

Flowmeters for small flow-rates

Flowmeters Riels@Instruments RIV400 are all-metal flow indicators for the measurement of gas or liquid flow-rates at high pressure and temperature with magnetic coupling for external reading. Besides the standard version, indicator flow meter, it is available also electronic microprocessor transmitter - two wire technology - for safe areas (EEx i execution) on request.

This model flow regulator; needle valve and minimum and maximum flow rate alarm switches.

No gaskets.

Flanged or screwed connections (top/bottom or elbow).

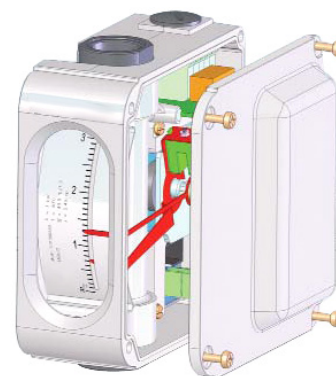
Construction materials

- **Metering tube:** AISI 316L stainless steel (other materials on request)
- **Float:** AISI 316L stainless steel (other materials on request)
- **Housing:** die cast aluminium epoxy paint finish (RAL 7001).



Indicator Flowmeters with or without alarm - Technical features

Scale Length	60 mm
Accuracy	± 2,5% v.f.s. (better on request)
Repeatability	1% v.f.s.
Tightness degree (housing)	IP 65 (IP 67 on request)
Max allowable pressure	150 bar (higher on request)
Temperature	See table 1
Alarms	for minimum or/and maximum flow, inductive type, adjustable on all the scale range. They can be certified for classified areas ATEX - CENELEC EEx ia IIC T68 Vcc
Feeding	8 Vcc
Current consumption	With metal <1mA Without metal >3 mA
Repeatability	<0,4% v.f.s.



Technical features - Otherwise

Alarms	for minimum or/and maximum flow, PNP bistable type, adjustable on all the scale range
Feeding	24 Vcc
Connections	screwed 1/2" gas thread or NPT (L5-2600). Flanged PN16 DN15 UNI or ANSI standards. On request: screwed 1/4" NPT f

Reference flow rates

H ₂ O T=20°C		Air P=1013 mbar a T=20°C	
l/h Min	l/h Max	nl/h Min	nl/h Max
0,1	1	1,6	16
0,2	2	5	50
0,3	3	10	100
0,4	4	12	120
0,63	6,3	20	200
1	10	31	310
1,6	16	50	500
2,5	25	80	800
4	40	120	1200
6,3	63	200	2000
8	80	250	2500
10	100	300	3000
16	160	500	5000

Temperature

RIV400 Indicator or micropr. 4÷20mA	Size	Standard Cover
Without alarms	All sizes	-10+150 °C (302° F)
With alarms	All sizes	-10+150 °C (302° F)

Maximum Fluid Temperature
at 40°C (104°F) environment temperature

Flowmeters with microprocessor transmitter 4÷20 MA

Two wire technology - Smart technology with or without alarms

Scale Length	60 mm
Accuracy	± 1% v.f.s. (standard)
Repeatability	0,5% v.f.s.
Electronic Reply Time (99%)	< 0,5 s
Feeding	Levels 24 V dc ± 10%
Analogic Output	4 ÷ 20 mA with serial port communication overlapped to HART® protocol (on request)
Tightness degree (housing)	IP65, (IP67 on request)
Max pressure	150 bar (higher on request)
Temperature	see table 1
Connections	1/2" gas or NPT threaded (mod. L5-2600); PN16 DN15 UNI or ANSI flanged. On request 1/4" NPTf threaded
Alarms	1 or 2 bistable Namur, otherwise, 2 bistable PNP on request (as specified in the previous execution).



Optionals for indicator and/or microprocessor models

Regulating needle valve: AISI 316L stainless steel standard

Differential pressure regulators

Flowmeters "L" combined with our differential pressure regulators are designed to maintain constant flow, independent from downstream or upstream pressure fluctuations, according to requirements.

Main performance is maintaining a constant flow-rate independent from:

- inlet pressure fluctuations (ver. 11)
- outlet pressure fluctuations (ver. 12)

Mod. R880

for flow-rates up to 3 nm³/h of air:

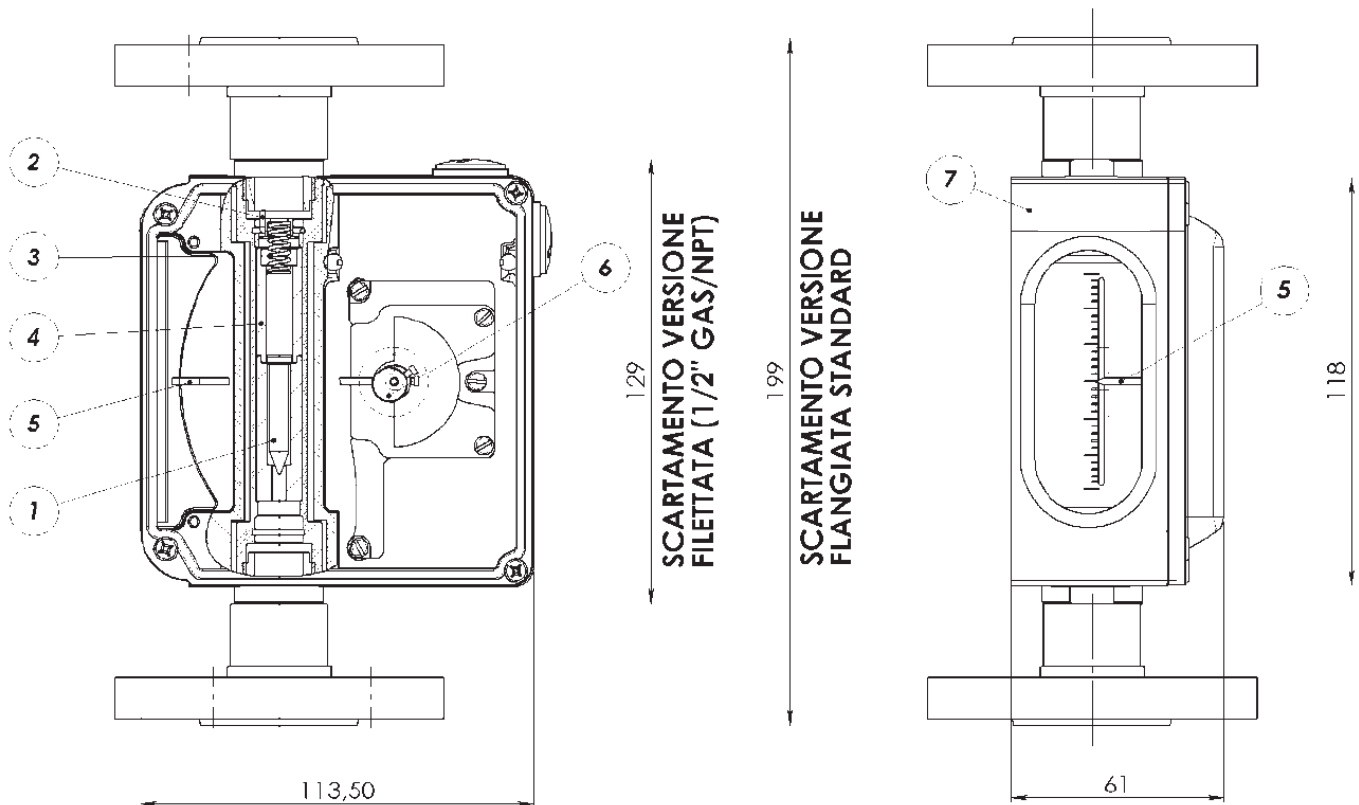
- brass wetted parts (Buna diaphragm and shutter) or AISI 316L stainless steel wetted parts (PTFE diaphragm)
- connections: screwed 1/4" gas or NPT thread.

Mod. BL-2611 o BL-2612

for flow-rates up to 20 nm³ /h of air:

- carbon steel wetted parts (Buna diaphragm), or AISI 316 stainless steel wetted parts (Viton diaphragm or with PTFE coating)
- connections: screwed 1/2" gas or NPT thread.

Dimensional drawing



- | | |
|-------------------|------------------------------|
| 1) Float (*) | 5) Pointer |
| 2) Circlip (*) | 6) Counterbalance weight |
| 3) Float stop (*) | 7) Flowmeter housing |
| 4) Measuring cone | (*) Available also as spares |

Metal tube Flowmeters coding

Model	Type
RIV400	
	Code Connections
	5 Screwed NPT f. Gas f 1/2" (optional 1/4")
	6 Flanged EN 1092-1, ANSI
	Code Measuring tube size
	2600 1/2"
	Code Options
	/39 Indicator
	/38 Microprocessor 4÷20 mA
	/Ex1 EEx ia IIC T& Zona 1
	Code Options
	/H HART protocol
	/5 1 alarm bistable Namur
	6 2 alarms bistable Namur
	/7 1 alarm bistable PNP
	/7 R 1 al. bist. PNP with relay board
	/9 1 al. bist. PNP 4 wires
	/8 2 alarms bistable PNP
	/10 2 al. bist. PNP 4 wires
	T High/low temperature exec.
RIV 400	5 -2600 /38 /Ex1 /H /6 /T