



Flow Transmitter HFT 2100

Float

Any installation position

30–600 cSt

For oils / viscous fluids

Description:

The HYDAC flow transmitters of the HFT 2100 series are based on a variable-area float principle.

Irrespective of the installation position, the measuring medium deflects a spring-loaded float in the direction of flow, depending on the flow rate. A Hall sensor detects the position of the float and is fitted to the outside of the device therefore separated from the fluid circuit. In proportion to the deflection of the float, the sensor produces an analogue signal which corresponds to the particular measuring range.

The device is calibrated for vertical installation and for an upwards flow direction. The measurement transmitter is designed to give reliable measurements within its accuracy range, even with changes in viscosity. The kinematic viscosity may vary between 30 and 600 cSt.

The fields of application include:

- Central lubrication systems
- Circulation oil lubrication systems
- Transformers
- Cooling systems and circuits
- Lubrication circuits
- Hydraulic systems
- Pumps
- Welding machines and laser plants
- Chemical industry
- Research and development

Technical data:

Input data		
Measuring ranges [l/min]	Size 1	Size 2
	0.5 .. 1.6	0.5 .. 1.5
	0.8 .. 3.0	1 .. 4
	2.0 .. 7.0	2 .. 8
		3 .. 10
		5 .. 15
		8 .. 24
		10 .. 30
		15 .. 45
		20 .. 60
		30 .. 90
		35 .. 110
Operating pressure		
Brass version [bar]	300	250
Stainless steel version [bar]	350	300
Pressure drop [bar]	0.02 .. 0.2	0.02 .. 0.4
Mechanical connection	see dimensions	
Parts in contact with fluid		
Brass version	St. steel 1.4571; FKM ¹⁾ ; brass nickel-pl.; brass; hard ferrite	
Stainless steel version	Stainless steel 1.4571; FKM ¹⁾ ; hard ferrite	
Housing material		
Measuring parts	Brass (nickel-plated) or stainless steel 1.4571	
Transmitter	Brass, nickel-plated	
Output data		
Output signal, max. load resist.	4 .. 20 mA, 3-conductor, R _{Lmax} ~ 500 Ω	
max. current	0 .. 10 V, 3-conductor, I _{max} ~ 10 mA	
Accuracy ²⁾	≤ ± 10 % FS	
Repeatability	≤ 1 % FS max.	
Environmental conditions		
Operating temperature range	-20 .. +70 °C	
Fluid temperature range	-20 .. +70 °C	
Viscosity range	30 .. 600 cSt	
CE mark	Directive 2014 / 30 / EU	
Protection class acc. to DIN EN 60529 ³⁾	IP 67	
Other data		
Supply voltage	18 .. 30 V	
Power consumption	< 1 W	

Note: **FS (Full Scale)** = relative to complete measuring range

¹⁾ Other seal materials on request

²⁾ ± 5 % possible with calibration to a certain viscosity

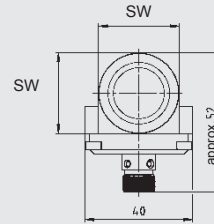
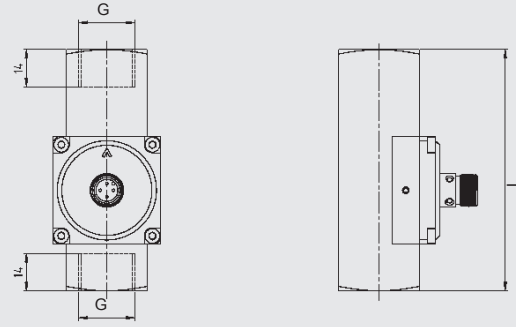
³⁾ With mounted mating connector in corresponding protection class

Dimensions:

Size 1

Type [l/min]	Installation dimensions [mm]				Weight (approx.) [g]
	DN	SW	G	L	
0.5 ... 1.6	8	24	1/4"	98	610
	10	24	3/8"	119	660
	15	30	1/2" ¹⁾	90	560
0.8 ... 3.0	15	30	1/2"	90	560
2.0 ... 7.0					

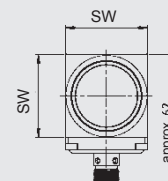
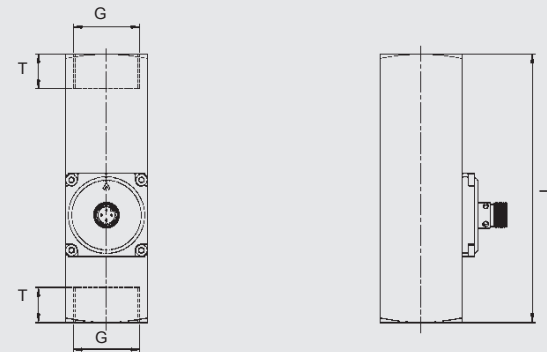
¹⁾ Standard



Size 2

Type [l/min]	Installation dimensions [mm]					Weight (approx.) [g]
	DN	SW	G	L	T	
0.5 ... 1.5	8	34	1/4"	152	10	1510
	15	34	1/2"	152	14	1435
	20	34	3/4"	152	15	1350
1 to 4	25	40	1" ¹⁾	130	17	1170
	2 to 8	15	34	1/2"	152	14
3 to 10						
5 to 15						
8 to 24						
10 to 30						
15 to 45	20	34	3/4"	152	15	1350
20 to 60						
30 to 90						
35 to 110	25	40	1"	130	17	1170

¹⁾ Standard



Model code:

HFT 2 1 X 6 - X - XXXX-XXXX - 7 - X - 0 - 000

Measuring principle

2 = variable area float

Measuring medium

1 = oils / viscous fluids

Mechanical connection ^{4) 5)}

1 = 1/4"

2 = 3/8"

3 = 1/2"

4 = 3/4"

5 = 1"

Electrical connection

6 = male M12x1, 4 pole
(mating connector not supplied)

Output signal ⁶⁾

B = 0 .. 10 V, 3-conductor

C = 4 .. 20 mA, 3-conductor

Measuring ranges in l/min ⁵⁾

Oil 10 % -size 1-

00.5-01.6; 00.8-03.0; 02.0-07.0

Oil 10 % -Size 2-

00.5-01.5; 0001-0004; 0002-0008; 0003-0010;
0005-0015; 0008-0024; 0010-0030; 0015-0045;
0020-0060; 0030-0090; 0035-0110

Accuracy

7 = $\leq \pm 10.0$ % FS

Housing material

B = brass, nickel-plated

S = stainless steel

Mechanical indicator

0 = without indicator

Modification number

000 = standard

⁴⁾ Mechanical connection options depend on housing type
(see Dimensions)

⁵⁾ Other types available on request

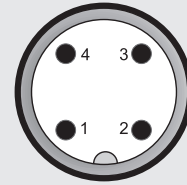
⁶⁾ 0 V or 4 mA resp. correspond to 0 l/min

Accessories:

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

Pin connections:

M12x1



Pin	HFT 21X6-C	HFT 21X6-B
1	+U _B	+U _B
2	Reserved	Reserved
3	GND	GND
4	4 .. 20 mA	0 .. 10 V

Note:

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

Subject to technical modifications.

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