

Trapped Key System

What is Trapped Key?

A method of isolating the source of danger (usually control power) before releasing keys to allow access.

What Trapped Key solutions Offer

- A simple mechanical system of interlocking
- No wiring to the access gates
- Keys are trapped and freed in a defined logic sequence, to only allow access when safe to enter.

Example 1

A method of isolating the source of danger (usually control power) before releasing keys to allow access.

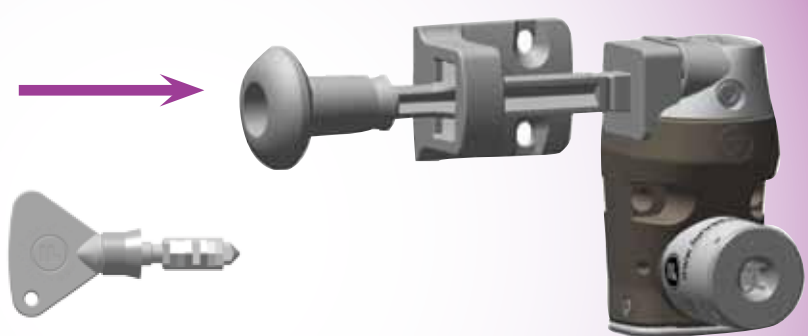
Key Switch



SE

Removal of key breaks the dual safety circuits. (similar to removing a key from the car ignition as the engine stops).

Door Lock



DM1

Different to a standard door lock as the key is trapped when the door is open. Therefore the machine cannot run with the door open.

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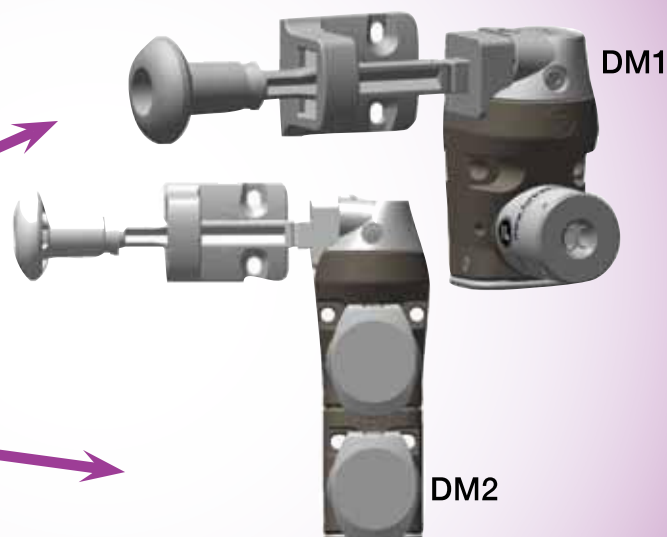
Example 2

Machines with two doors (both can be open at the same time). The machine needs to be electrically locked until safe to enter (either because it has a run down cycle or a request for the robot to reach a programmed stop as required).

Solenoid controlled isolation configuration. Keys are electrically locked in place until the machine is stopped. Removal of first key breaks the safety circuits.



SS 2

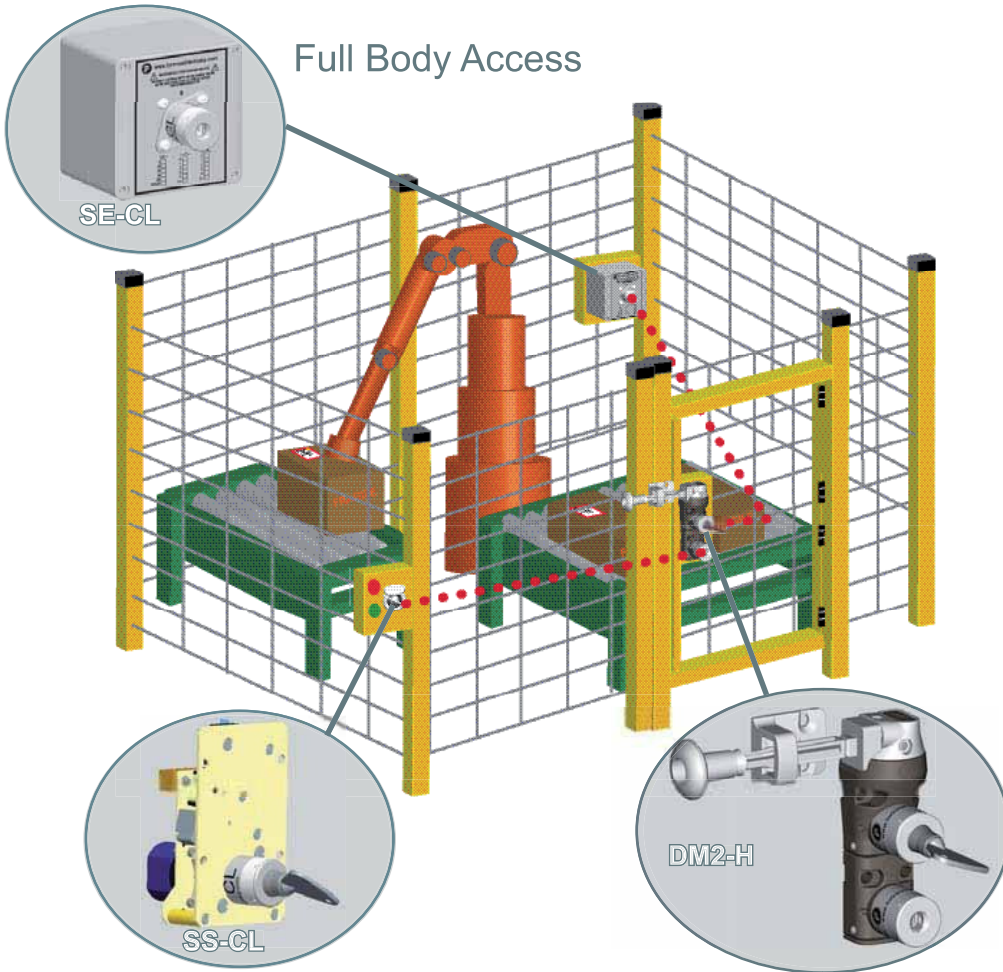


DM1

DM2

Insertion of the key into bottom lock releases a safety key which in turn unlocks the door and traps the bottom access key, ensuring personnel do not get accidentally locked in.

Robot Cell



Full Body Access

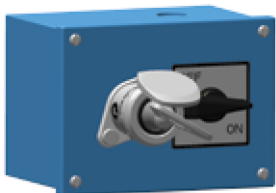
Sequence

- Request robot to come to end of cycle. When in a safe state, the solenoid (SS) is energised, this will then allow the key to be turned and removed, disabling control circuits.
- Insert, turn and trap the key into the DM2 door lock
- Remove the top key.
- Remove the side bolt from the door lock and gain entry to the conveyor line.
- The released key can either be retained as a safety key or inserted, turned and trapped into the SE enabling the robot to be placed into a teach mode.
- To re-start the line reverse the above procedure.

Shopping List

- SS1-CLIN-A02022-D110-B
- DM2-CLIN-H
- SE-CLIN-A02022
- CLK-SUS x 2

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ODS 1



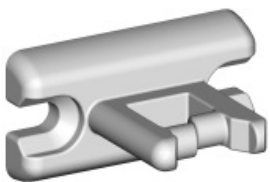
ODS 2



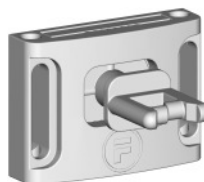
XM 4



XM 2



Fixed Actuator (F)



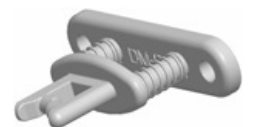
Self Aligning Actuator (S)



hand operated actuator with spring return (A)



hand operated actuator (H)



compressible actuator (C)