



## Electronic Flow Transmitter HFT 2500 for water / water-based media

### Description:

The HFT 2500 series of HYDAC flow transmitters is based on the variable area float principle and is position-independent.

The test medium deflects a spring-loaded float in the direction of flow, depending on the flow rate but irrespective of the installation position. A Hall sensor is fitted to the outside of the device and is therefore also outside the flow circuit. It determines the position of the float.

The sensor emits an analogue signal proportional to the deflection of the float which corresponds to the relevant measurement range.

The device is calibrated for vertical installation and for a flow direction from bottom to top.

Areas of application are to monitor flow rate in fluids (water / water-based) in the following areas, amongst others:

- Cooling systems and circuits
- Hydraulic systems
- Pumps
- Welding machines and laser systems
- Medical technology
- Pharmaceutical industry
- Chemical industry
- Research & development

### Medium:

- Water or water-based media

### Special features:

- Accuracy  $\leq \pm 3\%$  FS
- Any mounting position
- High level of functional reliability
- High pressure resistance
- Threaded connection

### Technical data:

Input data					
Measuring ranges [l/min]	Size 1	Size 2	Size 3	Size 4	
0.005..0.06		0.02 .. 0.2	10 .. 30	0.2 .. 4.0	8 .. 90
0.04 .. 0.13		0.2 .. 0.6	15 .. 45	0.6 .. 5.0	5 .. 110
0.1 .. 0.6		0.4 .. 1.8	20 .. 60	0.5 .. 8.0	10 .. 150
0.2 .. 1.2		0.8 .. 3.2	30 .. 90	1 .. 14	35 .. 220
0.4 .. 2.0		2 .. 7	60 .. 150	1 .. 28	35 .. 250
0.5 .. 3.0		3 .. 13		2 .. 40	
1.0 .. 5.0		4 .. 20		4 .. 55	
		8 .. 30		1 .. 70	
Operating pressure					
Brass version	300 bar	300 bar	250 bar	200 bar	
Stainless steel version	350 bar	350 bar	300 bar	300 bar	
Pressure drop [bar]	0.02 .. 0.2	0.02 .. 0.3	0.02 .. 0.4	0.02 .. 0.8	
Mechanical connection	See dimensions				
Parts in contact with medium					
Brass version	Stainl. steel 1.4571; NBR <sup>1)</sup> ; Brass (nickel-pl.); Brass; Hard ferrite				
Stainless steel version	Stainless steel 1.4571; FPM <sup>1)</sup> ; Hard ferrite				
Output data					
Output signal	4 .. 20 mA, 3-conductor 0 .. 10 V, 3-conductor				
Accuracy	$\leq \pm 3\%$ FS				
Repeatability	1 % FS				
Environmental conditions					
Operating temperature range	-20 .. +70 °C				
Fluid temperature range	-20 .. +70 °C				
CE mark	Directive 2004 / 108 / EC				
Protection class to IEC 60529	IP 67				
Other data					
Supply voltage	18 .. 30 V DC				
Power consumption	< 1 W				
Housing material					
Measuring body	Brass (nickel-plated) or stainless steel 1.4571				
Transmitter	Brass (nickel-plated)				
Electrical connection	Male connection M12x1				

Note: FS (Full Scale) = relative to the complete measuring range  
1) Other seal materials available on request

## Model code:

HFT 2 5 X 6 - X - XXXX-XXXX - 5 - X - 0 - 000

### Measuring principle

2 = Variable area float

### Test medium

5 = Water /  
water-based

### Mechanical connection <sup>2)</sup>

1 = 1/4 "  
2 = 3/8 "  
3 = 1/2 "  
4 = 3/4 "  
5 = 1 "  
6 = 1 1/4 "  
7 = 1 1/2 "

### Electrical connection

6 = Male M12x1, 4 pole  
(connector not supplied)

### Output signal

B = 0 .. 10 V, 3 conductor  
C = 4 .. 20 mA, 3 conductor

### Measuring ranges in l/min

#### Size 1

.005-0.06; 0.04-0.13; 0.1-0.6; 0.2-0.12; 0.4-0.20;  
0.5-0.30; 0.1-0.50

#### Size 2

0.02-0.2; 0.2-0.6; 0.4-0.18; 0.8-0.32; 0.2-0.70;  
0.3-0.013; 0.4-0.020; 0.8-0.030

#### Size 3

0010-0030; 0015-0045; 0020-0060; 0030-0090; 0060-0150

#### Size 4

00.2-04.0; 00.6-05.0; 00.5-08.0; 01.0-0014; 01.0-0028;  
02.0-0040; 04.0-0055;  
01.0-0070; 08.0-0090; 0005-0110; 0010-0150;  
0035-0220; 0035-0250

### Accuracy

5 =  $\leq \pm 3.0\%$  FS

### Housing material

B = Brass (nickel-plated)  
S = Stainless steel

### Mechanical indicator

0 = Without indicator

### Modification number

000 = Standard

2) Mechanical connection options depend on housing type  
(see Dimensions)

### Note:

Special models on request.

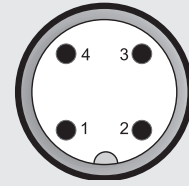
On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

### Accessories:

Appropriate accessories, such as electrical connectors, can be found in the Accessories brochure.

## Pin connections:

M12x1



Pin	HFT 25X6-C	HFT 25X6-B
1	+U <sub>B</sub>	+U <sub>B</sub>
2	reserved	reserved
3	GND	GND
4	4 ..20 mA	0 ..10 V

## Notes on installation:

- The medium must not contain solid particles! We recommend using contamination strainers.
- External magnetic fields can affect the switching contact. Ensure sufficient distance from magnetic fields (e.g. from electric motors)!

## Dimensions:

Type [l/min]	Installation dimensions							Weight (approx.) [g]
	[mm]							
	SW	D	B	G	DN	T	L	

### Size 1

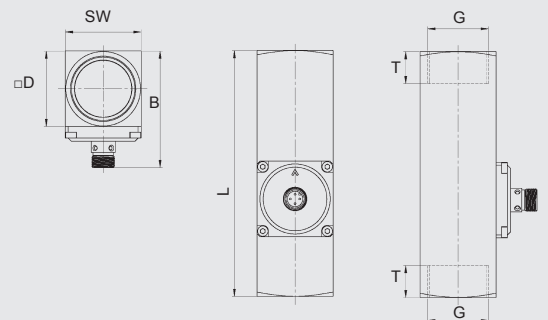
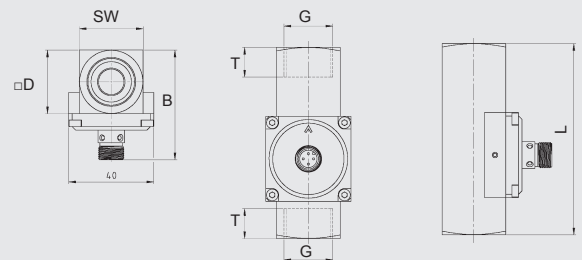
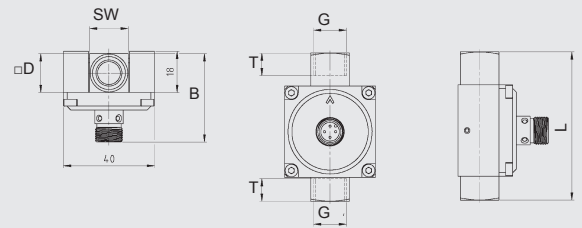
0.005..0.06	17	18	39	1/4"	8	10	65	210
0.04..0.13								
0.1..0.6								
0.2..1.2								
0.4..2.0								
0.5..3.0								
1.0..5.0								

### Size 2

0.02 .. 0.2	30	30	62	1/2 "	15	14	90	560
0.2 .. 0.6								
0.4 .. 1.8								
0.8 .. 3.2								
2.0 .. 7.0								
3.0 .. 13.0								
4.0 .. 20.0								
8.0 .. 30.0								

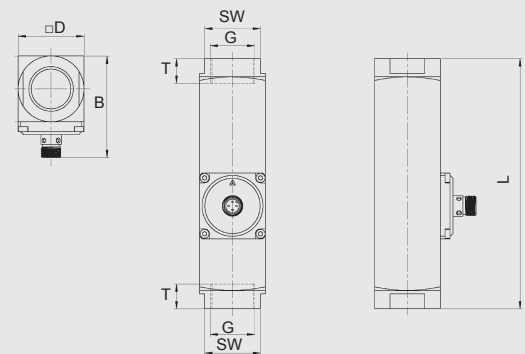
### Size 3

10 .. 30	34 40	40	62	3/4 " 1" *)	20 25	15 17	152 130	1200 1050
15 .. 45								
20 .. 60								
30 .. 90								
60 .. 150	40	40	62	1"	25	17	130	1050



### Size 4

0.2 .. 4.0	27	40	52	1/4" 3/8" 1/2"	8 10 15	14	131	900
0.6 .. 5.0								
0.5 .. 8.0								
1 .. 14								
1 .. 28	27 32	40	52	1/2" 3/4"	15 20	14 16	146 174	950
2 .. 40								
4 .. 55	34 40	40 40	62 62	3/4" 1"	20 25	18 19	152 156	1420 1120
1 .. 70								
8 .. 90								
5 .. 110	50	50	72	1 1/4"	32	21	200	2770
10 .. 150								
35 .. 220								
35 .. 250	60	50	72	1 1/2"	40	24	200	3820



\*) Standard

### Note:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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