



DY-터빈 series



제품의 유량범위 및 압력

Table 1. Measurable Flow Range and Pressure Rating

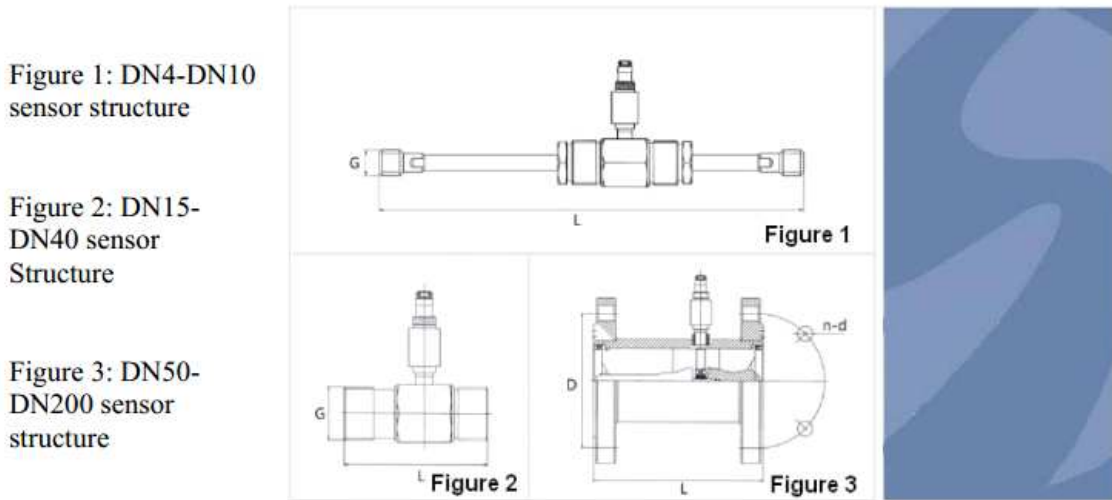
Nominal Diameter		Standard Flow Range (SFR)	Extended Flow Range (EFR)	Standard Pressure Rating	Customized Pressure Rating
(mm)	(in.)	(m ³ /h)	(m ³ /h)	(MPa)	(MPa) - Flange Fitting
4	0.15	0.04 to 0.25	0.04 to 0.4	Thread: 6.3	12, 16, 25
6	0.25	0.1 to 0.6	0.06 to 0.6	Thread: 6.3	12, 16, 25
10	0.4	0.2 to 1.2	0.15 to 1.5	Thread: 6.3	12, 16, 25
15	0.5	0.6 to 6	0.4 to 8	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
20	0.75	0.8 to 8	0.45 to 9	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
25	1	1 to 10	0.5 to 10	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
32	1.25	1.5 to 15	0.8 to 15	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
40	1.5	2 to 20	1 to 30	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
50	2	4 to 40	2 to 40	Flange: 2.5	4.0, 6.3, 12, 16, 25
65	2.5	7 to 70	4 to 70	Flange: 2.5	4.0, 6.3, 12, 16, 25
80	3	10 to 100	5 to 100	Flange: 2.5	4.0, 6.3, 12, 16, 25
100	4	20 to 200	10 to 200	Flange: 1.6	4.0, 6.3, 12, 16, 25
125	5	25 to 250	13 to 250	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
150	6	30 to 300	15 to 300	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
200	8	80 to 800	40 to 800	Flange: 1.6	2.5, 4.0, 6.3, 12, 16



○ 제품의 제원

- 재 질 : SUS 304
- 사용온도 : 80°C (분리형 120°C)
- 전 원 : 배터리 타입(옵션 : DC24V or AC220V)
- 신 호 : Pulse (옵션 : 4~20mA or RS 485통신)
- 압 력 : KS 10K (옵션 : KS 20K , ANSI , DIN)
- 디스플레이 : 6 digits, 8 Totalize, 순간유속

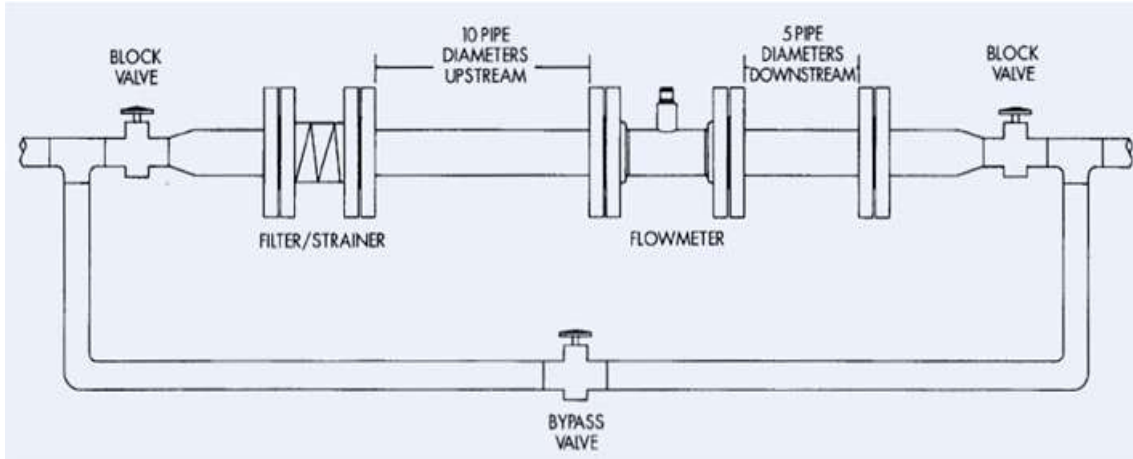
○ 제품의 치수



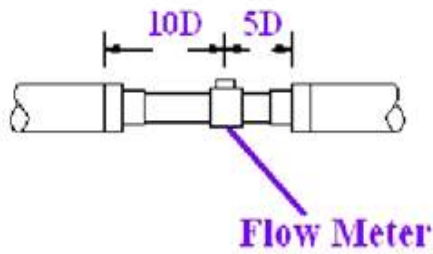
Diameter(mm)	L(mm)	G	D(mm)	d(mm)	n(Bolt)
4	295	1/2			
6	330	1/2			
10	450	1/2			
15	75	1	65	14	4
20	80	1	75	14	4
25	100	5/4	85	14	4
32	140	2	100	14	4
40	140	2	110	18	4
50	150		125	18	4
65	170		145	18	4
80	200		160	18	8
100	220		180	18	8
125	250		210	18	8
150	300		240	22	8



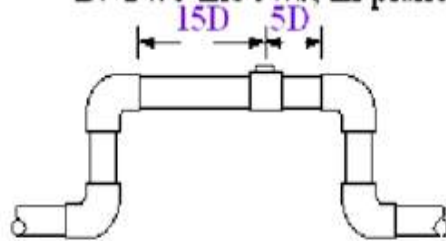
○ 설치시 주의사항



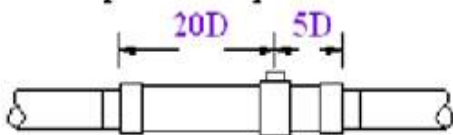
A. Reduced Pipe



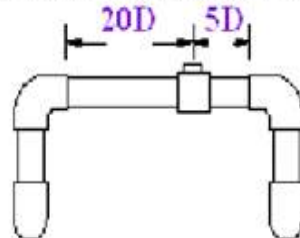
B. Two Elbows, In plane



C. Expanded Pipe



D. Two Elbows, out of plane



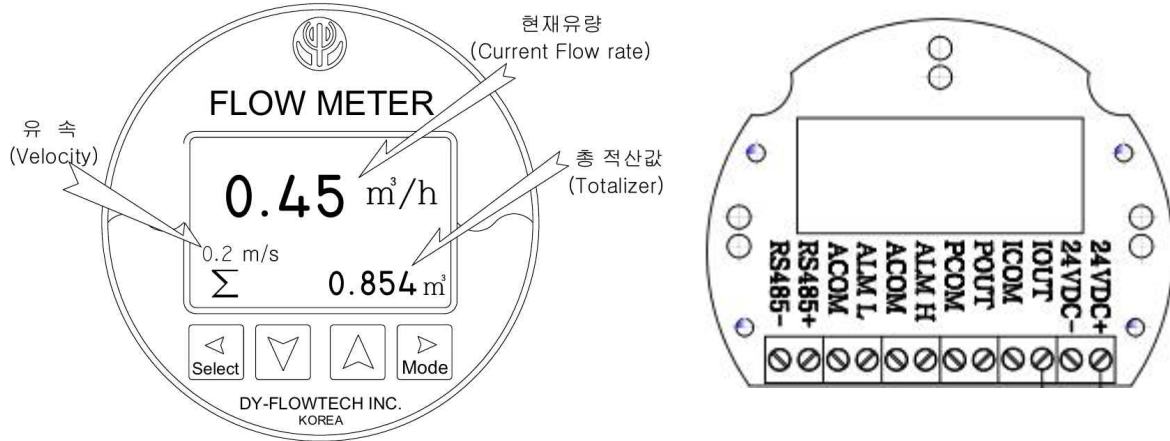
유량계의 앞단 및 뒷단에 충분한 직선구간이 필요하며, 배관에 따른 길이 비율은 앞단은 10D, 뒷단은 5D입니다.

즉, 50mm의 유량계를 사용하시면, 최소 앞단:500mm, 뒷단 50mm입니다.



○ 기판 설명서

Display Descriptions



	왼쪽으로 이동, 설정확인 및 이전단계로 이동
	아래로 이동
	위로 이동
	오른쪽으로 이동, 메인모드 이동

24V +	DC24전원 +
24 -	DC24전원 -
IOU	4~20mA +
ICOM	4~20mA -
POUT	Pulse out +
PCOM	Pulse out -
ALM H	High alarm output +
ACOM	High alarm output -
ALM L	Low alarm output +
ACOM	low alarm output -
RS+	RS485 +
RS-	RS485 -



Settings Mode

메 인	
1. Flow rate (유량세팅)	
2. Total Flow (총적산세팅)	
3. Calibration(아날로그신호세팅)	
4. Output (출력세팅)	
5. Communication (통신세팅)	
6. Factory (공장세팅) - (P/W : 052500)	

1. 유량세팅	2. 적산세팅	3. 아날로그신호세팅	4. 출력세팅	5. 통신세팅	6. 공장세팅
PV unit	Unit	4mA Adjust	Max Freq	Protocol	Medium
PV Decimal	Decimal	20mA Adjust	Pulse equiv	Baud Rate	Sensor size
Flow range	Preset value	Temp Adjust	Pulse width	Data Bit	K-Factor
Low flow cut		Pres Adjust	Signal	Check Mode	
Damping time				Device No.	
Low alarm					
High alarm					

1. 유량세팅

PV Unit	Option : L/s L/m L/h m ³ /s m ³ /m m ³ /h Nm ³ /h SG/s USG/m USG/h Kg/s Kg/m Kg/h t/s t/m t/h L (liter), h(hour), t(ton), s(second) , m(minute)
PV Decimal	Option : 0 1 2 3
Flow Range	Float point : 99999999.00 ~ 0.00 m ³ /h
Low Flow Cut	Float point : 9.90 ~ 0.00 %
Low Alarm	Float point : 99.00 ~ 0.00 %
High Alarm	Float point : 99.00 ~ 1.00 %

2. 적산세팅

Unit	Option : L(liter) m ³ USG Kg t(ton) Nm ³
Decimal	Option : 0 1 2 3
Preset value	Clear the total flow or Preser the value of the total flow

경기도 남양주시 화도읍 가곡리 135-2 번지

전화 : 031-594-4748(50)

팩스 : 031-594-4749

이메일 : dyit4514@naver.com



3. 아날로그신호세팅

4mA Adjust	Float point : 5.0 ~ 3.0
20mA Adjust	Float point : 21.0 ~ 19.0
Temp Adjust	NONE
Pres Adjust	NONE

4. 펄스출력세팅

Max Freq	Floating point : 5000.0 ~ 100.0 Hz
Pulse equiv	Floating point : 9999.0 ~ 0.0
Pulse width	Floating point : 1000.0 ~ 0.0 ms
Signal	current output mode

5. 통신세팅

Protocol	option: Modbus-RTU Modbus-ASCII
Baud Rate	option: 1200 2400 4800 9600 19200 38400 Note: Please set the baud rate ≥ 9600
Data Bit	option: 7 8
Check Mode	option: None , Odd , Even
Device No.	data: 247 ~ 1

6. 공장세팅

Medium	Liquid flow
Sensor size	15 ~ 500 mm
K-Factor	K (k-factor) : Numbers of pulse per m3

DY-LWGY 터빈



○ 제품의 유량범위 및 압력

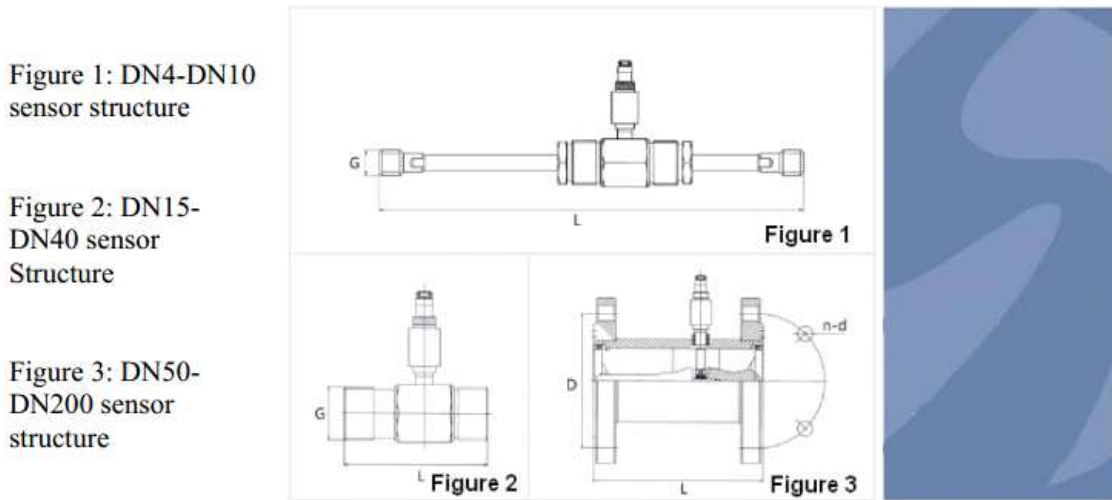
Table 1. Measurable Flow Range and Pressure Rating

Nominal Diameter		Standard Flow Range (SFR)	Extended Flow Range (EFR)	Standard Pressure Rating	Customized Pressure Rating
(mm)	(in.)	(m ³ /h)	(m ³ /h)	(MPa)	(MPa) - Flange Fitting
4	0.15	0.04 to 0.25	0.04 to 0.4	Thread: 6.3	12, 16, 25
6	0.25	0.1 to 0.6	0.06 to 0.6	Thread: 6.3	12, 16, 25
10	0.4	0.2 to 1.2	0.15 to 1.5	Thread: 6.3	12, 16, 25
15	0.5	0.6 to 6	0.4 to 8	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
20	0.75	0.8 to 8	0.45 to 9	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
25	1	1 to 10	0.5 to 10	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
32	1.25	1.5 to 15	0.8 to 15	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
40	1.5	2 to 20	1 to 30	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
50	2	4 to 40	2 to 40	Flange: 2.5	4.0, 6.3, 12, 16, 25
65	2.5	7 to 70	4 to 70	Flange: 2.5	4.0, 6.3, 12, 16, 25
80	3	10 to 100	5 to 100	Flange: 2.5	4.0, 6.3, 12, 16, 25
100	4	20 to 200	10 to 200	Flange: 1.6	4.0, 6.3, 12, 16, 25
125	5	25 to 250	13 to 250	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
150	6	30 to 300	15 to 300	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
200	8	80 to 800	40 to 800	Flange: 1.6	2.5, 4.0, 6.3, 12, 16

○ 제품의 제원

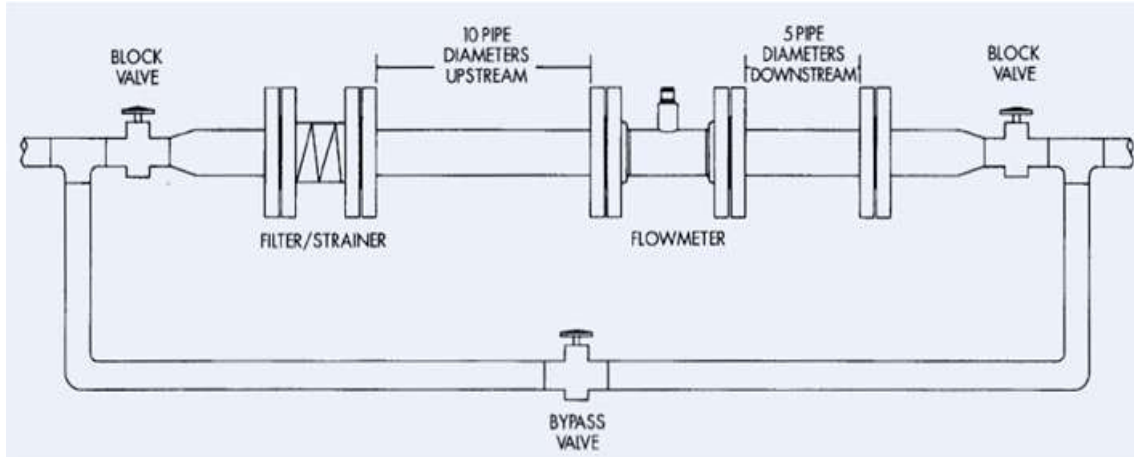
- 재 질 : SUS 304
- 사용온도 : 80°C (분리형 130°C)
- 전 원 : 배터리 타입(옵션 : DC24V or AC220V)
- 신 호 : Pulse (옵션 : 4~20mA or RS 485통신)
- 압 력 : KS 10K (옵션 : KS 20K , ANSI , DIN)
- 디스플레이 : 6 digits, 8 Totalize, 순간유속

○ 제품의 치수

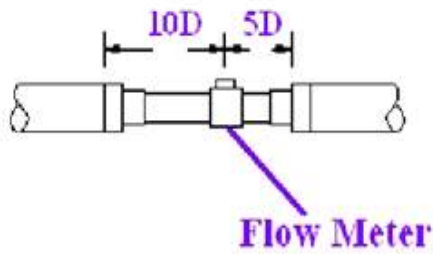


Diameter(mm)	L(mm)	G	D(mm)	d(mm)	n(Bolt)
4	295	1/2			
6	330	1/2			
10	450	1/2			
15	75	1	65	14	4
20	80	1	75	14	4
25	100	5/4	85	14	4
32	140	2	100	14	4
40	140	2	110	18	4
50	150		125	18	4
65	170		145	18	4
80	200		160	18	8
100	220		180	18	8
125	250		210	18	8
150	300		240	22	8

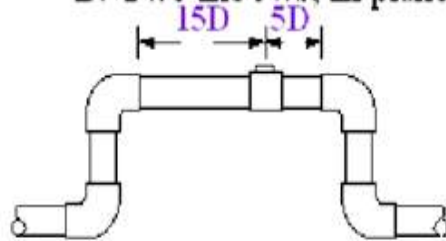
○ 설치시 주의사항



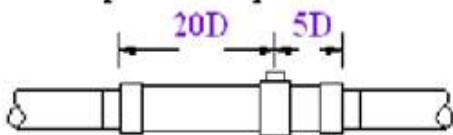
A. Reduced Pipe



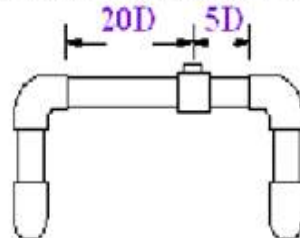
B. Two Elbows, In plane



C. Expanded Pipe



D. Two Elbows, out of plane

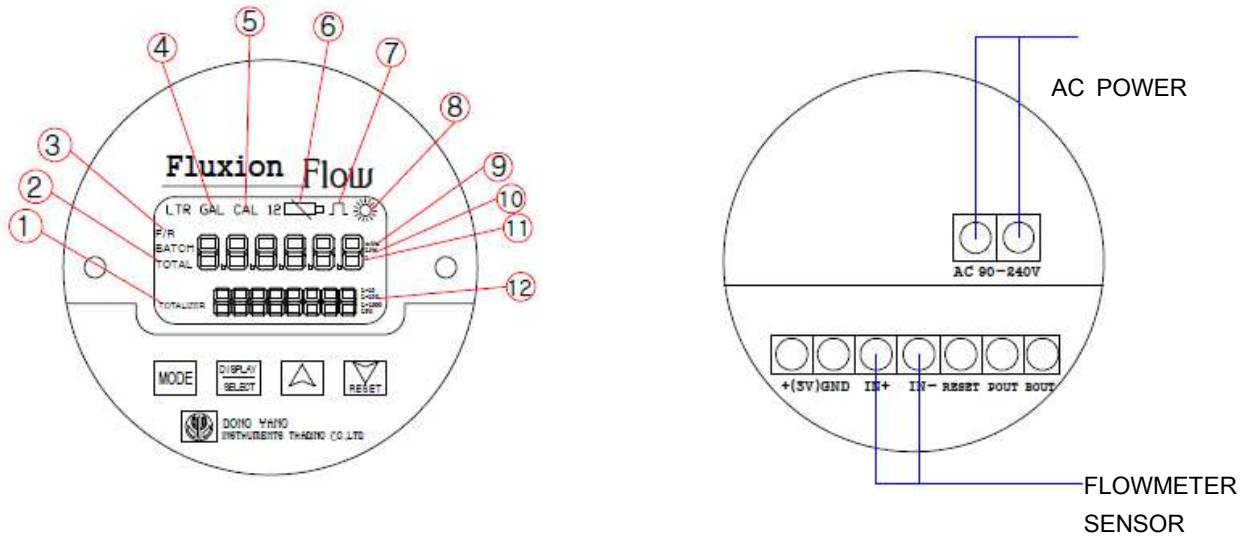


유량계의 앞단 및 뒷단에 충분한 직선구간이 필요하며, 배관에 따른 길이 비율은 앞단은 10D, 뒷단은 5D입니다.

즉, 50mm의 유량계를 사용하시면, 최소 앞단:500mm, 뒷단 50mm입니다.

○ 기판 설명서

Display Descriptions



① TOTALIZER : Displays the total accumulated flow. (총 적산 유량 표시)

② BATCH TOTAL : Displays current flow for batch controller.

(현재 사용 유량 표시_Batch controller 사용시 사용)

③ F/R : Displayed when Preset flow setting. (Preset 유량설정 표시)

④ GAL : Gallon used display. (갤런으로 유량 단위 설정 시 표시)

⑤ CAL 1 2 : Displays setting value of the pulse input.

(펄스 input 값 설정 시 표시_factory only)

⑥ BATTERY : Displayed at the lack of battery. (배터리 부족시 표시)

⑦ PULSE OUTPUT : Displayed when the pulse output. (펄스 출력시 표시)

⑧ PULSE INPUT : Displayed when the pulse input. (펄스 입력시 표시)

⑨ m3/h : Flow/hour. (시간당 유량 단위)

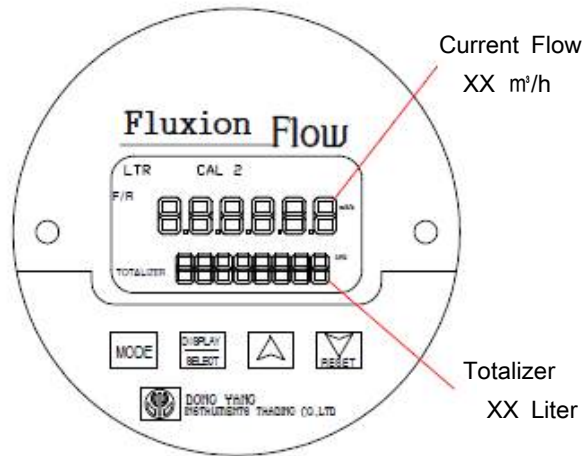
⑩ LPM : Flow/min. (분당 유량 단위)

⑪ L : Liter_current total. (현재 사용 유량 단위)

⑫ Totalizer Display Range. (총 적산 유량 표시 범위)

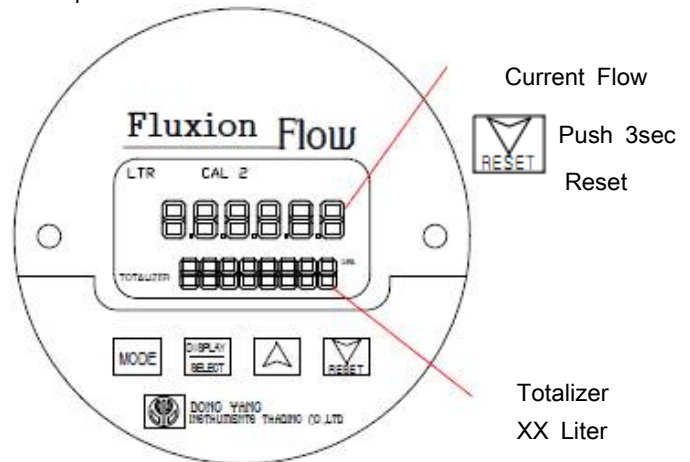
Display Setting

① Normal Display



DISPLAY
SELECT
push

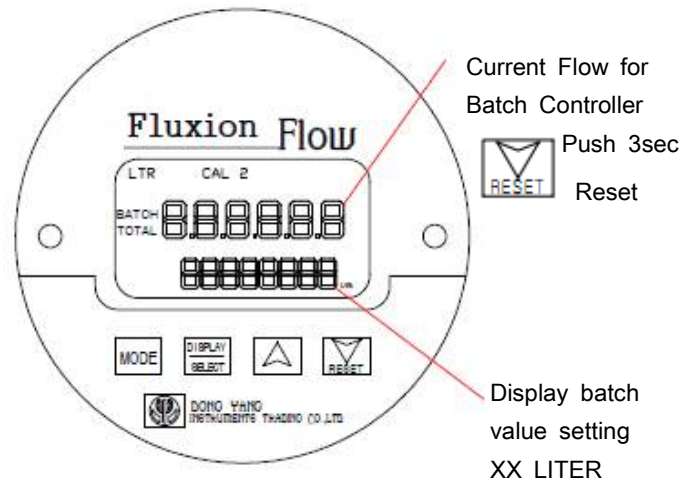
② Second Display



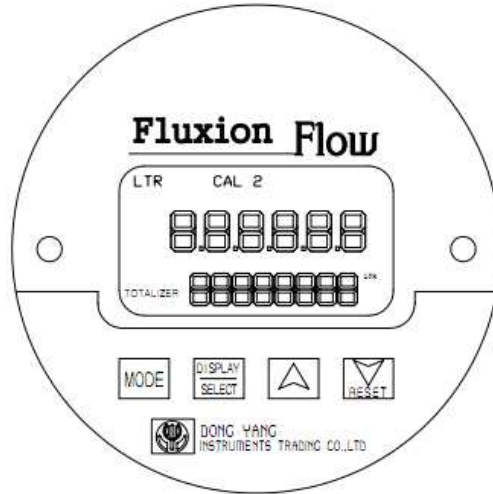
DISPLAY
SELECT
Push

③ Third Display

DISPLAY
SELECT
Push



Settings Mode

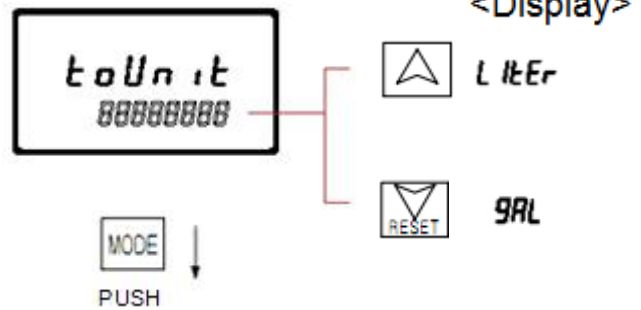


MODE

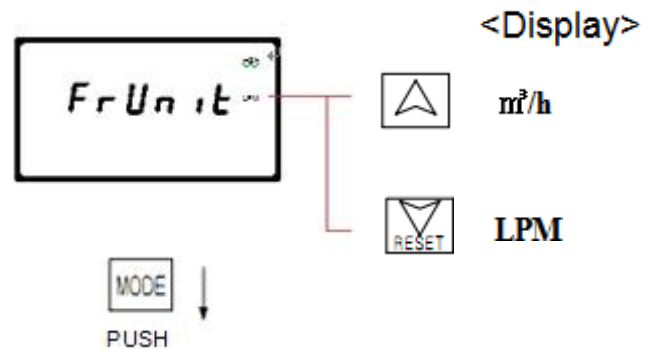
Press 3 sec. for setting mode

MODE
↓
PUSH

* Flow liter gallon setting
(유량 리터, 갤런 설정)



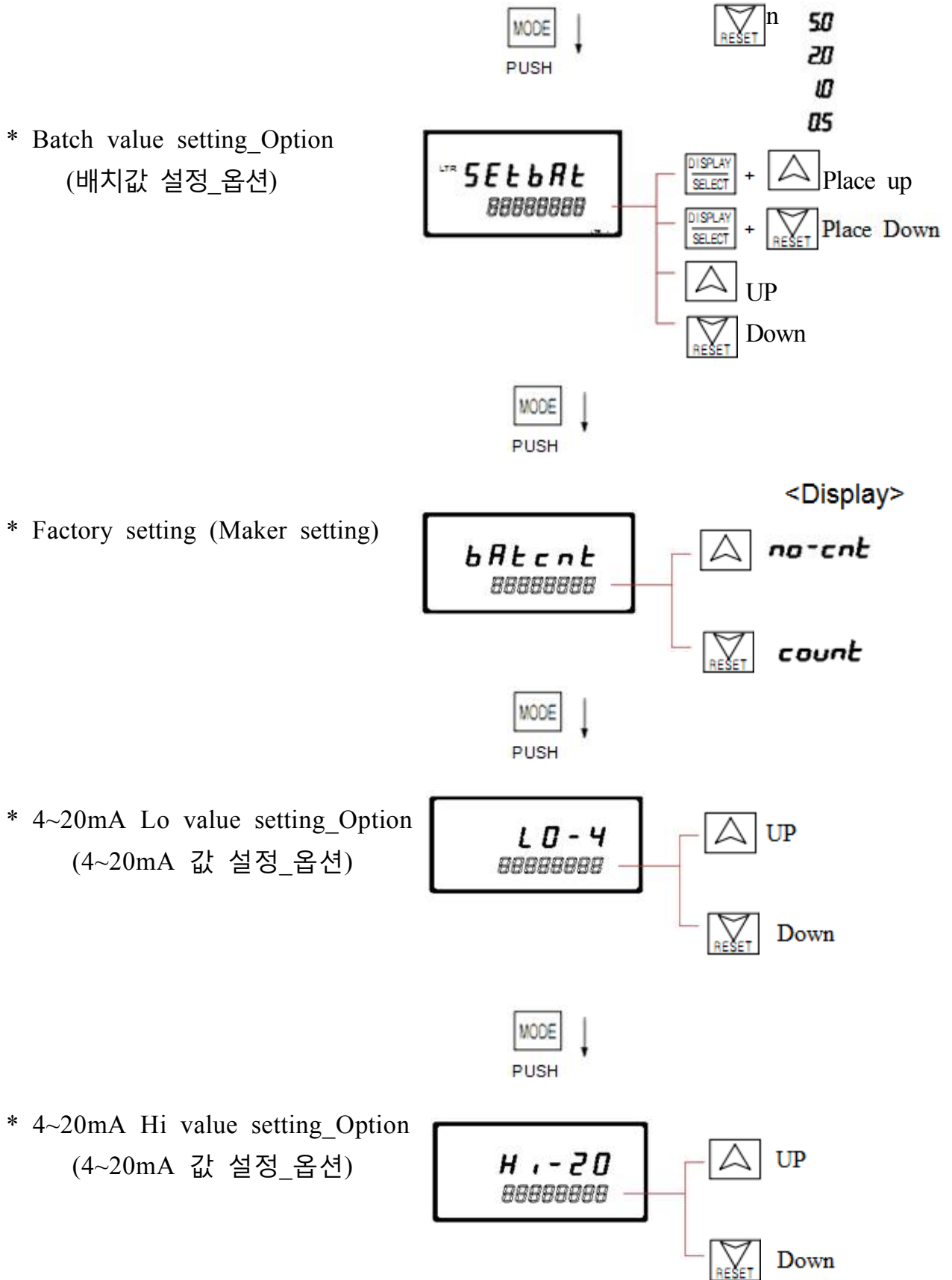
* Instant flow unit setting
(순간유량 단위 설정)



* Instant flow measure time setting
(순간유량 측정시간 설정)



경기도 남양주시 화도읍 가곡리 135-2 번지
전화 : 031-594-4748(50)



* Alarm Lo value setting_Option
(알람 출력 Lo 값 설정_옵션)

MODE ↓
PUSH

AL - Hi
 88888888

↑ UP
↓ Down
RESET

* Alarm Hi value setting_Option
(알람 출력 Hi 값 설정_옵션)

MODE ↓
PUSH

AL - Lo
 88888888

↑ UP
↓ Down
RESET

* Pulse time setting_Option
(펄스폭 시간 설정_옵션)

MODE ↓
PUSH

Pout - t
 88888888

↑ UP
↓ Down
RESET

<Display>

40
80
120
160
200

* Pulse output liter setting_Option
(펄스 출력량 설정_옵션)

MODE ↓
PUSH

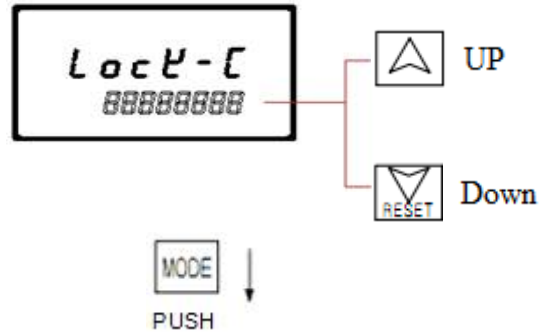
Pout - g
 88888888

↑ UP
↓ Down
RESET

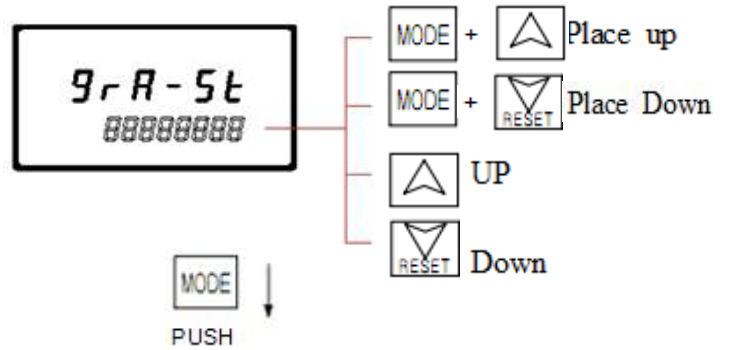
<Display>

0.1
1
10
100
1000

* Lock input
(Lock 입력)



* Hydrometric setting_Factory setting
(비중 설정_maker 설정)



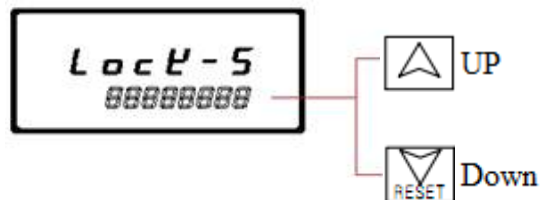
* Totalizer reset function
(Totalizer reset 기능)



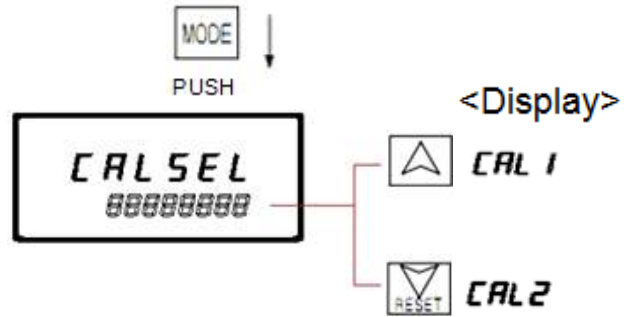
(Press simultaneously key for 3 sec.)



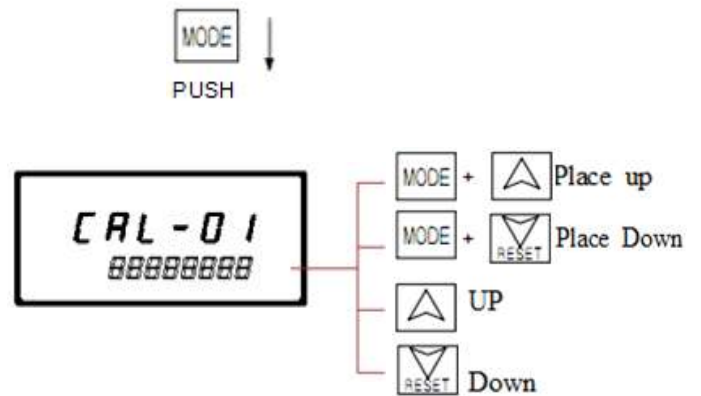
* Lock setting
(Lock 설정)



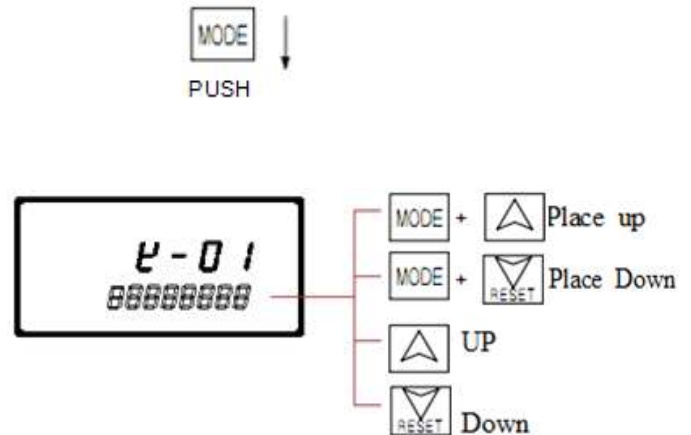
* Factory setting
(maker 설정)



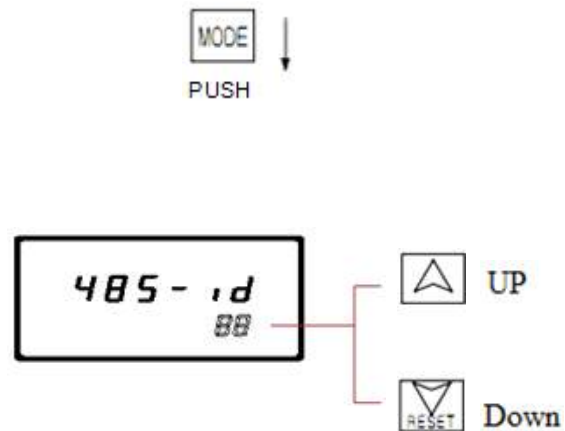
* Factory setting
(maker 설정)



* K-factor setting
(maker 설정)



* Factory setting
(maker 설정)





CALIBRATION MANUAL

When shipped our product, it would be shipped after test / calibration in order to meet the flow requirement specification.

However it can be caused the subtle error depending on the field condition, must be calibrated in the field as following.

(당사의 제품 출고 시 제품 스펙에 맞는 규격의 유량(주문 시 유량)으로 Test 및 Calibration 되어서 출고 되고 있습니다. 하지만 현장 상황에 따라 미묘한 유량 오차 등이 발생할 경우, 아래의 내용에 따라 현장에서 Calibration을 수행하여야 합니다.)

- 1) Pressing the MODE key on front of the Flow meter for 3 seconds, the FLOW UNIT(toUnit) such as base main menu is displayed on the LCD.

(유량계 전면의 MODE KEY를 3초간 누르면 기본 메인 메뉴인 FLOW UNIT 이 LCD 화면에 표시 됩니다.)

- 2) In the FLOW UNIT status displayed on LCD, When you press the DISPLAY/SELECT key, the new menu will appear.(See the Operating Manual)
On the K-FACTOR menu, Please enter the 01.00000 after deleting the setting value.

(기본 메뉴인 FLOW UNIT 이 LCD에 있는 상태에서 DISPLAY/SELECT KEY를 여러 번 누르면 누를 때마다 새로운 메뉴가 나타납니다. (사용설명서 참조)
여러 메뉴 중 K-FACTOR의 메뉴에서 기본값을 삭제하고 01.00000 값을 입력하세요.)

NOTE)

SELECT +▲ : In the status of pressing SELECT KEY, the number of digits to be moved when press the ▲key or ▼key

▲ ▼ : Using ▲/▼ key, can be entered what you want digits.

참고)

SET + ▲ : SELECT KEY를 먼저 누르고 있는 상태에서 ▲ KEY를 누를 때마다 숫자 자릿수 이동함.

▲ ▼ : 상하 KEY를 가지고 원하는 수자를 입력함.



- 3) After enter the 1.0000 at K-FACTOR, pressing the MODE KEY for 3~5 seconds, it is displayed as the initial screen.

(K-FACTOR 에 1.0000 이라는 수자 입력 후 MODE KEY를 3~5초간 누르면 초기 화면이 나타납니다.)

- 4) The TOTALIZER at the bottom of initial screen should set the ZERO.

< How to Set Up>

Like No.1 and No.2, Pressing the MODE KEY, it is displayed on LCD as TO-RST.

When Press the ▲ and ▼KEY at the same time, TOTALIZER value become 0.

(초기 화면이 LCD에 나타나면 맨 하단에 있는 TOTALIZER의 값을 ZERO로 설정하세요.

<설정방법>

상기 1번과 2번순으로 MODE KEY를 누르면 LCD 화면에 TO-RST라는 화면이 나타납니다. 이때 ▲ KEY와 ▼KEY를 동시에 누르면 TOTALIZER 값이 0이 됩니다.)

- 5) After returning to the initial screen

(pressing the MODE KEY for 3~5 seconds),

Please checking the TOTALIZER value became 0.

By opening the valve connected to the Flow meter should be passed exactly 50L.

Record the totalized number at the TOTALIZER of Flow meter.

(초기 화면으로 다시 돌아와 (MODE KEY를 3~5초 누름)

TOTALIZER 값이 0 임을 확인 후 유량계와 연결 된 밸브를 개방하여 정확히 50L를 통과시킵니다. 그 유량계 TOTALIZER 에 적산된 숫자를 기록합니다.)

- 6) According to the formula to calculate, the result should be recorded after calculating.

(ex.) If the passed the flow meter is 52.10 L and the TOTALIZER of flow meter is 3200, it is $52.10 \text{ L} / 3200 = 0.01628125$, of which can be entered only by 10^5 .

That is 0.01628 ->> It is the exact K-FACTOR value.

(하기의 계산식에 따라 계산 후 그 결과 값을 기록 합니다.

(예) 통과시킨 유량이 52.10 L 이고 유량계의 TOTALIZER 값이 3200 이라고 할 때,

$52.10 \text{ L} / 3200 = 0.01628125$, 이중 10^5 까지만 입력가능.

즉 0.01628 -> 정확한 K-FACTOR 값임)

경기도 남양주시 화도읍 가곡리 135-2 번지

전화 : 031-594-4748(50)



- 7) After Entering sequentially the exact value of the calculated K-FACTOR as above, pressing the MODE KEY for 3~5 seconds, the calibration is complete.
Please use after re-checking the normal operating of Flow.

(계산된 정확한 K-FACTOR 값을 앞에서 설명한 순서대로 입력 후 MODE KEY를 약 3 ~ 5초 정도 누르면 모든 CALIBRATION을 성공적으로 완료한 상태입니다.
다시 한번 유량이 정상적으로 작동하는지 확인 하신 후 사용 하십시오.)