



## SDB A100 Smoke Detector Duct Probe

### Introduction

The SDB-A100 duct probe was designed and produced following a special study of the problems involved in applying the benefits of smoke detection to ventilation and air conditioning ducts. Many detectors and duct probes are unstable—the combination of the SDB-A100 and the Hochiki range of optical detectors is not.

A fine engineering solution to a difficult engineering problem and approved by the Australian testing authorities.

The unit is supplied ready equipped to fit to ducting, including smoke inlet and outlet tubes, detector base, gasket and terminal box for line connection, but does not include the smoke detector, the duct probe can be used with the Hochiki range of optical detectors.

### Operation

A sample of the air in the duct being monitored is passed continuously through the detector housing chamber, having been taken in through the inlet tube and subsequently returned to the duct through the outlet tube. The flow of air through the detector housing chamber is arranged to ensure that no air is blown directly at the detector and cannot therefore adversely effect the sensitivity, so avoiding the false alarms that ordinary duct probes are prone to. The SDB-A100 is ideal in air velocities from 2.5 to 30 metres per second.

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## Installation

1. It is important that the SDB-A100 be installed at a point in the duct run where the duct probe sampling tubes are not subject to turbulent air flow i.e. avoid bends and changes of section. Consideration should also be given to positions which permit easy access for maintenance.
2. The length of the inlet sampling tube should be 70% of the duct width and the outlet tube aperture approximately in the centre of the duct. The standard inlet tube supplied is 1000 mm long and so is suitable for up to 1250 mm ducts, 875 mm protruding into the duct. Air inlet holes are 6 mm diameter, spaced 25 mm apart. Where a duct is more than 1250 mm wide in order to keep the inlet tube stable, extend it through the rear duct wall (length = duct width + 140 mm).
3. Having chosen the most suitable location drill two 22 mm holes and eight 2 mm holes at the spacing shown in figure 1.
4. Mount the duct probe body on the duct with the sealing gasket between the body and the duct wall and fix in place with self tapping screws. Tighten the screws to ensure that the duct probe is hermetically sealed, which is essential for optimum performance,
5. Remove the front of the probe housing and insert the inlet and outlet tubes in their appropriate positions, having plugged the duct end of the inlet tube with a plug. See Fig. 2 for positioning detail, paying particular attention to the amount by which the tubes should protrude into the detector housing chamber.
6. Wiring to the terminal box should be connected to terminals L and C. A 200 mm minimum length of flexible tubing should be used. See Fig. 3.

## Maintenance

By the nature of a ventilation system, dust tends to concentrate in a duct and will consequently adversely effect the performance of any smoke detector. The removable front cover and plug-in optical smoke detectors makes for simple maintenance. Cleaning is recommended every three months. The inside of the duct housing and the sampling tubes should also be cleaned at that time.

## Specifications

Model reference	: SDB-A100
Description	: Smoke detector duct probe
Detector head	: optical chamber smoke detectors : SLK-A, SLR-AS : ALB-E, ALG-AS
Detector base	: YBN-RL/2NA, YBF-RL/2NBF : AMU-B2M : YBF-RL/4AH4M, YBO-RL/4A
Function	: To detect smoke in a duct by sampling the air flow through it.
Duct air velocity	: 2.5 to 30 m per second.
Structure; main body	: 1.0 mm mild steel plate painted grey; removable access door; integral terminal box.
Structure; sampling tubes	: 20 mm welded conduit; 1000 mm inlet, 750 mm outlet standard.
Weight	: 3 kg
SSL Listing Number. . . .	afp 847

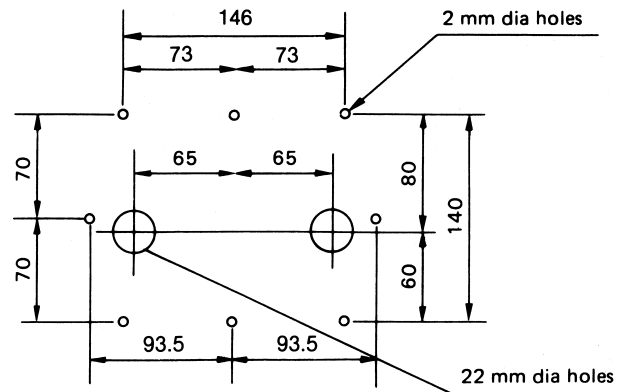


Fig. 1

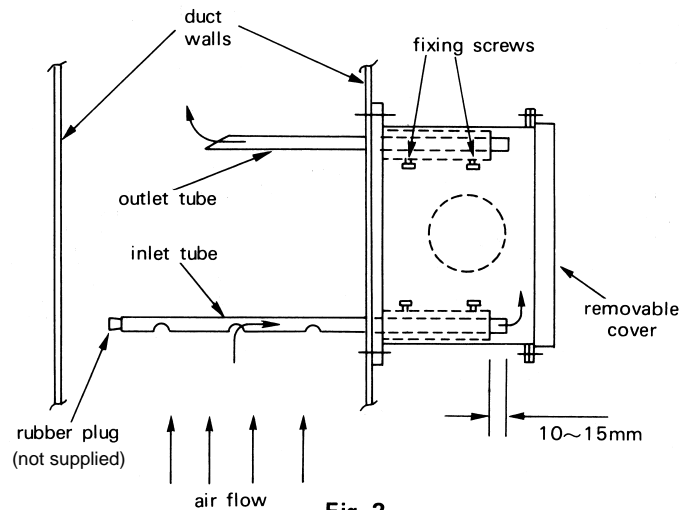


Fig. 2

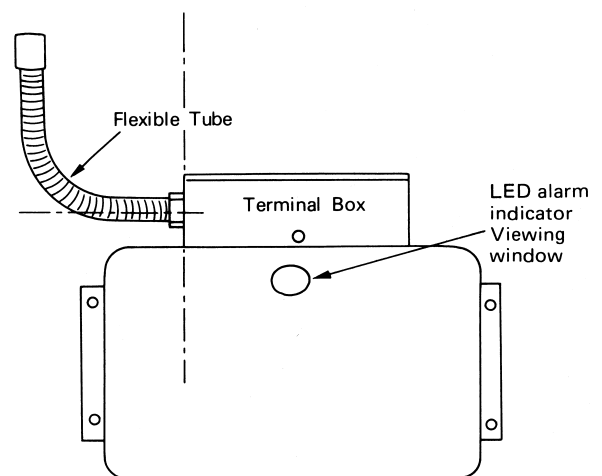


Fig. 3

In line with a continuous programme of product development, the Manufacturer reserves the right to modify or update specifications without notice. It should be noted that the exact specification may vary depending on the configuration of the designed system. The information herein is to assist in determining whether this product is suitable for a given application. This information does not purport to cover all details or variations in the equipment described, nor does it provide for every possible contingency to be met in connection with installation, operation and maintenance. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. NOTHING HEREIN SHALL CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.