

SKORPION Trapped Key Interlocking with Key Exchange

THE SKORPION RANGE - AVAILABLE IN STAINLESS STEEL 316 OR DIE CAST:

ISOLATION



ISB1

KEY EXCHANGE



SS-KE-NS4

INTERLOCKING



SS-TS

PRODUCT OVERVIEW:

The SKORPION Trapped Key System has been developed to provide extremely robust mechanical coded key safeguarding and interlocking for hazardous machinery.

The system works on the principle of releasing factory coded mechanical keys in a pre-determined sequence to ensure machine power is isolated before any access can be gained to hazardous or dangerous machinery.

After the machine control has been isolated (first key turned in the system) the key from the isolator can then be used to release other trapped keys to enable access to the guarded areas.

After release of the first key (power isolation) safeguarding can be achieved without the need for electrical wiring, this makes the system ideal for use in harsh environments.

When used in conjunction with interlock sensing they can be used to achieve up to PLe/Cat4 to ISO13849-1.



SS-HS

APPLICATION:

A trapped-key guarding system relies upon the transfer of keys between a power isolation switch (or control switch) and a locking mechanism fixed on a guard.

The essential feature of the system is that a removable key is trapped either in the guard lock, or in the power isolation switch. The lock on the guard is arranged so that the key can be released only when the guard has been closed and locked. This allows transfer of the key from the guard to the power isolation switch.

Closing the switch traps the key, so that it cannot be removed while the switch is in the ON position.

If there is more than one source of power, and therefore more than one circuit breaking element to be actuated, then a key-exchange box is necessary, to which all keys have to be transferred and locked in before the access key, which is of a different coding, can be released for transfer to the guard lock.

Where there is more than one guard, the exchange box will accommodate an equivalent number of access keys.

Where a number of operations have to be carried out in a pre-determined definite sequence, then the transferable key is locked in and exchanged for a different one at each stage.



SS-BS

ADVANTAGES:

- No reduction of integrity due to the distance between movable guard and control system.
- High mechanical integrity, robust fixings and holdings suitable for all types of guards.
- Eliminates the need for electrical wiring to each movable guard.
- Fully Stainless Steel 316 version is suitable when the movable guard is placed in harsh or hostile environments.
- Suitable for CIP and SIP cleaning processes and can be high pressure hosed with detergents at high temperatures.
- Can be used where the movable guard requires to be removed completely.
- All keys are coded in the factory and it is virtually impossible to override the system.
- A trapped key system provides a quick yet safe and reliable access to machinery.
- Use of a trapped key system can also prevent shortcuts and enforce a logical set of procedures that need to be satisfied.
- Until the isolator key is returned to its original position within the lock, there is no way to enable the machinery to be re-started.

SKORPION Trapped Key Interlocking with Key Exchange

ISOLATION SWITCH BOX 1 - ISB1:

ISB1



STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 1 RATING			
SS-ISB1-25	25A	690V	4 pole	
SS-ISB1-40	40A	690V	4 pole	

DIE-CAST (Mirror Finish) BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 1 RATING			
M-ISB1-25	25A	690V	4 pole	
M-ISB1-40	40A	690V	4 pole	

ISOLATION SWITCH BOX 2 - ISB2:

ISB2



STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 2 RATING			
SS-ISB2-63	63A	690V	4 pole	

DIE-CAST (Mirror Finish) BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 2 RATING			
M-ISB2-63	63A	690V	4 pole	

ISOLATION SWITCH PANEL MOUNT - ISP:

ISP



STAINLESS STEEL 316 BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 1 RATING			
SS-ISP-25	25A	690V	4 pole	
SS-IISP-40	40A	690V	4 pole	
SS-IISP-63	63A	690V	4 pole	

DIE CAST (Mirror Finish) BARREL HOUSING AND DUST CAP				
Sales Number	ISOLATION SWITCH BOX 1 RATING			
M-ISP-25	25A	690V	4 pole	
M-ISP-40	40A	690V	4 pole	
M-ISP-63	63A	690V	4 pole	

SKORPION Trapped Key Interlocking with Key Exchange

KEY EXCHANGE STAINLESS STEEL 316 ORDERING:

SS-KE-NS4



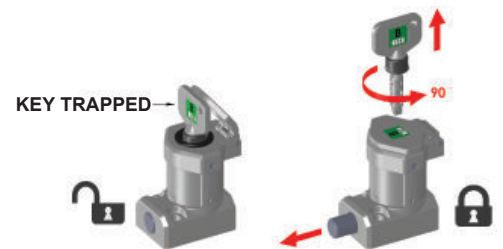
Sales Number	KEY EXCHANGE - STAINLESS STEEL 316
SS-KE-NS2	2 Key (First key trapped - 1 released non-sequential)
SS-KE-NS3	3 Key (First key trapped - 2 released non-sequential)
SS-KE-NS4	4 Key (First key trapped - 3 released non-sequential)
SS-KE-NS5	5 Key (First key trapped - 4 released non-sequential)

BOLT INTERLOCKS (not suitable for guard access) STAINLESS STEEL 316 ORDERING:

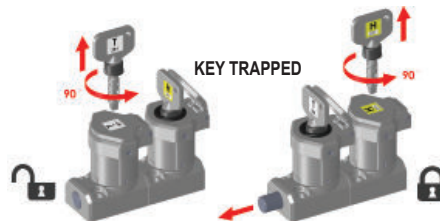
SS-BS



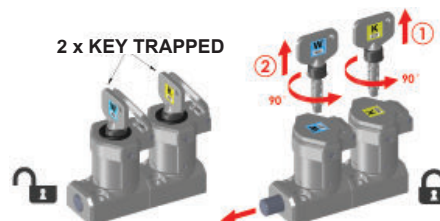
Sales Number	BOLT INTERLOCK SINGLE KEY STAINLESS STEEL 316
SS-BS	Key trapped - bolt retracted



SS-BD-11



Sales Number	BOLT INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-BD-11	2 keys - 1 key trapped 1 key free - bolt retracted



Sales Number	BOLT INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-BD-20	2 keys trapped - bolt retracted

SKORPION Trapped Key Interlocking with Key Exchange

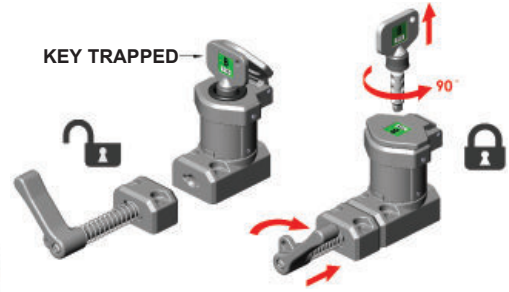
HANDLE INTERLOCKS (Single Key) STAINLESS STEEL 316 ORDERING:

SS-HS

Sales Number	HANDLE INTERLOCK SINGLE KEY STAINLESS STEEL 316
SS-HS	Key trapped - actuator unlocked (spring action handle)
SS-HS-C	Key trapped - actuator unlocked (chain fixed to handle)



SS-HS-C



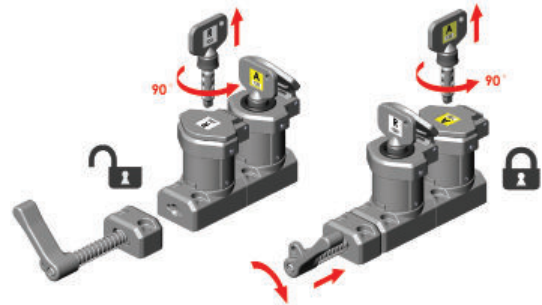
HANDLE INTERLOCKS (Dual Key) STAINLESS STEEL 316 ORDERING:

SS-HD-11

Sales Number	HANDLE INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-HD-11	2 sequential keys - one key trapped one key free - actuator unlocked (spring action handle)
SS-HD-C-11	2 sequential keys - one key trapped one key free - actuator unlocked (chain fixed to handle)



SS-HD-C-11



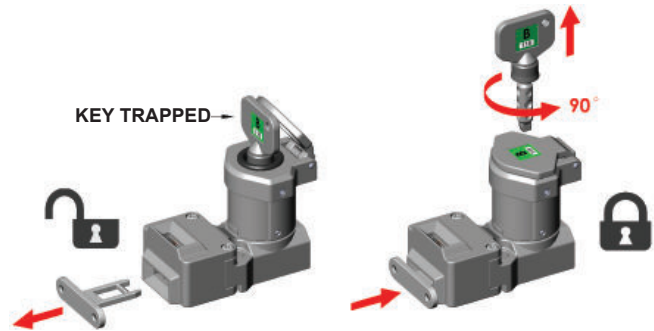
SKORPION Trapped Key Interlocking with Key Exchange

TONGUE INTERLOCKS (Single Key) STAINLESS STEEL 316 ORDERING:

SS-TS



*See below for Actuator options.



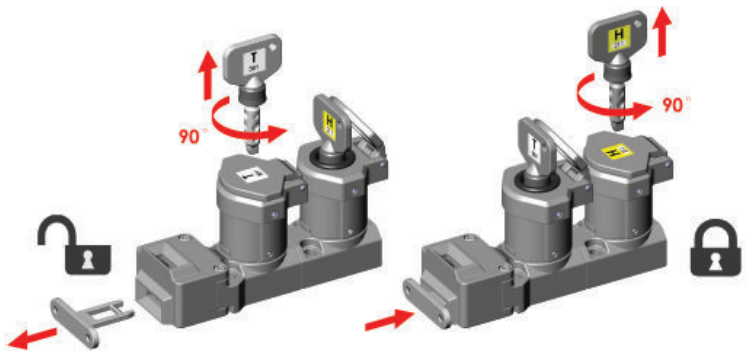
Sales Number	TONGUE INTERLOCK SINGLE KEY STAINLESS STEEL 316
SS-TS	Key trapped - actuator unlocked

TONGUE INTERLOCKS (Dual Key) STAINLESS STEEL 316 ORDERING:

SS-TD-11



*See below for Actuator options.



Sales Number	TONGUE INTERLOCK DUAL KEY STAINLESS STEEL 316
SS-TD-11	2 sequential keys - one key trapped one key free - actuator unlocked

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:



SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

SKORPION Trapped Key Interlocking with Key Exchange

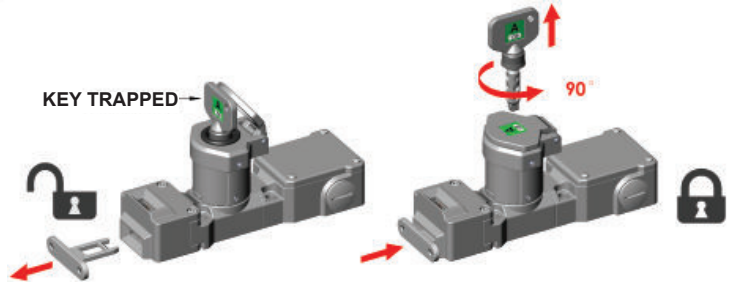
INTERLOCKING WITH CONTROL ISOLATION STAINLESS STEEL 316 ORDERING:

SS-TS-CB



*See below for Actuator options.

Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK STAINLESS STEEL 316
SS-TS-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - 1/2" NPT
SS-TS-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - 1/2" NPT
SS-TS-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - M20
SS-TS-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - M20



EXPLOSION PROOF INTERLOCKING WITH CONTROL ISOLATION S/STEEL 316 ORDERING:

SS-TS-CB EX



*See below for Actuator options.



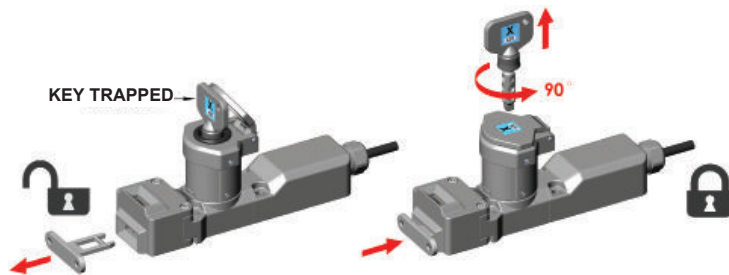
Trapped Key with ATEX EExd IIC T6 certified explosion proof contact blocks.

The explosion proof contact blocks conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust).

Adheres to the latest standard ISO13850, Designed for use in oil, petro-chemical, pharmaceutical, food processing and packaging applications where the potential for explosive atmospheres are present.

Exd IIC T6 (-20 ≤ Ta ≤ +60C)

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db



Sales Number	TONGUE INTERLOCK SINGLE KEY WITH EXPLOSION PROOF CONTACT BLOCK STAINLESS STEEL 316
SS-TS-CB-22-EX	Single Tongue Interlock with 2NC 2NO Pre-wired EX Block
SS-TS-CB-11-EX	Single Tongue Interlock with 1NC 1NO Pre-wired EX Block

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:

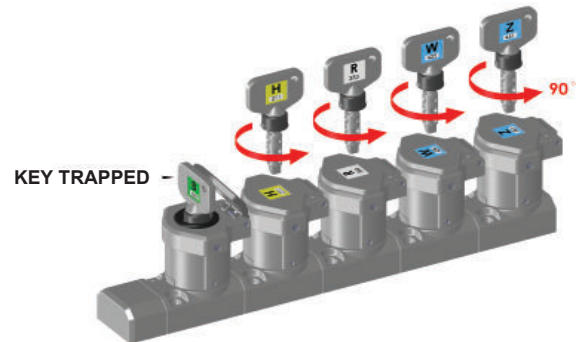


SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

SKORPION Trapped Key Interlocking with Key Exchange

KEY EXCHANGE DIE CAST METAL ORDERING:

M-KE-NS4



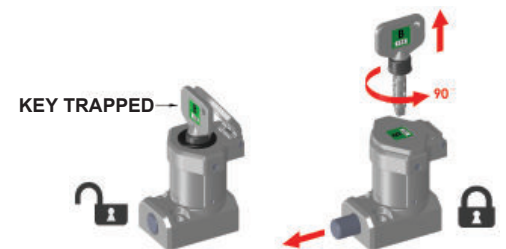
Sales Number	KEY EXCHANGE - DIE CAST METAL (Mirror Finish)
M-KE-NS2	2 Key (First key trapped - 1 released non-sequential)
M-KE-NS3	3 Key (First key trapped - 2 released non-sequential)
M-KE-NS4	4 Key (First key trapped - 3 released non-sequential)
M-KE-NS5	5 Key (First key trapped - 4 released non-sequential)

BOLT INTERLOCKS (not suitable for guard access) DIE CAST METAL ORDERING:

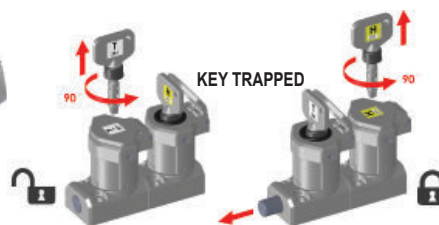
M-BS



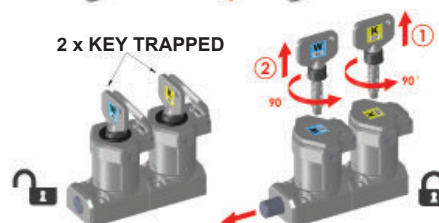
Sales Number	BOLT INTERLOCK SINGLE KEY DIE CAST METAL (Mirror Finish)
M-BS	Key trapped - bolt retracted



M-BD-11



Sales Number	BOLT INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-BD-11	2 keys - 1 key trapped 1 key free - bolt retracted

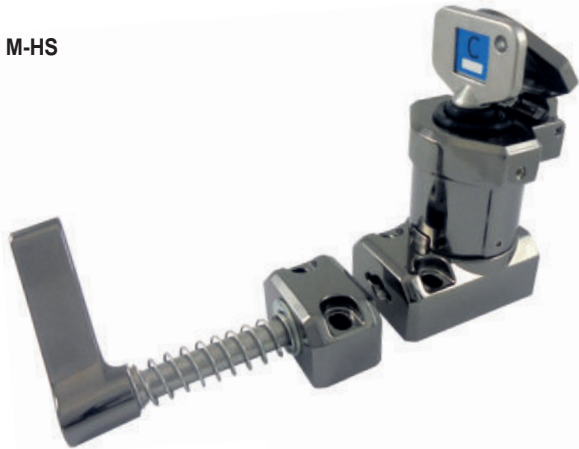


Sales Number	BOLT INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-BD-20	2 keys trapped - bolt retracted

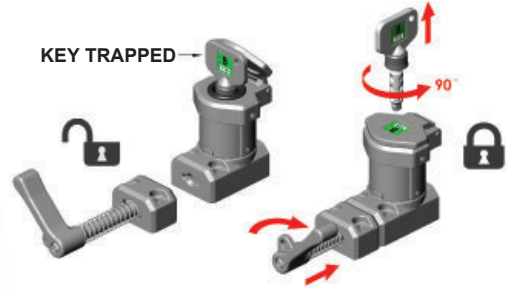
SKORPION Trapped Key Interlocking with Key Exchange

HANDLE INTERLOCKS DIE CAST METAL ORDERING:

M-HS



Sales Number	HANDLE INTERLOCK SINGLE KEY DIE CAST METAL (Mirror Finish)
M-HS	Key trapped - actuator unlocked (spring action handle)
M-HS-C	Key trapped - actuator unlocked (chain fixed to handle)



M-HS-C

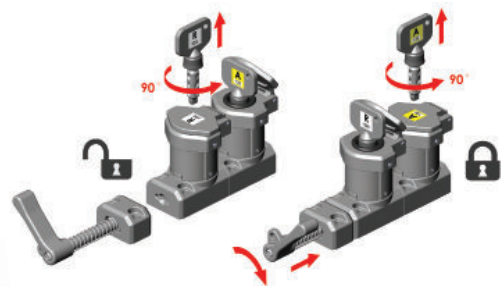


HANDLE INTERLOCKS (Dual Key) DIE CAST METAL ORDERING:

M-HD-11



Sales Number	HANDLE INTERLOCK DUAL KEY DIE CAST METAL (Mirror Finish)
M-HD-11	2 sequential keys - one key trapped one key free - actuator unlocked (spring action handle)
M-HD-C-11	2 sequential keys - one key trapped one key free - actuator unlocked (chain fixed to handle)



M-HD-C-11



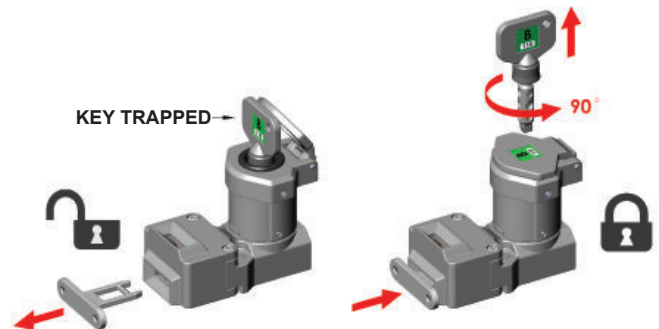
SKORPION Trapped Key Interlocking with Key Exchange

TONGUE INTERLOCKS (Single Key) DIE CAST METAL ORDERING:

M-TS



*See below for Actuator options.



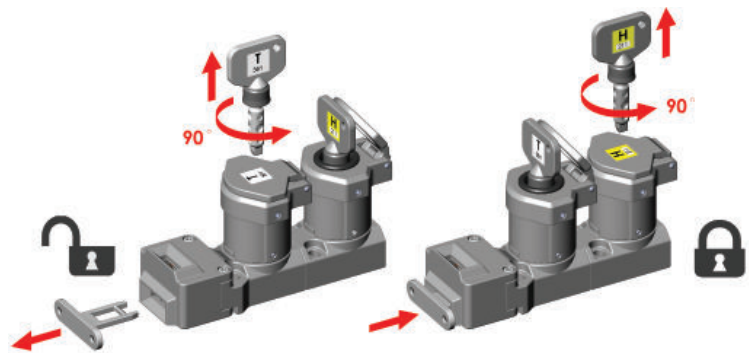
Sales Number	TONGUE INTERLOCK SINGLE KEY	DIE CAST METAL (Mirror Finish)
M-TS	Key trapped - actuator unlocked	

TONGUE INTERLOCKS (Dual Key) DIE CAST METAL ORDERING:

M-TD-11



*See below for Actuator options.



Sales Number	TONGUE INTERLOCK DUAL KEY	DIE CAST METAL (Mirror Finish)
M-TD-11	2 sequential keys - one key trapped one key free - actuator unlocked	

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:



SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
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SKORPION Trapped Key Interlocking with Key Exchange

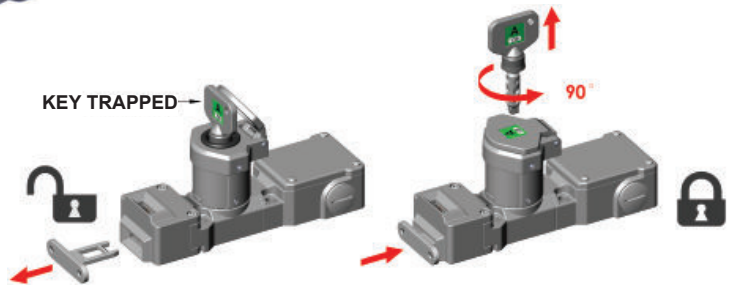
INTERLOCKING WITH CONTROL ISOLATION DIE CAST METAL ORDERING:

M-TS-CB



*See below for Actuator options.

Sales Number	TONGUE INTERLOCK SINGLE KEY WITH CONTACT BLOCK DIE CAST METAL (Mirror Finish)
M-TS-CB-22-N	Single Tongue Interlock with 2NC 2NO Contact Block - 1/2" NPT
M-TS-CB-31-N	Single Tongue Interlock with 3NC 1NO Contact Block - 1/2" NPT
M-TS-CB-22-M	Single Tongue Interlock with 2NC 2NO Contact Block - M20
M-TS-CB-31-M	Single Tongue Interlock with 3NC 1NO Contact Block - M20



EXPLOSION PROOF INTERLOCKING WITH CONTROL ISOLATION DIE CAST METAL ORDERING:

M-TS-CB EX



*See below for Actuator options.

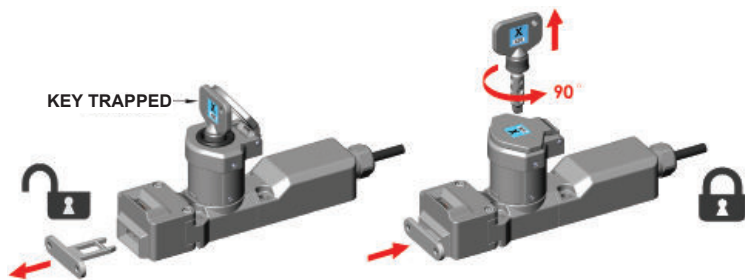


Trapped Key with ATEX EExd IIC T6 certified explosion proof contact blocks.

The explosion proof contact blocks conform to European harmonized standard EN60079-0 and EN60079-1 and can be used in European Zone 1, 2, 21, 22 environments. (Gas and Dust). Adheres to the latest standard ISO13850, Designed for use in oil, petro-chemical, pharmaceutical, food processing and packaging applications where the potential for explosive atmospheres are present.

Exd IIC T6 (-20 ≤ Ta ≤ +60C)

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db



Sales Number	TONGUE INTERLOCK SINGLE KEY WITH EXPLOSION PROOF CONTACT BLOCK DIE CAST METAL (Mirror Finish)
M-TS-CB-22-EX	Single Tongue Interlock with 2NC 2NO Pre-wired EX Block
M-TS-CB-11-EX	Single Tongue Interlock with 1NC 1NO Pre-wired EX Block

ACTUATORS FOR TONGUE INTERLOCK SWITCHES SELECTION CHART:



SALES NUMBER	ACTUATOR TYPE
140107	A = Standard Actuator Stainless Steel 316
140108	F = Flat Actuator Stainless Steel 316 with Plastic Cover
140110	HF = Heavy Duty Flexible Actuator Stainless Steel 316 and Die Cast
140111	HFH = Heavy Duty Flexible Actuator fully Stainless Steel 316

SKORPION Trapped Key Interlocking with Key Exchange

KEY CODE SELECTION & ORDERING:

IDEM offer a unique range of KEY CODE variants that number in the tens of thousands.

To assist in the process of ordering we offer a range of 48 STANDARD KEY CODES which are shown in the table below (other KEY CODES are available to the customer upon request).

Note: Different KEY FOB colours are available dependent upon the code chosen. This is a customer option to provide the end-user with an easily seen visual aid e.g. the First Key (Primary Key) could be chosen in a different colour to the colour chosen for the Released Keys - therefore easily distinguishing the Primary Key from the other keys in the system.

Please see Order Form TK1 available either from www.idemsafety.com or by contacting IDEM at sales@idemsafety.com.



KEY FOB COLOUR	YELLOW Key Fob	WHITE Key Fob
	A	B
Key Code	A101	B201
	A102	B202
	A103	B203
	A104	B204
	A105	B205
	A106	B206
	A107	B207
	A108	B208
	A109	B209
	A110	B210
	A111	B211
	A112	B212
KEY FOB COLOUR	GREEN Key Fob	BLUE Key Fob
	C	D
Key Code	C301	D401
	C302	D402
	C303	D403
	C304	D404
	C305	D405
	C306	D406
	C307	D407
	C308	D408
	C309	D409
	C310	D410
	C311	D411
	C312	D412

ORDERING:

Please see Order Form TK1 available either from www.idemsafety.com or by contacting IDEM at sales@idemsafety.com.

Tens of thousands of codes are possible. If codes are not specified at the time of order IDEM will allocate from the standard key code table (shown above).

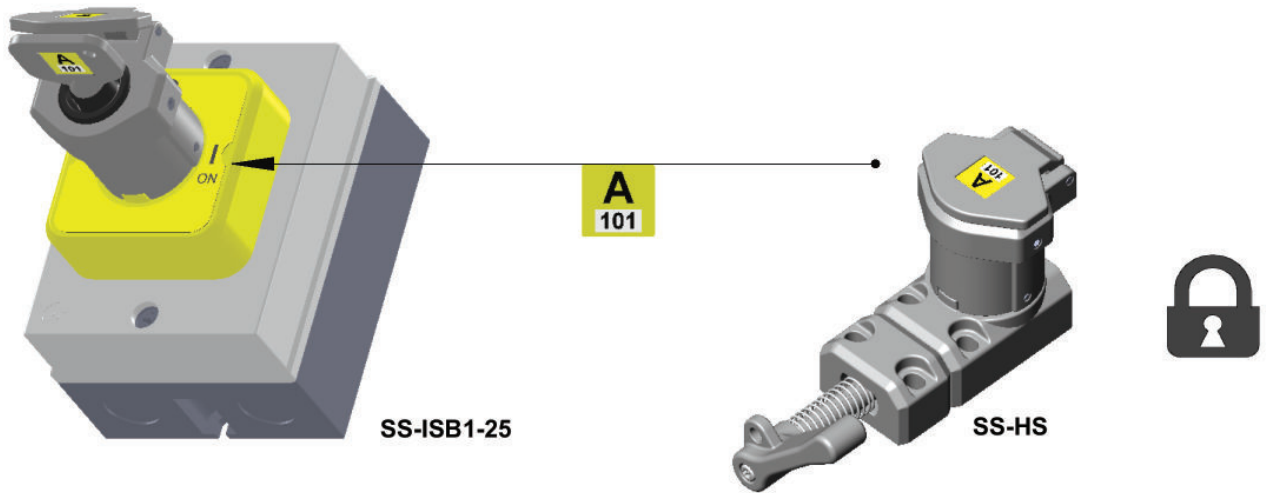
ORDER FORM TK1: (See examples on next two pages)

SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)					
ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number					
	CODE	CODE	CODE	CODE	CODE
Key Fob Code (if not specified IDEM will configure)					
Key Status					

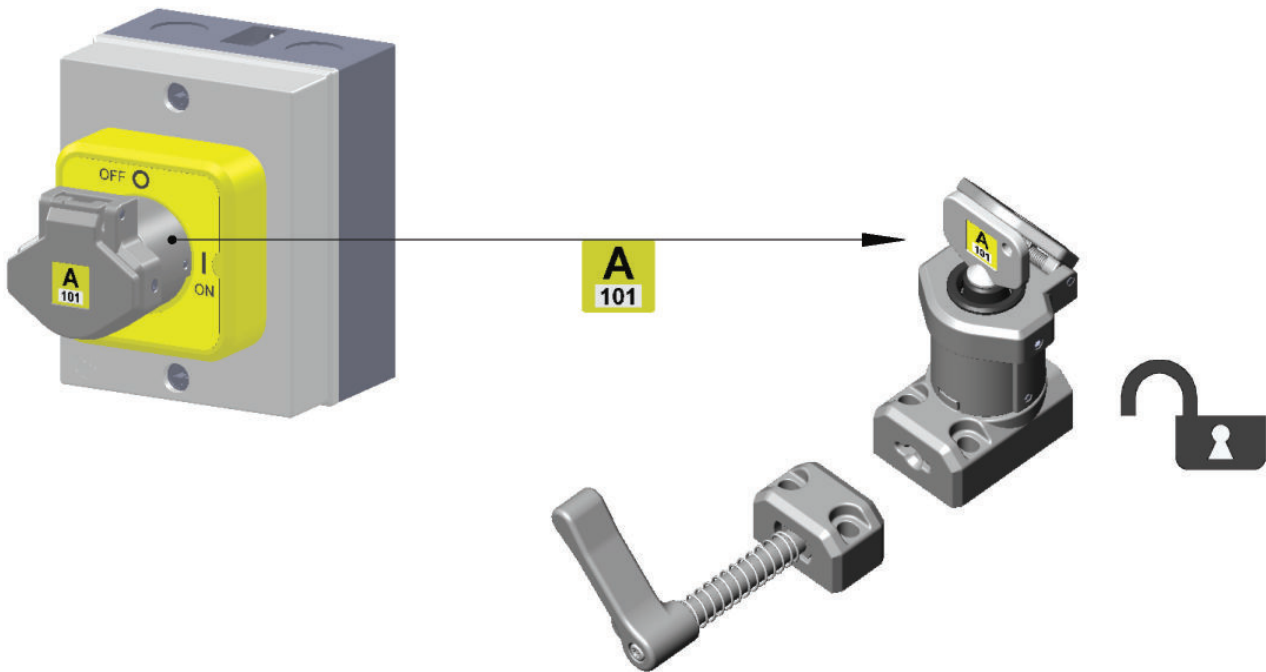
ACTUATOR TYPES				
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)
Quantity				

SKORPION Trapped Key Interlocking with Key Exchange

BASIC SYSTEM EXAMPLE:



POSITION 1: MACHINE POWER ON - GUARD LOCKED (ACCESS IS DENIED TO OPERATOR)



POSITION 2: MACHINE POWER OFF - GUARDS UNLOCKED (ACCESS AVAILABLE TO OPERATOR)

SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)

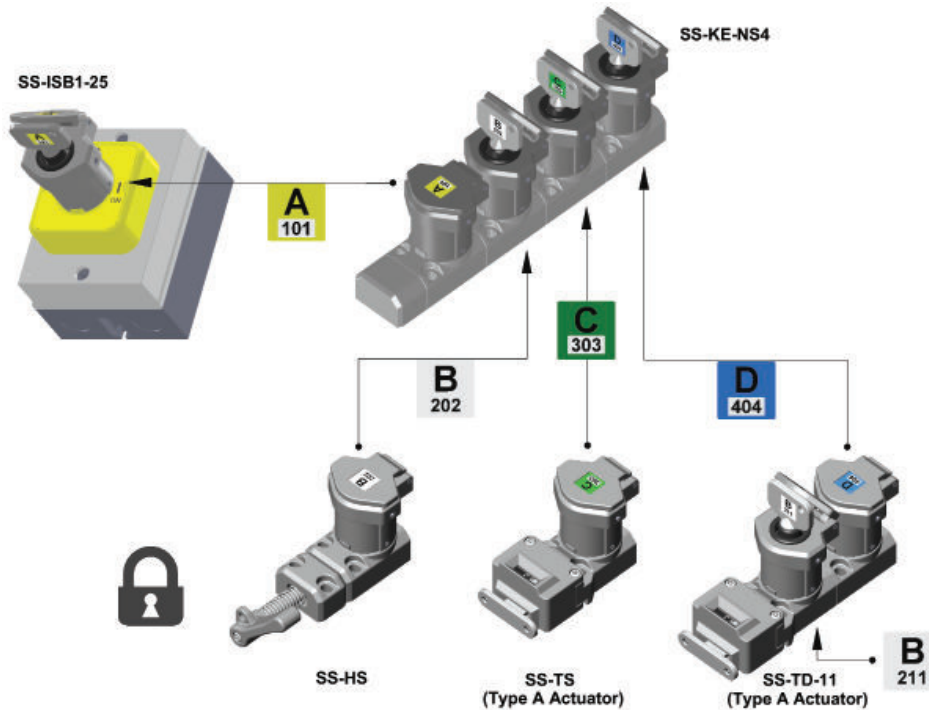
ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number	<i>SS-ISB1-25</i>	<i>SS-HS</i>			
	CODE	CODE	CODE	CODE	CODE
Key Fob Code (if not specified IDEM will configure)	<i>A101</i>				
Key Status	<i>Out</i>	<i>Trapped</i>			

ACTUATOR TYPES

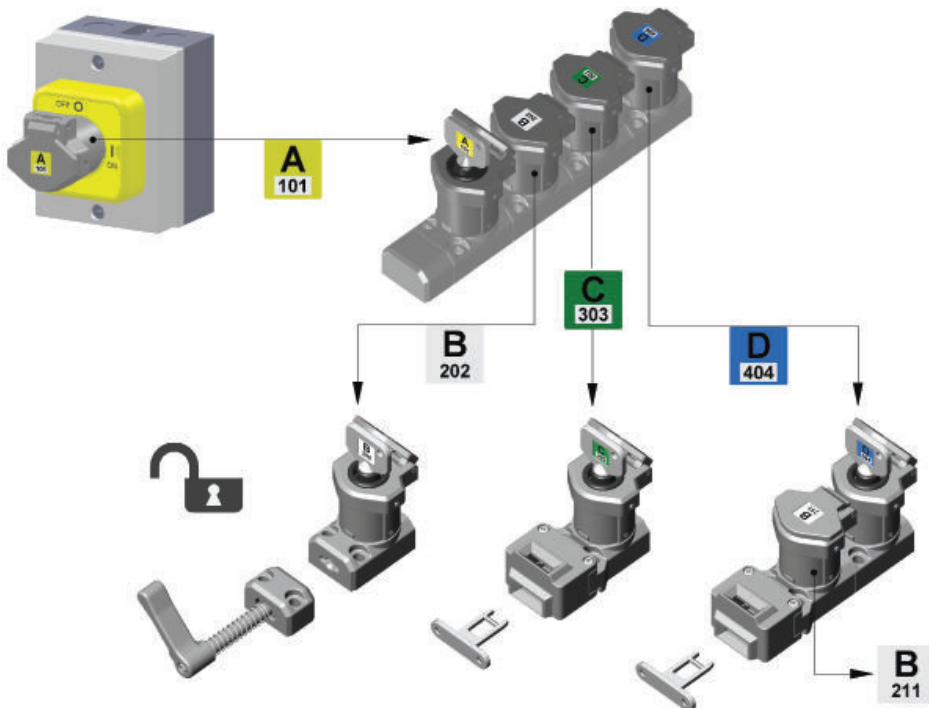
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)
Quantity	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

SKORPION Trapped Key Interlocking with Key Exchange

EXAMPLE 2: COMPLEX SYSTEM



POSITION 1: MACHINE POWER ON - GUARDS LOCKED (ACCESS IS DENIED TO OPERATOR)



POSITION 2: MACHINE POWER OFF - GUARDS UNLOCKED (ACCESS AVAILABLE TO OPERATOR)

SKORPION TRAPPED KEY ORDER FORM/TEMPLATE - TK1 (for Example 2)

ORDER	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Part Number	SS-ISB1-25	SS-KE-NS4	SS-HS	SS-TS	SS-TD-11
	CODE	CODE	CODE	CODE	CODE
Key Fob Code (if not specified IDEM will configure)	A101	A101 B202 C303 D404	B202	C303	D404 B211
Key Status	Out	Trapped / Out / Out / Out	Trapped	Trapped	Trapped / Out
ACTUATOR TYPES					
	140107 (A Standard)	140108 (F Flat)	140110 (HF Flexible)	140111 (HFH S/Steel Flexible)	
Quantity	2	0	0	0	