

### FEATURES

- Subminiature size (19.8×11.1×6.4 mm)
- Sealed construction for use in adverse environment-Sealed construction by epoxy resin and rubber cap greatly reduces possible miscontact due to contaminants such as dust. Conforming to IP67\* of IEC protective construction classification
- Elastomer double molding technology, an industry first and ultrasonic swaging technology contribute to uniform sealing in high production quantities
- Expansion of low-level circuit type
- We offer a Au clad 2-ply contact type (for small loads) that we developed specifically for small current and voltage loads in the range of 1 mA to 100 mA and 5 V to 30 V.
- UL/CSA/VDE/SEMKO approved  
(AS for Au-clad twin layer, VDE and SEMKO are not approved.)

\* Based on the protective construction classification of IEC, items which satisfy the test requirements are denoted with an IP designation.

### TYPICAL APPLICATIONS

- Automotive
- Home appliances (vacuum cleaner, air purifier)
- Others (gas cooking range)

<http://panasonic-denko.co.jp/ac/e/service/environment>

### ORDERING INFORMATION

Ex. ABS 1 1 1 0 4 0 3

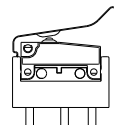
| Type of switch                     | Wire and terminal position                          | Terminal                                                                                      | Contact arrangement                 | Actuator                                                                                                                                         | Operating force by pin plunger (max.) | Contact*                                                            | Agency standard                                                                                              |
|------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| ABS:<br>Turquoise switch<br>S type | 1: Straight type<br>4: Right angle<br>5: Left angle | 1: .110 quick-connect terminal<br>4: Solder terminal<br>5: PC board terminal<br>6: Wire leads | 1: SPDT<br>2: SPST-NC<br>3: SPST-NO | 0: Pin plunger<br>1: Short hinge lever<br>2: Hinge lever<br>3: Long hinge lever<br>4: Simulated roller lever<br>6: Roller lever<br>8: Leaf lever | 4: 0.98 N<br>5: 1.47 N                | 0: AgNi alloy<br>1: Au-clad triple layer<br>4: Au-clad double layer | 3: UL/CSA/VDE/SEMKO (AgNi alloy contact, Au-clad triple layer type)<br>9: UL/CSA (Au-clad double layer type) |

Remarks: 1. Standard packing: Dust protected type 100 pcs./carton, 1,000 pcs./case; Immersion protected type 50 pcs./case.

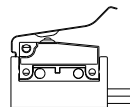
2. SPST-NC and SPST-NO are only available for wire leads type.

3. Leaf lever is only available for wire leads type

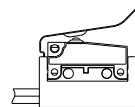
4. As for wire position:



Straight type



Wire opposite to the actuator side type (Right angle)



Wire actuator side type (Left angle)

5. Not every combination is available. Please refer to the following table, "PRODUCT TYPES".

\* Contact

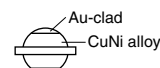
0: AgNi alloy



1: Au-clad triple layer

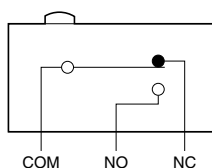


4: Au-clad double layer

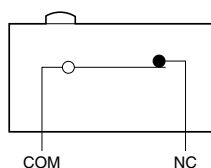


## CONTACT ARRANGEMENT

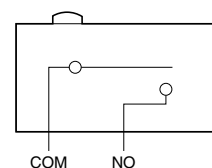
1. SPDT



2. SPST-NC (Wire leads type only)



3. SPST-NO (Wire leads type only)



## PRODUCT TYPES

### 1. Dust protected type

AgNi alloy

| Actuator               | Operating force<br>Max. | .110<br>quick-connect<br>terminal | Solder terminal | PC board terminal |             |            |
|------------------------|-------------------------|-----------------------------------|-----------------|-------------------|-------------|------------|
|                        |                         |                                   |                 | Terminal position |             |            |
|                        |                         |                                   |                 | Straight          | Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1110403                        | ABS1410403      | ABS1510403        | ABS4510403  | ABS5510403 |
|                        | 1.47 N                  | ABS1110503                        | ABS1410503      | ABS1510503        | ABS4510503  | ABS5510503 |
| Short hinge lever      | 0.39 N                  | ABS1111403                        | ABS1411403      | ABS1511403        | ABS4511403  | ABS5511403 |
|                        | 0.59 N                  | ABS1111503                        | ABS1411503      | ABS1511503        | ABS4511503  | ABS5511503 |
| Hinge lever            | 0.34 N                  | ABS1112403                        | ABS1412403      | ABS1512403        | ABS4512403  | ABS5512403 |
|                        | 0.54 N                  | ABS1112503                        | ABS1412503      | ABS1512503        | ABS4512503  | ABS5512503 |
| Long hinge lever       | 0.25 N                  | ABS1113403                        | ABS1413403      | ABS1513403        | ABS4513403  | ABS5513403 |
|                        | 0.44 N                  | ABS1113503                        | ABS1413503      | ABS1513503        | ABS4513503  | ABS5513503 |
| Simulated roller lever | 0.34 N                  | ABS1114403                        | ABS1414403      | ABS1514403        | ABS4514403  | ABS5514403 |
|                        | 0.54 N                  | ABS1114503                        | ABS1414503      | ABS1514503        | ABS4514503  | ABS5514503 |
| Roller lever           | 0.39 N                  | ABS1116403                        | ABS1416403      | ABS1516403        | ABS4516403  | ABS5516403 |
|                        | 0.59 N                  | ABS1116503                        | ABS1416503      | ABS1516503        | ABS4516503  | ABS5516503 |

### Au-clad triple layer

| Actuator               | Operating force<br>Max. | .110<br>quick-connect<br>terminal | Solder terminal | PC board terminal |             |            |
|------------------------|-------------------------|-----------------------------------|-----------------|-------------------|-------------|------------|
|                        |                         |                                   |                 | Terminal position |             |            |
|                        |                         |                                   |                 | Straight          | Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1110413                        | ABS1410413      | ABS1510413        | ABS4510413  | ABS5510413 |
|                        | 1.47 N                  | ABS1110513                        | ABS1410513      | ABS1510513        | ABS4510513  | ABS5510513 |
| Short hinge lever      | 0.39 N                  | ABS1111413                        | ABS1411413      | ABS1511413        | ABS4511413  | ABS5511413 |
|                        | 0.59 N                  | ABS1111513                        | ABS1411513      | ABS1511513        | ABS4511513  | ABS5511513 |
| Hinge lever            | 0.34 N                  | ABS1112413                        | ABS1412413      | ABS1512413        | ABS4512413  | ABS5512413 |
|                        | 0.54 N                  | ABS1112513                        | ABS1412513      | ABS1512513        | ABS4512513  | ABS5512513 |
| Long hinge lever       | 0.25 N                  | ABS1113413                        | ABS1413413      | ABS1513413        | ABS4513413  | ABS5513413 |
|                        | 0.44 N                  | ABS1113513                        | ABS1413513      | ABS1513513        | ABS4513513  | ABS5513513 |
| Simulated roller lever | 0.34 N                  | ABS1114413                        | ABS1414413      | ABS1514413        | ABS4514413  | ABS5514413 |
|                        | 0.54 N                  | ABS1114513                        | ABS1414513      | ABS1514513        | ABS4514513  | ABS5514513 |
| Roller lever           | 0.39 N                  | ABS1116413                        | ABS1416413      | ABS1516413        | ABS4516413  | ABS5516413 |
|                        | 0.59 N                  | ABS1116513                        | ABS1416513      | ABS1516513        | ABS4516513  | ABS5516513 |

### Au-clad double layer

| Actuator               | Operating force<br>Max. | .110<br>quick-connect<br>terminal | Solder terminal | PC board terminal |             |            |
|------------------------|-------------------------|-----------------------------------|-----------------|-------------------|-------------|------------|
|                        |                         |                                   |                 | Terminal position |             |            |
|                        |                         |                                   |                 | Straight          | Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1110449                        | ABS1410449      | ABS1510449        | ABS4510449  | ABS5510449 |
|                        | 1.47 N                  | ABS1110549                        | ABS1410549      | ABS1510549        | ABS4510549  | ABS5510549 |
| Short hinge lever      | 0.39 N                  | ABS1111449                        | ABS1411449      | ABS1511449        | ABS4511449  | ABS5511449 |
|                        | 0.59 N                  | ABS1111549                        | ABS1411549      | ABS1511549        | ABS4511549  | ABS5511549 |
| Hinge lever            | 0.34 N                  | ABS1112449                        | ABS1412449      | ABS1512449        | ABS4512449  | ABS5512449 |
|                        | 0.54 N                  | ABS1112549                        | ABS1412549      | ABS1512549        | ABS4512549  | ABS5512549 |
| Long hinge lever       | 0.25 N                  | ABS1113449                        | ABS1413449      | ABS1513449        | ABS4513449  | ABS5513449 |
|                        | 0.44 N                  | ABS1113549                        | ABS1413549      | ABS1513549        | ABS4513549  | ABS5513549 |
| Simulated roller lever | 0.34 N                  | ABS1114449                        | ABS1414449      | ABS1514449        | ABS4514449  | ABS5514449 |
|                        | 0.54 N                  | ABS1114549                        | ABS1414549      | ABS1514549        | ABS4514549  | ABS5514549 |
| Roller lever           | 0.39 N                  | ABS1116449                        | ABS1416449      | ABS1516449        | ABS4516449  | ABS5516449 |
|                        | 0.59 N                  | ABS1116549                        | ABS1416549      | ABS1516549        | ABS4516549  | ABS5516549 |

\* Agency standard: Please refer to "Ordering information".

# ABS1,4,5

## 2. Immersion protected type (3 wire leads type SPDT)

AgNi alloy

| Actuator               | Operating force<br>Max. | SPDT       |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1610403 | ABS4610403                   | ABS5610403 |
|                        | 1.47 N                  | ABS1610503 | ABS4610503                   | ABS5610503 |
| Short hinge lever      | 0.39 N                  | ABS1611403 | ABS4611403                   | ABS5611403 |
|                        | 0.59 N                  | ABS1611503 | ABS4611503                   | ABS5611503 |
| Hinge lever            | 0.34 N                  | ABS1612403 | ABS4612403                   | ABS5612403 |
|                        | 0.54 N                  | ABS1612503 | ABS4612503                   | ABS5612503 |
| Long hinge lever       | 0.25 N                  | ABS1613403 | ABS4613403                   | ABS5613403 |
|                        | 0.44 N                  | ABS1613503 | ABS4613503                   | ABS5613503 |
| Simulated roller lever | 0.34 N                  | ABS1614403 | ABS4614403                   | ABS5614403 |
|                        | 0.54 N                  | ABS1614503 | ABS4614503                   | ABS5614503 |
| Roller lever           | 0.39 N                  | ABS1616403 | ABS4616403                   | ABS5616403 |
|                        | 0.59 N                  | ABS1616503 | ABS4616503                   | ABS5616503 |

### Au-clad triple layer

| Actuator               | Operating force<br>Max. | SPDT       |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1610413 | ABS4610413                   | ABS5610413 |
|                        | 1.47 N                  | ABS1610513 | ABS4610513                   | ABS5610513 |
| Short hinge lever      | 0.39 N                  | ABS1611413 | ABS4611413                   | ABS5611413 |
|                        | 0.59 N                  | ABS1611513 | ABS4611513                   | ABS5611513 |
| Hinge lever            | 0.34 N                  | ABS1612413 | ABS4612413                   | ABS5612413 |
|                        | 0.54 N                  | ABS1612513 | ABS4612513                   | ABS5612513 |
| Long hinge lever       | 0.25 N                  | ABS1613413 | ABS4613413                   | ABS5613413 |
|                        | 0.44 N                  | ABS1613513 | ABS4613513                   | ABS5613513 |
| Simulated roller lever | 0.34 N                  | ABS1614413 | ABS4614413                   | ABS5614413 |
|                        | 0.54 N                  | ABS1614513 | ABS4614513                   | ABS5614513 |
| Roller lever           | 0.39 N                  | ABS1616413 | ABS4616413                   | ABS5616413 |
|                        | 0.59 N                  | ABS1616513 | ABS4616513                   | ABS5616513 |

### Au-clad double layer

| Actuator               | Operating force<br>Max. | SPDT       |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1610449 | ABS4610449                   | ABS5610449 |
|                        | 1.47 N                  | ABS1610549 | ABS4610549                   | ABS5610549 |
| Short hinge lever      | 0.39 N                  | ABS1611449 | ABS4611449                   | ABS5611449 |
|                        | 0.59 N                  | ABS1611549 | ABS4611549                   | ABS5611549 |
| Hinge lever            | 0.34 N                  | ABS1612449 | ABS4612449                   | ABS5612449 |
|                        | 0.54 N                  | ABS1612549 | ABS4612549                   | ABS5612549 |
| Long hinge lever       | 0.25 N                  | ABS1613449 | ABS4613449                   | ABS5613449 |
|                        | 0.44 N                  | ABS1613549 | ABS4613549                   | ABS5613549 |
| Simulated roller lever | 0.34 N                  | ABS1614449 | ABS4614449                   | ABS5614449 |
|                        | 0.54 N                  | ABS1614549 | ABS4614549                   | ABS5614549 |
| Roller lever           | 0.39 N                  | ABS1616449 | ABS4616449                   | ABS5616449 |
|                        | 0.59 N                  | ABS1616549 | ABS4616549                   | ABS5616549 |

\* Agency standard: Please refer to “Ordering information”.

**3. Immersion protected type (2 wire leads type SPST-NC)**

AgNi alloy

| Actuator               | Operating force<br>Max. | SPST-NC    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1620403 | ABS4620403                   | ABS5620403 |
|                        | 1.47 N                  | ABS1620503 | ABS4620503                   | ABS5620503 |
| Short hinge lever      | 0.39 N                  | ABS1621403 | ABS4621403                   | ABS5621403 |
|                        | 0.59 N                  | ABS1621503 | ABS4621503                   | ABS5621503 |
| Hinge lever            | 0.34 N                  | ABS1622403 | ABS4622403                   | ABS5622403 |
|                        | 0.54 N                  | ABS1622503 | ABS4622503                   | ABS5622503 |
| Long hinge lever       | 0.25 N                  | ABS1623403 | ABS4623403                   | ABS5623403 |
|                        | 0.44 N                  | ABS1623503 | ABS4623503                   | ABS5623503 |
| Simulated roller lever | 0.34 N                  | ABS1624403 | ABS4624403                   | ABS5624403 |
|                        | 0.54 N                  | ABS1624503 | ABS4624503                   | ABS5624503 |
| Roller lever           | 0.39 N                  | ABS1626403 | ABS4626403                   | ABS5626403 |
|                        | 0.59 N                  | ABS1626503 | ABS4626503                   | ABS5626503 |

**Au-clad triple layer**

| Actuator               | Operating force<br>Max. | SPST-NC    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1620413 | ABS4620413                   | ABS5620413 |
|                        | 1.47 N                  | ABS1620513 | ABS4620513                   | ABS5620513 |
| Short hinge lever      | 0.39 N                  | ABS1621413 | ABS4621413                   | ABS5621413 |
|                        | 0.59 N                  | ABS1621513 | ABS4621513                   | ABS5621513 |
| Hinge lever            | 0.34 N                  | ABS1622413 | ABS4622413                   | ABS5622413 |
|                        | 0.54 N                  | ABS1622513 | ABS4622513                   | ABS5622513 |
| Long hinge lever       | 0.25 N                  | ABS1623413 | ABS4623413                   | ABS5623413 |
|                        | 0.44 N                  | ABS1623513 | ABS4623513                   | ABS5623513 |
| Simulated roller lever | 0.34 N                  | ABS1624413 | ABS4624413                   | ABS5624413 |
|                        | 0.54 N                  | ABS1624513 | ABS4624513                   | ABS5624513 |
| Roller lever           | 0.39 N                  | ABS1626413 | ABS4626413                   | ABS5626413 |
|                        | 0.59 N                  | ABS1626513 | ABS4626513                   | ABS5626513 |

**Au-clad double layer**

| Actuator               | Operating force<br>Max. | SPST-NC    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1620449 | ABS4620449                   | ABS5620449 |
|                        | 1.47 N                  | ABS1620549 | ABS4620549                   | ABS5620549 |
| Short hinge lever      | 0.39 N                  | ABS1621449 | ABS4621449                   | ABS5621449 |
|                        | 0.59 N                  | ABS1621549 | ABS4621549                   | ABS5621549 |
| Hinge lever            | 0.34 N                  | ABS1622449 | ABS4622449                   | ABS5622449 |
|                        | 0.54 N                  | ABS1622549 | ABS4622549                   | ABS5622549 |
| Long hinge lever       | 0.25 N                  | ABS1623449 | ABS4623449                   | ABS5623449 |
|                        | 0.44 N                  | ABS1623549 | ABS4623549                   | ABS5623549 |
| Simulated roller lever | 0.34 N                  | ABS1624449 | ABS4624449                   | ABS5624449 |
|                        | 0.54 N                  | ABS1624549 | ABS4624549                   | ABS5624549 |
| Roller lever           | 0.39 N                  | ABS1626449 | ABS4626449                   | ABS5626449 |
|                        | 0.59 N                  | ABS1626549 | ABS4626549                   | ABS5626549 |

\* Agency standard: Please refer to "Ordering information".

# ABS1,4,5

## 4. Immersion protected type (2 wire leads type SPST-NO)

AgNi alloy

| Actuator               | Operating force<br>Max. | SPST-NO    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1630403 | ABS4630403                   | ABS5630403 |
|                        | 1.47 N                  | ABS1630503 | ABS4630503                   | ABS5630503 |
| Short hinge lever      | 0.39 N                  | ABS1631403 | ABS4631403                   | ABS5631403 |
|                        | 0.59 N                  | ABS1631503 | ABS4631503                   | ABS5631503 |
| Hinge lever            | 0.34 N                  | ABS1632403 | ABS4632403                   | ABS5632403 |
|                        | 0.54 N                  | ABS1632503 | ABS4632503                   | ABS5632503 |
| Long hinge lever       | 0.25 N                  | ABS1633403 | ABS4633403                   | ABS5633403 |
|                        | 0.44 N                  | ABS1633503 | ABS4633503                   | ABS5633503 |
| Simulated roller lever | 0.34 N                  | ABS1634403 | ABS4634403                   | ABS5634403 |
|                        | 0.54 N                  | ABS1634503 | ABS4634503                   | ABS5634503 |
| Roller lever           | 0.39 N                  | ABS1636403 | ABS4636403                   | ABS5636403 |
|                        | 0.59 N                  | ABS1636503 | ABS4636503                   | ABS5636503 |

### Au-clad triple layer

| Actuator               | Operating force<br>Max. | SPST-NO    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1630413 | ABS4630413                   | ABS5630413 |
|                        | 1.47 N                  | ABS1630513 | ABS4630513                   | ABS5630513 |
| Short hinge lever      | 0.39 N                  | ABS1631413 | ABS4631413                   | ABS5631413 |
|                        | 0.59 N                  | ABS1631513 | ABS4631513                   | ABS5631513 |
| Hinge lever            | 0.34 N                  | ABS1632413 | ABS4632413                   | ABS5632413 |
|                        | 0.54 N                  | ABS1632513 | ABS4632513                   | ABS5632513 |
| Long hinge lever       | 0.25 N                  | ABS1633413 | ABS4633413                   | ABS5633413 |
|                        | 0.44 N                  | ABS1633513 | ABS4633513                   | ABS5633513 |
| Simulated roller lever | 0.34 N                  | ABS1634413 | ABS4634413                   | ABS5634413 |
|                        | 0.54 N                  | ABS1634513 | ABS4634513                   | ABS5634513 |
| Roller lever           | 0.39 N                  | ABS1636413 | ABS4636413                   | ABS5636413 |
|                        | 0.59 N                  | ABS1636513 | ABS4636513                   | ABS5636513 |

### Au-clad double layer

| Actuator               | Operating force<br>Max. | SPST-NO    |                              |            |
|------------------------|-------------------------|------------|------------------------------|------------|
|                        |                         | Straight   | Wire position<br>Right angle | Left angle |
| Pin plunger            | 0.98 N                  | ABS1630449 | ABS4630449                   | ABS5630449 |
|                        | 1.47 N                  | ABS1630549 | ABS4630549                   | ABS5630549 |
| Short hinge lever      | 0.39 N                  | ABS1631449 | ABS4631449                   | ABS5631449 |
|                        | 0.59 N                  | ABS1631549 | ABS4631549                   | ABS5631549 |
| Hinge lever            | 0.34 N                  | ABS1632449 | ABS4632449                   | ABS5632449 |
|                        | 0.54 N                  | ABS1632549 | ABS4632549                   | ABS5632549 |
| Long hinge lever       | 0.25 N                  | ABS1633449 | ABS4633449                   | ABS5633449 |
|                        | 0.44 N                  | ABS1633549 | ABS4633549                   | ABS5633549 |
| Simulated roller lever | 0.34 N                  | ABS1634449 | ABS4634449                   | ABS5634449 |
|                        | 0.54 N                  | ABS1634549 | ABS4634549                   | ABS5634549 |
| Roller lever           | 0.39 N                  | ABS1636449 | ABS4636449                   | ABS5636449 |
|                        | 0.59 N                  | ABS1636549 | ABS4636549                   | ABS5636549 |

\* Agency standard: Please refer to "Ordering information".

**5. Immersion protected type (3 wire leads type SPDT)**

- Leaf lever type

AgNi alloy

| Actuator   | Operating force<br>Max. | SPDT       |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1618403 | ABS4618403                   | ABS5618403 |
|            | 1.08 N                  | ABS1618503 | ABS4618503                   | ABS5618503 |

**Au-clad triple layer**

| Actuator   | Operating force<br>Max. | SPDT       |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1618413 | ABS4618413                   | ABS5618413 |
|            | 1.08 N                  | ABS1618513 | ABS4618513                   | ABS5618513 |

**Au-clad double layer**

| Actuator   | Operating force<br>Max. | SPDT       |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1618449 | ABS4618449                   | ABS5618449 |
|            | 1.08 N                  | ABS1618549 | ABS4618549                   | ABS5618549 |

**6. Immersion protected type (2 wire leads type SPST-NC)**

- Leaf lever type

AgNi alloy

| Actuator   | Operating force<br>Max. | SPST-NC    |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1628403 | ABS4628403                   | ABS5628403 |
|            | 1.08 N                  | ABS1628503 | ABS4628503                   | ABS5628503 |

**Au-clad triple layer**

| Actuator   | Operating force<br>Max. | SPST-NC    |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1628413 | ABS4628413                   | ABS5628413 |
|            | 1.08 N                  | ABS1628513 | ABS4628513                   | ABS5628513 |

**Au-clad double layer**

| Actuator   | Operating force<br>Max. | SPST-NC    |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1628449 | ABS4628449                   | ABS5628449 |
|            | 1.08 N                  | ABS1628549 | ABS4628549                   | ABS5628549 |

**7. Immersion protected type (2 wire leads type SPST-NO)**

- Leaf lever type

AgNi alloy

| Actuator   | Operating force<br>Max. | SPST-NO    |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1638403 | ABS4638403                   | ABS5638403 |
|            | 1.08 N                  | ABS1638503 | ABS4638503                   | ABS5638503 |

**Au-clad triple layer**

| Actuator   | Operating force<br>Max. | SPST-NO    |                              |            |
|------------|-------------------------|------------|------------------------------|------------|
|            |                         | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.88 N                  | ABS1638413 | ABS4638413                   | ABS5638413 |
|            | 1.08 N                  | ABS1638513 | ABS4638513                   | ABS5638513 |

\* Agency standard: Please refer to "Ordering information".

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Au-clad double layer

| Actuator   | Operating force<br>Max. gf | SPST-NO    |                              |            |
|------------|----------------------------|------------|------------------------------|------------|
|            |                            | Straight   | Wire position<br>Right angle | Left angle |
| Leaf lever | 0.89 N                     | ABS1638449 | ABS4638449                   | ABS5638449 |
|            | 1.08 N                     | ABS1638549 | ABS4638549                   | ABS5638549 |

\* Agency standard: Please refer to "Ordering information".

## SPECIFICATIONS

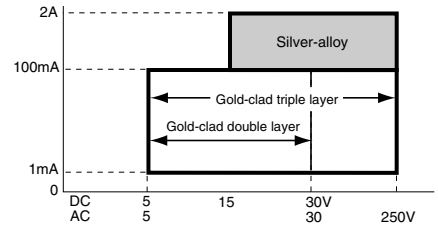
### 1. Contact rating

| Voltage  | AgNi alloy contact type |                | Au-clad contact type    |                       |
|----------|-------------------------|----------------|-------------------------|-----------------------|
|          |                         |                | Au-clad<br>triple layer | Au-clad<br>twin layer |
|          | Resistive load          | Inductive load | Resistive load          |                       |
| 125 V AC | 2 A                     | 2 A            | 0.1 A                   | —                     |
| 250 V AC | 2 A                     | 2 A            | 0.1 A                   | —                     |
| 30 V DC  | 2 A                     | 2 A            | 0.1 A                   | 0.1 A                 |
| 125 V DC | 0.4 A                   | 0.05 A         | —                       | —                     |

#### Low-level circuit rating (Au-clad contact type)

| Rated voltage | Resistive load |
|---------------|----------------|
| 6 V DC        | 5 mA           |
| 12 V DC       | 2 mA           |
| 24 V DC       | 1 mA           |

Recommended contact material chart  
classified by load voltage & current  
(reference)



Remarks: If the contact is being used in the constant low-level circuit load range, the Au-clad twin layer contact is recommended. If there is a danger of the current being less than 0.5 A, for instance if the contact is being turned on and off, the Au-clad triple layer type is recommended.

### 2. Characteristics

|                                                     |                         |                                                                                                                             |
|-----------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Mechanical life<br>(O.T.: Specified value)          | Leaf lever              | Min. $5 \times 10^5$ (at 60 cpm)                                                                                            |
|                                                     | Other types             | Min. $5 \times 10^6$ (at 60 cpm)                                                                                            |
| Electrical life at rated load<br>(O.T.: Max.)       | AgNi alloy contact type | Min. $5 \times 10^4$ (at 20 cpm)                                                                                            |
|                                                     | Au-clad contact type    | Min. $2 \times 10^5$ (at 20 cpm)                                                                                            |
| Insulation resistance                               |                         | Min. 100 MΩ (at 500 V DC insulation resistance meter)                                                                       |
| Dielectric strength                                 |                         |                                                                                                                             |
| Between non-continuous terminals                    |                         | 1,000 Vrms                                                                                                                  |
| Between each terminal and other exposed metal parts |                         | 1,500 Vrms                                                                                                                  |
| Between each terminal and ground                    |                         | 1,500 Vrms                                                                                                                  |
| Vibration resistance (Pin plunger type)             |                         | 10 to 55 Hz at single amplitude of 0.75 mm (Contact opening Max. 1 msec.)                                                   |
| Shock resistance (Pin plunger type)                 |                         | Min. 294 m/s <sup>2</sup> (Contact opening Max. 1 msec.)                                                                    |
| Contact resistance (Initial)                        | AgNi alloy contact type | Dust protected type (IP50): Max. 50 mΩ<br>Immersion protected type (IP67): Max. 100 mΩ (By voltage drop 1 A 6 to 8 V DC)    |
|                                                     | Au-clad contact type    | Dust protected type (IP50): Max. 100 mΩ<br>Immersion protected type (IP67): Max. 150 mΩ (By voltage drop 0.1 A 6 to 8 V DC) |
| Allowable operating speed (at no load)              |                         | 0.1 to 500 mm/sec.                                                                                                          |
| Max. operating cycle rate (at no load)              |                         | 120 cpm                                                                                                                     |
| Ambient temperature                                 |                         | -40°C to +85°C                                                                                                              |
| Unit weight                                         |                         | Approx. 2 g (IP50 type)                                                                                                     |

### 3. Operating characteristics

| Type of actuator       | Operating force, Max. |       | Release force, Min. |        | Pretravel, Max.<br>mm | Movement<br>differential,<br>Max. mm | Overtravel,<br>Min. mm | Operating<br>position,<br>mm |
|------------------------|-----------------------|-------|---------------------|--------|-----------------------|--------------------------------------|------------------------|------------------------------|
| Pin plunger            | 0.98N                 | 1.47N | 0.15N               | 0.20N  | 0.6                   | 0.1                                  | 0.4                    | 8.4±0.3                      |
| Short hinge lever      | 0.39N                 | 0.59N | 0.034N              | 0.039N | 2.5                   | 0.5                                  | 0.8                    | 8.8±0.8                      |
| Hinge lever            | 0.34N                 | 0.54N | 0.029N              | 0.034N | 2.8                   | 0.8                                  | 1.2                    | 8.8±0.8                      |
| Long hinge lever       | 0.25N                 | 0.44N | 0.025N              | 0.029N | 3.5                   | 1.0                                  | 1.6                    | 8.8±1.2                      |
| Simulated roller lever | 0.34N                 | 0.54N | 0.029N              | 0.034N | 2.8                   | 0.8                                  | 1.2                    | 11.65±0.8                    |
| Roller lever           | 0.39N                 | 0.59N | 0.034N              | 0.039N | 2.5                   | 0.5                                  | 0.8                    | 14.5±0.8                     |
| Leaf lever             | 0.88N                 | 1.08N | 0.17N               | 0.20N  | 4.5                   | 1.0                                  | 2.5                    | 14.5±1.5                     |

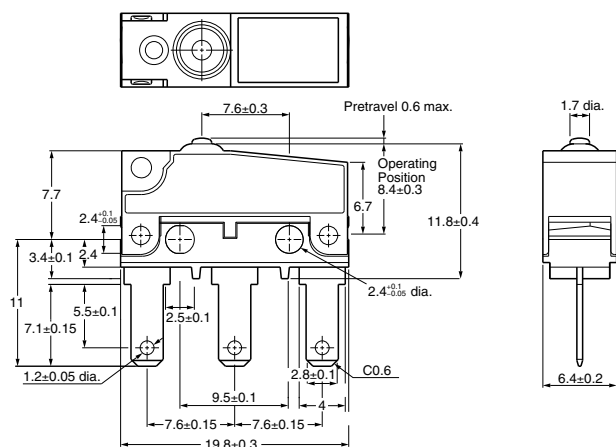
## DIMENSIONS

mm General tolerance:  $\pm 0.25$

### 1. Dust protected type

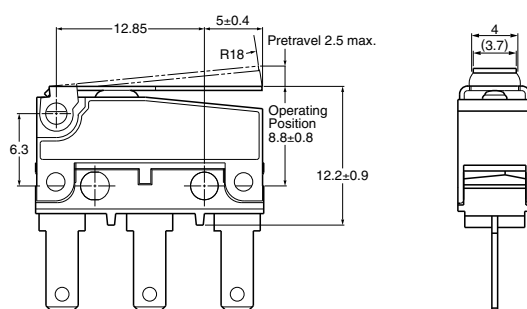
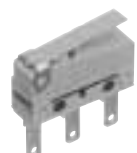
1-(1) .110 quick-connect terminal

Pin plunger



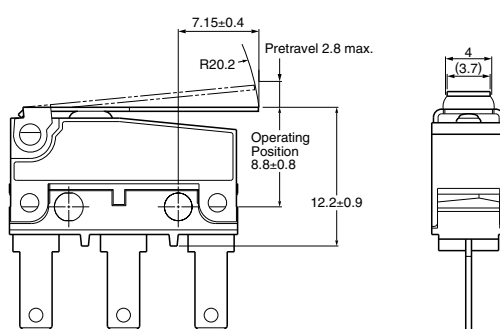
|                                |                                 |          |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm             |                                 | 0.6      |
| Movement differential, Max. mm |                                 | 0.1      |
| Overtravel, Min. mm            |                                 | 0.4      |
| Operating position             | Distance from mounting hole, mm | 8.4±0.3  |
|                                | Distance from stand-off, mm     | 11.8±0.4 |

### Short hinge lever



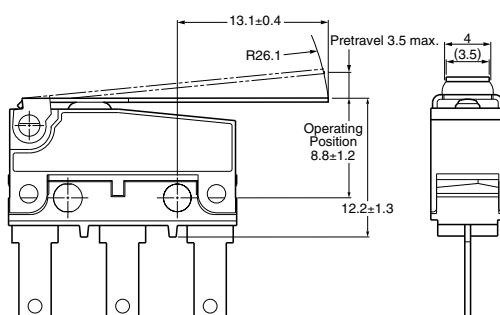
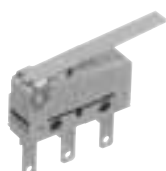
|                                |                                 |          |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm             |                                 | 2.5      |
| Movement differential, Max. mm |                                 | 0.5      |
| Overtravel, Min. mm            |                                 | 0.8      |
| Operating position             | Distance from mounting hole, mm | 8.8±0.8  |
|                                | Distance from stand-off, mm     | 12.2±0.9 |

Hinge lever



|                                |                                 |          |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm             |                                 | 2.8      |
| Movement differential, Max. mm |                                 | 0.8      |
| Overtravel, Min. mm            |                                 | 1.2      |
| Operating position             | Distance from mounting hole, mm | 8.8±0.8  |
|                                | Distance from stand-off, mm     | 12.2±0.9 |

Long hinge lever

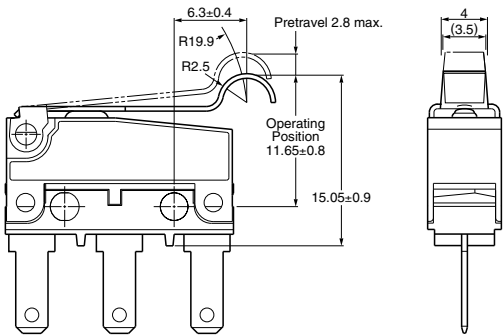


|                                |                                 |          |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm             |                                 | 3.5      |
| Movement differential, Max. mm |                                 | 1        |
| Overtravel, Min. mm            |                                 | 1.6      |
| Operating position             | Distance from mounting hole, mm | 8.8±1.2  |
|                                | Distance from stand-off, mm     | 12.2±1.3 |

ABS1,4,5

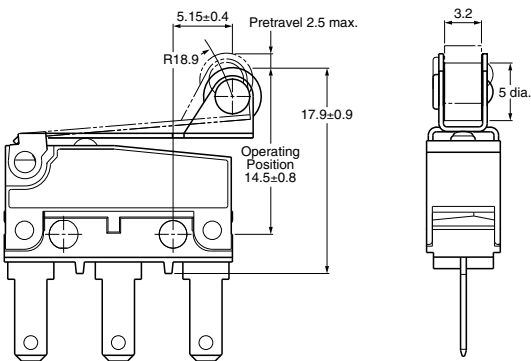
Simulated roller lever

mm General tolerance: ±0.25



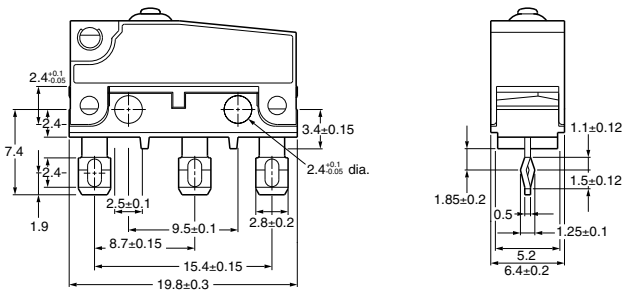
|                                |                                 |           |
|--------------------------------|---------------------------------|-----------|
| Pretravel, Max. mm             |                                 | 2.8       |
| Movement differential, Max. mm |                                 | 0.8       |
| Overtravel, Min. mm            |                                 | 1.2       |
| Operating position             | Distance from mounting hole, mm | 11.65±0.8 |
|                                | Distance from stand-off, mm     | 15.05±0.9 |

Roller lever



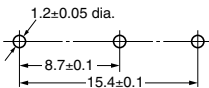
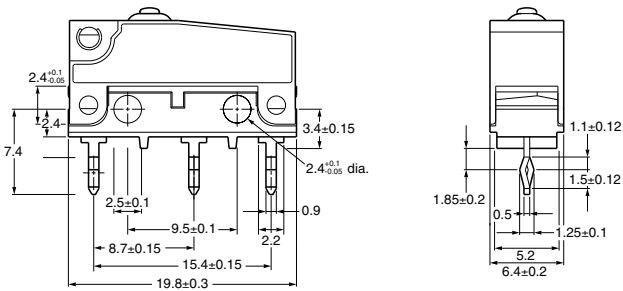
|                                |                                 |          |
|--------------------------------|---------------------------------|----------|
| Pretravel, Max. mm             |                                 | 2.5      |
| Movement differential, Max. mm |                                 | 0.5      |
| Overtravel, Min. mm            |                                 | 0.8      |
| Operating position             | Distance from mounting hole, mm | 14.5±0.8 |
|                                | Distance from stand-off, mm     | 17.9±0.9 |

1-(2) Solder terminal



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

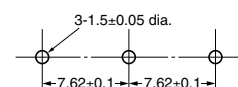
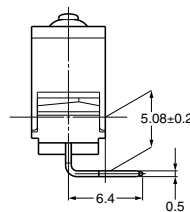
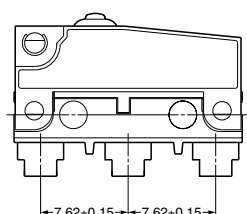
1-(3) PC board terminal  
Straight type



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

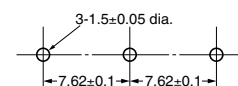
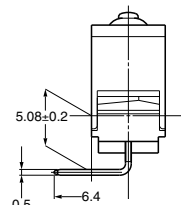
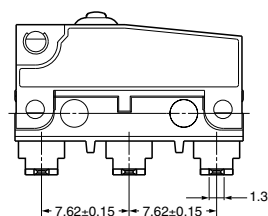
## Right angle type

mm General tolerance:  $\pm 0.25$



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

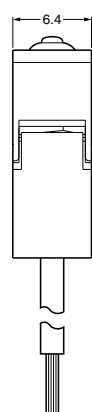
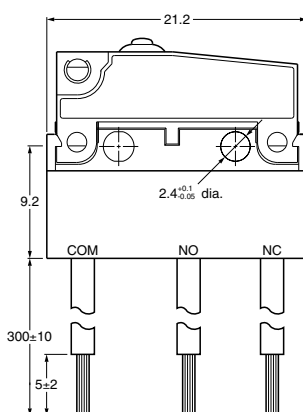
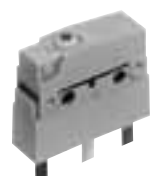
## Left angle type



Remarks: Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

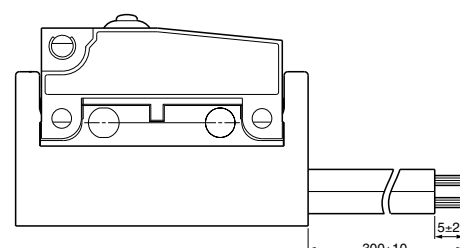
## 2. Immersion protected type

Wire leads  
Pin plunger  
Straight type

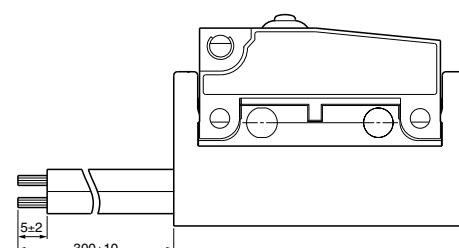


Thickness of the lead wire: 0.5 mm<sup>2</sup>  
UL/CSA approved type and Right/Left angle type:  
AWG #20  
Color of the lead wire:  
COM ... Black  
N.C. ... Red  
N.O. ... White  
Remarks: 1. Other dimensions are the same as those of .110 quick-connect terminal types.  
2. Dimensions of the actuator types are the same as those of corresponding .110 quick-connect terminal types.

## Right angle type



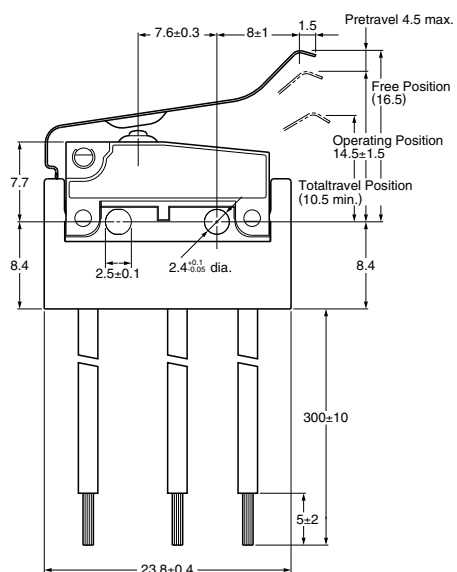
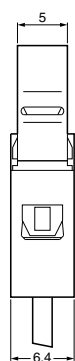
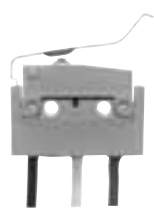
## Left angle type



# ABS1,4,5

Leaf lever  
Straight type

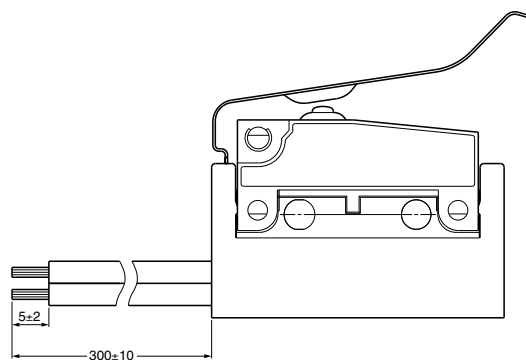
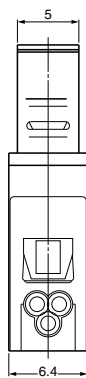
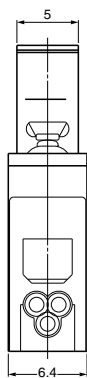
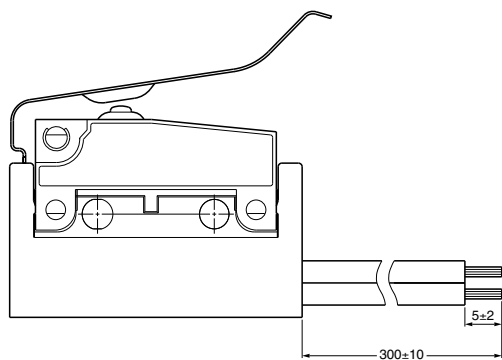
mm General tolerance:  $\pm 0.25$



Thickness of the lead wire: 0.5 mm<sup>2</sup>  
UL/CSA approved type and Right/Left angle type:  
AWG #20  
Color of the lead wire:  
COM... Black  
N.C. ... Red  
N.O. ... White

Right angle type

Left angle type



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