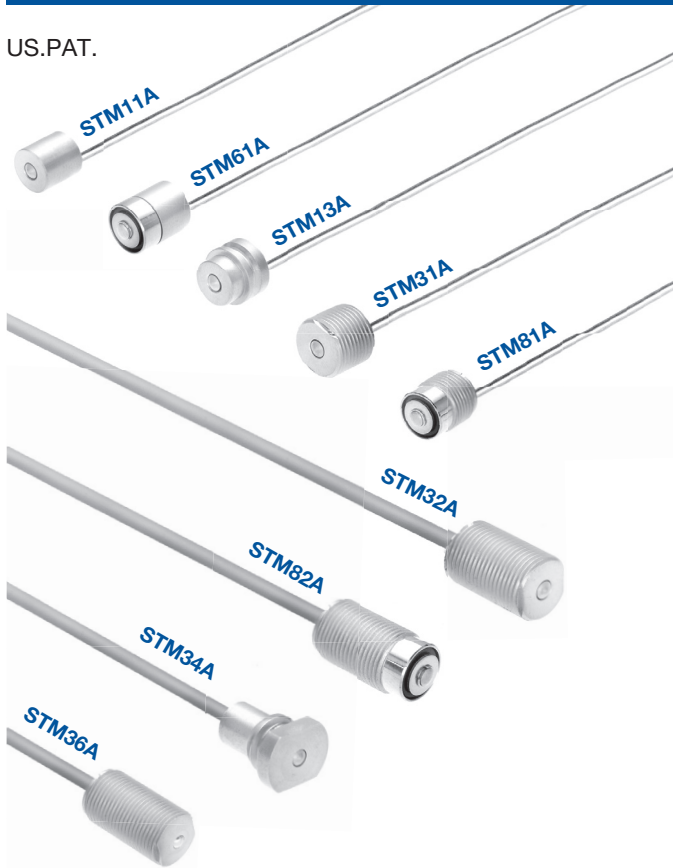
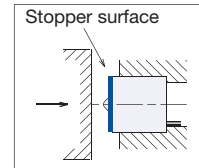
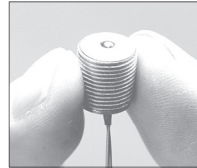


US.PAT.

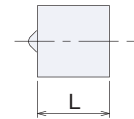


Features

- $\phi 8 \times 8$ 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

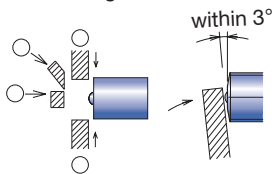
Switch structure	Dry contact
Output mode	A : Normally open
Signal point	Middle of the stroke
Repeatability	Both On→Off, Off→On/ 0.01 (range) (At operating speed 50~200mm/min) *1
Movement differential	0
Contact life time	10 million (No bungle caused by vibration and use under contact rating)
Withstand 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

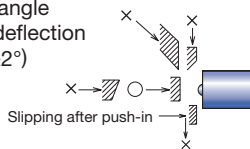
Suitable for angular touch



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 $\pm 2^\circ$)



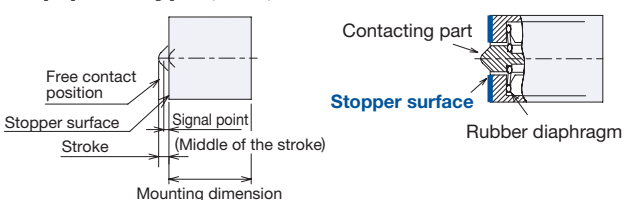
Do not press the plunger beyond the stopper.
(The contact surface of the objects should be more than 3.5mm in diameter for drip-proof type)

Tightening torque for case screws and nuts

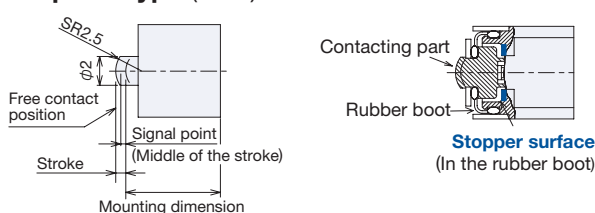
	Screw / Nut	Tightening torque	Applicable model
Mini Stopper Switch	M10	10N · m	STM

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.

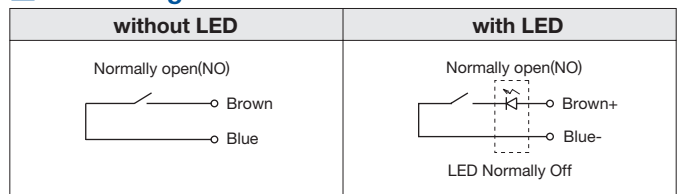
Contacting part material	SUS HRC50-
Cable (Refer to P2-9)	Short type: Core-wire cable 0.5m(x2) Oil-resistant $\phi 0.6$ Tensile strength 15N Long type: Cabtyre cable 2m Oil-resistant $\phi 2.8 / 2$ cores, Tensile strength 30N
Operating temperature range	0°C-80°C (Ice-free)*2
Temperature drift	0 (because 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

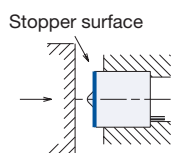


Electrical specification / circuit diagram. (Refer to P2-1)

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

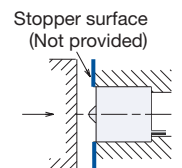
Stopper surface

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

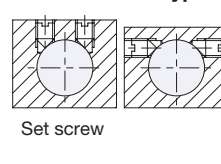
2) When the expected load is larger than the specification, embed the switch in a sturdy stopper (to be prepared by the customer) for use.



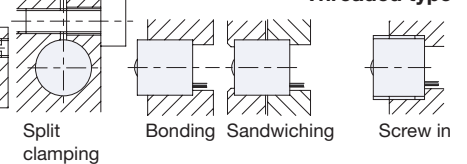
Assembly: press fitting not allowed

How to install

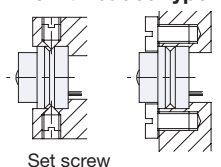
Non-threaded type



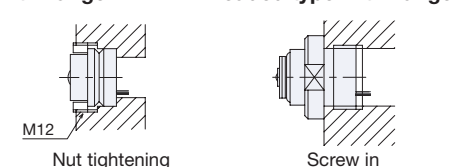
Threaded type



Non-threaded type with flange



Threaded type with flange



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</p> <p>: Short type (Core-wire cable)</p> <p>R: Short type</p> <p>Long type</p> <p>Sideways cable direction(R)</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)