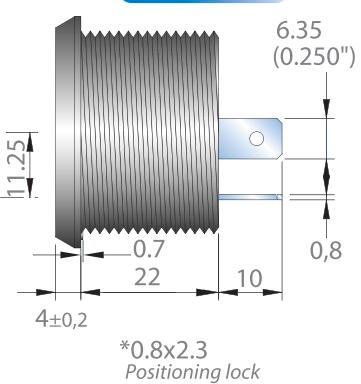
Models SU, SUC, SULC, SULI, SUM & SULM



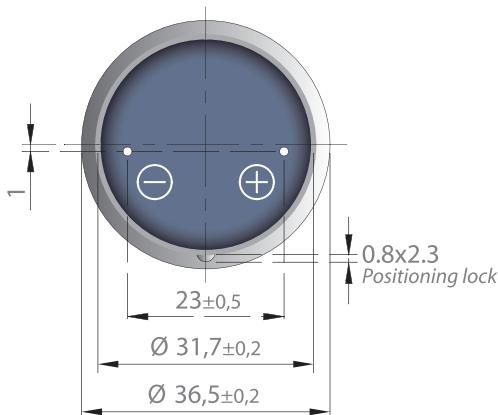
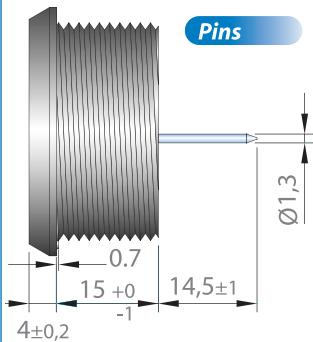
'fast-on' F



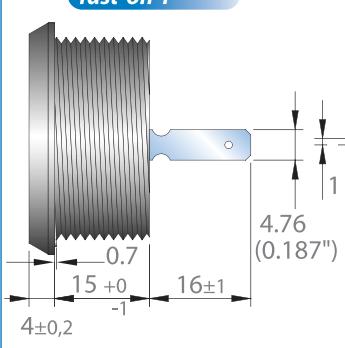
'fast-on' F2



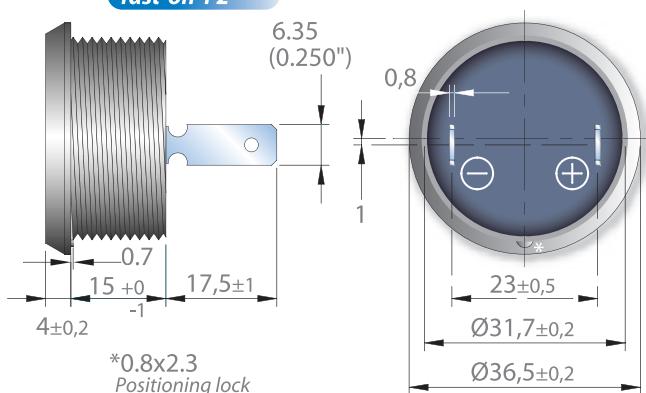
Model SP27



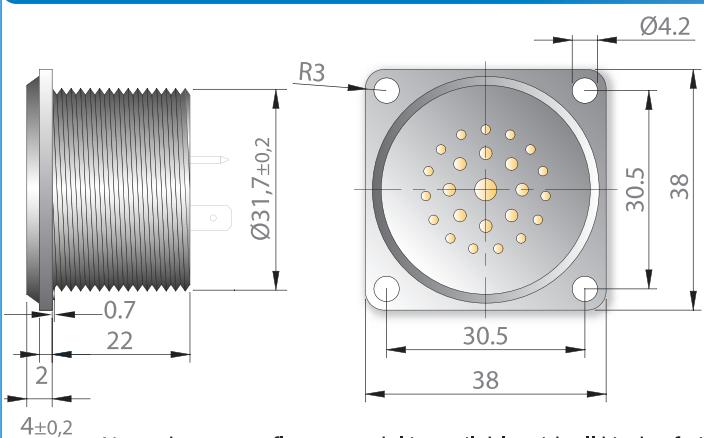
'fast-on' F



'fast-on' F2

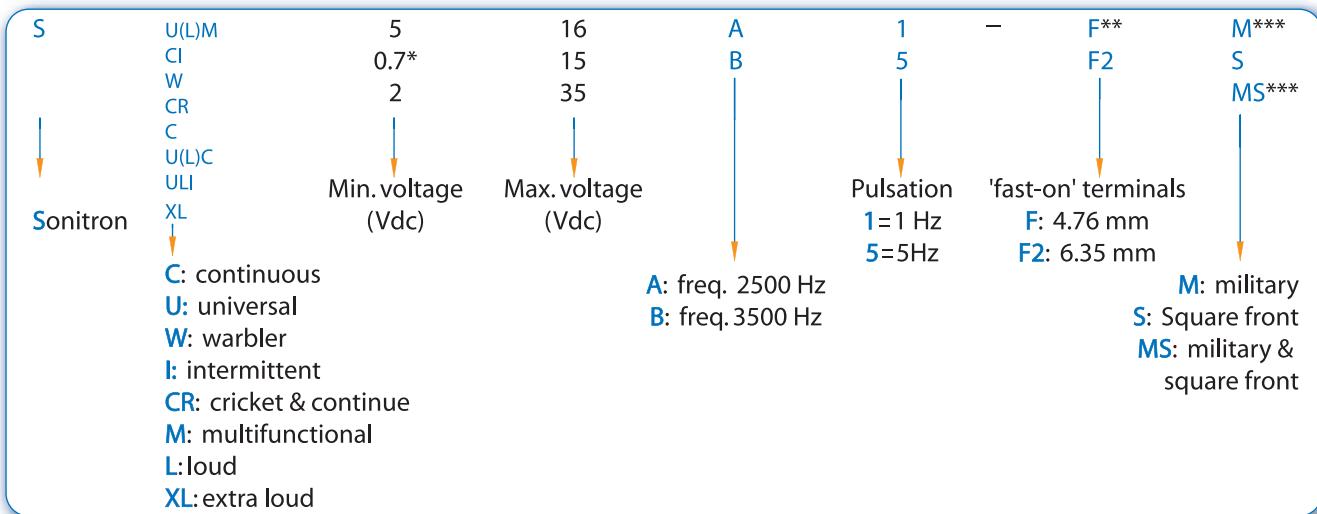


Square flange model



Note: the square flange model is available with all kinds of pin terminals.

PRODUCT CODIFICATION



SP27: special model (see specifications)

*0.7: 0.7 Vdc minimum voltage of the SC 0715 BL

F**: If no terminal specification, the model is standard delivered with round pins, diameter 1.5 mm. Fast-on terminals are available in 2 dimensions: F= 4,76 mm (0,187 inch) or F2 = 6,35 mm (0,250 inch).

M***: Military norm MIL STD 202

LIST OF AVAILABLE PRODUCT TYPES

SC 235 A	SC 235 B	SC 0715 BL	SP27	SCI 535 A1	SCI 535 A5
SC 235 A F	SC 235 B F	SC 0715 BL F	SP27 F	SCI 535 A1 F	SCI 535 A5 F
SC 235 A F2	SC 235 B F2	SC 0715 BL F2	SP27 F2	SCI 535 A1 F2	SCI 535 A5 F2
SC 235 A F M	SC 235 B F M	SC 0715 BL F M	SP27 F M	SCI 535 A1 F M	SCI 535 A5 F M
SC 235 A F2 M	SC 235 B F2 M	SC 0715 BL F2 M	SP27 F2 M	SCI 535 A1 F2 M	SCI 535 A5 F2 M
SC 235 A S	SC 235 B S	SC 0715 BL S	SP27 S	SCI 535 A1 S	SCI 535 A5 S
SC 235 A F S	SC 235 B F S	SC 0715 BL F S	SP27 F S	SCI 535 A1 F S	SCI 535 A5 F S
SC 235 A F2 S	SC 235 B F2 S	SC 0715 BL F2 S	SP27 F2 S	SCI 535 A1 F2 S	SCI 535 A5 F2 S
SC 235 A F MS	SC 235 B F MS	SC 0715 BL F MS	SP27 F MS	SCI 535 A1 F MS	SCI 535 A5 F MS
SC 235 A F2 MS	SC 235 B F2 MS	SC 0715 BL F2 MS	SP27 F2 MS	SCI 535 1700	SCI 535 A5 F2 MS
SCI 535 B1	SCI 535 B5	SCR 535 A	SCR 535 B	SUC 516 A	SUC 516 B
SCI 535 B1 F	SCI 535 B5 F	SCR 535 A F	SCR 535 B F	SUC 516 A F	SUC 516 B F
SCI 535 B1 F2	SCI 535 B5 F2	SCR 535 A F2	SCR 535 B F2	SUC 516 A F2	SUC 516 B F2
SCI 535 B1 F M	SCI 535 B5 F M	SCR 535 A F M	SCR 535 B F M	SUC 516 A F M	SUC 516 B F M
SCI 535 B1 F2 M	SCI 535 B5 F2 M	SCR 535 A F2 M	SCR 535 B F2 M	SUC 516 A F2 M	SUC 516 B F2 M
SCI 535 B1 S	SCI 535 B5 S	SCR 535 A S	SCR 535 B S	SUC 516 A S	SUC 516 B S
SCI 535 B1 F S	SCI 535 B5 F S	SCR 535 A F S	SCR 535 B F S	SUC 516 A F S	SUC 516 B F S
SCI 535 B1 F2 S	SCI 535 B5 F2 S	SCR 535 A F2 S	SCR 535 B F2 S	SUC 516 A F2 S	SUC 516 B F2 S
SCI 535 B1 F MS	SCI 535 B5 F MS	SCR 535 A F MS	SCR 535 B F MS	SUC 516 A F MS	SUC 516 B F MS
SCI 535 B1 F2 MS	SCI 535 B5 F2 MS	SCR 535 A F2 MS	SCR 535 B F2 MS	SUC 516 A F2 MS	SUC 516 B F2 MS
SULC 516 B	SUM 516 A1	SUM 516 A5	SULI 516 B1	SULI 516 B5	SULM 516 B1
SULC 516 B F	SUM 516 A1 F	SUM 516 A5 F	SULI 516 B1 F	SULI 516 B5 F	SULM 516 B1 F
SULC 516 B F2	SUM 516 A1 F2	SUM 516 A5 F2	SULI 516 B1 F2	SULI 516 B5 F2	SULM 516 B1 F2
SULC 516 B F M	SUM 516 A1 F M	SUM 516 A5 F M	SULI 516 B1 F M	SULI 516 B5 F M	SULM 516 B1 F M
SULC 516 B F2 M	SUM 516 A1 F2 M	SUM 516 A5 F2 M	SULI 516 B1 F2 M	SULI 516 B5 F2 M	SULM 516 B1 F2 M
SULC 516 B S	SUM 516 A1 S	SUM 516 A5 S	SULI 516 B1 S	SULI 516 B5 S	SULM 516 B1 S
SULC 516 B F S	SUM 516 A1 F S	SUM 516 A5 F S	SULI 516 B1 F S	SULI 516 B5 F S	SULM 516 B1 F S
SULC 516 B F2 S	SUM 516 A1 F2 S	SUM 516 A5 F2 S	SULI 516 B1 F2 S	SULI 516 B5 F2 S	SULM 516 B1 F2 S
SULC 516 B F MS	SUM 516 A1 F MS	SUM 516 A5 F MS	SULI 516 B1 F MS	SULI 516 B5 F MS	SULM 516 B1 F MS
SULC 516 B F2 MS	SUM 516 A1 F2 MS	SUM 516 A5 F2 MS	SULI 516 B1 F2 MS	SULI 516 B5 F2 MS	SULM 516 B1 F2 MS
SULM 516 B5	SW 535 B	SXLC 515 C	SXLI 515 C1	SXLW 515 C	SXLP 515 C
SULM 516 B5 F	SW 535 B F	SXLC 515 C F	SXLI 515 C1 F	SXLW 515 C F	SXLP 515 C F
SULM 516 B5 F2	SW 535 B F2	SXLC 515 C F2	SXLI 515 C1 F2	SXLW 515 C F2	SXLP 515 C F2
SULM 516 B5 F M	SW 535 B F M	SXLC 515 C F M	SXLI 515 C1 F M	SXLW 515 C F M	SXLP 515 C F M
SULM 516 B5 F2 M	SW 535 B F2 M	SXLC 515 C F2 M	SXLI 515 C1 F2 M	SXLW 515 C F2 M	SXLP 515 C F2 M
SULM 516 B5 S	SW 535 B S	SXLC 515 C S	SXLI 515 C1 S	SXLW 515 C S	SXLP 515 C S
SULM 516 B5 F S	SW 535 B F S	SXLC 515 C F S	SXLI 515 C1 F S	SXLW 515 C F S	SXLP 515 C F S
SULM 516 B5 F2 S	SW 535 B F2 S	SXLC 515 C F2 S	SXLI 515 C1 F2 S	SXLW 515 C F2 S	SXLP 515 C F2 S
SULM 516 B5 F MS	SW 535 B F MS	SXLC 515 C F MS	SXLI 515 C1 F MS	SXLW 515 C F MS	SXLP 515 C F MS
SULM 516 B5 F2 MS	SW 535 B F2 MS	SXLC 515 C F2 MS	SXLI 515 C1 F2 MS	SXLW 515 C F2 MS	SXLP 515 C F2 MS

MILITARY MODELS

All standard models can be delivered in a military version. All military models have flame retardant ABS housings in olive green, fast-on terminals and the membrane is foreseen with a special protective coating.

The military models guarantee a quality superior to the classic models. On top of the standard specifications, the military models are tested as follows:

Test	Method MIL STD202	Test conditions
Thermal Shock	107	A
Humidity	103	B
Salt Spray	101	A
Shock	213 B	H
Vibration	201 A	none
Terminal strength	211	A (10 Lbs, 2 cycles)

See also information about military norms in addendum.

MODELS ON REQUEST

The standard buzzers can be modified upon request in order to deliver a product meeting the requirements of the customer's application.

- Upon special request all standard models are also available in GREY, BLACK or GREEN (khaki). Please add GREY, BLACK or GREEN to the part number if the required colour is different from the one specified as standard.
- For applications under aggressive humid conditions, Sonitron also deliver a special model in which the piezo element is covered with a protective coating. Add ACR to the part number. The protective coating gives a complementary assurance against smog; all standard models are perfectly waterproof (IP67) without the mentioned coating.
- Different pin terminal lengths, straight or bent, can be custom made.
- The frequency, indicated in the present catalogue, has an accuracy of $\pm 15\%$. Standard buzzers with an improved frequency accuracy (up to $\pm 2\%$) are available upon special customer request.
- All these models are also available as a 110/220 VAC version: SC 235 A SW 535 B
 SC 235 B SULM 516 B5
 SCI 535 B1 SC 0715 BL
 SCI 535 A5

PACKAGING

All standard buzzers are packed in polystyrene boxes of 26.5 x 26.5 mm; 25 pieces per box.

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