watanabe

# Automation Applications

New Product

## WSPF Series
Signal converters

## WPMZ Series
LCD Graphical Panel Meter

| YouTube | |
|---|---|
| Product Introduction | https://youtu.be/rBL784EB_Kg |
| WPMZ Operation | https://youtu.be/1Fro4qzebQY |

2020, Jun
Ver.1

# Watanabe
# Automation Applications

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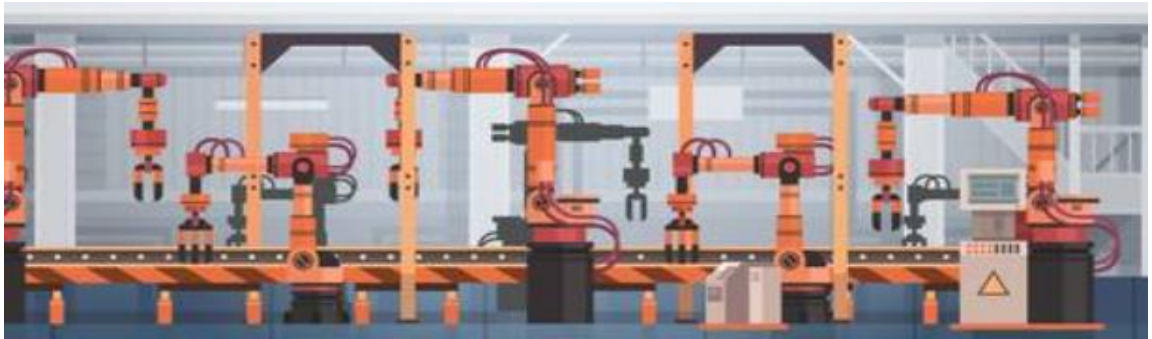
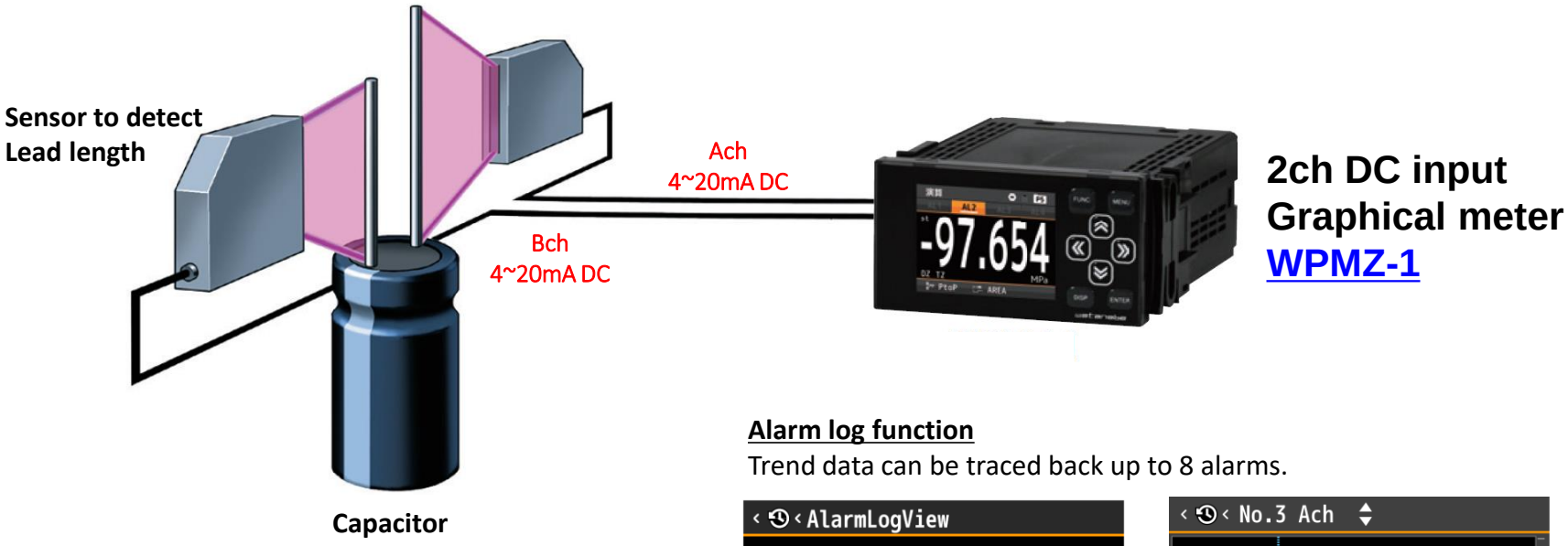


# 1. WPMZ-1 Error detection in inspection process

## Input 2ch sensor signal (Ach, Bch) to WPMZ-1

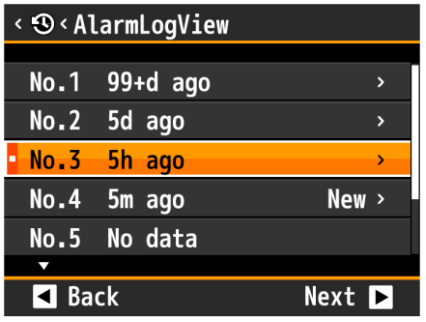
1) Capacitor lead length inspection can be performed using the arithmetic function (A-B).
2) In addition, it is equipped with an alarm log function that retains trend data before and after the comparison judgment alarm is generated.

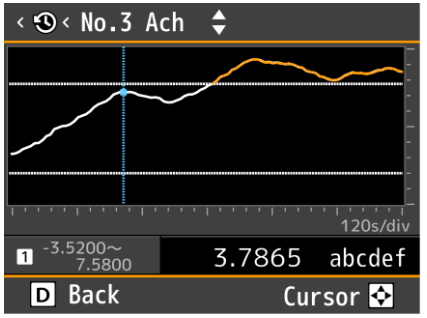



**2ch DC input**
**Graphical meter**
**WPMZ-1**

**Alarm log function**

Trend data can be traced back up to 8 alarms.

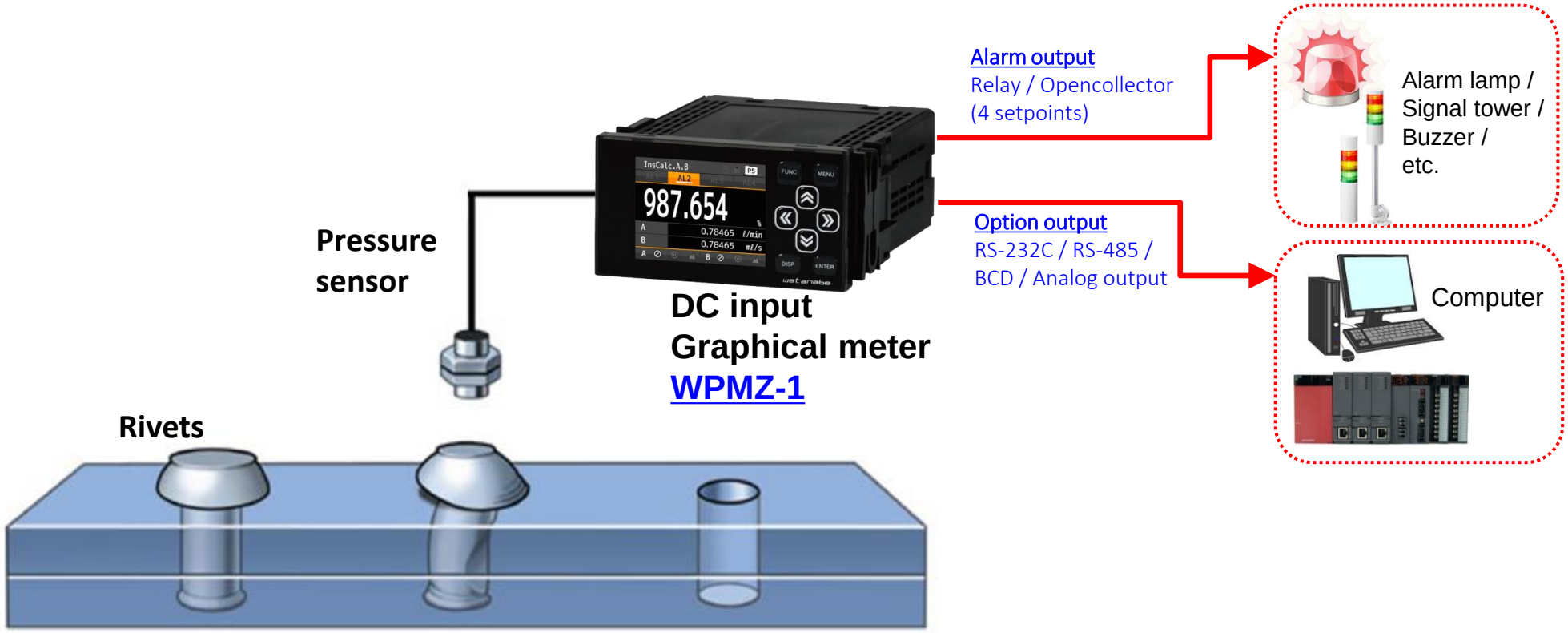


# 2. WPMZ-1 Inspection of driving condition of rivets

**Able to store several kinds of OK judgement range by using pattern select function**

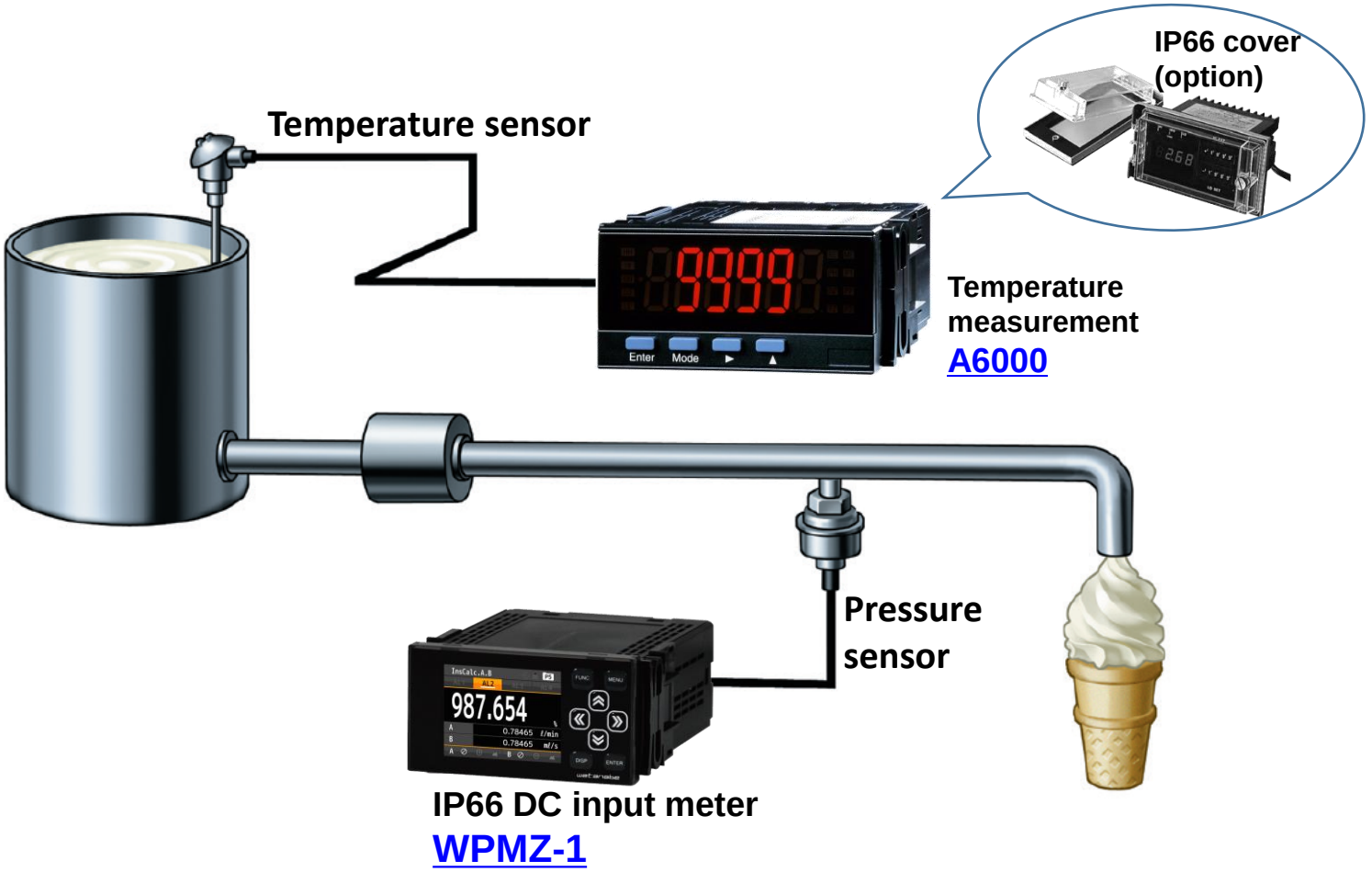
1) The pattern select function can store 8 pattern of HH/HI/LO/LL set points and scaling settings.
2) Tolerance range can be switched instantly by switching the pattern from the front SW or rear terminal, which is very convenient for flexible lines where multiple materials are mixed.



# 3. WPMZ-1 & A6000 Food process management

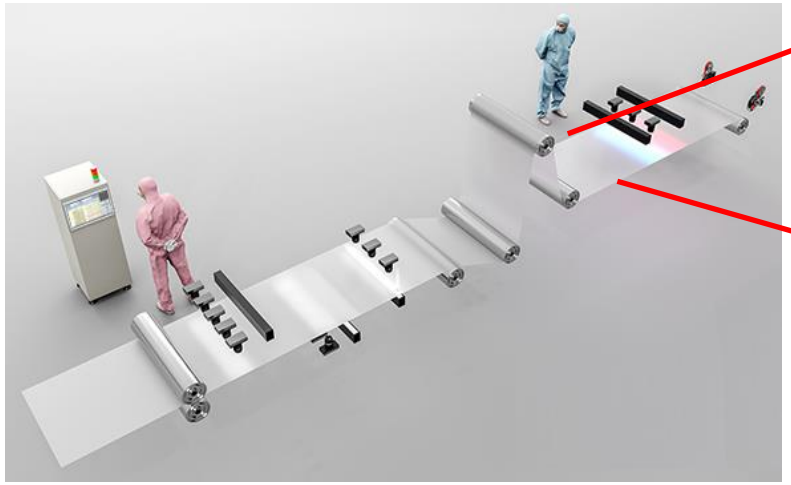
**Dustproof/waterproof case structure allows cleaning from the front of the panel**

1) WPMZ-1 conform IP66 standard. Useful for measuring temperature, pressure and measurement.
2) A6000 has IP66 cover by accessories for Dustproof/waterproof.



# 4. WPMZ-3 Metal foil tension control

**In order to measure the tension on the left and right of the metal foil,
able to display 2ch value from two load cells by 1pc WPMZ-3.
Also display average calculation display of 2 channels to control left and right balance.**



Load cell

Ach
mV/V

Load cell

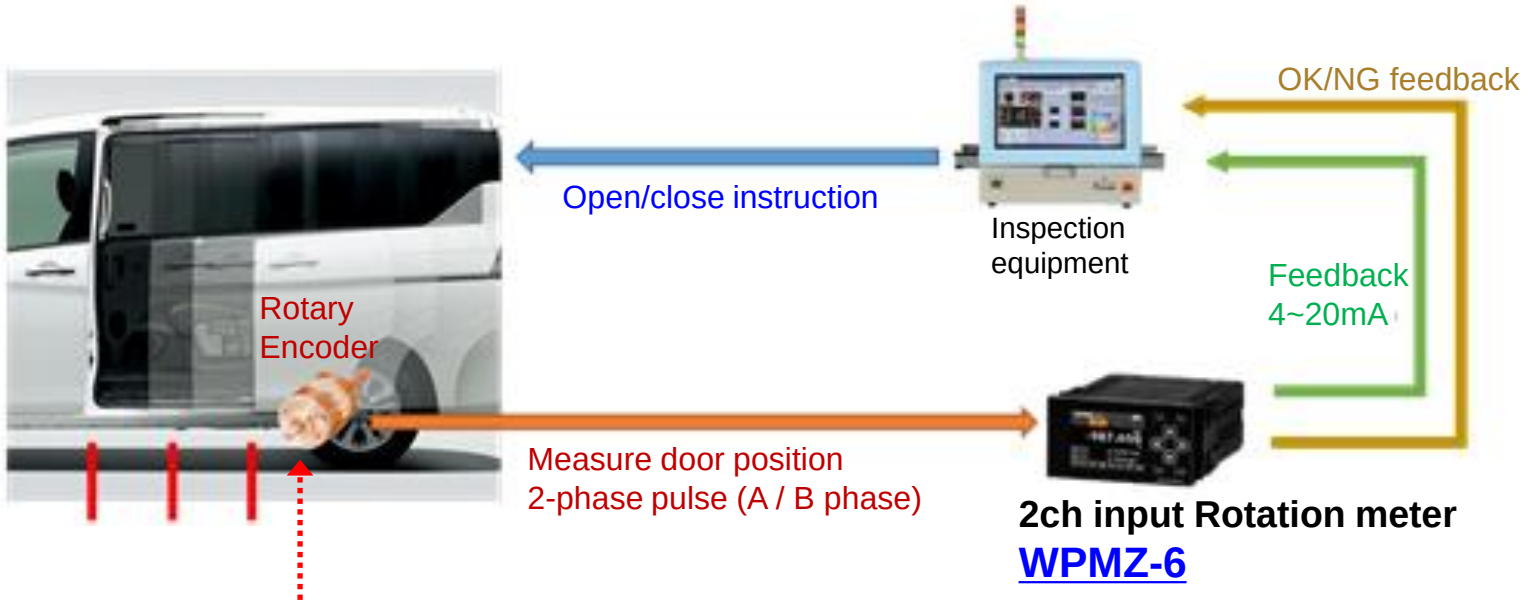
Bch
mV/V

**Display Ach & Bch value.
Also display calculate Average of 2ch.**

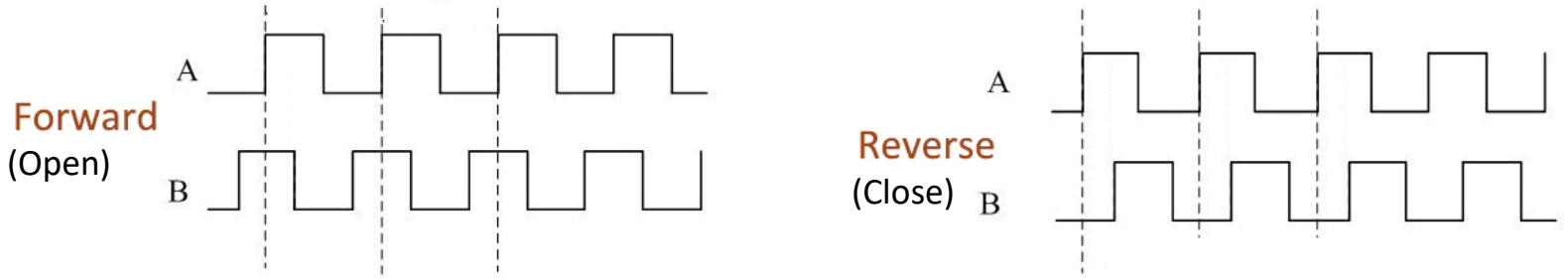
**2ch input Load cell meter**
**WPMZ-3**

# 5. WPMZ-6 Control open/close of Power sliding door motor

**Detect open/close of power sliding door by 2-phase pulse of rotary encoder.**
**WPMZ-6 Displays the torque, speed, and angle of the power sliding door motor.**

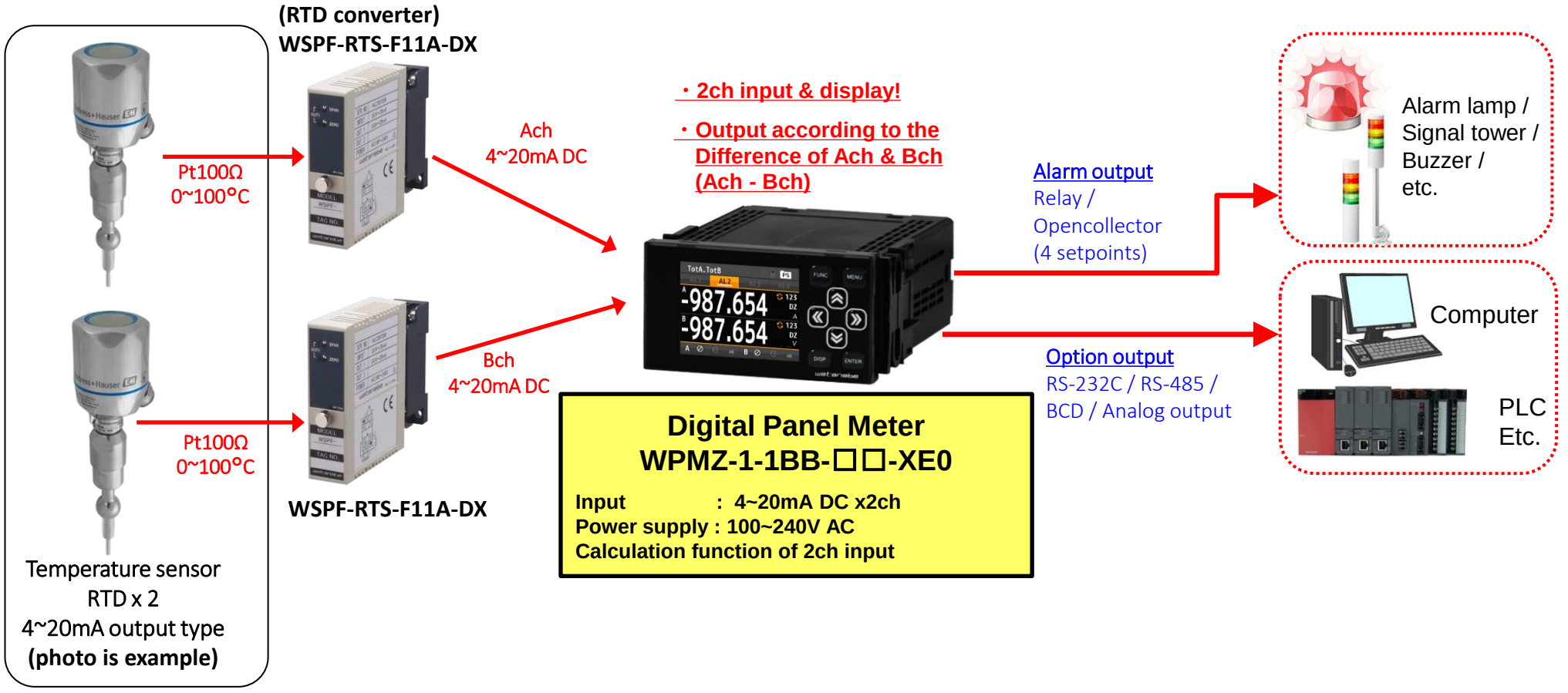



**2-phase pulse, detect open and close of door position**

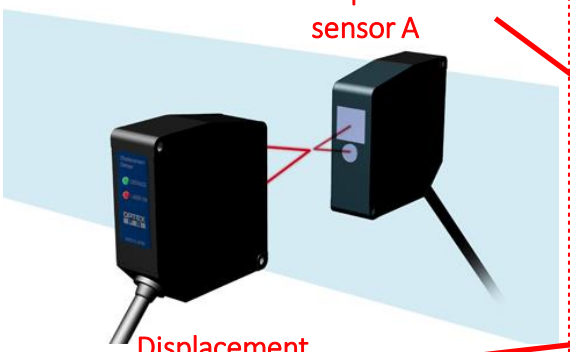


# 6. WPMZ-1 2ch Temperature signal input

1) Convert RTD signal to 4-20mA by RTD converter WSPF-RTS-F11A-DX.
2) Input 2ch, Display Ach & Bch value in 1 display.
3) WPMZ-1 can Calculate difference of 2ch input (Ach - Bch).
If calculation result is below or over setpoints (4 setpoints setting available)
when one of RTD broken etc., then Relay signal will output to detect.



# 7. WPMZ-1 Thickness measurement by 2ch input



Displacement sensor A

Displacement sensor B

4~20mA

4~20mA

Calculation result of 2 ch input
=Thickness value

WPMZ-1-4BB-☐☐-XE0

- 2ch input 4-20mA
- Various calculation

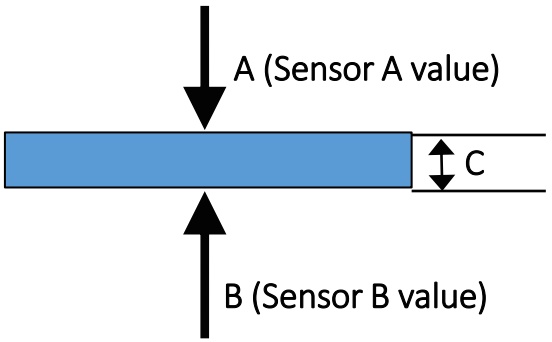
Alarm output
Relay /
Opencollector
(4 setpoints)

Alarm lamp /
Signal tower /
Buzzer /
etc.

Option output
RS-232C / RS-485 /
BCD / Analog output

Computer

PLC
Etc.

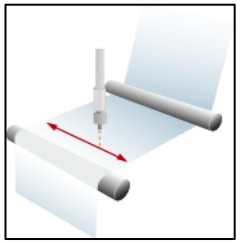


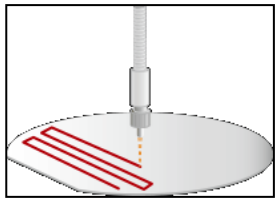

**Example of Calculation method**

**(B-A)+C) x K = Thickness value**

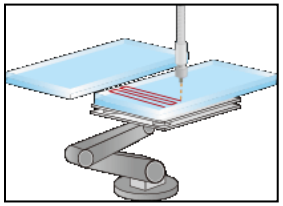
*C & K can set value by setting.
If you want to display zero at 3mm for example,
set -3 as C by setting.
Then calculation result will be difference from reference.

# 8. WPMZ-1 Thickness measurement with displacement sensor



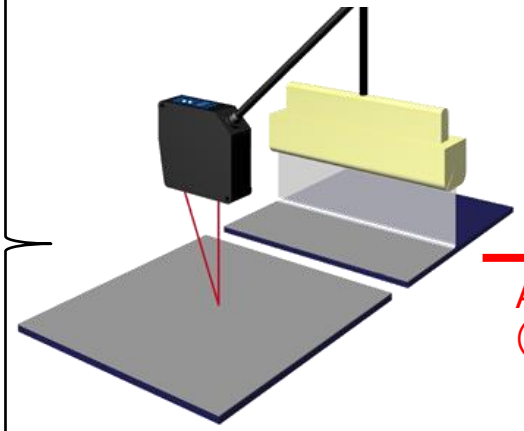


Wafer



FPD

Plating



Thickness measurement
Displacement sensor

Analog signal
(current / voltage)

**WPMZ-1**

Measure integrating current, and outputs when Integrating current is at constant value

# 9. WPMZ-3 Weight measurement of Conveyor

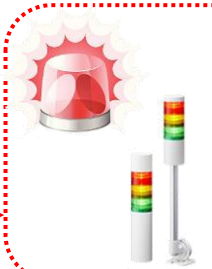
Conveyor at Site

## Weight measurement of Conveyor at Site

Load cell

x2ch
Load cell
input

Alarm output
Relay / Opencollector
(4 setpoints)



Alarm lamp /
Signal tower /
Buzzer /
etc.

Option output
RS-232C / RS-485 /
BCD / Analog output

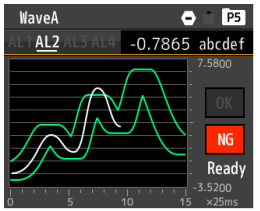
Computer

PLC
Etc.

**Strain gauge meter WPMZ-3**

- 2ch Load cell signal input
- 2ch calculation function
- LCD Display
- Waveform comparison
- Multi hold function
- Alarm output (Relay / Open collector)
- Option output
  (BCD / Analog / RS-232C /RS-485)

Waveform comparison



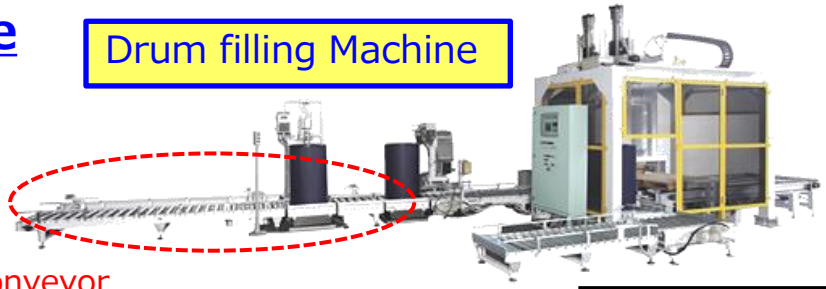
# 10. WPMZ-5 2ch input, Conveyor rotation / speed

## WPMZ-5 Application : Conveyor

**Rotation and Speed** measurement of conveyor by WPMZ-5

**Example**

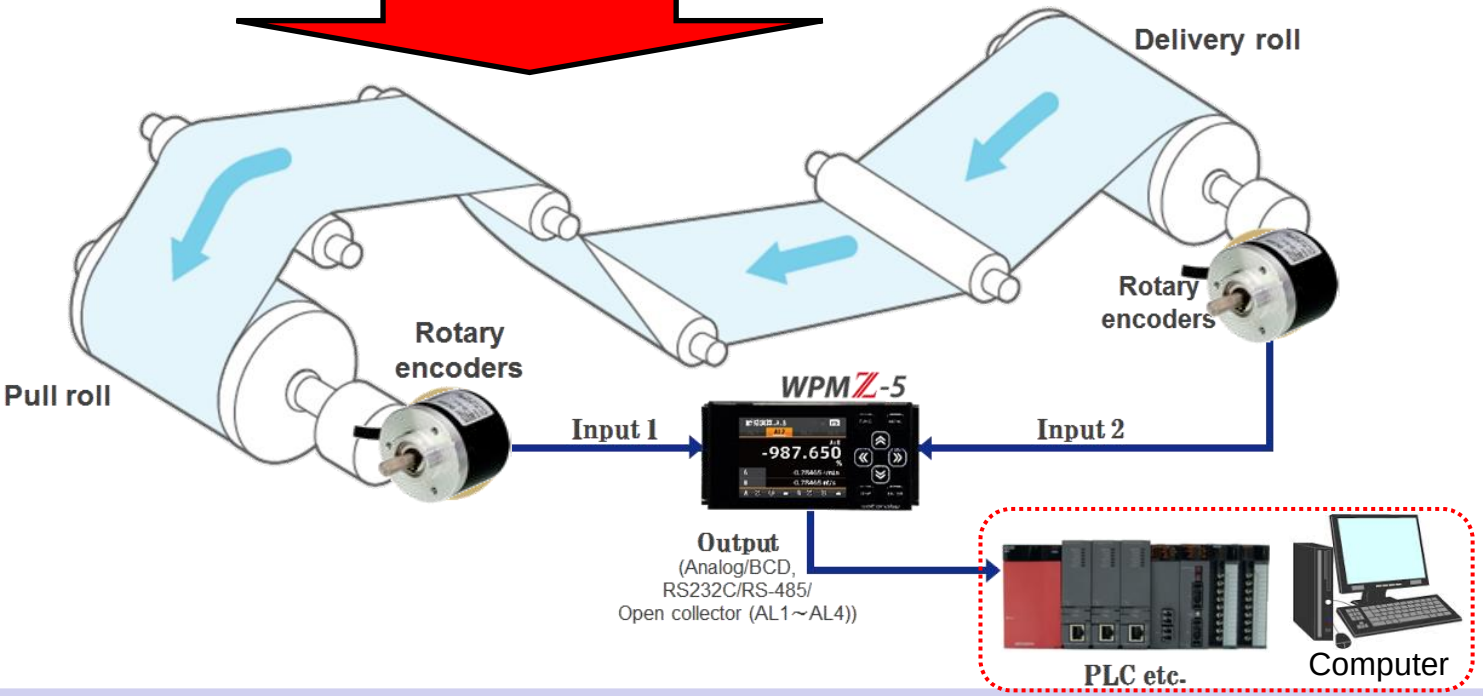
Drum filling Machine



Conveyor

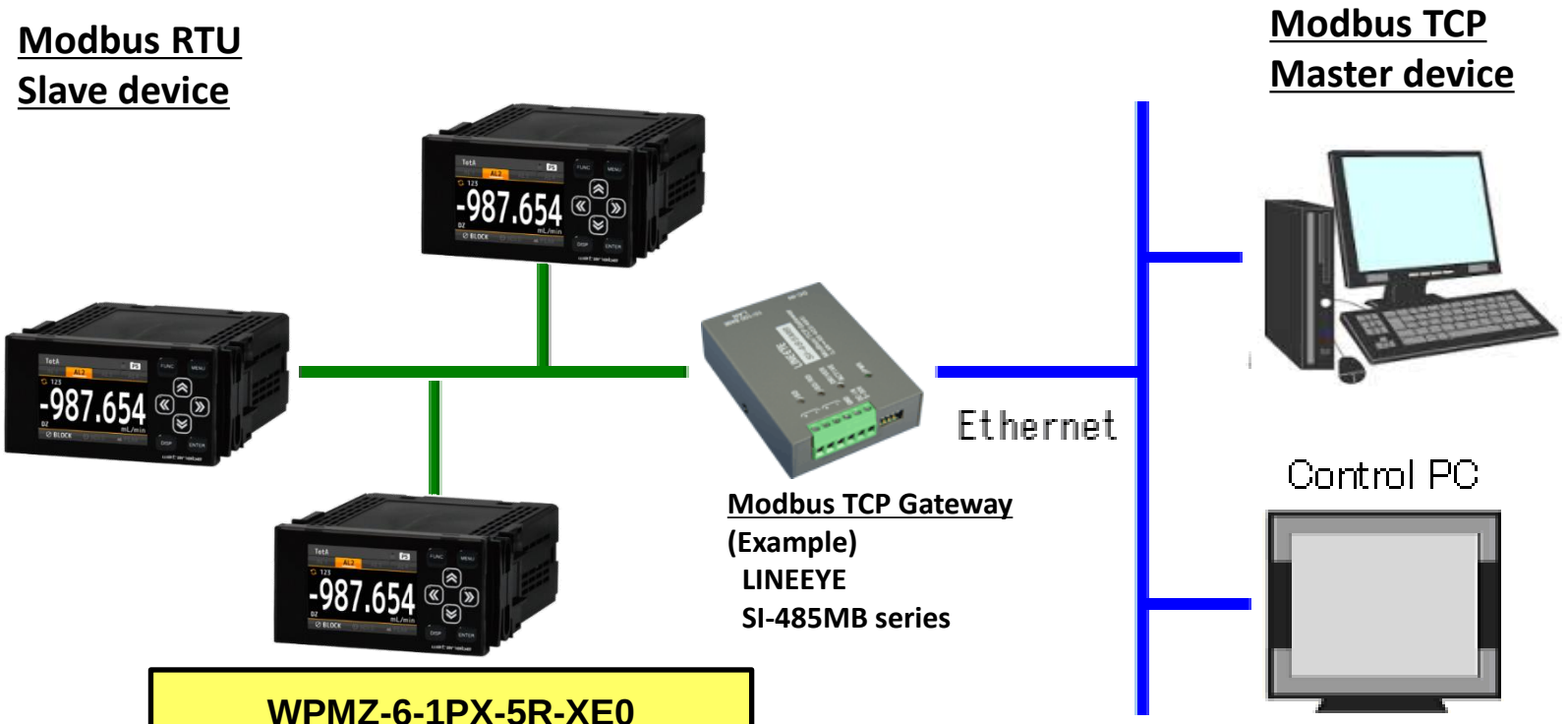
Difference of Conveyor speed

| 2 input Calculation | Calculation method |
|---|---|
| Absolute ratio | (B/A)×100 |
| Relative error | (B/A-1)×100 |
| Subtraction | B-A |
| Density | (B/(A+B))×100 |
| Sum | A+B |



# 11. WPMZ-6 with Modbus RTU / TCP IP

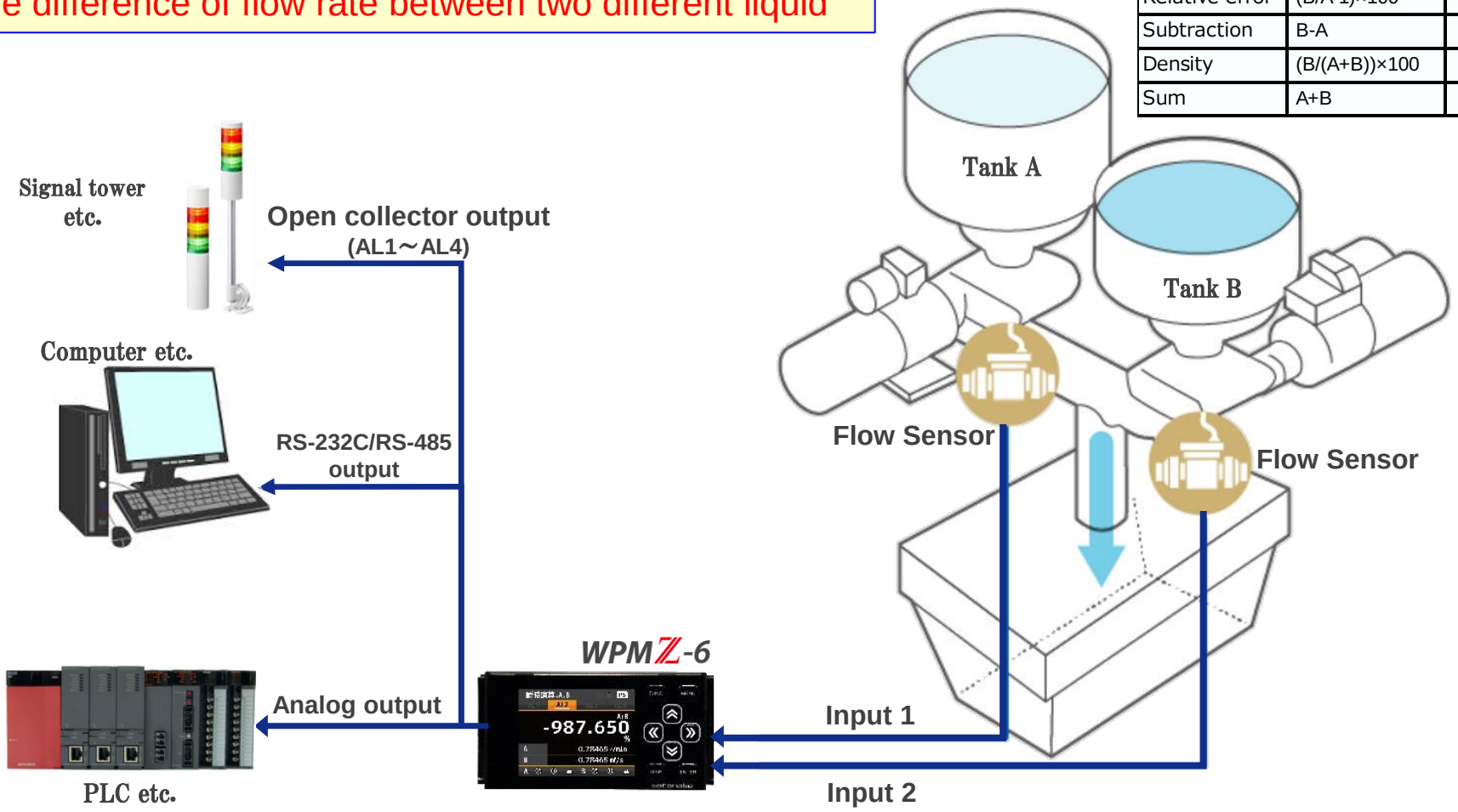
**Connection of MODBUS TCT master and MODBUS RTU slaves (WPMZ-6)**




**WPMZ-6-1PX-5R-XE0**

**Input : 1ch Pulse input**
**Option output : RS-485 Modbus RTU**
**Power supply : 100~240V AC**

# 12. WPMZ-6 Tank Flow measurement

Stabilize the mixing process by monitoring
the difference of flow rate between two different liquid

| 2 input Calculation | Calculation method | WPMZ-6 | |
|---|---|---|---|
| | | Instantaneous | Totalized |
| Absolute ratio | (B/A)×100 | ○ | × |
| Relative error | (B/A-1)×100 | ○ | × |
| Subtraction | B-A | ○ | ○ |
| Density | (B/(A+B))×100 | ○ | × |
| Sum | A+B | ○ | ○ |