

SPECIFICATIONS

Range :	35 to 130 dB(A)
Signal to noise ratio :	better than 5dB at lower range limit
Weighting Network	'A' to IEC 651 and ANSI S1.4 Type 3
Attenuator :	10dB steps +/-0.5dB.
Rectifier :	quasi-rms. Accuracy better than +/-5% for crest <3.
Meter :	Scaled -5 to +10dB 35mm scale length.
Accuracy :	+/-0.5dB each division 0 +10dB. +/-1dB each division -5 to 0dB.
Battery :	1 x 9V Type MN1604 (such as PP3).
Life :	At least 80 hours
Temperature Range	
Operational :	-10 to +50° C.
Storage :	-20 to +70 °C.
Dimensions :	
Length :	174mm
Width :	54mm
Depth :	(overall) 60mm
Weight :	including battery 500 grams.

Thank you for buying a Castle product, I am sure you will find both the goods and the service to be of the highest quality but if not, then please feel free to write to me personally and I will ensure that your needs are dealt with immediately.

This manual is designed to show you the operation of the goods you have purchased and a very brief insight into acoustics itself. If you would like to become a competent person in the eyes of the law, then you may like to know more about our Competent persons training course for the Noise at Work Regulations.

It is my intention for Castle Group Ltd to provide a complete range of Noise and Vibration products and Services of the highest standard. If you would like to know more about any of our other products and services then please complete the reply paid card in this manual and return it to us for prompt action or telephone on +44(0)1723 584250.

Simon Bull



Sales Manager

GA301 SOUND LEVEL METER INSTRUCTIONS

INTRODUCTION

The GA301 is a rugged survey sound level meter, constructed to specifications originally drawn up in co-operation with the Open University in England. It also satisfies the requirements of IEC Recommendations 651 Type 3, and ANSI S1.4-1971, Type 3.

The instrument is designed for simplicity of use, and is easily and accurately calibrated with its companion calibrator GA601. Range of measurements is from 35 to 130 dB re 20 uPa, and 'A' weighting of its frequency range (approx 20 Hz to 8kHz) is built in.

CONTROLS AND BATTERY CHECK

The controls of the GA301 are kept to a minimum in order to preserve simplicity of operation. As well as the main RANGE switch, the main POWER switch "Off/Batt/On" and the RESPONSE switch "Slow/Fast" are located on the front panel. The POWER switch is designed so that it is not possible to make measurements without first checking the battery condition (position "Batt"). The RESPONSE switch selects either "Fast" or "Slow" meter response rate. For steady sound levels, the meter reading will be identical whichever position is selected.

If, on switching the POWER switch to "Batt", the meter does not deflect within the "Batt" sector of the meter scale, then the single 9V battery of the GA301 must be renewed. To do this, remove the two self-tapping screws on the lower rear sides of the instrument and slide the back of the case downwards and outwards to remove it. The battery is then accessible and may be unclipped and replaced. Battery type is an MN1604, such as a PP3. When the new battery is clipped in position and relocated, taking care that the wiring is not trapped, the back of the case may be replaced.

CALIBRATION USING GA601

The GA601 is an electronic calibrator supplying a reference sound level of nominally 94dB re 20 uPa at 1 kHz. When supplied it normally has an adaptor fitted. This needs removing to leave a 1" diameter coupler cavity and is set to give the nominal level of 94 dB without correction factor.

CALIBRATION PROCEDURE IS AS FOLLOWS

1. Check the battery condition of the GA301 and the GA601.
2. Set the RANGE of the GA301 to "90" and switch the power switch to "On". Set RESPONSE to "Fast".
3. Switch on the GA601 and check that it is operating correctly. Place it on a flat surface with its coupler cavity upwards and then invert the GA301 and place its microphone in the cavity of the GA601. When the microphone is properly positioned, the GA301 will stand freely without support.
4. The meter reading of the GA301 should be 94dB (90 on the RANGE switch + 4dB on the meter scale). If not, then the gain of the GA301 may be adjusted to obtain the correct reading. This is achieved by inserting a small screwdriver through the access hole in the rear panel and adjusting the single turn potentiometer until the correct reading is obtained.

MEASURING SOUND LEVELS

1. Check the battery condition and calibrate the GA301 as described above.
2. With the POWER switch at "On" and RESPONSE set to "FAST" point the microphone of the GA301 towards the sound source to be measured. Hold the instrument at arm's length in order to minimise sound reflections from the body of the operator.
3. Adjust the RANGE setting to bring the meter reading of the GA301 on scale between 0 and +10. If the meter proves difficult to read because of large fluctuations in level, some improvements may be obtained by switching to "Slow" RESPONSE.
4. Record the sound level as (RANGE setting + meter reading). For example if the RANGE switch is set at "80dB" and the meter reads "+6dB", then the sound level is 86dB(A). The term "dB(A)" indicates that measurements are made with the "A" frequency weighting, which is the case for all measurements with the GA301.