

Requires Only Minimal Operating Force

- Detects cards and paper sheets with a 0.03-N {3-gf} operating force.
- Snap-fit onto 0.8, 1.0 or 1.2-mm-thick mounting objects.
- Easy wiring ensured through quick-connect terminals.
- Long 45-degree stroke angle makes it easier to design a wide range of mechanisms.
- Long life ensured with 2,000,000 switching operations.

Precautions

Circuit Designing

Be sure to use the D3K within the rated electrical ratings, including instantaneous switching current and voltage, otherwise the life of the D3K may be shortened or the D3K may burn or radiate heat.

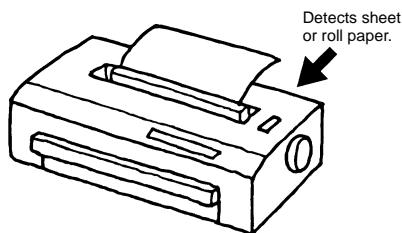
Ordering Information

Model	Minimum order
D3K-B	100

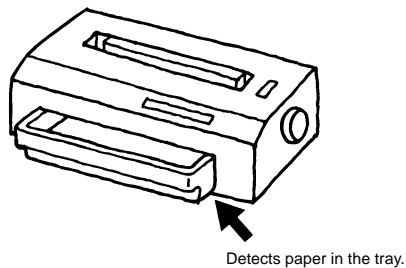
Note: Only orders in multiples of 100 are accepted.

Application Examples

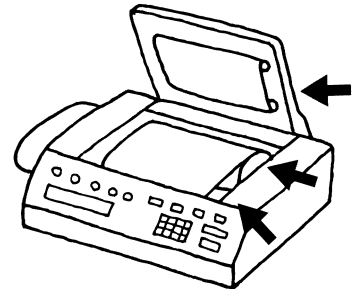
Detects Passing Paper in Printers



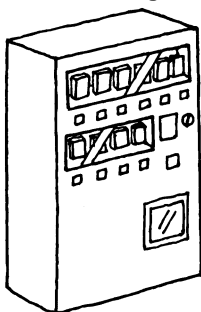
Detects Loaded Paper in Printers



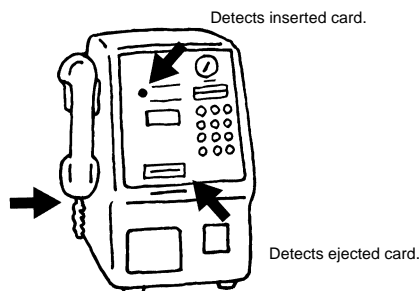
Detects an Open Cover on Fax Machines



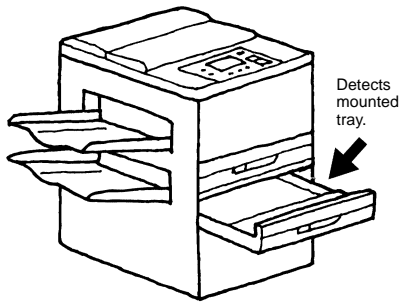
Detects Sold-out Products in Automatic Vending Machines



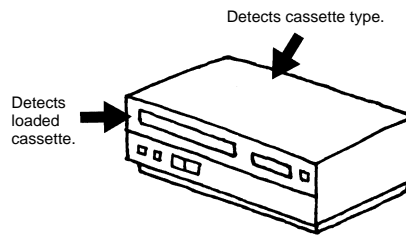
Detects Cards in Pay Phones and Card Readers



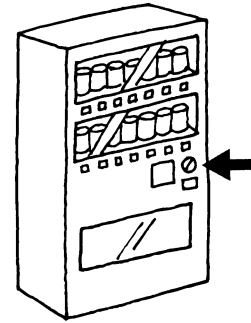
Detects Trays in Photocopiers



Detects Cassettes in Tape Decks



Detects Inserted Coins in Automatic Vending Machines



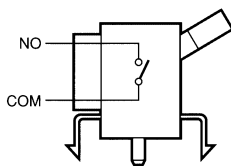
Specifications

■ Characteristics

Ratings	10 mA at 12 VDC (resistive load)
Operating speed	0.1 to 100 mm/s
Operating frequency	Mechanical: 30 operations/min Electrical: 30 operations/min
Insulation resistance	100 MΩ min. (at 250 VDC)
Contact resistance	200 mΩ max. (initial value)
Dielectric strength	250 VAC, 50/60 Hz for 1 min between contacts of same polarity 250 VAC, 50/60 Hz for 1 min between each terminal and ground
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude (at a contact separation time of 1 ms max.) (see note)
Shock resistance	Malfunction: 300 m/s ² (30G) min. (at a contact separation time of 1 ms max.) (see note)
Life expectancy	Mechanical: 2,000,000 operations min. at the rated operating frequency Electrical: 2,000,000 operations min. at the rated operating frequency
Enclosure rating	IP00
Protection against electric shock	Class III
Ambient temperature	Operating: -10°C to 70°C with no icing or condensation
Ambient humidity	Operating: 35% to 85% (at 5°C to 35°C)
Weight	Approx. 0.9 g

Note: These values are possible on condition that the actuator of the D3K is in the total travel position (TTP).

■ Contact Form

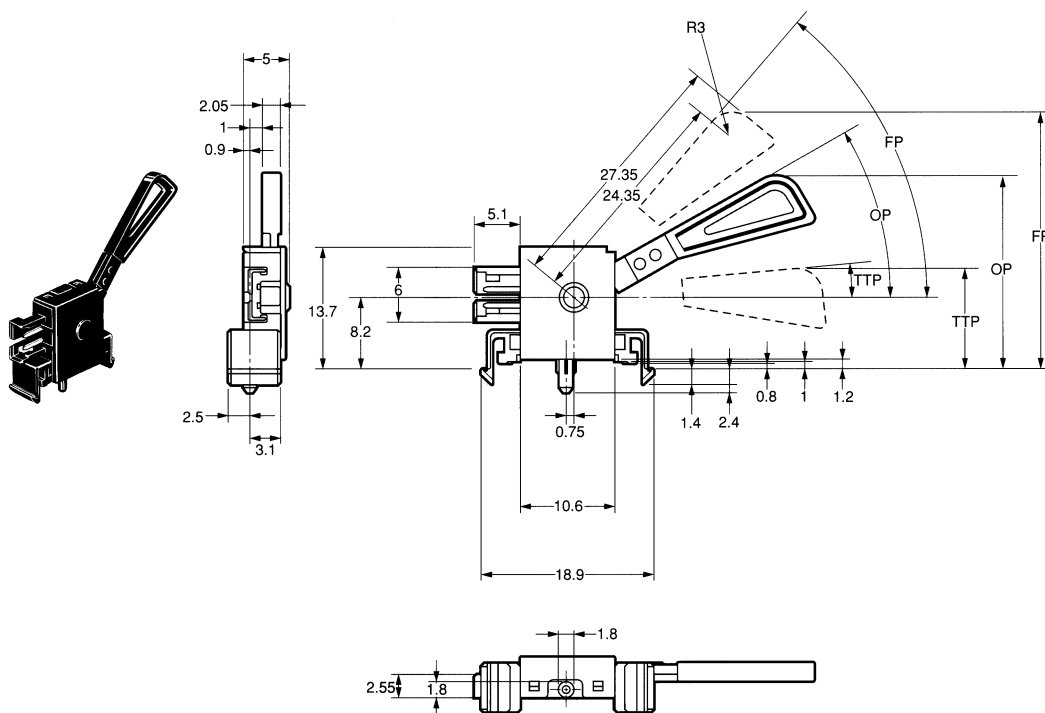


■ Operating Characteristics

OF max.	0.03 N {3 gf}
TTF max.	0.05 N {5 gf}
TTP max.	11.4 mm (5°)
FP max.	28.7 mm (50°)
OP	21.6±2 mm (30±5°)

Dimensions

D3K



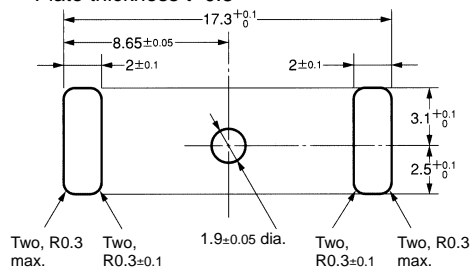
■ Correct Use

Mounting

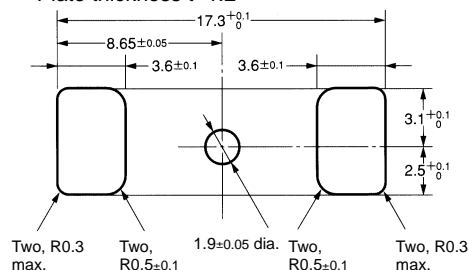
Refer to the following mounting hole dimensions and be sure that the burred side is opposite to the Switch mounting side.

Mounting Hole Dimensions

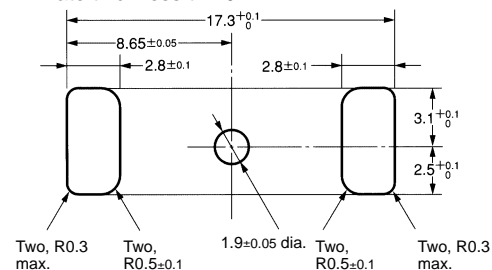
- Plate thickness $t=0.8$



- Plate thickness $t=1.2$



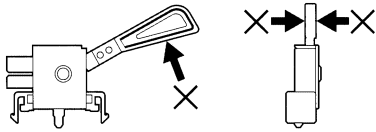
- Plate thickness $t=1.0$



Contact your OMRON representatives if further mounting security is required for the prevention of rattling.

Lever Load

Do not impose loads in the following directions on the lever, otherwise the D3K may be damaged or malfunction.

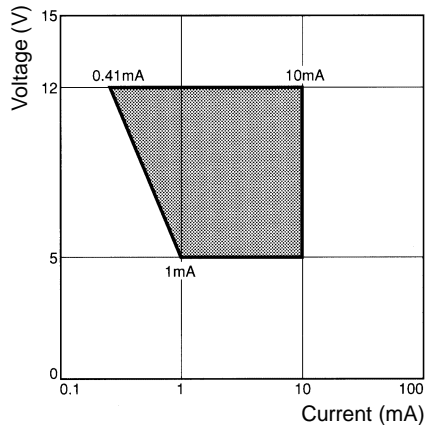


Operating Object

The operating object must fully press the lever when the operating object travels and must be perfectly separated from the lever when the operating object is in the free position. The operating object must not be pressed excessively to exceed the TTP, otherwise the D3K may be damaged. Be sure that the operating object imposes a proper load on the lever according to the motion of the lever.

Micro-load Model

Be sure that the load is within the following range. The load may cause an inrush current at the moment the load is switched, by which the life of the contact will be shortened. If the load causes an inrush current, add an appropriate circuit for contact protection. The N-level reference value applies to the minimum operating load. This level indicates the failure rate of 1/2,000,000 operations max. at a reliability level of 60% (λ_{60}), which is obtained from the following formula: $\lambda_{60} = 0.5 \times 10^{-6}/\text{operations}$



Minimum operating load: 1 mA at 5 VDC

Wiring

Use the following type CT connectors of Nippon AMP for wiring the D3K:

Press-fit connector: 173977-2
Crimp-style connector housing: 175778-2
Crimp-style connector contact: 175102-1

The above connectors are not sold by OMRON. Contact the following offices for these connectors:

- AMP (Japan), Ltd.
Phone: 81-44-844-8111
- AMP Inc. (U.S.A.)
Phone: 1-800-522-6752
- AMP of Great Britain Ltd.
Phone: 44-181-954-2356
- AMP Products Pacific Ltd. (Hong Kong)
Phone: 852-2735-1628

Operating Environment

Do not use the D3K in places with hydrogen sulfide gas, corrosive gas, briny air, oil sprays, or direct sunlight, otherwise the D3K may malfunction.

The D3K is not of dust-tight construction. Do not use the D3K in places with excessive dust, otherwise contact failures may result.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. B099-E1-1 **In the interest of product improvement, specifications are subject to change without notice**

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