Printer PR2080D

Specifications

■Introduction

Receiving flow rate pulse signal from flow meter, batch counter and so on, it prints totalized flow quantity per batch and total flow rate per setting time.

■Features

● Enabling 2 input flow rate pulse
● Indication 8 digits count and daily total, and 10 digits monthly total and total.
● Available for choose from 7 kind of indication unit.
● Depend on the kind of pulse signal, max input frequency can be set in 2 stages.
● By memorizing a flow meter factor, it can be inputted unscaled pulse. (option)
● The channel name can be preset. (option)
● Enabling confirmation of time by inner clock.
● Available for reprint of last print in case of miss-print or multiplicity print.
● Panel mounting or set on the desk.
● AC free power supply unit.

■Specifications

Pulse input

Number of input   2 channel (Photo-coupler insulation)

No-contact input

Frequency   200Hz or under (ON/OFF ratio 1:1)

Type of signal   Voltage or open-collector pulse signal

Signal level   H:9～24V   L:3V or under

Voltage & current Approx. 12V Approx. 6mA (with internal 12V power source)

Approx. 24V Approx. 12mA (with external 24V power source)

Contact input

Frequency   20Hz or under (ON/OFF ratio 1:1)

Voltage & current Approx. 12V Approx. 6mA (in case of using 12V internal power source)

Approx. 24V Approx. 12mA (in case of using 24V external power source)

Counter (No flow rate indication)

Count, daily total   8 digits counter (zero suppression print)

Monthly, total   10 digits counter (zero suppression print)

Scaling (option)

Totalize with unscaled pulse. Need flow meter factor.

Multiplying factor 0.1000～1.000

Dividing factor   1/1, 1/10, 1/100, 1/1000, 1/10000

Decimal point

Chose from without /0.0 /0.00 /0.000 (setting with switch)

Naming (option)

Requested names are set to each channels before delivery.

Standard name   Channel1: 1CH Channel2: 2CH

Letter   Alphanumeric character up to 3 digits max.

Unit

Chose from cubic measure unit, mass unit or without

Unit: mL, L, m^3, GAL, g, kg, t, without

Clock

Indication: Indication as print when power on or total flow rate print

Clock   Up to 31st December, 99, 23 hours 59 minutes 59 seconds

Leap year   Set with the last 2 digits of Gregorian calendar year and automatically renewed.

Time reference   Internal crystal oscillator

Daily difference: Within 4sec (0～40)

Reference value: Approx. 0.5sec (25±3)

Synchronization with supply frequency

Synchronize with commercial power supply frequency (50Hz / 60Hz Set with switch)

Synchronization with input signal

Synchronize with external transmitter

Signal level   H:9～24V   L:3V or under

Indication

Flash on and off every one second (Feed switch S6) LED indication (Red)

Operation

Setting procedure by manual operation switches (S3～S6)

S3: Left side (measuring): Normal measuring point

S4: Correct of clock with in ±30 sec

S5: Manual print

S6: Feed the paper (1 line)

S3: Right side (time setting): Setting for time, flow unit, and delay time.

S4: Adding volume, change measuring unit.

S5: Reduce volume, change measuring unit

S6: Print the setting, save the setting

Manual print

Enabling to check the total value with pushing S5 baton inside of the sub-panel

Print the count, daily total, monthly total, and total of both channels.

Auto print

Print the count, daily total, monthly total, and total of both channels at each set time interval with reference to 0:00 on the clock.

Interval time   1min, 5min, 30min, 1hr, 4hr, 12hr, 24hr, and no-function. (Setting with switch)

Resetting Count: Reset at each print

Daily total: Reset on 24:00 at end of day.

Monthly total: Reset on 24:00 at end of month.

Total: Not reset

Control input

Type of signal   No-voltage contact, or open-collector signal

Voltage & current Approx. 12V Approx. 6mA (with internal 12V power source)

Approx. 24V Approx. 12mA (with external 24V power source)

Signal length   50msec and over

● Print signal Count value for each channel will be printed and reset

Delay time of printing: Default setting is 3sec (for counting over-flow of batching)

Setting time: 0- 30sec

● Reset signal

Count, daily total, monthly total of both channels will be reset after print count, daily total, monthly total and total.

● Count inhibit signal

1. No totalizing is made while this signal is ON.

2. Total of both channels will be reset with reset signal ON in the same time. (Count, daily total, monthly total, total will be reset after print count, daily total, monthly total, and total)

Printing contents

Reset indication   R: reset   N: no reset

Example of manual print

```
00.00.00 00:00:00  MAN
1CH CNT    000000.00L   N
    DAY    000000.00L   N
    MON  00000000.00L   N
    TOT  00000000.00L   N

2CH CNT    000000.00L   N
    DAY    000000.00L   N
    MON  00000000.00L   N
    TOT  00000000.00L   N
```
↑ Feed the paper

Example of auto-print (example of end of month)

```
00.00.00 00:00:00  AUTO
1CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   N

2CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   N
```
↑ Feed the paper

Example of print from print signal (example of channel 1)

```
00.00.00 00:00:00  PRINT
1CH CNT    000000.00L   R
```
↑ Feed the paper

Example of print from reset signal

```
00.00.00 00:00:00  RESET
1CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   N

2CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   N
```
↑ Feed the paper

Example of total reset

```
00.00.00 00:00:00  T.RES
1CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   R

2CH CNT    000000.00L   R
    DAY    000000.00L   R
    MON  00000000.00L   R
    TOT  00000000.00L   R
```
↑ Feed the paper

Reprint function

Memorizing immediate data enable to reprint in case of miss-print or multiplicity print.

This memory will be erased when turn off the power.

Operation: Push S5 button while push S6 button.

Memory update: Memory will be updated when print out except for manual print.

Setting confirmation function

Scaled value, naming, flow unit, and delay time of printing of both channels can be checked and printed.

Operation: Turn on the power while push button S6.

Example of print

```
SCALE 1CH X0.3456 +100
      2CH X1.0000 +1
NAME  1CH ABC
      2CH EIF
UNIT  MASS
DELAY 03sec
```
↑ Feed the paper

Printing mechanism

Printing system   5 x7 dots print

Character size   Width 1.8mm x Height 2.5mm 24 digits

Speed   1 line/approx. 0.7 sec

Mechanism   M180 (EPSON), Life: Approx 1 million lines

Ink   Ribbon type ERC-22B (EPSON), Life: 0.3 million characters

Printing paper   Width 58mm x Length 22mm, rolled paper PR58 x 60

Life: Approx. 6,000 lines/roll. A red mark appears on the last 1m for service.

Backup battery   Lithium battery: ER3VC (Toshiba Battery Co., Ltd.)

Operates the clock and protects the totalized value while blackout. Working time: Approx. 7years (Time for replacement: 5years)

Power for transmitter 12V DC ±5%, 100mA

Insulation   500V DC 20MΩ and over (between power supply terminal and casing)

Withstand voltage 1500V AC, 1 minutes (test point is same as that of insulation resistance)

Noise resistance   Square wave noise by noise simulator 1000V (Noise width 1μs, Polarity ±, Application by synchronization with power source, Phase 0~360°)

Power   85~264V AC, 50/60Hz

Power consumption 20VA or under

Ambient temperature

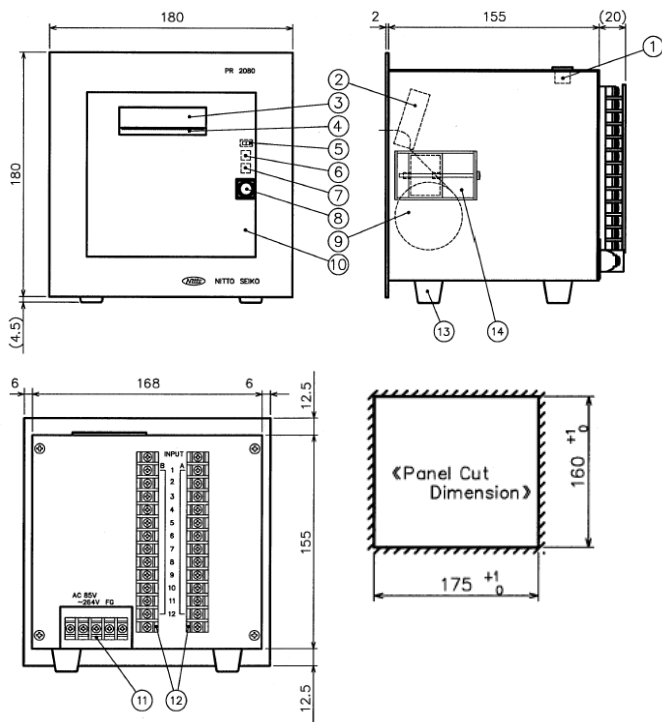0～+40°C (Without condensation)

Mass Approx. 3kg

Casing Material: Sheet metal, plated (front)

Coating: Munsell N1.5 Half-shine (black)

Sub-panel Acrylic plastic (smoky)

Accessories Printing paper: 2 rolls Ribbon cassette: 1 pc.

Mounting fixture: 1set

■External & panel cut dimensions

SW1-6	SW1-7	SW1-8	Contents
ON	ON	ON	Interval time of auto-print: non
OFF	ON	ON	Interval time of auto-print: 24Hr
ON	OFF	ON	Interval time of auto-print: 12Hr
OFF	OFF	ON	Interval time of auto-print: 4Hr
ON	ON	OFF	Interval time of auto-print: 1Hr
OFF	ON	OFF	Interval time of auto-print: 30min
ON	OFF	OFF	Interval time of auto-print: 5min
OFF	OFF	OFF	Interval time of auto-print: 1min

SW2	Setting	Contents
SW2-1	ON	Input frequency in 1CH: Max. 20Hz
	OFF	Input frequency in 1CH: Max. 200Hz
SW2-2	ON	Count direction of 1CH: Setting Low (H→L)
	OFF	Count direction of 1CH: Setting High (L→H)
SW2-3	ON	Input frequency in 2CH: Max. 20Hz
	OFF	Input frequency in 2CH: Max. 200Hz
SW2-4	ON	Count direction of 2CH: Setting Low (H→L)
	OFF	Count direction of 2CH: Setting High (L→H)

No.	Contents	No.	Contents
1	Setting switchs SW1, SW2	8	Lightning push-switch S6
2	Print Mechanical	9	Roll paper
3	Paper cutter	10	Sub-panel
4	Printed paper outlet	11	Turminal of power input
5	Select-switch S3	12	Terminal of inputo or output
6	Push-switch S4	13	Rubber pods
7	Push-switch S5	14	Mounting fixture

Setting Switch
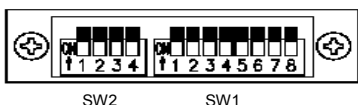
SW1	Setting	Contents
SW1-1	ON	Synchronization of internal frequency: 50Hz
	OFF	Synchronization of internal frequency: 60Hz

SW1-2	SW1-3	Contents
ON	ON	Cubic measure unit: GAL (without)
OFF	ON	Cubic measure unit: m^3 (t)
ON	OFF	Cubic measure unit: L (kg)
OFF	OFF	Cubic measure unit: mL (g)

Unit inside of the ( ) can be changed as mass unit.

SW1-4	SW1-5	Contents
ON	ON	Decimal points: 0.000
OFF	ON	Decimal points: 0.00
ON	OFF	Decimal points: 0.0
OFF	OFF	Decimal points: non

■Action

● Turn on the main power

・ Printing time and Flash on and off every one second with red light when turn on the power.

If time is different, please adjust with time setting.

● Time setting and change the setting.

・ Do time adjustment within ±30sec with S4 button switch. Resetting of seconds only, for a difference less than 30 seconds. In the case of a difference of 30 seconds and over, reset seconds and carry up to minute.

・ Turn select switch S3 to the time setting (right side) and adjust the time difference or change the setting.

(1) Minute adjustment: After adjust with S4 (+), S5 (-), save with pressing S6 button.

(2) Hour, day, month, year adjustment: same procedure.

(3) Indication unit setting: Change with S4 (+) and confirm with pushing S6.

(4) Delay time of 1st digit setting: Same procedure as minute adjustment.

(5) Delay time of 2nd digit setting: Same procedure as minute adjustment.

Turn select switch S3 to the measure (left side) and finish the setting.

● Counting action

・ After turn on power, count pulse signal which input to 1CH or 2CH.

・ When count inhibit signal is ON, stop counting.

● Printing action

・ There are 5 kinds of printing function as below, and kind of printing function is printed in right side of time.

(1) Manual print (MAN)

(2) Auto-print (AUT)

(3) Print from print signal (PRINT)

(4) Print from reset signal (RESET)

(5) Print when total reset (TRES)

・ In manual print can check the count value of that time. No reset after print.

・ Reset after print except for manual print. In case of reset, "R" is printed on right side of the paper. In case of No reset, "N" is printed on right side of the paper.

・ In case of use only 1CH etc, the channel of which value is zero is not printed. In this case, usable as a printer only for 1CH

● Reprint action

・ While pressing switch S6, press switch S5, and available for reprint of last print. Please use in case of miss-print or multiplicity print.

・ The contents of memory are updated by new printing except for manual print and erased at power down.

■Terminal arrangement

● Signal terminal block

N o.	Signal Name		N o.	Signal Name
B 1			A 1	Flow Signal Input CH.1
B 2			A 2	Flow Signal Input CH.2
B 3			A 3	Print Signal Input CH.1
B 4	0V COMMON		A 4	Print Signal Input CH.2
B 5			A 5	Reset Signal Input
B 6			A 6	Count Inhibit Signal Input
B 7			A 7	NC
B 8			A 8	Power Frequency Output *1
B 9	+12〜24VDC Input *3		A 9	+12VDC Output *2
B 1 0			A 1 0	＋ Input(For Time synchro)
B 1 1	0V COMMON		A 1 1	±Input(For Time synchro)
B 1 2			A 1 2	－ Input(For Time synchro)

*1: In case of synchronization with no-commercial power source, please take off the short

circuit of A8 and A12.

*2: Input circuit, or power source output for external receiver. (For external: 100mA max.)

*3: In case of using external power source for input circuit, please take off the short circuit

of A9 and B9, and connect external power to B9.
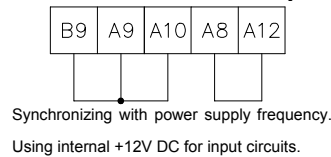
● Power source terminal block

No.	Signal Name
N	Power AC85〜264V
L	
FG	GND

■Wire connection

● Power source connection

N	L	FG

AC85〜
264V
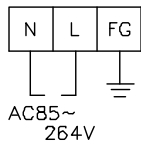
●Connection of usual delivery

B9	A9	A10	A8	A12

Synchronizing with power supply frequency.

Using internal +12V DC for input circuits.
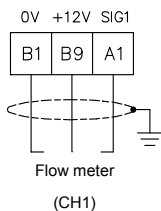
● Pulse input circuit
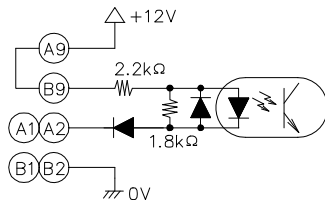
● Pulse input connection (Example of CH1)

(Use the shielded cable)

No-contact input

Case of non-contact 12V pulse flow meter
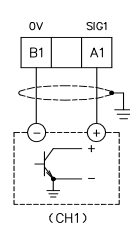
0V	+12V	SIG1
B1	B9	A1

Flow meter

(CH1)

Case of non-contact 12V pulse signal

0V		SIG1
B1		A1

+12V

(CH1)

Contact input

0V	SIG1
B1	A1

（CH1）
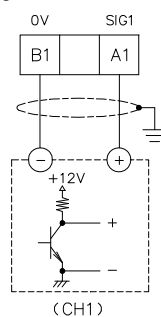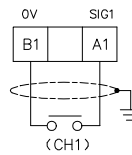
Open-collector input

0V	SIG1
B1	A1

（CH1）

● Control input connection

(Use the shielded cable)

Print signal (CH1)

0V	PRINT1
B3	A3

（CH1）

Reset signal

0V	RESET
B5	A5

Count inhibit signal

0V	INH.
B6	A6
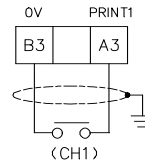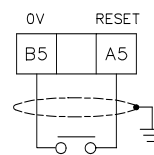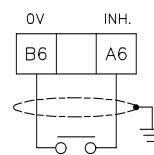
Total reset signal

0V	RESET	INH.
B5	A5	A6
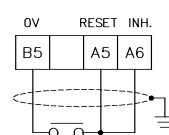
■Model

Model	Specification code		Remark
PR	・・・・・・・・・・・・・・・・・・		Counting printer
	2080D	・・・・・・・・・・	Version symbol
Additional specification (option)	/NM	・・・・・	Add naming option
	/SC	・・・・・	Add scaling option
	/E	・・・・・	English print
	/Z□	・・・・・	Another special software option (□ is series number)

◆◆◆◆◆Matters to be specified at placing of order◆◆◆◆◆

1. Model and specification code
2. Input pulse unit and indication unit.

▼The contents given here are subject to change without notice.