

## GENERAL CHARACTERISTICS

This volumetric type flow meter is designed according to the principle of the high precision screw transmitter, independent of the viscosity of the fluid. The fluid enters into the flow chamber and generates the rotation of the two screws mounted inside.

The rotations of the screws are detected by a magnetically biased Hall sensor positioned outside the flow chamber.

The construction does not require the presence of magnets in the flow chamber. A frequency output signal, proportional to the flow, is generated by the revolution of the screws. The volumetric displacement of a screw corresponds to two pulses per revolution. This volumetric function of the measuring element produces an operation independent of fluid viscosity up to 40,000 mm<sup>2</sup>/s (cSt).

The transmitter can be equipped with integrated electronic unit for the indication of flow, alarm or analog output.

- **Operation independent of viscosity.**
- Separation between the electrical and hydraulic parts.
- Dimensions up to 2.1/2" and 350 bar working pressure.
- Bidirectional operation.
- Compact and lightweight design.
- Degree of protection IP65



## TECHNICAL DATA

Tab.1

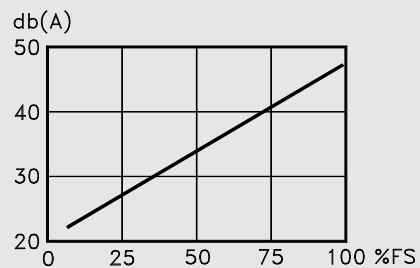
DN Ø	Code	Measuring range l/min	cm <sup>3</sup> pulse	Pulses litre	Q. max @ Frequency		Screw	Code Measuring range
					l/min	Hz		
1"	<b>025</b>	1,4 - 140	13,10	76,3	200	254.5	6xM8	<b>0140</b>
1.1/4"	<b>032</b>	3,5 - 350	29,00	34,5	500	287.4	8xM8	<b>0350</b>
1.1/2"	<b>040</b>	5,5 - 550	48,58	20,6	800	274.5	8xM10	<b>0550</b>
1.1/2"	<b>040</b>	8,0 - 800	72,00	13,9	1200	277.8	8xM12	<b>0800</b>
2"	<b>050</b>	10 - 1000	103,63	9,6	1600	257.3	8xM14	<b>1000</b>
2"	<b>050</b>	15 - 1500	133,00	7,5	2200	275.7	8xM16	<b>1500</b>
2.1/2"	<b>065</b>	25 - 2500	238,82	4,2	3800	265.2	8xM20	<b>2500</b>

Process connections	UNI 228/1 Female	<b>G</b>	160 bar max.	Overpressure 1,5 x P max.
	With SAE flanges	<b>X</b>	350 bar max.	
	Without SAE flanges	<b>O</b>	-	

Accuracy	± 1% of the measured value		
Repeatability	± 0,25%		
Power supply	10 – 30Vdc		
Current	19 mA without load		
Electrical connection	<b>B</b>	DIN-43650-A	
	<b>S</b>	M12x1- 4 poles	
Degree of protection	IP67		
Medium temperature	°C	-25 / + 80 (+150 °C on request)	
Ambient temperature	°C	-25 / + 60	
Fluids	Oils		
	Viscous self-lubricating		
	No presence of water		
	Non-aggressive fluids		
Standard output	Frequency Push pull NPN – PNP 200 mA max.	On request output	4 – 20 mA
			0 – 10 V

### Noise level

One of the most important targets of the project VHS was to create a silent instrument. The noise level remains below 50 dB(A). The viscosity of the test shown in the diagram is 20mm<sup>2</sup>/s (cSt). The higher the viscosity, the level of the noise tends to decrease.



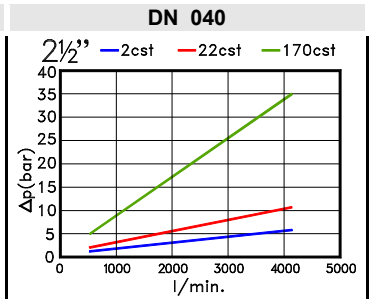
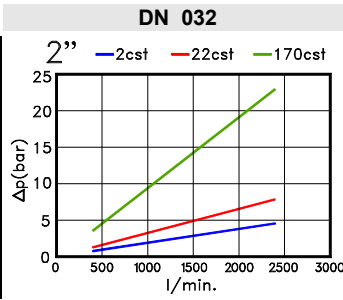
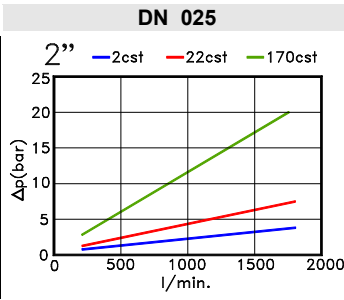
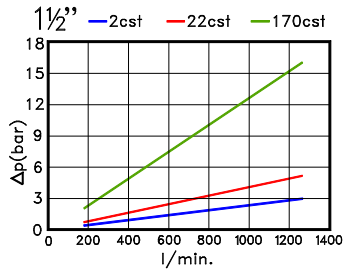
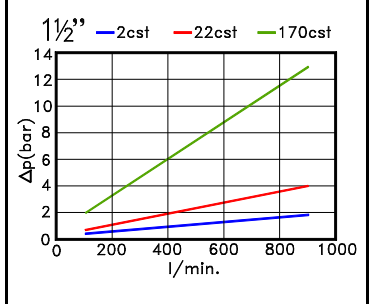
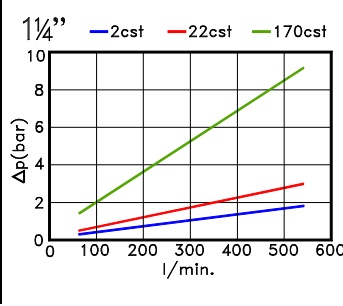
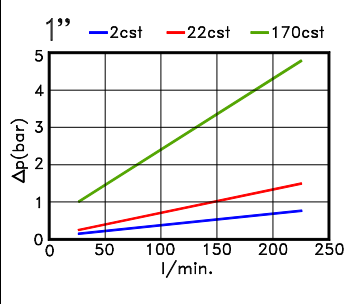
## MATERIALS

Tab.2

Body	Anodized aluminium	<b>A</b>
Body input Female threaded	Anodized aluminium Stainless steel	<b>A</b> <b>S</b>
Body input SAE flanged	Stainless steel	<b>X</b>
Screws	Stainless steel 1.4460	-
Ball bearings	Stainless steel 1.4460 - Ceramics	-
Gaskets	Viton	<b>V</b>

## PRESSURE LOSS – VISCOSITY - FLOW

The pressure loss is a function of flow rate and viscosity of the fluid to be measured. The reference viscosity is approx. 100 mm<sup>2</sup>/s (cSt). The pressure loss at the maximum flow rate is approximately 3 bar. A higher viscosity does not affect the operation of the instrument. It is obviously necessary a suitable pump to compensate the greater pressure loss.



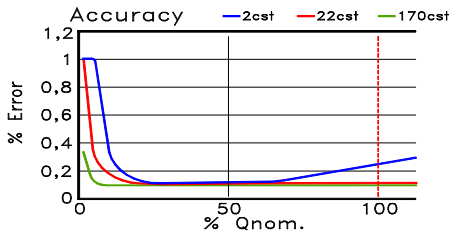
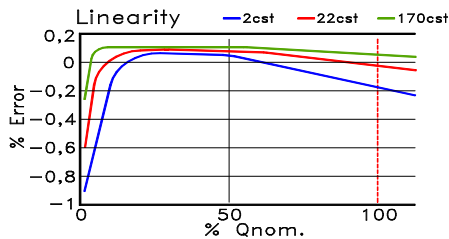
DN 040

DN 050

DN 050

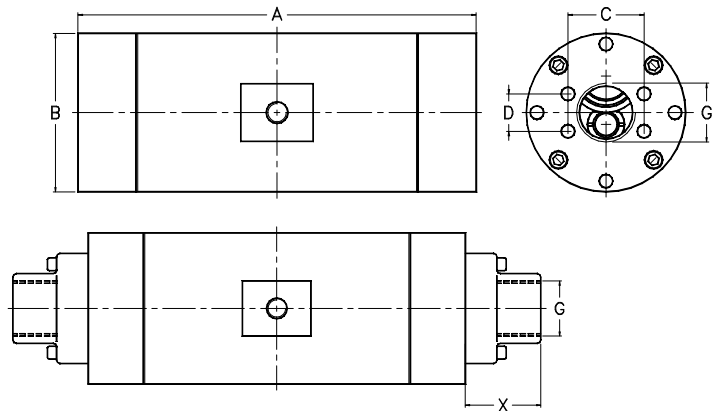
DN 065

## LINEARITY – ACCURACY



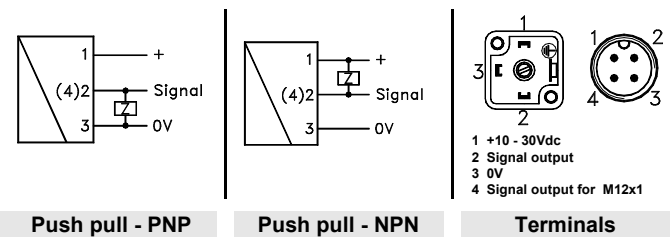
## DIMENSIONS

Measures in mm.



	G	A	B	C	D	X
1"		220	88	57,1	27,8	44
1.1/4"		270	100	66,7	31,6	44
1.1/2"		320	115	79,4	36,5	51
1.1/2"		340	135	79,4	36,5	51
2"		400	160	96,8	44,4	70
2"		430	180	96,8	44,4	70
2.1/2"		478	210	123,8	58,7	75

## WIRING



## NOMENCLATURE

VHS	025	G	A	X	A	0140	V	B
•								
	•							
		•						
			•					
				•				
					•			
						•		
							•	
								•

-	Type
Tab.1	Dimensions - DN
Tab.1	Body input – Female threaded
Tab.2	Body input – SAE flanged
Tab.1-2	Presence or absence of SAE flanges
Tab.2	Body material
Tab.1	Measuring ranges
Tab.2	Gaskets material
Tab.1	Electrical connection