



# TMLE series security door lock



## TMLE series security door lock features

TMLE series safety door locks are usually the lowest cost solution due to their small and lightweight form factor, touch armor, various configurations, and locking function. Moreover, thanks to the use of flexible keys, their misalignment tolerances are increased, so they can be used in a wide range of applications.

TMLE series safety door locks allow the switch head to be connected to 90. The angle is rotated 4 times, the key can be inserted into the lock in 4 different positions, and the electromagnet can choose to work on and off the power, providing a variety of different options for the working mode of the switch and the installation method on the protective door. This increases the flexibility of the switch and makes it suitable for use on a variety of doors.

## Technical parameters

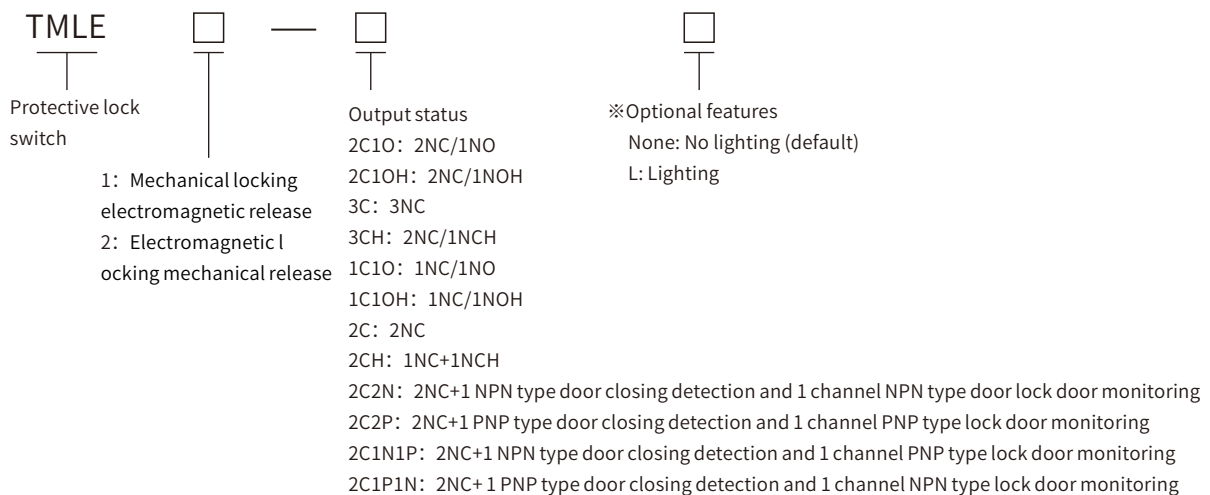
Security level	
Standard	EN60947-5-1 GB/T14048.5
B10D	200万次
Authentication	CQC、FCC
Output	
Output Type (Normal)	3NC、2NC/1NO、2NC、1NC/1NO
Output voltage	DC 24V
Load current	Max.:100mA
On-voltage drop	Max.:0.3V
Turn off leakage current	30μA
Capacitive load	Max.:100μF
Electrical parameters	
Operating voltage	DC 24V (+10%~-15%)
Rated power	5.3W(no load)
Operating frequency	3Hz
Door opening delay	50ms
Lock door delay	200ms
Startup time	1s
Environment	
Protection against electric shock	III (Safe supply voltage SELV)
Use environment (pollution level)	3
Degree of protection	IP54
Operating temperature	-20...+55°C
Relative humidity	5...95%



Mechanical parameters	
Mechanical life	More than 5 million times
Flexible key insertion deviation	Max.: $\pm 2\text{mm}$
Minimum operating force	15N
Lock holding force Fzh (ISO14119)	1700N
Revolving door use radius	Min.: $\geq 250\text{mm}$
Impact resistant	$300\text{m/s}^2$
Vibration resistance	10~55Hz Unilateral amplitude 1mm
LOCK lock door control signal	
Operating current	3mA
LOCK signal high level voltage	$> 10\text{V}$
LOCK signal low level voltage	$< 5\text{V}$
Other	
Body weight	About 240g※
Material	Nylon/stainless steel

※Due to the influence of product configuration and manufacturing process, there may be differences in actual product size and weight. Please refer to the actual product and ensure that the locking retention force Fzh complies with the ISO14119 testing standard.

## Model description



※The mechanical locking electromagnetic release model provides the function of preventing false closing, and when the anti-false closing function is used, the door can only be closed in the unlocked state, and the maximum bearing force of the anti-false closing product shall not be greater than 1000N.

※The mechanical locking model is equipped with TMLE K1R, TMLE K2R, and TMLE K3R to realize the function of preventing false door closing.

TMLE series safety lock selection table

Type		Operating characteristics	Model	Accessibility description
Mechanical locking electromagnetic release	Relay output	With lighting function	TMLE1-1C1OL	1NC+1NO With lighting
			TMLE1-2CL	2NC With lighting
			TMLE1-2C1OL	2NC+1NO With lighting
			TMLE1-3CL	3NC With lighting
		With normally unlocked door to assist monitoring	TMLE1-1C1O	1NC+1NO
			TMLE1-2C1O	2NC+1NO
		With normally locked door to assist monitoring	TMLE1-2C	2NC
			TMLE1-3C	3NC
	With constant opening and closing door detection	TMLE1-1C1OH	1NC+1NOH	
		TMLE1-2C1OH	2NC+1NOH	
	With normally closed door detection	TMLE1-2CH	1NC+1NCH	
		TMLE1-3CH	2NC+1NCH	
	Switching output	With NPN type door closing detection and NPN type lock door monitoring	TMLE1-2C2N	2NC+1 NPN type door closing detection and 1 NPN type lock door monitoring
		With PNP type door closing detection and PNP type lock door monitoring	TMLE1-2C2P	2NC+1 PNP type door closing detection and 1 channel PNP type lock door monitoring
With NPN type door closing detection and PNP type lock door monitoring		TMLE1-2C1N1P	2NC+1 NPN type door closing detection and 1 channel PNP type lock door monitoring	
With PNP type door closing detection and NPN type lock door monitoring		TMLE1-2C1P1N	2NC+1 PNP type door closing detection and 1 channel NPN type lock door monitoring	
Electromagnetic locking mechanical release	Relay output	With lighting function	TMLE2-1C1OL	1NC+1NO With lighting
			TMLE2-2CL	2NC With lighting
			TMLE2-2C1OL	2NC+1NO With lighting
			TMLE2-3CL	3NC With lighting
		With normally unlocked door to assist monitoring	TMLE2-1C1O	1NC+1NO
			TMLE2-2C1O	2NC+1NO
		With normally locked door to assist monitoring	TMLE2-2C	2NC
			TMLE2-3C	3NC
	With constant opening and closing door detection	TMLE2-1C1OH	1NC+1NOH	
		TMLE2-2C1OH	2NC+1NOH	
	With normally closed door detection	TMLE2-2CH	1NC+1NCH	
		TMLE2-3CH	2NC+1NCH	
	Switching output	With NPN type door closing detection and NPN type lock door monitoring	TMLE2-2C2N	2NC+1 NPN type door closing detection and 1 NPN type lock door monitoring
		With PNP type door closing detection and PNP type lock door monitoring	TMLE2-2C2P	2NC+1 PNP type door closing detection and 1 channel PNP type lock door monitoring
With NPN type door closing detection and PNP type lock door monitoring		TMLE2-2C1N1P	2NC+1 NPN type door closing detection and 1 channel PNP type lock door monitoring	
With PNP type door closing detection and NPN type lock door monitoring		TMLE2-2C1P1N	2NC+1 PNP type door closing detection and 1 channel NPN type lock door monitoring	

※Ip54 waterproof requirements need to be directly wired, please consult sales staff for details.

## Accessories selection table

Model	Operating characteristics	Order number	Model	Operating characteristics	Order number
TMLE-K1	Flexible key	LOT555242K1	WJ-16015	M16×1.5 Nylon waterproof connector	LOTWJ16015
TMLE-K1H※	Flexible key, door approach, with induction function	LOT555242H1	TMLE-K1R	Flexible key to prevent accidental door closing	LOT555242R1
TMLE-K2※	Straight key	LOT623508K2	TMLE-K2R※	Anti-accidental closing of the door straight key	LOT623508R2
TMLE-K2H※	Straight key, door approach, with induction work	LOT623508H2	TMLE-K3R	Anti-accidental closing of the door bending key	LOT433508R3
TMLE-K3	Bend the key	LOT433508K3	TRL1-F03※	Release the key manually	LOTRRL1F03
TMLE-K3H※	Curved key, door approach, with induction function	LOT623508H3	TRL1-H03※	Rear release accessories	LOTRRL1H03

※Matching TSU, TS2 safety gate, please choose TMLE K2, TMLE K2R; The mechanical locking model is equipped with TMLE K1R, TMLE K2R and TMLE K3R to realize the function of preventing false door closing.

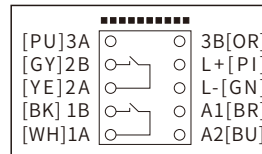
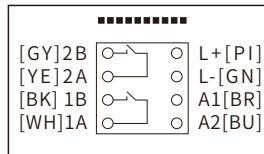
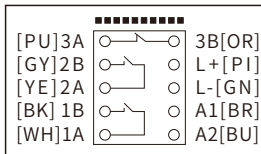
※For installation and use of TRL1 manual release accessories, please refer to TRL1 product details.

※TMLE-K1/K2/K3 doors are close to the key without padlock function.

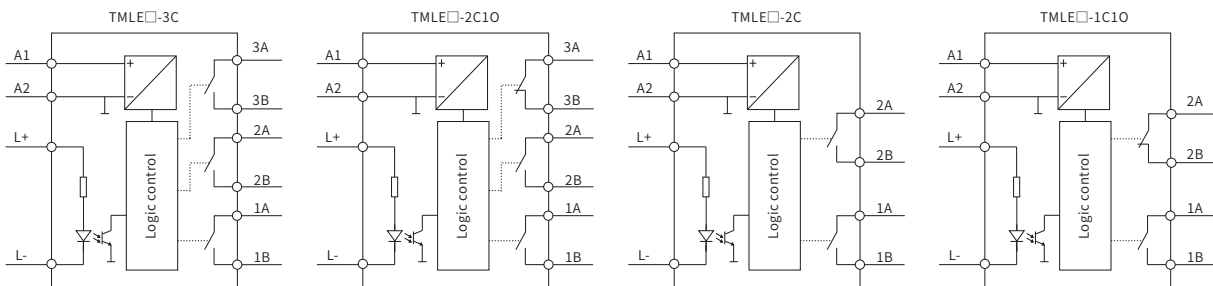
## TMLE series safety lock interface description

No	Signal name	Illustrate	No	Signal name	Illustrate
1	3A	Output 3/PNP/NPN	6	3B	Output 3/PNP/NPN
2	2B		7	L+	
3	2A	Output 2	8	L-	Lock the control signal input to low or ground
4	1B		Output 1	9	
5	1A	10		A2	0V

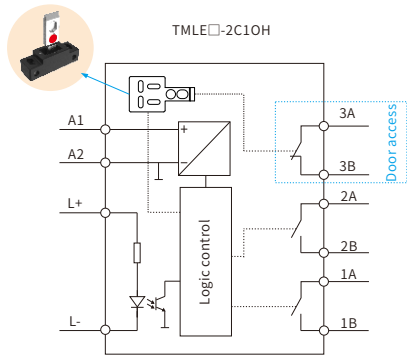
※Direct line IP67 waterproof model product wiring color definition: [WH]White、[BK] black、[YE] yellow、[GY] gray、[PU] purple、[OR] orange、[PI] pink、[GN] Green、[BR] brown、[BU] Blue



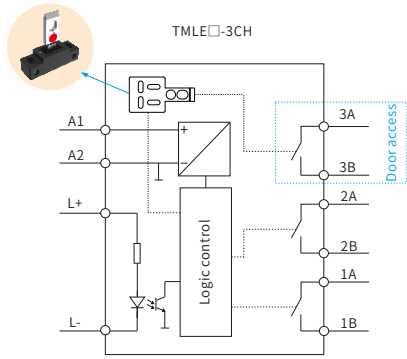
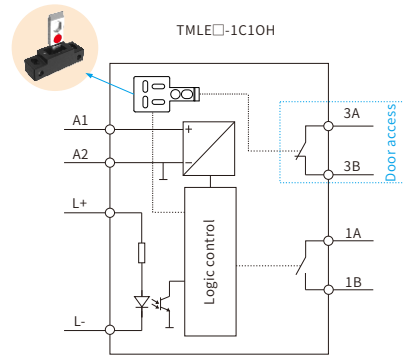
## TMLE series internal block diagram



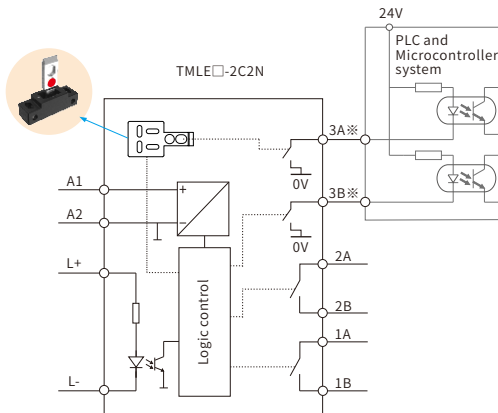
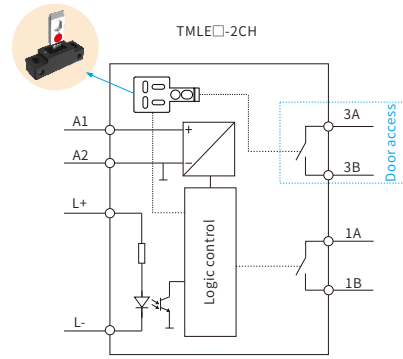
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking



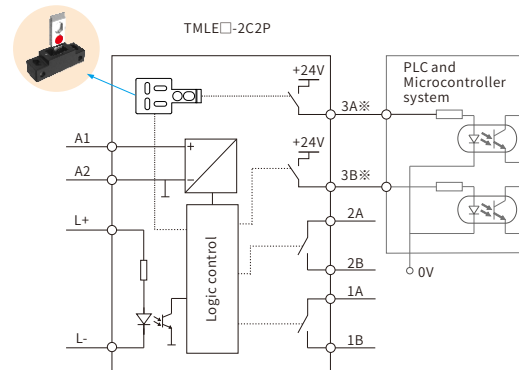
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking



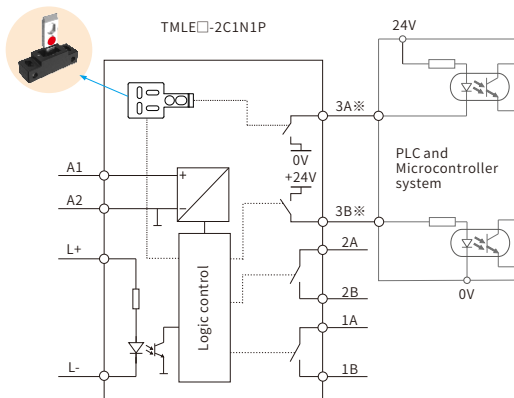
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking



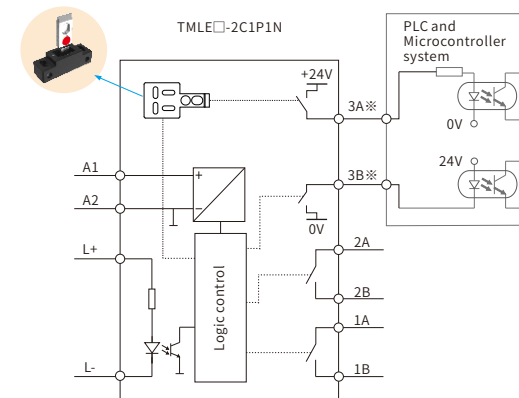
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking  
※3A/3B: NPN output



※□Optional number 1: Mechanical locking, 2: Electromagnetic locking  
※3A/3B: PNP output



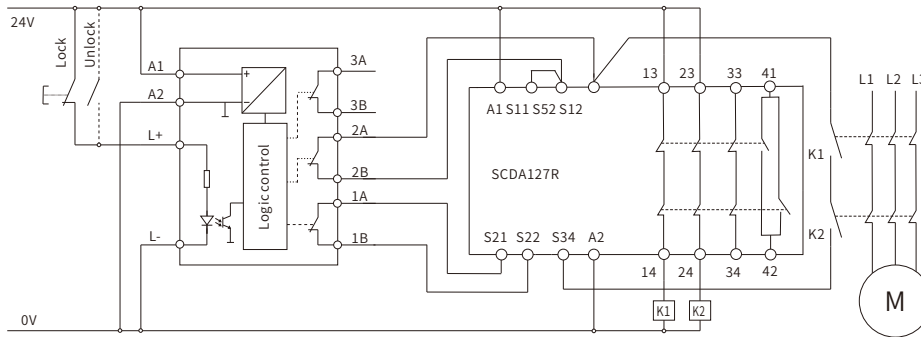
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking  
※3A: NPN output, 3B: PNP output



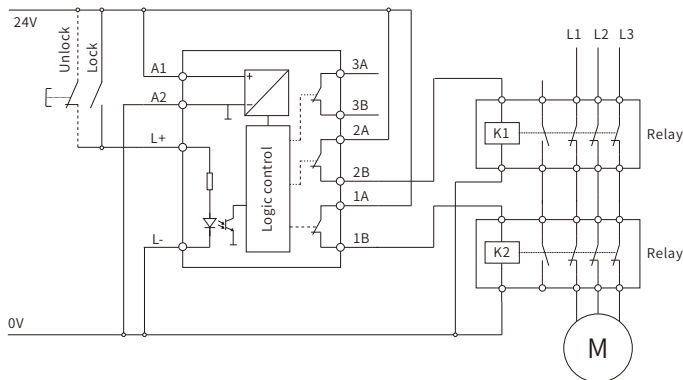
※□Optional number 1: Mechanical locking, 2: Electromagnetic locking  
※3A: PNP output, 3B: NPN output

## TMLE series application examples

### Example of TMLE-3C Electromagnetic Lock and SCDA127R Application Wiring

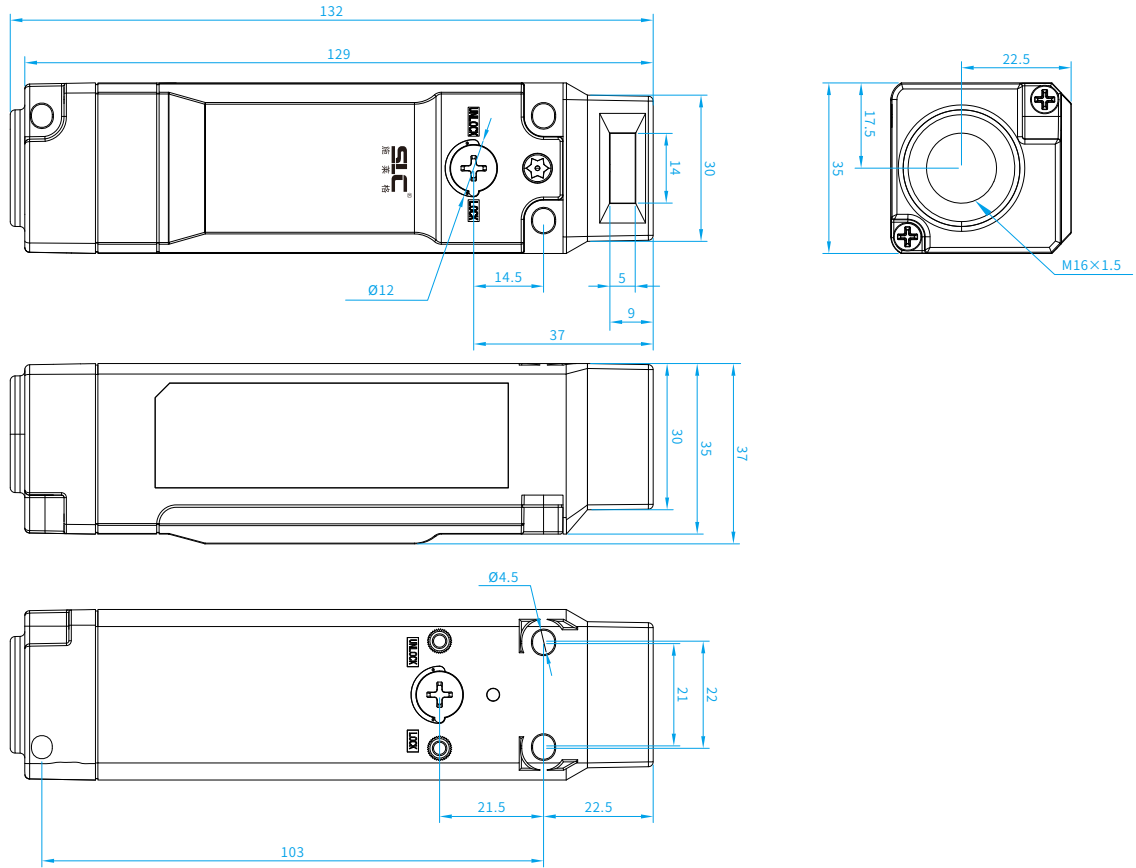


### Example of TMLE-3C Mechanical Lock and Relay Application Wiring

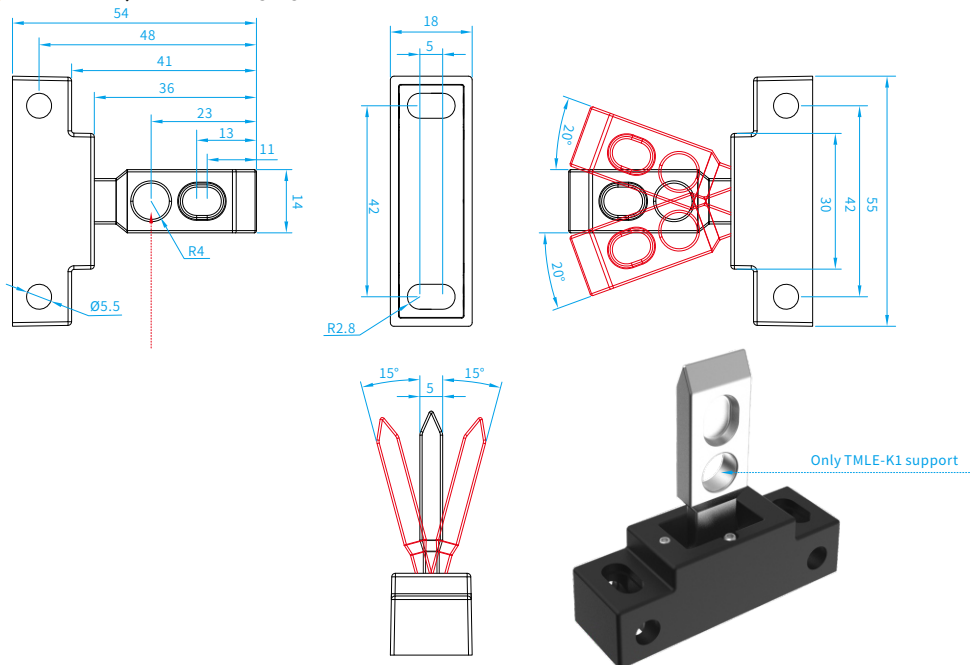


TMLE series product size

TMLE size

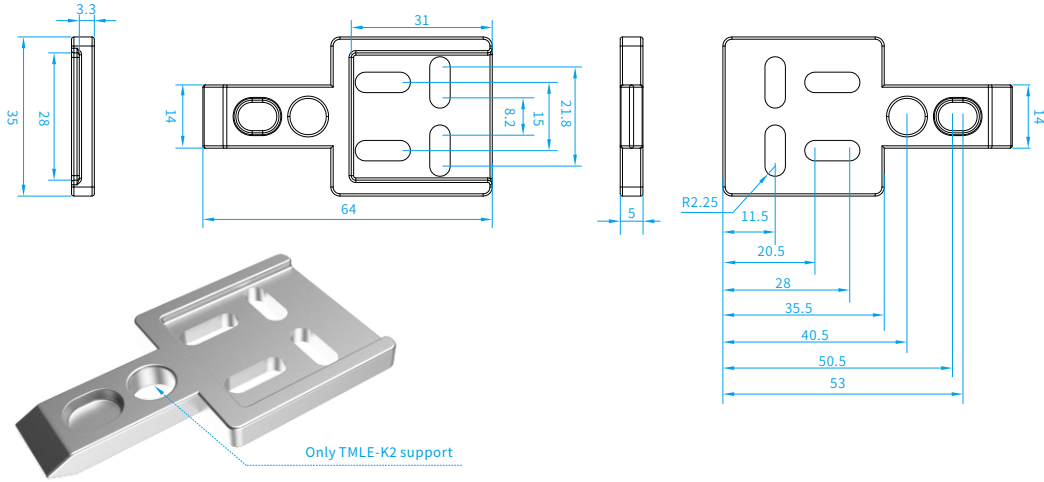


TMLE-K1, TMLE-K1H size

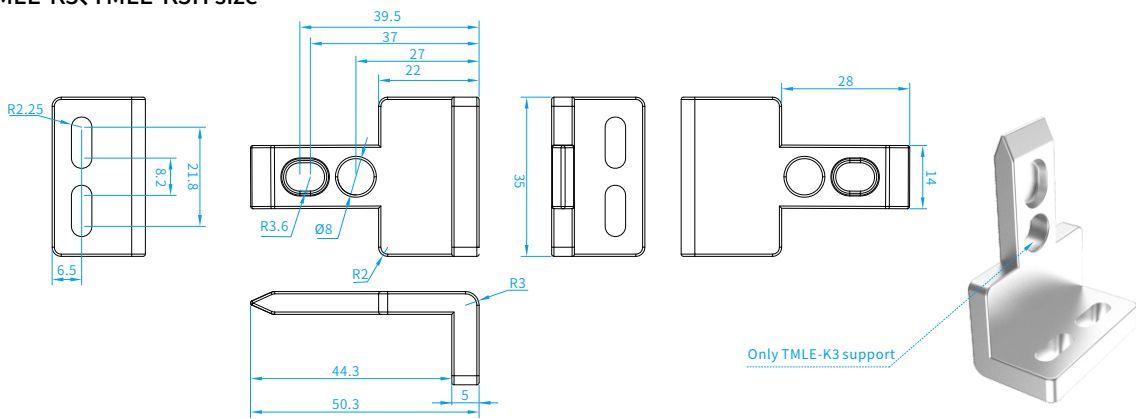


※Affected by product configuration and manufacturing process, the actual product size, weight may be different, please refer to the actual product

◆ TMLE-K2, TMLE-K2H size

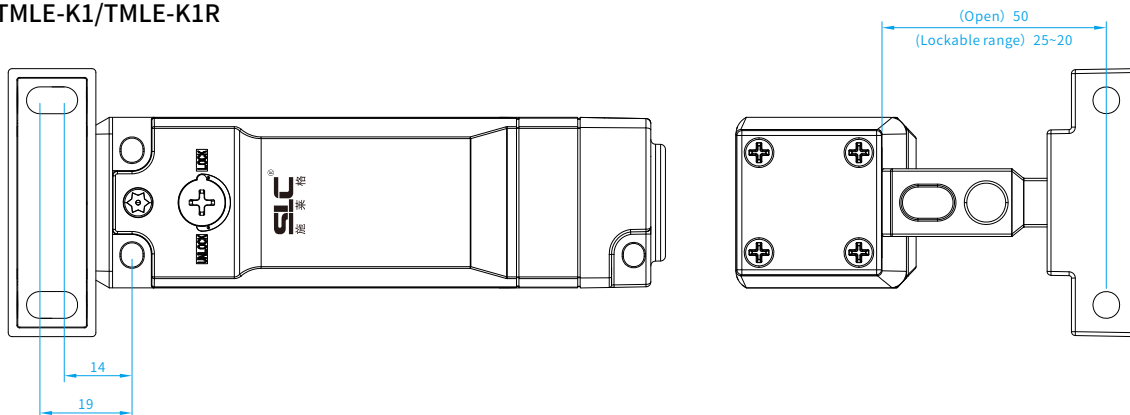


◆ TMLE-K3, TMLE-K3H size



▶ TMLE series mounting dimensions

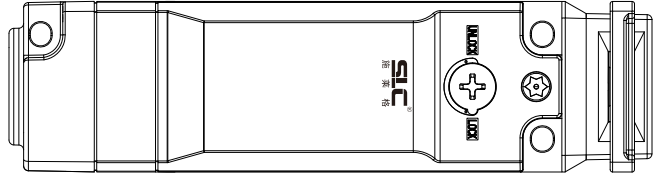
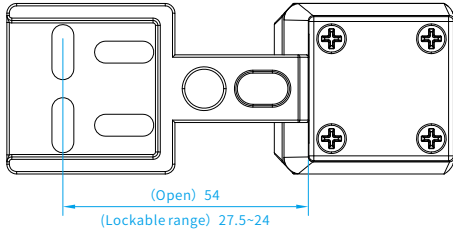
◆ TMLE-K1/TMLE-K1R



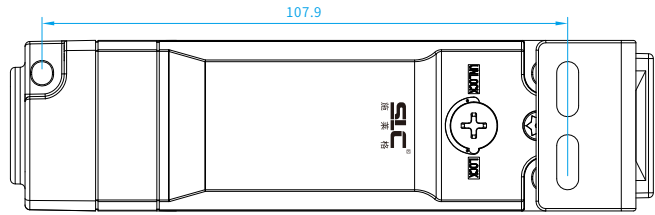
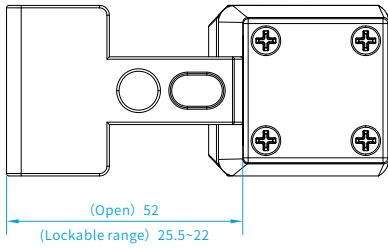


TMLE SERIES SECURITY DOOR LOCK

◆ TMLE-K2/TMLE-K2R

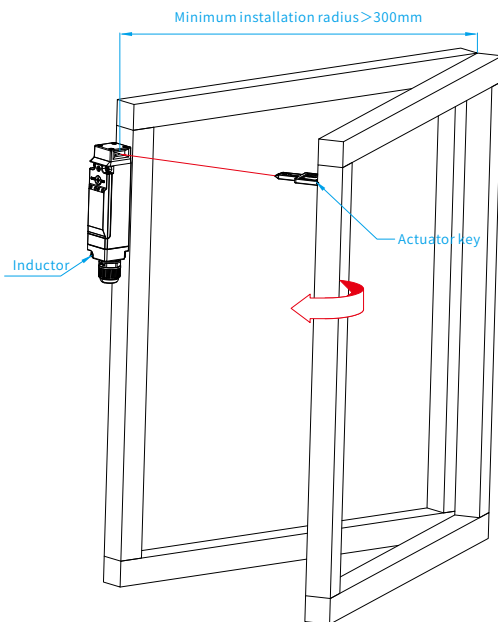


◆ TMLE-K3/TMLE-K3R



※  $\overbrace{54}^{54 \text{ (开门)}}$  Lockable range 29~24 In this annotation method, the size above the size line is the minimum door opening size, and the range size below the size line is the range that can be locked. Affected by product configuration and manufacturing process, the actual product size, weight may be different, please refer to the actual product.

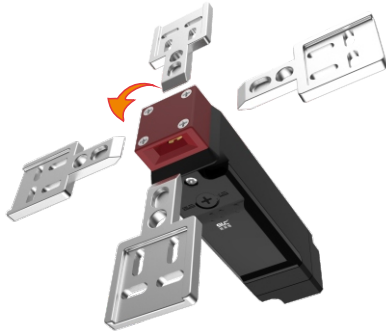
➤ TMLE series security door lock revolving door installation size



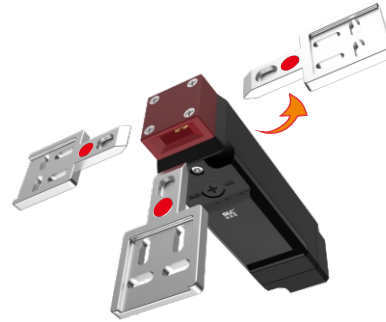
The minimum installation radius is measured from the center of the actuator (actuation key) insert of the safety switch (safety interlock) to the center of the revolving door rotary axis.

## TMLE series security door locks correct approach orientation

TMLE safety door lock, provides four directions for inserting the actuator key, it should be noted that before inserting the actuator key, you need to unscrew the four screws of the TMLE safety door lock head, and rotate the head socket to the desired position (90 per rotation. One insertion direction can be fixed) and the head can be fixed with the unscrewed screw before the actuator key can be inserted (except for the TMLE-2C10H series, only three insert actuator key directions are available).



TMLE series door approach direction



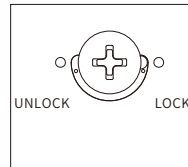
TMLE-2C10H series door approach direction

## TMLE series security door lock manual release instructions

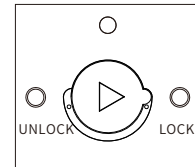


1. Need to use manual release, please use a screwdriver or release accessory, screw the front or back release knob of TMLE from the LOCK position, clockwise to the UNLOCK position, at this time the TMLE safety lock will not be locked, to restore the lock function, you need to screw the front or back release knob of the TMLE safety lock from the UNLOCK position, counterclockwise to the LOCK position.

2. TMLE safety lock, only when the front release knob and back release knob are in the LOCK position at the same time.





十字释放旋钮



三角释放旋钮

 <b>Warn</b>	<p>1. Electromagnetic locking model, it is forbidden to transform the manual release knob from LOCK to UNLOCK position in the product lock state, otherwise TMLE products will not be able to repaired damage;</p>
	<p>2. Electromagnetic locking model, in the state of door opening, after the manual release knob is transformed from LOCK to UNLOCK position, and then the lock door signal is given, it will not be able to provide locking force for the safety door. If the product is working properly again, it will need to be manual Release the knob to turn to the LOCK position;</p>
	<p>3. The maximum torque of manual unlocking shall not be greater than 0.7N.m, otherwise it will cause irreversible damage to the product structure.</p>

 <p><b>Danger</b></p>	<ul style="list-style-type: none"> <li>◆ Personal injury may occur. Before using this device, be sure to check that the safety function can be operated frequently. Safety functions may not function properly due to incorrect wiring, incorrect settings or faulty switches, resulting in some devices remaining operational when they should have stopped.</li> <li>◆ There is a possibility of personal injury. If the device is used when the release key is in the UNLOCK position, the electromagnetic lock may not work, causing some devices to remain operational when they should stop. Before using the device, be sure to put the release key in the LOCK position. Also, check the status of the locking and safety circuits.</li> <li>◆ Personal injury may occur. Before changing the orientation of the head, be sure to set the release key to the "UNLOCK" position, or install the operating key. Failure to do so can damage the switch, causing some devices to remain operational when they should be stopped.</li> <li>◆ There is a possibility of personal injury. When the electromagnetic locking function or switch function is damaged, some devices may remain operational when they should stop. Do not use the electromagnetic locking function of the switch instead of the door lock. Be sure to prepare a lock that is independent of the switch and put a warning label on the door to prevent others from forcefully opening it while the door is locked, or you can also prepare an indicator light to show the locked/unlocked status of the door.</li> <li>◆ During installation, please apply thread glue to the fixing screw to prevent the TMLE safety door lock body and the screw that executes the key.</li> <li>◆ Please prepare the screws (M4) for fixing the actuator, inductor, and mounting bracket to the device.</li> </ul>
 <p><b>Warn</b></p>	<ul style="list-style-type: none"> <li>◆ There is a possibility of electric shock.</li> <li>◆ Do not use metal connectors or metal conduits.</li> </ul>

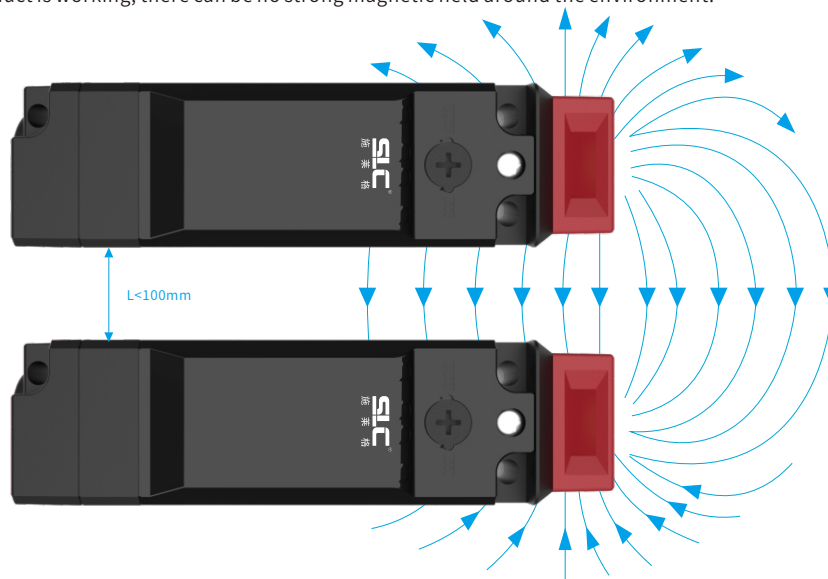
## Precautions for use


### ● About installation

When multiple sets are used at the same time, pay attention to the installation spacing  $L$  is not less than 100mm.

### ● Other

When the product is working, there can be no strong magnetic field around the environment.



 <p><b>Warn</b></p>	<ul style="list-style-type: none"> <li>◆ This product should not be used in the environment with more metal iron shoulder and metal powder, otherwise it will cause failure.</li> <li>◆ Please clean the locking shaft and locking hole of the sensor and actuator of this product regularly (recommended once every 7 days) to keep free of iron chip powder adsorption.</li> </ul>
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