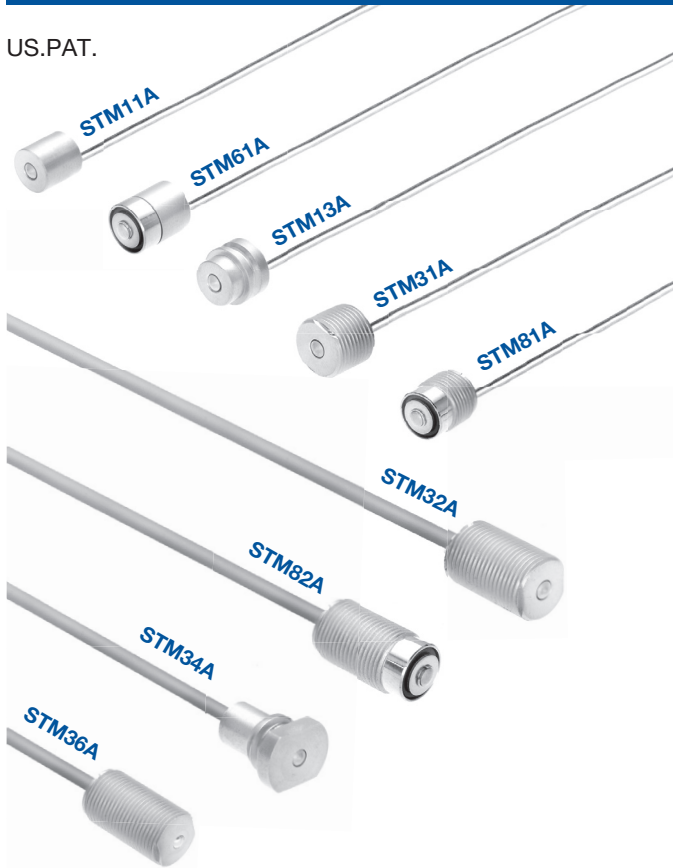


STM

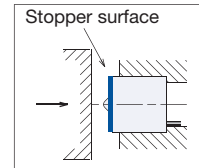
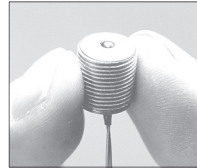
Seating check plunger type Mini type

US.PAT.

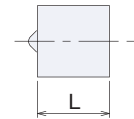


Features

- $\phi 8 \times 8$ Smallest size
- Mini switch with a hardened stopper surface
- Best suited to demanding application and equipment for installation space.
- There are straight touch type and angled touch type.



- Friction-less plate spring is applied to this product
- As for waterproof type, the stopper surface is stored in the rubber boot.
- High dimensional accuracy for mounting simple setting at replacement.



L : Mounting dimension

Standard specification

unit:mm

| Shape | Product name | Protective structure | Contact force | Size | Stroke | with LED | |
|--|--|----------------------|---------------|--------------------|-----------------------|------------|------------|
| Short type | Non-threaded type | STM11A | IP44 | 0.8N | $\phi 8 \times 8$ | 0.5 | STM11A-L |
| | | STM61A | IP67 | 1N | $\phi 9 \times 11.5$ | 0.3 | STM61A-L |
| | Non-threaded type with flange | STM13A | IP44 | 0.8N | $\phi 10 \times 8$ | 0.5 | STM13A-L |
| | | STM63A | IP67 | 1N | $\phi 11 \times 11.5$ | 0.3 | STM63A-L |
| | Threaded type | STM31A | IP44 | 0.8N | M10 \times 8 | 0.5 | STM31A-L |
| | | STM81A | IP67 | 1N | M10 \times 11.5 | 0.3 | STM81A-L |
| | Threaded type with flange | STM33A | IP44 | 0.8N | $\phi 13 \times 8$ | 0.5 | STM33A-L |
| | | STM83A | IP67 | 1N | $\phi 13 \times 11.5$ | 0.3 | STM83A-L |
| Non-threaded/ threaded with a contacting ball type | STM B11A | IP44 | 0.8N | $\phi 8 \times 11$ | 0.5 | STM B11A-L | |
| | STM35A | | | M10 \times 11 | | STM35A-L | |
| Long type | Non-threaded type | STM12A | IP44 | 0.8N | $\phi 8 \times 15$ | 0.5 | STM12A-L |
| | | STM62A | IP67 | 1N | $\phi 9 \times 18.5$ | 0.3 | STM62A-L |
| | Non-threaded type with flange | STM14A | IP44 | 0.8N | $\phi 10 \times 15$ | 0.5 | STM14A-L |
| | | STM64A | IP67 | 1N | $\phi 11 \times 18.5$ | 0.3 | STM64A-L |
| | Threaded type | STM32A | IP44 | 0.8N | M10 \times 15 | 0.5 | STM32A-L |
| | | STM82A | IP67 | 1N | M10 \times 18.5 | 0.3 | STM82A-L |
| | Threaded type with flange | STM34A | IP44 | 0.8N | $\phi 13 \times 15$ | 0.5 | STM34A-L |
| | | STM84A | IP67 | 1N | $\phi 13 \times 18.5$ | 0.3 | STM84A-L |
| | Non-threaded/ threaded with a contacting ball type | STM B12A | IP44 | 0.8N | $\phi 8 \times 18$ | 0.5 | STM B12A-L |
| | | STM36A | | | M10 \times 18 | | STM36A-L |

◎When stopper property is not required,
CS-Touch Switch CSM with 1.5mm stroke is recommended. (Refer to P4-17)

-L : LED indicator (120mm from the switch)

unit:mm

Common specification

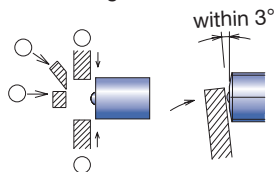
| | |
|-----------------------------------|---|
| Switch structure | Dry contact |
| Output mode | A : Normally open |
| Signal point | Middle of the stroke |
| Repeatability | Both On→Off, Off→On/ 0.01 (range) (At operating speed 50~200mm/min) *1 |
| Movement differential | 0 |
| Contact life time | 10 million (No bungle caused by vibration and use under contact rating) |
| Withstand load | 3000N 1500N : In the case the contacting surface of the detected object is smaller than $\phi 6$ and the selected switch is IP44 (STM11-STM36) |
| Impact resistance | 0.2J |
| Case and stopper surface material | SUS HRC45 |

*1 Operating speed slower than 10mm/min is not recommended.

How to use

Contacting ball type

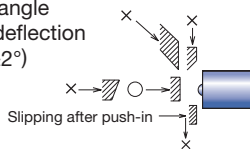
Suitable for angular touch



The angle required to turn on the switch when the object can not make contact with the switch end.

Other types

Make contact with the object at right angle (within deflection angle $\pm 2^\circ$)



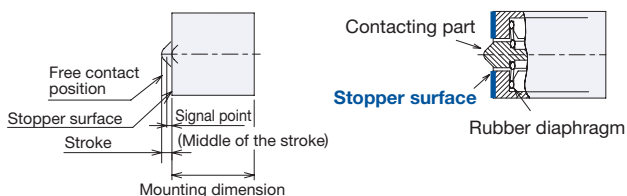
Do not press the plunger beyond the stopper.
(The contact surface of the objects should be more than 3.5mm in diameter for drip-proof type)

Tightening torque for case screws and nuts

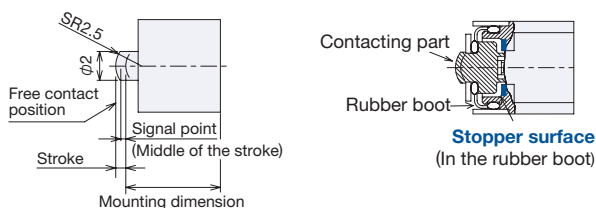
| | Screw / Nut | Tightening torque | Applicable model |
|---------------------|-------------|-------------------|------------------|
| Mini Stopper Switch | M10 | 10N · m | STM |

Protective structure

Drip-proof type (IP44)



Waterproof type (IP67)



The products in this series are not suitable for operating in a harsh machining environment (even IP67 type) where coolant contains metal cuttings.

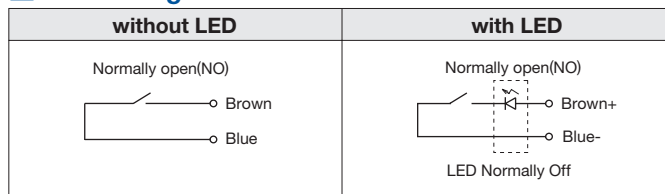
| | |
|-----------------------------------|--|
| Contacting part material | SUS HRC50- |
| Cable (Refer to P2-9) | Short type: Core-wire cable 0.5m(x2) Oil-resistant $\phi 0.6$ Tensile strength 15N Long type: Cabtyre cable 2m Oil-resistant $\phi 2.8 / 2$ cores, Tensile strength 30N |
| Operating temperature range | 0°C-80°C (Ice-free)*2 |
| Temperature drift | 0 (because of no amplifier) |
| Oscillation | 10-55Hz total amplitude 1.5 for X,Y,Z each direction |
| Impact | 300m/s ² for X,Y,Z each direction |
| Contact rating (Refer to P7-3) | DC5V-DC24V Steady current : 10 mA or less (rush current: 20 mA or less) When using the switch with LED, limit the current below 10mA. |
| Standard accessory | Refer to the drawing |

*2 The sealed waterproof structure causes delay in return, when used under temperature (below 5°C).

The following options are available.

- Transistor output (Refer to P2-4)
- LED indicator
- Reverse connect protection.
- Cable direction
- Level conversion.
- Cable
- Output current is increased to 100mA.
- Heat-resistance (P6-4)

Circuit diagram

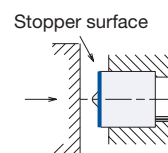


Electrical specification / circuit diagram. (Refer to P2-1)

When using the switches with LED option, limit the current below 10mA. (Refer to P7-3 "Confirmation of switch operation")

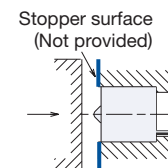
Stopper surface

1) When using under the specified static load resistance, the stopper surface of the product can be used as a stopper.



Do not let dust or metal cuttings pile up on the stopper surface when using drip-proof type

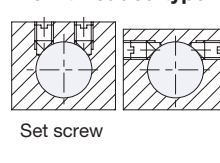
2) When the expected load is larger than the specification, embed the switch in a sturdy stopper (to be prepared by the customer) for use.



Assembly: press fitting not allowed

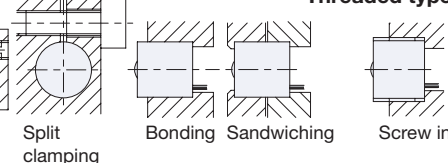
How to install

Non-threaded type



Set screw

Threaded type



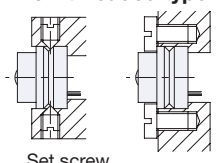
Split clamping

Bonding

Sandwiching

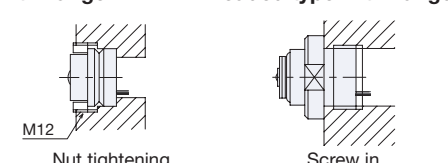
Screw in

Non-threaded type with flange



Set screw

Threaded type with flange



M12
Nut tightening

Screw in

Outer dimension Straight touch type Short type (Core-wire cable)

Mini Stopper Switch

| | Drip-proof type (IP44) | Waterproof type (IP67) |
|-------------------------------|--|--|
| Non-threaded type | <p>STM11A (A: NO)</p> | <p>STM61A (A: NO)</p> |
| Non-threaded type with flange | <p>STM13A (A: NO)</p> | <p>STM63A (A: NO)</p> |
| Threaded type | <p>STM31A (A: NO)</p> <p>Accessory : Spanner × 1, nut × 1 Sideways cable direction is not available</p> | <p>STM81A (A: NO)</p> <p>Material : BsBM Treatment : Ni plating Product name : S623B</p> <p>Accessory : Nut × 1 Sideways cable direction is not available</p> |
| Threaded type with flange | <p>STM33A (A: NO)</p> <p>Sideways cable direction is not available</p> | <p>STM83A (A: NO)</p> <p>Sideways cable direction is not available</p> |

Outer dimension Angled touch type (Contacting ball)

| | Short type (Core-wire cable) | Long type (Cabletyre cable) |
|-------------------|--|--|
| Non-threaded type | <p>STMB11A (A: NO)</p> | <p>STMB12A (A: NO)</p> |
| Threaded type | <p>STM35A (A: NO)</p> <p>Accessory : Spanner × 1, nut × 1</p> | <p>STM36A (A: NO)</p> <p>Accessory : Spanner × 1, nut × 2, toothed washer</p> |

Outer dimension Straight touch type Long type (Cabtyre cable)

| | Drip-proof type (IP44) | Waterproof type (IP67) |
|-------------------------------|--|---|
| Non-threaded type | <p>STM12A (A: NO)</p> | <p>STM62A (A: NO)</p> |
| Non-threaded type with flange | <p>STM14A (A: NO)</p> | <p>STM64A (A: NO)</p> |
| Threaded type | <p>STM32A (A: NO)</p> <p>Accessory : Spanner×1, nut×2, toothed washer</p> | <p>STM82A (A: NO)</p> <p>Accessory : Nut×2, toothed washer×1</p> |
| Threaded type with flange | <p>STM34A (A: NO)</p> <p>Sideways cable direction is not available</p> | <p>STM84A (A: NO)</p> <p>Sideways cable direction is not available</p> |

(-L) Refer to below for LED indicator

Options

| Product name | LED indicator | Cable direction | Cable |
|---|--|--|---|
| <p>STM series</p> | <p>Blank: No LED</p> <p>L: 120mm from the switch</p> | <p>Blank: Straight</p> <p>R: Sideways (90°)</p> <p>Short type (Core-wire cable)</p> <p>Long type (Cabtyre)</p> <p>(The Sideways cable direction is not available for threaded type with flange and short, threaded type.)</p> | <p>Blank: Short type</p> <p>0.5m Cabtyre 2m</p> <p>Option</p> <p>Only for long type</p> <p>: Connector</p> <p>(Refer to next page)</p> |
| <p>Transistor output</p> <p>Only for long type</p> <p>TNA Added to standard product name</p> <p>TNB Added to standard product name</p> <p>TPA Added to standard product name</p> <p>TPB Added to standard product name</p> <p>(Refer to P2-4)</p> <p>▶ e.g.) STM11A-LR</p> <p>▶ Transistor output e.g.) STM12ATNA</p> | <p>L: Tubular type</p> | <p>Blank : Short type (Core-wire cable)</p> <p>R: Short type</p> <p>Long type</p> <p>Standard dimension -2mm</p> <p>For threaded type, pay extra attention to damage on the cable during installation.</p> | |

Connector (Only applicable for cabtyre cables, not usable when transistor output is selected.)

| Blank : No protective | Cable | | Protective structure | Dimension | Pullout strength |
|-----------------------|---------|------|----------------------|---|------------------|
| Product name | | | | | |
| CH | 2-cores | φ2.8 | IP65 | <p>* Only applicable for cabtyre cables, not usable when transistor output is selected.</p> <p>The switch side is able to go through M6 nuts.</p> | 1.5N |

e.g.) STM12A-1-**CH**-2

(Mini Stopper Switch **STM12A** / Switch side cable 1m / Connector **CH** / Machine side cable 2m)

● **How to Order for Maintenance**

(1) When Ordering Only the Switch Side

Please add [**H**] after the model name. Example: STM12A-1-**CH****H**

(2) When Ordering Only the Machine Side

Please add [**Cord Length**] in 1m increments after the model name.

Example: **CH-2** (Relay Connector: CH / Machine-Side Cord: 2m)