

## GENERAL

**ALIAVTX** AVF7000 is a Vortex Flowmeter based on Von Karman theory of vortices generated by a bluff body in the pipe. The number of vortices are linearly proportional to the volumetric flow in the pipe. The AVF7000 is versatile flowmeter widely used for Gases, Steam & Liquid applications. There are no moving parts and comes with either Flange or wafer connection. Standard configuration have local indication for flowrate and total flow as well as a 4-20mA output functions. The microprocessor design can filter out erroneous signals as well as interference caused by pipe vibration.

## FEATURES

- ❑ Simplified setup and self-diagnostic functions
- ❑ Auto. Temperature & Pressure compensation
- ❑ 4-20 mA and pulse outputs, user selectable
- ❑ a very wide selection of sizes
- ❑ Wide temperature range which can up to 420 Deg. C
- ❑ Non-volatile memory for setup and calibration

## SPECIFICATION

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Size : 10,15,20,25,32,40,50,65,80,100,125,150<br/>200,250,300,350,400,450,500mm</li> <li>● Measuring Range : Steam - 1.6 to 540,000 Kg/Hr<br/>: Gas - 3 to 46,000 M3/Hr<br/>: Liquid - 0.3 to 4950 M3/Hr</li> <li>● Material : Stainless Steel 301 / 304 / 316</li> <li>● Accuracy<br/>Liquid : +/-0.7% value of reading<br/>Gas &amp; Steam : +/-1.0% value of reading</li> <li>● Repeatability : +/-0.2% value of reading</li> <li>● Process Connection : Flange / Wafer<br/>Flanges type : JIS 10K / JIS 20K / JIS 40K<br/>ANSI 150# / ANSI 300# / ANSI 600#<br/>DIN PN 10 / PN 16 / PN25 / PN 40<br/>Wafer type : DN40~DN250<br/>without Temperature / Pressure Sensor</li> <li>● Temperature : -40 ~ +280 Deg. C (Standard)<br/>: -40 ~ +420 Deg. C (Optional)</li> <li>● Ambient Temperature : -20 ~ +60 Deg. C</li> <li>● Pressure : 78 Kg/cm2 (Max.)</li> <li>● Protection : IP 65<br/>: Explosion Proof, Exd IIC T6<br/>: Intrinsically Safe, Eex ia IIC T4</li> </ul> | <ul style="list-style-type: none"> <li>● Local display : 4 lines LCD<br/>: 4 digit flowrate<br/>: 8 digit Totalizer</li> <li>● Current output : 4-20 mA (2 wire)<br/>Load : 600 Ohm</li> <li>● Pulse output : Scale Pulse(3 wire)<br/>Rating : 3 to 30VDC, 20mA Max.</li> <li>● Communication : RS485</li> <li>● Data storage : Operation Parameter and Totalizer<br/>Figures are stored by EEPROM for more than 10 years</li> <li>● Housing Material : Aluminum Alloy</li> <li>● Cable Entry : 2 X M20 *1.5</li> <li>● Power supply : 12-36 VDC<br/>: Ni-MH Battery(3 years working Hours)</li> <li>● Key Pad : 4 keys from internal for Programming and display control</li> <li>● Option<br/>Pressure Sensor : Pressure compensation<br/>Signal output : 0-30 mV DC(20 uA Power supply)<br/>Temperature sensor : Temperature compensation<br/>Signal output : PT100 ohm (3 wires)</li> </ul> |
|--|---|



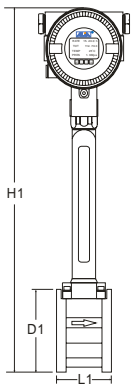
**FLOW RANGE**

| Normal Size |        | Flow Range   |      |                          |       |        |        |        |        |        |        |        |        |
|-------------|--------|--------------|------|--------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| mm          | Inch   | Water(25 °C) |      | Air - Nm3/Hr - 20 Deg. C |       |        |        |        |        |        |        |        |        |
|             |        | M3/Hr        |      | 0 BarG                   |       | 2 BarG |        | 4 BarG |        | 6 BarG |        | 8 BarG |        |
|             |        | Min.         | Max. | Min.                     | Max.  | Min.   | Max.   | Min.   | Max.   | Min.   | Max.   | Min.   | Max.   |
| 10          | 3/8"   | 0.12         | 2.4  | 1.1                      | 18    | 3.1    | 55     | 5.2    | 91     | 7.3    | 127    | 9.3    | 164    |
| 15          | 1/2"   | 0.28         | 5.4  | 2.0                      | 44    | 5.8    | 130    | 10     | 216    | 14     | 302    | 17     | 389    |
| 20          | 3/4"   | 0.48         | 9.6  | 3.4                      | 77    | 10     | 229    | 17     | 381    | 23     | 533    | 30     | 685    |
| 25          | 1"     | 0.72         | 14   | 5.3                      | 115   | 16     | 342    | 26     | 569    | 37     | 796    | 47     | 1023   |
| 32          | 1-1/4" | 1.2          | 24   | 9.2                      | 196   | 27     | 581    | 46     | 967    | 64     | 1353   | 82     | 1739   |
| 40          | 1-1/2" | 1.8          | 38   | 13                       | 345   | 40     | 1026   | 66     | 1707   | 92     | 2388   | 118    | 3069   |
| 50          | 2"     | 2.8          | 60   | 20                       | 575   | 60     | 1710   | 100    | 2845   | 141    | 3980   | 181    | 5115   |
| 65          | 2-1/2" | 4.8          | 101  | 32                       | 897   | 94     | 2668   | 156    | 4438   | 218    | 6209   | 280    | 7979   |
| 80          | 3"     | 7.2          | 152  | 53                       | 1380  | 158    | 4104   | 263    | 6828   | 372    | 9552   | 473    | 12276  |
| 100         | 4"     | 11           | 238  | 77                       | 2300  | 229    | 6840   | 381    | 11380  | 533    | 15920  | 685    | 20459  |
| 125         | 5"     | 18           | 372  | 119                      | 3335  | 354    | 9918   | 589    | 16501  | 824    | 23083  | 1059   | 29666  |
| 150         | 6"     | 26           | 534  | 182                      | 4715  | 541    | 14022  | 900    | 23328  | 1260   | 32635  | 1619   | 41942  |
| 200         | 8"     | 46           | 949  | 336                      | 8625  | 999    | 25649  | 1662   | 42674  | 2326   | 59698  | 2989   | 76723  |
| 250         | 10"    | 71           | 1484 | 511                      | 14375 | 1520   | 42749  | 2528   | 71123  | 3537   | 99497  | 4546   | 127871 |
| 300         | 12"    | 102          | 2136 | 742                      | 18975 | 2207   | 56429  | 3671   | 93882  | 5136   | 131336 | 6600   | 168790 |
| 350         | 14"    | 138          | 2940 | 980                      | 25300 | 2914   | 75238  | 4849   | 125177 | 6783   | 175115 | 8717   | 225053 |
| 400         | 16"    | 181          | 3792 | 1260                     | 34500 | 3747   | 102598 | 6234   | 170695 | 8721   | 238793 | 11208  | 306891 |
| 450         | 18"    | 229          | 4800 | 1610                     | 42550 | 4788   | 126537 | 7966   | 210524 | 11144  | 294512 | 14322  | 378499 |
| 500         | 20"    | 284          | 5940 | 2030                     | 52900 | 6037   | 157316 | 10044  | 261733 | 14051  | 366149 | 18058  | 470566 |

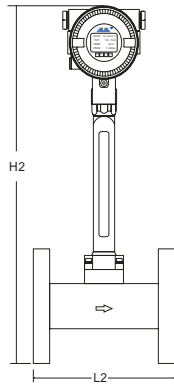
| Normal Size |        | Saturated Steam - Kg/Hr |       |        |       |        |        |        |        |        |        |         |        |
|-------------|--------|-------------------------|-------|--------|-------|--------|--------|--------|--------|--------|--------|---------|--------|
| mm          | Inch   | 1 BarG                  |       | 2 BarG |       | 4 BarG |        | 6 BarG |        | 8 BarG |        | 10 BarG |        |
|             |        | Min.                    | Max.  | Min.   | Max.  | Min.   | Max.   | Min.   | Max.   | Min.   | Max.   | Min.    | Max.   |
| 10          | 3/8"   | 1.1                     | 20    | 1.6    | 30    | 2.6    | 48     | 3.6    | 66     | 4.5    | 83     | 5.5     | 101    |
| 15          | 1/2"   | 2.5                     | 46    | 3.7    | 68    | 5.9    | 109    | 8.0    | 149    | 10     | 188    | 12      | 229    |
| 20          | 3/4"   | 4.4                     | 81    | 6.5    | 121   | 10     | 193    | 14     | 265    | 18     | 334    | 22      | 406    |
| 25          | 1"     | 6.8                     | 126   | 10     | 188   | 16     | 302    | 22     | 414    | 28     | 521    | 34      | 635    |
| 32          | 1-1/4" | 11                      | 207   | 17     | 308   | 27     | 495    | 36     | 677    | 46     | 853    | 56      | 1039   |
| 40          | 1-1/2" | 16                      | 390   | 24     | 582   | 39     | 933    | 53     | 1278   | 66     | 1609   | 81      | 1960   |
| 50          | 2"     | 25                      | 715   | 37     | 1066  | 59     | 1711   | 80     | 2343   | 101    | 2949   | 123     | 3594   |
| 65          | 2-1/2" | 41                      | 1027  | 62     | 1531  | 99     | 2457   | 135    | 3365   | 170    | 4236   | 208     | 5163   |
| 80          | 3"     | 63                      | 1554  | 93     | 2316  | 150    | 3717   | 205    | 5090   | 258    | 6408   | 315     | 7809   |
| 100         | 4"     | 98                      | 2431  | 146    | 3625  | 235    | 5817   | 321    | 7966   | 404    | 10028  | 493     | 12220  |
| 125         | 5"     | 154                     | 3783  | 230    | 5641  | 369    | 9052   | 505    | 12396  | 635    | 15605  | 774     | 19016  |
| 150         | 6"     | 224                     | 5460  | 334    | 8141  | 536    | 13065  | 734    | 17891  | 924    | 22523  | 1126    | 27446  |
| 200         | 8"     | 392                     | 9750  | 585    | 14538 | 938    | 23330  | 1285   | 31949  | 1617   | 40219  | 1971    | 49011  |
| 250         | 10"    | 609                     | 15080 | 908    | 22485 | 1457   | 36084  | 1996   | 49414  | 2512   | 62205  | 3061    | 75804  |
| 300         | 12"    | 875                     | 21710 | 1305   | 32371 | 2094   | 51949  | 2867   | 71139  | 3609   | 89554  | 4398    | 109132 |
| 350         | 14"    | 1197                    | 29640 | 1785   | 44195 | 2864   | 70924  | 3922   | 97124  | 4938   | 122265 | 6017    | 148994 |
| 400         | 16"    | 1568                    | 37700 | 2338   | 56213 | 3752   | 90211  | 5138   | 123535 | 6468   | 155513 | 7882    | 189510 |
| 450         | 18"    | 1981                    | 48100 | 2954   | 71721 | 4740   | 115096 | 6491   | 157613 | 8172   | 198413 | 9958    | 241788 |
| 500         | 20"    | 2443                    | 60840 | 3643   | 90717 | 5846   | 145581 | 8005   | 199360 | 10077  | 250965 | 12280   | 305830 |

**➤ DIMENSIONS**

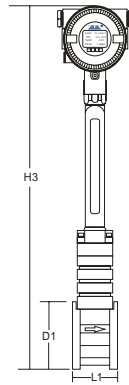
| Normal Size |        |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| mm          | Inch   | H1  | H2  | H3  | H4  | H5  | L1  | L2  | L3  | L4  | D1  |     |     |
| 10          | 3/8"   |     | 428 |     |     |     |     | 200 |     |     |     |     |     |
| 15          | 1/2"   |     | 430 |     |     |     |     | 200 |     |     |     |     |     |
| 20          | 3/4"   |     | 435 |     |     |     |     | 200 |     |     |     |     |     |
| 25          | 1"     |     | 440 |     |     |     |     | 200 |     |     |     | 275 | 275 |
| 32          | 1-1/4" |     | 452 |     |     |     |     | 200 |     |     |     | 275 | 275 |
| 40          | 1-1/2" | 415 | 468 | 477 | 505 | 468 | 70  | 200 | 275 | 275 | 85  |     |     |
| 50          | 2"     | 425 | 480 | 484 | 518 | 480 | 70  | 200 | 275 | 275 | 99  |     |     |
| 65          | 2-1/2" | 440 | 502 | 495 | 535 | 502 | 70  | 200 | 275 | 275 | 118 |     |     |
| 80          | 3"     | 460 | 515 | 519 | 550 | 515 | 70  | 225 | 300 | 300 | 132 |     |     |
| 100         | 4"     | 480 | 534 | 543 | 571 | 534 | 70  | 250 | 350 | 350 | 156 |     |     |
| 125         | 5"     | 500 | 564 | 560 | 599 | 564 | 70  | 275 | 375 | 375 | 184 |     |     |
| 150         | 6"     | 530 | 593 | 585 | 631 | 593 | 70  | 300 | 400 | 400 | 211 |     |     |
| 200         | 8"     | 578 | 647 | 635 | 682 | 647 | 98  | 350 | 450 | 450 | 248 |     |     |
| 250         | 10"    | 628 | 700 | 685 | 735 | 700 | 114 | 400 | 500 | 500 | 298 |     |     |
| 300         | 12"    |     | 750 |     | 785 | 750 |     | 450 | 550 | 550 |     |     |     |
| 350         | 14"    |     | 805 |     | 840 | 805 |     | 500 | 600 | 600 |     |     |     |
| 400         | 16"    |     | 861 |     | 895 | 861 |     | 550 | 650 | 650 |     |     |     |
| 450         | 18"    |     | 910 |     | 945 | 910 |     | 600 | 700 | 700 |     |     |     |
| 500         | 20"    |     | 965 |     | 998 | 965 |     | 650 | 750 | 750 |     |     |     |



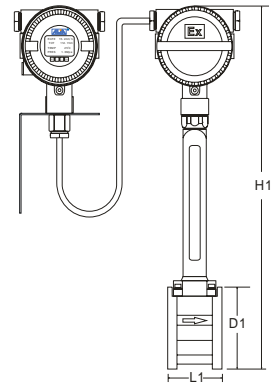
Wafer Type



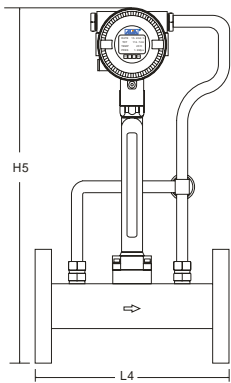
Flange Type



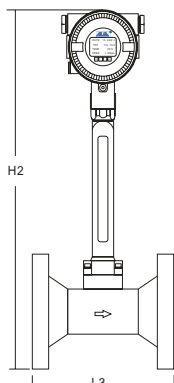
Wafer Type  
Under Pressure Replace Sensor



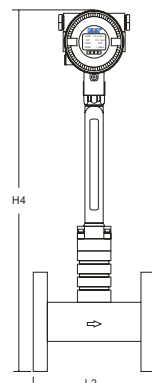
Separate wafer Type



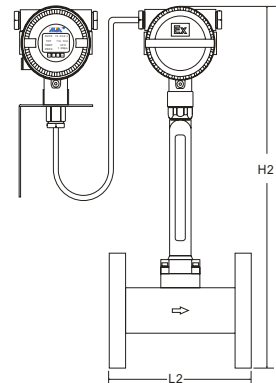
Flange Type with T/P Sensor



Reduced Bore Type



Flange Type  
Under Pressure Replace Sensor



Separate Flange Type

➤ Model Selection Guide

| AVF7000 Series                   |           |     |     |   |   |    |   |   |   |        |  |
|----------------------------------|-----------|-----|-----|---|---|----|---|---|---|--------|--|
| Example: AVF7000-F050-6A2-A1NN-N |           |     |     |   |   |    |   |   |   |        |  |
| AVF7000-                         | X-        | XXX | -X  | X | X | -X | X | X | X | -X     | Description  |
| Connection                       | W-        |     |     |   |   |    |   |   |   |        | Wafer Type (DN40~DN250)                            |
|                                  | F-        |     |     |   |   |    |   |   |   |        | Flange Type  |
| Size                             | 010 ~ 500 |     |     |   |   |    |   |   |   |        | 10 ~ 500mm (3/8" ~ 20")                            |
| Material                         |           |     | - 1 |   |   |    |   |   |   |        | Stainless Steel 301(Wafer Type Only)               |
|                                  |           |     | - 4 |   |   |    |   |   |   |        | Stainless Steel 304                                |
|                                  |           |     | - 6 |   |   |    |   |   |   |        | Stainless Steel 316                                |
| Flange type                      |           |     | N   |   |   |    |   |   |   |        | Wafer Type   |
|                                  |           |     | 1   |   |   |    |   |   |   |        | PN10   |
|                                  |           |     | 2   |   |   |    |   |   |   |        | PN16   |
|                                  |           |     | 3   |   |   |    |   |   |   |        | PN25   |
|                                  |           |     | 4   |   |   |    |   |   |   |        | PN40   |
|                                  |           |     | A   |   |   |    |   |   |   |        | ANSI 150 #   |
|                                  |           |     | B   |   |   |    |   |   |   |        | ANSI 300 #   |
|                                  |           |     | C   |   |   |    |   |   |   |        | ANSI 600 #   |
|                                  |           |     | J   |   |   |    |   |   |   |        | JIS 10K  |
|                                  |           |     | K   |   |   |    |   |   |   |        | JIS 20K  |
|                                  |           |     | L   |   |   |    |   |   |   |        | JIS 40K  |
|                                  |           | Z   |     |   |   |    |   |   |   | Others |  |
| Function                         |           |     | 1   |   |   |    |   |   |   |        | Display ( without Temp./ Pressure compensation)    |
|                                  |           |     | 2   |   |   |    |   |   |   |        | Display + Pressure + Temperature calculation       |
|                                  |           |     | 3   |   |   |    |   |   |   |        | Display + Temperature sensor *Note                 |
|                                  |           |     | 4   |   |   |    |   |   |   |        | Display + Pressure sensor *Note                    |
|                                  |           |     | 5   |   |   |    |   |   |   |        | Display + Pressure / Temperature sensor *Note      |
| Output                           |           |     | - A |   |   |    |   |   |   |        | 4-20 mA (2 Wire)                                   |
|                                  |           |     | - B |   |   |    |   |   |   |        | Battery Power (Display only, without output)       |
|                                  |           |     | - P |   |   |    |   |   |   |        | Scale Pulse output (3 Wire)                        |
|                                  |           |     | - R |   |   |    |   |   |   |        | RS485 Communication + Scale Pulse Output(3 Wire)   |
| Max. Temperature                 |           |     | 1   |   |   |    |   |   |   |        | -40 to +280 Deg. C                                 |
|                                  |           |     | 2   |   |   |    |   |   |   |        | -40 to +320 Deg. C                                 |
|                                  |           |     | 3   |   |   |    |   |   |   |        | -40 to +330 Deg. C (Under pressure replace sensor) |
|                                  |           |     | 4   |   |   |    |   |   |   |        | -40 to +420 Deg. C (Under pressure replace sensor) |
| Protection                       |           |     | N   |   |   |    |   |   |   |        | Intrinsically Safe, Eex ia IIC T4                  |
|                                  |           |     | X   |   |   |    |   |   |   |        | Explosion Proof, Exd IIC T6                        |
| Installation                     |           |     | N   |   |   |    |   |   |   |        | Compact  |
|                                  |           |     | R   |   |   |    |   |   |   |        | Remote type with 10M cable                         |
| Option                           |           |     | -N  |   |   |    |   |   |   |        | None   |
|                                  |           |     | -R  |   |   |    |   |   |   |        | Reduce Bore Type                                   |

● Note: Wafer type without Temperature and Pressure Sensor