

AC Series FLOWMETER

GENERAL

AC is a series of direct indication type variable area flowmeters with resin 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 (Density 1.0g/cm³, Viscosity 1.0mPa·s)
 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. : 0.5MPa
 (Test press, 0.75MPa)

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 : 50cm of lead wire with connector
 Enclosure : Water tight



MODEL CODE

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 *1		Alarm availability *2
		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 m³/h	
2020-4/6	20mm (3/4")			
1530-4/6	15mm (1/2")	5 ~ 30 L/min	0.3 ~ 1.8 m³/h	
2030-4/6	20mm (3/4")			
2530-4/6	25mm (1 ")	3 ~ 30 L/min	0.2 ~ 2 m³/h	○
2040-4/6	20mm (3/4")	4 ~ 40 L/min	0.25 ~ 2.5 m³/h	
2540-4/6	25mm (1 ")			
2050-4/6	20mm (3/4")	5 ~ 50 L/min	0.3 ~ 3m³/h	
2550-4/6	25mm (1 ")			
2070-4/6	20mm (3/4")	14 ~ 70 L/min	0.8 ~ 4 m³/h	
2570-4/6	25mm (1 ")			
254K-4/6	25mm (1 ")	—	0.4 ~ 4 m³/h	×
256K-4/6	25mm (1 ")	10 ~ 100 L/min	0.6 ~ 6 m³/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 m³/h	○
2520-P	25mm (1 ")			
2030-P	20mm (3/4")	3 ~ 30 L/min	0.2 ~ 2 m³/h	
2530-P	25mm (1 ")			

*1 Duplicated flow ranges

*2 ○ : applicable × : not applicable

MATERIAL CONSTRUCTION

Table 2

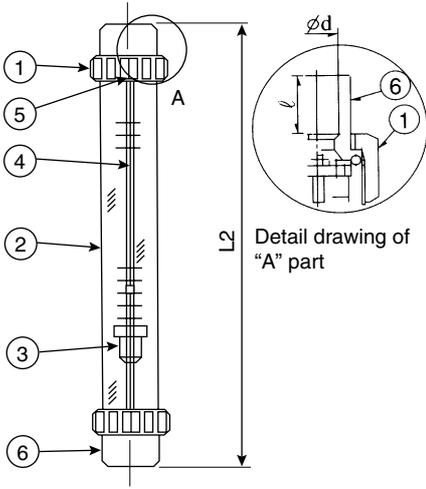
PARTS	NAME	MATERIAL CLASS			
		1	2	3	4
		AC-□□□□-4	AC-□□□□-6	AC-□□□□-T	AC-□□□□-P
①	UNION NUT *1	PVC			
②	TAPERED TUBE *1	ACRYL			
③	FLOAT *1	SUS304	SUS316	PTFE	PVC
④	FLOAT ROD *1	SUS304	SUS316	FEP COVERED (SUS304 CORE)	
⑤	O RING *1	NBR	FPM		
⑥	FITTING *1	PVC			
⑦	BACK-UP RING *2	SUS304			
⑧	ALARM FITTING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

*1 : Wetted parts

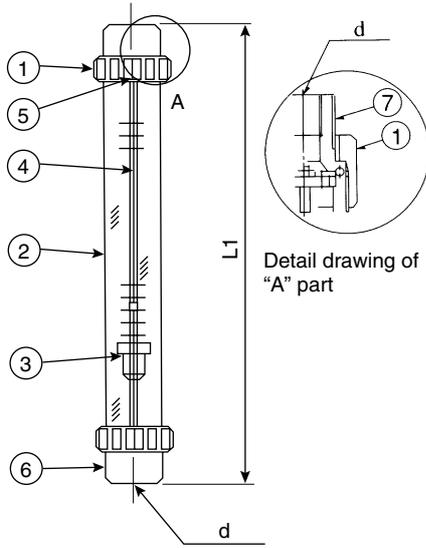
*2 : Provided only for Rc thread version

*3 : Applicable only for alarm version

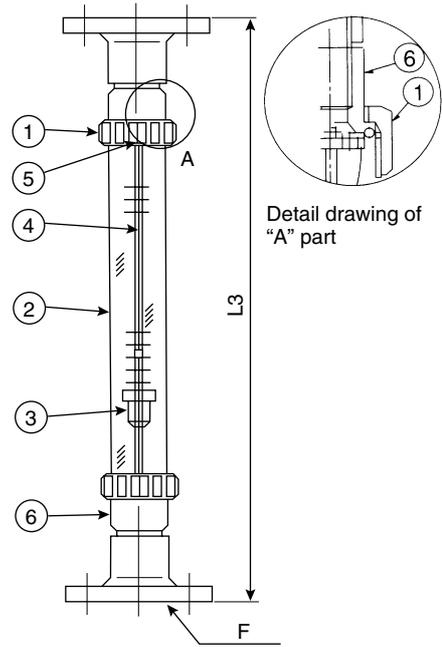
DIMENSION



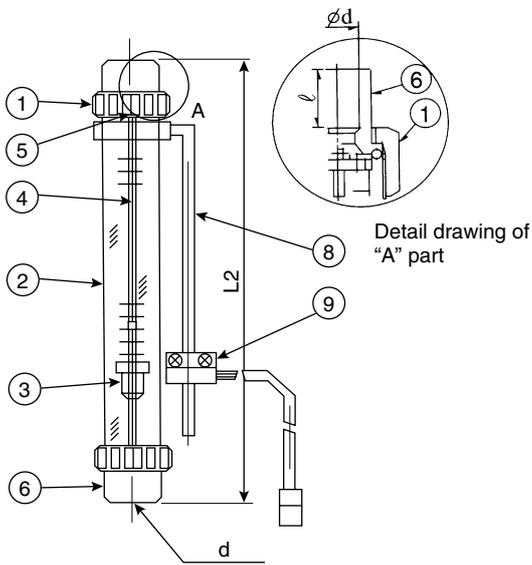
● TS SOCKET VERSION



● Rc THREAD VERSION



● FLANGE VERSION



● TS SOCKET WITH ALARM VERSION

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

MEDIUM SIZE VERSIONS (40mm and 50mm)

STANDARD SPECIFICATION

Measuring object : Liquids
(Avoid the opaque liquids. They might prevent visibility because of the direct reading of float through transparent tapered tube.)

Available size : 40mm (1 1/2") and 50mm (2")

Scale Range :

1) Standard pre-fixed range (Water density 1.0g/cm³,
Viscosity 1.0mPa·s)

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 : Applicable for the flowmeter with the SUS316 float having a float rod.

*2 : Applicable for the flowmeter with the resin made float (PVC) not having a float rod.

2) Possible scale range for Custom made calibration/graduation

(Flow rate is indicated by water flow)

● In case of SUS316 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 1.0mPa·s viscosity.

*4 : Max. 2.0 ~ 20m³/h is acceptable for liquids with 1.0mPa·s 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. : 0.7MPa(Test press. 1.0MPa)

Max. liquid temp. : Acryl tapered tube version 50°C

Processconnection : 1) TS socket
2) Rc thread
3) Equivalent to JIS5K flange (only for PVC)
4) Equivalent to JIS10K flange
5) Equivalent to ANSI#150 flange (only for PVC)
6) Others

Degrease treatment : On request



Alarm function

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)

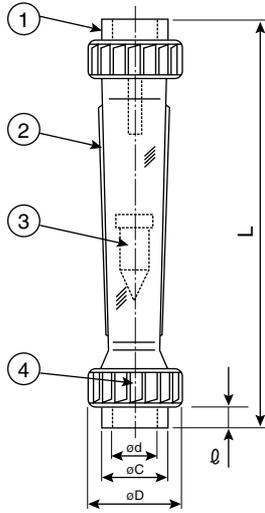
MODEL CODE

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													PVC	
Tapered tube material													Acryl	
Float material (Float rod)						6							SUS316 (With rod)	
						P							PVC (No rod)	
						Z							Others	
Seal material													NBR	
						F							FPM	
						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

The float rod is provided for the alarm contact version.

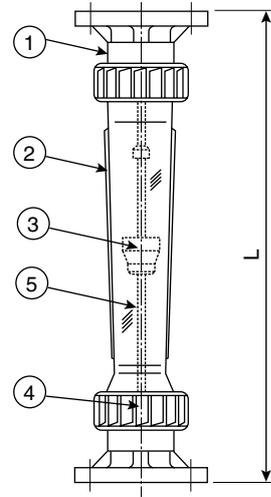
DIMENSION

TS SOCKET CONNECTION



Size	L	C	D	d	l
40mm	445	65	97	48.5	35
50mm	460	77	121	60.6	38

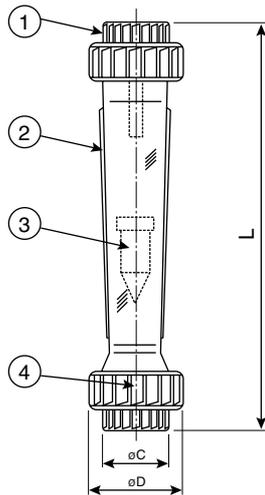
FLANGE CONNECTION



Size	L
40mm	510
50mm	530

Above figure is for SUS316 float with float rod version. No float rod is provided for other float material versions.

Rc THREAD CONNECTION



Size	d	L
40mm	Rc1½	445
50mm	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, FPM, OTHERS
⑤	Float rod	SUS316

AC-T NON-METALLIC TYPE WITHOUT PARTICLES AND METALLIC IONS

ALL PARTS CONSISTING OF FLUOROCARBON RESIN

GENERAL

AC-T is direct reading type variable area flowmeter whose wet parts consist of all fluorocarbon resin. The flow rate is indicated directly by the float location on the measuring scale. The simple and rugged construction offers you reliable operation and easy maintenance for various services. The optional alarm contact serves for flow stoppage alarming in addition to flow monitoring.

FEATURES

- All wet components consisting fluorocarbon resin eliminate the effluent of metallic ions in process liquid.
- Eliminating float rod, the ribbed taper tube prevents the generation of particles and assures stable movement of the float.
- Not only for pure water or ultra-pure water, this anti-corrosion flowmeter is suitable also for other corrosive chemicals.
- The union construction makes overhaul, assembly and cleaning easier.
- Easy to mount on the equipment and packaged units thanks to simple and compact construction.
- Alarm contact can be added easily on the indicator.

STANDARD SPECIFICATION

Available size	: 15mm (1/2") and 20mm (3/4")
Measuring object	: Liquids (Water density 1.0g/cm ³ , Viscosity 1.0mPa·s)
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	: ±3% F.S.



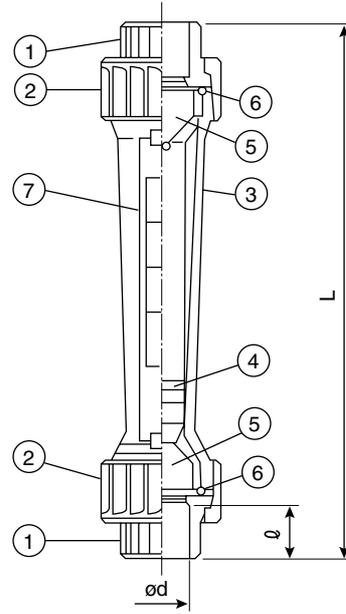
Max. Op. Press.	: 0.49MPa (at 20°C) The maximum operating pressure changes according to the fluid temperature. For instance, the pressure becomes as low as 0.2 MPa at 80°C. Consult Tokyo Keiso for the details.
Max. liquid temp.	: 90°C (Max. 0.15MPa) The pressure and temperature deviation from design values causes measurement error. Please specify the pressure and temperature when ordering.
Process connection	: Standard : 15mm (1/2") and 20mm (3/4") welding (TS socket) or Rc thread Option : Other connections are available. Consult Tokyo Keiso.
Flow direction	: Bottom to Top
Material	: Fluorocarbon resin See STANDARD MATERIAL TABLE for details.
Alarm function	: Available as option
Point	: 1 point High or Low
Switch	: Reed switch (SPST)

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 (KGF type)
	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).

DIMENSION



STANDARD MATERIAL TABLE

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

* : SUS316 weight moulded

unit : mm

	AC-T15□□-□	AC-T20□□-□
Nominal diameter	15	20
L	220	220
Screw	Rc1/2	Rc3/4
Welding type	Tube outside diameter	15 (20)
	d	19.2
	ø	16.5
	KGF type	KGF type

PRODUCT MASS

400g

FOR INQUIRY

Please specify followings for your inquiry.
 Model code AC-T □□□-□
 If alarm contact is required,
 Alarm set point at _____ L/min
 Other requirements

* Specification is subject to change without notice.

TOKYO KEISO CO., LTD.

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558
 Tel : +81-3-3431-1625 (KEY) ; Fax : +81-3-3433-4922
 e-mail : overseas.sales@tokyokeiso.co.jp ; URL : http://www.tokyokeiso.co.jp

