## Series variation

| Variation | Model no. <br> JIS symbol | Bore size <br> (mm) | Standard stroke length (mm) |  |  |  |  |  |  |  |  | Mounting style Mounting style |  |  |  |  | Option |  |  |  |  |  |  |  | Accessory |  |  |  | c | $\begin{aligned} & \mathbb{\varnothing} \\ & \stackrel{\varnothing}{\circ} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline 0 \end{aligned}$ | $$ |  |  |  |  |  |  | $$ | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{0} \\ & 0 \\ & 0 \\ & \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{\stackrel{\rightharpoonup}{0}} \\ & \stackrel{\rightharpoonup}{0} \\ & \stackrel{\rightharpoonup}{\mathrm{u}} \\ & \stackrel{\rightharpoonup}{\mathrm{u}} \end{aligned}$ | Clevis bracket clevis type. |  |  |
|  |  |  | 25 | 50 | 75 | 100 | 150 | 200 |  |  |  | 00 | LB | FA | TA | TB | J | L | M | W | G | E | X | P6 | 1 | Y | B2 | B3 |  |  |
| Double acting single rod type | CKV2 | \$20, \$25, \$32, \$40 | - | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  | 5 | 750 | 1 | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bigcirc$ | © | $\bigcirc$ | © | © | © | $\bigcirc$ | $\bigcirc$ | © | $\bigcirc$ | © | $\bigcirc$ | © | 664 |
| Double acting non-rotating type | CKV2-M | \$20, \$25, \$32, $\phi 40$ | - | $\bullet$ | $\bullet$ | - | $\bullet$ | - | 5 | 750 | 1 | $\bullet$ | $\bullet$ | $\bullet$ | - | $\bullet$ | $\bigcirc$ | © | - | © | © | O | $\bigcirc$ | $\bigcirc$ | © | © | © | $\bigcirc$ | O | 676 |

## Selection table of variation and options

|  | $\bigcirc$ : Standard |
| :--- | :--- |
| $\bigcirc:$ Option |  |
| $\bigcirc:$ Available (custom order) |  |
|  | $\triangle:$ Available depending on conditions (consult with CKD.) |
|  | $X:$ Not available |



Note 1: If the size of the screw at the piston rod end is changed, this combination does not apply. Consult with CKD in this case
Note 2: The nonrotating piston rod is made of stainless steel.
If option M, the stainless steel piston rod, is selected, stainless steel rod nuts are included.

## CKV2 series

Variation and option selection table
(How to order)


Model no.: Medium bore size cylinder with valve
Variation: Double acting non-rotating type
A Mounting style : Axial foot type
B Bore size $: \phi 20 \mathrm{~mm}$
(C) Port thread type: Rc thread

D Stroke length : 25 mm
(E) How to wire : Grommet
(F) Voltage : 100 VAC

G Switch model no. : Reed TOH switch, lead wire 1 m
(H) Switch quantity : 2
(1) Option : Bellows, max. ambient temperature $100^{\circ} \mathrm{C}$
(J) Accessory : Rod eye Safety precautions

Always read this section before starting use.
Refer to Intro 71 for general notes of cylinders and Intro 78 for cylinder switches.

## Medium bore size cylinder with valve CKV2 Series

## Design \& Selection

## A WARNING

Check that the valve's exhaust port (including PE port) is not smaller than the connecting port size.
A respiration effect could be generated by the operation of the valve at the valve's exhaust port, and cause foreign matter around the exhaust port to be sucked in, or could cause foreign matter to enter if the exhaust port is facing upward.
The actuator does not operate properly if exhaust is not smooth.

- The actuator will not be activated normally if exhaust is not made smoothly.


## A CAUTION

Check the leakage current to prevent malfunctions caused by leakage currents generated at other control devices.
When using a programmable controller, etc., the valve could malfunction because of leakage currents from the device.
The value at which the leakage current has an effect differs according to the valve type.


Switch the valve once every 30 days to prevent operation faults.

■The reed switch's contact life is generally several hundred thousand times, but may differ with working conditions. The contact life range is reached quickly if the working device is used continuously or is operated at high frequency. In this case, use a proximity switch with no contact.

## Installation \& Adjustment

## WARNING

- The connected device functions when manual operations are carried out, so check that no hazards exist before starting.
If the valve's manual override has been operated, return to the origin (initial position) before operating the unit. If compressed air is supplied when the cylinder is not at the origin, the cylinder could start moving and cause problems.
[Example]



## A CAUTION

Do not bump tools or devices, etc., against the solenoid during installation.

Do not support the valves with pipes.
Do not lift the product by coil lead. - Leads could disconnect.

Polarity
All series have no polarity. (Not polarized type)

Applied voltage
Check the voltage type (AC or DC) and voltage when working with electrical wiring.
Incorrect connections could lead to operation faults or coil burning.
Wiring confirmation
Check that connections are correct after wiring is completed.

## During Use \& Maintenance

## 1. Common

## WARNING

The connected device functions when manual operations are carried out, so check that no hazards exist before starting.

## A CAUTION

## Low frequency use

- Switch the valve once every 30 days to prevent operation faults.

■ After disassembling and assembling the valve, conduct an operation test in order below and confirm that operation is correct.

## Work procedures

1. Check the origin (OFF position) of the manual override.
2. Set to low pressure. ( 0.15 MPa )
3. Switch manual override to activation (ON), and confirm that the cylinder moves.
4. Return manual override to the initial position (OFF), and confirm that the cylinder returns. (This completes manual confirmation of operation.)
5. Conduct an energizing test.

After confirming manually, check operation with power on and off.

If the DIN terminal box is used in a hot environment with power continuously on, the gasket could be thermally degraded. Replace the gasket regularly.

Changing extension and retraction with power ON
(1) Loosen the adapter set screw and flat headed cross cut screw.
(2) Rotate only adapter $180^{\circ}$ in the direction of arrow. ( $\longleftrightarrow$ : Rotation direction)
(3) Tighten the flat headed cross cut screw (proper torque 1.7 $\mathrm{N} \cdot \mathrm{m}$ ) and adapter set screw (proper torque $9 \mathrm{~N} \cdot \mathrm{~m}$ ).


Terminal box wiring methods
Refer to the following drawings, and wire the terminal box in steps (1) to (3).

1) Pass the cap (4), washer (5), and gasket (6) in this order through the cabtire cable (7), and insert into the case (2).
2) When using a crimp terminal, treat the cabtire cable (7) at an appropriate length as shown in the figure, and crimp the crimp terminal (9) onto the end.
3) Remove the screw (10) from the gland (3), and pass the crimp terminal (9) through. (When using a $Y$ type terminal, loosen and sandwich the terminal.) Retighten screw (10).
(Note) Tighten at a torque of $0.5 \mathrm{~N} \cdot \mathrm{~m} \pm 15 \%$.
Remarks:

- Bare wires can be wired. Loosen the screw (10), and insert leads into the bracket, then retighten.
- The lead wire outlet direction is changed by pulling the gland out of the case, rotating it $180^{\circ}$, then pressing it into the case again.
- The following crimp terminals (9) are used: NICHIFU -FUUTERMNAL LDOUSFYYCO.LTD.- JST MFG CO. LTD

| O terminal | Y terminal | O terminal | Y terminal | O terminal Y terminal |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $0.3-3$ | $0.3-3$ | $1.25-3$ | $1.25-\mathrm{YAS}$ | $0.5-3$ | $0.25-\mathrm{B} 3 \mathrm{~A}$ |
| $1.25-3$ | $1.25 \mathrm{Y}-3$ |  | $1.25-\mathrm{YAS3} 5$ | $1.25-3$ | $1.25-\mathrm{C} 3 \mathrm{~A}$ |
| $1.25-3 \mathrm{~S}$ | $1.25 \mathrm{Y}-3.5$ |  |  |  |  |

Use equivalent products when using other brands.


## 2. Common (with T type switch)

## A CAUTION

- Moving the switch position in the stroke direction
- Switches T2, T3, T0, T5 can be finely adjusted at $\pm 3 \mathrm{~mm}$ from the default installation position. If the adjustment range exceeds 3 mm , or when other switches are adjusted, move the band position.
- Loosen the switch fixing screw, move the switch along the rail, and tighten at the required position.
When using the $\mathrm{T} 2, \mathrm{~T} 3, \mathrm{~T} 0$ or T 5 switch, use a flat-tip screwdriver with 5 to 6 mm grip, 2.4 mm or smaller tip width, and 0.3 mm or thinner (clock screwdriver, precision screwdriver, etc.), and tighten with a tightening torque of 0.1 to $0.2 \mathrm{~N} \cdot \mathrm{~m}$. When using T1, T*C, T2J, T2Y, T3Y, T2YF, T3YF, T2YM, T3YM, or T8, tighten with a tightening torque of 0.5 to 0.7 $\mathrm{N} \cdot \mathrm{m}$.
- The switch bracket rail has a mark 4 mm from the rail end. Use this as a guide to the mounting position when replacing the switch.
Switch rail markings are set to the default switch maximum sensitivity position.
Maximum sensitivity position changes when the switch type is changed or when the switch bracket is moved. Adjust the position accordingly.


■ Shifting the switch position in the circumference direction

- Loosen the band fixing screw, shift the switch rail in the circumference direction, then tighten at the specified position. Tightening torque is 0.6 to $0.8 \mathrm{~N} \cdot \mathrm{~m}$.


## - Shifting the band position

- Loosen the band fixing screw, shift the switch rail and band along cylinder tubing, then tighten at the specified position. Tightening torque is 0.6 to $0.8 \mathrm{~N} \cdot \mathrm{~m}$.


Min. stroke length with switch
(Unit: mm)

| Switch quantity <br> Bore size (mm) | 1 |  |  |  | 2 |  |  |  | 3 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Proximity |  | Reed |  | Proximity |  | Reed |  | Proximity |  | Reed |  |
|  | T2, T3 | T1, $\mathrm{T}^{*} \mathrm{Y}^{*}$ | T0, T5 | T8 | T2, T3 | T1, $\mathrm{T}^{*} \mathrm{Y}^{*}$ | T0, T5 | T8 | T2, T3 | T1, $\mathrm{T}^{*} \mathrm{Y}^{*}$ | T0, T5 | T8 |
| ¢ 20 | 10 |  |  |  | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| ¢25 | 10 |  |  |  | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| $\phi 32$ | 10 |  |  |  | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| ¢ 40 | 10 |  |  |  | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |

Note 1: Switches cannot be installed more than three.

Specifications

## Switch specifications

- 1 color/2 color indicator, strong magnetic field proof
* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

|  | Proximity 2-wire |  |  | Proximity 3-wire |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Descriptions | T1H/T1V | $\begin{aligned} & \text { T2H/T2V/ } \\ & \text { T2JH/T2JV } \end{aligned}$ | T2YH/T2Y | T3H/T3V | T3PHT3PV <br> (Cistom order) | T3YH/T3YV |



| Applications | Programmable controller relay, small solenoid valve | Programmable controller dedicated |  | Programmable controller, relay |  |  | Programmable controller, relay | Programmab relay, IC circu serial co | le controller, mit (w/o light), nnection | Programmable co relay | ontroller, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Output method | - |  |  | NPN output | PNP output | NPN output | - |  |  |  |  |
| Power voltage | - |  |  | 10 to 28 VDC |  |  |  |  |  |  |  |
| Load voltage | 85 to 265 VAC | 10 to 30 VDC |  | 30 VDC or less |  |  | 12/24 VDC 110 VAC | 5/12/24 VDC | 110 VAC | 12/24 VDC 110 VAC 2 | 220 VAC |
| Load current | 5 to 100 mA | 5 to 20 mA (Note 1) |  | 100 mA or less |  | 50 mA or less | 5 to 50 mA 7 to 20 mA | 50 mA or less | 20 mA or less | 5 to 50 mA 7 to 20 mA 7 | 7 to 10 mA |
| Light | LED (ON lighting) | $\left.\begin{array}{\|c\|} \hline \text { LED } \\ \text { (ON lighting) } \end{array} \right\rvert\,$ | $\begin{gathered} \text { Red/green } \\ \text { LED } \\ (\text { ON lighting }) \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { LED } \\ (\text { ON lighting }) \end{array}$ | $\begin{gathered} \text { Green } \\ \text { LED } \\ (\text { ON lighting }) \end{gathered}$ | $\begin{aligned} & \text { Red/green } \\ & \text { LEED } \\ & \text { (ON lighting) } \end{aligned}$ | LED <br> (ON lighting) | Without ind | dicator light | LED <br> (ON lighting) |  |
| Leakage current | 1 mA or less with 100 VAC 2 mA or less with 200 VAC | 1 mA or less |  | $10 \mu \mathrm{~A}$ or less |  |  | 0 mA |  |  |  |  |

With preventive maintenance output

| Descriptions |  | Proximity 3-wire | Proximity 4-wire | Proximity 3-wire | Proximity 4-wire |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | T2YFH/V | T3YFH/V | T2YMH/V | T3YMH/V |
| Applications |  | Programmable controller dedicated | Programmable controller, relay | Programmable controller dedicated | Programmable controller, relay |
| Output method |  | NPN output |  |  |  |
| - | Instalaion position adusiment section | Red/green LED (ON lighting) |  |  |  |
|  | Preventive maintenance output | - |  | Yellow LED (ON lighting) |  |
|  | Power voltage | - | 10 to 28 VDC | - | 10 to 28 VDC |
|  | Load voltage | 10 to 30 VDC | 30 VDC or less | 10 to 30 VDC | 30 VDC or less |
|  | Load current | 5 to 20 mA | 50 mA or less | 5 to 20 mA | 50 mA or less |
|  | Leakage current | 1 mA or less | $10 \mu \mathrm{~A}$ or less | 1.2 mA or less | $10 \mu \mathrm{~A}$ or less |
|  | Load voltage | 30 VDC or less |  |  |  |
|  | Load current | 20 mA or less | 50 mA or less | 5 to 20 mA or less | 50 mA or less |
|  | Leakage current | $10 \mu \mathrm{~A}$ or less |  |  |  |


| STK |
| :--- |
| ULK* |


| ULK |
| :--- |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max. load current above: 20 mA at $25^{\circ} \mathrm{C}$. The current will be lower than 20 mA if ambient temperature around switch is higher than $25^{\circ} \mathrm{C}$. ( 5 to 10 mA at $60^{\circ} \mathrm{C}$ )

Cylinder weight
(Unit: kg)

| Descriptions, mounting style | Product weight when stroke length (S) = 0 mm |  |  |  |  | Switch weight | Switch rail | Additional weight |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | Basic type (00) | Axial foot type (LB) | Rod end ilange type (FA) | Rod end trumion tye (TA) | Head end trumion type (TB) | Grommet | + band weight | per $\mathrm{S}=10 \mathrm{~mm}$ |
| $\phi 20$ | 0.47 | 0.63 | 0.53 | 0.52 | 0.49 | 0.018 | 0.005 | 0.01 |
| ¢ 25 | 0.57 | 0.79 | 0.72 | 0.67 | 0.60 | 0.018 | 0.005 | 0.01 |
| $\phi 32$ | 0.62 | 0.84 | 0.77 | 0.72 | 0.65 | 0.018 | 0.009 | 0.02 |
| ¢ 40 | 0.81 | 1.08 | 0.96 | 0.97 | 0.85 | 0.018 | 0.009 | 0.02 |
| (E.g.) Product weight of | KV2-FA-32-5 | -1-TOH-D | duct weight wh ditional weight wh ight of two swi eight of switch ra duct weight | S $=0 \mathrm{~mm}$ <br> en $\mathrm{S}=50 \mathrm{~mm}$ <br> tches <br> ail + 2 bands | 0.77 kg <br> Additional weight <br> 0.036 kg <br> 0.018 kg <br> $0.77 \mathrm{~kg}+0.1 \mathrm{~kg}$ | when $S=10 \mathrm{~mm}$ $g+0.036 \mathrm{~kg}+$ | $\begin{gathered} 0.02 \times \frac{\begin{array}{c} \text { Stroke le } \\ \text { of produ } \end{array}}{10} \\ 0.018 \mathrm{~kg}=0.92 \end{gathered}$ | $\begin{aligned} & \text { length } \\ & \operatorname{ct~(50)~} \end{aligned}=0.10 \mathrm{~kg}$ |


| LCY |
| :--- |
| STR2 |

UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

CKD

How to order
Without switch

| Symbol | Descriptions |
| :---: | :--- |
| A Mounting style |  |
| $\mathbf{0 0}$ | Basic type |
| LB | Axial foot type |
| FA | Rod end flange type |
| TA | Rod end trunnion type |
| TB | Head end trunnion type |
| B Bore size (mm) |  |
| $\mathbf{2 0}$ | $\phi 20$ |
| $\mathbf{2 5}$ | $\phi 25$ |
| $\mathbf{3 2}$ | $\phi 32$ |
| 40 | $\phi 40$ |


| C Port thread type |  |
| :---: | :--- |
| Blank | Rc thread |
| NN | NPT thread (custom order) |
| GN | G thread (custom order) |

## Note on model no. selection

Note 1: Refer to page 664 for min. stroke length with switch.
Note 2: For bellows J , the min. stroke length is 25 mm . If less than 25 mm stroke, consult with CKD.
Note 3: The type with a surge killer (G) is included when a grommet lead is selected for connection.
Note 4: The type with a lamp (E) is available only when DIN terminal (U) connection is selected.
Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
Note 6: P6 (PTFE free specifications) are customized order parts. Contact CKD for details on the delivery schedule.
Note 7: "I" and " Y " can not be selected at the same time.
Note 8: Refer to Ending 89 for custom specifications of rod end form.
Note 9: Refer to page 658 for variation and combinations of options
Note 10: Up to three switches can be mounted.
If four or more switches are required, switch mounting brackets for the extra switches must be prepared separately.
<Example of model number>

## CKV2-LB-20-25-U-1-TOH-R-JI

Model: Medium bore size cylinder with valve double acting single rod type
(A) Mounting style: Axial foot type
(B) Bore size : $\phi 20 \mathrm{~mm}$
(C) Port thread type: Rc thread
(D) Stroke length
: 25 mm
E How to wire
: DIN terminal
© Voltage
: 100 VAC
© Switch model no. : Reed TOH switch, lead wire 1 m
$\boldsymbol{\oplus}$ Switch quantity: One on rod end
(1) Option : Bellows, max. ambient temperature $100^{\circ} \mathrm{C}$
(1) Accessory : Rod eye

How to order

## How to order switch

- Switch body + mounting bracket
Only switch body
- Mounting bracket


Switch model no. Bore size


Switch model no. (Item (G) previous page) (Item (B) previous page) (Item © previous page)


Bracket Bore size (Item (B) previous page)

How to order mounting bracket

| Bore size (mm) | $\phi 20$ | $\phi 25$ | $\phi 32$ | $\phi 40$ |
| :--- | :---: | :---: | :---: | :---: |
| Mounting bracket | M1-LB-20 | M1-LB-30 | M1-LB-30 | M1-LB-30 |
| Axial foot type (LB) rod end | M1-LBV-20 | M1-LBV-30 | M1-LBV-30 | M1-LBV-40 |
| Axial foot type (LB) head end | M1-FA-20 | M1-FA-30 | M1-FA-30 | M1-FA-30 |
| Flange (FA) | M1-TA-20 | M1-TA-30 | M1-TA-30 | M1-TA-40 |
| Trunnion (TA) | M1-TB-20 | M1-TB-30 | M1-TB-30 | M1-TB-40 |
| Bolt for head end trunnion (TB) |  |  |  |  |

Note 1: Mounting nut and toothed washer are attached to the mounting bracket.
Note 2: Refer to page 668 for the mounting bracket material.
Note 3: For axial foot type, one each set of [M1-LB-*] and [M1-LBV-*] is required.

| SCP*2 |
| :---: |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |
|  |

## CKV2 ${ }_{\text {series }}$



| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Rod nut | Steel | Zinc chromate | 17 | Adaptor | Steel | Zinc chromate |
| 2 | Piston rod | $\phi 20, \phi 25$ are stainless steel. |  | 18 | Cap | Aluminum alloy die-casting | Chromate |
| 2 | Piston rod | $\phi 32, \phi 40$ are carbon steel. |  | 19 | Valve body | Aluminum alloy | Alumite |
| 3 | Rod packing seal | Nitrile rubber |  | 20 | Speed adustment needle | Brass |  |
|  | Bush | Dry bearing | ¢ 20 Note 1 | 21 | Spool assembly |  |  |
| 4 | Bush | SBK2118 | $\phi 25, \phi 32, \phi 40$ | 22 | Piston assembly | - |  |
| 5 | Rod cover | Aluminum alloy |  | 23 | Pie valve body | Nylon |  |
| 6 | Cylinder tube | Stainless steel |  | 24 | Plunger assembly |  |  |
| 7 | Cushion rubber | Urethane rubber |  | 25 | Coil assembly | - |  |
| 8 | Piston A | Aluminum alloy |  | 26 | Core assembly |  |  |
| 9 | Piston packing seal | Nitrile rubber |  | 27 | Pass-pipe | Nylon |  |
| 10 | Magnet | Plastic |  | 28 | Joint | - | GWJL-6-6 |
| 11 | Wear ring | Polyacetal |  | 29 | Nut | Steel | Zinc chromate |
| 12 | Piston B | Aluminum alloy |  | 30 | Toothed washer | Steel | Zinc chromate |
| 13 | Spacer | Steel | Zinc chromate | With | switch |  |  |
| 14 | Hexagon nut | Steel | Zinc chromate | 31 | Switch body |  |  |
| 15 | Head cover | Aluminum alloy |  | 32 | Band | Stainless steel |  |
| 16 | O ring | Nitrile rubber |  | 33 | Pan head machine screw | Stainless steel |  |
| Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free. |  |  |  | 34 | Switch rail | Stainless steel |  |

Mounting bracket material

| Mounting style | Material | Remarks |
| :--- | :--- | :--- |
| LB | Steel | Zinc chromate |
| FA | Steel | Zinc chromate |
| TA | Steel | Zinc chromate |

Note: The mounting bracket is shipped with the product.

Valve repair parts list

| Kit No. | Repair parts number |
| :---: | :---: |
| CKV2-VK | (1) ©91) (3) |

Double acting single rod type

- Basic type (00)


Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output. Note 2: $\ell$ dimensions below decimal point are rounded up.
Note 3: Refer to page 683 for accessory dimensions.

| Symbol | Basic dimensions for basic type (00) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | A | B | C | D | F | (H) | HA |  | K | LL | M |  | B | MM | MN | MO | T | TG | U | V |
| $\phi 20$ | 20 | 13 | 18 | 21.4 | 28 | 38.5 | 26 | M8 | $\times 1.0$ | 67 | M8 | M18 | $\times 1.5$ | 10 | 8 | 5 | 5 | 29 | 24 | 14 |
| $\phi 25$ | 23 | 17 | 20 | 26.4 | 32 | 38.5 | 35 | M10 | $\times 1.25$ | 70 | M8 |  | $\times 1.5$ | 12 | 10 | 5 | 6 | 41 | 30 | 16 |
| $\phi 32$ | 23 | 17 | 20 | 33.6 | 36 | 38.5 | 35 | M10 | $\times 1.25$ | 70 | M8 | M26 | +1.5 | 12 | 10 | 5 | 6 | 41 | 34 | 16 |
| $\phi 40$ | 25 | 19 | 22 | 41.6 | 45 | 43.0 | 35 | M12 | $\times 1.5$ | 74 | M10 | M26 | $\times 1.5$ | 14 | 12 | 6 | 7 | 41 | 43 | 16 |
| Symbol | With switch |  |  |  |  |  |  |  |  |  |  | With bellows |  |  |  |  |  |  |  |  |
| Bore size (mm) | WF | X | Y | Z | GC | GD | RD | HD | P | P1 | (Pe) ${ }^{\circ}$ | b | d | $\ell$ |  |  |  |  |  |  |
| $\phi 20$ | 24 | 207 | 34 | 36 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 19.5 | 22 | 30 | 30 | $($ Stroke length/3) +6 |  |  |  |  |  |  |
| ¢ 25 | 23 | 212 | 34 | 36 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 22.0 | 18 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |  |
| ¢ 32 | 23 | 212 | 34 | 36 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 25.5 | 15 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |  |
| $\phi 40$ | 23 | 218 | 34 | 45 | 7.0 | 6.5 | 11.0 | 10.5 | 28.3 | 29.5 | 12 | 34 | 46 | $($ Stroke length/3.25) +7 |  |  |  |  |  |  |

## CKV2 ${ }_{\text {series }}$



Double acting single rod type
$\frac{\text { Dimensions CAD }}{\text { - Rod end flange type (FA) }}$


Note 1: Refer to page 682 for HD, RD, and projecting dimen
Note 2: Refer to page 683 for dimensions of an accessory.


## CKV2 ${ }_{\text {series }}$

Dimensions
Rod end trunnion type (TA) CAD


X + stroke length

(with bellows)

Rod side trunnion type (TA) bracket (option symbol B2)


Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.
Note 2: Refer to page 683 for accessory dimensions.

| Symbol | Basic dimensions for rod end trunnion type (TA) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Installation dimensions |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | A | B | C | D | F | (H) | HA | K | K | LL | MM | MN | MO | T | U | V | WF | X | Y | Z | TB | TD | TE |
| ¢ 20 | 20 | 13 | 18 | 21.4 | 28 | 38.5 | 26 | M8 | 1.0 | 67 | 10 | 8 | 5 | 5 | 24 | 14 | 24 | 207 | 34 | 36 | 4.5 | 8 | 9 |
| ¢ 25 | 23 | 17 | 20 | 26.4 | 32 | 38.5 | 35 | M10 | - 1.25 | 70 | 12 | 10 | 5 | 6 | 30 | 16 | 23 | 212 | 34 | 36 | 5.5 | 10 | 11 |
| $\phi 32$ | 23 | 17 | 20 | 33.6 | 36 | 38.5 | 35 | M10 | 1.25 | 70 | 12 | 10 | 5 | 6 | 34 | 16 | 23 | 212 | 34 | 36 | 5.5 | 10 | 11 |
| ¢ 40 | 25 | 19 | 22 | 41.6 | 45 | 43 | 35 | M12 | 1.5 | 74 | 14 | 12 | 6 | 7 | 43 | 16 | 23 | 218 | 43 | 45 | 5.5 | 10 | 11 |
| Symbol |  |  |  |  |  |  |  |  | With switch |  |  |  |  |  |  | With bellows |  |  |  |  |  |  |  |
| Bore size (mm) | TF | TG | TH | TL | TM | TN | TR | TS | GC | GD | RD | HD | P | P1 | $(\mathrm{P} \theta)^{\circ}$ | b | d | $\ell$ |  |  |  |  |  |
| $\phi 20$ | 19.5 | 167.5 | 29.5 | 8 | 30 | 46 | 70 | 90 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 19.5 | 22 | 30 | 30 | (Stroke length/3) +6 |  |  |  |  |  |
| $\phi 25$ | 17.5 | 171.5 | 39 | 12 | 40 | 64 | 80 | 100 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 22.0 | 18 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |
| $\phi 32$ | 17.5 | 171.5 | 39 | 12 | 40 | 64 | 80 | 100 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 25.5 | 15 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |
| $\phi 40$ | 17.5 | 175.5 | 44 | 9.5 | 53 | 72 | 93 | 113 | 7.0 | 6.5 | 11.0 | 10.5 | 28.3 | 29.5 | 12 | 34 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |

## Dimensions



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of $T 1^{*}$ and $T 8^{*}$ switches and the 2-color indicator switch with preventive maintenance output. Note 2: Refer to page 683 for accessory dimensions.

| Symbol | Basic dimensions for head end trunnion type (TB) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | A | B | BH | C | D | F | (H) | K |  | KK | LL | M |  | MM | MN | MO | T | U | V | WF | X |
| $\phi 20$ | 20 | 13 | 57.5 | 18 | 21.4 | 28 | 38.5 | 5 |  | $8 \times 1.0$ | 67 | M18 $\times$ |  | 10 | 8 | 5 | 5 | 24 | 14 | 24 | 207 |
| ¢ 25 | 23 | 17 | 57.5 | 20 | 26.4 | 32 | 38.5 | 514 |  | $0 \times 1.25$ | 70 | M26 |  | 12 | 10 | 5 | 6 | 30 | 16 | 23 | 212 |
| ¢ 32 | 23 | 17 | 57.5 | 20 | 33.6 | 36 | 38.5 | 5 |  | $0 \times 1.25$ | 70 | M $26 \times$ |  | 12 | 10 | 5 | 6 | 34 | 16 | 23 | 212 |
| $\phi 40$ | 25 | 19 | 62 | 22 | 41.6 | 45 | 43 | 14 |  | $2 \times 1.5$ | 74 | M26 | . 5 | 14 | 12 | 6 | 7 | 43 | 16 | 23 | 218 |
| Symbol |  | Installation dimensions |  |  |  |  |  |  | With switch |  |  |  |  |  |  | With bellows |  |  |  |  |  |
| Bore size (mm) | Z | TD | TJ | TL | TM | TN | TR | TS | GC | GD | RD | HD | P | P1 | (P $\theta$ ) ${ }^{\circ}$ | b | d | l |  |  |  |
| ¢ 20 | 36 | 8 | 83 | 8 | 44 | 60 | 84 | 104 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 3 19.5 | - 22 | 30 | 30 | (Stroke length/3) +6 |  |  |  |
| ¢ 25 | 36 | 10 | 85 | 10 | 44 | 64 | 84 | 104 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 22.0 | 18 | 32 | 46 | $($ Stroke length/3.25) +7 |  |  |  |
| $\phi 32$ | 36 | 10 | 85 | 10 | 44 | 64 | 84 | 104 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 25.5 | - 15 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |
| ¢ 40 | 45 | 10 | 89 | 10 | 53 | 73 | 93 | 113 | 7.0 | 6.5 | 11.0 | 10.5 | 28.3 | 329.5 | 12 | 34 | 46 | (Stroke length/3.25) +7 |  |  |  |

## CKV2 ${ }_{\text {series }}$

## Dimensions

Head side trunnion type (TB), with bracket (option symbol B3)



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output. Note 2: Refer to page 683 for accessory dimensions.

| Symbol | Basic dimensions for head side trunnion type (TB) with bracket (option symbol B3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | A | B | C | D | F | (H) | K |  | KK |  | LL |  | MB |  | MM | MN | MO | T | U | V | WF | ZZ |
| ¢ 20 | 20 | 13 | 18 | 21.4 | 28 | 38.5 | 12 |  | M8 $\times 1.0$ |  | 67 |  | M18 $\times 1$ |  | 10 | 8 | 5 | 5 | 24 | 14 | 24 | 213 |
| ¢ 25 | 23 | 17 | 20 | 26.4 | 32 | 38.5 | 14 |  | M10 $\times 1.2$ |  | 70 |  | M26 $\times 1$ |  | 12 | 10 | 5 | 6 | 30 | 16 | 23 | 218 |
| $\phi 32$ | 23 | 17 | 20 | 33.6 | 36 | 38.5 | 14 |  | M10 $\times 1.2$ |  | 70 |  | M26 $\times 1$. |  | 12 | 10 | 5 | 6 | 34 | 16 | 23 | 218 |
| $\phi 40$ | 25 | 19 | 22 | 41.6 | 45 | 43 | 14 |  | M12 1.5 |  | 74 |  | M26 $\times 1$ |  | 14 | 12 | 6 | 7 | 43 | 16 | 23 | 224 |
| Symbol | Installation dimensions |  |  |  |  |  |  |  | With switch |  |  |  |  |  |  | With bellows |  |  |  |  |  |  |
| Bore size (mm) | TD |  | TJ | TL | TM | TN | TR | TS | GC | GD |  | RD | HD | P | (P $\theta$ ) | b | d | , |  |  |  |  |
| $\phi 20$ | $8_{-0.076}^{-0.040}$ |  | 83 | 8 | 44 | 60 | 84 | 104 | 4 4 4.0 | 3.0 |  | 8.0 | 7.0 | 17.3 | 322 | 30 | 30 | (Stroke length/3) +6 |  |  |  |  |
| ¢ 25 | $10^{-0.040}$ |  | 85 | 10 | 44 | 64 | 84 | 104 | 4 | 4.5 |  | 9.5 | 8.5 | 19.8 | 8 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |
| $\phi 32$ | $10^{-0.040}$ |  | 85 | 10 | 44 | 64 | 84 | 104 | $4 \mathrm{5.5}$ | 4.5 |  | 9.5 | 8.5 | 24.3 | 3 15 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |
| ¢ 40 | $10^{-0.040}$ |  | 89 | 10 | 53 | 73 | 93 | 113 | 37.0 | 6.5 |  | 11.0 | 10.5 | 28.3 | 3 12 | 34 | 46 | (Stroke length/3.25) +7 |  |  |  |  |



[^0]Switch specifications

- 1 color/2 color indicator, strong magnetic field proof
* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

| Descriptions |  | Proximity 2-wire |  |  | Proximity 3-wire |  |  | Reed 2-wire |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | T1H/T1V | $\begin{aligned} & \hline \mathrm{T} 2 \mathrm{H} / \mathrm{T} 2 \mathrm{~V} / \\ & \mathrm{T} 2 \mathrm{HH} / \mathrm{T} 2 \mathrm{JV} \end{aligned}$ | T2YH/T2YV | T3H/T3V | TЗРНТЗРV <br> (Clistom order) | T3YH/T3YV | TOH/TOV | T5H/T5V | T8H/T8V |
| Applications |  | Programmable controller relay, small solenoid valve | Programmable controller dedicated |  | Programmable controller, relay |  |  | Programmable controller, relay | Programmable controller, relay, IC circuit (w/ light), serial connection | Programmable controller, relay |
| Output method |  | - |  |  | NPN output $\mid$ P | PNP output | NPN output | - |  |  |
| Power voltage |  | - |  |  | 10 to 28 VDC |  |  | - |  |  |
| Load voltage |  | 85 to 265 VAC | 10 to 30 VDC |  | 30 VDC or less |  |  | 12/24 VDC 110 VAC | 5/12/24 VDC 110 VAC | $12 / 24 \mathrm{VDC}$ 110 VAC 220 VAC |
| Load current |  | 5 to 100 mA | 5 to $20 \mathrm{~mA} \mathrm{(Note} \mathrm{1)}$ |  | 100 mA or less |  | 50 mA or less | 5 to 50 mA 7 to 20 mA | 50 mA or less 20 mA orless | 5 to 50 mA 7 to 20 mA 7 to 10 mA |
| Light |  | LED <br> (ON lighting) | LED (ON lighting) | $\begin{aligned} & \text { Red/green } \\ & \text { LED } \\ & \text { (ON lighting) } \end{aligned}$ | LED (ON lighting) | $\begin{array}{\|l\|} \hline \text { Green LED } \\ \text { (ON lighting) } \end{array}$ | $\begin{aligned} & \text { Red/green } \\ & \text { LED } \\ & \text { (ON lighting) } \end{aligned}$ | LED <br> (ON lighting) | Without indicator light | LED <br> (ON lighting) |
| Leakage current |  | 1 mA or less with 100 VAC <br> 2 mA or less with 200 VAC | 1 mA or less |  | $10 \mu \mathrm{~A}$ or less |  |  | 0 mA |  |  |
| With preventive maintenance output |  |  |  |  |  |  |  |  |  |  |
| Descriptions |  | Proximity 3-wire |  |  | Proximity 4-wire |  |  | Proximity 3-wire |  | Proximity 4-wire |
|  |  | T2YFH/V |  |  | T3YFH/V |  |  | T2YMH/V |  | T3YMH/V |
| Applications |  | Programmable controller dedicated |  |  | Programmable controller, relay |  |  | Programmable controller dedicated |  | Programmable controller, relay |
| Output method |  | NPN output |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \stackrel{\pi}{\square} \\ & \frac{0}{3} \end{aligned}$ | Instalation position adistment section | Red/green LED (ON lighting) |  |  |  |  |  |  |  |  |
|  | Preventive maintenance output | - |  |  |  |  |  | Yellow LED (ON lighting) |  |  |
|  | Power voltage | - |  |  | 10 to 28 VDC |  |  | - |  | 10 to 28 VDC |
|  | Load voltage | 10 to 30 VDC |  |  | 30 VDC or less |  |  | 10 to 30 VDC |  | 30 VDC or less |
|  | Load current | 5 to 20 mA |  |  | 50 mA or less |  |  | 5 to 20 mA |  | 50 mA or less |
|  | Leakage current | 1 mA or less |  |  | $10 \mu \mathrm{~A}$ or less |  |  | 1.2 mA or less |  | $10 \mu \mathrm{~A}$ or less |
|  | Load voltage | 30 VDC or less |  |  |  |  |  |  |  |  |
|  | Load current | 20 mA or less |  |  | 50 mA or less |  |  | 5 to 20 mA or less |  | 50 mA or less |
|  | Leakage current | $10 \mu \mathrm{~A}$ or less |  |  |  |  |  |  |  |  |

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max. load current above: 20 mA at $25^{\circ} \mathrm{C}$. The current will be lower than 20 mA if ambient temperature around switch is higher than $25^{\circ} \mathrm{C}$.
( 5 to 10 mA at $60^{\circ} \mathrm{C}$ )

Cylinder weight
(Unit: kg)

| Descriptions, mounting style | Product weigth when stroke length (S) = 0 mm |  |  |  |  | Switch weight | Switch rail | Additional weight |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | Basic type (00) | Axial foot type (LB) | Rod end flange type (FA) | Rodend trumion type (TA) | Head end tummion type (TB) | Grommet | + band weight | per S = 10 mm |
| \$20 | 0.47 | 0.63 | 0.53 | 0.52 | 0.49 | 0.018 | 0.005 | 0.01 |
| \$25 | 0.57 | 0.79 | 0.72 | 0.67 | 0.60 | 0.018 | 0.005 | 0.01 |
| ¢32 | 0.62 | 0.84 | 0.77 | 0.72 | 0.65 | 0.018 | 0.009 | 0.02 |
| \$40 | 0.81 | 1.08 | 0.96 | 0.97 | 0.85 | 0.018 | 0.009 | 0.02 |
|  Product weigth when $S=0 \mathrm{~mm} \cdots 0.77 \mathrm{~kg}$ <br> Additional weigth when $S=50 \mathrm{~mm} \cdots$ Additional weigth when $\mathrm{S}=10 \mathrm{~mm} \cdots 0.02 \times \frac{\text { Stroke length of product (50) }}{}=0.10 \mathrm{~kg}$ <br> Weigth of two switches $\cdots 0.036 \mathrm{~kg}$ <br> Weigth of switch rail +2 bands $\cdots 0.018 \mathrm{~kg}$ <br> Product weigth $\cdots 0.77 \mathrm{~kg}+0.1 \mathrm{~kg}+0.036 \mathrm{~kg}+0.018 \mathrm{~kg}=0.924 \mathrm{~kg}$  |  |  |  |  |  |  |  |  |


| SCP*2 |
| :--- |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRI2 |
| CDC |


| SRL2 |
| :--- | :--- |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |

GLC

## CKV2-M series



## CKV2-M ${ }_{\text {series }}$

How to order
How to order switch

- Switch body + mounting bracket
- Only switch body Mounting bracket


CKV2-M - T - 20

Bore size (Item (B) previous page) Bracket

Switch model no. (Item (G) previous page)

How to order mounting bracket

| Bore size (mm) | $\phi 20$ | $\phi 25$ | $\phi 32$ |
| :--- | :---: | :---: | :---: |
| Mounting bracket | M1-LB-20 | M1-LB-30 | M1-LB-30 |
| Axial foot type (LB) rod end | M1-LBV-20 | M1-LBV-30 | M1-LBV-30 |
| Axial foot type (LB) head end | M1-FA-20 | M1-FA-30 | M1-FA-30 |
| Flange (FA) | M1-TA-20 | M1-TA-30 | M1-TA-30 |
| Trunnion (TA) | M1-TB-20 | M1-TB-30 | M1-TB-30 |
| Bolt for head end trunnion (TB) |  |  |  |

[^1]
## CKV2-M ${ }_{\text {series }}$

Internal structure and parts list

- CKV2-M (with switch)


| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Rod nut | Steel | Zinc chromate | 18 | Cap | Aluminum alloy die-casting | Chromate |
| 2 | Piston rod | Stainless steel |  | 19 | Valve body | Aluminum alloy | Alumite |
| 3 | Rod packing seal | Nitrile rubber |  | 20 | Speed adjustment needle | Brass |  |
| 4 | Bush | SBK2118 | Note 1 | 21 | Spool assembly | - |  |
| 5 | Rod cover | Aluminum alloy |  | 22 | Piston assembly | - |  |
| 6 | Cylinder tube | Stainless steel |  | 23 | Pie valve body | Nylon |  |
| 7 | Cushion rubber | Urethane rubber |  | 24 | Plunger assembly | - |  |
| 8 | Piston A | Aluminum alloy |  | 25 | Coil assembly | - |  |
| 9 | Piston packing seal | Nitrile rubber |  | 26 | Core assembly | - |  |
| 10 | Magnet | Plastic |  | 27 | Pass-pipe | Nylon |  |
| 11 | Wear ring | Polyacetal |  | 28 | Joint | - | GWJL6-6 |
| 12 | Piston B | Aluminum alloy |  | 29 | Nut | Steel | Zinc chromate |
| 13 | Spacer | Steel | Zinc chromate | 30 | Toothed washer | Steel | Zinc chromate |
| 14 | Hexagon nut | Steel | Zinc chromate | With | switch |  |  |
| 15 | Head cover | Aluminum alloy |  | 31 | Switch body | - |  |
| 16 | O ring | Nitrile rubber |  | 32 | Band | Stainless steel |  |
| 17 | Adaptor | Steel | Zinc chromate | 33 | Pan head machine screw | Stainless steel |  |
| Note 1: Oil impregnated resin bearing is used for copper and PTFE free. |  |  |  | 34 | Switch rail | Stainless steel |  |

Double acting non-rotating type
Dimensions


Note 1: Refer to pages 670 to 674 for the dimensions of other mounting style.
Note 2: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2 color indicator switch with preventive maintenance output.
Note 3: Refer to page 683 for accessory dimensions.

| Symbol | Basic dimensions for basic type (00) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bore size (mm) | A | B | C | D | F | (H) | HA | KA | K | K | LL | M | MB | MM | T | TG | U | V | WF |
| \$20 | 20 | 13 | 18 | 21.4 | 28 | 38.5 | 26 | 8 | M8 | $\times 1.0$ | 67 | M8 | M18 $\times 1.5$ | 10 | 5 | 29 | 24 | 14 | 24 |
| \$25 | 23 | 17 | 20 | 26.4 | 32 | 38.5 | 35 | 10 | M10 | +1.25 | 70 | M8 | M26 x 1.5 | 12 | 6 | 41 | 30 | 16 | 23 |
| \$32 | 23 | 17 | 20 | 33.6 | 36 | 38.5 | 35 | 10 | M10 | $\times 1.25$ | 70 | M8 | M26 $\times 1.5$ | 12 | 6 | 41 | 34 | 16 | 23 |
| $\phi 40$ | 25 | 19 | 22 | 41.7 | 45 | 43.0 | 35 | 12 | M12 | $\times 1.5$ | 74 | M10 | M26 x 1.5 | 14 | 7 | 41 | 43 | 16 | 23 |
| Symbol |  |  |  | With switch |  |  |  |  |  |  | With bellows |  |  |  |  |  |  |  |  |
| Bore size (mm) | X | Y | Z | GC | GD | RD | HD | P | P1 | $(\mathrm{P} \theta)^{\circ}$ | b | d | l |  |  |  |  |  |  |
| \$20 | 207 | 34 | 36 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 19.5 | 22 | 30 | 30 | $($ Stroke length/3) +6 |  |  |  |  |  |  |
| \$25 | 212 | 34 | 36 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 22.0 | 18 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |  |
| ¢32 | 212 | 34 | 36 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 25.5 | 15 | 32 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |  |
| \$40 | 218 | 43 | 45 | 7.0 | 6.5 | 11.0 | 10.5 | 28.3 | 29.5 | 12 | 34 | 46 | (Stroke length/3.25) +7 |  |  |  |  |  |  |

## CKV2 ${ }_{\text {series }}$

CKV2 Series common (2 color indicator type, with preventive maintenance output with switch) dimensions


2 color indicator type, preventive maintenance output switch installation dimensions

| Symbol | 1 color indicator (T1, T8) 2 color indicator ( $\mathrm{T}_{3}^{2} \mathrm{Y}, \mathrm{T}_{3}^{2} \mathrm{Y}_{\mathrm{M}}^{\mathrm{F}}$ ) |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | RD Note 1 |  | HD Note 2 |  | P |  |  | P1 | $(\mathrm{P} \theta)^{\circ}$ |
|  | $\mathrm{T} 1, \mathrm{~T}_{3}^{2} \mathrm{Y}, \mathrm{T}_{3}^{2} \mathrm{Y}_{\mathrm{M}}^{\mathrm{F}}$ | T8 | $\mathrm{T} 1, \mathrm{~T}_{3}^{2} \mathrm{Y}, \mathrm{T}_{3}^{2} \mathrm{Y}_{\mathrm{M}}^{\mathrm{F}}$ | T8 | T1 | T ${ }_{3}^{2} \mathrm{Y}, \mathrm{T} 8$ | $\mathrm{T}_{3}^{2} \mathrm{Y}_{\mathrm{M}}^{\mathrm{F}}$ |  |  |
| $\phi 20$ | 7.0 | 2.0 | 6.0 | 1 | 28.5 | 23.1 | 28.1 | 19.5 | 22 |
| \$25 | 8.5 | 3.5 | 7.5 | 2.5 | 31.0 | 25.6 | 30.6 | 22.0 | 18 |
| ¢ 32 | 8.5 | 3.5 | 7.5 | 2.5 | 35.5 | 30.1 | 35.1 | 25.5 | 15 |
| ¢ 40 | 10.5 | 5.5 | 9.5 | 4.5 | 39.5 | 34.1 | 39.1 | 29.5 | 12 |

Accessory
Accessory dimensions (rod eye/clevis, bracket, pin)


| Model no. | Applicable tube <br> I.D. $(\mathrm{mm})$ | AA | CA | CD | CH | EW | KK | MA | MC | Weight <br> $(\mathrm{g})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{M} 1-\mathrm{I}-20$ | $\phi 20$ | 14 | 30 | 10 | 19 | 8 | $\mathrm{M} 8 \times 1.0$ | 13 | 10 | 60 |
| $\mathrm{M} 1-\mathrm{I}-30$ | $\phi 25, \phi 32$ | 16 | 36 | 12 | 25 | 10 | $\mathrm{M} 10 \times 1.25$ | 16 | 12 | 110 |
| $\mathrm{M} 1-\mathrm{I}-40$ | $\phi 40$ | 16 | 36 | 12 | 25 | 10 | $\mathrm{M} 12 \times 1.5$ | 16 | 12 | 100 |




Note: Snap ring and pin are attached.


Material: Steel


| Model no. | Applicable tube I.D. $(\mathrm{mm})$ | CD | Weight <br> $(\mathrm{g})$ |
| :---: | :---: | :---: | :---: |
| M1-B3-20-TA | $\phi 20$ | 8 | 370 |
| M1-B3-30-TA | $\phi 25, \phi 32, \phi 40$ | 10 | 360 |

Note: Snap ring and pin are attached.
Silencer (SL-M5)
*The silencer is sold as 2 pcs./set.

| SCP*2 |
| :--- |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CAOV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC |
| STK |
| ULK |
| JSKM2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |



Note: For rod clevis, pin, washer and split pin are attached to the product.

- Rod end nut (NR)

Material: Steel


| Model no. | Applicable tube <br> I.D. $(\mathrm{mm})$ | B | C | KK | T | Weight <br> $(\mathrm{g})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M1-NR-20 | $\phi 20$ | 13 | 15 | $\mathrm{M} 8 \times 1.0$ | 5 | 3 |
| M1-NR-30 | $\phi 25, \phi 32$ | 17 | 19.6 | $\mathrm{M} 10 \times 1.25$ | 6 | 7 |
| M1-NR-40 | $\phi 40$ | 19 | 21.9 | $\mathrm{M} 12 \times 1.5$ | 7 | 9 |

How to wire


Note 1: The light and surge suppressor cannot be assembled into the grommet. Note 2: Refer to the terminal box wiring methods on page 661 for connections to the DIN terminal box.


[^0]:    Note 1: Switches cannot be installed more than three.

[^1]:    Note 1: Mounting nut and toothed washer are attached to the mounting bracket.
    Note 2: Refer to page 668 for mounting bracket material.
    Note 3: For axial foot type, one each set of [M1-LB-*] and [M1-LBV-*] is required.

