北京平和
Bei Jing Ping He

PHLM Series
4 Contacts Safety Door Switch



Safety Protection Forced Lock

- EN 60947-5-1
- GB/T 14048.5
- EN ISO 14119
- GB/T 18831
- UL 508

PHLM Series introduction

PHLM series is the most common door interlock technology. It uses a inserting key to detect the movement of the protective door. As the small and light weight size, various contact configurations, and locking functions, safety door locks are usually the lowest cost solution. The PHLM series safety door lock allows the switch head to rotate at a 90° angle four times. The key can be inserted into the switch at five different positions. The electromagnet can be selected to work when powered on or off, providing various different options for the working mode of the switch and the installation method on the protective door. It improves the flexibility of the switch and make it suitable for use on various doors.

Product features

- Multiple and optional contacts construction;
- Holding force 1300N;
- IP67 protection class;
- PA66 flame retardant material;
- Support general load and micro load.

PHLM Series Safety Door Switch

Product parameters

Electromagnetic tube		
Nominal working voltage	DC24V	
Power consumption	about 4.8W*1	
Current consumption	about 200mA*2	
Insulation	Class B (130°C)	
LED indicator		
Nominal working voltage	DC24V	
Nominal current	about 2mA	
Luminous color (LED)	Green	
Safety level	**PL d ISO 13849-1**	
Certification	CE, TÜV	
Standard	EN 60947-5-1, GB/T 14048.5, EN ISO 14119, GB/T 18831, UL 508	
Protection class	IP67	
Material	PA66 flame retardant	
Mechanical lifespan	Over 1.000.000 times	
Electrical lifespan	Over 150.000 times (AC240V3A，resistive load)	
Using type	**AC-15**	**DC-13**
Nominal working voltage (Ue)	240V	24V
Nominal working current (Ie)	3A	2A
Electrical parameters		
Contact resistance	<200mΩ	
Nominal discharge current (Ith)	10A	
Nominal insulation voltage (Ui)	300V	
Anti electric shock level	Class II (double insulation)	
Pulse withstand voltage (EN 60947-5-1)	2.5KV	
Insulation resistance	>100MΩ	
Short circuit protection	10A, 250V requires a quick break fuse	
Vibration resistance	10~55HZ double amplitude 1.5mm	
Impact resistance	Durability 1000m/s^2	
Conditional short circuit current	100A (EN 60947-5-1)	
Contact distance	2*2mm above	
Action characteristics		
Direct opening force	>10mm	
Direct operating speed	0.1~0.5m/s	
Allowed operation frequency	Max. 30 times/min	
Holding force	1300N	
Environment		
Operating environment	3 (EN 60947-5-1)	
Operating temperature	-10~+60°C (no freezing)	
Operating humidity	<95%RH	

*1 The maximum inrush power of the door switch does not exceed 15W, and the power consumption will then return to within 4.8W.
*2 The maximum inrush current of the door switch does not exceed 600mA, and the current consumption will then return to within 200mA.

Model Selection (ex: PHLM-APM-B)

Product Series	Switch contact (Door monitor + Lock monitor)	Head montage direction/Material	Door lock/Release method		Back unlock
PHLM	– □	□	□	–	□

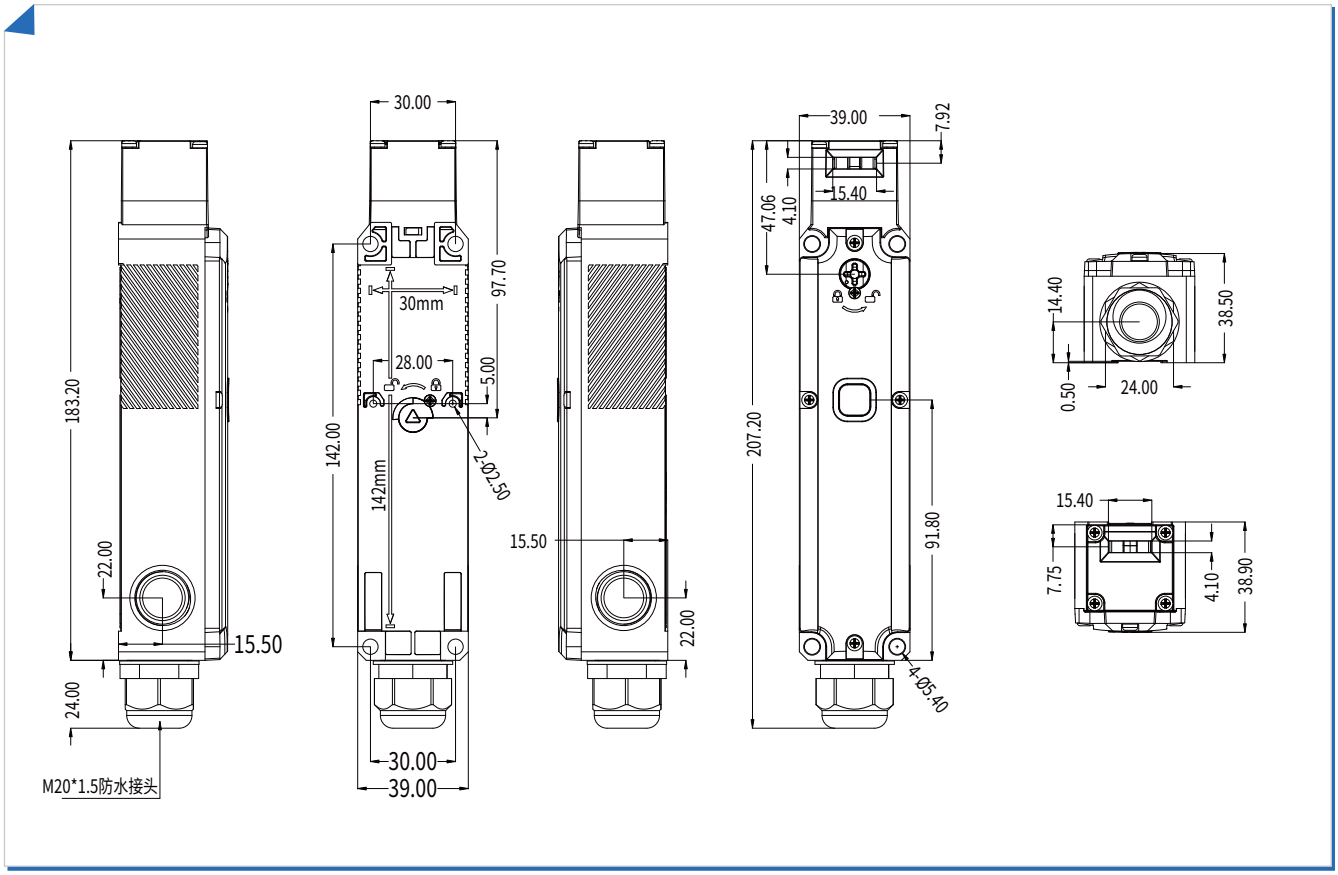
A: 1NC/1NO (slow contact) +1NC/1NO (slow contact)
B: 1NC/1NO (slow contact) +2NC (slow contact)
C: 2NC (slow contact) +1NC/1NO (slow contact)
D: 2NC (slow contact) +2NC (slow contact)
E: 1NC/2NO (slow contact) +1NC (slow contact)
F: 3NC (slow contact) +1NC (slow contact)
G: 2NC/1NO (slow contact) +1NC (slow contact)
H: 1NC (slow contact) +3NC (slow contact)
I: 1NC (slow contact) +1NC/2NO (slow contact)
J: 1NC (slow contact) +2NC/1NO (slow contact)
K: 1NO (slow contact) +3NC (slow contact)
L: 1NO (slow contact) +2NC/1NO (slow contact)
M: 1NC (slow contact) +1NC (slow contact)
N: 1NO (slow contact) +1NC (slow contact)

M: 4 optional directions (Default front side installation)/ metal
P: 4 optional directions (Default front side installation)/ plastic

M: mechanical lock/DC24V electromagnetic release
E: DC24V electromagnetic lock/ mechanical release

Empty: no
B: yes

Product Dimension



Note: include back unlock function.

PHLM Series Safety Door Switch

PHLM Series Selection Table

Back unlock	Head material	Magnetic voltage/ indicator	Lock/release mode	Contact type (Door + Lock monitor)	Duct dimension	Model
No	Plastic	Electromagnetic DC24V Green LED	Electromagnetic lock Mechanical release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-APE
				1NC/1NO+2NC	M20*1.5	PHLM-BPE
				2NC+1NC/1NO	M20*1.5	PHLM-CPE
				2NC+2NC	M20*1.5	PHLM-DPE
				1NC/2NO+1NC	M20*1.5	PHLM-EPE
				3NC+1NC	M20*1.5	PHLM-FPE
				2NC/1NO+1NC	M20*1.5	PHLM-GPE
				1NC+3NC	M20*1.5	PHLM-HPE
				1NC+1NC/2NO	M20*1.5	PHLM-IPE
				1NC+2NC/1NO	M20*1.5	PHLM-JPE
				1NO+3NC	M20*1.5	PHLM-KPE
				1NO+2NC/1NO	M20*1.5	PHLM-LPE
				1NC+1NC	M20*1.5	PHLM-MPE
				1NO+1NC	M20*1.5	PHLM-NPE
			Mechanical lock Electromagnetic release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-APM
				1NC/1NO+2NC	M20*1.5	PHLM-BPM
				2NC+1NC/1NO	M20*1.5	PHLM-CPM
				2NC+2NC	M20*1.5	PHLM-DPM
				1NC/2NO+1NC	M20*1.5	PHLM-EPM
				3NC+1NC	M20*1.5	PHLM-FPM
				2NC/1NO+1NC	M20*1.5	PHLM-GPM
				1NC+3NC	M20*1.5	PHLM-HPM
				1NC+1NC/2NO	M20*1.5	PHLM-IPM
				1NC+2NC/1NO	M20*1.5	PHLM-JPM
				1NO+3NC	M20*1.5	PHLM-KPM
				1NO+2NC/1NO	M20*1.5	PHLM-LPM
				1NC+1NC	M20*1.5	PHLM-MPM
				1NO+1NC	M20*1.5	PHLM-NPM

PHLM Series Selection Table

Back unlock	Head material	Magnetic voltage/ indicator	Lock/release mode	Contact type (Door + Lock monitor)	Duct dimension	Model
Yes	Plastic	Electromagnetic DC24V Green LED	Electromagnetic lock Mechanical release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-APE-B
				1NC/1NO+2NC	M20*1.5	PHLM-BPE-B
				2NC+1NC/1NO	M20*1.5	PHLM-CPE-B
				2NC+2NC	M20*1.5	PHLM-DPE-B
				1NC/2NO+1NC	M20*1.5	PHLM-EPE-B
				3NC+1NC	M20*1.5	PHLM-FPE-B
				2NC/1NO+1NC	M20*1.5	PHLM-GPE-B
				1NC+3NC	M20*1.5	PHLM-HPE-B
				1NC+1NC/2NO	M20*1.5	PHLM-IPE-B
				1NC+2NC/1NO	M20*1.5	PHLM-JPE-B
				1NO+3NC	M20*1.5	PHLM-KPE-B
				1NO+2NC/1NO	M20*1.5	PHLM-LPE-B
				1NC+1NC	M20*1.5	PHLM-MPE-B
				1NO+1NC	M20*1.5	PHLM-NPE-B
			Mechanical lock Electromagnetic release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-APM-B
				1NC/1NO+2NC	M20*1.5	PHLM-BPM-B
				2NC+1NC/1NO	M20*1.5	PHLM-CPM-B
				2NC+2NC	M20*1.5	PHLM-DPM-B
				1NC/2NO+1NC	M20*1.5	PHLM-EPM-B
				3NC+1NC	M20*1.5	PHLM-FPM-B
				2NC/1NO+1NC	M20*1.5	PHLM-GPM-B
				1NC+3NC	M20*1.5	PHLM-HPM-B
				1NC+1NC/2NO	M20*1.5	PHLM-IPM-B
				1NC+2NC/1NO	M20*1.5	PHLM-JPM-B
				1NO+3NC	M20*1.5	PHLM-KPM-B
				1NO+2NC/1NO	M20*1.5	PHLM-LPM-B
				1NC+1NC	M20*1.5	PHLM-MPM-B
				1NO+1NC	M20*1.5	PHLM-NPM-B

PHLM Series Safety Door Switch

PHLM Series Selection Table

Back unlock	Head material	Magnetic voltage/ indicator	Lock/release mode	Contact type (Door + Lock monitor)	Duct dimension	Model
No	Metal	Electromagnetic DC24V Green LED	Electromagnetic lock Mechanical release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-AME
				1NC/1NO+2NC	M20*1.5	PHLM-BME
				2NC+1NC/1NO	M20*1.5	PHLM-CME
				2NC+2NC	M20*1.5	PHLM-DME
				1NC/2NO+1NC	M20*1.5	PHLM-EME
				3NC+1NC	M20*1.5	PHLM-FME
				2NC/1NO+1NC	M20*1.5	PHLM-GME
				1NC+3NC	M20*1.5	PHLM-HME
				1NC+1NC/2NO	M20*1.5	PHLM-IME
				1NC+2NC/1NO	M20*1.5	PHLM-JME
				1NO+3NC	M20*1.5	PHLM-KME
				1NO+2NC/1NO	M20*1.5	PHLM-LME
				1NC+1NC	M20*1.5	PHLM-MME
				1NO+1NC	M20*1.5	PHLM-NME
			Mechanical lock Electromagnetic release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-AMM
				1NC/1NO+2NC	M20*1.5	PHLM-BMM
				2NC+1NC/1NO	M20*1.5	PHLM-CMM
				2NC+2NC	M20*1.5	PHLM-DMM
				1NC/2NO+1NC	M20*1.5	PHLM-EMM
				3NC+1NC	M20*1.5	PHLM-FMM
				2NC/1NO+1NC	M20*1.5	PHLM-GMM
				1NC+3NC	M20*1.5	PHLM-HMM
				1NC+1NC/2NO	M20*1.5	PHLM-IMM
				1NC+2NC/1NO	M20*1.5	PHLM-JMM
				1NO+3NC	M20*1.5	PHLM-KMM
				1NO+2NC/1NO	M20*1.5	PHLM-LMM
				1NC+1NC	M20*1.5	PHLM-MMM
				1NO+1NC	M20*1.5	PHLM-NMM

PHLM Series Selection Table

Back unlock	Head material	Magnetic voltage/ indicator	Lock/release mode	Contact type (Door + Lock monitor)	Duct dimension	Model
Yes	Metal	Electromagnetic DC24V Green LED	Electromagnetic lock Mechanical release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-AME-B
				1NC/1NO+2NC	M20*1.5	PHLM-BME-B
				2NC+1NC/1NO	M20*1.5	PHLM-CME-B
				2NC+2NC	M20*1.5	PHLM-DME-B
				1NC/2NO+1NC	M20*1.5	PHLM-EME-B
				3NC+1NC	M20*1.5	PHLM-FME-B
				2NC/1NO+1NC	M20*1.5	PHLM-GME-B
				1NC+3NC	M20*1.5	PHLM-HME-B
				1NC+1NC/2NO	M20*1.5	PHLM-IME-B
				1NC+2NC/1NO	M20*1.5	PHLM-JME-B
				1NO+3NC	M20*1.5	PHLM-KME-B
				1NO+2NC/1NO	M20*1.5	PHLM-LME-B
				1NC+1NC	M20*1.5	PHLM-MME-B
				1NO+1NC	M20*1.5	PHLM-NME-B
			Mechanical lock Electromagnetic release	1NC/1NO+1NC/1NO	M20*1.5	PHLM-AMM-B
				1NC/1NO+2NC	M20*1.5	PHLM-BMM-B
				2NC+1NC/1NO	M20*1.5	PHLM-CMM-B
				2NC+2NC	M20*1.5	PHLM-DMM-B
				1NC/2NO+1NC	M20*1.5	PHLM-EMM-B
				3NC+1NC	M20*1.5	PHLM-FMM-B
				2NC/1NO+1NC	M20*1.5	PHLM-GMM-B
				1NC+3NC	M20*1.5	PHLM-HMM-B
				1NC+1NC/2NO	M20*1.5	PHLM-IMM-B
				1NC+2NC/1NO	M20*1.5	PHLM-JMM-B
				1NO+3NC	M20*1.5	PHLM-KMM-B
				1NO+2NC/1NO	M20*1.5	PHLM-LMM-B
				1NC+1NC	M20*1.5	PHLM-MMM-B
				1NO+1NC	M20*1.5	PHLM-NMM-B

PHLM Series Safety Door Switch

Contacts structure and action

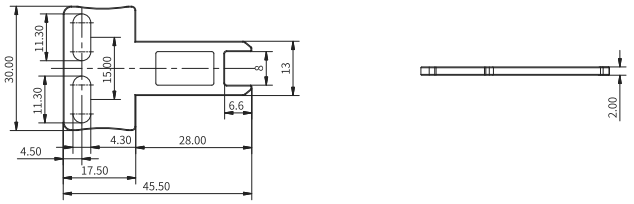
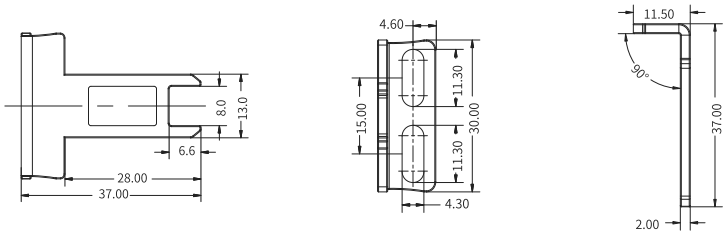
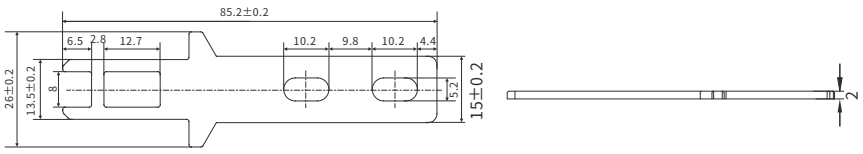
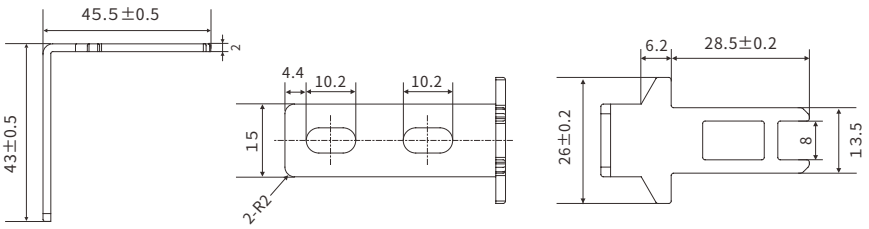
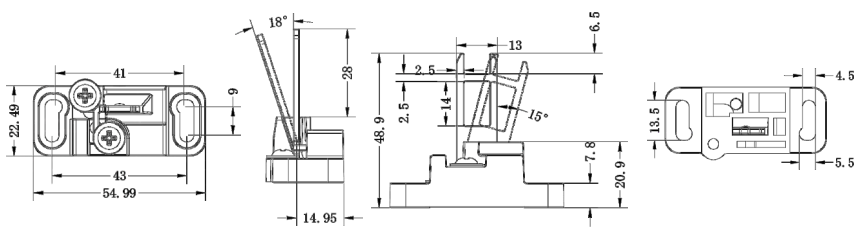
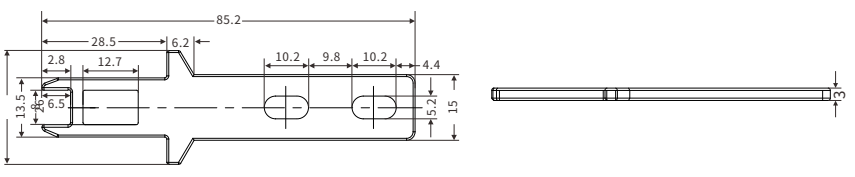
Model	Contact type (Door+Lock monitor)	Wire diagram		Contact action	
		Door monitor	Lock monitor	Contact ON	Contact OFF
	Door monitor NC NO / Lock monitor NC NO The contact status of key insertion and locking		02 01 E2 E1 (−) (+)	Operation key complete insertion → Travel → Operation key extraction	
PHLM-AP□□ PHLM-AM□□	1NC/1NO+1NC/1NO	11 12 21 22 33 34 43 44		11--12 21--22 33--34 43--44	
PHLM-BP□□ PHLM-BM□□	1NC/1NO+2NC	11 12 21 22 33 34 41 42		11--12 21--22 33--34 41--42	
PHLM-CP□□ PHLM-CM□□	2NC+1NC/1NO	11 12 21 22 31 32 43 44		11--12 21--22 31--32 43--44	
PHLM-DP□□ PHLM-DM□□	2NC+2NC	11 12 21 22 31 32 41 42		11--12 21--22 31--32 41--42	
PHLM-EP□□ PHLM-EM□□	1NC/2NO+1NC	11 12 21 22 33 34 43 44		11--12 21--22 33--34 43--44	
PHLM-FP□□ PHLM-FM□□	3NC+1NC	11 12 21 22 31 32 41 42		11--12 21--22 31--32 41--42	
PHLM-GP□□ PHLM-GM□□	2NC/1NO+1NC	11 12 21 22 33 34 41 42		11--12 21--22 33--34 41--42	
PHLM-HP□□ PHLM-HM□□	1NC+3NC	11 12 21 22 31 32 41 42		11--12 21--22 31--32 41--42	
PHLM-IP□□ PHLM-IM□□	1NC+1NC/2NO	11 12 21 22 33 34 43 44		11--12 21--22 33--34 43--44	
PHLM-JP□□ PHLM-JM□□	1NC+2NC/1NO	11 12 21 22 33 34 41 42		11--12 21--22 33--34 41--42	
PHLM-KP□□ PHLM-KM□□	1NO+3NC	11 12 21 22 33 34 41 42		11--12 21--22 33--34 41--42	
PHLM-LP□□ PHLM-LM□□	1NO+2NC/1NO	11 12 21 22 33 34 43 44		11--12 21--22 33--34 43--44	
PHLM-MP□□ PHLM-MM□□	1NC+1NC	11 12 21 22		11--12 21--22	
PHLM-NP□□ PHLM-NM□□	1NO+1NC	33 34 41 42		33--34 41--42	

Operation key

Operation Key Model

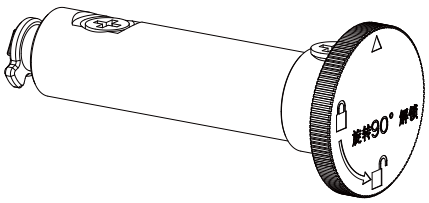
PHSK-□

Operation key type	1: T type operation key
	2: L type operation key
	3: T type length operation key
	4: L type length operation key
	5: level/vertical adjust type operation key
	8: T type length operation key (3mm)
Product Series	PHSK Series

Appearance	Model	Bracket dimension
	PHSK-1	
	PHSK-2	
	PHSK-3	
	PHSK-4	
	PHSK-5	
	PHSK-8	

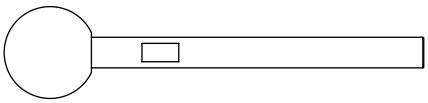
Back unlock set

Back unlock set



Model: PHSU-50

Back hand



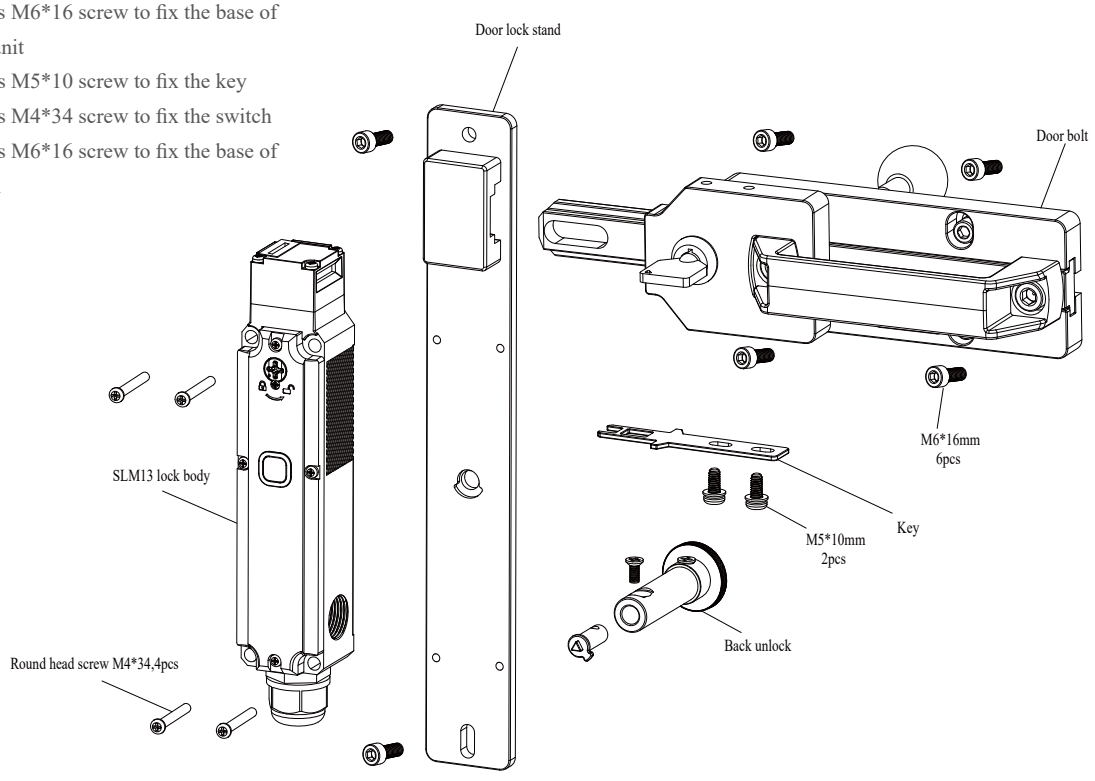
Model: PHSH-1

Note: For more types of back unlock unit, please refer to the back unlock unit selection guide.

Montage and Matching instruction

- Diagram of PHMB-M04 safety bolt with a rotating back unlock unit.

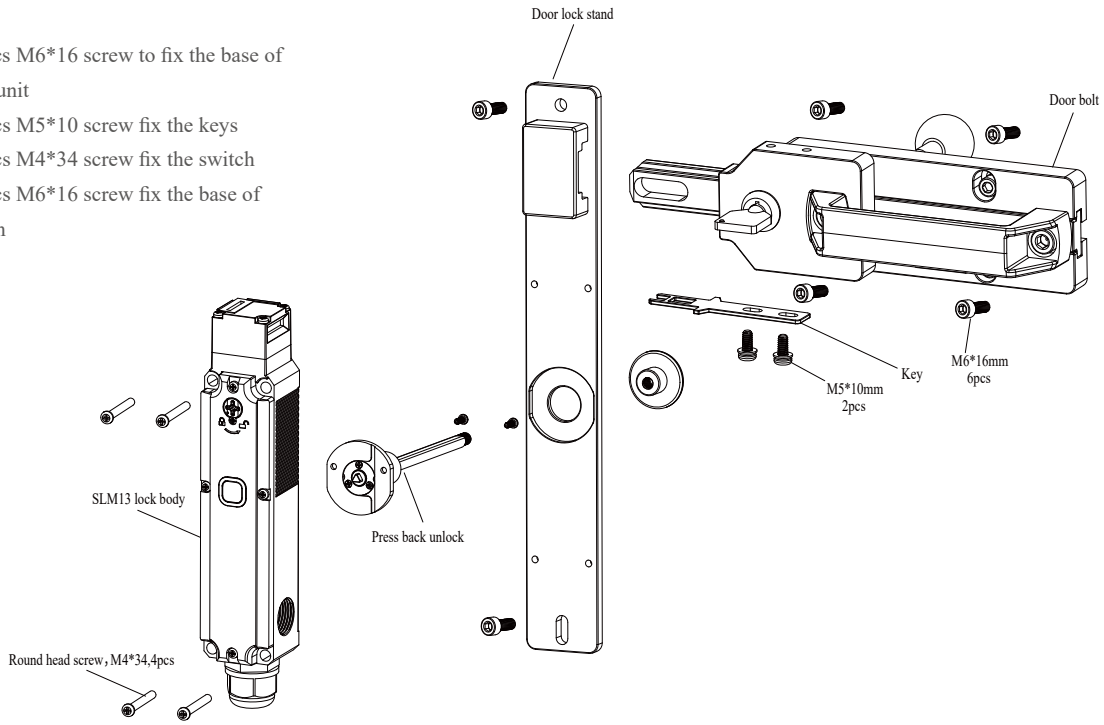
1. 4pcs M6*16 screw to fix the base of slide unit
2. 2pcs M5*10 screw to fix the key
3. 4pcs M4*34 screw to fix the switch
4. 2pcs M6*16 screw to fix the base of switch



Montage and Matching Instruction

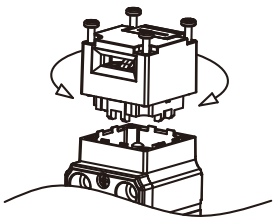
- Diagram of PHMB-M05 safety bolt with a press back unlock unit.

1. 4pcs M6*16 screw to fix the base of slide unit
2. 2pcs M5*10 screw fix the keys
3. 4pcs M4*34 screw fix the switch
4. 2pcs M6*16 screw fix the base of switch

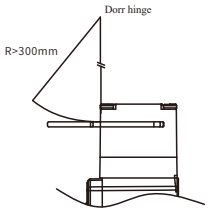


Product Montage

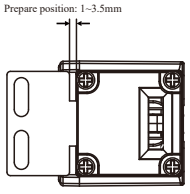
★ Loosen 4 screws on top of head, rotate the head to the right key inserting position and then install it



★ When install on slide hung door, it should be over than semi-diameter.



★ Please install the safety switch and insertion key under range 1-3.5mm.



★ The installation of operation key allows ±1mm deviation within the key insertion center of the hole.

