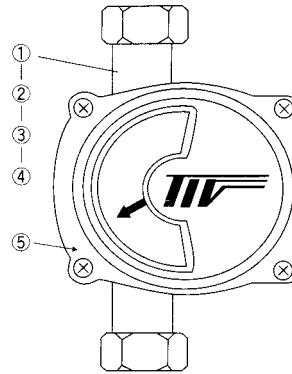


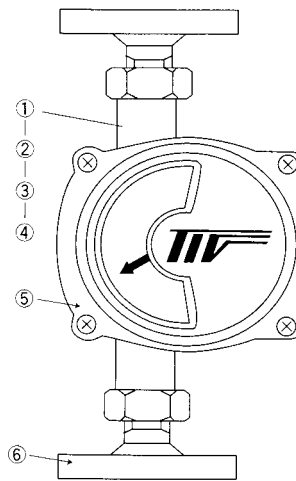
STANDARD SPECIFICATION

MEASURING OBJECT	Liquids and Gases High viscosity liquid measurement also acceptable. Consult factory for details.
MEASURING RANGE	
Liquid measurement (Water)	Min. 0.1~0.5 ℓ/h Max. 60~600 ℓ/h
Gas measurement (Air, 0°C, 1atm)	Min. 3~15 Nℓ/h Max. 2~20 Nm ³ /h
RANGE ABILITY	10 : 1 10 : 2 for versions with full scale smaller than 3ℓ/h (Water) or 100Nℓ/h (Air).
FLUID TEMP.	STD. Max.100°C In case of versions with full scale smaller than 3ℓ/h (Water) or 100Nℓ/h (Air), a glass tube is inserted and allowable thermal shock will be 80°C.
OP. PRESS.	STD. 30kgf/cm ² G (3MPa) High press.200kgf/cm ² G (20MPa)
INDICATION ACCURACY	±3.0%F.S. ±5% for the versions with full scale smaller than 3ℓ/h (Water) or 100Nℓ/h (Air)
PAINTING	Munsell 7.5BG4/1.5 (Indicator part only)
ALARM CONTACT	
AVAILABILITY SETTING	1point LOW or 1point HIGH Adjustable by moving setting pointer (within graduation range)
SETTING ACCURACY	±3.0%F.S.
DETECTION	Hall element IC
OUTPUT RATING	Open collector output DC18V, Max. 15mA
RESET SPAN CONNECTION	Max. 15%F.S. M3 screw terminal
CABLE ENTRY	G1/2 thread
PROCESS CONNECTION	
STD.	Rc1/4, 3/8, 1/2 or 3/4, 10A, 15A, 20A or 25AJIS10KFF flange
OPTION	NPT and other threads, other flanges than JIS10KFF
FLOW DIRECTION	Bottom→Top, Bottom→Top side, Bottom side→Top side, Bottom rear→Top rear
INSTALLATION MATERIAL WEIGHT	Supported by piping Refer to ■ MATERIALCONSTRUCTION Approx. 1kg (Rc1/4 thread)

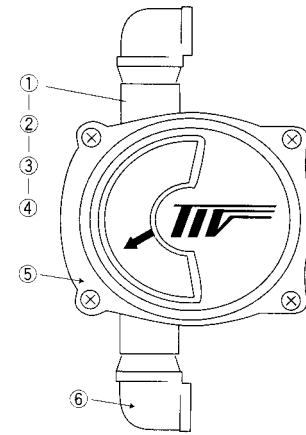
MATERIAL CONSTRUCTION



Straight through, Screw connection



Flange connection



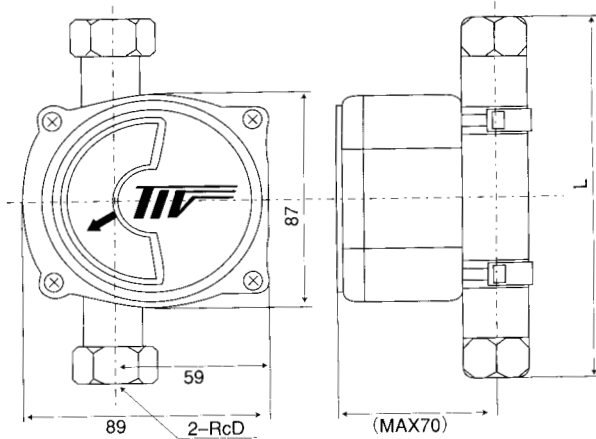
Elbow connection

No.	Part Name	Material
①	Body	SCS14 *1
②	Tapered tube	SUS316 *2
③	Float	SUS316 *3
④	Gasket	TEFLON
⑤	Indicator	ADC12
⑥	Process conn, fittings	SUS304 or SUS316 *4

- *1: SUS 316 for 3/8" meter size in case of versions with full scale smaller than 3ℓ/h (Water) or 100Nℓ/h (Air).
- *2: Glass tapered tube will be inserted for 3/8" meter size in case of versions with full scale smaller than 3ℓ/h (Water) or 100Nℓ/h (Air). Allowable thermal shock will be 80°C
- *3: PPS resin float is used for Gas measurement application with full scale larger than 100Nℓ/h.
- *4: Connection fitting material can be selected for Flange connection version. Specify requirement when ordering.

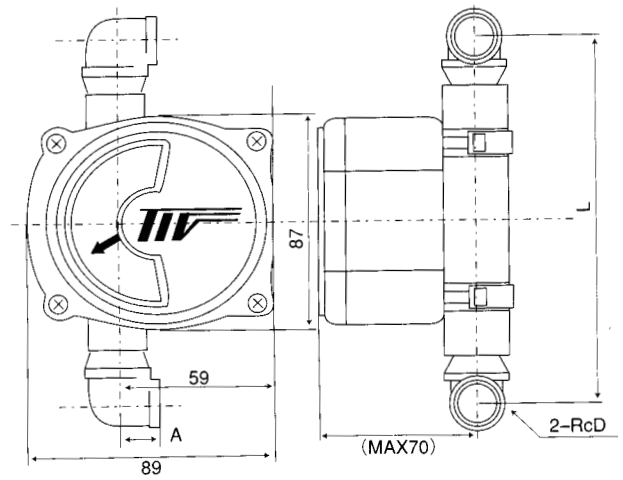
DIMENSION

- Flow direction : BOTTOM TO TOP, Screw connection



Meter size	Max. possible full scale		Connection screw size					L(mm)
	Water (l/h)	Air (Nl/h)	1/4	3/8	1/2	3/4	1	
3/8	3	100	180	160	210	230	230	
1/2	30	600	180	180	160	230	230	
3/4	300	5000	180	180	180	160	230	
1	600	20000	200	180	180	180	160	

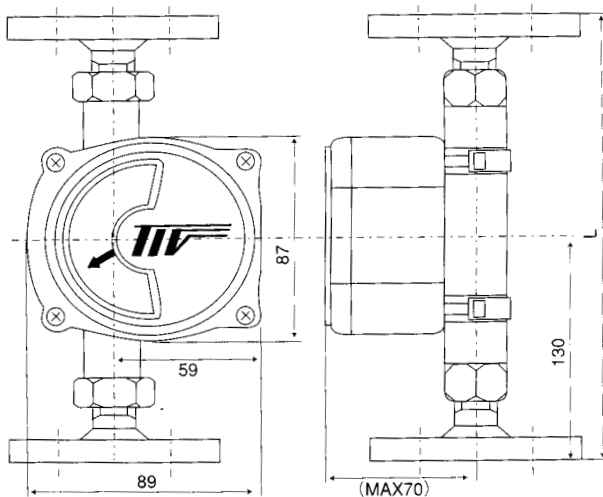
- Flow direction : BOTTOM SIDE (or REAR) TO TOP SIDE (or REAR), Screw connection



Meter size	Max. possible full scale		Connection screw size										L(mm)
	Water (l/h)	Air (Nl/h)	1/4		3/8		1/2		3/4		1		
			L	A	L	A	L	A	L	A	L	A	
3/8	3	100	225	19	215	23	270	27	300	32	310	38	
1/2	30	600	225	19	235	23	220	27	300	32	310	38	
3/4	300	5000	225	19	235	23	240	27	230	32	310	38	
1	600	20000	245	19	235	23	240	27	300	32	240	38	

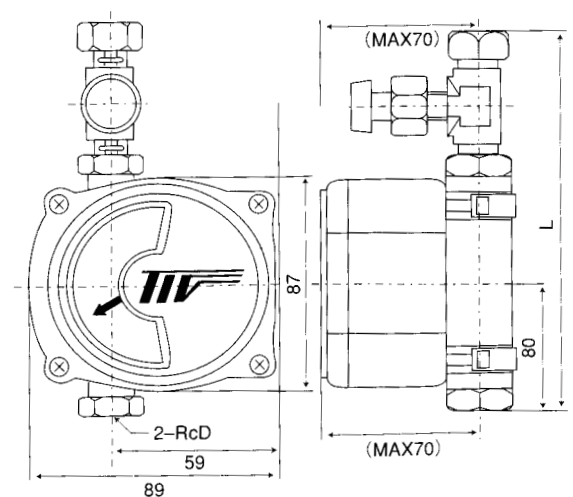
A will be 100mm for flange connection version.

- Flow direction : BOTTOM TO TOP, Flange connection



Meter size	Max. possible full scale		L(mm)
	Water (l/h)	Air (Nl/h)	
3/8	3	100	260
1/2	30	600	
3/4	300	5000	
1	600	20000	

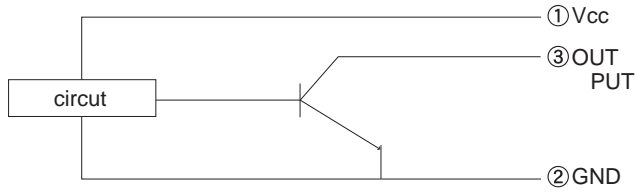
- Flow direction : BOTTOM TO TOP, Screw connection, Needle valve provided at outlet



Meter size	Max. possible full scale		Connection screw size					L(mm)
	Water (l/h)	Air (Nl/h)	1/4	3/8	1/2	3/4	1	
3/8	3	100	240	220	270	290	290	
1/2	30	600	245	225	250	285	295	
3/4	300	5000	245	225	250	260	295	
1	600	20000	280	260	240	275	275 *1	
			290	270	270	250	285 *2	

*1 Upto Water 500l/h, Air 1500Nl/h.
*2 Larger than above

WIRING For MA-95□



Rating voltage	Vcc	18V
Open voltage	Vo (off)	18V
Rated current	Isink	15mA
AMB. Temp.	Ta	-30~85°C

ORDERING FORM

Specify the following for order / inquiry;

MODEL CODE MA-9□□-□□-□-□
 FLUID NAME _____
 SP. GR. _____
 VISCOSITY _____ □ cP □ _____
 PRESS. _____ □ kgf/cm²G □ _____
 TEMP. _____ □ °C □ _____
 SCALE RANGE _____ □ l/h □ Nl/h □ _____
 CONNECTION SIZE _____ □ mm
 CONNECTION Rc thread JIS10KFF _____
 STANDARD
 MATERIAL Standard Special (Specify)

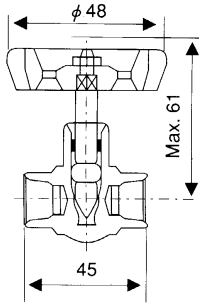
FOR ALARM VERSION

Contact High Low
 Setting point _____ □ l/h □ Nl/h □ _____

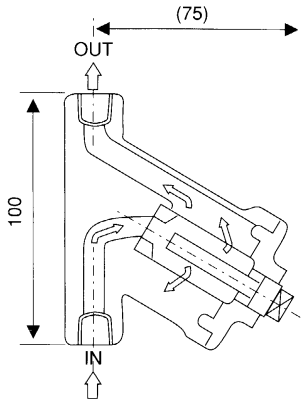
SPECIAL INSTRUCTION IF ANY ; _____

OPTIONS

- Needle valve



- Strainer



* Specification subject to change without notice

TOKYO KEISO CO., LTD.

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558
 Tel : 03-3431-1625 (KEY) ; Fax : 03-3433-4922
 e-mail : overseas.sales@tokyokeiso.co.jp ; URL : http://www.tokyokeiso.co.jp

