

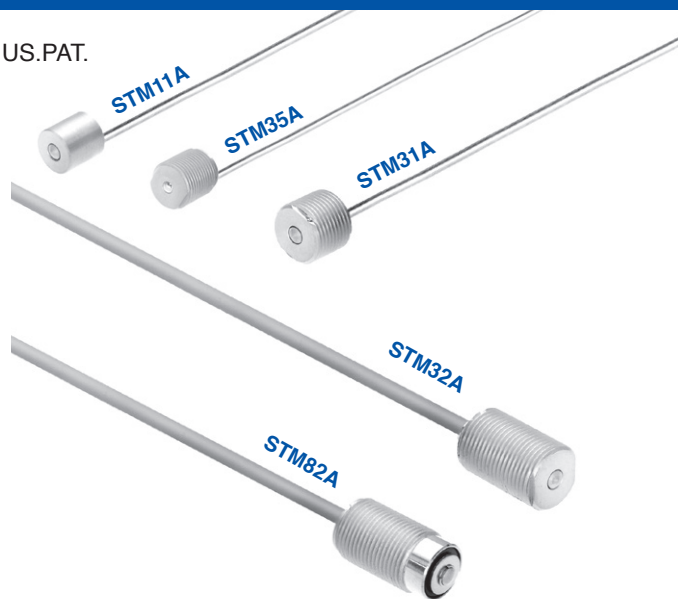
Mini Stopper Switch

Machine Components with a Built-in Switch series
www.metrol.co.jp/en

STM

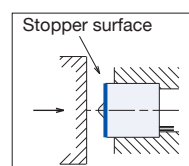
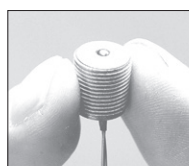
Seating check plunger type
Mini type

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.

Standard specification

unit:mm

| Shape | Product name | Protective structure | Contact force | Size | Stroke | with LED |
|----------------------------------|---|----------------------|---------------|---------------------------------------|--------|-------------------------------------|
| Short type core-wire cable | Non-threaded type straight touch STM11A | IP44 | 0.8N | $\phi 8 \times 8$ | 0.5 | |
| | Threaded type straight touch STM31A | IP44 | 0.8N | M10 \times 8 | 0.5 | |
| | Non-threaded/ threaded with a contacting ball type angle touch STMB11A STM35A | IP44 | 0.8N | $\phi 8 \times 11$ M10 \times 11 | 0.5 | |
| Long type cabtyre cable | Non-threaded type straight touch STM12A | IP44 | 0.8N | $\phi 8 \times 15$ | 0.5 | STM12A-L |
| | Non-threaded type straight touch STM62A | IP67 | 1N | $\phi 9 \times 18.5$ | 0.3 | STM62A-L |
| | Threaded type straight touch STM32A | IP44 | 0.8N | M10 \times 15 | 0.5 | STM32A-L |
| | Threaded type straight touch STM82A | IP67 | 1N | M10 \times 19.5 | 0.3 | STM82A-L |
| | Non-threaded/ threaded with a contacting ball type angle touch STMB12A STM36A | IP44 | 0.8N | $\phi 8 \times 18$ M10 \times 18 | 0.5 | STMB12A-L STM36A-L |

○When stopper property is not required,
CS-Touch Switch CSM with 1.5mm stroke is recommended. (Refer to P4-13)

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

Common specification

unit:mm

| | |
|--------------------------------------|---|
| 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 |
| Contacting part material | SUS HRC50- |

| | |
|------------------------------------|---|
| Cable (Refer to P7-5) | Short type: Core-wire cable 0.5m(\times 2) 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) |
| Vibration | 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 P14-3) | 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 Outer dimension(P5-11) |

*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 P7-3)
- LED indicator
- Reverse connect protection.
- Cable direction
- Level conversion.
- Heat-resistance (P6-4)
- Output current is increased to 100mA.

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

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

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| Drip-proof type (IP44) | |
|------------------------|---|
| Non-threaded type | <p>STM11A (A: NO)</p> |
| Threaded type | <p>STM31A (A: NO)</p> <p>Material : BsBM Treatment : Ni plating Product name : S623B</p> <p>Accessory : Spanner × 1, nut × 1</p> |

Options

| | |
|--|--|
| <p>Product name</p> <p>STM series</p> | <p>LED indicator</p> <p>Blank: No LED Only long type (cabtyre cable) L: 120mm from the switch</p> |
| <p>Transistor output</p> <p>Only for long type (cabtyre cable)</p> <p>TNA Added to standard product name TNB TPA TPB</p> <p>(Refer to P7-3)</p> <p>▶ e.g.) STM12A-L ▶ Transistor output e.g.) STM12ATNA</p> | <p>L: Tubular type</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> | Non-threaded type | <p>STM62A (A: NO)</p> |
| Threaded type | <p>STM32A (A: NO)</p> <p>Accessory : Spanner × 1, nut × 2, toothed washer</p> | Threaded type | <p>STM82A (A: NO)</p> <p>Accessory : nut × 2, toothed washer</p> |

(-L) Refer to below for LED indicator

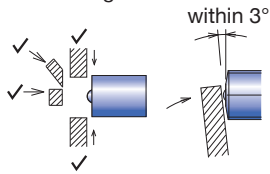
Outer dimension Angled touch type **Contacting ball (IP44)**

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

How to use

Contacting ball type

Suitable for angular touch

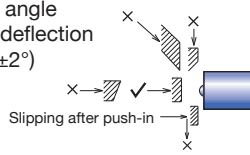


The angle required to turn on the switch when the object can not make contact with the switch end.

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)

Other types

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

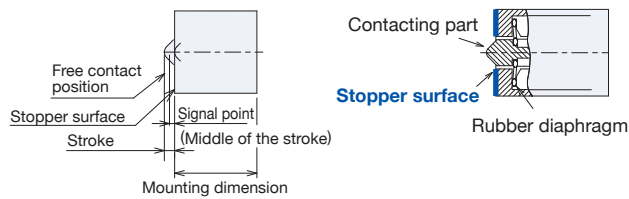


Tightening torque for case screws and nuts

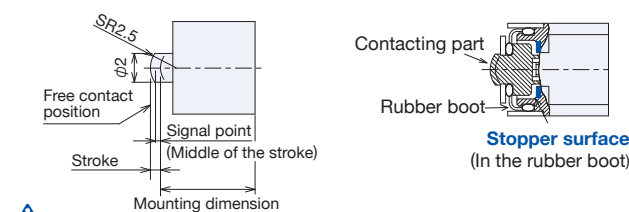
| | Screw / Nut | Tightening torque | Applicable model |
|---------------------|-------------|-------------------|------------------|
| Mini Stopper Switch | M10 | 10N · m | STM |

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.

Circuit diagram

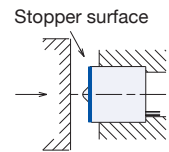
| without LED | with LED |
|--------------------------|--------------------------|
| <p>Normally open(NO)</p> | <p>Normally open(NO)</p> |

Electrical specification / circuit diagram. (Refer to P7-2)

When using the switches with LED option, limit the current below 10mA. (Refer to P14-3 "Confirmation of switch operation")

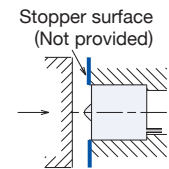
Stopper surface

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

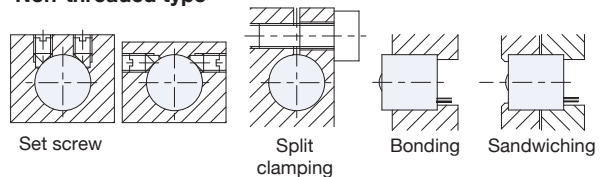
2) When the expected load is larger than the specification, embed the switch in a sturdy stopper (to be prepared by the customer) for use.



Assembly: press fitting not allowed

How to install

Non-threaded type



Threaded type

