

## MKCM TYPE OIL/WATER/AIR SIGNAL

### Reed switch system (The electric contact type flow sight)

#### ● Feature

1. This product is the electric contact type flow sight by the combination of a reed switch and a magnet.
2. The reed switch enclosed with the transparent tube runs by magnetic action of the magnet inside a float. This product is the flow switch which it is very compact and is easy to use.
3. Since the spring is being used for this product in a transparent tube, the postures when attaching are freedom, such as facing up, facing down, and sideways.
4. Since the transparent tube made of acrylic resin is used, the movement of a float or the flow condition of a fluid can be confirmed from the outside. However, the confirmation of a flow rate cannot be performed.
5. Since the reed switch is being fixed, adjustment of the operating flow rate value cannot be performed. However, adjustment of some operating flow rate value is possible by exchanging the spring.

#### ● Standard specification

1. Maximum working voltage DC, AC 300V
2. Maximum working current DC, AC 0.5A
3. Contact capacity 50VA
4. System of a contact ON type (Contacts are closed when fluid does not flow), or OFF type (Contacts are open when fluid does not flow)
5. Acceptable Fluid Fluids, such as water, oil, and air
6. Standard pressure proof 1MPa (10kgf/cm<sup>2</sup>)
7. Working temperature range 0°C ~ +60°C
8. Connection system of a joint The female screw Rc(PT) is being used for a standard product. However the male screw or the combination of milli size copper pipe and precision steel pipes is also made.

#### ● Request item in the case of an order

1. Type
2. Connection system of a joint
3. Name of a fluid In the case of an oil, it is a viscosity.)
4. Working voltage、 working current
5. System of a contact ON type (Contacts are closed when fluid does not flow), or OFF type (Contacts are open when fluid does not flow)
6. Working flow rate The minimum, daily use, the maximum
7. Operating flow rate Please make the flow rate table of an attached sheet reference. In the case of an oil, if possible, please specify with 1/3 or less flow rate value of the minimum working flow rate. As for an oil, an operating flow rate may change with temperature changes sharply.
8. Special Specification Heat-resistant product (maximum 100°C)  
Pressure-proof product (5MPa ; 50kgf/cm<sup>2</sup>)  
Please consult about the special quality of the materials, such as stainless steel etc.

## ●Part table

No.	Name	Material
①	Frame	Bronze
②	Transparent tube	Acrylic resin
③	Joint	Brass
④	Float containing a magnet	Acrylic resin or Aluminium or Nylon
⑤	Spring	SUS 304
⑥	O ring	Nitrile rubber
⑦	Reed switch	Commercial article
⑧	Lead wire (Standard product 20 cm) ※	Commercial article

※Please consult about the length of lead wire, specification of a color, and use of a cable cord.

## ●Flow rate table of MKCM type OIL SIGNAL

Type	Dimension (mm)					Flow rate (L/min)	
	Connection aperture [A]	Length [C]	Width [D]	Depth [B]	Minimum bore $\phi$ mm	Specification range of anoperating flow rate (L/min)	Maximum flow rate
MKCM20-1TL-OFF	Rc1/8	80	30	22	6.5	0.005(5cc)~2	5
MKCM20-1TL-ON							
MKCM20-2TL-OFF	Rc1/4	80	30	22	6.5	0.005(5cc)~2	5
MKCM20-2TL-ON							
MKCM20-3TL-OFF	Rc3/8	86	30	25	6.5	0.005(5cc)~2	5
MKCM20-3TL-ON							
MKCM30-2TL-OFF	Rc1/4	104	43	32	9.5	0.05(50cc)~5	10
MKCM30-2TL-ON							
MKCM30-3TL-OFF	Rc3/8	104	43	32	9.5	0.05(50cc)~5	10
MKCM30-3TL-ON							
MKCM30-4TL-OFF	Rc1/2	110	43	32	9.5	0.05(50cc)~5	10
MKCM30-4TL-ON							
MKCM35-4TL-OFF	Rc1/2	124	49	44	13.5	1.0~10	25
MKCM35-4TL-ON							
MKCM35-6TL-OFF	Rc3/4	124	49	44	13.5	1.0~10	25
MKCM35-6TL-ON							
MKCM45-6TL-OFF	Rc3/4	142	62	50	18.0	3.0~15	50
MKCM45-6TL-ON							
MKCM45-8TL-OFF	Rc1	142	62	50	18.0	3.0~15	50
MKCM45-8TL-ON							

※The operating flow rate value of a reed switch is set up by the specified flow rate, and is fixed.

Keep in mind an oil that a flow rate may change with temperature changes sharply.

● **Flow rate table of MKCM type WATER SIGNAL**

Type	Dimension (mm)					Flow rate(L/min)	
	Connection aperture [A]	Length [C]	Width [D]	Depth [B]	Minimum bore $\phi$ mm	Specification range of anoperating flow rate (L/min)	Maximum flow rate
MKCM20-1TW-OFF	Rc1/8	80	30	22	6.5	0.1~4	10
MKCM20-1TW-ON							
MKCM20-2TW-OFF	Rc1/4	80	30	22	6.5	0.1~4	10
MKCM20-2TW-ON							
MKCM20-3TW-OFF	Rc3/8	86	30	25	6.5	0.1~4	10
MKCM20-3TW-ON							
MKCM30-2TW-OFF	Rc1/4	104	43	32	9.5	0.5~10	20
MKCM30-2TW-ON							
MKCM30-3TW-OFF	Rc3/8	104	43	32	9.5	0.5~10	20
MKCM30-3TW-ON							
MKCM30-4TW-OFF	Rc1/2	110	43	32	9.5	0.5~10	20
MKCM30-4TW-ON							
MKCM35-4TW-OFF	Rc1/2	124	49	44	13.5	1.0~15	50
MKCM35-4TW-ON							
MKCM35-6TW-OFF	Rc3/4	124	49	44	13.5	1.0~15	50
MKCM35-6TW-ON							
MKCM45-6TW-OFF	Rc3/4	142	62	50	18.0	5.0~30	100
MKCM45-6TW-ON							
MKCM45-8TW-OFF	Rc1	142	62	50	18.0	5.0~30	100
MKCM45-8TW-ON							

※In the case of **AIR SIGNAL (FLOW SWITCH)** , as compared with MAGNET WATER SIGNAL, the specification range of an operating flow rate increases about 10 times and the maximum flow rate increases 30 times.

## ● Notes on MKCM type use

### 1. The notes on the influence by heat

Please use this flow sight at the temperature (60°C or less) near normal temperature if possible.

### 2. The notes on the influence of magnetic

Since a reed switch is a switch which operates magnetically, please use it in the place which is not influenced of a magnetic field.

Moreover, keep in mind that it will become the cause of incorrect operation of a switch if the magnetic substance, such as iron material, exists near the reed switch.

### 3. The notes on the influence by dust

When the float of this flow sight fails to work, please take apart and clean.

(a) When using the industrial water, be careful of fur.

(b) When using a mixing oils, such as a antifriction material, be careful of deposits.

(c) Keep in mind that a float may fail to work by dust and iron powder which are mixed in piping or a fluid.

(d) When the float fails to work by the foreign substance, fur, etc. while in use, please wash the core of the transparent tube well with kerosene or detergent. (Organic solvents, such as thinner, are improper.)

(e) Since the gap between the transparent tube and the float becomes small depending on type, please prevent the foreign substance entering in the transparent tube using a filter etc.。

### 4. The notes on the flow of a fluid

If air bubbles mix into a fluid, the float may fail to work normally.

In using it for the part which the flow of a fluid pulsates, be careful of specification of the operating flow rate.

### 5. The notes on the influence by the impact and vibration

(a) Please don't drop this flow sight or avoid use in the part where violent vibration and strong impact are added.

(b) If this flow sight connects with the piping system for which rapid opening-and-closing actions (electromagnetic valve etc.) are performed, keep in mind that the float and the main body may be damaged by the water hammer phenomenon or the air hammer phenomenon.

### 6. The notes on electric connection

(a) Notice this flow sight about connection so that an overcurrent does not flow to a reed switch by which cause with poor earth connection.

(b) Please use this flow sight as an alarm detector and avoid using it for any operation interlocked with some other electrical equipment, if possible.

If it is used interlocking, please fully take into consideration the influence of incorrect operation generating.

(a) If the working voltage and the working current are used stopping as small as possible, the life of a reed switch will become long.

### 7. The notes on the change of the operating flow rate of the switch by the temperature and viscosity change of an oil.

\* Keep in mind that the operating flow rate of the switch will also change if the temperature and the viscosity of an oil change.

\* Please do one check and one confirmation work or more per day including the check at the time of commencement of work.

\* When there is fear of a freeze, please be sure to drain the water in the transparent tube.