Company Introduction

Tokico System Solutions, Ltd.

2020-05-07 (rev.00)
Company History
1937  **TOKYO KIKI KOGYO LTD** was established (already in HITACHI group)

1950  **TOKICO YUKI LTD.** was established
      The beginning of **TOKICO** brand
      (Construction of Gas station, Sale of gasoline dispenser)

1964  **TOKYO KIKI KOGYO** changed the name to **TOKICO LTD.**

1966  **TOKICO MAINTENANCE** was established
      (Maintenance, Service of products.

1998  **TOKICO YUKI + TOKICO MAINTENANCE = TOKICO TECHNOLOGY LTD.**

2002  **TOKICO** (Measuring Equip Div.) merged into
      **TOKICO TECHNOLOGY LTD.**

2009  **TOKICO** (Automotive components div.) was merged into
      Hitachi Automotive Systems, Ltd. (Automotive components section)
      *1st year of the aggressive overseas business of measuring equipment*

2015  **TOKICO TECHNOLOGY** changed the company name to
      **HITACHI AUTOMOTIVE SYSTEMS MEASUREMENT, LTD.**

2019  New **TOKICO** begins…
Product Application
Products Application for Oil Supply Infrastructure

- **Refinery**
  - Pipeline in the refinery
  - Turbine meter
  - Vertical type non-floatation positive displacement flow meter

- **Oil terminal**
  - Main control computer
  - Lorry
  - Lorry stage
  - Intelligent vortex flowmeter
  - Intelligent turbine flowmeter

- **Airport**
  - Oiling facility for aircraft

- **Port**
  - Flowmeter for shipping and boilers
  - Oiling facility for marine

- **Lorry unloading system**

- **Gas station**
  - Gasoline dispenser
  - Lorry equipped with lorry
  - Vapor recovery system
  - Dispenser for emergency use

- **Advanced TOKICO Dispenser by HITACHI**
  - High Type Standard Model for Various Fuel (8 Nozzles)
  - High Type Standard Model for Various Fuel (8 Nozzles)
  - Low Type Heavy Duty Model (High Speed)
  - LPG Dispenser

- **LPG station**
  - LPG station
  - LPG dispenser

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Products Application for Gas Supply Infrastructure
Business Summary
BUSINESS SUMMARY

Location of Office and Factory

<table>
<thead>
<tr>
<th>Basic Info</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Office</td>
<td>Kawasaki, Kanagawa</td>
</tr>
<tr>
<td>Factory</td>
<td>Kakegawa, Shizuoka</td>
</tr>
<tr>
<td>Branches</td>
<td>55 branches</td>
</tr>
</tbody>
</table>

Head office, Kawasaki

Shizuoka Works, Near Mt. Fuji
Business Summary

Sales Ratio & Our Products

Sales Ratio (FY2019)

- Gas station-related 79%
  - Dispenser, New energy, Construction of station, Maintenance

- Measuring Equipment 21%
  - Flowmeter, Gas equip, Maintenance

- Gas station 79%

Industrial Measuring Equip.
- Domestic share: 30% (No. 2)
  - Industrial flowmeter for refinery use

- Measuring Equip. 21%
  - Dispenser, New energy, Construction of station, Maintenance

- Gas station-related 79%
  - Dispenser, New energy, Construction of station, Maintenance

- Gas station 79%

- Domestic share: 40% (No. 2)
  - Dispenser, New energy, Construction of station, Maintenance

- LPG Dispenser
  - Domestic share: 40% (No. 2)
  - In Thailand 60% (No. 1)

- Hydrogen Dispenser
  - Domestic share: 40% (No. 2)

- CNG Dispenser
  - Domestic share: 60% (No. 1)

- Environmental business (Leakage prevention, etc.)

- Construction
Oil Delivery Solution in Upstream

Idemitsu’s Oil refinery in Tokyo (Tokico’s Turbine meter)

Oil Delivery & Unloading System
For effective & on-time delivery
No oil contamination!
Station Management Solution For Effective Control

Tokico can also provide the total management solution for the station in Japan.

① Fueling status can be check in the office
② Remote check by wireless connection
③ Multiple stations can be controlled at the same time
After Sales Service – To be the most-trusted company in Japan

MAIN CONCEPT OF BUSINESS: DEVOTE TO THE CUSTOMERS AND PROTECT THEIR BENEFIT.

One of the important points for Gasoline station is after-sales service. Tokico provides full support not only for the dispenser but also any troubles happening in stations. We try to do the activities in your country on the same concept.

*Maintenance.*
More than 50 branches all over Japan to cover every customers. 200+ technicians are ready to visit within 24 hours.

*Support Center.*
Opens 24 hours and provides full support in case of emergency.
Products and Service for Eco-friendly World

Tokico also provides the eco-friendly products & services to the customers for the better & clean station operation.

- Underground tank
- Underground tank leakage test and maintenance
- Tank level gauge (produced by SKK)
- Eco cap for vent pipe (produced by SKK)
- Barrier pipe (Resin pipe)

Improve customer’s satisfaction in terms of Safety and Economic
Measuring Equipment

May 2020

TOKICO SYSTEM SOLUTIONS, LTD.
Type of Flowmeter

Ultrasonic Vortex Type

For Fluid

Turbine Type

Insertion type Turbine meter

Roots Type

For Gas

Roots meter

Turbine meter

New

Ultrasonic meter
Ultrasonic Vortex Flowmeter
Measurement Principle

Direct pulse output of vortex

Vortex shedding bluff body
Sensor
Karman Vortex

Resin Type
SUS Type
<Resin Type>

Pocket-less structure by ultrasonic sensing.

Suitable to measure pure water & ultra-pure water.

PFA resin type

Ultrasonic vortex flowmeter

Integral-type structure

Sensor does not contact the fluid.
## Product Range

<table>
<thead>
<tr>
<th>Series (Material)</th>
<th>size</th>
<th>Flow range [L/min]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PFA Series</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10mm</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>15mm</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>20mm</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>25mm</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td><strong>PPS Series</strong></td>
<td>15mm</td>
<td>3 40</td>
</tr>
<tr>
<td><strong>Application:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Semiconductor making equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Display making equipment, etc</td>
<td></td>
</tr>
<tr>
<td><strong>PEEK Series</strong></td>
<td>15mm</td>
<td>10</td>
</tr>
<tr>
<td><strong>Application:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Chemical, pure water, etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20mm</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td><strong>PPS Series</strong></td>
<td>25mm</td>
<td>29</td>
</tr>
<tr>
<td><strong>Application:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Chemical, pure water, etc</td>
<td></td>
</tr>
</tbody>
</table>

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Application

Control, mixture of the chemical

(Semi-conductor making equipment)

《Main Usage》
Temp. controlling machine, semi-conductor making equipment etc

• Control of the chemical, pure water
• Flow range control (Density control)
Wafer cleaning system

Wet-Bench type Wafer cleaning system

Chemical Solution A → Pure Water → Chemical Solution B → Pure Water

Flow rate: 0.5 to 10L/min
Model: FUBB3, FUBB4

Single-Wafer type cleaning system

Chemical Solution → Pure Water

Flow rate: 30 to 100L/min
Model: FUBB6, FUBB8
### Ultrasonic Vortex Flowmeter (SUS series)

#### SUS Series

| Accuracy               | ±1%RD  
|------------------------|--------
| (±0.5%RD available for 40~100A) |        |
| Temp.                  | −20~120℃ (Fluid temp.) |
| Press.                 | 5MPa (Max. press) |
| Kinematic viscosity    | 20mm²/s (Max. visco) |
| Connection             | Wafer, Flange |
| Material               | Housing SUS316 |
|                        | Sensor SUS316L |

#### Indication

- 8桁LCD (Total, Instantaneous)

#### Pulse output
- Open collector

#### Analog output
- 4~20mA (Instantaneous)

#### Alarm
- Open collector (High, low alarm)

#### Power
- DC24V

#### Ex. Proof
- ExdⅡBT4

#### Ambient temp.
- −20~60℃

### LINE UP

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Flow rate (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25mm</td>
<td>1.7</td>
</tr>
<tr>
<td>40mm</td>
<td>2.2</td>
</tr>
<tr>
<td>50mm</td>
<td>2.5</td>
</tr>
<tr>
<td>80mm</td>
<td>4.6</td>
</tr>
<tr>
<td>100mm</td>
<td>7.4</td>
</tr>
</tbody>
</table>

- Fluid: Water
- Accuracy: ±1%
Roots Flowmeter
《Features》

1. One pair of rotors rotate without mutual contact
   - Rotor is free from abrasion
   - Accuracy degradation can be minimized

2. Driving gears engage with each other
   - Smaller pressure loss compared to other PD meters because rotation speed is more even.
   - Less noise and vibration

《Standard spec》

<table>
<thead>
<tr>
<th></th>
<th>Accuracy</th>
<th>Temp.</th>
<th>Press.</th>
<th>Viscosity</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±0.5%</td>
<td>−5～150℃ (Fluid temp.)</td>
<td>2.5MPa (Max. press.)</td>
<td>500mPa · s (Max. viscosity)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>±0.2%</td>
<td>−20～60℃ (Ambient temp.)</td>
<td></td>
<td></td>
<td>Body FC250, FCD400, SCPH2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Roots FC200, AC7A, or ADC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Roots shaft SUS416 chrome coating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bearing FC or C5191</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Driving gear SUS316</td>
</tr>
</tbody>
</table>
Structure
### Product Range

<table>
<thead>
<tr>
<th>Size</th>
<th>Flow rate (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25A</td>
<td>1.5 3.5</td>
</tr>
<tr>
<td>40A</td>
<td>2 6</td>
</tr>
<tr>
<td>50A</td>
<td>3 13</td>
</tr>
<tr>
<td>50/80A</td>
<td>8 35</td>
</tr>
<tr>
<td>80A</td>
<td>12 50</td>
</tr>
<tr>
<td>100A</td>
<td>20 120</td>
</tr>
<tr>
<td>100A (Lateral non-fluctuation type)</td>
<td>25 150</td>
</tr>
</tbody>
</table>

![Image of Roots flowmeter](image1)

**Roots flowmeter**

- **Fluid:** gasoline
- **Accuracy:** ±0.2%

![Image of Vertical type non-fluctuation roots flowmeter](image2)

**Vertical type non-fluctuation roots flowmeter**

<table>
<thead>
<tr>
<th>Size</th>
<th>Flow rate (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150A</td>
<td>40 240</td>
</tr>
<tr>
<td>200A</td>
<td>70 380</td>
</tr>
<tr>
<td>250A</td>
<td>100 650</td>
</tr>
<tr>
<td>300A</td>
<td>200 1000</td>
</tr>
<tr>
<td>350A</td>
<td>300 1300</td>
</tr>
</tbody>
</table>
**Features of compensator**

◎ Compensation by temperature and pressure. Suitable for compensating JIS/crude oil, fuel oil, lubricant, and LPG. Also suitable for compressing coefficient compensation of gas.

◎ Compact design

144 × 72 × 210 (cm)

◎ Measurement result shown in real time. Trend chart for flow rate, temperature, and pressure can be shown. Also, writing to USB memory is available.

◎ 3.5 inch color LCD

Highly visible and user friendly interface.
Turbine Flowmeter
(Potter Meter)
Potter meter is one of the most typical turbine flowmeter. It has high stability and long durability by adopting floating rotor structure.

### 《Standard Spec.》

<table>
<thead>
<tr>
<th></th>
<th>±0.5%</th>
<th>or</th>
<th>±0.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temp.</strong></td>
<td>−250~500°C (Fluid temp.)</td>
<td></td>
<td>−20~60°C (Ambient temp.)</td>
</tr>
<tr>
<td><strong>Press.</strong></td>
<td>4.16MPa (Max. press.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Kinetic viscosity</strong></td>
<td>5mm²/s (Max. Viscosity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>Housing</td>
<td>SUS304</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blade</td>
<td>SUS631 or SUS430</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bearing</td>
<td>Super hard alloy</td>
<td></td>
</tr>
</tbody>
</table>
Product Range

<table>
<thead>
<tr>
<th>Size</th>
<th>Flow rate (m³/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20A</td>
<td>1.2 2.7</td>
</tr>
<tr>
<td>25A</td>
<td>1.8 4.5</td>
</tr>
<tr>
<td>25A</td>
<td>2 8</td>
</tr>
<tr>
<td>25A</td>
<td>4.5 18</td>
</tr>
<tr>
<td>50A</td>
<td>6 26</td>
</tr>
<tr>
<td>50A</td>
<td>8 36</td>
</tr>
<tr>
<td>50A</td>
<td>10 72</td>
</tr>
<tr>
<td>80A</td>
<td>17 110</td>
</tr>
<tr>
<td>80/100A</td>
<td>23 180</td>
</tr>
<tr>
<td>100A</td>
<td>40 340</td>
</tr>
<tr>
<td>150A</td>
<td>63 580</td>
</tr>
<tr>
<td>200A</td>
<td>80 820</td>
</tr>
<tr>
<td>250A</td>
<td>110 1450</td>
</tr>
<tr>
<td>300A</td>
<td>210 2230</td>
</tr>
<tr>
<td>350A</td>
<td>280 3500</td>
</tr>
</tbody>
</table>

Fluid: gasoline
Accuracy: ±0.2%

Turbine flowmeter with intelligent indicator
Thrust force to the rotor is balanced by introducing static pressure from the lower stream cone’s pressure introducing port. Rotor rotates without touching the thrust bearing.

- Rotor’s rotation resistance is lower compared to ball bearing retention type. Lower resistance enables high accuracy.
- Super hard alloyed is used for bearing and this enables long durability.
TOKICO’s intelligent Indicator enables to minimize oil loss and maintenance cost by achieving highly accurate measurement.
Features

- **Multiple functions**
  It has multiple functions inside its compact body, such as temperature adjusting function and linearization function. It does not require separate equipment for such adjusting function.

- **Linearization function compatible to wide flow range**
  11 linearization points enable to exert linearization effect to wide flow range.

- **Easy maintenance**
  Various setting can be done without adjusting mechanical parts.

- **Interchangeability with mechanical type indicator**
  It can be replaced from TOKICO’s mechanical type indicator.

- **Smart communication function**
  Smart communication enables to monitor totalized volume, momentary flowrate, etc. Also, it can read/set various setting value.
Accuracy reaches extremely close to ±0%

Flow range can be widened by linearization
(Minimum flowrate at ±0.5% can be changed to ±0.2%)

【Example】

4 inch turbine flowmeter (FPL1054)
(1) ±0.2% flow range: 40 ~ 340 m³/h (without linearization)
↓ with linearization
(2) ±0.2% flow range: 20 ~ 340 m³/h (Range1: 8.5 to 1:17)
Usually flowmeters count up flow volume regardless of flow direction. Intelligent indicator can detect flow direction and count up only when rotors are rotating in forward direction. This function enables accurate measurement.
Intelligent indicator

■ Data monitoring and parameter reading/setting can be done through notebook PC.

■ Smart communication is done through analog line, thus separate line is unnecessary.

Smart Communication

《Smart communication》

Pulse signal

Receiver
=count totalized volume

Analog signal 4~20mA
=Smart communication

Analog receiver

Protocol converter

Upper level network

Notebook PC
=Special software necessary

- Data monitor
  - Totalized volume
  - Momentary flow rate
  - Error log
- Parameter setting/reading

Smart communication is done through analog line, thus separate line is unnecessary.
Application (1)

<For delivery>

Removable type small flowmeter (for diesel)

LPG delivery lorry truck

Indicator

Printer

Turbine flowmeter (potter meter)

~75L/min

~133L/min

Turbine flowmeter

Vortex flowmeter (for rear deck)

Urea aqueous solution delivery

~80L/min
Application (2)

<Diezel lorry truck>

Flowmeters for home delivery lorry truck

Delivery efficiency improves by linking with upper level system

Mobile terminal
Application (3)

Factory in S.E. Asia

Oil refinery in Middle East

Oil Refinery in S. Korea

Oil Refinery in S. Korea
Gas Flowmeter and Gas Equipment
We have been contributing to gas industry by providing safe and accurate gas equipments.

**Gas flowmeters**

- Roots type
- Turbine type
- Vortex type
- Ultrasonic type

**Emergency Shutoff Valve**

- Electric signal type
- For low-pressure line

**Governor**

- Governor
- High-pressure type

**CNG**

- CNG dispenser
**Roots gas flowmeter** *(Flow rate: 2.5~2000m³/h, Size: 50~300mm, Accuracy: ±1.5%)*

- TOKICO’s roots gas flowmeter is a PD type flowmeter which measures fluid directly by 2 rotors.
- These 2 rotors rotate without mutual contact. They rotate alternately by driving gears that are directly connected to totalizing counter with roots shaft. This design enables low noise, low vibration, and high accuracy.

**Operating principle**

**Internal structure**

**Totalizing counter**

**Roots gas flowmeter**

**Ultrasonic gas flowmeter**

**Turbine gas flowmeter**

**NEW PRODUCT**

**Flow rate:** 2.5~2000m³/h  
**Size:** 50~150mm  
**Accuracy:** ±1.5%

**Flow rate:** 32~4000m³/h  
**Size:** 100~300mm  
**Accuracy:** ±1.5%
Emergency shutoff valve

- Adoption of high pressure CO2 gas cartridge as drive power source for the ball valve requires no electric wiring for motor power and no air piping for driving actuator.
- Combination with seismic vibration sensor unit enables the emergency shutoff valve to automatically close when an earthquake occurs. (option)

Governor

- Excellent response speed and stable control
- Wide line up for both low pressure and high pressure line

CNG Dispenser

<Situation in Japan>
- Number of stations: 333 stations
- TOKICO dispenser: 219 stations (65% market share)

⇒ No.1 Share in Japan !!

- Natural Gas Vehicle: 40,000 cars

Coriolis Flowmeter (Made by TOKICO)
Ultrasonic gas flowmeter for middle-pressure range city gas

Outline View of the new Ultrasonic Gas Meter (Diameter: 50mm)

Cross-sectional View of the Measuring Section

One set of sensor is not enough to capture difference in flow distribution

One set of sensor can measure the fluid precisely
**Characteristics**

*No Moving Parts / No Obstructions*
- No protrusions in the flow path means little pressure loss and no supply failure in the event of an unexpected malfunction.

*High Accuracy / Wide Flow Range*
- High accuracy (±1% (meter units)),
- Wide measuring range (flow rate range 1:40, flow rate sensitivity 1/200)
- Maximum flow speed: 30m/s, sufficient for town gas measurement

*Dust and Mist Resistant*
- Meter operation is hardly affected by dust, mist or other foreign matter in gas piping.

*Forward/ Backward Flow Measurement*
- Even if operating conditions cause the gas to flow in reverse, forward/backward flow is judged to prevent the measured flow rate from being incremented.

*Long-Life Metal Ultrasonic Sensor*
- The ultrasonic sensor is in a metal-covered study structure to ensure its long life.
### Specification

<table>
<thead>
<tr>
<th><strong>Aperture</strong></th>
<th>50A</th>
<th>80A</th>
<th>100A</th>
<th>150A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Straight pipe</strong></td>
<td>Upstream: 7D or more, Downstream 2D or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flow range</strong></td>
<td>50A (5 〜 220 m³/h), 80A (13 〜 550 m³/h), 100A (25 〜 900 m³/h), 150A (50 〜 2100 m³/h)</td>
<td><strong>Note</strong> Velocity in piping: 0.75 〜 30 m/s, Flow rate sensitivity: 0.15 m/s</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating press.</strong></td>
<td>0.04 〜 0.99 MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fluid temp.</strong></td>
<td>-10 〜 50 ℃</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>Meter unit: ±1.0%RD, After temp./press. compensation: ±1.5%RD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Press. loss</strong></td>
<td>Intermediate press A: 12 kPa or less, Intermediate press B: 5 kPa or loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Material of gas contact parts</strong></td>
<td>50A・80A: SCS13, SUS304, 100A・150A: SS400, SCPH2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pipe connections</strong></td>
<td>JIS 10K FF (Standard)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td>Display: Compensated totalized flow, compensated momentary flow, temp., press.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Function</strong></td>
<td>Temp. &amp; Press. Compensation, Backward flow detection, Abnormality detection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>Pulse output (open collector), analog output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Press.-resistnat, explosion-proof (Exd II BT4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>100VAC, 50/60 Hz or 24 VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Emergency Shutoff Valve

### Standard Spec

<table>
<thead>
<tr>
<th>Temp.</th>
<th>-5～80°C (Fluid temp.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-20～60°C (Ambient temp.)</td>
</tr>
<tr>
<td>Press.</td>
<td>0.98MPa (Max. press)</td>
</tr>
<tr>
<td>Conn.</td>
<td>25A～400A (11 sizes)</td>
</tr>
<tr>
<td>Material</td>
<td>Body SCPH2 or SCS13</td>
</tr>
<tr>
<td></td>
<td>Ball SCS13 sheet: Teflon</td>
</tr>
<tr>
<td>Sensor</td>
<td>Ball-falling type (2 balls)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acceleration</th>
<th>190</th>
<th>-50～25 gal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250</td>
<td>-50～25 gal</td>
</tr>
<tr>
<td></td>
<td>360</td>
<td>±40 gal</td>
</tr>
</tbody>
</table>

Recovery: By handle operation

*Cycle 0.3, 0.5, 0.7 sec
Horizental continuous excitation
Emergency Shutoff Valve

Normal Condition (Valve Open)

E-Shutoff Operation (Valve Close)