



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating Instructions

Level Switch MPC2000 MPC2

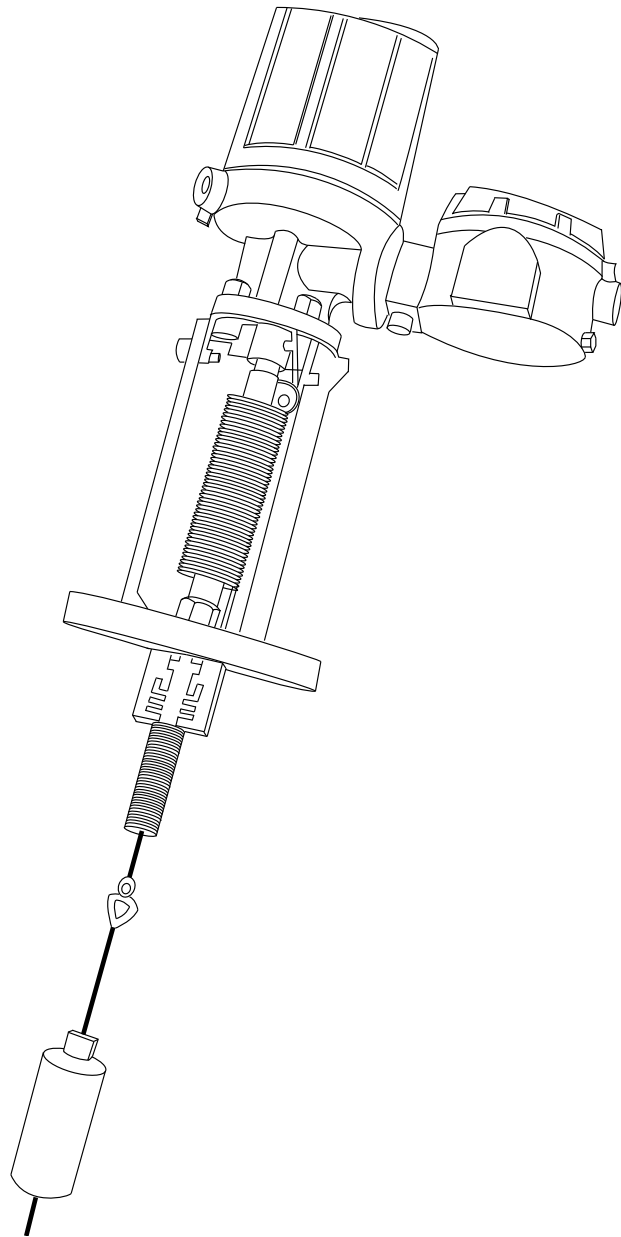


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1 Safety Instructions

1.1 Designated Use

MPC series level switches are displacement type instruments for liquid tanks. MPC displays an alarm for water or oil tank levels and to control pumps and valves by utilizing independent operation of the contacts.

1.2 Installation, Commissioning, and Operation

- Mounting, electrical installation, start-up, and maintenance of the instrument may only be performed by trained personnel authorized by the operator of the facility.
- Personnel must read and understand these installation instructions before performing the procedures.
- The instrument may only be operated by personnel who are authorized and trained by the operator of the facility. All instructions in this manual must be observed.
- The installer must make sure that the measuring system is correctly wired according to the wiring diagrams. The measuring system must be grounded.
- Observe all law and regulations applicable and valid for your country and pertaining to the opening and repairing of electrical devices.

1.3 Product Requirements

External Connection

When an external connection is required, the product should be protectively grounded before it is connected to a measurement object or an external control circuit.














Caution!

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1.4 Notes on Safety Conventions and Symbols

To highlight safety-relevant or alternative operating procedures in this manual, the following conventions have been used, each indicated by a corresponding symbol on the left.

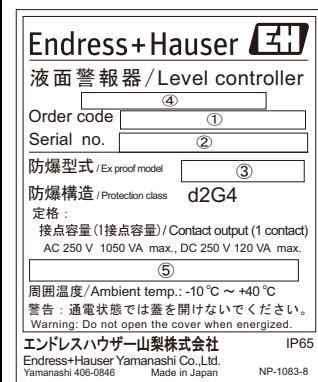
| Safety Conventions | |
|---|--|
|  | Warning! Indicates an action or procedure that, if not performed correctly, will lead to personal injury, a safety hazard, or destruction of the instrument |
|  | Caution! Indicates an action or procedure that, if not performed correctly, may lead to personal injury or malfunction of the instrument |
|  | Note! Indicates an action or procedure that, if not performed correctly, may indirectly affect operation or lead to an unexpected instrument response. |
| Explosion Protection | |
|  | Device certified for Use in Explosion Hazardous Area If the device has this symbol embossed on its name plate, it can be installed in an explosion hazardous area. |
|  | Explosion Hazardous Areas Symbol used in drawings to indicate explosion hazardous areas. Devices located in and wiring entering areas designated as "explosion hazardous areas" must conform to the stated type of protection. |
|  | Safe Area (non-explosion hazardous area) Symbol used in drawings to indicate, if necessary, non-explosion hazardous areas. Devices located in safe areas still require a certificate if wiring enters into explosion hazardous areas |
| Electrical Symbols | |
|  | Direct Voltage A terminal to or from which a direct current or voltage may be applied or supplied |
|  | Alternating Voltage A terminal to or from which an alternating (sine-wave) current or voltage may be applied or supplied |
|  | Grounded Terminal A grounded terminal, that is already grounded by means of an earth grounding system for the purpose of the operator |
|  | Protective Grounding (earth) Terminal A terminal that must be connected to an earth ground prior to making any other connection to the equipment |
|  | Equipotential Connection (earth bonding) A connection that must be made to the facility grounding system, such as a star-shaped connection grounding system or equipotential line, according practices of the country or company. |

2 Identification

2.1 Device Designation

2.1.1 Nameplate

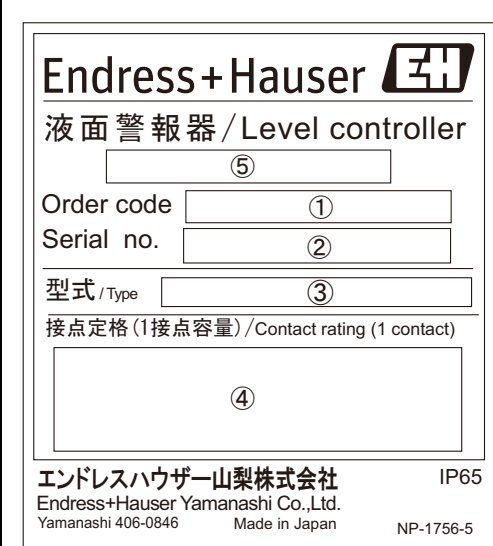
The following technical data are given on the instrument nameplate:

| | |
|---|-------------------|
|  <p>Endress+Hauser EH 液面警報器 / Level controller Order code [] Serial no. [] 防爆型式 / Ex proof model [] 防爆構造 / Protection class d2G4 規格 : 接点容量 (1接点容量) / Contact output (1 contact) AC 250 V 1050 VA max., DC 250 V 120 VA max. 周囲温度 / Ambient temp.: -10 °C ~ +40 °C 警告 : 通電状態では蓋を開けないでください。 Warning: Do not open the cover when energized. エンドレスハウザー山梨株式会社 IP65 Endress+Hauser Yamanashi Co.,Ltd. Yamanashi 406-0846 Made in Japan NP-1083-8</p> | ① Order Code |
| | ② Serial No. |
| | ③ Explosion model |
| | ④ Tag No. |

| |
|---|
| <p>Explosion model :</p> <p>Protection class :</p> <p>Rating :</p> <p>Contact output (1 contact) AC 250V 1050VA DC 250V 120VA</p> <p>Note: Be sure to cut off the power before opening the cover.</p> <p>Endress+Hauser Yamanashi Co.,Ltd. Made in Japan Yamanashi 406-0846 NP-2592</p> |
|---|

| | | | |
|---------------------------------|-------------------------------------|----------------------------|---|
| Approved Type | | | |
| MPC2- | a | b | c |
| ↑ | ↑ | ↑ | ↑ |
| External Design | Radiation Fins | Switching Point | Cable entry |
| 0 Without guide pipe | 0 Without fin | 1 1 x Level | E PF(C)3/4 |
| 1 Internal pipe type | 1 With fin (single fin, double fin) | 1 x FRT overflow detection | EB With cable connector (TF16-11/TF22-13/TF22-15/TF28-18) |
| 2 Outer pipe type (side-side) | | 1 x CRT overflow detection | |
| 3 Outer pipe type (side-bottom) | | 2 2 x Level | |
| | | 3 3 x Level | |
| | | 4 4 x Level | |

Figure 1: TIIS Approval Type

| | |
|--|------------------|
|  <p>Endress+Hauser EH 液面警報器 / Level controller Order code [] Serial no. [] 型式 / Type [] 接点定格 (1接点容量) / Contact rating (1 contact) [] エンドレスハウザー山梨株式会社 IP65 Endress+Hauser Yamanashi Co.,Ltd. Yamanashi 406-0846 Made in Japan NP-1756-5</p> | ① Order Code |
| | ② Serial No. |
| | ③ Type |
| | ④ Tag No. |
| | ⑤ Contact Rating |

| | |
|--------------------------------|-----------|
| Order Code | Printed |
| MPC2-abc ■ xxxxxxxx | MPC-2abcW |
| MPC2-abc ■ xxxxxxxx | MPC-2abcW |
| MPC2-ab5 ■ xxxxxxxx | MPC-2ab1W |
| MPC2-ab5 ■ xxxxxxxx | MPC-2ab1W |
| MPC2-ab6 ■ xxxxxxxx | MPC-2ab1W |
| MPC2-ab6 ■ xxxxxxxx | MPC-2ab1W |
| MPC2-a2c ■ xxxxxxxx | MPC-2a1cW |
| MPC2-a2c ■ xxxxxxxx | MPC-2a1cW |
| ■ = W or X | |
| (Sample) | |
| MPC2-304Wxxxxxxxx → MPC-2304W | |
| MPC2-304X xxxxxxxx → MPC-2304W | |

Figure 2: Waterproof Type

2.2 Ordering Information

| | | | | | | | | | |
|--------------|--|---|--|--|--|--|--|--|------------------------------|
| 010 | Type: | | | | | | | | |
| | 0 | Not selected | | | | | | | |
| | 1 | Internal pipe | | | | | | | |
| | 2 | External pipe (side-side installation 25A/1") | | | | | | | |
| | 3 | External pipe (side-bottom installation 25A/1") | | | | | | | |
| 020 | Heat Radiation: | | | | | | | | |
| | 0 | w/o fin, max. 100°C | | | | | | | |
| | 1 | Double fin max. 250°C | | | | | | | |
| | 2 | Single fin max. 150°C | | | | | | | |
| 030 | Switch count: | | | | | | | | |
| | 1 | 1 x Level | | | | | | | |
| | 2 | 2 x Level | | | | | | | |
| | 3 | 3 x Level | | | | | | | |
| | 4 | 4 x Level | | | | | | | |
| | 5 | 1 x FRT Overflow detection | | | | | | | |
| | 6 | 1 x CRT Overflow detection | | | | | | | |
| 040 | Approval: | | | | | | | | |
| | B | Flame proof d2G4, TIIS + cable gland | | | | | | | |
| | E | Flame proof d2G4, TIIS | | | | | | | |
| | W | Weather proof IP65 | | | | | | | |
| | X | Weather proof IP65 + cable connector | | | | | | | |
| | 9 | Special version, TSP-no. to be spec | | | | | | | |
| 050 | Function: | | | | | | | | |
| | 0 | Basic version | | | | | | | |
| | 9 | Special version, TSP-no. to be spec | | | | | | | |
| 060 | Process Connection, Top Mounted Flange: | | | | | | | | |
| | 3 | 10K 65A RF, SUS304, JIS flange B2220 | | | | | | | |
| | 4 | 10K 65A RF, SUS316, JIS flange B2220 | | | | | | | |
| | 1 | 10K 80A RF, SUS304, JIS flange B2220 | | | | | | | |
| | 2 | 10K 80A RF, SUS316, JIS flange B2220 | | | | | | | |
| | S | 10K 100A RF, SUS304, JIS flange B2220 | | | | | | | |
| | T | 10K 100A RF, SUS316, JIS flange B2220 | | | | | | | |
| | 7 | 20K 65A RF, SUS304, JIS flange B2220 | | | | | | | |
| | 8 | 20K 65A RF, SUS316, JIS flange B2220 | | | | | | | |
| | 5 | 20K 80A RF, SUS304, JIS flange B2220 | | | | | | | |
| | 6 | 20K 80A RF, SUS316, JIS flange B2220 | | | | | | | |
| | C | 2-1/2"150lbs RF, SUS304, ANSI flange B16.5 | | | | | | | |
| | D | 2-1/2"150lbs RF, SUS316, ANSI flange B16.5 | | | | | | | |
| | G | 2-1/2"300lbs RF, SUS304, ANSI flange B16.5 | | | | | | | |
| | H | 2-1/2"300lbs RF, SUS316, ANSI flange B16.5 | | | | | | | |
| | A | 3" 150lbs RF, SUS304, ANSI flange B16.5 | | | | | | | |
| | B | 3" 150lbs RF, SUS316, ANSI flange B16.5 | | | | | | | |
| | E | 3" 300lbs RF, SUS304, ANSI flange B16.5 | | | | | | | |
| | F | 3" 300lbs RF, SUS316, ANSI flange B16.5 | | | | | | | |
| | U | 4" 150lbs RF, SUS304, ANSI flange B16.5 | | | | | | | |
| | V | 4" 150lbs RF, SUS316, ANSI flange B16.5 | | | | | | | |
| | L | 65A 150lbs RF, SUS304, JPI flange 7S-15 | | | | | | | |
| | M | 65A 150lbs RF, SUS316, JPI flange 7S-15 | | | | | | | |
| | Q | 65A 300lbs RF, SUS304, JPI flange 7S-15 | | | | | | | |
| | R | 65A 300lbs RF, SUS316, JPI flange 7S-15 | | | | | | | |
| | J | 80A 150lbs RF, SUS304, JPI flange 7S-15 | | | | | | | |
| | K | 80A 150lbs RF, SUS316, JPI flange 7S-15 | | | | | | | |
| | N | 80A 300lbs RF, SUS304, JPI flange 7S-15 | | | | | | | |
| | P | 80A 300lbs RF, SUS316, JPI flange 7S-15 | | | | | | | |
| | W | 100A 150lbs RF, SUS304, JPI flange 7S-15 | | | | | | | |
| | X | 100A 150lbs RF, SUS316, JPI flange 7S-15 | | | | | | | |
| | 9 | Special version, TSP-no. to be spec. | | | | | | | |
| MPC2- | | | | | | | | | Product designation (part 1) |

| | |
|-------|---|
| 070 | Switch Position: |
| | 0 Lower |
| | 1 Lower + upper |
| | 2 Upper |
| 080 | Pipe: |
| | 0 Not selected |
| | 1mm T, internal pipe, SGP/SS |
| | 2mm T, internal pipe, SUS304 |
| | 3mm T, internal pipe, SUS316 |
| | 4mm S, external pipe, STPG/SS, S25C |
| | 5mm S, external pipe, SUS304 |
| | 6mm S, external pipe, SUS316 |
| | 9 Special version, TSP-no. to be spec. |
| 090 | Set Point: |
| | A mm H, flange - SW1(300-3850mm) |
| | B mm H mm L1 H = flange- SW1 L1= SW1 - SW2 |
| | C mm H mm L1 mm L2, H = flange - SW1 L1= SW1-SW2 L2 = SW2 - SW3 |
| | D mm H mm L1 mm L2 mm L3, H = flange - SW1 L1 = SW1 - SW2 L2 = SW2 - SW3, L3 = SW3 - SW4 |
| | Y Special version, TSP-no. to be spec. |
| 100 | Cable Entry: |
| | 0 Thread PF (G) 3/4 |
| | 1 Thread PF (G) 3/4, TF16-11 |
| | 2 Thread PF (G) 1, TF22-13 |
| | 3 Thread PF (G) 1, TF22-15 |
| | 4 Thread PF (G) 1- 1/4, TF28-18 |
| | 5 Thread NPT3/4 |
| | 6 Thread PF (G) 1/2 |
| | 9 Special version, TSP-no. to be spec. |
| 110 | Density Range: |
| | 0 Not selected, no displacer |
| | 3 0.65 - 1.2g/cm ³ , see additional spec. |
| | 9 Special version, TSP-no. to be spec. |
| 120 | Color: |
| | 0 Silver |
| | 9 Special version, TSP-no. to be spec. |
| MPC2- | Complete product designation |



Note!

Order Information 070: Switch Position

When there are 3 or 4 alarm points and "1: lower + upper" is selected, if not specified by a customer, the following MPC specification is used.

- 3 points: 2 upper limits, 1 lower limit
- 4 points: 2 upper limits, 2 lower limits

Order Information 090: Set Point

- Without internal pipe/external pipe, overflow alarm
Specify a setting length in a range starting from the bottom of flange connected to top of MPC.
- With internal pipe
The set point should accommodate connection component length (internal pipe plate + attached gasket + mounting gasket (6+2+2mm)) of 10mm. Specify a setting length in a range starting from the bottom of the flange connected to top of MPC +10mm.
- With external pipe
The set point should accommodate an extra 2mm (dimension of gasket). Specify a setting length in a range starting from the bottom of the flange connected to top of MPC + 2mm.
- Minimum setting length
Specify a setting length of 300mm or more for point 1 (H) and 150mm or more for alarm intervals.

2.3 Scope of Delivery



Caution!

It is extremely important to follow the instructions concerning the unpacking, transportation and storage of measuring instruments provided in the chapter "Incoming Acceptance, Transportation, Storage".

The scope of delivery consists of:

- Assembled Instrument

Accompanying Documentation:

- Operating Manual (this manual)

3 Installation

3.1 Incoming Acceptance, Transport, Storage

3.1.1 Incoming Acceptance

Check the packing and contents for any signs of damage.

Check the shipment, and make sure that nothing is missing and that the items match your order.

3.1.2 Transport



Caution!

- Follow the safety instructions and conditions of transportation for instruments in excess of 18kg (40 lbs.).

3.1.3 Storage

Store MPC2 in three parts as follows.

The allowed storage temperature is -10°C to $+60^{\circ}\text{C}$ (-14°F to $+140^{\circ}\text{F}$)

MPC2 Main Body

- Store MPC2 using a box with cushioned packing material when delivered.

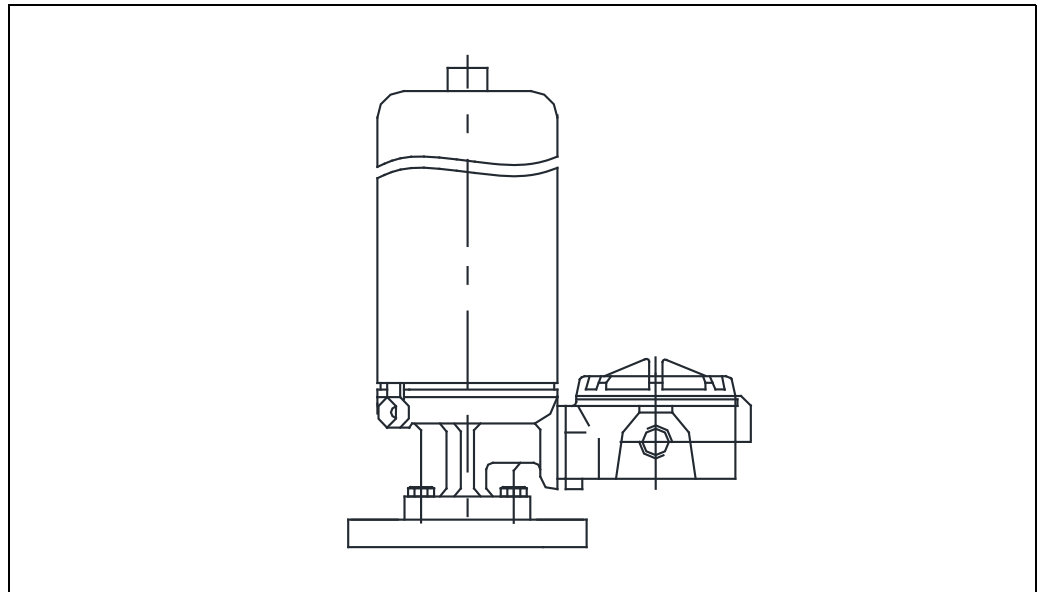


Figure 3: MPC2 Main Body

Displacer

- Without bending or crimping wire, store MPC2 using a box with cushioned packing material when delivered.
- Wind the upper and lower wires around the displacer in 100mm diameter coils if wire is long.

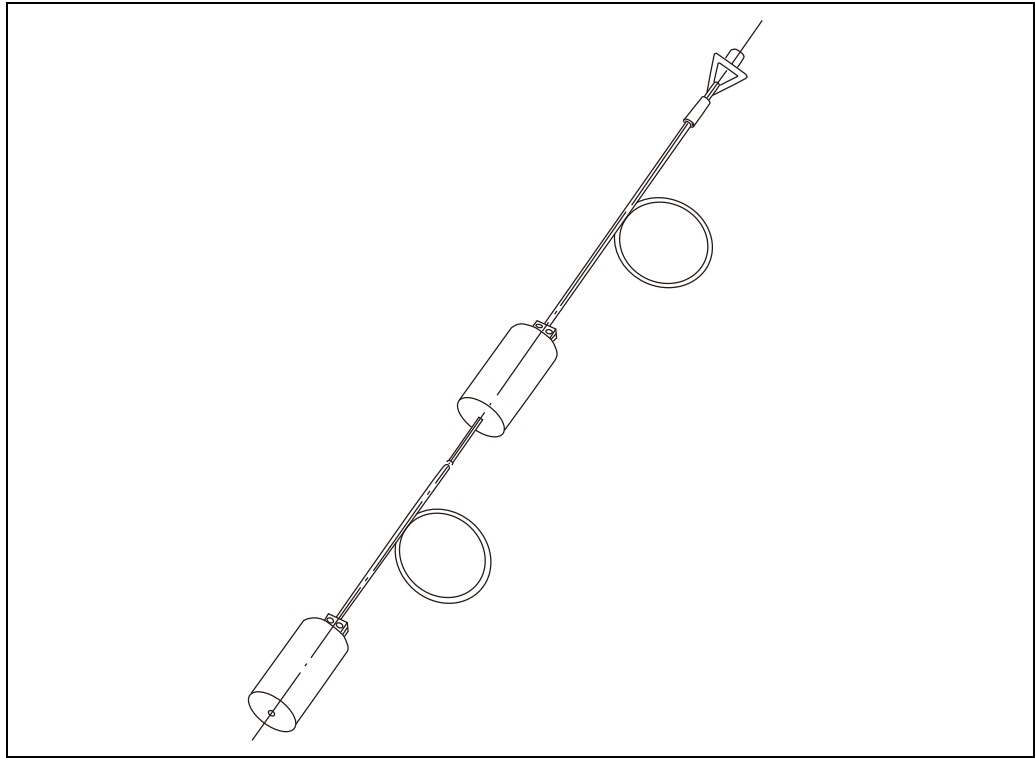


Figure 4: Displacer

Spring with Iron Core

- For 1 to 2 point switches, store spring with iron core in a cylindrical box.
- For 3 to 4 point switches, store spring with iron core in a cylindrical box, then cover the box and seal with tape to protect the spring.

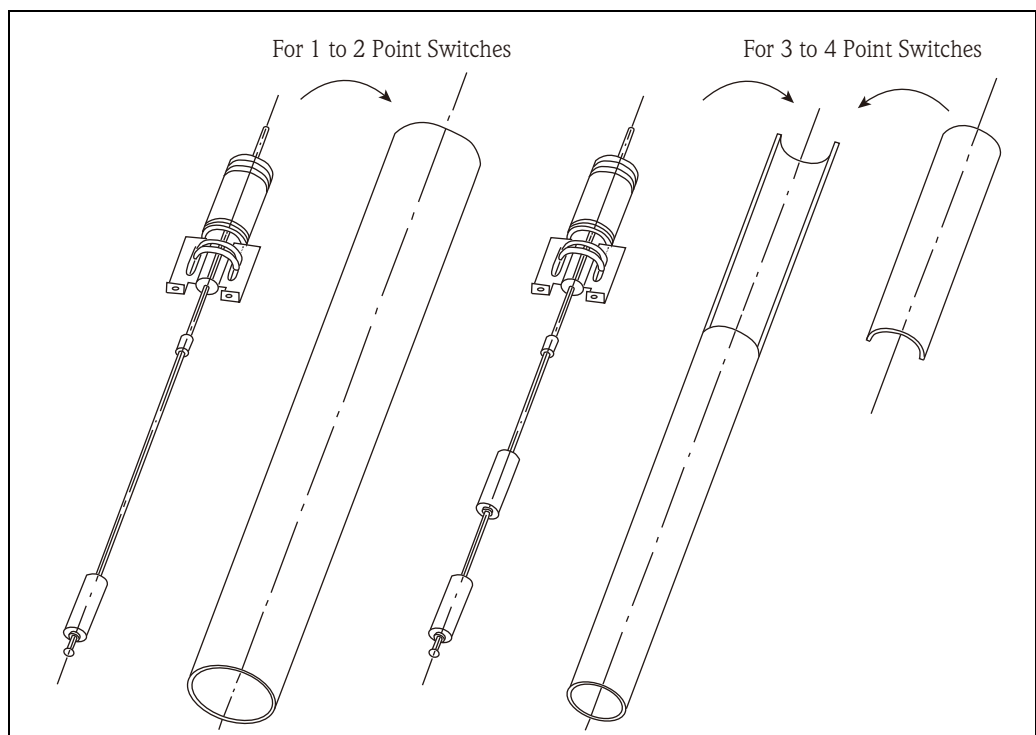


Figure 5: Spring with Iron Core

4 Basic Device Layout

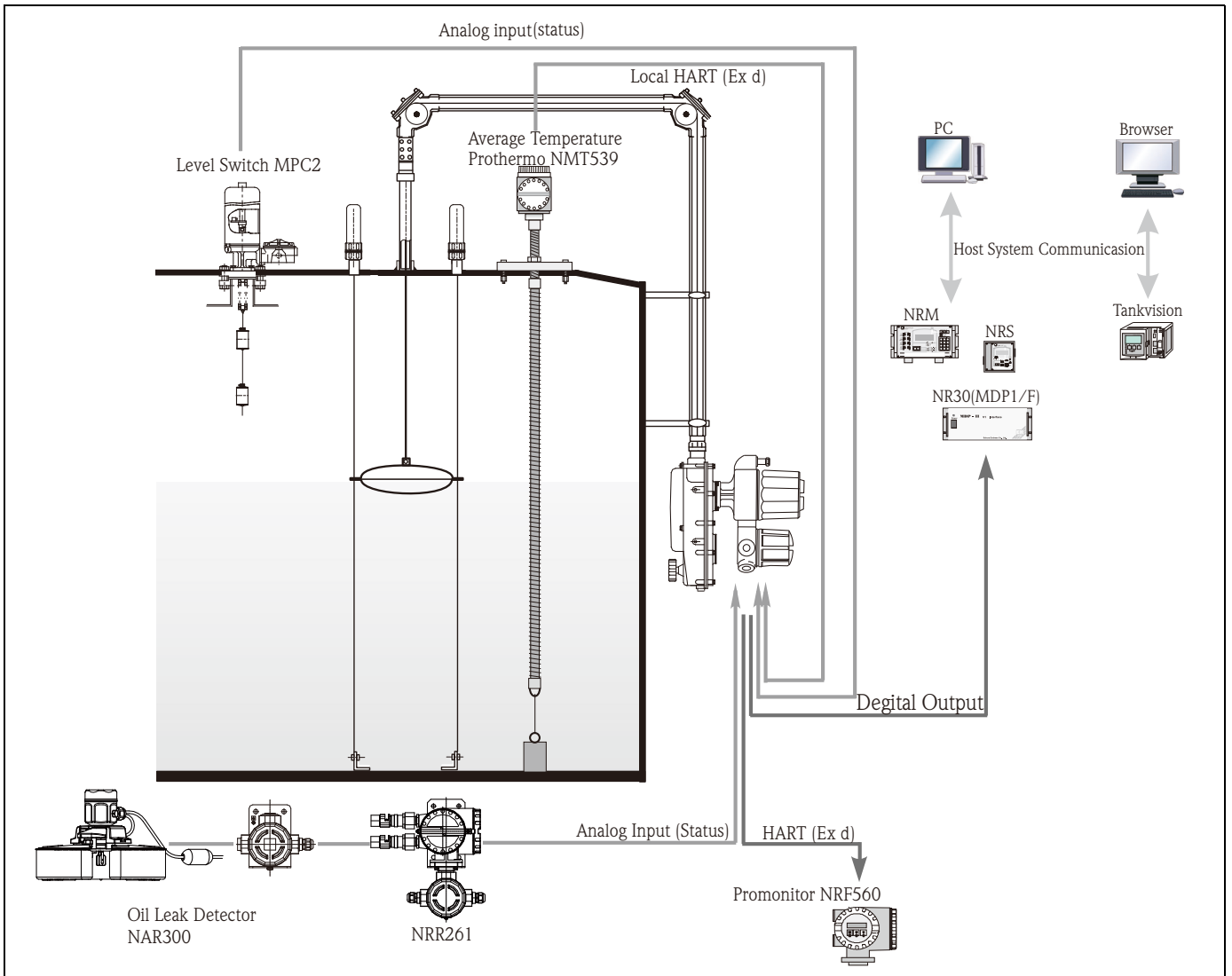


Figure 6: Device Layout

5 Set Up Condition

5.1 Dimensions

Switch Points: 1

| Without Guide Pipe MPC20 □□ E | Internal Pipe Type: Tank top mounting MPC21 □□ E | Radiation Fins Single Fin |
|--|--|-------------------------------|
| | | |
| External Pipe Type: Side-side Mounting MPC22 □□ E | External Pipe Type: Side-bottom Mounting MPC23 □□ E | Radiation Fins Double Fins |
| | | |

Figure 7: 1Points Switch

Switch Points: 2

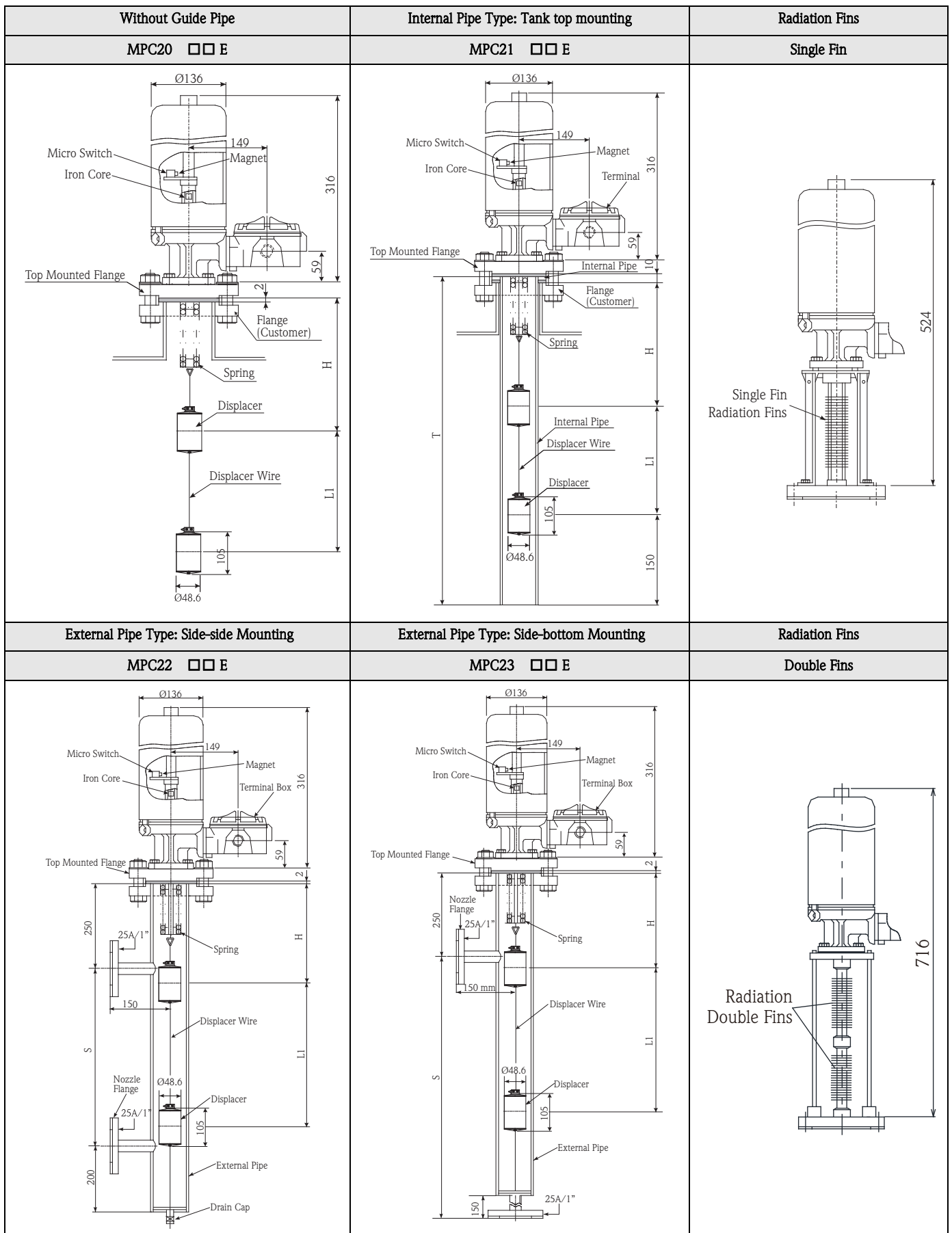


Figure 8: 2 Points Switch

Switch Points: 3

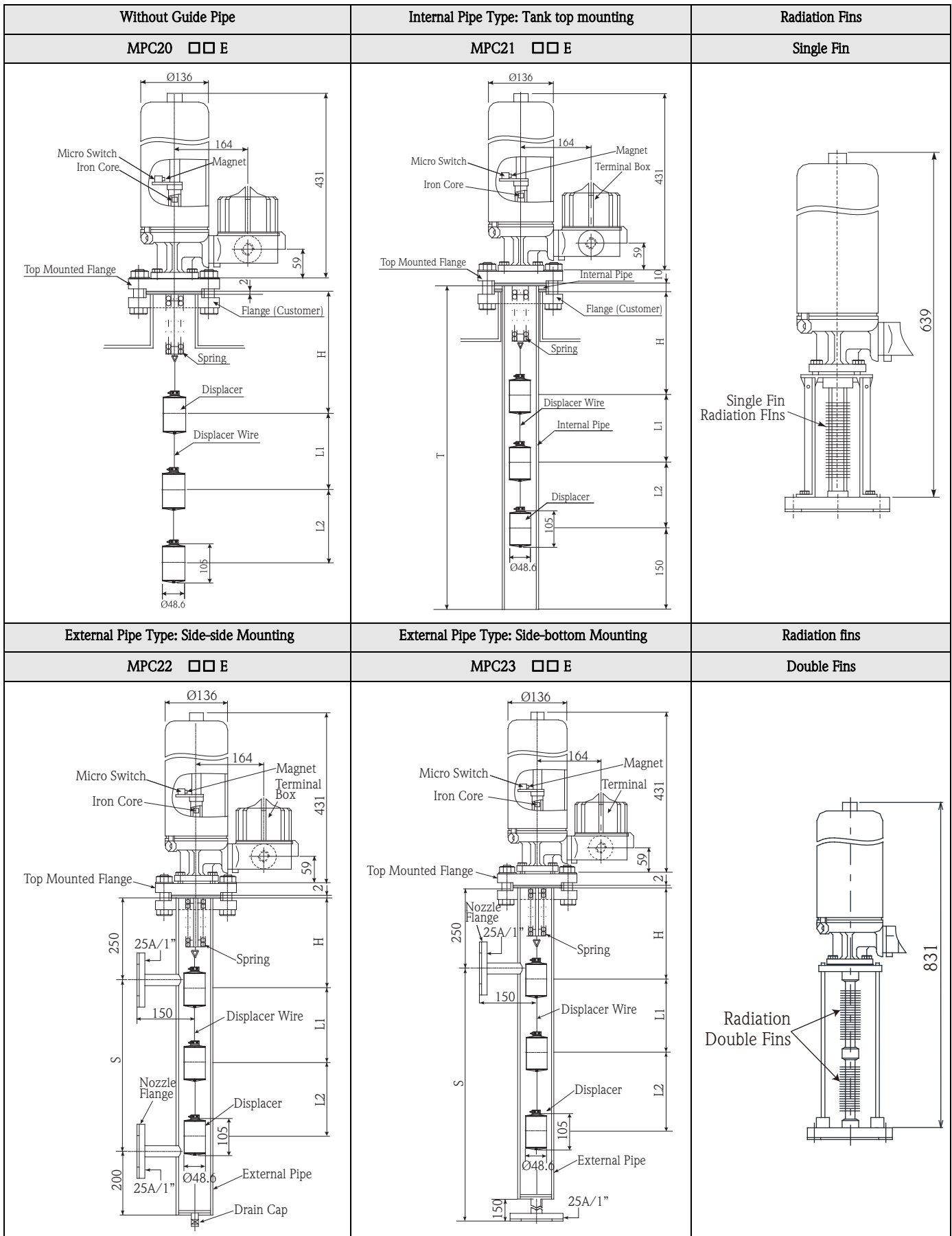


Figure 9: 3 Points Switch

Switch Points: 4

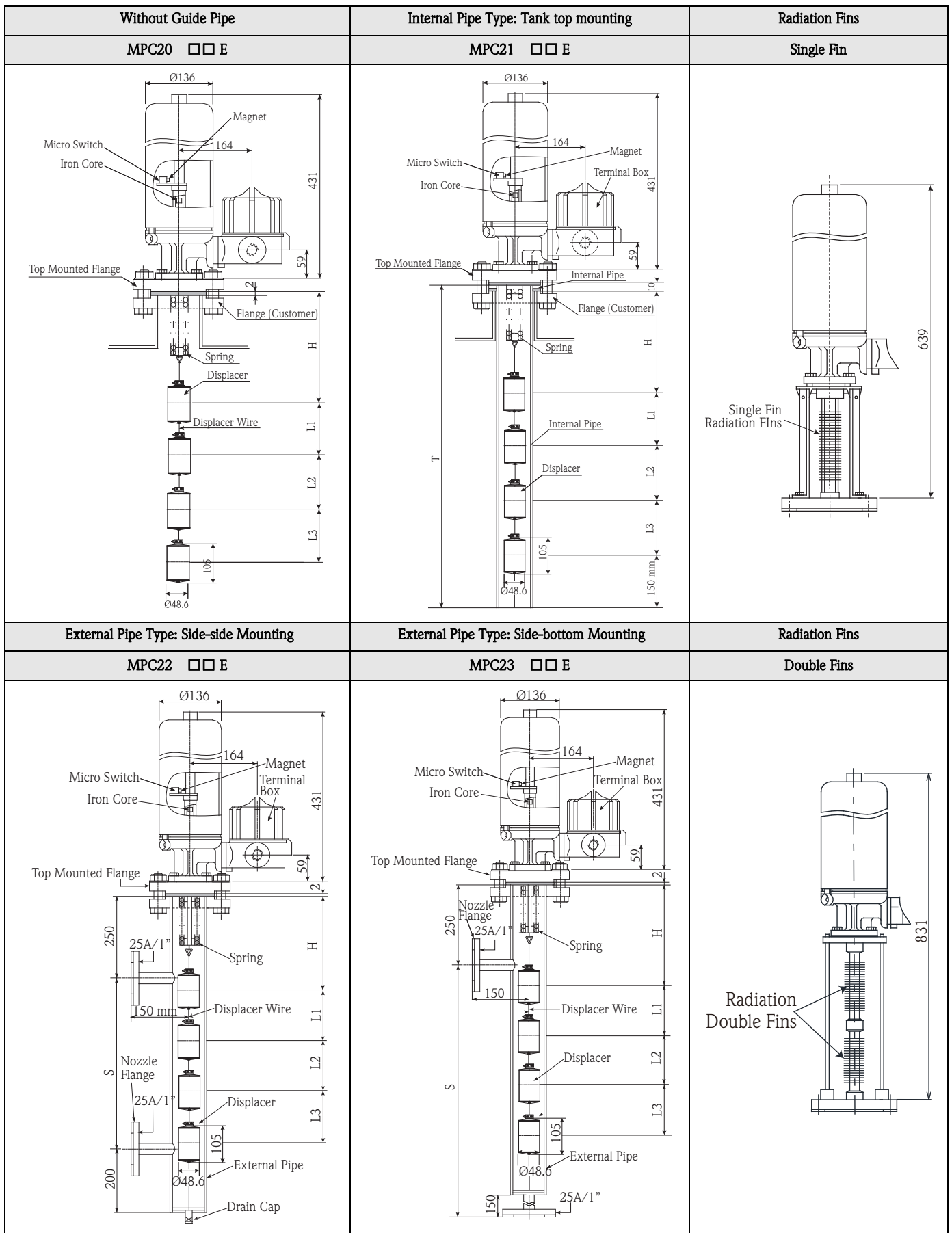


Figure 10:4 Points Switch

Waterproof Type

A cable connector can be attached to the waterproof type for an option.

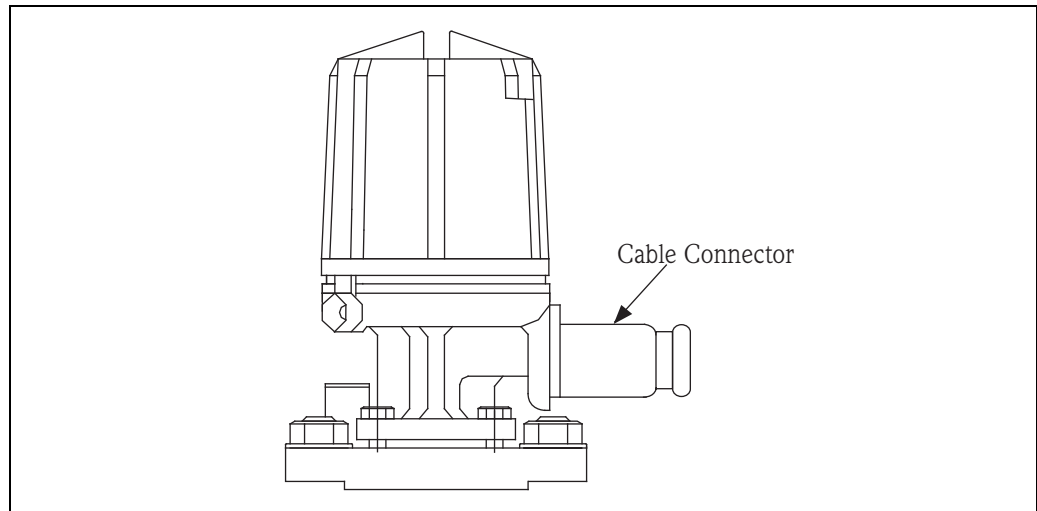


Figure 11: Cable Connector for 1 Point Switch

**Note!**

MPC2 of 2 to 4 type switches also can be attached to the waterproof type for an option.

5.2 Overflow Alarm

Either of two specifications can be used for the overflow alarm: displacer in CRT or weight in FRT. When displacer or weight reaches specified position, an alarm signal is output to warn in advance of an overflow.

The operation and function of weight specification are the same as for the 1 switch point of MPC type. When liquid reaches the upper limit point, a displacer rises and triggers the alarm. MPC2 features an additional confirmation function. By pulling the test wire and hoisting the displacer to the high limit point manually, the alarm can be triggered.

5.2.1 Floating Roof Tank (FRT) with Weight

Weight Type: Order Info.: 030 Switch Count...5; 1xFRT Overflow Detection

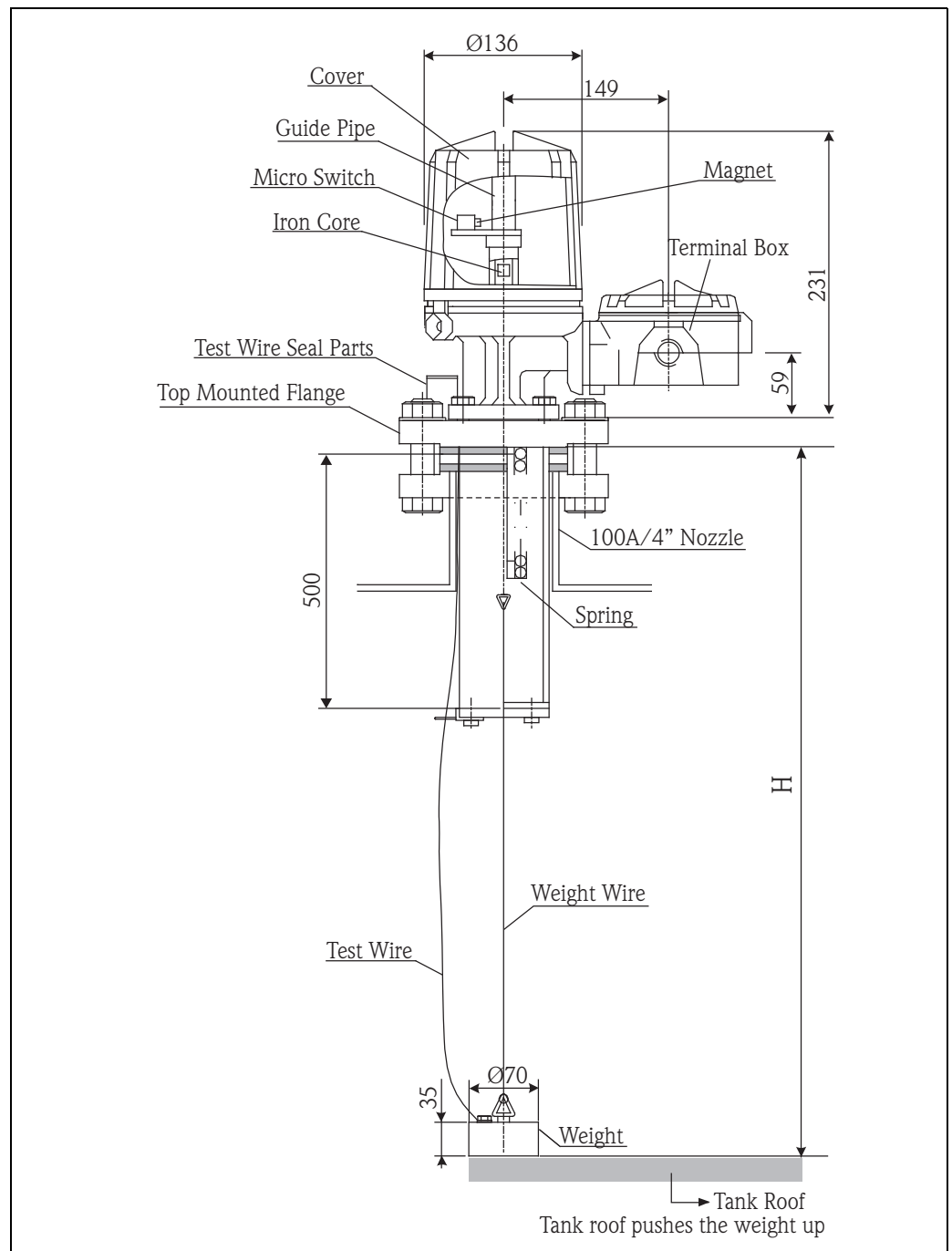


Figure 12: Weight Type of Overflow Alarm

5.2.2 Cone Roof Tank (CRT)

Displacer Type: Order Info.: 030 Switch Count...6; 1xCRT Overflow Detection

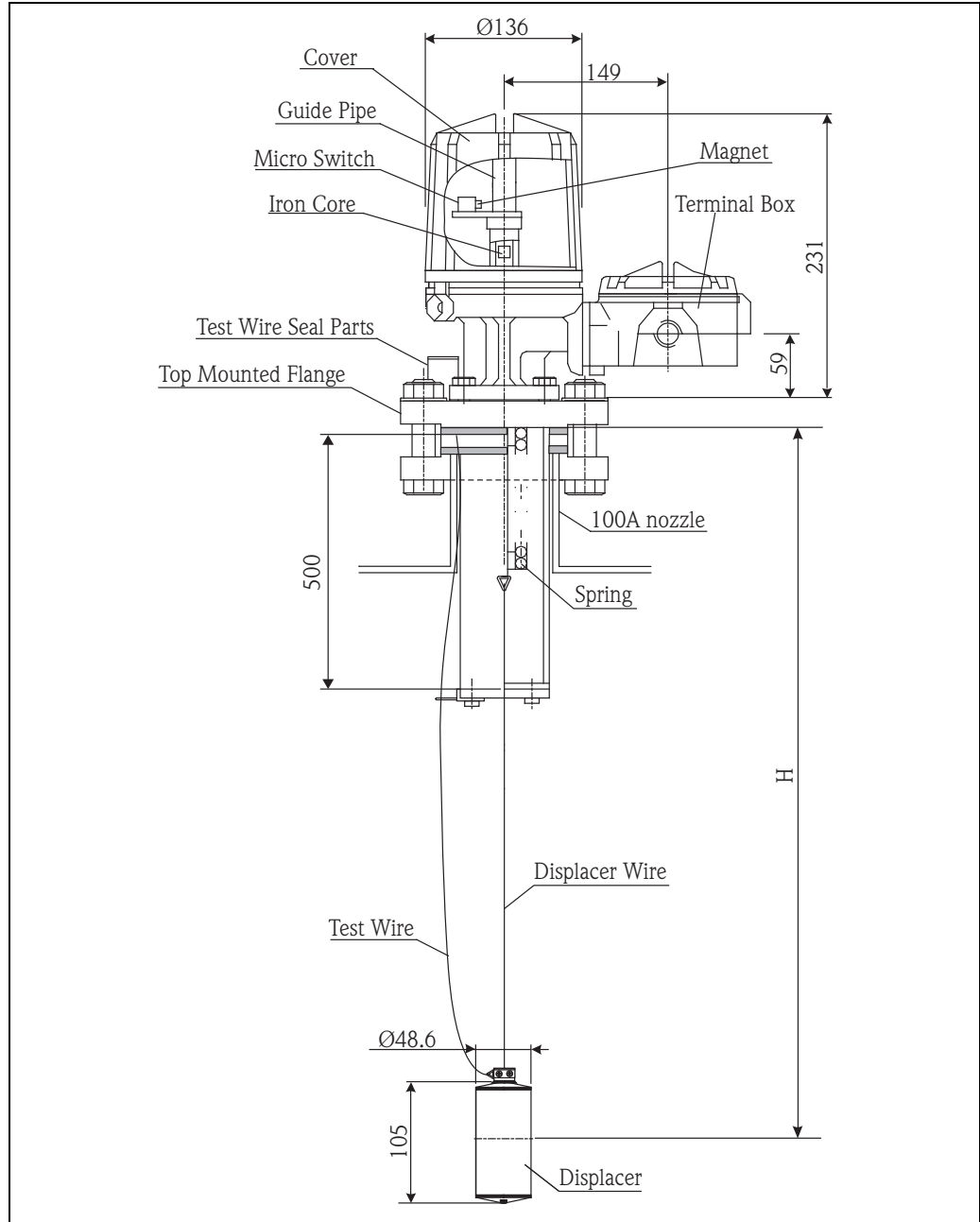


Figure 13: CRT with Displacer

5.3 Assembling and Mounting MPC2

MPC2 is delivered in four separate parts: body, spring (including iron), displacer, and pipe (internal/outer). Follow the instructions for mounting and installation.



Note!

- Do not bend or crimp wire connected to the displacer.
- When connecting displacer and spring, use the fixed triangular joint with threaded displacer locknut. Do not move the displacer out of position. It has been adjusted for this position at the factory.
- Do not bend intermediate shaft while installing spring and body.
- Install and tighten the spring lock screw securely.
- After mounting MPC as follows, connect it to the pipe.

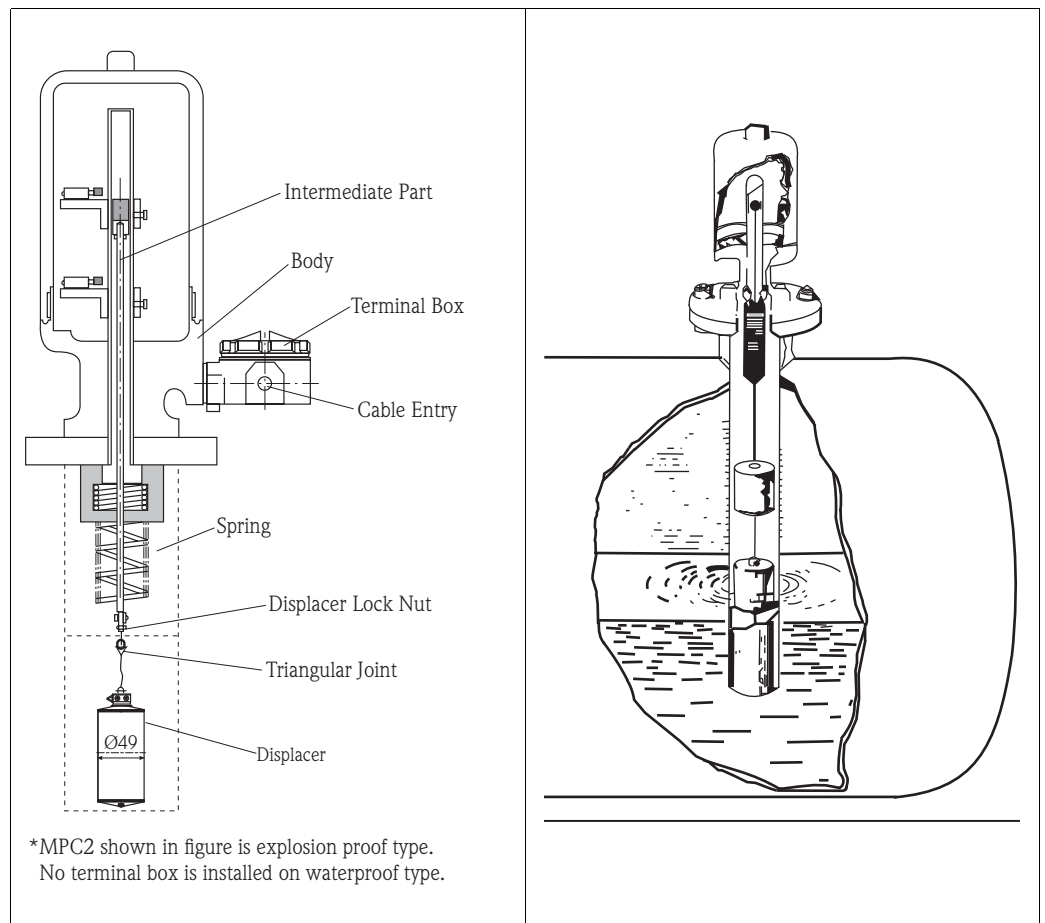


Figure 14: MPC Assembly

6 Wiring

The figure shows the each switch contact condition when level is normal.

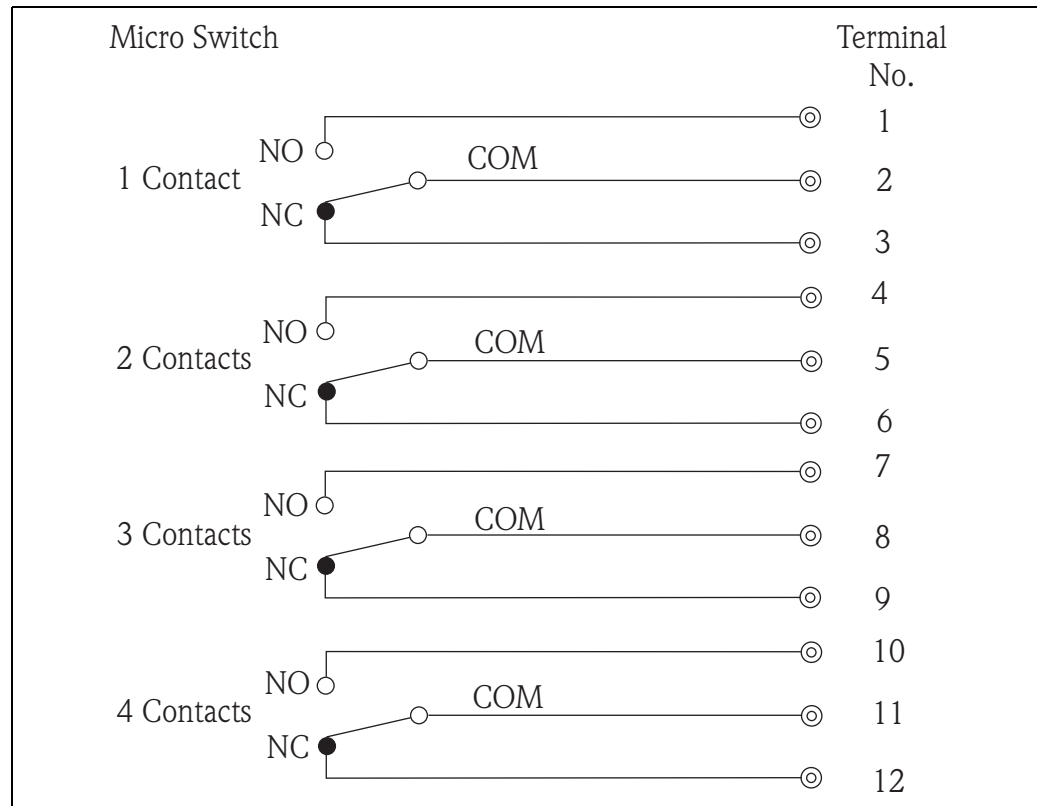


Figure 15: Switch Contact Condition

7 Change of Alarm Contact

The position of the alarm contact can change within the range of wire on which is hanging a displacer. To change the position, move the displacer to a direction where is required (ex. When the upper alarm contact is required to move 100mm down, the upper displacer should be moved 100mm down.).

8 Maintenance

MPC is not required to special cares of its operation or maintenance. However when the adherent liquid is used in a tank, the parts of MPC: protective pipe, displacer, and internal pipe, should be cleaned periodically.

8.1 Repair

The Endress+Hauser repair policy is based on the fact that the measuring devices have a modular design and that customers are able to undertake repairs themselves. Spare parts are contained in corresponding kits along with their related replacement instructions. Endress+Hauser provides spare parts for repairs of MPC2000 or MPC2, which are located with their order numbers on later pages (refer to "10.1 Spare Parts"). Contact Endress+Hauser service representatives for further assistance regarding service and spare parts.

9 Precaution for High Temperature

Refer to the separate Technical Information, "Instruction for Use in High Temperature".

10 Troubleshooting

10.1 Spare Parts

Spare parts are contained in kits. Spare parts for MPC2000 or MPC2 which can be ordered from Endress+Hauser are shown with their order numbers in the diagram below. Contact Endress+Hauser service representatives for further assistance.

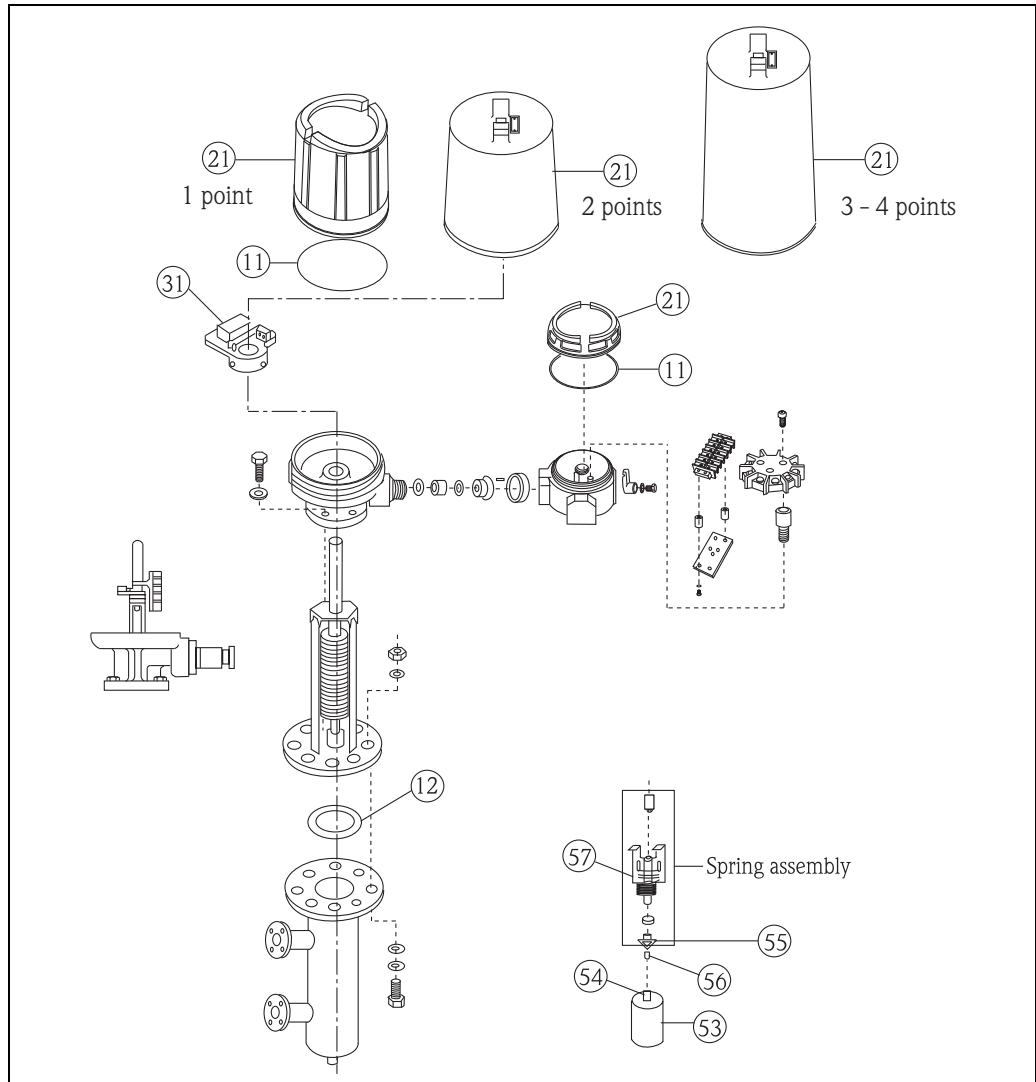


Figure 16: Spare Parts

| No. | Part No. | Specification | No. | Parts No. | Specification |
|-----|-------------|---|-------------|---------------------------|-----------------------------------|
| 11 | 017880-5025 | O-ring, main body, CR | 12 | 56004357 | Flange packing D120xD70x2T |
| | 017880-5026 | O-ring, terminal box, small, CR | | 56004358 | Flange packing D130xD90x2T |
| 21 | 017860-6323 | Terminal box cover | | 56004359 | Flange packing D160xD115x2T |
| | 017860-6324 | Cover for main housing for 1 contact | 54 | 56004364 | Displacer holder |
| | 017885-6316 | Cover for main housing for 2 contacts | 55 | 56004352 | Wire holder |
| 31 | 017885-6317 | Cover for main housing for 3+4 contacts | 57 | 017885-1839 | Wire sleeve, dia. 1.6 (10pcs/set) |
| | 56004285 | Switch bracket assembly (High Temp.) (to 250°C) | | 017885-1847 | Spring for 1 contact (4g) |
| 53 | 017885-1836 | Switch bracket assembly (to 100°C) | | 017885-1848 | Spring for 2 contact (5g) |
| | 017885-1841 | Displacer SS316 (100H x 50dia.) | | 017885-1849 | Spring for 3 contact (7g) |
| | 017885-1842 | Displacer SS316 (150H x 50dia.) | 017885-1850 | Spring for 4 contact (8g) | |

10.2 Troubleshooting

| Symptom | Possible Causes | Solutions |
|---|--|--|
| No Signal generated. | <ul style="list-style-type: none"> ■ Iron core is not moving due to damage or bent intermediate shaft. ■ Faulty micro switch ■ Foreign substances have collected on spring, impairing movement. ■ Displacer is not moving due to damaged flange. ■ Displacer sinks. | <ul style="list-style-type: none"> ■ Remove device and repair bent intermediate shaft. ■ Replace the micro-switch. ■ Remove device and clean or replace spring. ■ Reinstall displacer ■ Replace displacer |
| Signal generated is erratic. | <ul style="list-style-type: none"> ■ Faulty wiring connection ■ Faulty lead-in conductor connection ■ Faulty micro switch connection(internal switch terminal connection is faulty, internal switch contact is faulty) | <ul style="list-style-type: none"> ■ Repair/rewire connection ■ Repair faulty contacts ■ Replace micro switch |
| Upper/Lower setting position misaligned | <ul style="list-style-type: none"> ■ Liquid density has changed. ■ Displacer and iron core are not working smoothly due to misaligned or damaged installation component(s). ■ Foreign substances have collected on displacer causing weight to increase. | <ul style="list-style-type: none"> ■ Readjust MPC ■ Reinstall MPC ■ Replace damaged components, move displacer up and remove foreign substances. |

10.3 Return

The following procedure must be performed before returning MCP2000/MPC2 to Endress+Hauser e.g. for repair or calibration.

- Remove all residue. Pay special attention to the gasket grooves and crevices where fluid may be present. This is especially important if the fluid is corrosive, poisonous, carcinogenic, radioactive, or otherwise hazardous.
- Always enclose a duly completed "Declaration of Hazardous Material and De-contamination" form (a copy of the "Declaration of Hazardous Material and De-contamination" is included at the end of this operating manual). Only then can Endress+Hauser transport, examine, and repair a returned device.
- Enclose special handling instructions if necessary, for example a safety data sheet as per EN 91/155/EEC.

Additionally specify:

- An exact description of the application
- The chemical and physical characteristics of the instrument
- A short description of the error that occurred (specify the error code where possible)
- Operating time of the device



Caution!

- Hazardous materials may be attached to damaged parts of NMS5 or its plastic material. Unless hazardous materials are completely removed from NMS5, no repair request is accepted.
- Incomplete cleaning of the instrument may result in waste disposal or cause harm to personnel (burns, etc.). Any costs arising from this will be charged to the operator of the instrument.

10.4 Disposal

In case of disposal, separate the various components according to their materials.

10.5 Contact Addresses of Endress+Hauser

The addresses of Endress+Hauser are given on the back cover of this operating manual. If you have any questions, do not hesitate to contact E+H representatives.

11 Technical Data

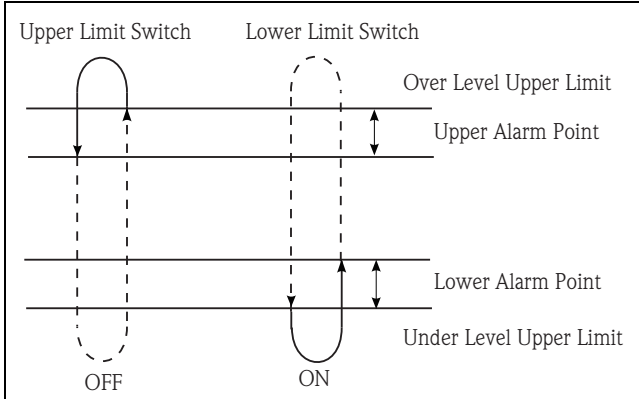


| | |
|------------------------------------|--|
| Accuracy | Without fin (MPC2- +0+++++) 1 and 2 points: within ±3mm (MPC2- +0+++++) 3 and 4 points: within ±5mm *at 25°C With fin Single fin (MPC2- +2+++++) 1 and 2 points: ±7mm, 3 and 4 points: ±10mm Double fin (MPC2- +1+++++) 1 and 2 points: ±7mm, 3 and 4 points: ±10mm |
| Maximum Allowable Working Pressure | 2.94 Mpa (30kgf/cm ²) *This value varies depending on specifications. |
| Ambient Temperature | -20 to +60 °C (-4 to 140°F) (Ex type) -10 to +40 °C (-14 to 104°F) (Non Ex type) |
| Liquid Temperature | 0 to 100°C (Radiation Fine: max. 250°C) *Refer to the separate Technical Information "Instruction for Use in High Temperature". |
| Density Limits | 0.65 to 1.2g/cm ³ |
| Wetted Material | Order Info. : 060: Process Connection, Top Mounted Flange 080: Internal Pipe/External Pipe |
| Alarm Contacts | 1 to 4 |
| Contact Capacity | TIIS Explosion Rating max. 250VAC, 1050VA max. 250VDC, 120VA Allowable Contact Capacity 1 to 2 points 250VAC 4.2A 1050VA, 125VDC 0.4A 50W 3 to 4 points 250VAC 2.8A 700VA, 125VDC 0.4A 50W |
| Hysteresis | Standard: 1, 2 Points 7 to 25mm (density = 1g/cm ³) 3, 4 Points 7 to 45mm (density = 1g/cm ³) High Temperature: 1, 2 Points 7 to 40mm (density = 1g/cm ³) 3, 4 Points 7 to 40mm (density = 1g/cm ³)  |

Figure 17: Hysteresis

| | |
|--|--|
| <p>Process Connection Top Mounted Flange</p> | <p>Without Internal Pipe/ Internal Pipe</p> <p>10K 80A RF, SUS304, JIS FlangeB2220 10K 80A RF, SUS316, JIS FlangeB2220 20K 80A RF, SUS304, JIS FlangeB2220 20K 80A RF, SUS316, JIS FlangeB2220 3" 150lbs RF,SUS304, ANSI Flange B16.5 3" 150lbs RF,SUS316, ANSI Flange B16.5 3" 300lbs RF,SUS304, ANSI Flange B16.5 3" 300lbs RF,SUS316, ANSI Flange B16.5 80A 150lbs RF,SUS304, JPI Flange 7S-15 80A 150lbs RF,SUS316, JPI Flange 7S-15 80A 300lbs RF,SUS304, JPI Flange 7S-15 80A 300lbs RF,SUS316, JPI Flange 7S-15</p> <p>External Pipe (side-side installation, side bottom installation)</p> <p>10K 65A RF, SUS304, JIS FlangeB2220 10K 65A RF, SUS316, JIS FlangeB2220 20K 65A RF, SUS304, JIS FlangeB2220 20K 65A RF, SUS316, JIS FlangeB2220 2-1/2" 150lbs RF,SUS304, ANSI Flange B16.5 2-1/2" 150lbs RF,SUS316, ANSI Flange B16.5 2-1/2" 300lbs RF,SUS304, ANSI Flange B16.5 2-1/2" 300lbs RF,SUS316, ANSI Flange B16.5 65A 150lbs RF,SUS304, JPI Flange 7S-15 65A 150lbs RF,SUS316, JPI Flange 7S-15 65A 300lbs RF,SUS304, JPI Flange 7S-15 65A 300lbs RF,SUS316, JPI Flange 7S-15</p> <p>10K 100A RF, SUS304, JIS FlangeB2220 10K 100A RF, SUS316, JIS FlangeB2220 4" 150lbs RF,SUS304, ANSI Flange B16.5 4" 150lbs RF,SUS316, ANSI Flange B16.5 100A 150lbs RF,SUS304, JPI Flange 7S-15 100A 150lbs RF,SUS316, JPI Flange 7S-15</p> <p>Overflow Detection</p> |
| <p>Approval</p> | <p>Flame Proof TIIIS d2G4</p> |
| <p>Protection Class</p> | <p>IP65</p> |
| <p>Cable Connection</p> | <p>Explosion proof PF(G)3/4,PF(G)1,PF(G)1-1/4, NPT3/4 (cable connection) TF16-11,TF22-13,TF22-15,TF28-18 (cable gland)</p> <p>Waterproof PF(G)3/4, NPT3/4, PF(G) 1/2 (cable connection) 20 a.b.c (cable connector)</p> <p> Caution! When installing MPC2 using cable glands, ensure to use the cable glands attached to MPC2. This specification can be ordered according to the order information 040.</p> |
| <p>Color</p> | <p>Metallic silver (internal pipe is note painted.)</p> |
| <p>Dimension</p> | <p>Internal Pipe Type: Internal pipe length max. 4000mm External Pipe Type: mounting nozzle interval (require to be specified)</p> <p> Note! The side and bottom flanges are equivalent to 25A/1".</p> |

Declaration of Hazardous Material and De-Contamination Erklärung zur Kontamination und Reinigung

RA No.

Please reference the Return Authorization Number (RA#), obtained from Endress+Hauser, on all paperwork and mark the RA# clearly on the outside of the box. If this procedure is not followed, it may result in the refusal of the package at our facility.
Bitte geben Sie die von E+H mitgeteilte Rücklieferungsnummer (RA#) auf allen Lieferpapieren an und vermerken Sie diese auch außen auf der Verpackung. Nichtbeachtung dieser Anweisung führt zur Ablehnung ihrer Lieferung.

Because of legal regulations and for the safety of our employees and operating equipment, we need the "Declaration of Hazardous Material and De-Contamination", with your signature, before your order can be handled. Please make absolutely sure to attach it to the outside of the packaging.

Aufgrund der gesetzlichen Vorschriften und zum Schutz unserer Mitarbeiter und Betriebseinrichtungen, benötigen wir die unterschriebene "Erklärung zur Kontamination und Reinigung", bevor Ihr Auftrag bearbeitet werden kann. Bringen Sie diese unbedingt außen an der Verpackung an.

Type of instrument / sensor
Geräte-/Sensortyp _____

Serial number
Seriennummer _____

Used as SIL device in a Safety Instrumented System / Einsatz als SIL Gerät in Schutzeinrichtungen

Process data/Prozessdaten
Temperature / Temperatur _____ [°F] _____ [°C] Pressure / Druck _____ [psi] _____ [Pa]
Conductivity / Leitfähigkeit _____ [µS/cm] Viscosity / Viskosität _____ [cp] _____ [mm²/s]

Medium and warnings
Warnhinweise zum Medium



| | Medium /concentration Medium /Konzentration | Identification CAS No. | flammable entzündlich | toxic giftig | corrosive ätzend | harmful/ irritant gesundheitsschädlich/ reizend | other * sonstiges* | harmless unbedenklich |
|--|--|---------------------------|--------------------------|-----------------|---------------------|--|-----------------------|--------------------------|
| Process medium Medium im Prozess | | | | | | | | |
| Medium for process cleaning Medium zur Prozessreinigung | | | | | | | | |
| Returned part cleaned with Medium zur Endreinigung | | | | | | | | |

* explosive; oxidising; dangerous for the environment; biological risk; radioactive

* explosive; brandfördernd; umweltgefährlich; biogefährlich; radioaktiv

Please tick should one of the above be applicable, include safety data sheet and, if necessary, special handling instructions.

Zutreffendes ankreuzen; trifft einer der Warnhinweise zu, Sicherheitsdatenblatt und ggf. spezielle Handhabungsvorschriften beilegen.

Description of failure / Fehlerbeschreibung _____

Company data / Angaben zum Absender

| | |
|-------------------------|--|
| Company /Firma _____ | Phone number of contact person /Telefon-Nr. Ansprechpartner: _____ |
| Address / Adresse _____ | Fax / E-Mail _____ |
| _____ | Your order No. / Ihre Auftragsnr. _____ |

"We hereby certify that this declaration is filled out truthfully and completely to the best of our knowledge. We further certify that the returned parts have been carefully cleaned. To the best of our knowledge they are free of any residues in dangerous quantities."

"Wir bestätigen, die vorliegende Erklärung nach unserem besten Wissen wahrheitsgetreu und vollständig ausgefüllt zu haben. Wir bestätigen weiter, dass die zurückgesandten Teile sorgfältig gereinigt wurden und nach unserem besten Wissen frei von Rückständen in gefährlicher Menge sind."

(place, date / Ort, Datum)

Name, dept./Abt. (please print /bitte Druckschrift)

Signature / Unterschrift

Endress + Hauser Japan Co., Ltd.
Product Center Yamanashi
862-1 Mitsukunugi Sakaigawa-cho
Fuefuki-shi Yamanashi,
406-0846 Japan

Phone: ++81 55 266 4964
Fax: ++81 55 266 4969

Endress + Hauser 
People for Process Automation