

RIV500 series metal tube flowmeters

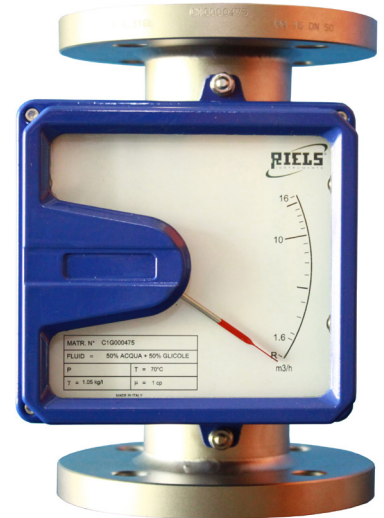
The flowmeters with Riels® Instruments index of this series are completely metallic instruments, having all parts in contact with the fluid in AISI 316L or PTFE.

The position of the float is shown outside by magnetic coupling with the mobile crew, placed inside the indicator.

The spacing of only 250 mm between flange and flange is a significant peculiarity of this series of small footprint tools.

These flowmeters are suitable for installation on vertical pipelines with ascending flow and do not require straight sections of inlet and outlet pipelines.

In addition to the basic version, they are available with microprocessor electronics and two wire technology, in the intrinsically safe version EEx i and in the explosion-proof version EEx d.



Construction materials

- Parts in contact: AISI 316L, PTFE, Monel, Titanium, Hastelloy "C" on request
- Indicator box: die-cast aluminum epoxy painted RAL 7001. AISI 316 satin stainless steel (on request)
- Degree of tightness of the indicator box: IP67, IP68 on request.

Flowmeters indicators with or without alarms - Technical characteristics

Measuring range	≈ 1-10
Scale length	≈ 80 mm
Precision	± 1,5% v.f.s. (standard)
Ripetibility	0,5% v.f.s.
Max pressure	40 bar (higher on request)
Temperature	see table "Temperature - tab.1"
Alarms	of minimum and/or maximum flow rate, of the bistable Namur inductive type, adjustable over the entire scale range. They can be supplied in the intrinsically safe version according to ATEX / CENECEEx IIC
Alimentation	8 Vcc
Current	absorbed Metal present < 1 mA; No metal assente > 3 mA
Ripetibility	< 0,4% v.f.s

Technical characteristics - Alternatives

Alarms	of minimum and/or maximum flow rate, bistable PNP type, adjustable over the whole scale range.	
Alimentation	24 Vcc	
Fastening	flanged PN 16 EN 1092-1, DIN 11851, Gas f, NPT f and Triclamp. Other flanges on request	
Certification ATEX	CESI 04 ATEX 067	
Protection	⊕ I 1GD cT6IP65T85°C	Ta=60°C;
	⊕ II 2GD cT6IP65T85°C	Ta=60°C.

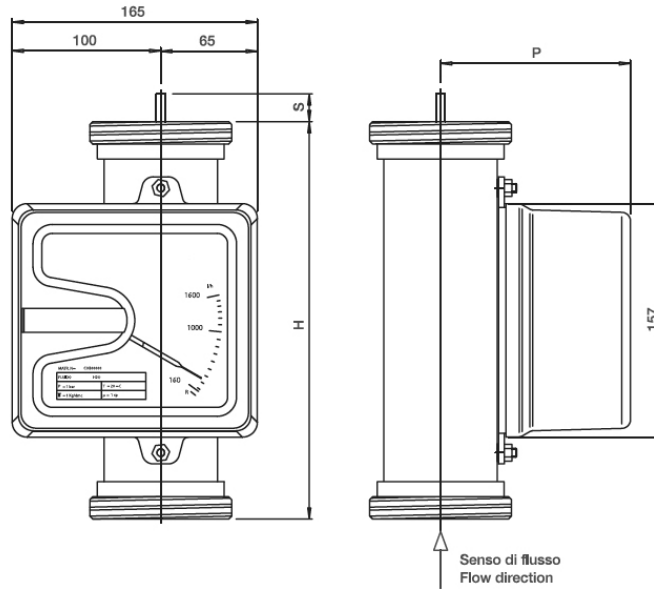


Temperature - tab.1

Maximum Fluid temperature at 40 °C (104 °F) ambient

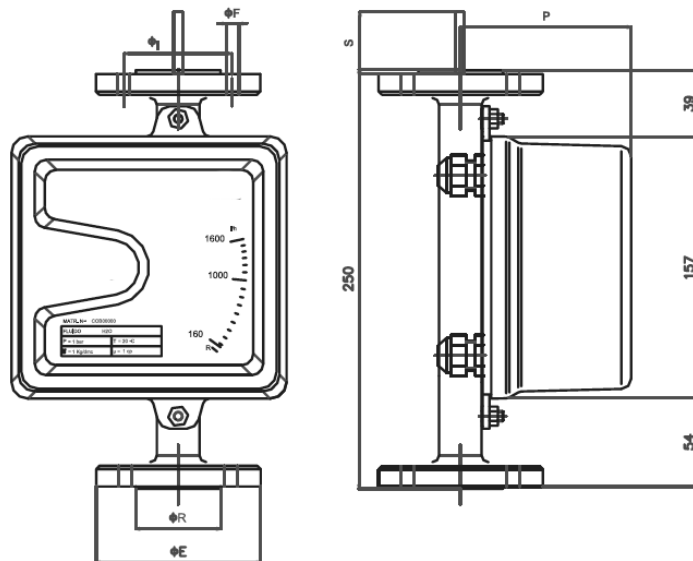
RIV500	Size	Standard Case	High Temperatures
Only indicator	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)
Indicator + alarms	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)

Overall dimensions DIN 11851 threaded flowmeters



Size	DIN 11851 DN	H mm	S mm	P mm	Weight Kg
2600	1"	265	31,5	123	2,7
2800	1 1/2"	265	45,5	130	3,3
3100	2 1/2"	265	60,5	148	5,7
3300	4"	274	53	168	8,2

Overall dimensions of flanged flowmeters



UNI EN 1092-1 flanging

Size	DN	S mm	P mm	φ E mm	φ I mm	φ R mm	N° Holes	φ Holes (F)	Weight Kg
2600	15	39	103	95	65	45	4	14 mm	3,8
2800	25	55	110	115	85	69	4	14 mm	4,9
3100	50	67	128	165	125	102	4	18 mm	9,9
3300	80	67	141	200	160	138	8	18 mm	13,5
3400	100	67	157	220	180	158	8	18 mm	16,5

ANSI 150 RF flanging

Size	DN	S mm	P mm	φ E mm	φ I mm	φ R mm	N° Holes	φ Holes (F)	Weight Kg
2600	1/2"	39	103	89	60	35	4	16 mm	3,8
2800	1"	53	110	108	79	51	4	16 mm	4,9
3100	2"	68	128	152	120	92	4	19 mm	9,9
3300	3"	65	141	190	152	127	4	19 mm	13,5
3400	4"	65	157	229	190	157	8	19 mm	16,5

Flowmeters with 4-20 mA microprocessor transmitter Two-wire technology

Smart technology with or without alarms - Technical features

Measuring range	≈ 1-10
Scale length	≈ 80 mm
Precision	± 1% v.f.s. (standard)
Ripetibility	0,5% v.f.s.
Display	8-digit LCD for instant, percentage or totalized low display
Electronic response time (99%)	< 0,5 s
Alimentation	24 V dc levels ± 10%. In the EExi version, power is supplied through an intrinsically safe isolator installed upstream of the flow meter.
Analogue output	4 - 20 mA which is superimposed on a serial communication signal according to HART® protocol (on demand)
Max pressure	40 bar (higher on request)
Temperature	see table "Temperature - tab.2"
Fastenings	flanged PN16 EN1092-1, DIN 11851, Gas f, NPT f and Triclamp. Other flanges on request
Alarms	1 or 2 Namur bistable, alternatively 1 or 2 PNP bistable on request
ATEX certification	CESI 04 ATEX 067X Protection: Ex 1GD Eex ia C T6IP65T85°C Ta=60°C; Ex 2GD Eex ia C T6IP65T85°C Ta=60°C.

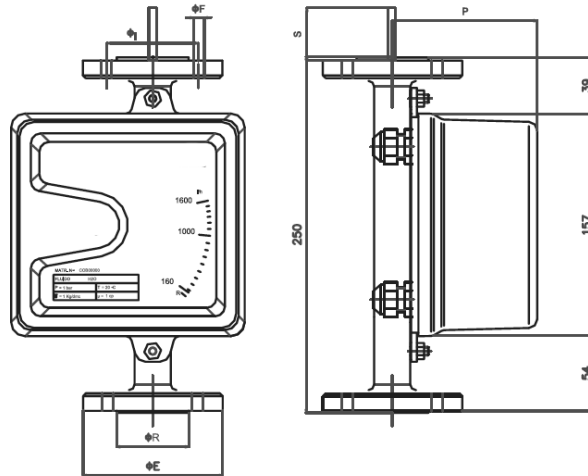


Temperature - tab.2

Maximum Fluid temperature at 40 ° C (104 ° F) ambient

RIV500 EEx i micropr. 4-20 mA	Sizes	Standard Case	High Temperatures
Without alarms	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)
With alarms	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)

Overall dimensions flowmeters with microprocessor transmitter



UNI EN 1092-1 flanging

Size	DN	S mm	P mm	φ E mm	φ I mm	φ R mm	N°Holes	φHoles (F)	Weight Kg
2600	15	39	103	95	65	45	4	14 mm	3,8
2800	25	55	110	115	85	69	4	14 mm	4,9
3100	50	67	128	165	125	102	4	18 mm	9,9
3300	80	67	141	200	160	138	8	18 mm	13,5
3400	100	67	157	220	180	158	8	18 mm	16,5

Flangiatura ANSI 150 RF

Size	DN	S mm	P mm	φ E mm	φ I mm	φ R mm	N°Holes	φHoles (F)	Weight Kg
2600	1/2"	39	103	89	60	35	4	16 mm	3,8
2800	1"	53	110	108	79	51	4	16 mm	4,9
3100	2"	68	128	152	120	92	4	19 mm	9,9
3300	3"	65	141	190	152	127	4	19 mm	13,5
3400	4"	65	157	229	190	157	8	19 mm	16,5

Other connections on request

EExd flowmeters for hazardous, potentially explosive areas

Technical characteristics

Measuring range	≈1-10
Scale length	≈ 55 mm
Display	8-digit LCD for instant, percentage or totalized low display
Electronic response time (99%)	< 0,5 s
Analogue output	4 - 20 mA which is superimposed on a serial communication signal according to HART® protocol (on demand)
Alimentation	Levels 24 V dc ± 10%.
Alarms	1 or 2 Namur bistable, alternatively 1 or 2 PNP bistable on request
Max pressure	40 bar (highest on request)
Temperature	see table "Temperature - tab.3"
Fastenings	flanged PN16 EN1092-1, DIN 11851, Gas f, NPT f and Triclamp. Other flanges on request



Version EEx d IIC T4



Version EEx d IIB T4

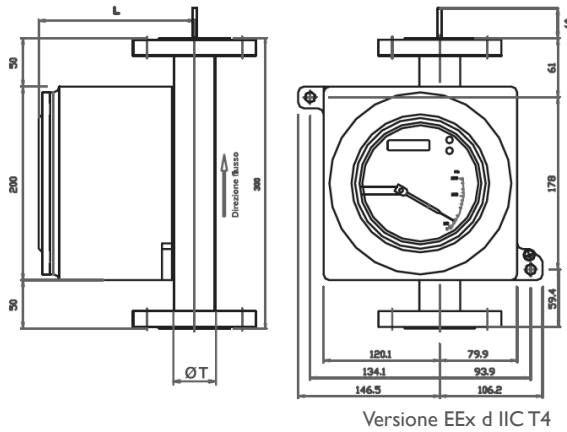
Temperature - tab.3

Maximum Fluid temperature at 40 °C (104 °F) ambient

RIV500 EEx d micropr. 4-20 mA	Sizes	Standard Case	High Temperatures *
Without alarms	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)
With alarms	All sizes	-10+150 °C (302° F)	-30+300 °C (572° F)

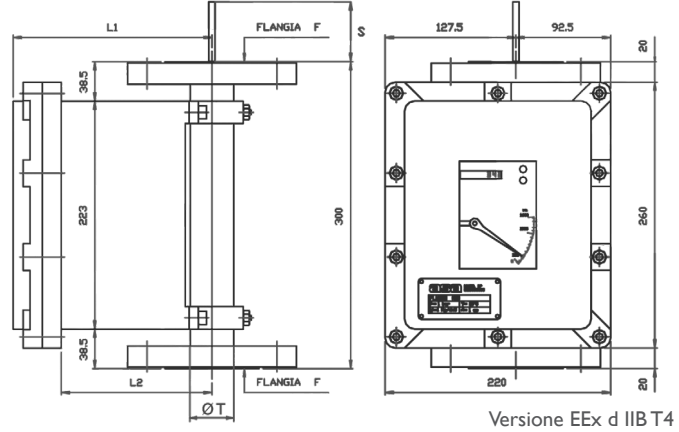
* Execution on request

Overall dimensions EEx d IIC T4



Versione EEx d IIC T4

Overall dimensions EEx d IIB T4



Versione EEx d IIB T4

Size	ANSI 300 RF DN	S mm	ø T mm	L mm EExd II C	L1 mm EExd II B	L2 mm EExd II B
2600	1/2"	39	26,5	154	187	137
2800	1"	55	42,5	161/166	190/195	140/145
3100	2"	67	89	183	218	168

Other versions on request

Reference flow rates

Sizes	Water flow rates / Stainless steel float - l / h @ T = 20 ° C		Water flow rates / PTFE float - l / h @ T = 20 ° C		ΔP mbar
	From:	To:	From:	To:	
2600	2,5	25	-	-	150
2600	4	40	2,5*	25*	150
2600	6,3	63	4*	40*	150
2600	10	100	6,3*	63*	160
2600	16	160	10*	100*	170
2600	25	250	16*	160*	190
2600	40	400	25*	250*	180
2600	63	630	40*	400*	210
2800	100	1000	63*	630*	110
2800	160	1600	100*	1000*	110
2800	250	2500	160*	1600*	140
2800	400	4000	250*	2500*	170
3100	630	6300	400*	4000*	210
3100	1000	10000	630*	6300*	230
3100	1600	16000	1000*	10000*	250
3100	2500	25000	1600*	16000*	320
3300	4000	40000	3000*	30000*	250
3400	6300	63000	4000*	40000*	260
3400	12000	120000	-	-	-

* Carried with parts in contact in PTFE