GENERAL CHARACTERISTICS

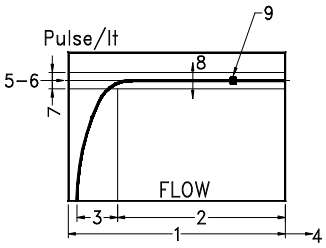
The primary sensor is constituted by a rotor with paddles which enters in rotation at the passage of fluid. The speed of rotation is proportional to the flow. The measurement is detected by means of different sensors depending on the type of mechanical construction and materials of the body of the transmitter. In some versions there is an integrated display optical or LED that indicates the operating status of the transmitter.

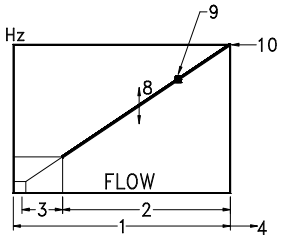
- Hermetic separation between flow chamber and sensor.
- High resolution and good linearity.
- Design in plastic and metal.
- Rotating and removable process connections.
- IP67 protection.

TECHNICAL DATA Tab.1

DN	Type	PN bar	T max °C	Q max l/min	Measuring ranges l/min (1)	(2)	(3)	Pulses/liter (6)	Hz (10)	Kg	Code	Measuring range
3/8"	RRI – 010	16	60	1,8	0,1 - 1,5	0,5 - 1,5	0,1 - 0,5	10200	255	0,20	0,1 - 1,5	**020**
				12	0,2 - 10	2,0 - 10	0,2 - 2	3345	558		0,2 - 10	**050**
				16,8	0,4 - 12	2,0 - 12	0,4 - 2	1755	351		0,4 - 12	**070**
	RRH – 010	100	100	1,8	0,1 - 1,5	0,5 - 1,5	0,1 - 0,5	4955	124	0,60	2 - 30	**080**
				12	0,2 - 10	2,0 - 10	0,2 - 2	1632	272		3 - 60	**120**
				16,8	0,4 - 12	2,0 - 12	0,4 - 2	860	172		4 - 100	**160**
	RRO – 010	16	60	1,8	0,1 - 1,5	0,5 - 1,5	0,1 - 0,5	11720	293	0,20		
				12	0,2 - 10	2,0 - 10	0,2 - 2	2960	493			
				16,8	0,4 - 12	2,0 - 12	0,4 - 2	1703	341			
1"	RRI – 025	16	60	36	2 - 30	3 - 30	2 - 3	1216	608	0,55		
				72	3 - 60	5 - 60	3 - 5	607	607			
				120	4 - 100	6 - 100	4 - 6	252	420			
	RRH – 025	100	100	36	2 - 30	3 - 30	2 - 3	544	272	1,90		
				72	3 - 60	5 - 60	3 - 5	295	295			
				120	4 - 100	6 - 100	4 - 6	126	210			
	RRO – 025	16	60	36	2 - 30	3 - 30	2 - 3	1090	545	0,55		
				72	3 - 60	5 - 60	3 - 5	588	588			
				120	4 - 100	6 - 100	4 - 6	265	442			

1	Total measuring range	See measuring range table	
2	Linear measuring range		
3	Non linear measuring range		
4	Flow in excess of the value of F.S.	increased usury	$\Delta p > 0,5$ bar
5	Pulses / liter	Measurements with H_2O a 20°C	
6	Pulses / liter mean value	Detected with different sensors at the same measuring range	
7	Accuracy ± 3%	Ref. to pulses / liter of measured value	
8	Pulses / liter variation ± 10%	Ref. to the value at point 5	
9	Repeatability ± 1%	Ref. to F.S. frequency	
10	Max. frequency	Value at F.S.	$\Delta p \cong 0,5$ bar





		RRI	RRH	RRO
Detection sensor		Inductive	HALL	Optical
Power supply		5 – 30 Vdc PNP-NPN	5 – 30 Vdc PNP-NPN	24 Vdc ±10%
		7 – 12 Vdc Namur	7 – 12 Vdc Namur	
Current		10 mA	30 mA	30 mA
Max. load		200 mA	100 mA	100 mA
Short circuit protection		No	Yes	Yes
Reverse polarity protection		No	Yes	Yes
Output	**P**	PNP	PNP	PNP
	N	NPN	NPN	NPN
	A	Namur	Namur	------
	E	4-20 mA – on request	4-20 mA – on request	4-20 mA – on request
Connection	**K**	cable 2 m.	cable 2 m.	cable 2 m.
	S	M12x1 4 poles	M12x1 4 poles	M12x1 4 poles
Degree of protection		IP67	IP67	IP67

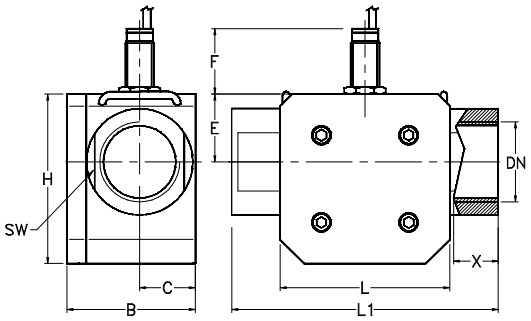
MATERIALS Tab.2

	RRI		RRH		RRO	
Process connections UNI 228/1 - Female	PVDF	**GV**	Nickel plated brass	**GM**	PVDF	**GV**
	Stainless steel 1.4305	**GK**	Stainless steel 1.4305	**GK**	Stainless steel 1.4305	**GK**
Body	Questra	**Q**	Nickel plated brass	**M**	PVDF	**V**
	PVDF	**V**	Stainless steel 1.4305	**K**		
Transparent cover (on request)	Polycarbonate	**A**	-	**-**	-	**-**
Rotor	PVDF	**-**	PVDF	**-**	PVDF	**-**
Rotor inserts	N.10 Stainless steel	**10K**	N.5 magnets	**05**	-	**-**
Gaskets	Viton	**V**	Viton	**V**	Viton	**V**

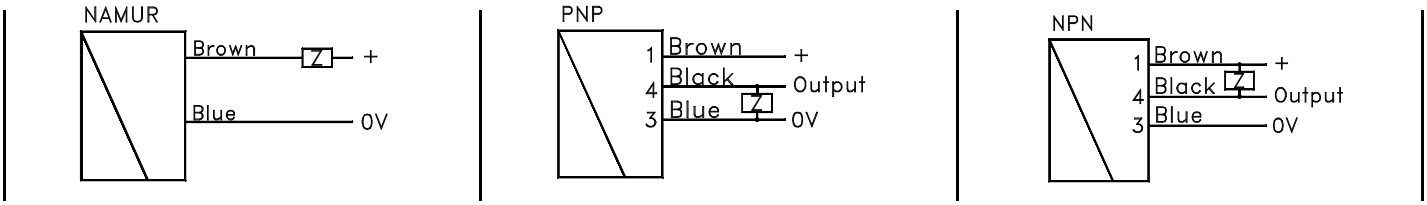
DIMENSIONS mm.

DN	H	L	L1	B	C	E	F (*)	SW	X
3/8"	50	50	84	29	12,5	16,5	38	22	12
1"	70	70	110	53	23	27,5	33	38	18

(*) F dimension is reduced by 8 mm with Namur output



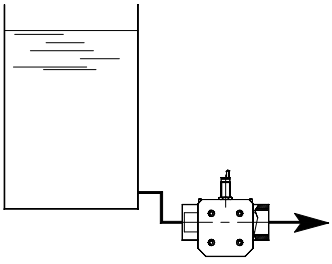
WIRING Tab.3



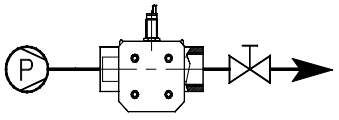
NAMUR = A | **PNP = P** | **NPN = N**

INSTALLATION

The flow transmitters RR are easily mounted in line by means of the removable and rotatable connections. Before installing the transmitter the hydraulic circuit must be purged to avoid that contaminants can interfere with the proper functioning of the rotor. It is important that the rotor always work in conditions of clean fluid. **Attention:** the presence of air bubbles in the fluid can be a source of error in the measurement.
Valves and / or other auxiliary components of the circuit must be installed downstream of the transmitter taking into account, in this case, of a start-up time of about 0,5 sec and a response delay of approximately 3 sec.
Electronic interface units are available to display the flow rate and the alarm signaling, also for use in hazardous area with intrinsically safe amplifier.



Always in contact with the flow.



Upstream of valves / accessories

NOMENCLATURE

RRH	025	GM	M	160	V	05	P	S		
•									-	Name - Type
	•								Tab.1	Process connections - DN
		•							Tab.2	Process connections material
			•						Tab.2	Body material
				•					Tab.1	Measuring range
					•				Tab.2	Gasket material
						•			Tab.2	N. and type of the rotor inserts (if present)
							•		Tab.1-3	Output signal type and wiring
								•	Tab.1	Electrical connection

K	PU	02	S	G	Connection cable 2m length with M12x1 plug	Accessory on request