

Digital Flow Switch
Operation Manual

NPF2A7□□ H

Outline of setting

Power is supplied

The output will not operate for 3 seconds after supplying power. The identification code of the product is displayed.

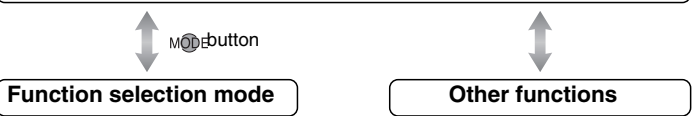
Measurement mode

The mode in which the flow is detected and displayed, and the switch output is operating. This is the basic operating mode; and other modes should be selected for setting changes and other function settings.

Accumulated flow can be displayed up to 999999999 L (99999999.9 ft³). The LCD display displays up to 5 digits at one time. The display is divided into three parts (upper digits, middle digits and lower digits).

Display unit	Maximum flow display value	Display digit		
		Upper digits	ddle digits	Lower digits
L display [ U_1]	999999999 L	9999 m³x10³ (9999 □□□□□L)	99999 m³ (99999 □□□□□)	99999 L
ft display * [ U_2]	999999999.9 ft³	999 ft³x10⁶ (999 □□□□□□ ft³)	99999 ft³x10³ (99999 □□□□□ ft³)	99999.9 ft³

※: Operate only the product with unit selection function.



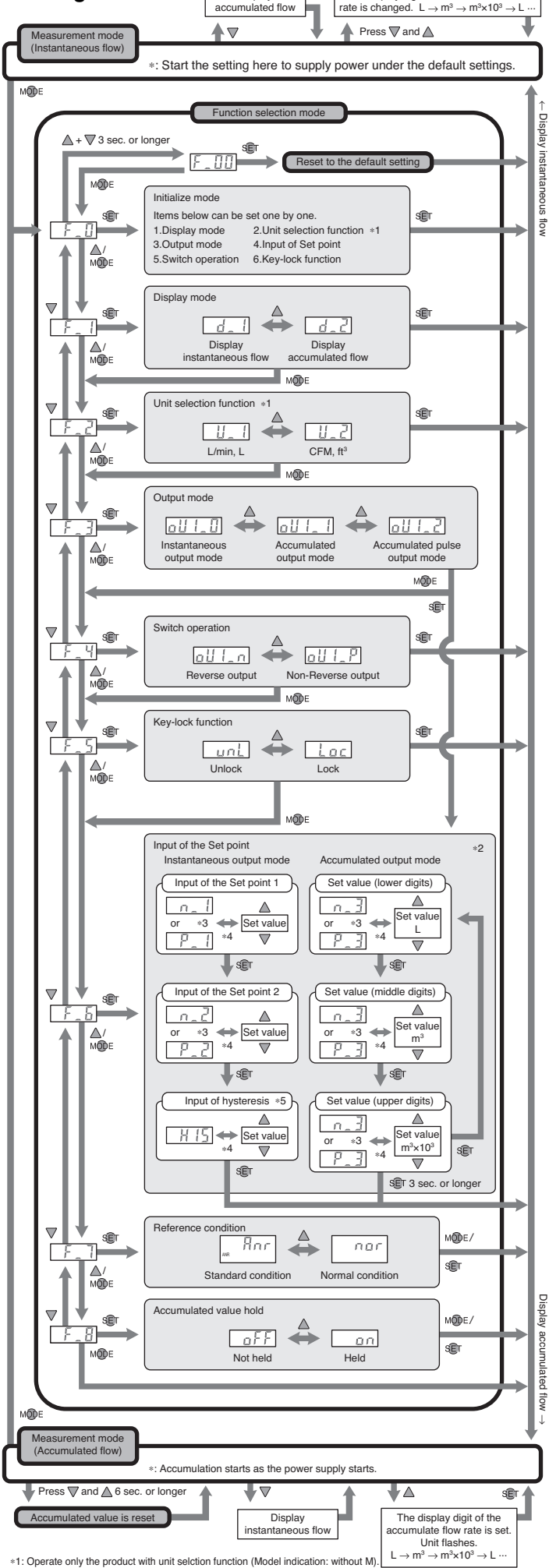
List of outputs

Find the diagram of the output required in the table below. Perform settings following the Set value column on the right.

	Switch output diagram	Output mode	Switch operation	Set value
Instantaneous flow		Instantaneous output mode	Non-Reverse output	Set point 2 Set point 1 $P_2 \leq P_1$ Hysteresis mode *2
				Set point 1 Set point 2 $P_1 < P_2$ Window comparator mode
			Reverse output	Set point 2 Set point 1 $n_2 \leq n_1$ Hysteresis mode *2
				Set point 1 Set point 2 $n_1 < n_2$ Window comparator mode
Accumulated flow		Accumulated output mode	Non-Reverse output	Upper digits P_3 Middle digits P_3 Lower digits P_3
			Reverse output	Upper digits n_3 Middle digits n_3 Lower digits n_3
			Accumulated pulse output mode	No Set value input
				No Set value input

\*1: Hysteresis can be set between "0" and "3%" of maximum rated flow". If the difference between Set point 1 and Set point 2 is less than "6%" of maximum rated flow", the maximum Set value of hysteresis is (Set point 1 - Set point 2) divided by 2.  
\*2: When Set point 1 = Set point 2, chattering may occur.

Setting flow chart



\*1: Operate only the product with unit selction function (Model indication: without M).  
\*2: A set of value is not input, when accumulate pulse output mode.  
\*3: Depend on the setting of switch operation in initialize mode.  
\*4: Displayed in turn.  
\*5: Setting is available when Set point 1 < Set point 2.

Function selection mode

In measurement mode, press the MODE button , to display [F\_0]. This [F\_□] indicates the mode for changing each functional setting.

- Default settings
- The default settings are as follows.
- If this condition is acceptable, then keep these settings.

Item	Default Setting
[F_0]	Selection of display mode [ d_1] Display instantaneous flow
	Unit selection function *1 [ U_1] L/min
	Selection of output mode [oU1_0] Instantaneous output mode
	Input of Set point 1 50% of max. rated flow
	Input of Set point 2 50% of max. rated flow
	Input of hysteresis *2 [ 0]
	Selection of switch operation [oU1_n] Reverse output
	Key-lock function [ UnL] Unlocked
[F_1]	Selection of display mode [ d_1] Display instantaneous flow
[F_2]	Unit selection function *1 [ U_1] L/min
[F_3]	Selection of output mode [oU1_0] Instantaneous output mode
	Input of Set point 1 50% of max. rated flow
	Input of Set point 2 50% of max. rated flow
	Input of hysteresis *2 [ 0]
[F_4]	Selection of switch operation [oU1_n] Reverse output
[F_5]	Key-lock function [ UnL] Unlocked
[F_6]	Input of Set point 1 50% of max. rated flow
	Input of Set point 2 50% of max. rated flow
	Input of hysteresis *2 [ 0]
[F_7]	Selection of reference condition [ Anr] Standard condition
[F_8]	Accumulated value hold [ oFF] Not held

\*1: Operate only the product with unit selection function.  
\*2: Setting is available when Set point 1 < Set point 2.  
Not displayed when Set point 1 ≥ Set point 2.

Other functions

- Reset of the accumulated flow
- Reset to the default setting

To set each of these functions, refer to the SMC website (URL <http://www.smcworld.com>) for more information about other functions in detail.

Troubleshooting

Error indication

Error Name	Display	Type	Troubleshooting
Excessive instantaneous flow	- - - - -	Flow has exceeded the upper limit of the display flow range.	Reduce the flow.
Over current error	Err_1	The switch output load current is more than 80 mA (OUT1).	Turn the power off and remove the cause of the over current. Then turn the power on again.
System error	Err_2	The set data has been changed unexpectedly.	To reset, press the ▲ button for 6 seconds or longer while the ▼ button is pressed. Then set all data again.
	Err_3 Err_7	The internal circuit could be damaged.	Stop using and please contact SMC.
Excessive accumulated flow	9999 (When [ U_1] is selected) 999 (When [ U_2] is selected) Accumulated flow displayed (flashing)	Exceeds the range of the 2nd. turn of flow indication.	To reset the accumulated flow value, press the ▲ button for 6 seconds or longer while the ▼ button is pressed.

※: If the error cannot be reset after the above measures are taken, then please contact SMC.

Refer to the SMC website (URL <http://www.smcworld.com>) for more information about troubleshooting.

Specifications / Outline with Dimensions

Refer to the product catalogue or SMC website (URL <http://www.smcworld.com>) for more information about the product specifications and outline dimensions.

SMC Corporation URL <http://www.smcworld.com>  
Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN  
Phone: +81 3-5207-8249 Fax: +81 3-5298-5362

Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.  
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