

## MPHM PRECISION TURBINE FLOW METER

Turbine flow meters designed for accurate measurement of flow rate or totalized for low viscosity fluids and high temperatures from -276°C up to +350°C. Stainless steel 1.4305 (AISI303) body. A helical turbine is rotated by the fluid which passes axially through the cylindrical measuring chamber. The movement of the propeller is intercepted by a proximity sensor without direct contact. The electrical pulses generated are then amplified and conditioned by a separate amplifier to obtain an proportional frequency output to the measuring range. Is reached a high precision and repeatability within a wide flow range. They are supplied with a calibration certificate including the characteristic curve.



Applications:

- Drinking water and demineralised
- Fuels
- Liquefied gas
- Fluids pharmaceutical
- Diathermic oil max 350 ° C

Versions: R = Female Inch Threads  
F flanged DIN - ANSI



| Models    | Range l/min | K-Factor (pulse/l) |        | max Pressure | Frequency in Hz, |       | Weight kg |
|-----------|-------------|--------------------|--------|--------------|------------------|-------|-----------|
|           |             | > 1cSt             | >8cSt  |              | > 1cSt           | >8cSt |           |
| MPHM 9 P  | 0.03...0.8  | 139,000            | -      | 630          | 1,900            | -     | 0.5       |
| MPHM3/1,5 | 0.3...1.5   | 32,000             | 32,500 | 630          | 1,100            | -     | 0.3       |
| MPHM 3/4  | 0.5...4     | 24,000             | 19,500 | 630          | 1,170            | -     | 0.3       |
| MPHM 5/6  | 0.8...6     | 17,800             | 17,800 | 630          | 1,740            | -     | 0.4       |
| MPHM 5/10 | 1.2...10    | 11,000             | 11,000 | 630          | 2,100            | -     | 0.4       |
| MPHM 7    | 2.0...20    | 5,200              | 5,200  | 630          | 1,800            | -     | 0.5       |
| MPHM 9    | 3.3...33    | 1,900              | 4,200  | 630          | 1,080            | 2,200 | 0.5       |
| MPHM 11   | 6.0...60    | 1,300              | 2,730  | 400          | 1,350            | 2,700 | 0.5       |
| MPHM 13   | 8.5...85    | 900                | 1,900  | 400          | 1,300            | 2,600 | 0.9       |
| MPHM 17   | 12...120    | 380                | 840    | 400          | 800              | 1650  | 1,1       |
| MPHM 19   | 15...150    | 310                | 650    | 400          | 925              | 2,000 | 1.3       |
| MPHM 28   | 30...360    | 155                | 320    | 315          | 960              | 2,000 | 2.6       |
| MPHM 30   | 35...400    | 130                | 270    | 315          | 1,000            | 1,800 | 2.9       |
| MPHM 40   | 50...750    | 105                |        |              | 1,320            | 1,400 |           |
| MPHM 50   | 70...1200   | 65                 |        |              | 1,400            |       |           |
| MPHM 65   | 100...2000  | 25                 |        |              | 850              |       |           |

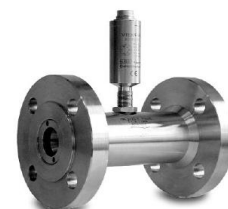
Models range from 830 up to 25,000 l/m. The data reported in the table are indicative for a dimensioning of the meter and vary

## TECHNICAL SPECIFICATIONS

Linearity: +/- 1.0% of actual flow (1 mm<sup>2</sup>/s)  
 Repeatability: +/- 0.2%  
 Viscosity Range: 0.8 to 100 mm<sup>2</sup>/s  
 Materials: Housing DIN 1.4305 (SS303; 1.4571 (SS316Ti); 1.4404 (SS316 L)  
 Weehls DIN 1.4122; 1.4460 (SS329)  
 Bearing carbide, sapphire (MPHM001P)  
 Medium temperature: -196°C to +350°C (higher temperatures on request)



MPHM\_R



MPHM\_F



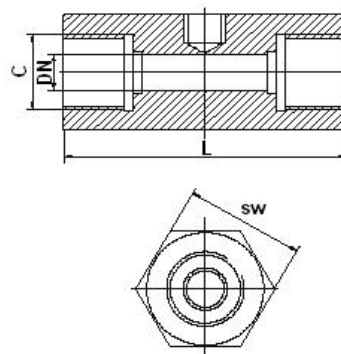
**SATEMA**

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 Tel. +39 015811102 - Fax 0158853029  
 Mail: [info@satema.it](mailto:info@satema.it) <http://www.satema.it>

## TECHNICAL SPECIFICATIONS

Threaded Size

| Mod.        |  | L   | C        | SW | E    |
|-------------|--|-----|----------|----|------|
| MPHM9RP     |  | 79  | G 3/8"   | 30 | 12.5 |
| MPHM3/1,5 R |  | 60  | G 1/4"   | 30 | 12.5 |
| MPHM 3/4 R  |  | 60  | G 1/4"   | 30 | 12.5 |
| MPHM 5/6 R  |  | 70  | G 3/8"   | 30 | 12.5 |
| MPHM 5/10R  |  | 70  | G 3/8"   | 30 | 12.5 |
| MPHM 7 R    |  | 74  | G 3/8"   | 30 | 12.5 |
| MPHM 9 R    |  | 79  | G 3/8"   | 30 | 12.5 |
| MPHM 11 R   |  | 86  | G 3/8"   | 30 | 12.5 |
| MPHM 13 R   |  | 97  | G 3/4"   | 41 | 16.5 |
| MPHM 19 R   |  | 125 | G 1"     | 46 | 18.5 |
| MPHM 28 R   |  | 161 | G 1 1/2" | 60 | 22.5 |
| MPHM 30 R   |  | 181 | G 1 1/2" | 60 | 22.5 |



Available Flanged models:

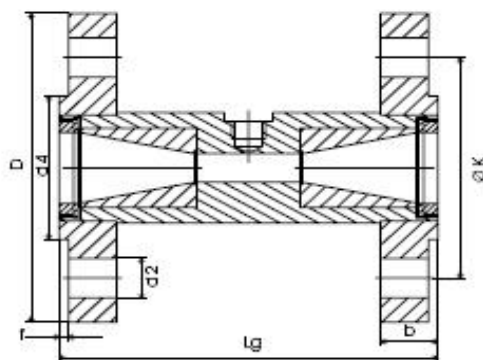
|             | DIN                  | ANSI                 |
|-------------|----------------------|----------------------|
| Models      | PN6/16/40/64/100     | 150/300/600          |
| MPHM3/1,5 F | DN15                 | DN15                 |
| MPHM 3/4 F  | DN15                 | DN15                 |
| MPHM 5/6 F  | DN15                 | DN15                 |
| MPHM 5/10 F | DN15                 | DN15                 |
| MPHM 7 F    | DN15                 | DN15                 |
| MPHM 9 F    | DN25                 | DN25                 |
| MPHM 11 F   | DN25 - DN40          | DN25 - DN40          |
| MPHM 13 F   | DN25                 | DN25                 |
| MPHM 17 F   | DN25 - DN40 - DN50   |                      |
| MPHM 19 F   | DN25 - DN40 - DN50   | DN25 - DN40 - DN50   |
| MPHM 28 F   | DN40 - DN50          | DN40 - DN50          |
| MPHM 30 F   | DN50                 | DN50                 |
| MPHM 40 F   | DN40-DN50-DN65-DN80  | DN40-DN50-DN65-DN80  |
| MPHM 50 F   | DN50-DN65-DN80-DN100 | DN50-DN65-DN80-DN100 |
| MPHM 65 F   | DN65- DN80 - DN100   | DN65- DN80 - DN100   |

For higher models contact Satema

Dima

| Diameter | Lg  |
|----------|-----|
| DN15     | 110 |
| DN25     | 150 |
| DN40     | 174 |
| DN50     | 210 |
| DN65     | 258 |
| DN80     | 316 |
| DN100    | 386 |

Flanged DIN, standard ANSI



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## PICKUP AND AMPLIFIER



IF\* PICKUP



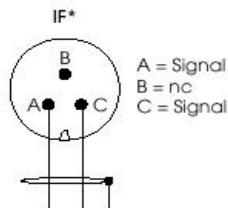
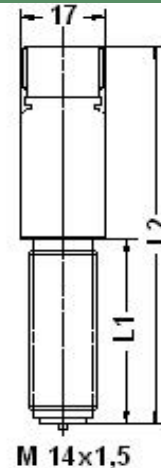
IF\*HTK con raffreddatore



VIEG amplificatore

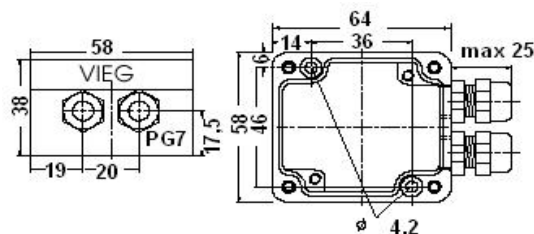
### TECHNICAL DATA

|                                                                |                                                                                                                                   |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Max fluid Temperature:                                         | -20...+120°C standard version IF*<br>+240°C version IF*HT<br>+350°C version IF*HTK<br>-276°C cryogenic version with special liner |
| Output IF*:                                                    | modulated voltage 0.5 ... 500 mV <100 ohms <25 mH                                                                                 |
| IF* Connector:                                                 | cylindrical 3PIN, amphenol 8001                                                                                                   |
| Housing:                                                       | stainless steel 1.4101                                                                                                            |
| Ex:                                                            | intrinsically safe version Eex ia IIC T6 on request                                                                               |
| Dimensions mm.:                                                | mod. IFK L1 = 40, L2 = 86; mod. IFL L1 = 80, L2 = 126<br>mod. IFE L1 = 40, L2 = 185 (per 350°C)                                   |
| Separate VIEG amplifier for signal conditioning from IF sensor |                                                                                                                                   |
| Power supply:                                                  | 7...29 Vdc                                                                                                                        |
| Frequency Range:                                               | 7 ... 3000 Hz depending on the meter                                                                                              |
| Input Impedance:                                               | < 100 Ohm                                                                                                                         |
| Input:                                                         | 0,5...500 mV                                                                                                                      |
| Housing:                                                       | aluminum                                                                                                                          |
| Class Protection:                                              | IP65                                                                                                                              |
| Transistor Output:                                             | selectable: NPN / active; NPN / open collector, PNP (excluded Eex version)                                                        |
| Ex:                                                            | intrinsically safe version Eex ia IIC T6 on request                                                                               |



### Marking of the pickup

CE 0123 Ex II 2 G EEx ia IIC T6  
BVS 03 ATEX E 206  
IF\*-\*\* Nr. 1234567



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