

CASTLE GA905 INDUSTRIAL SOUND LEVEL SWITCH

INTRODUCTION

The Castle GA905 Industrial Sound Level Switch is a well established product, which has been in existence since the early 1970's. They have been used for a very varied range of tasks. To suit differing needs, Castle have on many occasions produced special versions, consequently this data sheet is designed to introduce the basic the concept rather than precise details of a fixed product.



DETAILS

Generally the GA905 is housed in a waterproof plastic box with fixed cable input and outputs. It is a mains powered instrument with relay output switching for control of light current applications or for control of an external contactor. The sound level is detected by an electret microphone normally cable mounted and the signal is processed through a pre-amplifier, main amplifier and response and weighting networks. The resulting rms level is compared with a pre-set trigger level to detect an exceeded value. Upon receiving a danger signal the unit activates a relay to provide the switching function from which lights, audible warnings or auto shut 'off' or 'on' functions can be controlled.

APPLICATIONS

In certain applications in industrial manufacturing processes, an increase in noise often signifies a problem. This increase can be detected and used to set off a warning device or switch off a machine or operate a change over circuit to avoid damage or faulty product being created.

Two typical applications:

1) A Manufacturer of hydraulic suspension arms needed to ensure that a fine threaded end cap was properly screwed home by an automatic process. Unfortunately on some occasions the cap was cross threaded and as the machine recognised torque as a signal to indicate the completed assembly, faulty arms were

produced. By monitoring torque, noise level and duration of process a three parameter fool proof system was achieved.

2) A Manufacturer of television tube glassware needed to detect a breakage during the optical polishing process to avoid costly damage to the lining of the machine. The GA905 Noise Switch proved a most effective solution. There are many other applications and all share one common factor, the application of a noise switch was one of the last ideas considered because it is unusual. But it is a most effective and inexpensive solution.



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SPECIFICATION

TRIP RANGE

75dB to 112.5dB in 2.5 dB steps switch selectable ± 5 dB calibration control (factory set)

TRIP TIME

10 second to 20 seconds user adjustable (potentiometer) When tripped unit automatically resets after a pre-selected trip time

FREQUENCY WEIGHTING

'A' weighted in accordance with BS5969 Type 2

THE WEIGHTING

Slow 1000mS in accordance with BS5969 Type 2

MICROPHONE

Type: Pre Polarised Condenser
Sensitivity: -65dB(0dB = 1V/ μ Bar 1000Hz)

CALIBRATION

Factory calibrated.

CONTACT RATINGS

Changeover Contacts: 5A, 30Vdc/250Vac
Switched Mains: 1A 250V (Fuse F1 will blow above 1A)

TEMPERATURE

Operating range: -10°C to +50°C
Effect of temperature: < 0.5dB from -10°C to +50°C

HUMIDITY

Effect of Humidity: < 0.5dB from 30%RH to 90%RH

OVERALL DIMENSIONS AND WEIGHT

215 W x 120 H x 75 D mm, 550 g

In the interest of continued development Castle Group Ltd reserve the right to change any specification without prior notice.

ORDERING INFORMATION

GA905 Defines the standard model as detailed above.

GA905X Defines a non standard model. All requirements for non standard parameters must be specified with order or specified following discussions with Castle Associates applications Engineers, in writing or by telex.

For standard or non standard model the chosen pre-set trigger level must be stated.