

Freeze-Drying Product Sensors

- Easy and accurate product placement
- Rugged construction
- Sized to fit serum bottles or vials from 2 to 100 ml



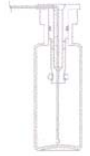
FDPS20 FDPS13 FDPS202 FDPS132 FDPS203

Product Sensors provide an easy way to place a product thermocouple in a serum vial or product tray accurately and repeatedly for stoppering applications. They are easy to use, rugged, auto-clavable and provide virtually no thermal path to the product. Each sensor is designed to allow easy adjustment throughout the height of the product in the vial.

Stoppering configurations include 13 and 20 mm O.D. vial neck sizes. The calibrated vent tubes approximate the vapor path of a standard split stopper, allowing the monitored sample to parallel the drying characteristics of samples that are not monitored. The height of a serum vial with the freeze-drying product sensor is slightly less than the equivalent stoppered serum vial to allow for unimpeded stoppering. Sized to fit serum bottles or vials from 2 to 100 ml.

FDPS13

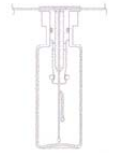
Constructed of 36 gauge (.005") type "T" (copper, constantan) thermocouple wire with Teflon® coating. Noryl top with O-ring fits 13 mm O.D. vials. Teflon-coated lead wires are 30" long. Standard miniature male thermocouple for connection to the freeze-dryer.



FDPS13

FDPS132

Same as FDPS13 except that two independent thermocouples are provided to allow placement of thermocouples at different depths of the product. One standard miniature thermocouple connector per thermocouple.



FDPS132

FDPS20

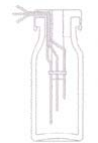
Type "T" thermocouple (copper, constantan) encased in .020 Teflon sheath. Teflon top for 20 mm O.D. neck serum vials with vent tube. Teflon-coated lead wire is 36 gauge and 30" long. Standard miniature male thermocouple connector for connection to freeze-dryer.



FDPS20

FDPS202

Two 36 gauge type "T" thermocouples (copper, constantan) with Teflon coating. Positioned on Teflon vent tube with O-ring to allow positioning of thermocouples at different depths in same vial. Lead wire is 36 gauge and 30" long. Standard miniature male thermocouple connectors for connection to freeze-dryer.



FDPS203

Same as FDPS 202 except with three thermocouples.

FDPS203



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