



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services

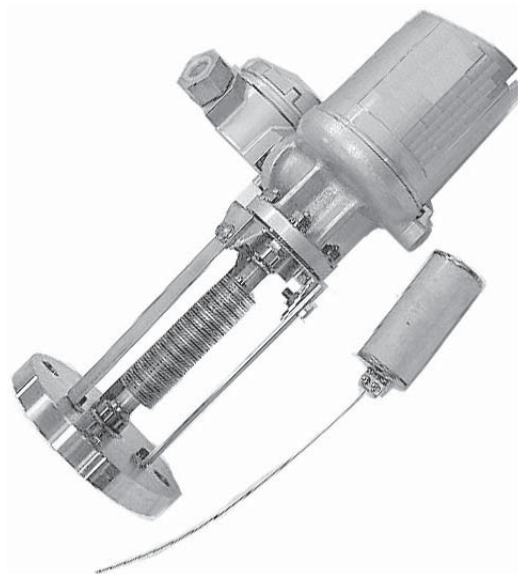


Solutions

Technical Information

Level Switch MPC2000 MPC2

Displacement Type Level Switch



Application

MPC series level controllers are displacement type instruments for tank installation. MPC provides 1 to 4 control output contacts while activating microswitches with a magnet. The switching mechanism is designed to operate these contacts independent of one another and performs pump control by utilizing the independent operation of the contacts.

Features and Benefits

- No power supply required
- Wide range control
- Spring type micro switch holders assure proper operation, unaffected by vessels vibration
- Multi-point control (4 points maximum) possible with single level controller
- High-temperature, high-pressure resistant
- Simple construction, stable operation
- Control level easily modified by changing displacer position.
- Explosion-proof type also available

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Basic Device Layout

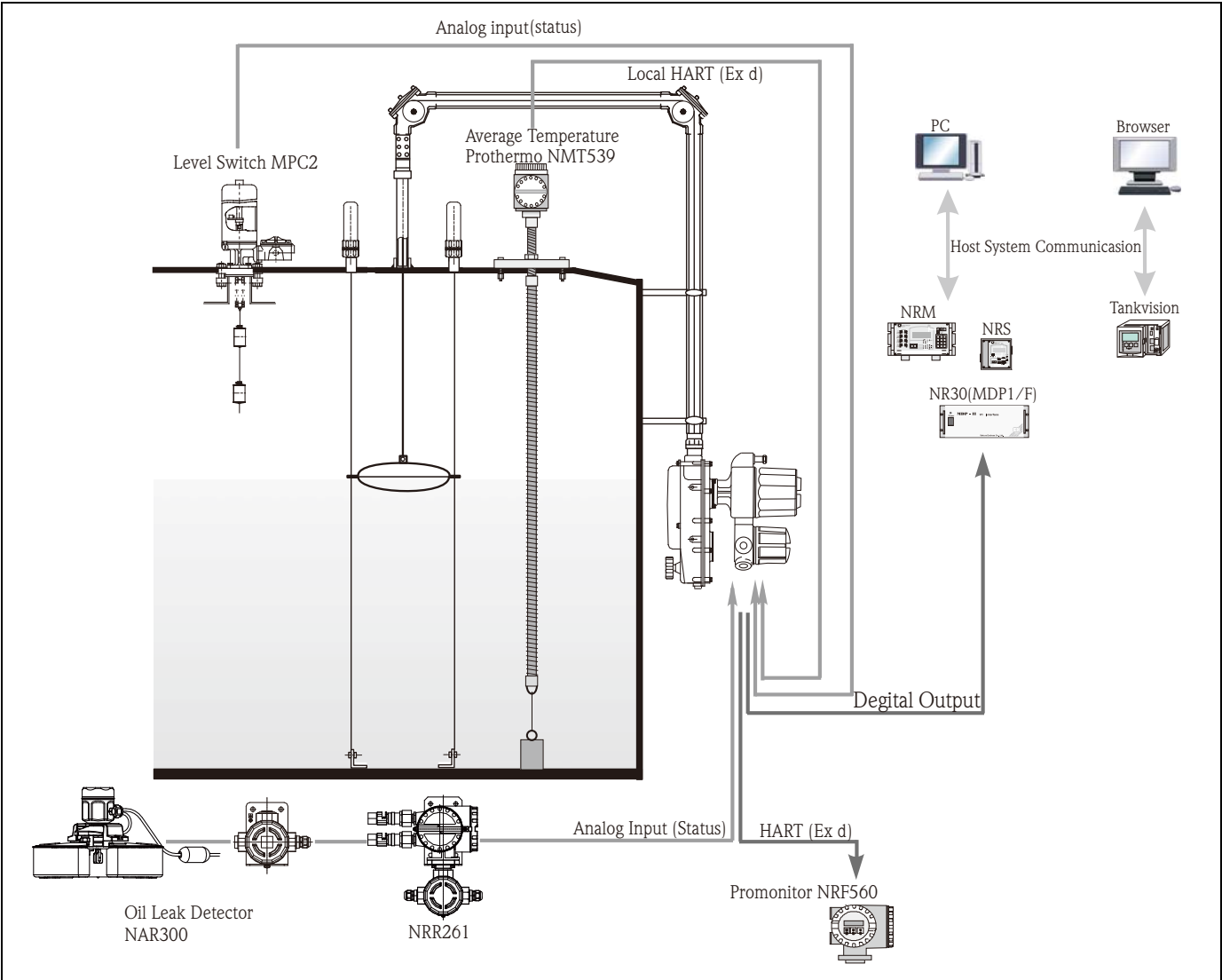


Figure 1: Basic Device Layout

Function and System Design

Measuring System

Level fluctuation is detected by a displacer and converted into displacement by a moving iron core located in the upper seal pipe. The switch is composed of micro switch, flat spring, and magnet on a bracket and located on the seal pipe. When the iron core in the seal pipe moves up and down and reaches setting level, the iron core and magnet attract, activating the micro switch. The cobalt composition in the magnet allows it to be small yet, powerful. The 2 point alarm specification features 1 iron core, 2 magnets, 2 micro switches and operates as explained above.

In high temperature applications, (up to 250°C) cooling fins prevent high-temperatures in the tank from being transmitted to the micro switch housing (refer to "Dimension": Radiation Fin).

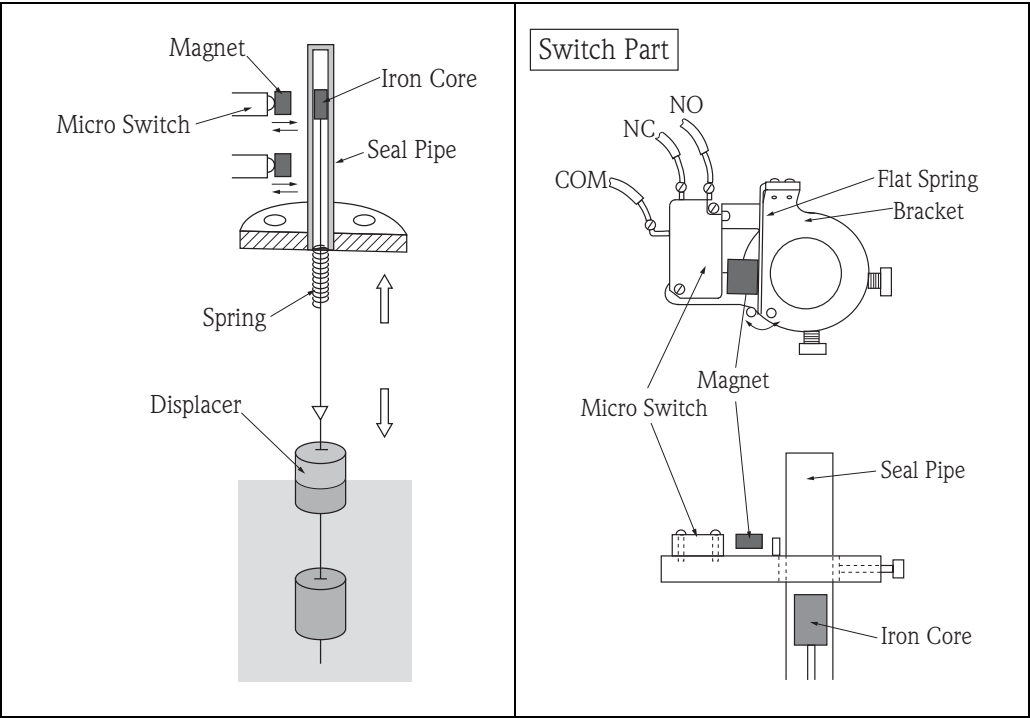


Figure 2: Parts Name

Operation Principal

The micro switch is normally operated by a flat spring. When the iron core nears and magnetic attraction is more powerful than flat spring force, the micro switch turns on. Thus, the upper/lower limit switch is always ON when the micro switch is isolated from the magnet.

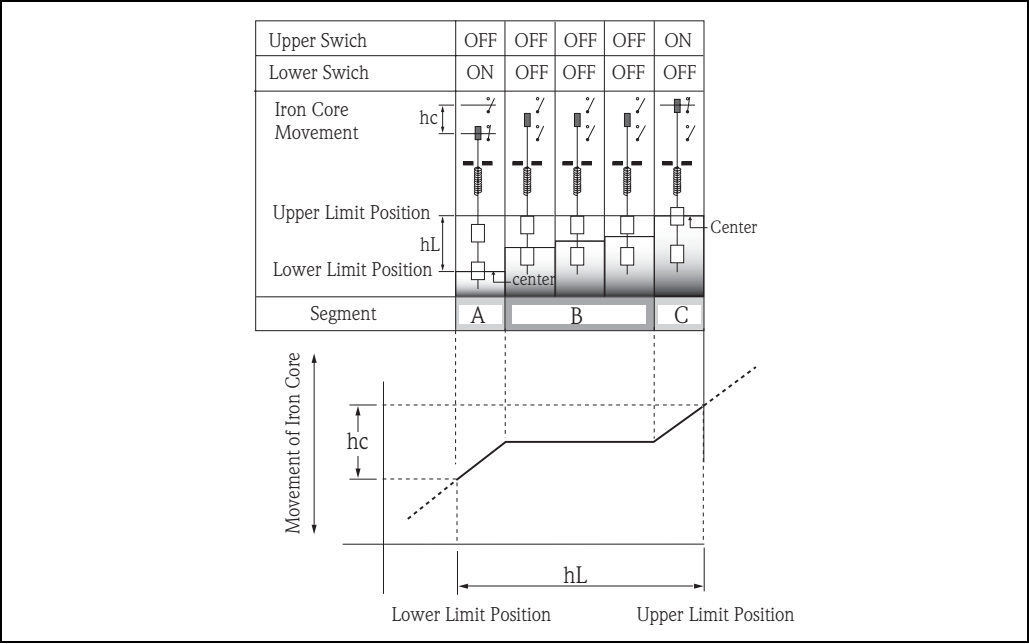


Figure 3: Switch Operation

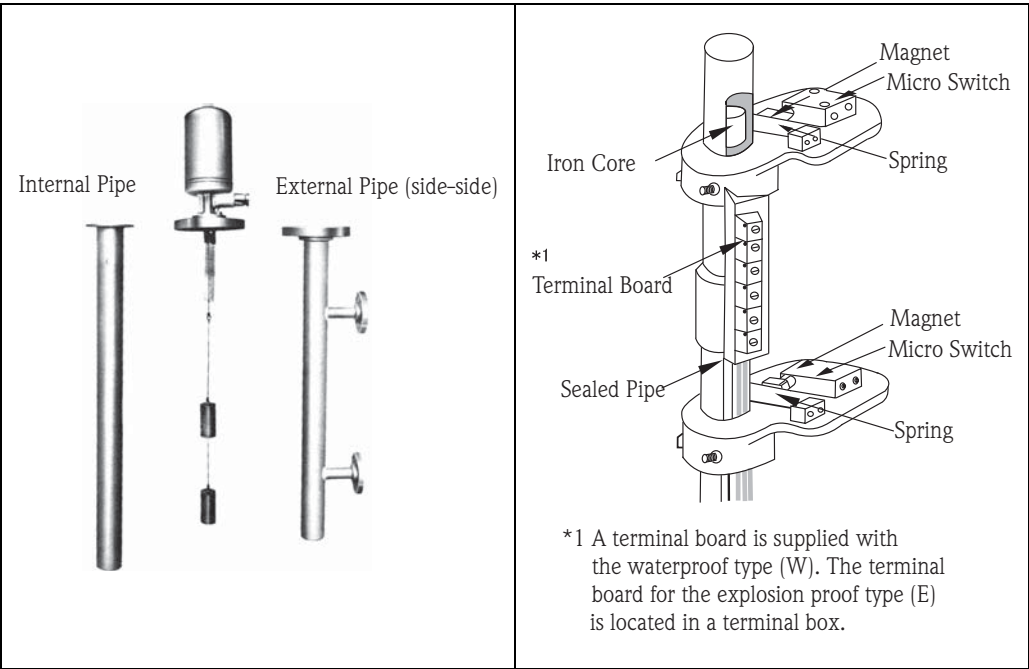


Figure 4: Parts Name

Performance Characteristics

Accuracy	Without radiation fin: (MPC2- +0++++++) 1 and 2 points: within ±3mm (MPC2- +0++++++) 3 and 4 points: within ±5mm (at a tmp. of 25°C/77°F) With radiation 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/cm²) * The pressure varies depending on the flange specifications.
Ambient Temperature	-20 to +60 °C (-4 to 140°F) (Ex type) -10 to +40 °C (-14 to 104°F) (Non Ex type/under the condition of not freezing or dewfall)
Liquid Temperature	0 to 100°C (32 to 212°F) (Radiation Fin: max. 250°C/482°F) Refer to "Instructions for Use in High Temperature"
Measured Liquid Temperature	0.65 to 1.2g/cm³
Wetted Material	Refer to Order information: 060: Process connection, Top mounted flange, 080: Pipe
Alarm Points	1 to 4 points
Contact Capacity	TIIS: max. 250VAC, 1050VA max. 250VDC, 120VA Allowable Contact Capacity: 1 to 2 points: max. 250VAC 4.2A 1050VA, 125VDC 0.4A 3 to 4 points: max. 250VAC 2.8A 700VA, 125VDC 0.4A
Hysteresis	Without fins: 1, 2: within 7 to 25mm (in case of density = 1g/cm³) 3, 4: within 7 to 45mm (in case of density = 1g/cm³) With fins: 1, 2: within 7 to 40mm (in case of density = 1g/cm³) 3, 4: within 7 to 40mm (in case of density = 1g/cm³)

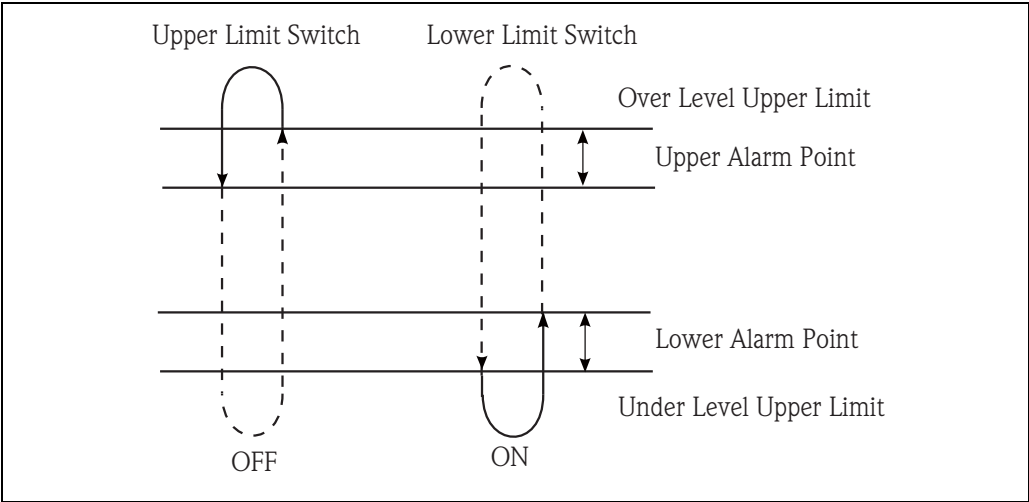


Figure 5: Hysteresis

Process Connection Top Mounted Flange**Without Internal Pipe/Internal Pipe**

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

External Pipe(side-side installation, side bottom installation)

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

Overflow Detection

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

Approval

Flame proof: TIIS d2G4

Protection Class

IP65

Cable Connection

Explosion proof : PF(G)3/4,PF(G)1,PF(G)1-1/4, NPT3/4 (cable connection)
 Explosion proof : TF16-11,TF22-13,TF22-15,TF28-18 (cable gland)
 Waterproof: PF(G)3/4, NPT3/4, PF(G)1/2 (cable connection)
 Waterproof: 20 a.b.c (cable connector)

**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.

Color

Metallic silver (internal type is not painted)

Dimension

Internal pipe type: Internal pipe length max. 4000mm
 External pipe type: mounting nozzle interval (specified by a customer)

**Note!**

Side and bottom flanges are equivalent to 25A/1".

Example: Internal Pipe Type (Order Information: 010 "Type")

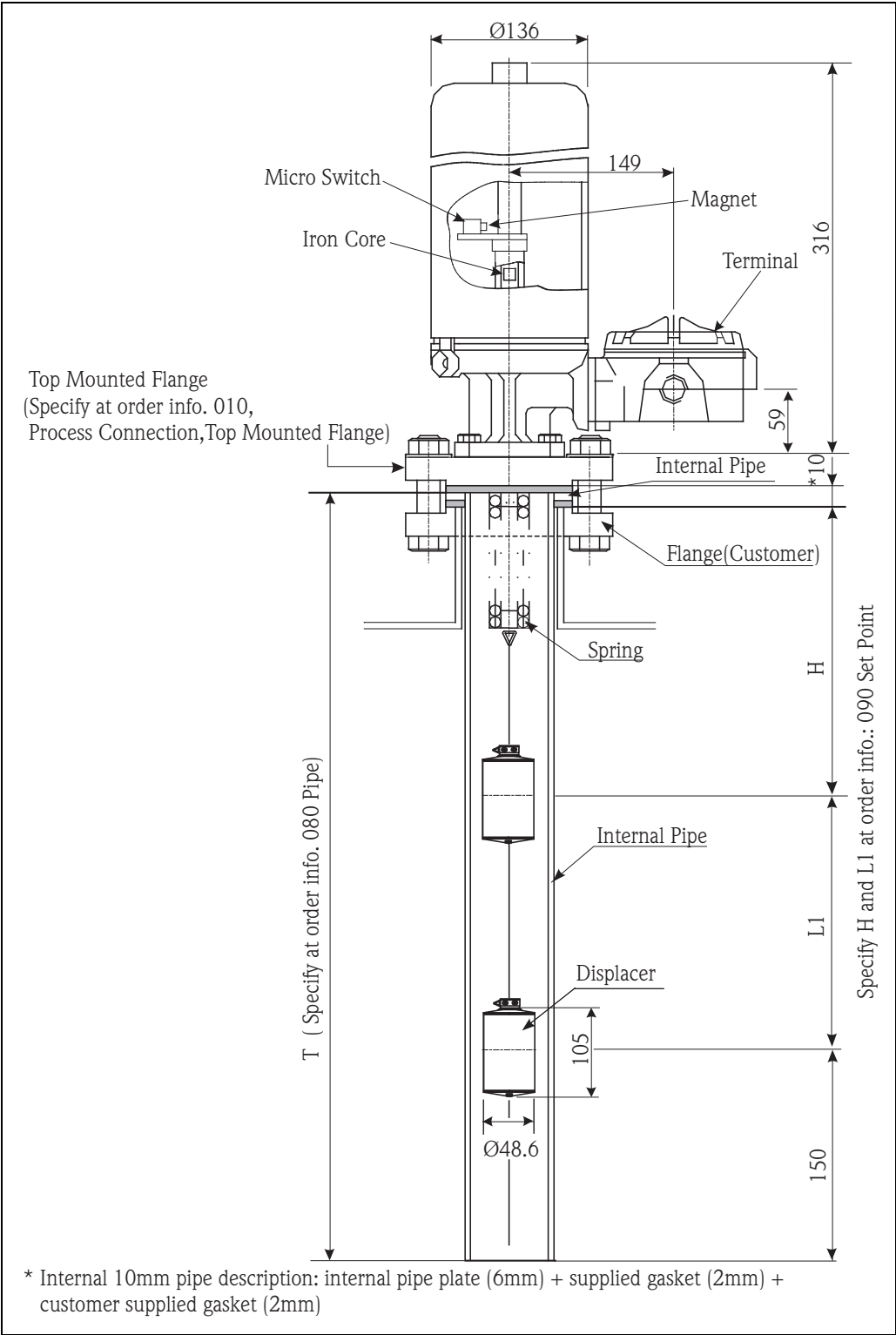


Figure 6: MPC with Internal Pipe

Example: External Pipe Type (Side-side Installation, Order Information: 010 "Type")

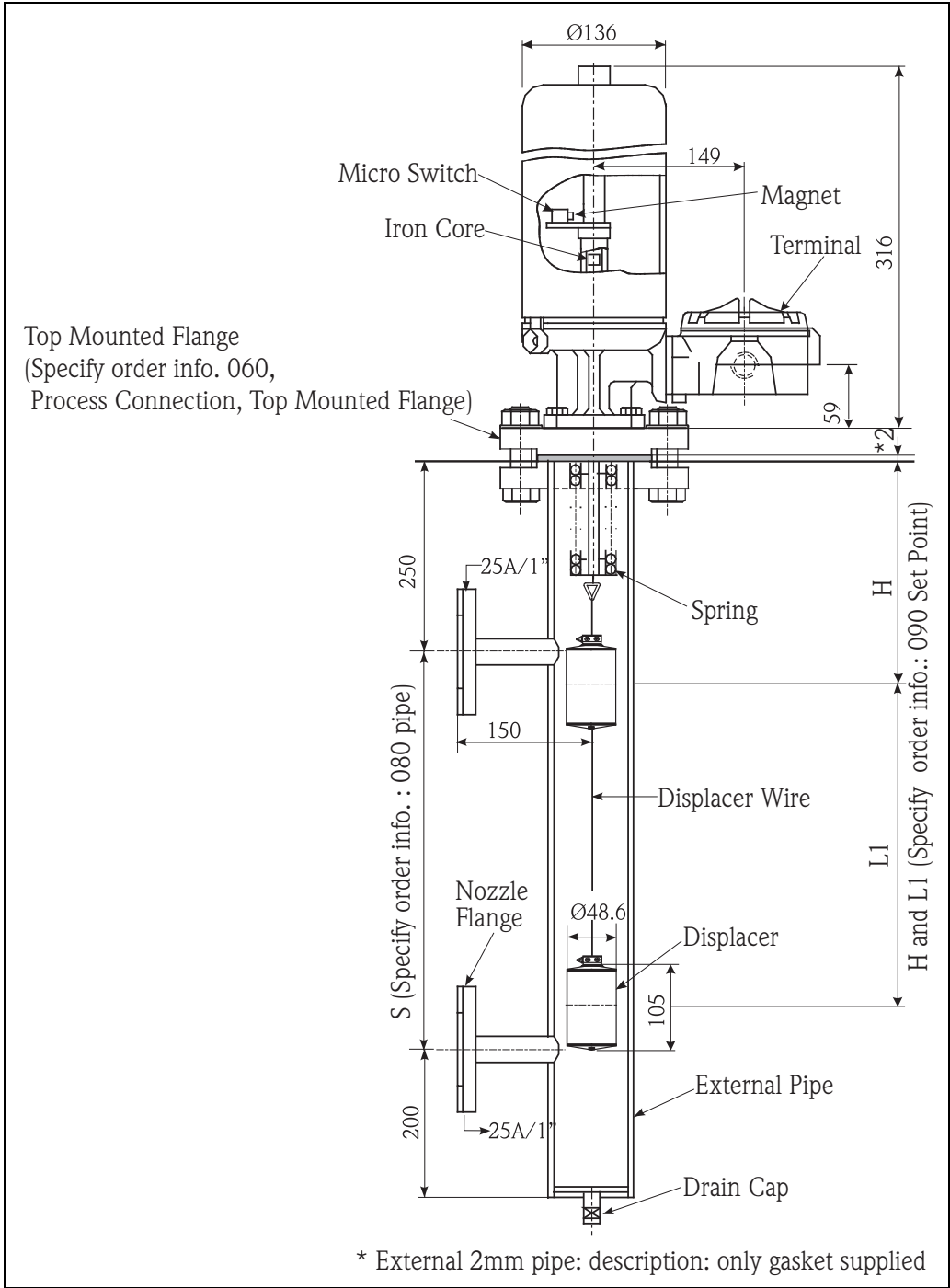


Figure 7: MPC2 with External Pipe (Side-side Installation)

Example: External Pipe Type (Side-bottom Installation, Order Information: 010 "Type")

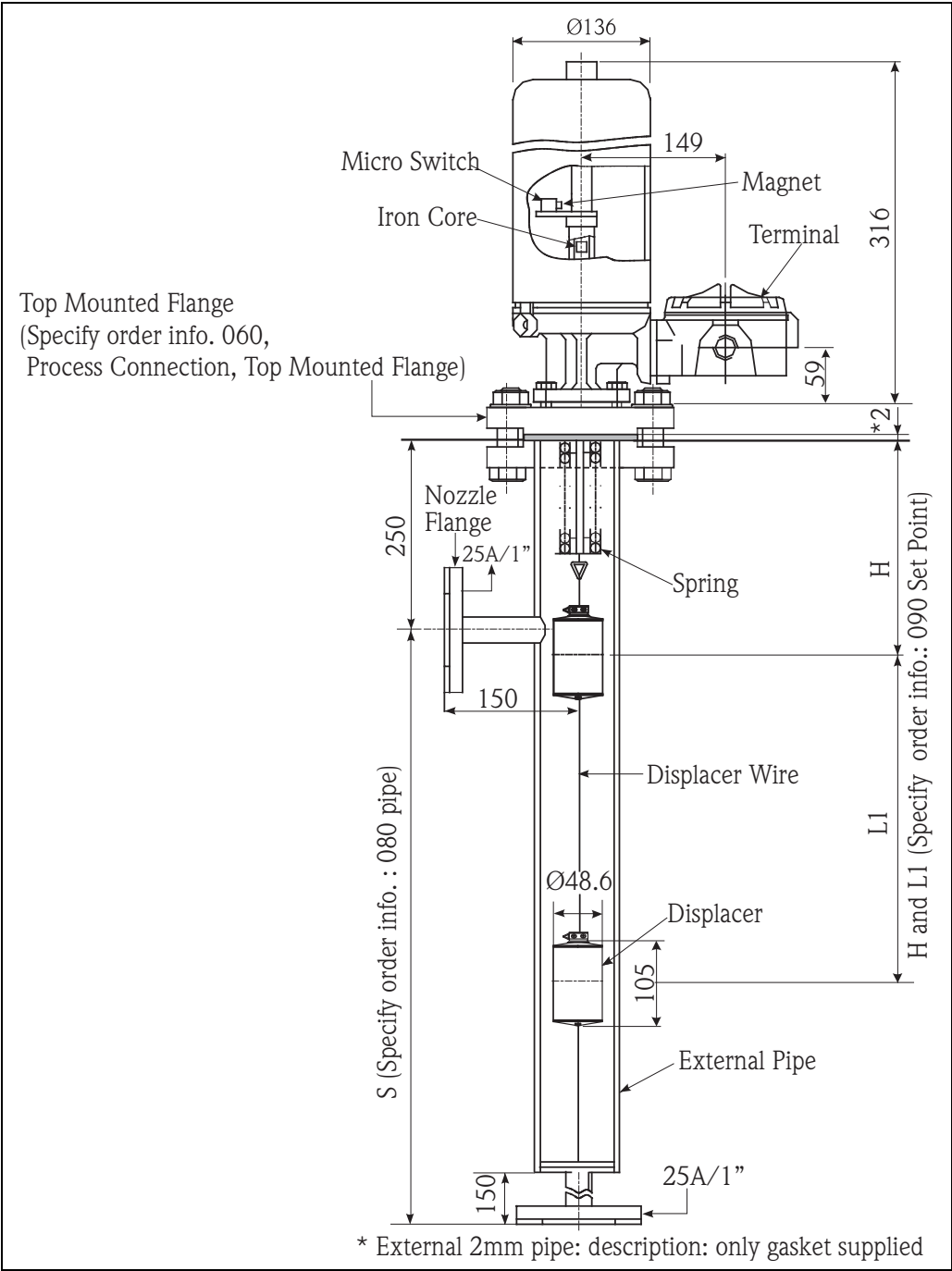


Figure 8: MPC2 with External Pipe (Side-bottom Installation)

Instructions for Use in High Temperature

Cooling fins are recommended to lower the temperature around the spring as much as possible.

Moreover, MPC can be adjusted based on the temperature surrounding the spring mechanism during a high temperature use.

The following specialized springs are used for MPC, which depending on the number of switch points.

Switch Points	1	2	3	4
Spring Coefficient	4g/mm	5g/mm	7g/mm	8g/mm
Temperature Characteristic	-0.05% °C			

Spring coefficient at a temperature of 25 °C/77°F

- 4g: $4 - 4 \times (0.05/100) \times 25 = 3.95$
- 5g: $5 - 5 \times (0.05/100) \times 25 = 4.94$
- 7g: $7 - 7 \times (0.05/100) \times 25 = 6.91$
- 8g: $8 - 8 \times (0.05/100) \times 25 = 7.10$

Since the constant for spring load rate decreases as temperature rises, switch position adjustment is required. Temperature characteristics are the same for all springs (-0.05%/°C). Since this characteristic is linear, setting the correction value to a normal temperature in advance is possible when operating temperature is limited (specified). Upon adjustment completion, accuracy in high temperature conditions is within $\pm 7\text{mm}$ for 2 points and within $\pm 10\text{mm}$ for 3 to 4 points.

Switch Points: Correction Formula for N (N = 1 to 4)

$$(W - \rho_2 \times S \times (10(N-1) + 5)) / K_2 = (W - \rho_1 \times S \times (10(N-1) + 0.1hy)) / K_1 \quad (1)$$

Switch Points: Change for 2 Characteristics/Correction Example for Normal Temperature

When setting the draft line to the center of displacer at operating temperature, 25°C would be the hy offset (mm) needed, as calculated by the following formula.

$$\text{Upper level: } (W - \rho_2 \times S \times 5) / K_2 = (W - \rho_1 \times S \times 0.1hy) / K_1 \quad (2)$$

$$\text{Lower level: } (W - \rho_2 \times S \times (10+5)) / K_2 = (W - \rho_1 \times S \times (10 + 0.1hy)) / K_1 \quad (3)$$

Symbol	Description
S	Cross-section of displacer, 18.55cm ²
W	Weight, 670g
ρ_1	Water density at 25°C, 0.997 (g/cm ³)
ρ_2	Liquid density (g/cm ³)
K1	Spring constant 25°C, 4.94 (g/mm)
K2	Spring constant in operating temperature (g/mm)



Note!

Table 1 shows hysteresis value hy (mm) according to operating temperature, derived from the formulas above.

Upper level hy (mm), however, is calculated, using the hysteresis (7 to 40mm).

For the hysteresis maximum, 40mm; hysteresis is adjusted using a 5% margin (42mm).

Using actual liquid, hy (mm) at the lower level limit is set to 50mm in all cases according to liquid composition. Offset table value is valid up to approximately 200 °C.

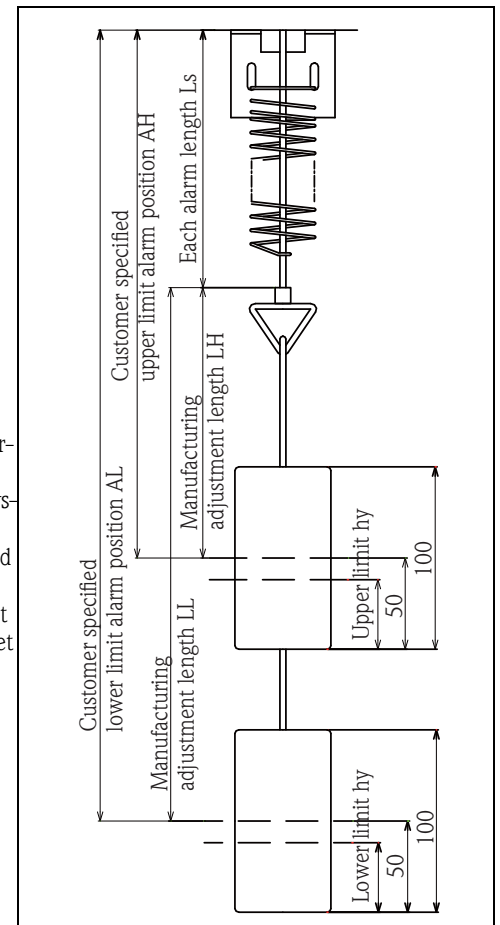


Figure 9: Correction Example

Table 1: Correction Value for 2 Points Switch

Temperature (°C)	Density ($\times 10^{-3} \text{ g/mm}^3$)	Spring Constant (g/mm)	Lower Limit Level (mm) Hy	Lower Limit Hy of Actual Liquid (mm)	Upper Limit Level (mm) hy	Upper Limit Hy of Actual Liquid (mm)
25	0.997	4.94	50.0	50.0	50.0	50.0
30	0.996	4.93	49.2	50.0	49.3	50.0
40	0.992	4.90	47.4	50.0	47.6	50.0
50	0.988	4.88	45.6	50.0	45.9	50.0
60	0.983	4.85	43.7	50.0	44.0	50.0
70	0.978	4.83	41.8	50.0	42.2	50.0
80	0.972	4.80	39.9	50.0	42.0	51.9
90	0.965	4.78	37.9	50.0	42.0	54.1
100	0.958	4.75	35.8	50.0	42.0	56.4
110	0.951	4.73	33.7	50.0	42.0	58.7
120	0.943	4.71	31.6	50.0	42.0	61.2
130	0.935	4.68	29.4	50.0	42.0	63.8
140	0.926	4.66	27.2	50.0	42.0	66.5
150	0.917	4.63	24.9	50.0	42.0	69.4
160	0.907	4.61	22.6	50.0	42.0	72.4
170	0.897	4.58	20.2	50.0	42.0	75.6
180	0.887	4.56	17.8	50.0	42.0	78.8
190	0.876	4.53	15.3	50.0	42.0	82.3
195	0.870	4.52	14.0	50.0	42.0	84.2
200	0.865	4.51	12.8	50.0	42.0	85.9

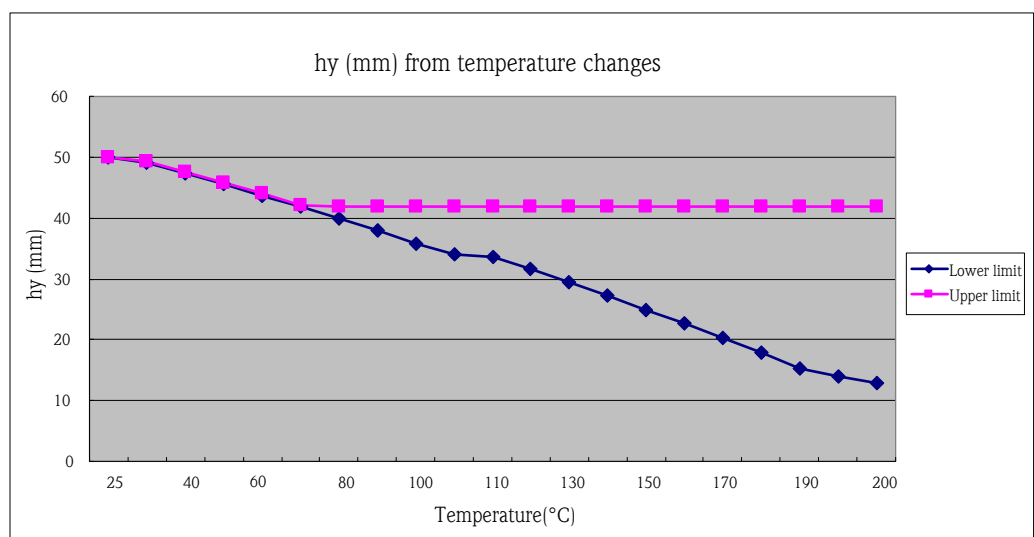


Figure 10: Dimension according to Temperature (Factory Setting)

**Switch Points: Change for 1
Characteristic/Correction
Example for Normal
Temperature**

W=375

in case of using 4g/mm spring

$$(W - p_2 \times S \times (10 (N-1) + 5)) / K_2 = (W - p_1 \times S \times (10 (N-1) + 0.1 h_y)) / K_1 \quad (N=1)$$

Table 2 shows hysteresis value h_y (mm) according to operating temperature, derived from the formulas above. Upper level h_y (mm), however, is calculated, using the hysteresis (7 to 40mm).

For the hysteresis maximum, 40mm; hysteresis is adjusted using a 5% margin (42mm).

Using actual liquid, h_y (mm) at the lower level limit is set to 50mm in all cases according to liquid composition.

Offset table value is valid up to approximately 250 °C.

Table 2: Correction Value for 1 Point Switch

Temperature (°C)	Density ($\times 10^{-3}$ g/mm ³)	Spring Constant (g/mm)	First Point h_y (mm)
25	0.997	3.95	50.0
30	0.996	3.94	49.2
40	0.992	3.92	48.6
50	0.988	3.90	47.6
60	0.983	3.88	46.5
70	0.978	3.86	45.5
80	0.972	3.84	44.3
90	0.965	3.82	43.1
100	0.958	3.80	41.9
110	0.951	3.78	40.7
120	0.943	3.76	39.4
130	0.935	3.74	38.1
140	0.926	3.72	36.8
150	0.917	3.70	35.4
160	0.910	3.68	34.1
170	0.901	3.66	32.7
180	0.893	3.64	31.3
190	0.885	3.62	29.9
200	0.877	3.60	28.5
210	0.868	3.58	27.1
220	0.860	3.56	25.7
230	0.852	3.54	24.2
240	0.844	3.52	22.7
250	0.835	3.50	21.2

**Switch Point: Change for 3
Characteristic/Correction
Example for Normal
Temperature**

W=670 + 295

295g: weight of one displacer

in case of using 7g/mm spring

$$(W - p_2 \times S \times (10 (N-1) + 5)) / K_2 = (W - p_1 \times S \times (10 (N-1) + 0.1 h_y)) / K_1$$

Table 3 to 5 show hysteresis value h_y (mm) according to operating temperature, derived from the formulas above.

Upper level h_y (mm), however, is calculated, using the hysteresis (7 to 40mm).

For the hysteresis maximum, 40mm; hysteresis is adjusted using a 5% margin (42mm).

Using actual liquid, h_y (mm) at the lower level limit is set to 50mm in all cases according to liquid composition.

Offset table value is valid up to approximately 150 °C.

Table 3: Correction Value for the First Point of 3 Points Switch

Temperature (°C)	Density ($\times 10^{-3}$ g/mm ³)	Spring Constant (g/mm)	First Point h_y (mm)
25	0.997	6.91	50.0
30	0.996	6.90	49.0
40	0.992	6.86	46.4
50	0.988	6.83	43.8
60	0.983	6.79	41.2
70	0.978	6.76	38.5
80	0.972	6.72	35.8
90	0.965	6.69	32.9
100	0.958	6.65	30.1
110	0.951	6.62	27.2
120	0.943	6.58	24.2
130	0.935	6.55	21.2
140	0.926	6.51	18.1
150	0.917	6.48	14.9

Table 4: Correction Value for the Second Point of 3 Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	Lower Limit Hy of Actual Liquid	Second Point Level Hy (mm)	Upper Limit Level Hy (mm)
25	0.997	6.91	50.0	50.0	50.0
30	0.996	6.90	50.0	49.1	50.0
40	0.992	6.86	50.0	46.6	50.0
50	0.988	6.83	50.0	44.2	50.0
60	0.983	6.79	50.0	42.0	50.5
70	0.978	6.76	50.0	42.0	53.1
80	0.972	6.72	50.0	42.0	56.1
90	0.965	6.69	50.0	42.0	59.1
100	0.958	6.65	50.0	42.0	62.1
110	0.951	6.62	50.0	42.0	65.2
120	0.943	6.58	50.0	42.0	68.5
130	0.935	6.55	50.0	42.0	71.8
140	0.926	6.51	50.0	42.0	75.4
150	0.917	6.48	50.0	42.0	78.9

Table 5: Correction Value for the Third Point of 3 Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	Lower Limit Hy of Actual Liquid	Third Point Level Hy (mm)	Upper Limit Level Hy (mm)
25	0.997	6.91	50.0	50.0	50.0
30	0.996	6.90	50.0	49.1	50.0
40	0.992	6.86	50.0	46.6	50.0
50	0.988	6.83	50.0	44.2	50.0
60	0.983	6.79	50.0	42.0	50.1
70	0.978	6.76	50.0	42.0	52.8
80	0.972	6.72	50.0	42.0	55.7
90	0.965	6.69	50.0	42.0	59.0
100	0.958	6.65	50.0	42.0	62.3
110	0.951	6.62	50.0	42.0	65.6
120	0.943	6.58	50.0	42.0	69.2
130	0.935	6.55	50.0	42.0	72.8
140	0.926	6.51	50.0	42.0	76.8
150	0.917	6.48	50.0	42.0	80.8

**Switch point: Change for 4
Characteristic/Correction
Example for Normal
Temperature**

W=670 + 590

590g: weight of two displacers
in case of using 8g/mm spring

$$(W - p_2 \times S \times (10(N-1) + 5)) / K_2 = (W - p_1 \times S \times (10(N-1) + 0.1h_y)) / K_1 \quad (1)$$

Table 6 to 9 show hysteresis value h_y (mm) according to operating temperature, derived from the formulas above.

Upper level h_y (mm), however, is calculated, using the hysteresis (7 to 40mm).

For the hysteresis maximum, 40mm; hysteresis is adjusted using a 5% margin (42mm).

Using actual liquid, h_y (mm) at the lower level limit is set to 50mm in all cases according to liquid composition. Offset table value is valid up to approximately 130 °C.

Table 6: Correction Value for the First Point of 4Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	First Point h_y (mm)
25	0.997	7.90	50.0
30	0.996	7.88	48.8
40	0.992	7.84	46.2
50	0.988	7.80	43.7
60	0.983	7.76	41.3
70	0.978	7.72	38.3
80	0.972	7.68	35.6
90	0.965	7.64	32.7
100	0.958	7.60	29.9
110	0.951	7.56	27.0
120	0.943	7.52	24.0
130	0.935	7.48	21.0
140	0.926	7.44	17.9
150	0.917	7.40	14.8

Table 7: Correction Value for the Second Point of 4 Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	Lower Limit Hy of Actual Liquid	Second Point Level Hy (mm)	Upper Limit Level Hy (mm)
25	0.997	7.90	50.0	50.0	50.0
30	0.996	7.88	50.0	49.1	50.0
40	0.992	7.84	50.0	46.6	50.0
50	0.988	7.80	50.0	44.2	50.0
60	0.983	7.76	50.0	42.0	50.6
70	0.978	7.72	50.0	42.0	53.3
80	0.972	7.68	50.0	42.0	56.1
90	0.965	7.64	50.0	42.0	59.2
100	0.958	7.60	50.0	42.0	62.2
110	0.951	7.56	50.0	42.0	65.3
120	0.943	7.52	50.0	42.0	68.6
130	0.935	7.48	50.0	42.0	72.0
140	0.926	7.44	50.0	42.0	75.5
150	0.917	7.40	50.0	42.0	79.1

Table 8: Correction Value for the Third Point of 4 Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	Lower Limit Hy of Actual Liquid	Third Point Level Hy (mm)	Upper Limit Level Hy (mm)
25	0.997	7.90	50.0	50.0	50.0
30	0.996	7.88	50.0	49.1	50.0
40	0.992	7.84	50.0	46.6	50.0
50	0.988	7.80	50.0	44.2	50.0
60	0.983	7.76	50.0	42.0	50.2
70	0.978	7.72	50.0	42.0	52.9
80	0.972	7.68	50.0	42.0	55.8
90	0.965	7.64	50.0	42.0	59.1
100	0.958	7.60	50.0	42.0	62.4
110	0.951	7.56	50.0	42.0	65.7
120	0.943	7.52	50.0	42.0	69.3
130	0.935	7.48	50.0	42.0	72.9
140	0.926	7.44	50.0	42.0	76.9
150	0.917	7.40	50.0	42.0	80.9

Table 9: Correction Value for the Fourth Point of 4 Points Switch

Temperature (°C)	Density (x10 ⁻³ g/mm ³)	Spring Constant (g/mm)	Lower Limit Hy of Actual Liquid	Fourth Point Level Hy (mm)	Upper Limit Level Hy (mm)
25	0.997	7.90	50.0	50.0	50.0
30	0.996	7.88	50.0	49.1	50.0
40	0.992	7.84	50.0	46.6	50.0
50	0.988	7.80	50.0	44.2	50.0
60	0.983	7.76	50.0	42.0	50.2
70	0.978	7.72	50.0	42.0	52.5
80	0.972	7.68	50.0	42.0	55.6
90	0.965	7.64	50.0	42.0	59.0
100	0.958	7.60	50.0	42.0	62.5
110	0.951	7.56	50.0	42.0	66.0
120	0.943	7.52	50.0	42.0	69.9
130	0.935	7.48	50.0	42.0	73.9
140	0.926	7.44	50.0	42.0	78.3
150	0.917	7.40	50.0	42.0	82.7

Dimensions

Switch Points: 1

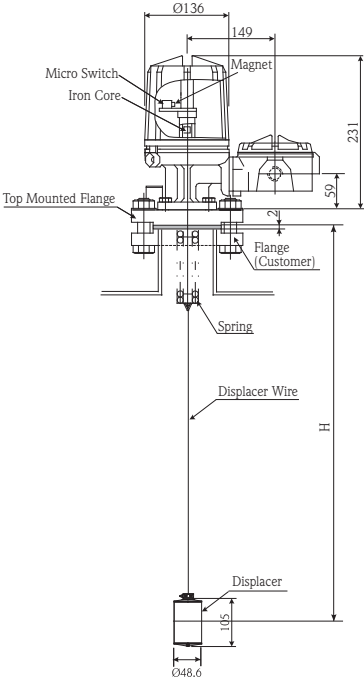
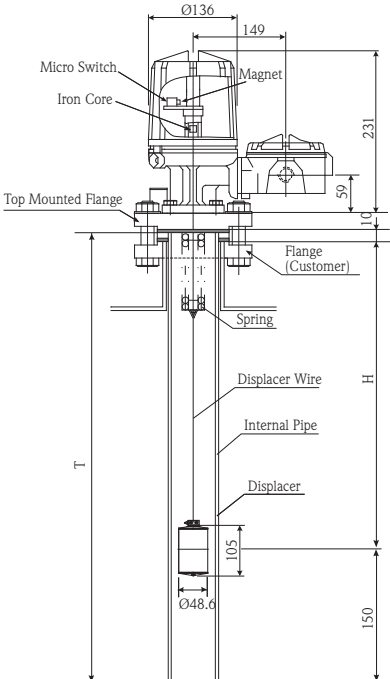
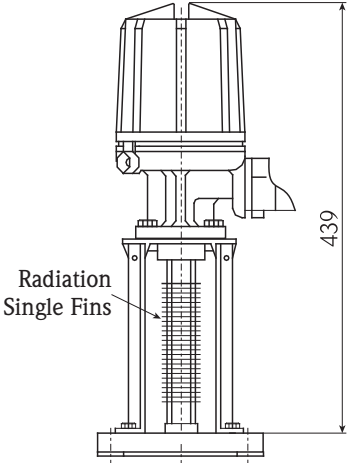
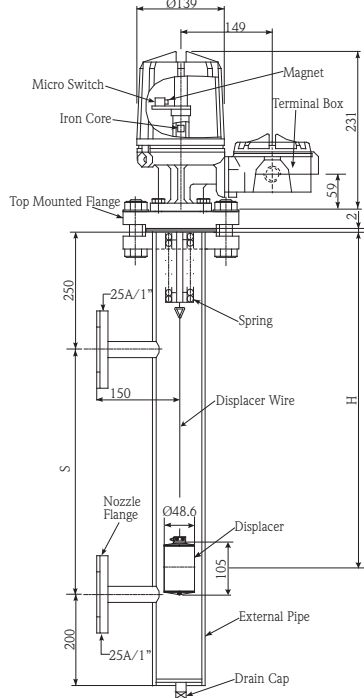
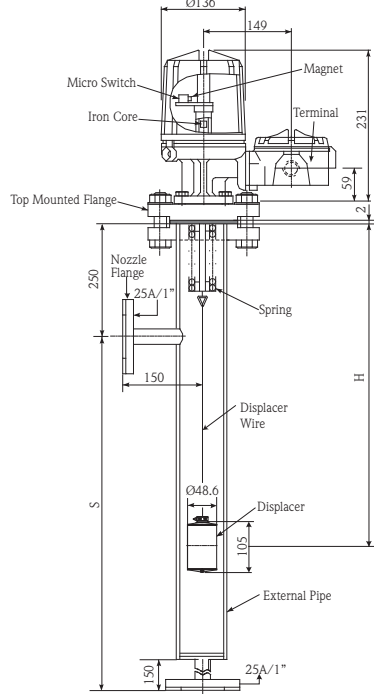
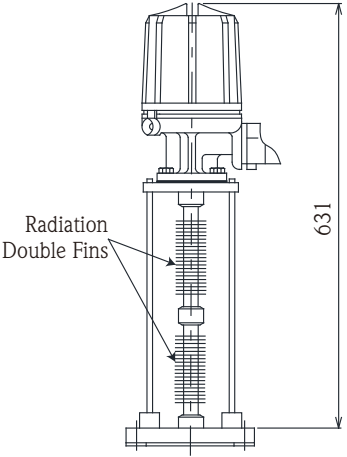
Without Guide Pipe	Internal Pipe Type: Tank top mounting	Radiation Fins
MPC20 □□ E	MPC21 □□ E	Single Fin
		
External Pipe Type: Side-side Mounting	External Pipe Type: Side-bottom Mounting	Radiation Fins
MPC22 □□ E	MPC23 □□ E	Double Fins
		

Figure 11: 1Point Switch of MPC

Switch Points: 2

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

Figure 12: 2 Points Switch of MPC

Switch Points: 3

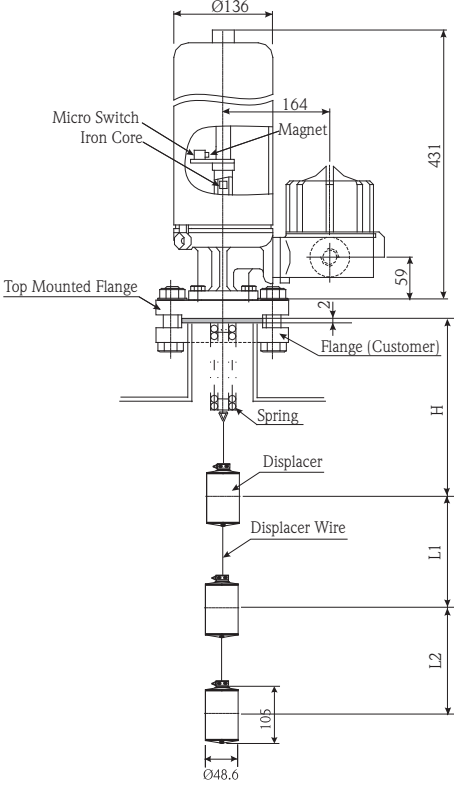
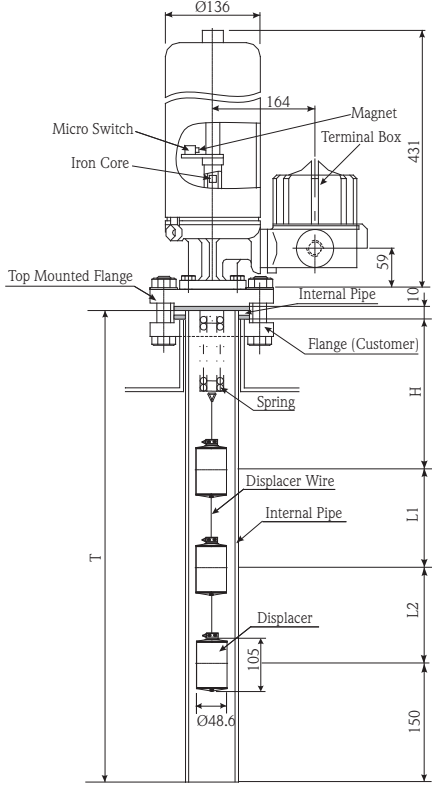
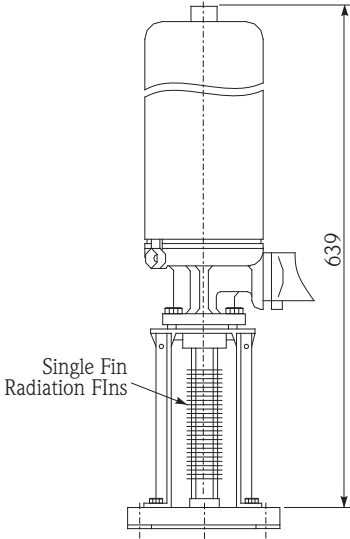
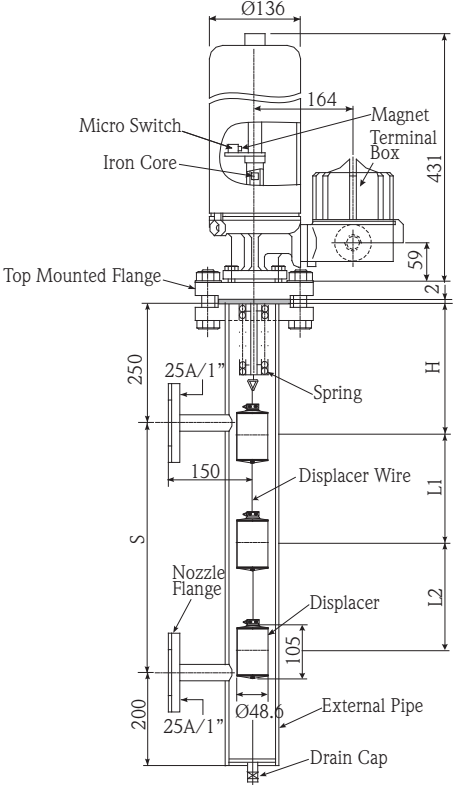
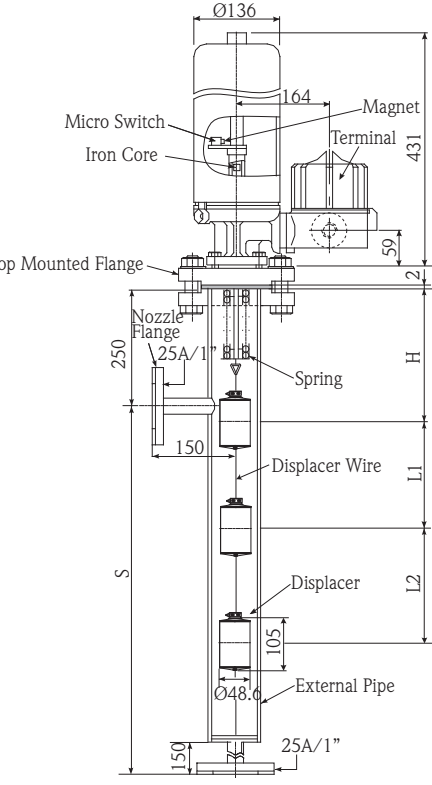
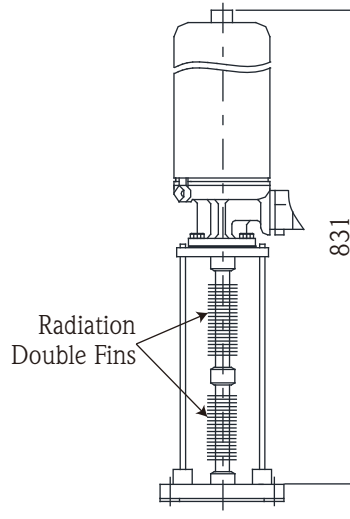
Without Guide Pipe	Internal Pipe Type: Tank top mounting	Radiation Fins
MPC20 □□ E	MPC21 □□ E	Single Fin
		
External Pipe Type: Side-side Mounting	External Pipe Type: Side-bottom Mounting	Radiation fins
MPC22 □□ E	MPC23 □□ E	Double Fins
		

Figure 13: 3 Points Switch of MPC

Switch Points: 4

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

Figure 14: 4 Points Switch of MPC

Waterproof Type

Cable Connector

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

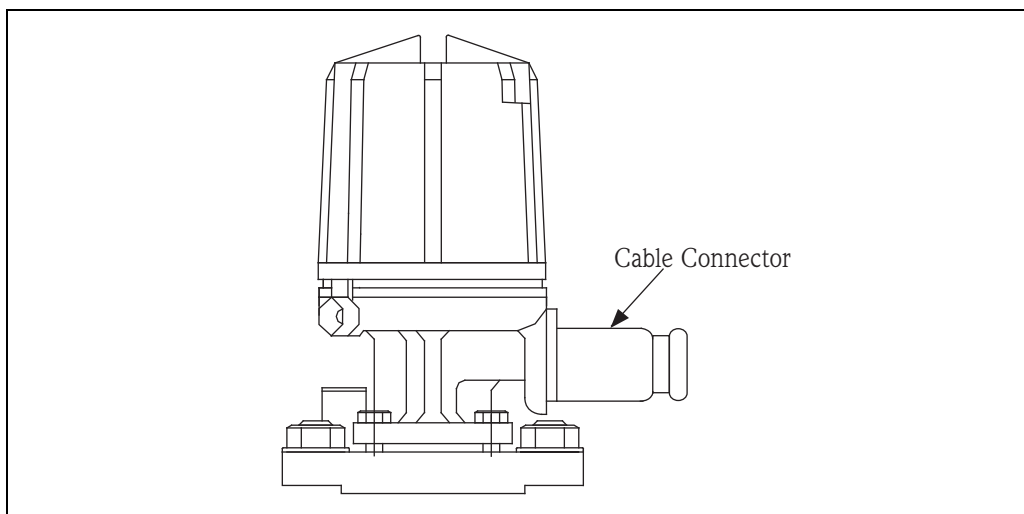


Figure 15: Cable Connector for 1 Point Switch



Note!

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

Overflow Alarm

There are two specifications for overflow alarm: displacer for CRT or weight for FRT.

When a displacer or weight reaches set position, an alarm signal is output to warn of overflow in advance. The operation and function of weight type are the same as 1 switch point type of MPC. When liquid reaches the upper limit point, a displacer rises and triggers an alarm. MPC2 also has a checking function. By pulling the test wire and raising the displacer manually to the high limit point, an alarm can be simulated.

Weight Type in Floating Roof Tank (FRT)

Weight Type: Order Information: 030 Switch Count...5; 1x FRT Overflow Detection

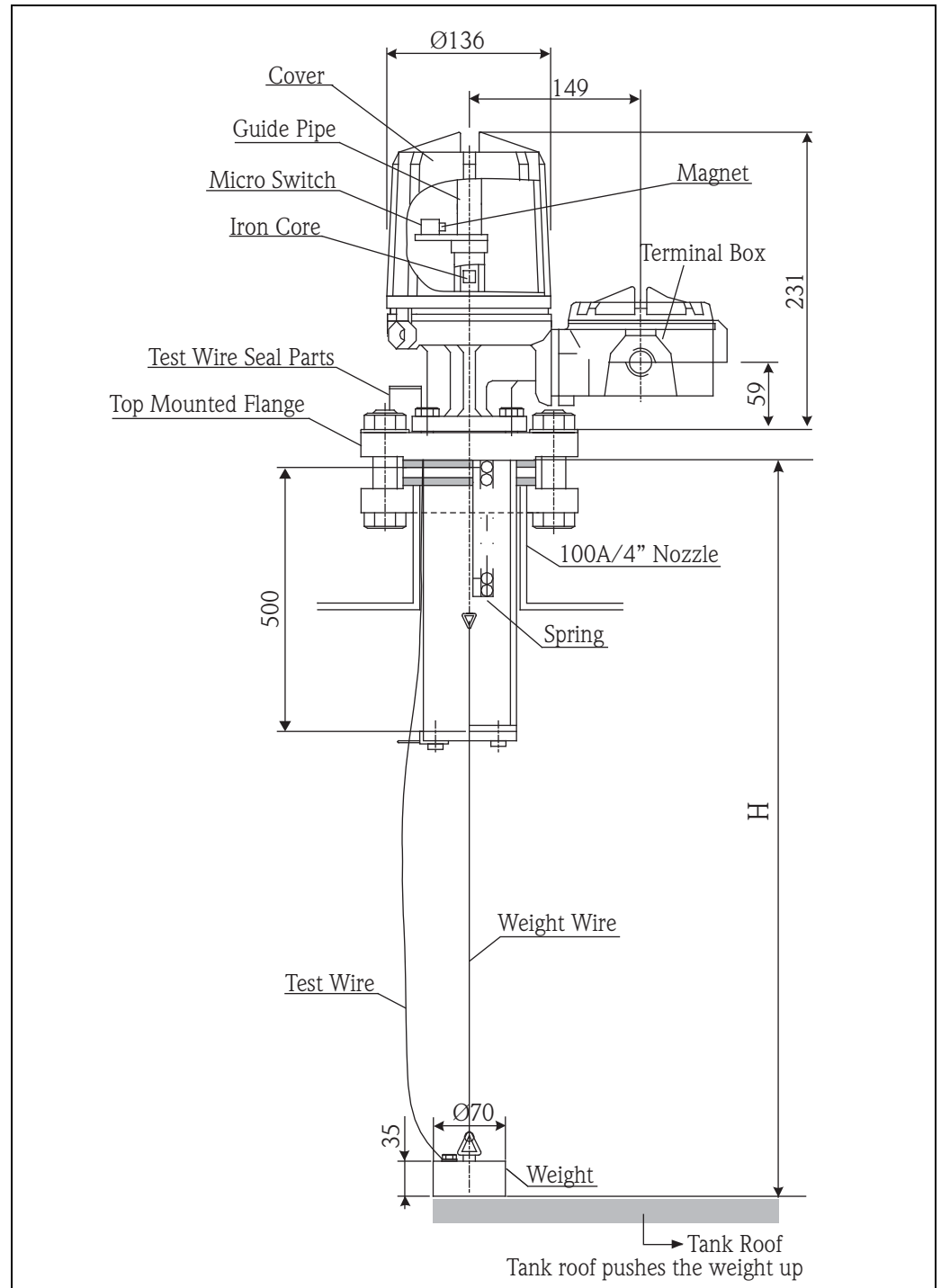
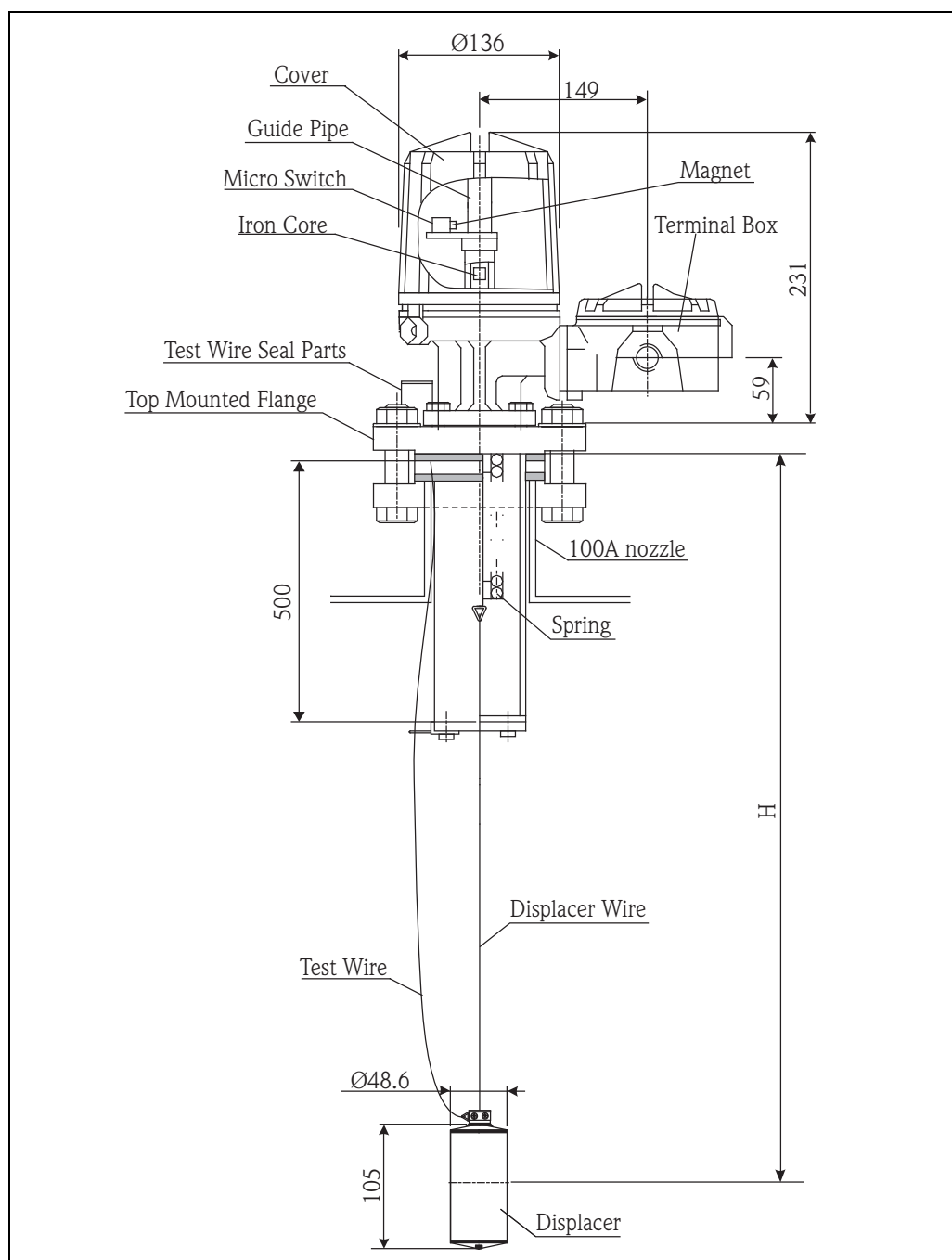


Figure 16: Weight Type of Overflow Alarm

Figure 17: Displacer Type of Overflow Alarm

Explosion Proof Approved
Type

MPC2-	a	b	c	d
↑	↑	↑	↑	↑
External Design	Radiation Fins	Switching Point	Cable entry	
0 Without guide pipe	0 Without fin	1 1 x Level	E PF(G)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 xCRT overflow detection		
3 Outer pipe type (side-bottom)		2 2 x Level		
		3 3 x Level		
		4 4 x Level		

Order 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)			



Order Information 070: Switch Position

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

- Without internal pipe/external pipe, overflow alarm
Specify a setting length at the range from the bottom of the top mounted flange.

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Certificates and Approvals

Ex Approvals

TIIS: d2G4

Supplementary Documentation

Operating Instructions

BA01298G
Level switch MPC2000 MPC2

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