

AC series FLOWMETER

GENERAL

AC is a series of direct indication type variable area flowmeters with resins made construction.

Thanks to Union assembled construction, removal of tapered tube and internal parts is possible without removing flowmeter itself from process piping. This results in easy maintenance and cleaning/replacement of parts.

All non-metallic material construction version is available for Pure/Ultra pure water or corrosive chemical process lines.

AC meets the requirements for quick delivery with competitive price.

FEATURES

- Quick delivery and Cost effective
- Various connection fittings available Rc thread, TS socket or flange connection.
- Union assembling construction
Simple and easy installation and disassembling.
- Size line-up:
From 15mm (1/2") to 50mm (2").
This can cover almost all requirements.
- Non-metallic material construction available
No metallic ions are produced. Suitable for Pure/ Ultra pure water lines.
- Alarm contact available
In addition to local flow rate indication, a reed switch alarm contact is available. AC acts as "FLOW SWITCH"
- Safety and durable design with Back-up ring:
Stainless steel back-up rings are provided for Rc thread parts to avoid cracks during installation.
- Double graduation
L/min. and m³/h double scaled.
- Custom order calibration/graduation available:
In addition to standard calibration for water, special custom made calibration against customers' actual liquids is available. Direct reading of flow rate of process liquids without compensation calculation.



MAIN APPLICATIONS

- General water treatment plants
- Pure/Ultra pure water processes in Semi-conductor plants
- Sewage plants
- Chemical injection processes
- Assembling onto various devices
- Cooling water monitoring
- Other liquid measurement applications

SMALL SIZE VERSIONS (15mm, 20mm and 25mm)

■ STANDARD SPECIFICATION

Available size : 15mm (1/2"), 20mm (3/4") and 25mm (1")

Calibration condition: Water (Sp.Gr.1.0, 1.0cP)
Special calibration/graduation available on request.
Gas measurement is also acceptable. Consult factory for details.

Scale range : Min. 0.1 ~ 1L/min
(AC-1501-□ □-□□, AC-2001-□ □-□□)
Max. 14 ~ 70L/min
(AC-2570-□ □-□□)

Range ability : Standard 10:1
(10:2 for some versions)

Graduation : Double scaled
(L/min and L/h(m³/h))

Accuracy : ±3% F.S.

Max.Op.Press. : 5kg/cm²G
(Test press, 7.5kg/cm²G)

Temp. range : 0 ~ 50°C

Process connection : Rc thread,
TS socket or Flange (JIS 10K)

Installation : Pipe line direct mount or by
wall mount fixture

Alarm function : Available for 260mm length
version
(Refer to Table 1 for availability)

Point : 1 point High or Low

Switch : Reed switch (SPST)

Setting : Adjustable by moving switch
position

Repeatability : ±3% F.S.

Reset span : Max.±20% F.S.

Capacity : Max. voltage AC125V, DC100V
Max. current 0.5A (AC, DC)
Max. wattage AC10VA, DC10W

Connection : Through connector

Enclosure : Water tight



AC-									Description	
Size	1	5							15mm (1/2")	
	2	0							20mm (3/4")	
	2	5							25mm (1")	
Range *1									Range code *2	
Material *3		4							Material class 1	
		6							Material class 2	
		T								Material class 3
		P								Material class 4
Connection		R							Rc thread	
		T								TS socket
		F								Flange (JIS 10K)
Wall mount fixture		P							Not provided	
		W								Provided *4
Alarm point									Not provided	
		A								Provided *5

*1 : Refer to Table 1.

*2 : Specify 99 and indicate calibration condition in case of Custom made calibration/graduation.

*3 : Refer to Table 2.

*4 : Wall mount fixture is not available for Flange ended version.

*5 : Limitation of availability applicable. Refer to Table 1 for details.

FLOW RATE TABLE

Table 1

Model	Size	Scale range		Alarm availability
		①	②	
AC-1503-4/6	15mm (1/2")	0.3 ~ 3 L/min	20 ~ 200 L/h	×
2003-4/6	20mm (3/4")			
1505-4/6	15mm (1/2")	0.5 ~ 5 L/min	30 ~ 300 L/h	
2005-4/6	20mm (3/4")			
1510-4/6	15mm (1/2")	1 ~ 10 L/min	60 ~ 600 L/h	
2010-4/6	20mm (3/4")			
1520-4/6	15mm (1/2")	2 ~ 20 L/min	0.12 ~ 1.2 m ³ /h	
2020-4/6	20mm (3/4")			
1530-4/6	15mm (1/2")	5 ~ 30 L/min	0.3 ~ 1.8 m ³ /h	
2030-4/6	20mm (3/4")			
2530-4/6	25mm (1 ")	3 ~ 30 L/min	0.2 ~ 2 m ³ /h	○
2040-4/6	20mm (3/4")	4 ~ 40 L/min	0.25 ~ 2.5 m ³ /h	
2540-4/6	25mm (1 ")			
2050-4/6	20mm (3/4")	5 ~ 50 L/min	0.3 ~ 3m ³ /h	
2550-4/6	25mm (1 ")			
2070-4/6	20mm (3/4")	14 ~ 70 L/min	0.8 ~ 4 m ³ /h	
2570-4/6	25mm (1 ")			
254K-4/6	25mm (1 ")	—	0.4 ~ 4 m ³ /h	×
256K-4/6	25mm (1 ")	10 ~ 100 L/min	0.6 ~ 6 m ³ /h	
1501-T	15mm (1/2")	0.1 ~ 1 L/min	6 ~ 60 L/h	×
2001-T	20mm (3/4")			
1502-T	15mm (1/2")	0.2 ~ 2 L/min	12 ~ 120 L/h	
2002-T	20mm (3/4")			
1503-T	15mm (1/2")	0.3 ~ 3 L/min	20 ~ 200 L/h	
2003-T	20mm (3/4")			
1505-T	15mm (1/2")	0.5 ~ 5 L/min	30 ~ 300 L/h	
2005-T	20mm (3/4")			
1510-T	15mm (1/2")	1 ~ 10 L/min	60 ~ 600 L/h	○
2010-T	20mm (3/4")			
2020-P	20mm (3/4")	2 ~ 20 L/min	0.12 ~ 1.2 m ³ /h	
2520-P	25mm (1 ")			
2030-P	20mm (3/4")	3 ~ 30 L/min	0.2 ~ 2 m ³ /h	
2530-P	25mm (1 ")			

MATERIAL CONSTRUCTION

Table 2

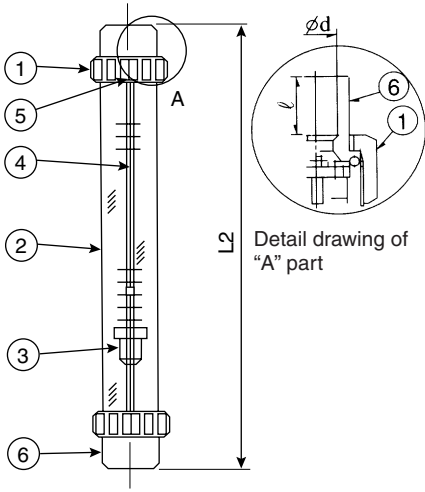
PARTS	NAME	MATERIAL CONSTRUCTION			
		1	2	3	4
		AC-□□□□-4	AC-□□□□-6	AC-□□□□-T	AC-□□□□-P
①	UNION NUT *1	PVC			
②	TAPERED TUBE *1	ACRYL			
③	FLOAT *1	SUS304	SUS316	TEFLON	PVC
④	FLOAT ROD *1	SUS304	SUS316	FEP COVERED (304SS CORE)	
⑤	O RING *1	NBR	VITON		
⑥	FITTING *1	PVC			
⑦	BACK-UP RING *2	SUS304			
⑧	ALARM FITTING *3	SUS304			
⑨	ALARM SWITCH *3	ASSEMBLY			

*1 : Contacts liquids

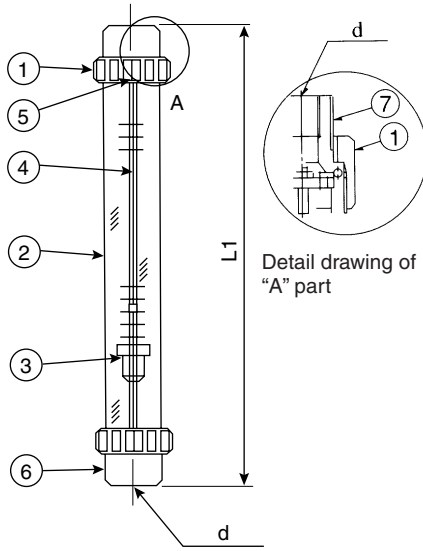
*2 : Only for Rc thread version

*3 : Only for alarm version

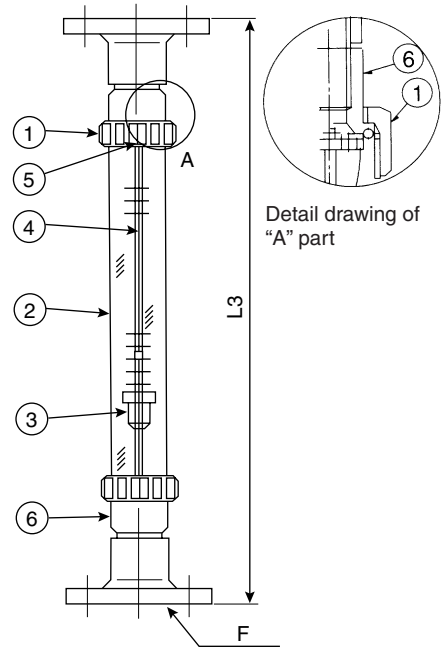
DIMENSION



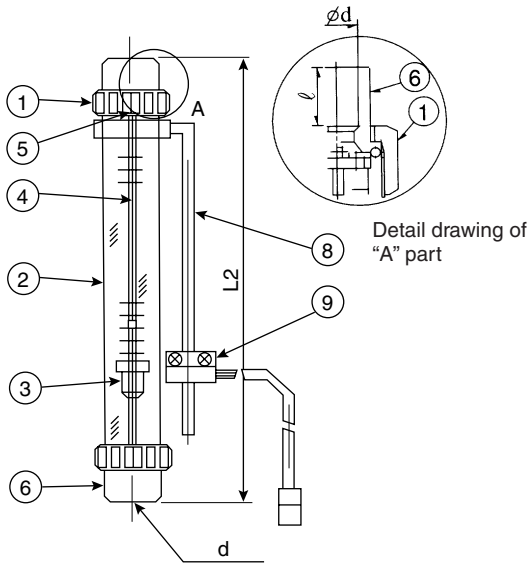
• TS SOCKET VERSION



• Rc THREAD VERSION



• FLANGE VERSION



• TS SOCKET WITH ALARM VERSION

MODEL CODE	Rc THREAD		TS SOCKET		FLANGE ENDED	
	d	L1	$\varnothing d$	L2	F	L3
AC-1503-4/6	Rc 1/2	220	20	22.3	15A JIS10K	300
AC-1505-4/6						
AC-1510-4/6						
AC-1520-4/6						
AC-1530-4/6						
AC-2003-4/6	Rc 3/4	260	25	26.3	20A JIS10K	350
AC-2005-4/6						
AC-2010-4/6						
AC-2020-4/6						
AC-2030-4/6						
AC-2040-4/6	Rc 1	260	29	32.3	25A JIS10K	350
AC-2050-4/6						
AC-2070-4/6						
AC-2540-4/6						
AC-2550-4/6						
AC-2570-4/6	Rc 1/2	220	20	22.3	15A JIS10K	300
AC-254K-4/6						
AC-256K-4/6						
AC-1501-T						
AC-1502-T						
AC-1503-T	Rc 3/4	260	25	26.3	20A JIS10K	350
AC-1510-T						
AC-2001-T						
AC-2002-T						
AC-2003-T						
AC-2005-T	Rc 1	260	29	32.3	25A JIS10K	350
AC-2010-T						
AC-2020-P						
AC-2030-P	Rc 1	260	29	32.3	25A JIS10K	350
AC-2520-P						
AC-2530-P						

MEDIUM SIZE VERSIONS (40mm and 50mm)

■ STANDARD SPECIFICATION

- Measuring object : Liquids
(Not suitable opaque liquids)
- Available size : 40mm (1 1/2") and 50mm (2")
- Scale Range :
- 1) Standard pre-fixed range (Water Sp. Gr. 1.0, 1.0cP)

Size	Standard Range 1 *1	Standard Range 2 *2
40mm	1 ~ 10 m ³ /h	0.6 ~ 6 m ³ /h
50mm	2 ~ 20 m ³ /h	1 ~ 10 m ³ /h

*1 : Standard Range 1 is available with Resin 316SS float with float rod version only.

*2 : Standard Range 2 is available with Resin made float (PVC) without float rod.

- 2) Possible scale range for Custom made calibration/graduation
(Flow rate is indicated by water flow)

- In case of 316SS float with float rod

Size	Possible scale range
40mm	Min. 0.5 ~ 5 m ³ /h
	Max. 0.8 ~ 8 m ³ /h *3
50mm	Min. 0.8 ~ 8 m ³ /h
	Max. 1.4 ~ 14 m ³ /h *4

*3 : Max. 1.0 ~ 10m³/h is acceptable for liquids with 1.0cp viscosity.

*4 : Max. 2.0 ~ 20m³/h is acceptable for liquids with 1.0cp viscosity.

- In case of Resin made float (PVC) without float rod

Size	Possible scale range
40mm	Min. 0.4 ~ 4 m ³ /h
	Max. 0.6 ~ 6 m ³ /h
50mm	Min. 0.7 ~ 7 m ³ /h
	Max. 1 ~ 10 m ³ /h

- Range ability : Standard 10:1
- Accuracy : ±2% F.S.
- Max. Op. Press. : 7kg/cm²G(Test press. 10kg/cm²G)
- Max. liquid temp. : Acryl tapered tube version 50°C
- Processconnection : 1) TS socket
2) Rc thread
3) JIS5K equivalent flange
4) JIS10K equivalent flange
5) ANSI#150 equivalent flange
6) Others

Degrease treatment : On request



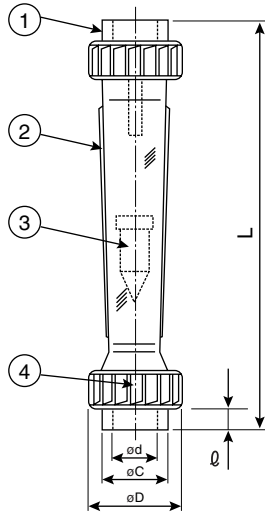
- Degrease treatment : On request
- Alarm function : Available as option
- Point : 1 point High or Low
- Switch : Reed switch (SPST)
- Setting : Adjustable by moving switch position (10 ~ 50% of full scale)
- Setting accuracy : ±2% F.S.
- Reset span : Max.20% F.S.
- Capacity :
- Max. voltage AC125V, DC100V
- Max. current 0.5A (AC,DC)
- Max. wattage AC10VA, DC10W
- Enclosure : Water tight (IP67)

MODEL CODE

AC-											Description
Size	4:0										40mm (1 1/2")
	5:0										50mm (2")
Scale range	1										STANDARS SCALE 1
	2										STANDARS SCALE 2
	9										CUSTOM MADE
Body material		-	P								PVC
Tapered tube material				A							Acryl
Float material (Float rod)				6							316SS (With rod)
				P							PVC (No rod)
				Z							Others
Seal material				N							NBR
				F							VITON
				Z							Others
Process connection					-	1					TS socket
					-	2					Rc thread
					-	3					JIS5K flange
					-	4					JIS10K flange
					-	5					ANSI#150 flange
					-	9					Others
Alarm point									0		Not provided
									A		1 point provided
Degrease treatment									0		Not provided
									1		provided

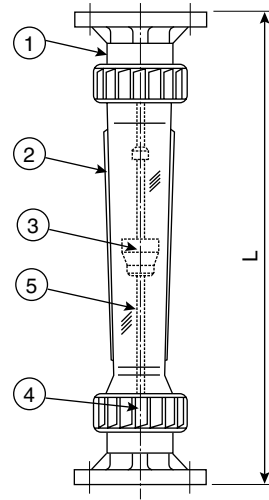
DIMENSION

TS SOCKET CONNECTION



Size	L	(A)	(B)	C	D	d	φ
40	445	(400)	(22.5)	65	97	48.5	35
50	460	(398)	(31)	77	121	60.6	38

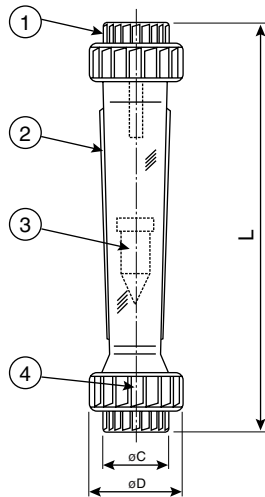
FLANGE CONNECTION



Size	L
40	510
50	530

Above figure is for 316SS float with float rod version. No float rod is provided for other float material versions.

Rc THREAD CONNECTION



Size	d	L
40	Rc1½	445
50	Rc2	460

C and D are the same as for TS socket version

■ MATERIAL

No.	Part name	Available material
①	Body, fittings	PVC
②	Tapered tube	Acryl
③	Float	SUS316, PVC
④	O ring	NBR, EPDM, VITON, OTHERS
⑤	Float rod	316SS

HOT PURE WATER VERSION (ALL TEFLON CONSTRUCTION)

AC-T has all-Teflon construction to meet requirements for measuring especially Hot Pure Water in Semiconductor production process. AC-T covers upto 90°C hot pure water. PFA ribbed tube eliminates float rod which may produce harmful particles. It has no metallic material in order to eliminate introduction of metallic ions in process liquid.



MODEL CODE

AC-T					Description
Connection size	15				15mm (1/2")
	20				20mm (3/4")
Scale range *		1			2 ~ 20L/min
		2			3 ~ 30L/min
		3			4 ~ 40L/min
		4			5 ~ 50L/min
		9			Others
Connection type		1			Welding
		2			Rc thread
		9			Others
Alarm contact			0		Not provided
			1		Provided

Connection size 20mm (3/4") is available for all scale ranges.
Connection size 15mm (1/2") is available only for all Scale ranges 1 (2 ~ 20L/min) and Scale range 2 (3 ~ 30L/min).

Available size : 15mm (1/2") and 20mm (3/4")
Measuring object : Liquids (Water Sp.Gr. 1.0, 1.0cP)
Scale range : 1) 2 ~ 20L/min (15 and 20mm)
2) 3 ~ 30L/min (15 and 20mm)
3) 4 ~ 40L/min (20mm)
4) 5 ~ 50L/min (20mm)

Other special calibration/graduation on request

Range ability : Standard 10:1
Accuracy : $\pm 3\%$ F.S.
Max. Op. Press. : 5kg/cm²G (at 20°C)
(Test press. 7.5kg/cm²G)
2kg/cm²G (at 80°C)
Max. liquid temp. : 90°C (Max. 1.5kg/cm²G)

Process connection : Welding (TS socket) or Rc thread
Others on request

Degrease treatment : On request

Alarm function : Available as option
Point : 1 point High or Low
Switch : Reed switch (SPST)
Setting : Adjustable by moving switch position (10 ~ 50% of full scale)

Setting accuracy : $\pm 2\%$ F.S.

Reset span : Max. 15% F.S.

Capacity :
Max. voltage AC125V, DC100V
Max. current 0.5A (AC, DC)
Max. wattage AC10VA, DC10W

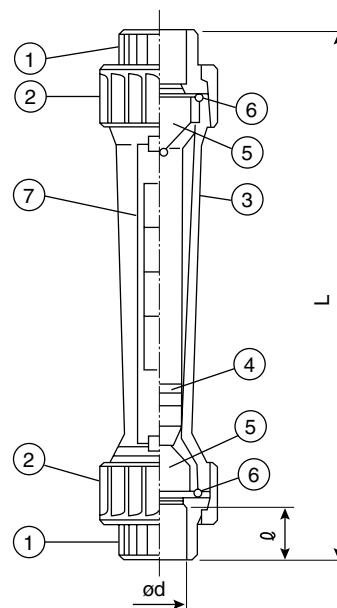
Enclosure : Water tight (IP67)

MATERIAL

No.	Part name	Material
①	SOCKET	PVDF
②	UNION SOCKET	PVDF
③	TAPERED TUBE(Ribbed)	PFA
④	FLOAT	PVDF *
⑤	FLOAT STOPPER	PFA
⑥	O RING	FPM (fluoric rubber)
⑦	SCALE PLATE	Acryl

* : 316SS weight moulded

DIMENSION



	AC-T 15 □□□□	AC-T 20 □□□□
SIZE	Rc 1/2	Rc 3/4
L	220	220
D	19.2	24.2
ø	16.5	18

* Specification is subject to change without notice.

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