

tissin

Limit Switch Box

TS400 Series

Instruction Manual



Tissin Co.,Ltd.

Ver. PM-TS400EN_05/2023

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1 Introduction

1.1 General information for the user

This instruction includes installation, operation, maintenance, and parts information for TS400 series. Keep these instructions in a location which is easily accessible to every user and make these instructions available to every new owner of the device.

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- Installation, commissioning and maintenance of the product can only be performed by trained specialist personnel who have been authorized by the plant operator to do so.
 - To avoid possible injury to the personnel or damage to valve parts, WARNING, CAUTION and NOTICE must be strictly followed.
 - Before installing or commissioning, be sure to read and thoroughly understand the product manual and operate the product properly.
 - Operators must strictly observe the applicable national regulations with regards to installation, function tests, repairs, and maintenance of electrical products.
 - For additional information or if specific problems occur that are not explained in these instructions, contact the manufacturer.
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1.2 Limited warranty and disclaimer

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- This product has been fully inspected and shipped through a thorough quality inspection procedure. The manufacturer warranty period of the product is 18 months after the product is shipped from Tissin in Korea.
 - For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
 - Using the device in a manner that does not fall within the scope of its intended use, disregarding this manual, using under unqualified personnel, or making unauthorized alterations releases the manufacturer from liability for any resulting damage. This renders the manufacturer's warranty null and void.
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1.3 Requirements for safety

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. These safety instructions are intended to prevent hazardous situations and/or equipment damage. For the safety, it is important to follow the instructions in the manual.



WARNING

Failure to observe the warning may result in serious injuries or death.



CAUTION

Failure to observe this warning may result in damage to the device or personal injury.



NOTICE

Failure to observe the warning may result in damage to the device or may degrade performance.

Safety notes



CAUTION

- Only trained and authorized person should operate the machinery and the equipment.
 - If it is out of the specification range, it may cause a malfunction, so please use it in compliance with the product specification.
 - Never handle mechanical equipment or disassemble the device until safety is confirmed.
 - Before reaching into the device or the equipment, please switch off the power supply and secure to prevent reactivation.
 - Observe applicable accident prevention and the safety regulations for electrical equipment.
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2 Product Description

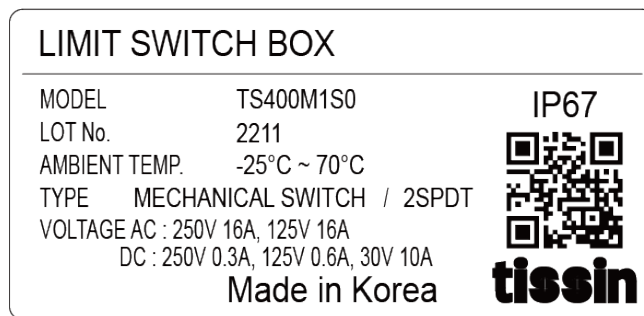
2.1 Function

Limit switch box is a device that notifies the open/closed state of the valve to the central control room or controller through ON/OFF electrical signals.

2.2 Features

- Compact design and External Indicator with good visibility
- Easy switch operation position setting with Spring-fixed cam
- Can select various switches
- IP67 enclosure
- NAMUR VDI/VDE 3845, ISO 5211 Bracket standards

2.3 Label



Item	Description
MODEL	Model number
LOT No	Serial number
AMBIENT TEMP.	Operating temperature
TYPE	Type of built-in switch
VOLTAGE	Specification of built-in switch

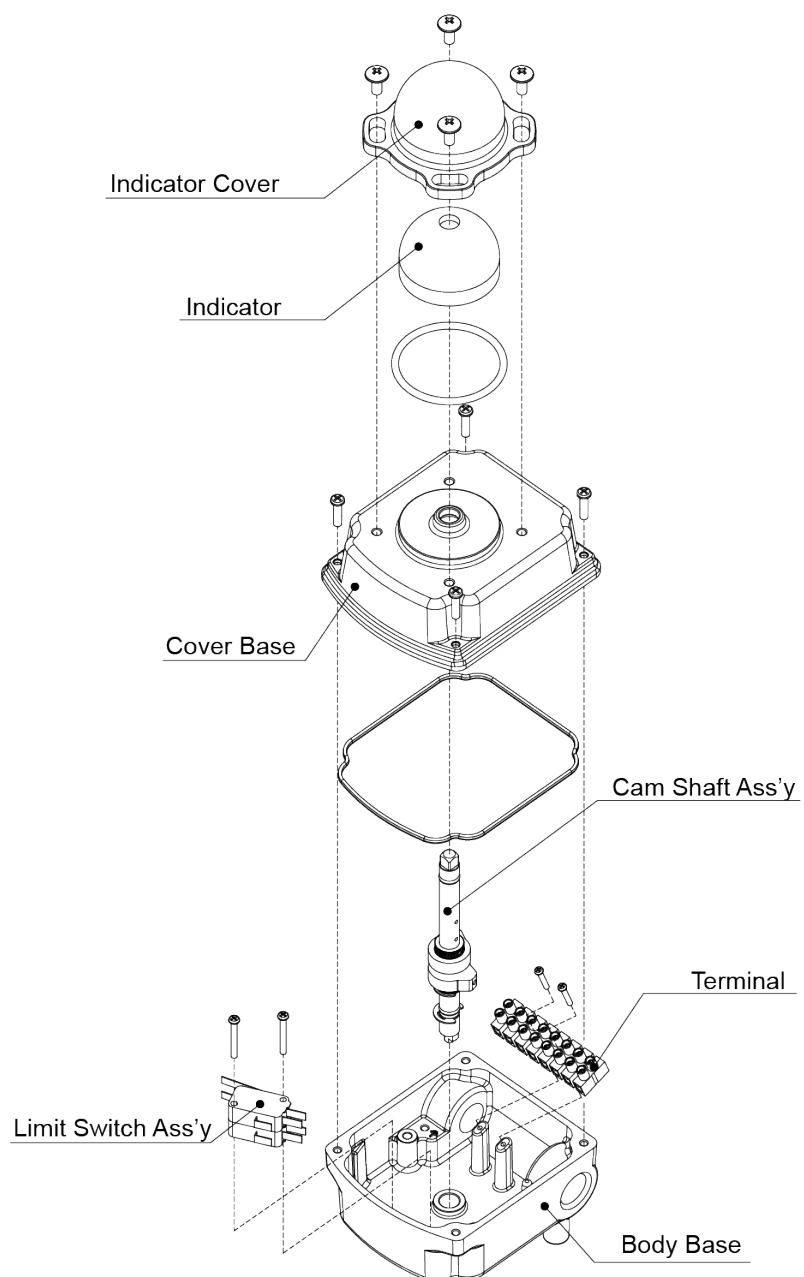
2.4 Product Code

Model		TS400		
Switch type	Mechanical (2xSPDT)	M		
	Proximity	P		
	Mechanical (2xDPDT)	D		
Conduit entry	NPT1/2		1	
	M20x1.5P		2	
	G1/2		3	
Bracket type	None			0
	ST-1 (30x80,H20)			1
	ST-2 (30x80,H30)			2
	ST-3 (30x130,H30)			3
	ST-4 (30x130,H50)			4

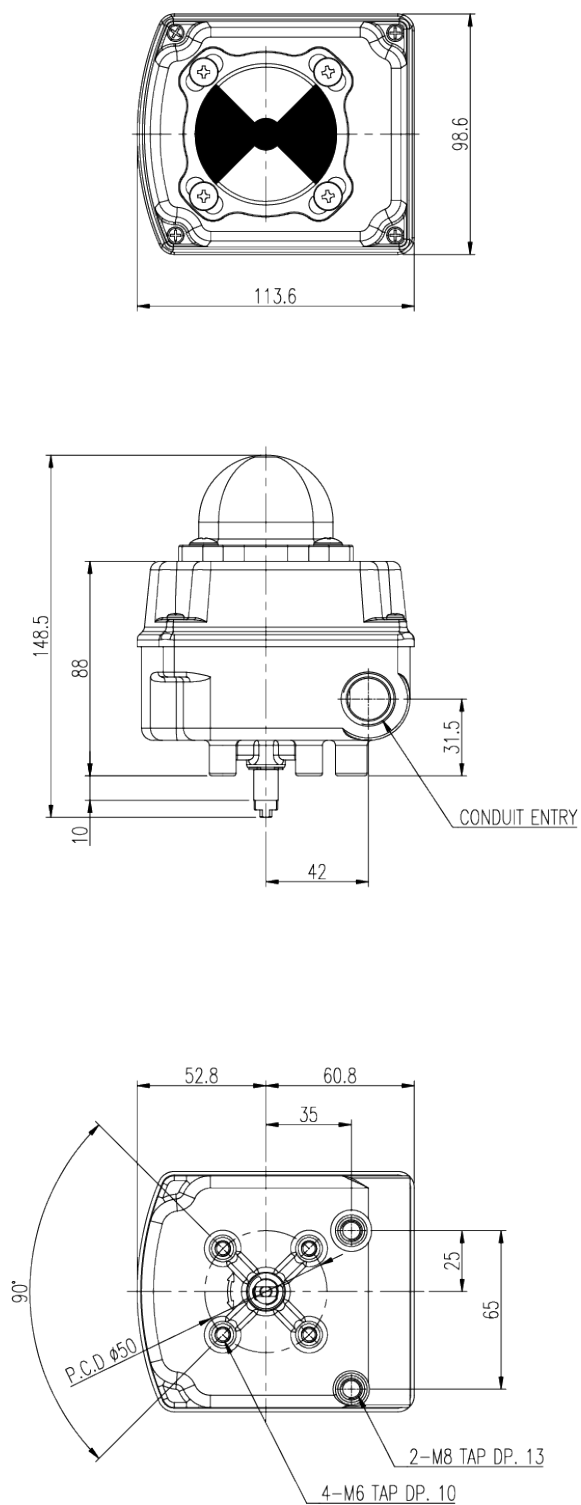
2.5 Specification

Item		TS400M	TS400P
Switch type		Mechanical (2xSPDT)	Proximity
		KW3A-16Z3-A100 (Dongnan)	PSN17-5DNU (Autonics)
Switch Spec	AC	16A,125/250V	-
	DC	30V,10A	10~30V
Enclosure		IP67	
Conduit entry		NPT1/2, G(PF)1/2, M20	
Ambient temp.		-25°C~70°C (standard)	
Terminal		8Points	
Material		Aluminum die casting	
Weight		0.7kg	

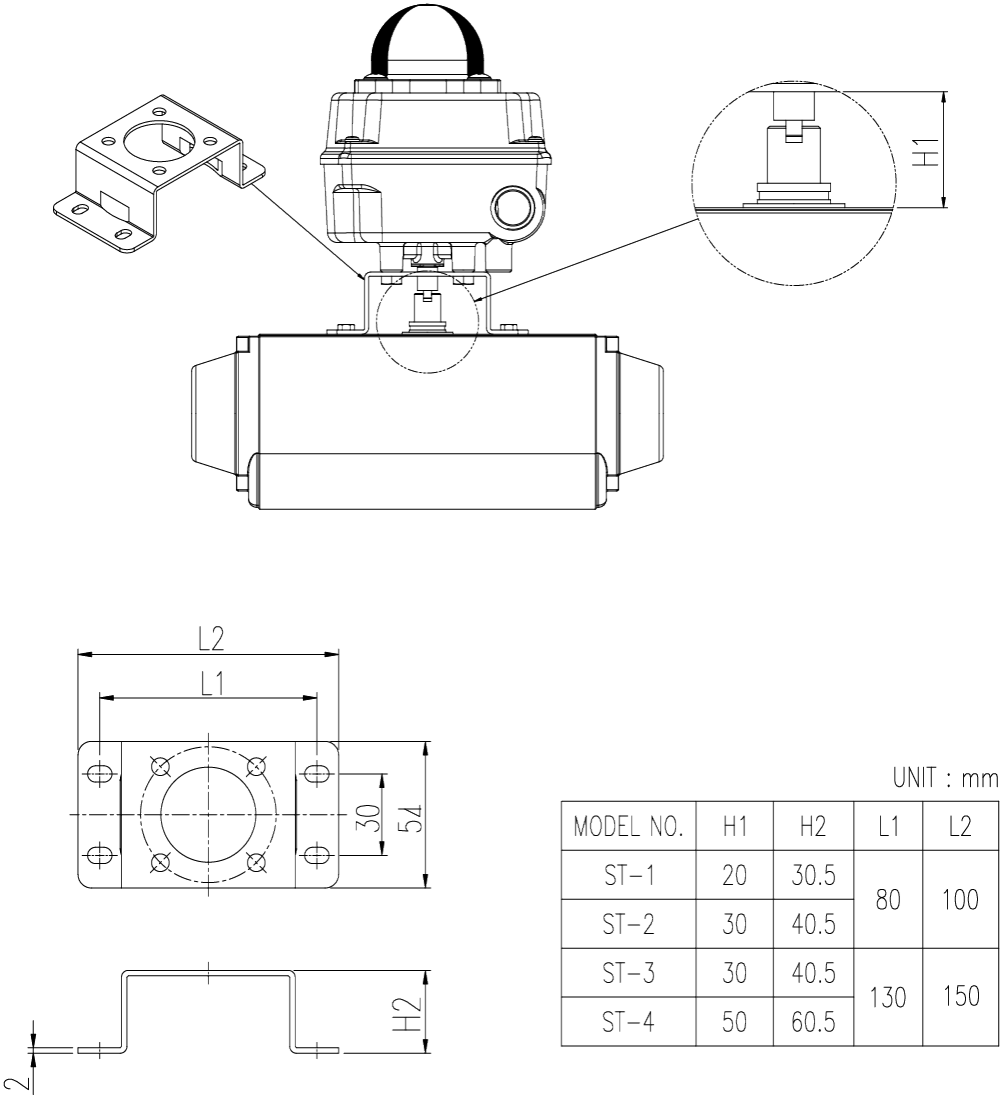
2.6 Structure



2.7 Product Dimension



2.8 Bracket Dimension



3 Installation

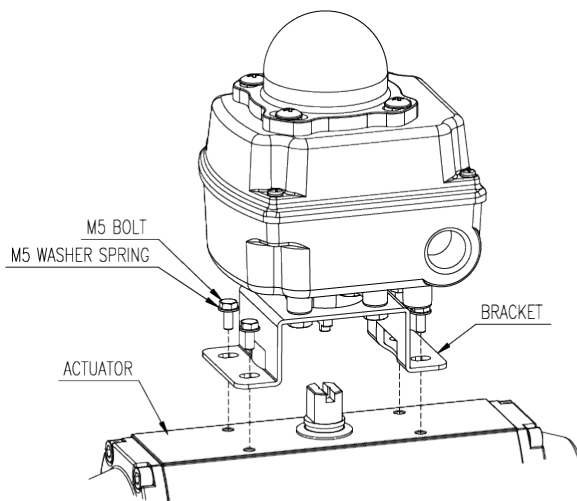
3.1 Before installation

 **WARNING**

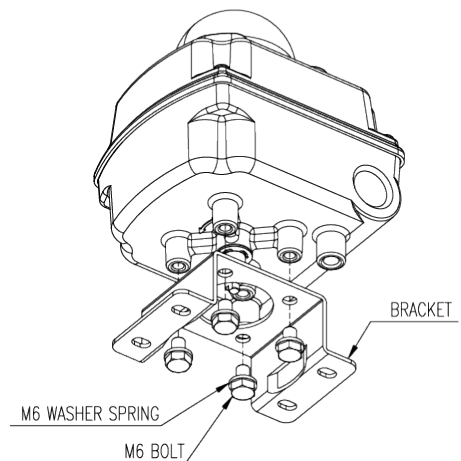
- Before installation, shut off the air pressure and make sure that no air pressure remains inside the actuator.
-

3.2 How to install

- ① As shown in Figure 02, fasten Bracket to the product with 4pcs-bolts included in the box.
- ② As shown in Figure 01, mount Limit switch box's shaft on actuator stem and fasten Bracket to actuator with bolts.



<Figure 01>



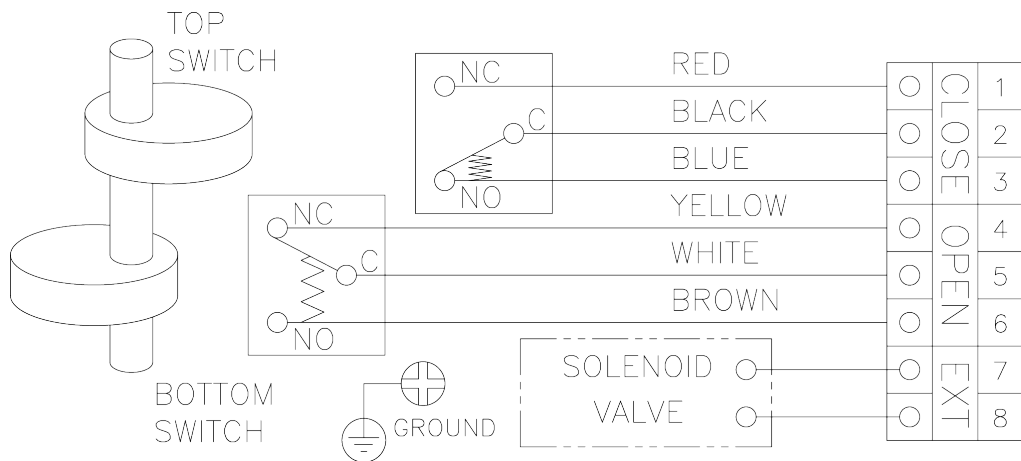
<Figure 02>

4 Electrical connection

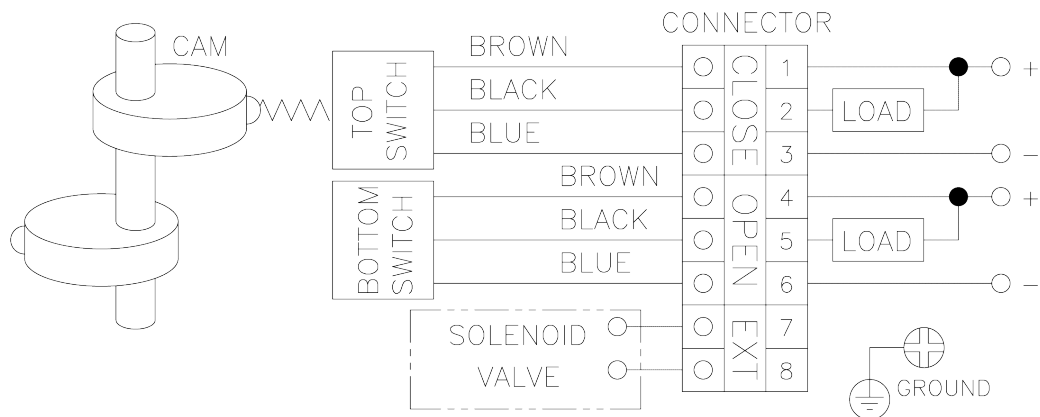
⚠ WARNING

- When open the terminal cover, be sure to turn off the power first.
- To protect the product, ground it to the ground terminal inside and outside the product.

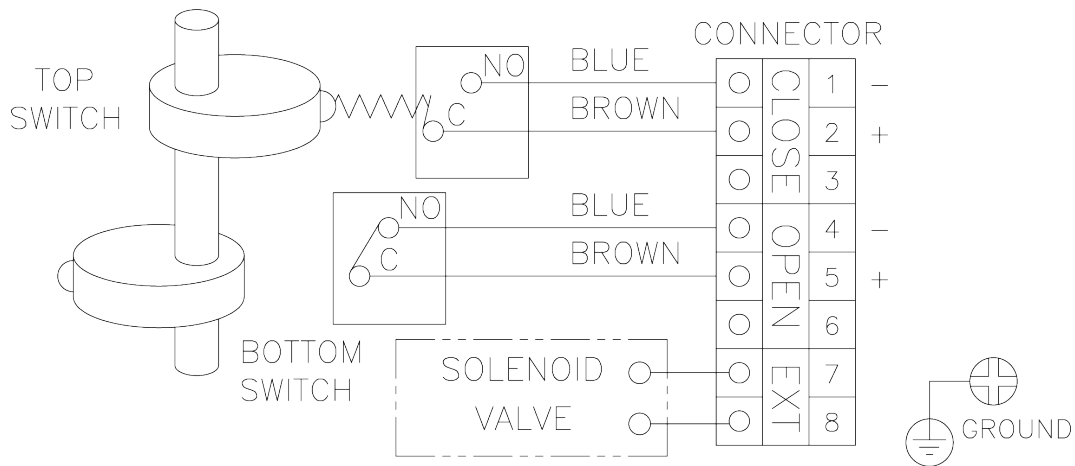
4.1 Mechanical type (2 x SPDT)



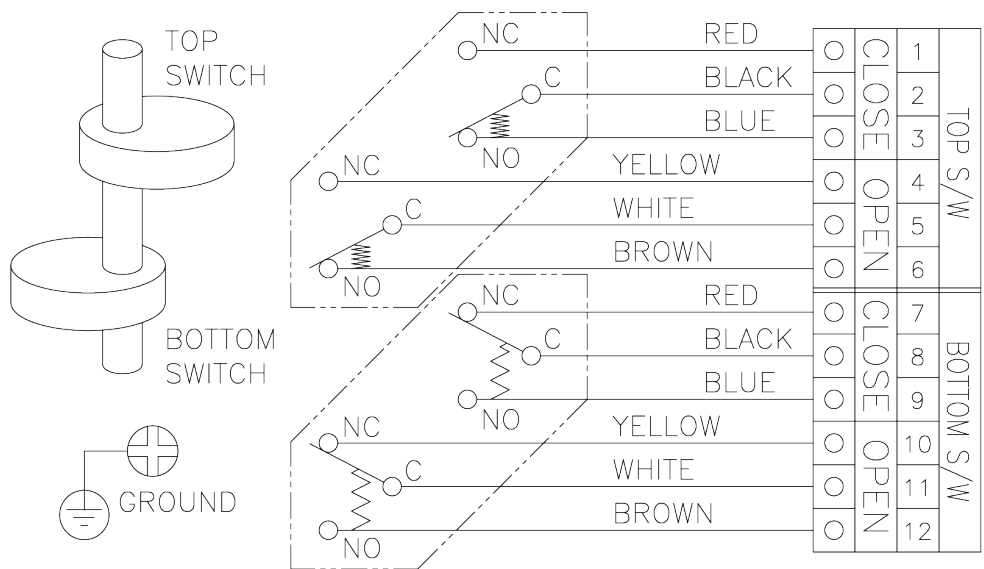
4.2 Inductive proximity type (Autonics PSN17-DNU, NPN Type)



4.3 Inductive proximity type (P&F NJ2-V3-N, NC Type)



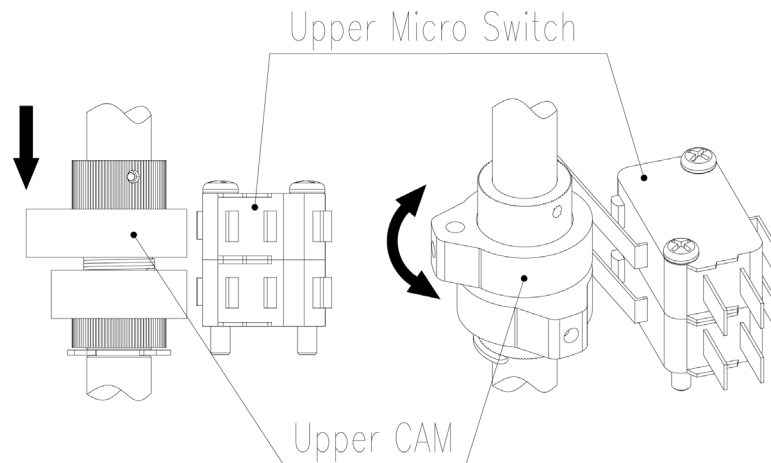
4.4 Mechanical type (2 x DPDT)



5 How to adjust cam

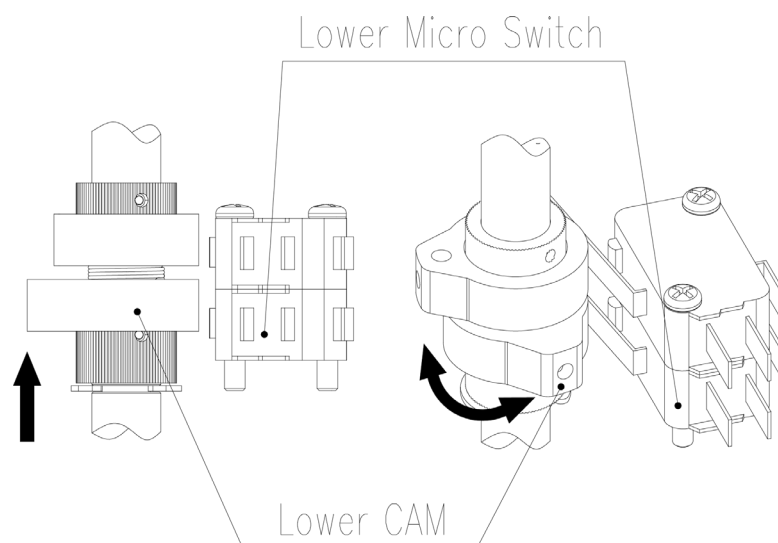
5.1 Upper switch

Push the upper cam down, turn left/right to adjust the cam to operate the upper switch in the desired position, release the cam, and it will return to a stable position by itself.



5.2 Lower switch

Pull the lower cam up, turn left/right to adjust the cam to operate the lower switch in the desired position, release the cam, and it will return to a stable position by itself.





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