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# Selection of the Number of Probes/Sensors

**(AFM-4)**

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The number of probes is normally based on an estimate of the velocity contours – the more even the air flow the fewer the number of probes and sensors the more distorted the more probes and sensors. The variation in velocities is hard to predict and will vary from duct system to duct system. Another condition is the distortion of the airflow by the probe itself—especially important with small duct. There is no known peer reviewed and developed or reviewed standards for probe density or number of sensors – the AMCA standard considers accuracy only not the number of sensors. The manufacturer of the flow stations often have their own recommendations.

We include the following chart as a recommendation for the selection of the number of probes and the number of probes per sensor. We have assumed that the flow upstream of the probe is uniform. We recommend that the probes are installed at least 2x longest duct dimension from disturbances i.e. elbows etc.

| **# OF PROBES / # OF SENSORS PER PROBE** | | | | |
|---|---|---|---|---|
| **Duct Height** | **Duct Width** | | | |
| | 4-18” | 20-36” | 38-60” | 62-96” |
| Up to 12” | 1/1 | 1/2 | 1/3 | 1/3 |
| 14” to 18” | 1/2 | 1/2 | 1/3 | 1/3 |
| 20” to 36” | 2/2 | 2/2 | 2/3 | 2/3 |
| 38” to 60” | 2/2 | 2/2 | 2/3 | 2/3 |
| 62” to 96” | 2/2 | 2/2 | 2/3 | 2/3 |

**Probe location in the ductwork**