

# FD-K4

## Instructions for use of 4-contact electromagnetic safety door switch



- Forced locking force 1300N
- Indicator light + emergency unlocking function
- 6 optional operation keys
- Miniaturized design saves installation space
- Standard 10-pin aviation plug
- Safety integrity level (SIL-3)

## Encoding rules

( Standard ) FD-K4-  
① ② ③ ④

### ① Contact type (slow action contact)

VA: 2NC+2NC

VB: 3NC+1NC

VC: 2NC+1NC/1NO

VD: 1NC/1NO+1NC/1NO

### ③ Head material

K : Zinc alloy (default - gold)

R : Resin (red)

### ② Locking and releasing methods

2: Mechanical release/DC24V electromagnetic lock (normally open)

4: DC24V electromagnetic release/mechanical lock (normally closed)

### ④ Connection method

L: M16 aviation plug on the left

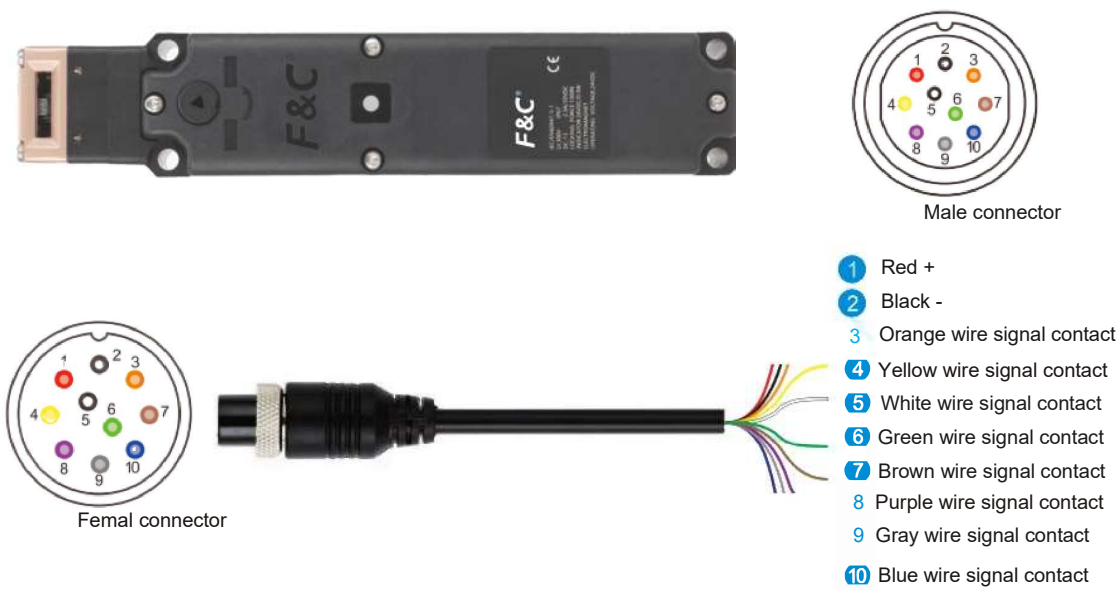
R: M16 aviation plug on the right

Z: M16 aviation plug on the bottom (default outlet)

# Cable models

- 10-DOL-00:Aircraft carrier plug (standard)
- 10-DOL-G01M: 1m cable
- 10-DOL-G03M: 3m cable
- 10-DOL-G05M: 5m cable

# FD-K4 Wiring diagram



S/N	Signal Definition	Color	Explain
1	24V	Red	Positive electrode G1
2	0V	Black	Negative electrode G2
3	Signal contact A1	Orange	Signal contact
4	Signal contact A2	Yellow	Signal contact
5	Signal contact B1	White	Signal contact
6	Signal contact B2	Green	Signal contact
7	Signal contact C1	Brown	Signal contact
8	Signal contact C2	Purple	Signal contact
9	Signal contact D1	Grey	Signal contact
10	Signal contact D2	Blue	Signal contact

# Specification

## Performance

Model 型号	FD-K□-□□□□□□
Protection level 防护等级	IP67(EN60947-5-1,Except key operation hole)
Shell material 外壳材质	Zinc alloy + PA66 flame retardant
Contact material 触点材质	Copper alloy gold plating
Service life 使用寿命 使用类别	Mechanical: 1,000,000 operations min.
	Electrical: 500,000 operations min.
Use category 使用类别 额定电压/额定电流	DC-13
Locking tensile strength	1300N
Direct opening travel 直接开启行程/操作力	≥10mm
Direct opening force 直接开启力/环境湿度	≥60N
Ambient temperature 环境温度 允许操作温度	-20~60℃,No ice
Ambient humidity 环境湿度 允许操作湿度	85%RH Max
Permitted operating speed 允许操作速度	0.05~0.5M/S
Permitted operating frequency 允许操作频率	Maximum 30 operations/minute
Rated open thermal current (ITH) 额定工作电压	10A
Rated operating current 额定限制短路电流	2.3A
Rated operating voltage	24V
Rated limiting short-circuit current	1000A

## Indicator

Rated voltage	DC24V
Rated current	1mA
Light color	Green

## Solenoid

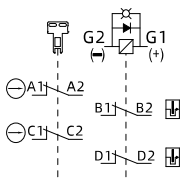
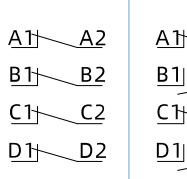
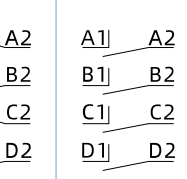
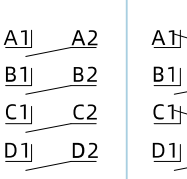
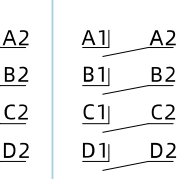
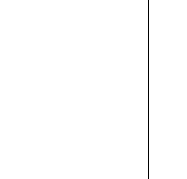
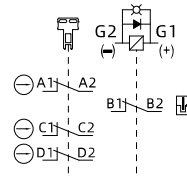
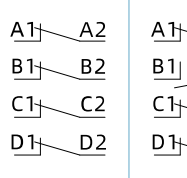
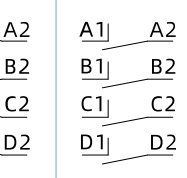
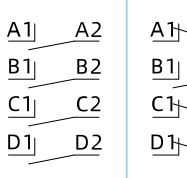
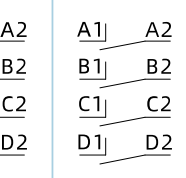
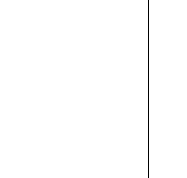
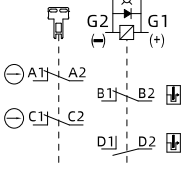
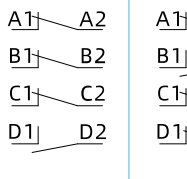
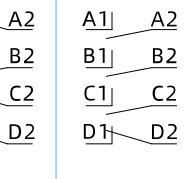
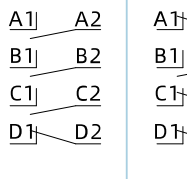
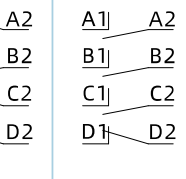
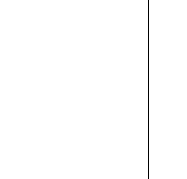
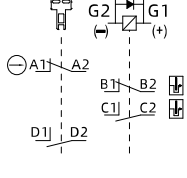
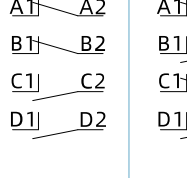
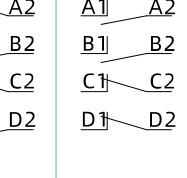
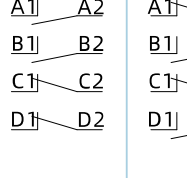
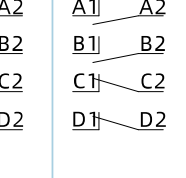
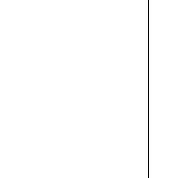
Rated working voltage	DC24V±10%
Rated working current 额定工作电流	200mA(Initial Value)
Power 功率/功耗	4.8W
Insulation level	Class B(130℃)

## ● Action circuit and action characteristics

## Mechanical lock


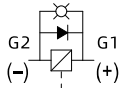



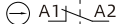
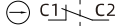
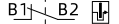
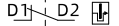
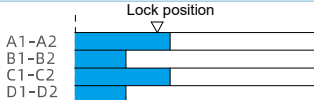
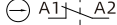
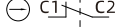
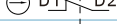
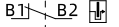

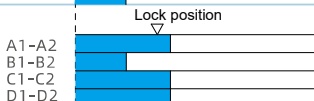
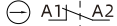
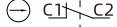
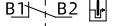
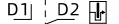

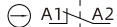

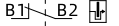
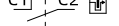

Safety door action status		Status 1	Status 2	Status 3	Status 4	When manually unlocking	
		Lock	Lock	Unlock	Unlock	Lock	Unlock
Electromagnet power supply		NO	OFF	NO	OFF	OR	
Model and contact structure	<b>FD-K4-VA4KZ</b> 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
	<b>FD-K4-VB4KZ</b> 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
	<b>FD-K4-VC4KZ</b> 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
	<b>FD-K4-VD4KZ</b> 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 

**Electromagnetic lock**

Safety door action status		Status 1	Status 2	Status 3	Status 4	When manually unlocking	
		Lock	Lock	Unlock	Unlock	Lock	Unlock
Electromagnet power supply		NO	OFF	NO	OFF	OR	
Model and contact structure	FD-K4-VA2KZ	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
	FD-K4-VB2KZ	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
	FD-K4-VC2KZ	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 	Circuit Diagram 
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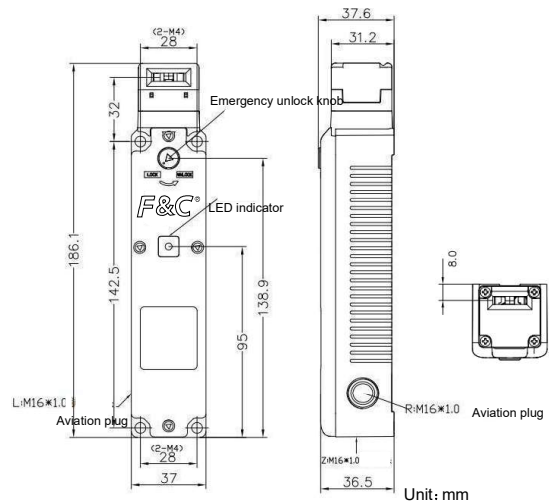
## ● Contact and Action

The following contact diagram shows the key is in the locked state when inserted

Model	Contact type (door monitoring + lock monitoring)	Wiring Diagram		Contact action	
		Door monitoring	Lock monitoring	<div></div> Contact ON <div></div> Contact OFF	
				  	
FD-K4-VA2KZ FD-K4-VA4KZ	2NC+2NC	 	 		
FD-K4-VB2KZ FD-K4-VB4KZ	3NC+1NC	  	 		
FD-K4-VC2KZ FD-K4-VC4KZ	2NC+1NC/1NO	 	 		
FD-K4-VD2KZ FD-K4-VD4KZ	1NC/1NO+1NC/1NO	 	 		

## ● Avoid mutual interference

When using multiple FD-K series safety door switches, mutual interference may occur, causing the safety door switch to malfunction. To prevent interference, please install the safety door switch according to the following regulations. (The installation spacing cannot be less than 50mm)



FD-K4 (4-contact type)

## ● Safety door switch installation dimensions