Electronic Flow Transmitter
HFT 2100
for Oils / Viscous Fluids

Description:

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

Irrespective of the installation position, the test medium deflects a spring-loaded float in the direction of flow, depending on the flow rate.
A Hall sensor which detects the position of the float, is fitted to the outside of the instrument and is therefore separate to the flow 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 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 areas of application include:

- Central lubrication systems
- Oil circuit lubrication systems
- Transformers
- Cooling systems and circuits
- Lubrication circuits
- Hydraulic systems
- Pumps
- Welding machines and laser systems
- Chemical industry
- Research & development

Medium:

- Oils / viscous fluids

Special features:

- Accuracy ≤ ± 10 % FS
- Viscosity compensation from 30 .. 600 cSt
- 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
	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	300 bar	250 bar
Stainless steel version	350 bar	300 bar
Pressure drop [bar]	0.02 .. 0.2	0.02 .. 0.4
Mechanical connection	See dimensions	
Parts in contact with medium		
Brass version	Stainl. st. 1.4571; FPM [1]; Brass, nickel-plated; Brass; Hard ferrite	
Stainless steel version	Stainl. st. 1.4571; FPM [1]; Hard ferrite	
Output data		
Output signal	4 .. 20 mA, 3 conductor 0 .. 10 V, 3 conductor	
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 2004 / 108 / EC	
Protection class to IEC 60529	IP 67	
Other data		
Supply voltage	18 .. 30 V	
Power consumption	< 1 W	
Electrical connection	Male connection M12x1	
Housing material		
Measuring body	Brass (nickel-plated) or st. steel 1.4571	
Transmitter	Brass (nickel-plated)	

Note: **FS** (**F**ull **S**cale) = relative to the complete measuring range
[1] Other seal materials available on request
[2] 3 % possible with calibration to a certain viscosity

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 [2) 3)]
1 = 1/4 “
2 = 3/8 “
3 = 1/2 “
4 = 3/4 “
5 = 1 “

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 [3)]
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 = ≤ ± 10.0 % FS

Housing material
B = Brass, nickel-plated
S = Stainless steel

Mechanical indicator
0 = Without indicator

Modification number
000 = Standard

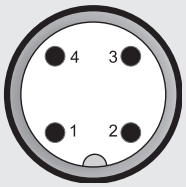
2) Mechanical connection options depend on housing type (see Dimensions)
3) Other models available on request.

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 21X6-C	HFT 21X6-B
1	$+U_B$	$+U_B$
2	reserved	reserved
3	GND	GND
4	4 .. 20 mA	0 .. 10 V

Notes on installation:

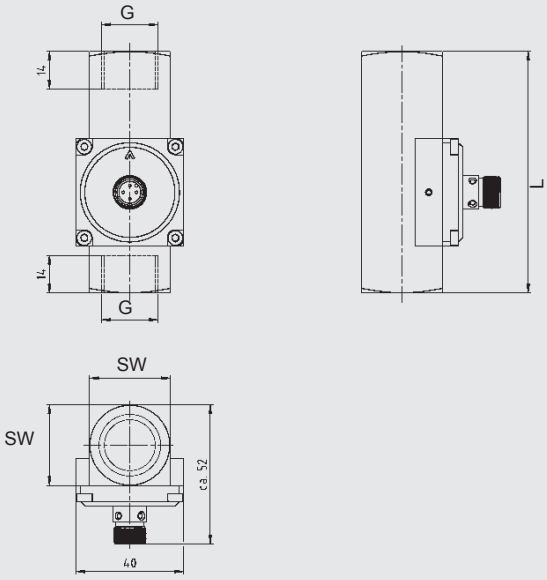
- The medium must not contain solid particles! We recommend using contamination strainers.
- External magnetic fields can affect the switching contact. Ensure sufficient distance from magnetic fields (e.g. from electric motors)!

Dimensions:

Size 1

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

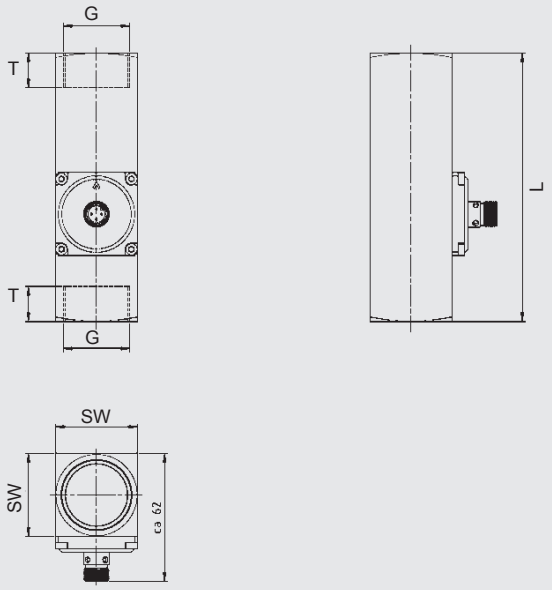
*) Standard



Size 2

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

*) 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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