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.

These series are strongly recommended in applications that are critical and life time in continuous function is tested. Critical applications are life support systems and equipment used to warn for life danger such as: portable gas detectors,medical monitoring equipment, aircraft cockpit alarm's, car breaking alarm's etc…

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 of 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

*All measurements are made @ 1 meter @ 12 Vdc in free air @21°C.

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	73
SC 235 B	contin.	2	35	3500	-	0.4	8.4	87
SCI 535 A1	multif.	5	35	2500	1	1.4	12.5	77
SCI 535 B1	multif.	5	35	3500	1	1.4	12.2	86
SCI 535 A5	multif.	5	35	2500	5	1.4	12.5	77
SCI 535 B5	multif.	5	35	3500	5	1.4	12.2	86
SCR 535 A	multif.	5	35	2500	20	1.4	12.6	82
SCR 535 B	multif.	5	35	3500	20	1.4	12.6	84
SW 535 B	warbler	5	35	3500	-	1.3	10.6	87
SUC 516 A	contin.	5	16	2500	-	1.8	13.3	92
SUC 516 B	contin.	5	16	3500	-	0.8	13.0	90
SULC 516 B	contin.	5	16	3500	-	2.0	13.3	97
SULI 516 B1	intermit.	5	16	3500	1	1.2	11.6	94
SULI 516 B5	intermit.	5	16	3500	5	1.2	11.6	94
SUM 516 A1	multif.	5	16	2500	1	1.8	11.6	93
SUM 516 A5	multif.	5	16	2500	5	1.8	11.6	93
SULM 516 B1	multif.	5	16	3500	1	2.4	14.2	96
SULM 516 B5	multif.	5	16	3500	5	2.4	14.2	96
SC 0715 BL	contin.	0.7	15	3500	-	0.3	13.4	98

Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C
Life time (at 21°C)	@12Vdc continuous use min. 2000 hours (expected life time curve in addendum)
Case material	ABS (UL rating: 94 HB)
Standard colour of case	Grey
Terminal material	Tinned brass for both pin terminals and fast-on terminals
Supplemental	Reverse voltage protected. Weight: 13g to 24g

SPECIALS

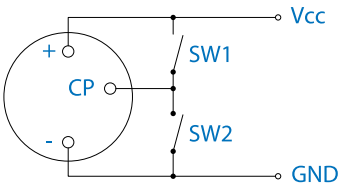
SP7	contin.	0.7	15	3500	-	0.3	13.4	71
SP27	contin.	4	16	3500	-	1.6	12	94
SCI 535 1700	multif.	5	35	1700	1	1.4	12.2	67

Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C
Life time (at 21°C)	@12Vdc continuous use min. 2000 hours (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
Supplemental	Reverse voltage protected, except the SP27. Weight: 13g to 24g

Please note: objects in proximity of the buzzer cause reflections thereby the SPL can be increased or decreased.

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 SUM 516 SULM 516	SCR 535
open	open	intermittent	cricket
closed	open	stop	stop
open	closed	continuous	continuous

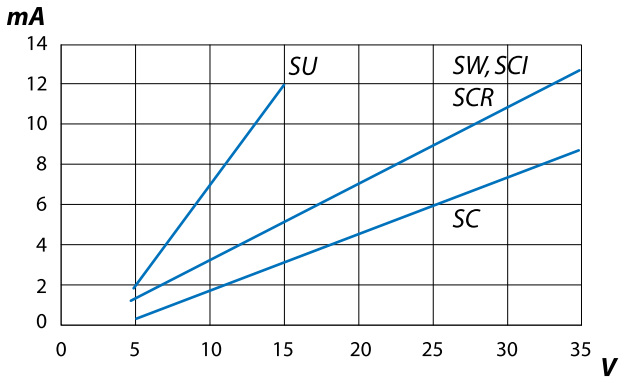
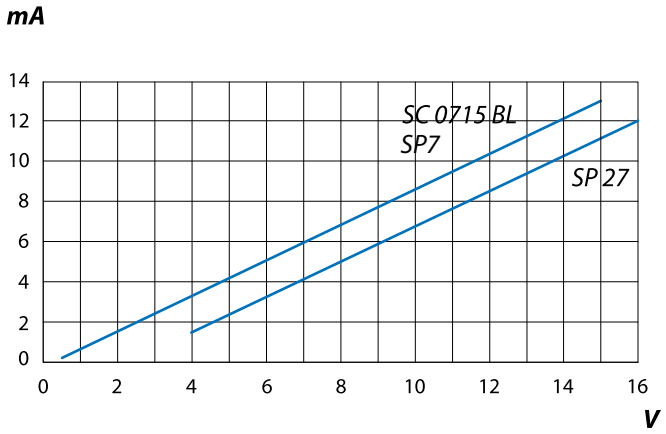
SELECTION GUIDE

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.
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.
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.
SP 7	The SP7 Buzzer has a closed front to whitstand high water pressure. It is extremely waterproof and used in extreme depth under water applications. Standard delivered with gasket (O-ring). 
SP 27	Small sized buzzer to be used in applications where space is limited.
SCI 535 1700	A buzzer for applications where a low frequency is required.

ELECTRICAL PARAMETERS

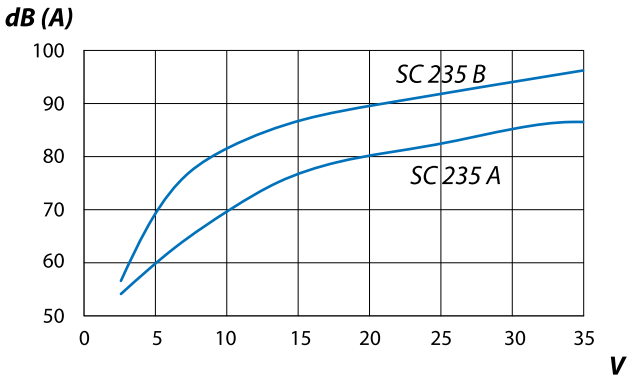
Current consumption vs. operating voltage

Models	Current consumption vs. operating voltage
SC, SCI, SCR, SU, SW	
SP27, SP7 & SC 0715 BL	

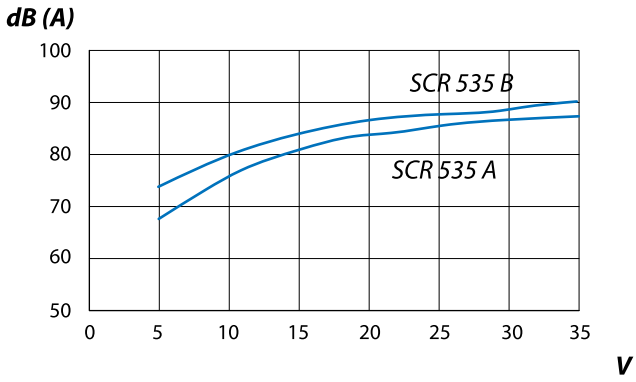
All measurements are made @ 12Vdc @ 1 meter in free air @ 21˚C.

Sound pressure level vs. voltage

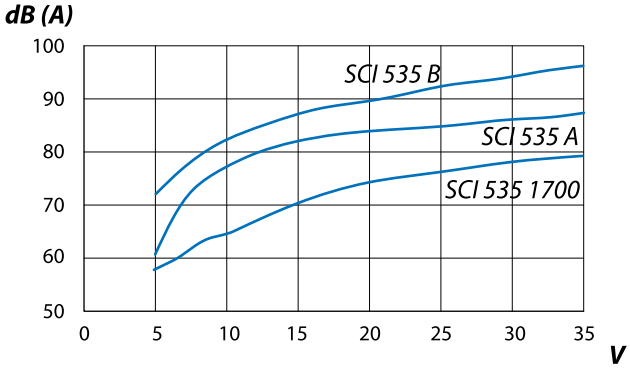
SC 235 A/B



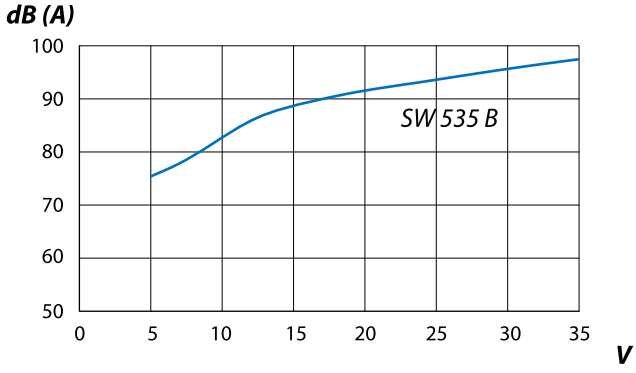
SCR 535 A/B



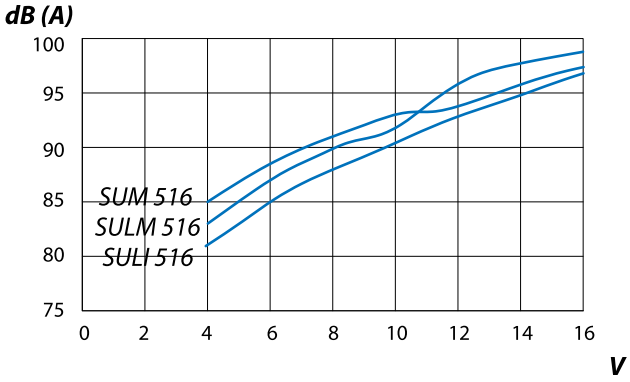
SCI 535 A/B



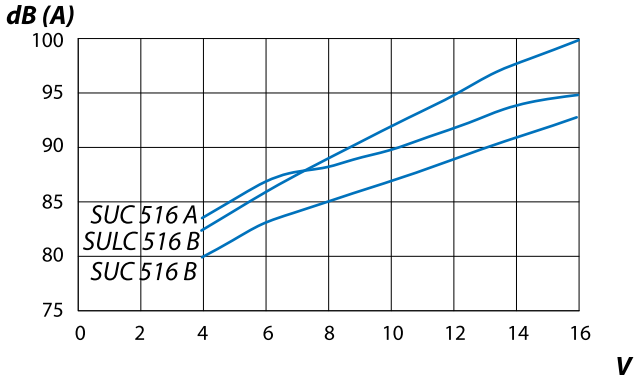
SW 535 B



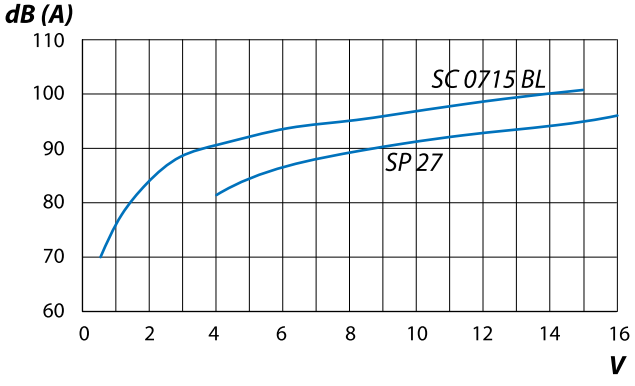
SUM 516 A1/A5, SULM 516 B1/B5, SULI 516 B1/B5



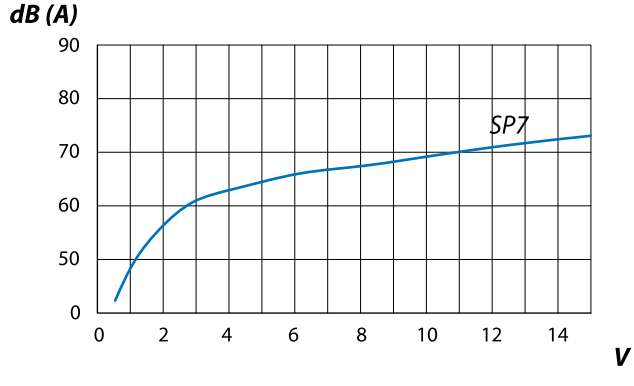
SULC 516 B, SUC 516 A/B



SP 27 & SC 0715 BL



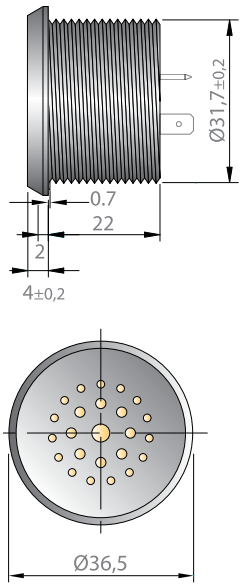
SP7



All measurements are made @ 12Vdc @ 1 meter in free air @ 21˚C.

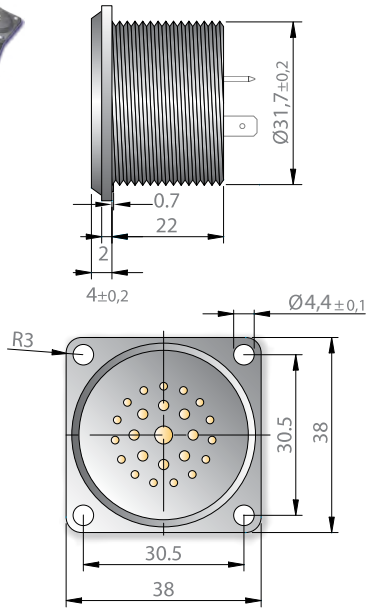
DIMENSIONS (All dimensions are in mm)

Round flange model

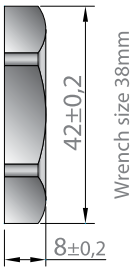


Note: all round and square flange models are available with all kinds of pin terminals.

Square flange model

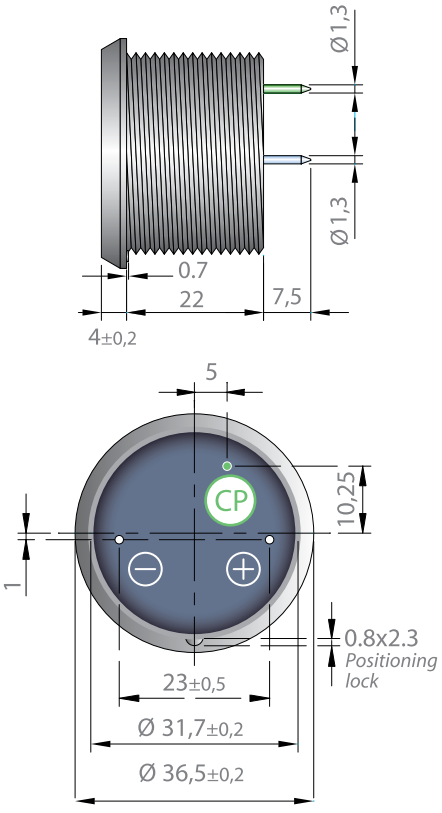


Mounting nut

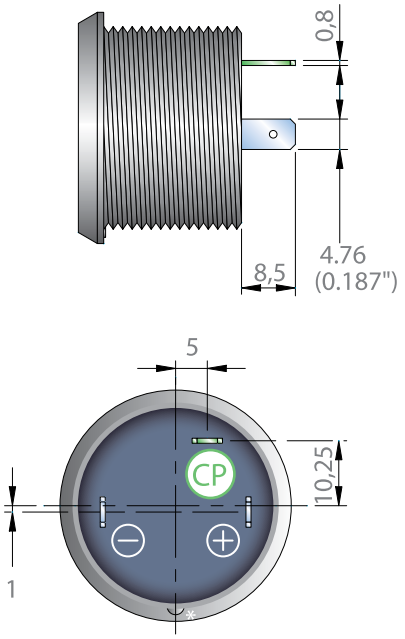


Models (2 pins) SC, SW (3 pins) SCR, SCI

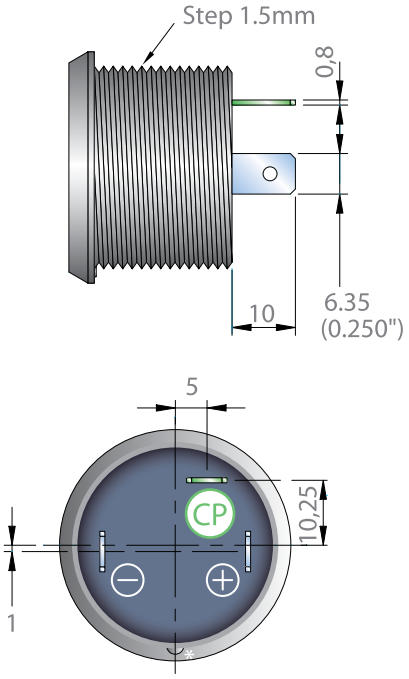
Pins



'fast-on' F



'fast-on' F2

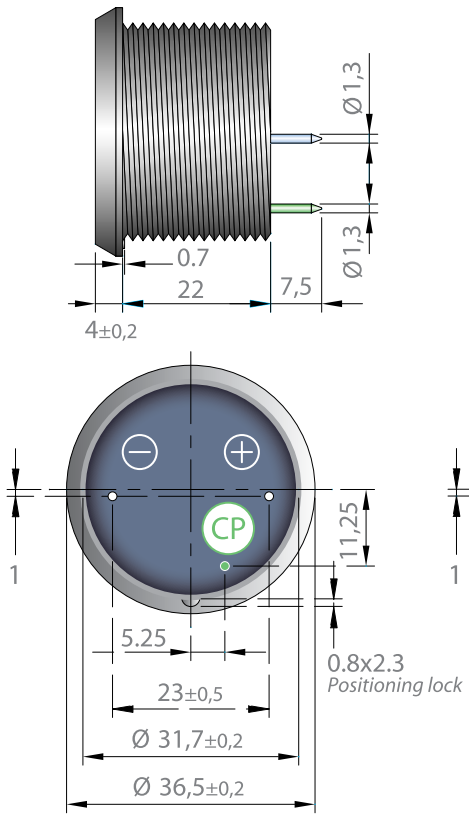


Note: control pin (CP) only with multifunction buzzers.

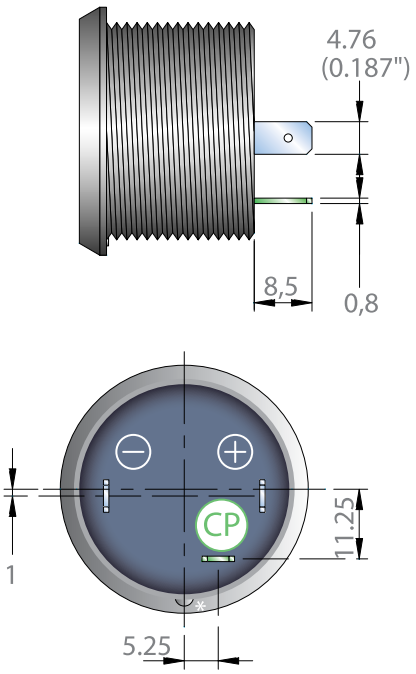
*0.8x2.3
Positioning lock

Models (2 pins) SUC, SULC, SULI (3 pins) SUM, SULM

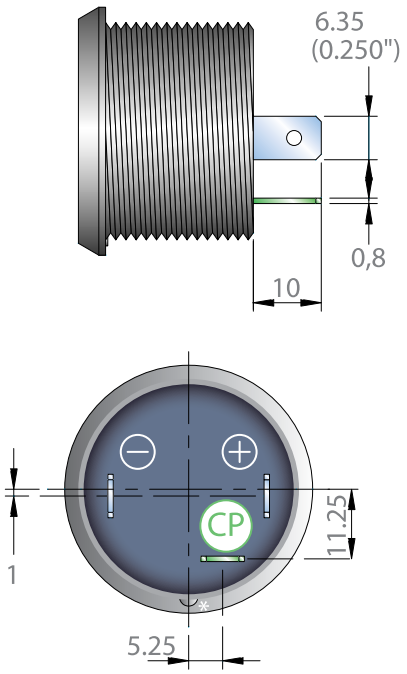
Pins



'fast-on' F

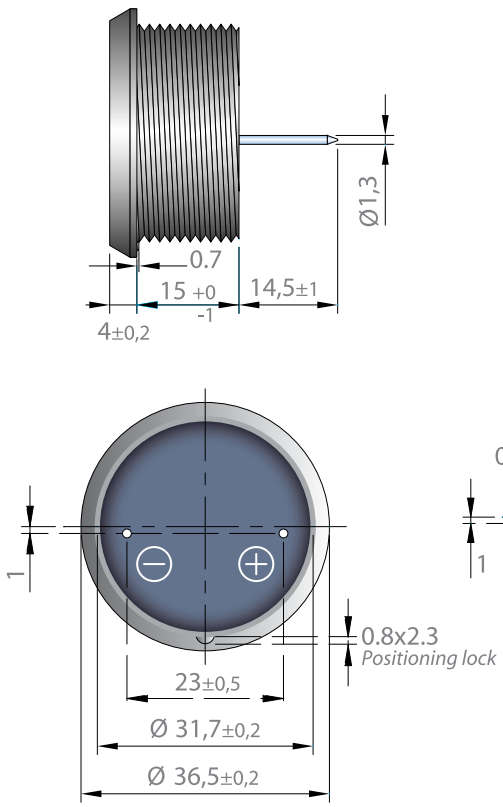


'fast-on' F2

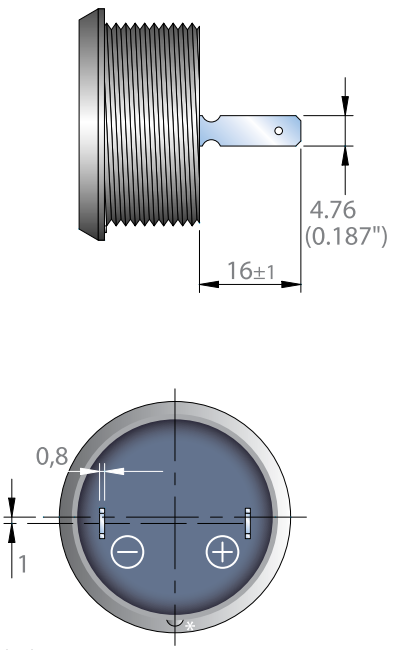


Model SP27

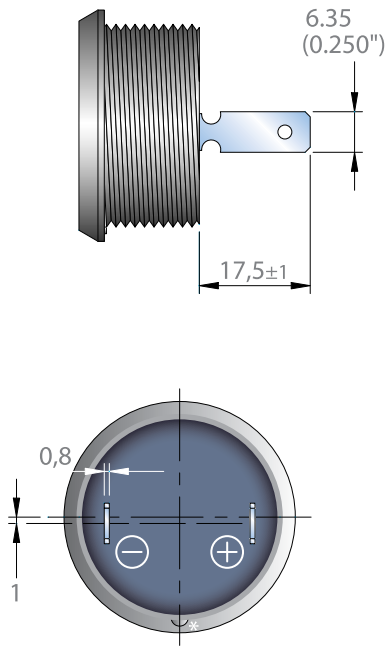
Pins



'fast-on' F



'fast-on' F2



*0.8x2.3
Positioning lock

PRODUCT OPTIONS STANDARD SERIES

Option Code	example	Description
W100	SCO715BL-W100	With 2 wires: length 10cm (instead of 2 pins)
W100	SCI535B5-W100	With 3 wires: length 10cm (instead of 3 pins)
W150	SCO715BL-W150	With 2 wires: length 15cm (instead of 2 pins)
W300	SCO715BL-W300	With 2 wires: length 30cm (instead of 2 pins)
ACR	SC235A-ACR	Acryl coating: The protective coating gives a complementary protection against smog. All standard series buzzers are perfectly waterproof (IP67) without the mentioned coating.
Gasket (O-ring)	GASKET	Rubber sealing ring for waterproof assembly. SP7 is inclusive O-ring. For 100% watertight assembly the O-ring together with loctite 5331 can be used.

To order an option add the suffix to the model number of the standard series.

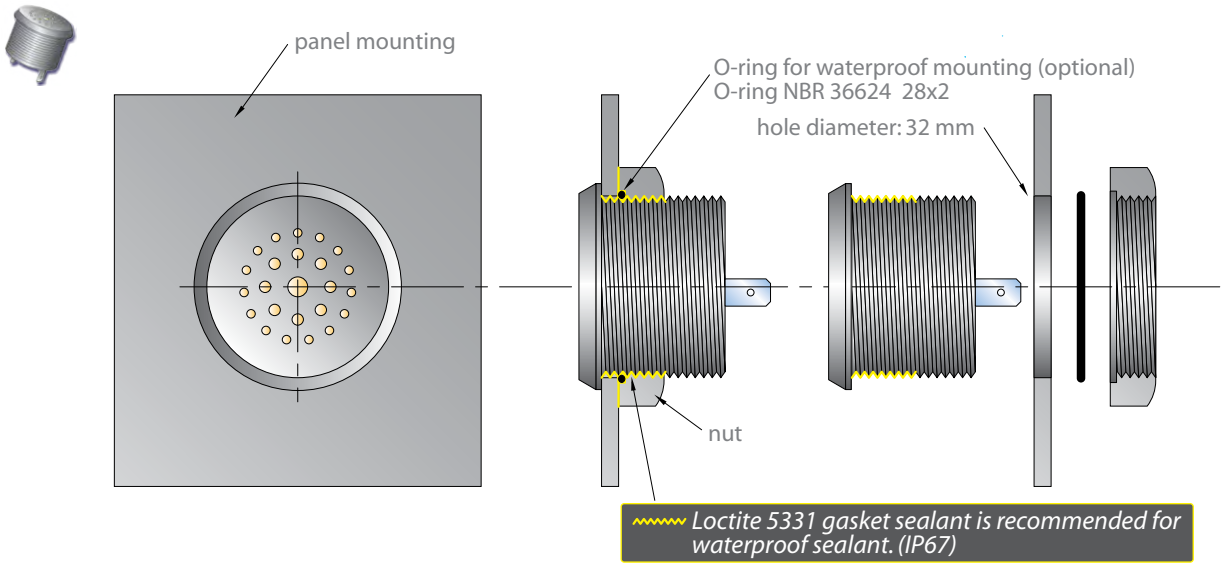
NUT All standard buzzers are delivered with a mounting nut.

MOUNTING GUIDELINES

Printed circuit-board:
- by soldering the terminals.

Front panel mounting:
- Panel mounting with a plastic nut.
  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 (M32x1.5).

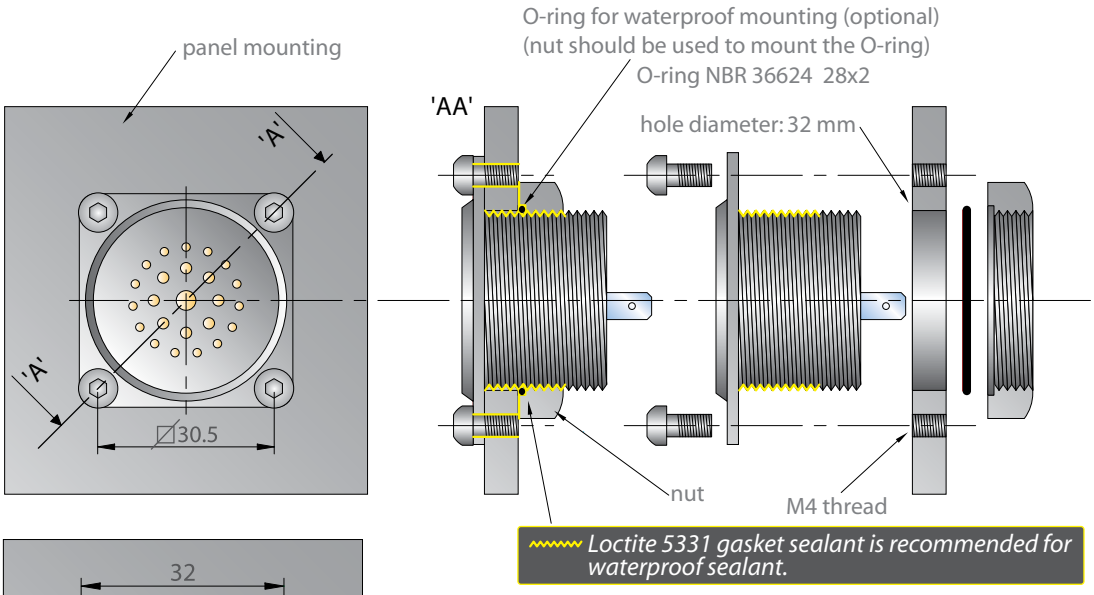
Round flange model *"sealing provision method on a panel"*

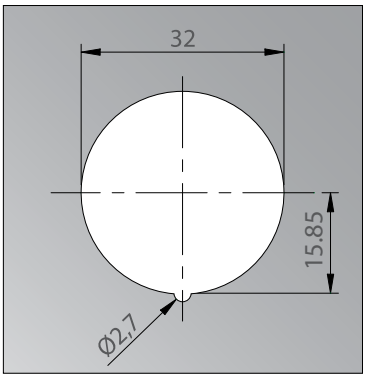


Square flange model

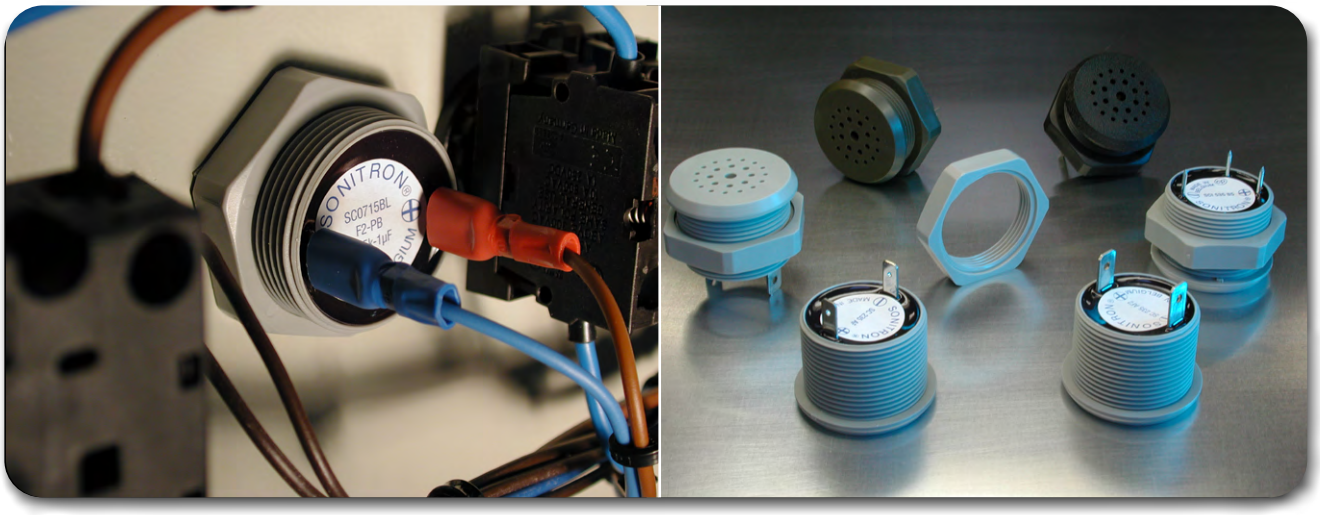
"sealing provision method on a panel"

Panel mounting square flange model with screws (M4).
The square flange model can be mounted with 4x M4 screws instead of using the plastic nut. for waterproof mounting of the square flange model the nut must also be screwed on together with the optional O-ring.

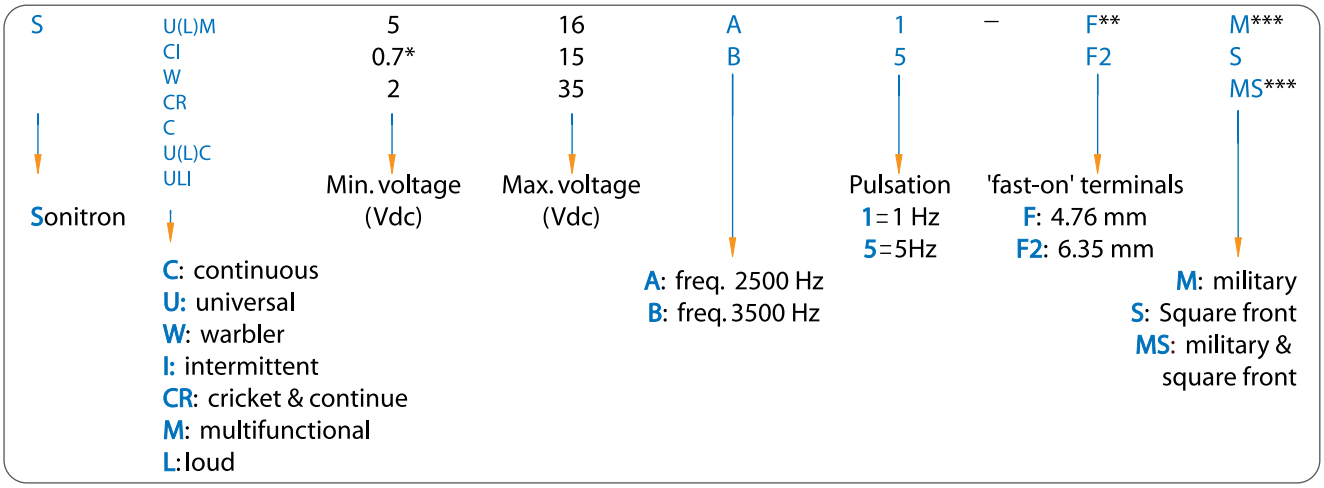




Hole dimensions *(recommended)*



PRODUCT CODIFICATION



*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 A1 F2 MS	SCI 535 A5 F2 MS
				SCI 535 1700	

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	SP 7
SULM 516 B5 F	SW 535 B F	SP 7 F
SULM 516 B5 F2	SW 535 B F2	SP 7 F2
SULM 516 B5 F M	SW 535 B F M	SP 7 M
SULM 516 B5 F2 M	SW 535 B F2 M	SP 7 M
SULM 516 B5 S	SW 535 B S	SP 7 S
SULM 516 B5 F S	SW 535 B F S	SP 7 F S
SULM 516 B5 F2 S	SW 535 B F2 S	SP 7 F2 S
SULM 516 B5 F MS	SW 535 B F MS	SP 7 F MS
SULM 516 B5 F2 MS	SW 535 B F2 MS	SP 7 F2 MS