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# ACCESSORIES FOR PORTABLE DIGITAL SOUND LEVEL METERS

## HD9101 HD9102 Sound Level Calibrators



### FIELD OF APPLICATION

The HD9101 and HD9102 sound level generator is a battery-fed portable sound source, suitable for calibrating sound level meters (portable and laboratory models) and acoustic measuring stations. It's possible to calibrate directly 1" microphones and, by means of a proper adapter (model 9101040), also 1/2" microphones; the mechanical dimensions are in accordance with standards IEC 61094-4 ("Measurement Microphones, Part 1: Specifications for Laboratory Standard Microphones") and IEC 61094-4 ("Measurement Microphones, Part 4: Specifications for working Standard Microphones").

### THE ADVANTAGES OF THE HD 9101/02 CALIBRATOR ARE THE FOLLOWING:

- with the frequency of sound pressure at 1000 Hz, calibration of sound level meters may be carried out with any kind of frequency weighting (LIN, A, B..), without introducing correction factors.
- The generated sound pressure level is independent of atmospheric pressure, so it is not necessary to correct the value to suit the atmospheric pressure.
- The HD 9101 calibrator may be used conveniently in the laboratory and in the field.
- It is simple to use, so it may be used even by non-skilled operators.

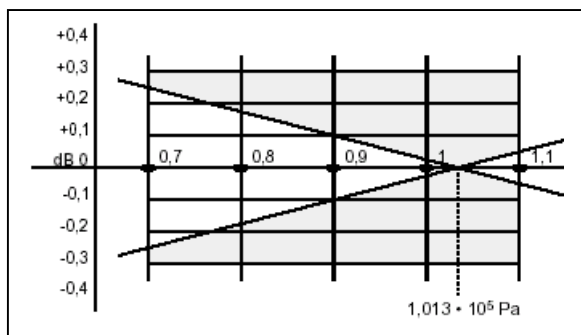
### ORDER CODES

**HD9101:** class 1 calibrator according to EC609442:1988. Frequency 1000 Hz, sound level 94dB/114dB.

**HD9102:** class 2 calibrator according to EC609442:1988. Frequency 1000 Hz, sound level 94dB/114dB.

### ACCESSORIES:

- Adapter for 1/2" model 9101040
- 9V alkaline battery IEC 6LF22
- instructions manual



Dependence of sound level on atmospheric pressure.










### TECHNICAL DATA











The calibrator HD9101 satisfies Class 1 specifications according to the standard IEC 60942-1988 and comply with the requirements of the standard ANSI S1.40-1984.

The calibrator HD9102 satisfies Class 2 specifications according to the standard IEC 60942-1988 and comply with the requirements of the standard ANSI S1.40-1984.

- Diameter of microphones that may be calibrated:  $3.77 \pm 0.05$  mm 1"  $12.7 \pm 0.03$  mm 1/2" (with 1/2" adapter mod. 9101040) standard according to IEC 61094-1 and IEC 61094-4
- Stabilization time: 60 sec
- Frequency HD 9101:  $1000\text{Hz} \pm 2\%$
- Frequency HD 9102:  $1000\text{Hz} \pm 4\%$
- Sound pressure level HD 9101:  $94\text{db}/114\text{dB} \pm 0.3\text{dB}$
- Sound pressure level HD 9102:  $94\text{db}/114\text{dB} \pm 0.5\text{dB}$  (ref. 101.3kPa, 23°C  $\pm 3^\circ\text{C}$  and 65% RH)
- Total distortion:  $< 0.5\%$
- Static pressure influence (Ref. to 101.3kPa):  
 $\pm 0.1$  dB between 90 kPa and 108kPa  
 $\pm 0.3$  dB between 65 kPa and 108kPa
- Temperature influence:  
 $\pm 0.05$  dB between 5°C and 35°C  
 $\pm 0.2$  dB between -10°C and 50°C
- Relative humidity influence (ref. to 50% R.H.)  
 $\pm 0.1$  dB between 10% RH and 90% RH Free from condensation
- Stability (one year, standard use):  $\pm 0.1$  dB
- Working temperature: -10°C  $\pm$  +50°C
- Storage temperature: -25°C  $\pm$  +55°C
- Relative humidity: 90% RH
- Equivalent volume of the calibration room (+23°C):  $10\text{ cm}^3$
- Power supply: 9V alkaline battery IEC type 6F22
- Battery life: about 15 hours with an alkaline battery
- Housing made of: NORYL NE110 resin
- Dimensions: 60x140 mm, H=46 mm
- Weight: 400 gr.

## Microphones, Preamplifiers and Accessories

| MODEL    | DESCRIPTION   |  | INSTR.                               |
|----------|---|--|--------------------------------------|
| HD8701S  | Separate probe for HD8701   |    |                                      |
| HD9101S1 | Classe 1 microphone 1/2" type WS2F for free field measurements                      |    |                                      |
| MK221    | Classe 1 microphone 1/2" type WS2F for free field measurements                      |    |                                      |
| MK231    | Classe 1 microphone 1/2" type WS2F for diffuse field measurements                   |   |                                      |
| MK223    | Classe 1 microphone with coated membrane for free field measurements 1/2" type WS2F |  | HD8701<br>HD9020<br>HD2010<br>HD2110 |
| UC 52    | Classe 2 microphone 1/2" type WS2F for free field measurements                      |  |                                      |
| HDSAV    | Windshield for 1/2" microphones   |  |                                      |
| HDSAV2   | Windshield with bird spikes for waterproof microphone unit HDWME950 and HDWME950N   |  |                                      |
| HDSAVP   | Spare rain shield for waterproof microphone unit HDWME950 and HDWME950N             |  |                                      |

| MODEL  | DESCRIPTION   |  | INSTR.                               |
|--|---|--|--------------------------------------|
| CPA/3<br>CPA/5<br>CPA/10<br>CPA/20<br>CPA/50 | Microphone extension cable<br>2, 5, 10, 20, and 50 meters   |    | HD8701<br>HD9020<br>HD2010<br>HD2110 |
| HD2010PN                                     | Microphone preamplifier with<br>standard connector for 1/2 ". It's<br>provided with CTC device for<br>electrical calibration  |    |                                      |
| HD2010PNW                                    | Microphone preamplifier for<br>HDWME95N with standard<br>connector for 1/2 ". Provided with<br>heater and CTC device for<br>electrical calibration  |    |                                      |
| HD2110P                                      | Microphone preamplifier with<br>standard connector for 1/2 ". It's<br>provided with CTC device for elec-<br>trical calibration and with a driver for<br>extension cable up to 100m          |    |                                      |
| HD2110PW                                     | Microphone preamplifier for<br>HDWME95N with standard<br>connector for 1/2 ". Provided with<br>CTC device for electrical calibration<br>and with a driver for extension cable<br>up to 100m |  |                                      |
| 9CPRS23                                      | Cable serie null-modem con<br>conectores mini Din Macho y DB9<br>estándar   |  |                                      |
| HD2110/CSNM                                  | Cable serie null-modem RS232<br>para interface sonómetros HD9019<br>y HD9020 a un PC (Interfase<br>COM)   |  |                                      |
| HD2110/CSM                                   | Serial cable for modem with<br>standard DB25 connector  |  |                                      |
| HD2110/CSP                                   | Serial cable for printer with<br>standard DB9 connector   |  |                                      |
| VTRAP  | Trípod, max. High 1550 mm   |  |                                      |



**DELTA OHM PORTABLE SOUND LEVEL METERS ANNEX  
ACCESSORIES - OPTIONS - SOFTWARE**



**DO-080.21E**

**A - 01**

| MODEL       | CLASS | LINEARITY | SETUP  | WORK | MACHINES | SOUND FACILITIES | MONITORING | EVENTS | BUILDINGS | Page |
|-------------|-------|-----------|--|------|----------|------------------|------------|--------|-----------|------|
| HD2010UC    | 2     | 80        | HD2010UC KIT 2 (*2)  | x    |          |                  |            |        |           | A-07 |
| HD2010UC    | 2     | 80        | HD2010UC KIT 2 + DataLogger  | x    |          |                  | x          |        |           | A-07 |
| HD2010UC    | 1     | 80        | HD2010UC KIT 1 (*2)  | x    |          |                  |            |        |           | A-02 |
| HD2010UC    | 1     | 80        | HD2010UC KIT 1 + DataLogger  | x    |          |                  | x          |        |           | A-02 |
| HD2010UC    | 1     | 80        | HD2010UC KIT 1 + DataLogger + Advanced analysis                    | x    |          |                  | x          | x      |           | A-02 |
| HD2010UC/ A | 2     | 80        | HD2010UC/ A KIT 2  | x    | x        |                  | x          |        |           | A-08 |
| HD2010UC/ A | 2     | 80        | HD2010UC/ A KIT 2 + 1/3 Octave                                     | x    | x        | x                | x          |        |           | A-08 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1  | x    | x        |                  | x          |        |           | A-03 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1 + Advanced analysis                              | x    | x        |                  | x          | x      |           | A-03 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1 + 1/3 Octava                                     | x    | x        | x                | x          |        |           | A-03 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1 + 1/3 Octava + Advanced analysis                 | x    | x        | x                | x          | x      |           | A-03 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1 + 1/3 Octava + Reverberation                     | x    | x        | x                | x          |        | x         | A-03 |
| HD2010UC/ A | 1     | 80        | HD2010UC/ A KIT 1 + 1/3 Octava + Advanced analysis + Reverberation | x    | x        | x                | x          |        | x         | A-03 |
| HD2010      | 1     | 80        | HD2010 KIT 1   | x    | x        |                  | x          |        |           | A-04 |
| HD2010      | 1     | 80        | HD2010 KIT 1 Advanced analysis                                     | x    | x        |                  | x          | x      |           | A-04 |
| HD2010      | 1     | 80        | HD2010 KIT 1 + 1/3 Octave  | x    | x        | x                | x          |        |           | A-04 |
| HD2010      | 1     | 80        | HD2010 KIT 1 + 1/3 Octave + Advanced analysis                      | x    | x        | x                | x          | x      |           | A-04 |
| HD2010      | 1     | 80        | HD2010 KIT 1 + 1/3 Octava + Reverberation                          | x    | x        | x                | x          |        |           | A-04 |
| HD2010      | 1     | 80        | HD2010 KIT 1 + 1/3 Octava + Advanced analysis + Reverberation      | x    | x        | x                | x          | x      | x         | A-04 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1   | x    | x        |                  | x          |        |           | A-05 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1 + Advanced analysis                                 | x    | x        |                  | x          | x      |           | A-05 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1 + 1/3 Octave  | x    | x        | x                | x          |        |           | A-05 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1 + 1/3 Octave + Advanced analysis                    | x    | x        | x                | x          | x      |           | A-05 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1 + 1/3 Octava + Reverberation                        | x    | x        | x                | x          |        |           | A-05 |
| HD2010RE    | 1     | 110       | HD2010RE KIT 1 + 1/3 Octava + Advanced analysis + Reverberation    | x    | x        | x                | x          | x      | x         | A-05 |
| HD2110      | 1     | 110       | HD2110 KIT 1   | x    | x        | x                | x          | x      |           | A-06 |
| HD2110      | 1     | 110       | HD2110 KIT 1 + FFT   | x    | x        | x                | x          | x      |           | A-06 |
| HD2110      | 1     | 110       | HD2110 KIT 1 + Reverberation                                       | x    | x        | x                | x          | x      | x         | A-06 |
| HD2110      | 1     | 110       | HD2110 KIT 1 + FFT + Reverberation                                 | x    | x        | x                | x          | x      | x         | A-06 |

CAN ALL KITS AVAILABLE IN 3 VERSIONS:

For indoor  
For outdoor  
For indoor and outdoor

example HD2010 KIT 1  
example HD2010 KIT1/ E  
example HD2010 KIT 1/ IE