TECHNICAL GUIDANCE

STANDARD SPECIFICATION,
QUICK DELIVERY, COST EFFECTIVE

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 m^3/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 : 15 mm (1/2"), 20 mm (3/4") and 25 mm (1")

Calibration condition : Water (Density 1.0 g/cm^3, Viscosity 1.0 mPa·s)
Special calibration/graduation available on request.
Gas measurement is also acceptable. Consult factory for details.

Scale range : Min. 0.1 to 1 L/min
(AC-1501-T□)
(AC-2001-T□)
Max. 10 to 100 L/min
(AC-256K-$\frac{4}{6}$□)

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

Graduation : Double scaled
[L/min and L/h(m^3/h)]

Accuracy : ±3% F.S.

Max.Op.Press. : 0.5 MPa
(Test press, 0.75 MPa)

Temp. range : 0 to 50°C
*: It is general data, and the maximum temperature may change by terms of use and environment.

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

Installation : Pipe line direct mount or by wall mount fixture

Alarm function : Available for 260 mm 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. volltage AC125V, DC100V
Max. current* 0.5A (AC, DC)
Max. wattage* AC10VA, DC10W
*: Whichever is smaller

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 to 3 L/min	20 to 200 L/h	×
2003-4/6	20mm (3/4")			
1505-4/6	15mm (1/2")	0.5 to 5 L/min	30 to 300 L/h	
2005-4/6	20mm (3/4")			
1510-4/6	15mm (1/2")	1 to 10 L/min	60 to 600 L/h	
2010-4/6	20mm (3/4")			
1520-4/6	15mm (1/2")	2 to 20 L/min	0.12 to 1.2 m³/h	
2020-4/6	20mm (3/4")			
1530-4/6	15mm (1/2")	5 to 30 L/min	0.3 to 1.8 m³/h	
2030-4/6	20mm (3/4")			
2530-4/6	25mm (1 ")	3 to 30 L/min	0.2 to 2 m³/h	○
2040-4/6	20mm (3/4")	4 to 40 L/min	0.25 to 2.5 m³/h	
2540-4/6	25mm (1 ")			
2050-4/6	20mm (3/4")	5 to 50 L/min	0.3 to 3m³/h	
2550-4/6	25mm (1 ")			
2070-4/6	20mm (3/4")	14 to 70 L/min	0.8 to 4 m³/h	
2570-4/6	25mm (1 ")			
254K-4/6	25mm (1 ")	—	0.4 to 4 m³/h	×
256K-4/6	25mm (1 ")	10 to 100 L/min	0.6 to 6 m³/h	
1501-T	15mm (1/2")	0.1 to 1 L/min	6 to 60 L/h	×
2001-T	20mm (3/4")			
1502-T	15mm (1/2")	0.2 to 2 L/min	12 to 120 L/h	
2002-T	20mm (3/4")			
1503-T	15mm (1/2")	0.3 to 3 L/min	20 to 200 L/h	
2003-T	20mm (3/4")			
1505-T	15mm (1/2")	0.5 to 5 L/min	30 to 300 L/h	
2005-T	20mm (3/4")			
1510-T	15mm (1/2")	1 to 10 L/min	60 to 600 L/h	
2010-T	20mm (3/4")			
2020-P	20mm (3/4")	2 to 20 L/min	0.12 to 1.2 m³/h	○
2520-P	25mm (1 ")			
2030-P	20mm (3/4")	3 to 30 L/min	0.2 to 2 m³/h	
2530-P	25mm (1 ")			

✻1 Duplicated flow ranges

✻2 ○ : applicable × : not applicable

MATERIAL CONSTRUCTION

Table 2

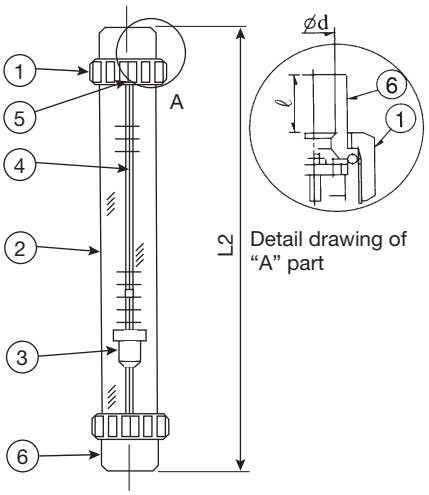
PARTS	NAME		MATERIAL CLASS			
			1	2	3	4
			AC-□□□□-4	AC-□□□□-6	AC-□□□□-T	AC-□□□□-P
1	UNION NUT	*1	PVC			
2	TAPERED TUBE	*1	ACRYL			
3	FLOAT	*1	SUS304	SUS316	PTFE	PVC
4	FLOAT ROD	*1	SUS316	SUS316	FEP COVERED (SUS304 CORE)	
5	O RING	*1	NBR	FPM		
6	FITTING	*1	PVC			
7	BACK-UP RING	*2	SUS304			
8	ALARM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

*1 : Wetted parts

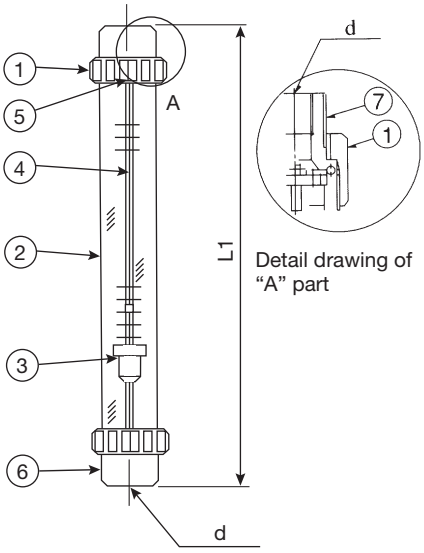
*2 : Provided only for Rc thread connection

*3 : Applicable only for alarm version

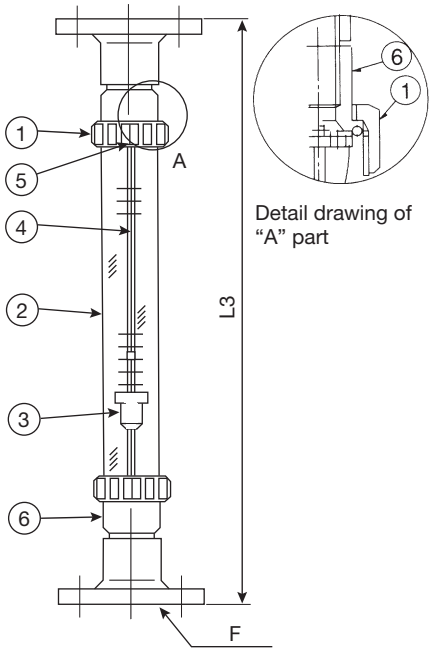
DIMENSION



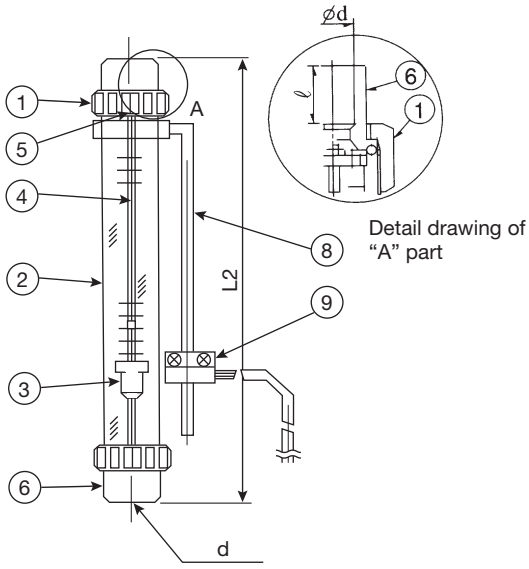
● TS SOCKET CONNECTION



● Rc THREAD CONNECTION



● FLANGE CONNECTION



● 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	220	20	22.3	220	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			26.3		20A JIS10K	
AC-2005-4/6							
AC-2010-4/6							
AC-2020-4/6							
AC-2030-4/6							
AC-2040-4/6		260	25		260		350
AC-2050-4/6							
AC-2070-4/6							
AC-2530-4/6	Rc 1		29	32.3		25A JIS10K	
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	220	20	22.3	220	15A JIS10K	300
AC-1502-T							
AC-1503-T							
AC-1505-T							
AC-1510-T							
AC-2001-T	Rc 3/4			26.3		20A JIS10K	
AC-2002-T							
AC-2003-T							
AC-2005-T							
AC-2010-T							
AC-2020-P		260	25		260		350
AC-2030-P							
AC-2520-P	Rc 1		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/cm^3, Viscosity 1.0mPa·s)

Size	Standard Range 1 *1	Standard Range 2 *2
40mm	1 to 10 m^3/h	0.6 to 6 m^3/h
50mm	2 to 20 m^3/h	1 to 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 to 5 m^3/h
	Max. 0.8 to 8 m^3/h *3
50mm	Min. 0.8 to 8 m^3/h
	Max. 1.4 to 14 m^3/h *4

*3 : Max. 1 to 10m^3/h is acceptable for liquids with 1.0mPa·s viscosity.
*4 : Max. 2 to 20m^3/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 to 4 m^3/h
	Max. 0.6 to 6 m^3/h
50mm	Min. 0.7 to 7 m^3/h
	Max. 1 to 10 m^3/h

Range ability : Standard 10:1
Accuracy : ±2% F.S.
Max. Op. Press. : 0.7MPa(Test press. 1MPa)
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

Degreace 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)

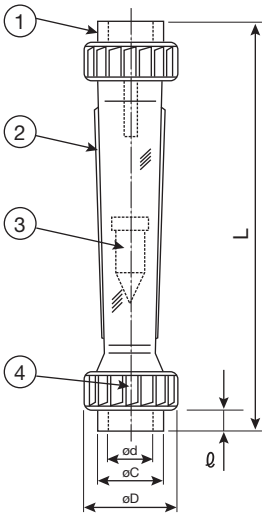
MODEL CODE

AC–			–				–				Description
Size	40										40mm (1 1/2")
	50										50mm (2")
Scale range		1									STANDARDS SCALE 1
		2									STANDARDS SCALE 2
		9									CUSTOM MADE
Body material			–	P							PVC
Tapered tube material					A						Acryl
Float material (Float rod)						6					SUS316 (With rod)
						P					PVC (No rod)
						Z					Others
Seal material							N				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 teatment											0 Not provided
											1 provided

The float rod is provided for the alarm contact version.

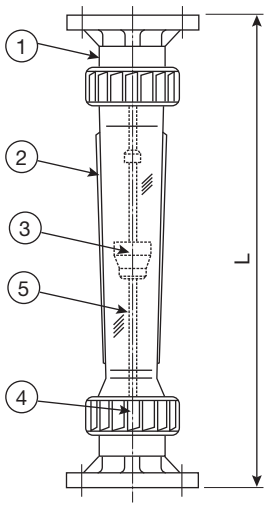
DIMENSION

TS SOCKET CONNECTION



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

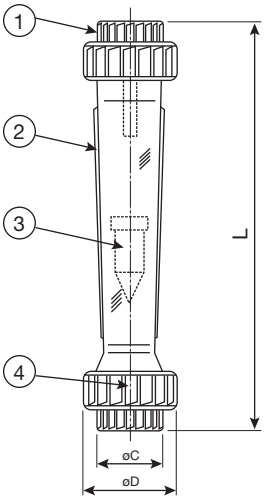
FLANGE CONNECTION



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

* Specification is subject to change without notice.

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