



mGard

Product Catalogue

Trapped Key Technology

“Who we are and What we do”

Fortress Interlocks helps customers protect their personnel and capital assets. The company has over 40 years of experience in the safety market, designing and manufacturing safety access and control systems based at its headquarters in Wolverhampton, UK. These systems create safe workplaces where employees in industrial environments are safeguarded from injury and equipment is protected from damage. A world leader in access control systems, Fortress products guarantee that actions and events are undertaken in a pre-determined sequence ensuring a safe working environment.

The company’s products are suitable for applications across a wide industrial base including power generation and distribution, steel, automotive, recycling, building materials, food and beverage, robotics and palletisers. Its extensive product offering and interlocking experience allows Fortress to provide unique solutions for all safeguarding applications. It regularly creates bespoke solutions, often by customising its standard products.

mGard

mGard is the premier range of modular robust trapped key interlocks for heavy duty applications. Trapped key interlocking is a tried and tested method of mechanically safeguarding dangerous machines and hazardous processes, and is suitable for use up to SIL 3 (EN/IEC 62061), Category 4 and PLe (EN/ISO 13849-1). It is called "Trapped Key" as it works by releasing and trapping keys in a predetermined sequence. After the control or power has been isolated, a key is released that can be used to grant access to individual or multiple doors.



amGard pro

amGardpro is the ultimate range of modular safety gate switch interlocks for heavy duty applications. Its unique modular construction allows easy configuration and provides total electro-mechanical solutions for practically any safeguarding application up to SIL3 (EN/IEC 60261) Category 4 and PLe (EN/ISO 13849-1).



tGard

tGard offers total integration of control and safety. This is Fortress’ brand new product that is customisable as standard. Its unique design allows the configuration of safety gate switches, trapped key interlocks and machine control stations or any configuration of all three. **tGard** elements are housed in a metal body to create a simple and robust safety system.



For 3D animated product views and specific application information, visit our web site www.fortressinterlocks.com.

Fortress Interlocks

Protecting People

Protecting Industry

Protecting Productivity

“For anyone who needs to protect people and machinery, Fortress is the interlock company that offers reliable, cost effective customised solutions”.



mGard is the premier range of modular robust trapped key interlocks for heavy duty applications. Trapped key interlocking is a tried and tested method of mechanically safeguarding dangerous machines and hazardous processes, and is suitable for use up to SIL3 (EN/IEC 62061) Category 4 and PLe (EN/ISO 13849-1).

It is called "Trapped Key" as it works by releasing and trapping keys in a predetermined sequence. After the control or power has been isolated, a key is released that can be used to grant access to individual or multiple doors.

The principles of trapped key technology apply to all industries where it is essential that all energy sources are isolated before gaining access to machinery. Almost all safety issues can simply be solved by selecting the required products in order of the steps shown on this page.



SE-CLIN-A02022

Power/Control Isolation

Identify the energy sources to be isolated and/or any hazard that cannot immediately be isolated such as; heat, pressure, radiation or machine rundown time

- | | |
|--|---|
| <p>Power isolation</p> <ul style="list-style-type: none"> • Mechanical Bolt Interlock • Bolt Interlock with Limit Switch • Bolt Interlock with Switch • Breaker Locks <p>All Fortress Interlocks rotary switches have European, Canadian, Chinese and North American approvals.</p> | <p>Control isolation</p> <ul style="list-style-type: none"> • Key Switches • Solenoid Controlled Key Switch • ATEX Key Switch • ATEX Solenoid Controlled Key Switch • Electronic Time Delay Unit • Voltage Sensing Unit • Knob and Key Operated Switch Control Unit |
|--|---|



XM4-MLIN

Key Exchange

Key Exchange with Switch



XMR4-CLIN

Identify the type and number of access points.

- Key Exchange Units
- Key Exchange Units with Switch

Because of the modular arrangement of **mGard** both key exchange and door lock units can easily be extended with an *extension module (XMA)*, for instance when doors are added to the safeguarded area or machine.

The Fortress Trapped Key System allows the safeguarding of potentially hazardous areas without the need for wiring.



DM2-MLIS-S

Door Locks & Actuators



DM1-CLIN

Identify the type of access point; part body or full body access doors with or without the use of personal safety keys (to prevent accidental lock in).

- Single Door Interlocks
- Multiple Door Interlocks
- Fixed actuator
- Handle operated actuator
- Spring loaded handle operated actuator
- Self aligning actuator
- Compressible actuator

mGard Application Example I (safeguarding without rundown time)

By using a trapped key system, this mixer is safeguarded in a pre-determined sequence without the need for wiring. mGard products are very robust and ideal for use in harsh conditions, such as heat, vibration, dust and moisture.

1 BM1-CLIN

First the isolation switch is operated into a safe condition. Only in this "off" position it is possible to shoot the bolt of the BM1 bolt-lock to isolate the switch and release the key.

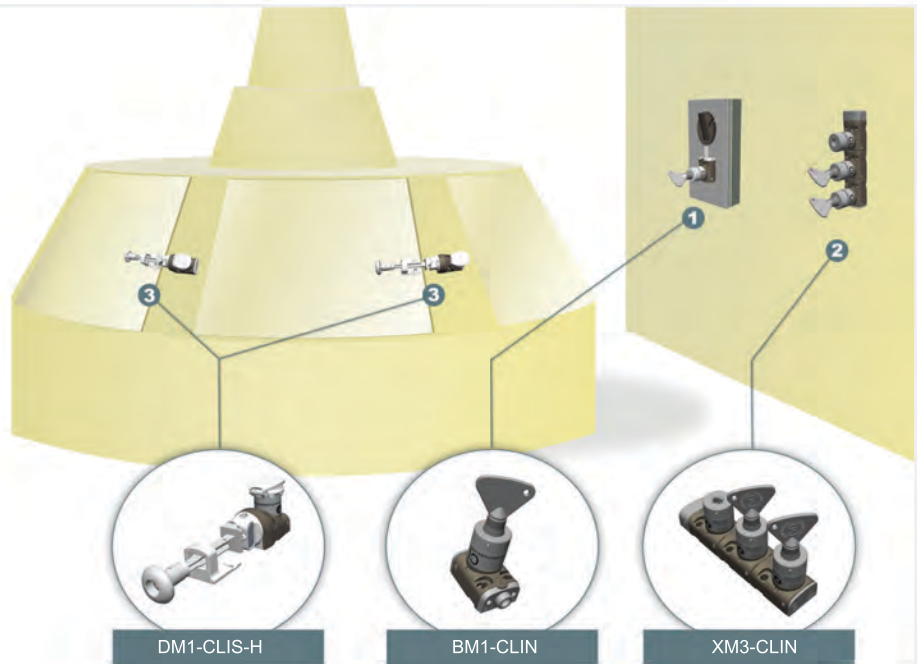
2 XM3-CLIN

The isolation key can now be inserted into the XM3 key exchange box and trapped, allowing the two access keys to be released.

3 DM1-CLIS-H

The two access keys can be inserted into the handle operated door interlocks located on the mixer, enabling the hatches to be opened for maintenance or repair purposes.

Mixer restart is only possible after reversing the sequence.



mGard Application Example II (safeguarding with rundown time)

This enclosed machine area is safeguarded with the use of a solenoid controlled trapped key interlock system. The modular arrangement allows configurations of virtually any safeguarding application.

1 SS1-CLIN-A02022D024B

After remote request for access and/or rundown time, the solenoid of the SS1 solenoid controlled key switch is energised, releasing the key. After releasing the isolation key, the machine is isolated.

2 XM3-CLIN

The isolation key can be inserted into the XM3 key exchange box to release two access keys.

3 DM1-CLIN-H & DM2-CLIN-H

The access keys can be used to open the doors to the safeguarded area. Full body access doors are equipped with a safety key, that can be taken into the safeguarded area, to prevent accidental lock in.

Machine restart is only possible after reversing the sequence.



mGard Application Example III (mGard linked to amGardpro)

By combining the **mGard** range of trapped key interlocks, with the electro mechanical functions of the **amGardpro** range, additional safety features can easily be integrated to take advantage of the benefits of control isolation/interlocking.

In this example an mGard solenoid controlled key switch unit is used to safely control the use of amGard switch controlled door locks.

1 SS2-CLIN-A02022D024B

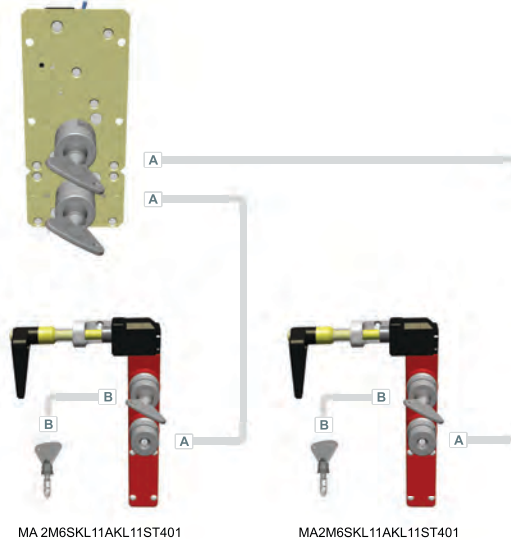
After remote request for access and/or rundown time, the solenoid of the SS2 solenoid controlled key switch is energised releasing the two keys "A". After releasing at least one of these isolation keys, the machine is isolated.

2 MA2M6SKL11AKL11ST401

The two keys "A" can be inserted into the handle operated door locks, to access the safeguarded area.

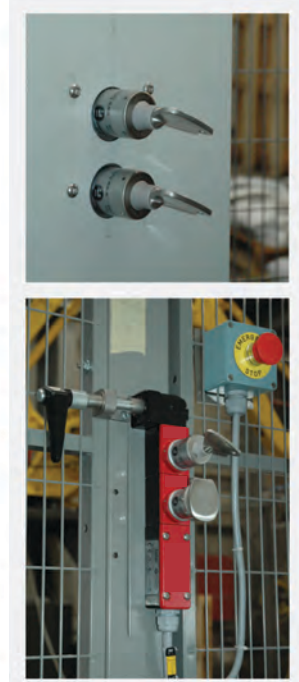
This configuration is equipped with two additional safety functions: A Safety switch which monitors the presence of key "A" and a safety key adaptor with safety key "B" to prevent accidental lock in and/or machine restart.

SS2-CLIS-A02022D024B



MA 2M6SKL11AKL11ST401

MA2M6SKL11AKL11ST401



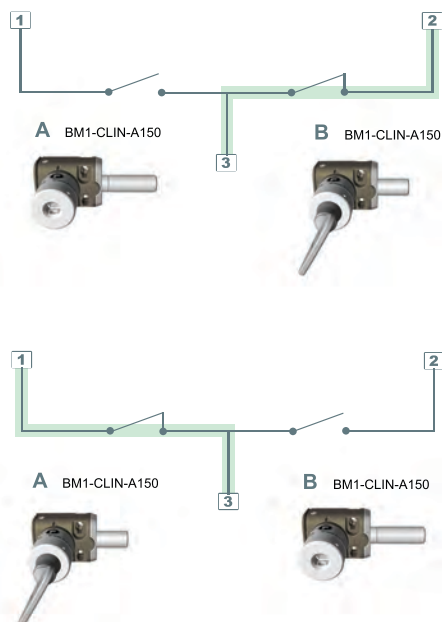
mGard Application Example IV (electrical switch gear interlocking)

To prevent paralleling of incoming or busbar power supplies, **mGard** mechanical trapped key systems are used to control safe operation.

In this application example two incoming supply isolators are fitted with BM1 bolt interlocks, allowing only one isolator to be closed (switched "on") at any time.

Each bolt lock is equipped with a blocking device such that when the bolt is shot, the isolator cannot be closed.

Only one key is supplied with this system in order to prevent paralleling of incoming or busbar power supplies.



A BM1-CLIN-A150

B BM1-CLIN-A150

A BM1-CLIN-A150

B BM1-CLIN-A150



Power Isolation

BM



Mechanical Bolt Interlock

The BM is used to interlock circuit breakers, valves earth switches etc. It is used where hazards needs to be indirectly interlocked.

- No product handling issues
- 16mm diameter bolt with 16mm of travel
- Extended bolt lengths available
- Standard operation: Key free, bolt shot (other sequences available)
- Additional modules/keys can be added

This product may not be used as an access lock.

Product Types

N° of Locks	Ref N°
1 » 10	BM1 » BM10
N° of Locks (Full Stainless Steel)	Ref N°
1 » 5	BMS1 » BMS5
Lock Type	
For key and lock specifications view page 12	
Bolt Lengths	Ref N°
6.35mm	-
50mm extension	50
150mm extension	150

BML



Bolt Interlock with Limit Switch

This device is used to interlock circuit breakers, valves, earth switches etc. It additionally provides electrical indication of the bolt position.

- No product handling issues
- 16mm diameter bolt with 16mm of travel
- Extended bolt lengths available
- Standard operation: Key Free, bolt shot (other sequences available)
- Standard IP67 switch
- Additional modules/keys can be added

This product may not be used as an access lock.

Product Types

N° of Locks	Ref N°
1 » 4	BML1 » BML4
N° of Locks (Full Stainless Steel)	Ref N°
1 » 4	BMSL1 » BMSL4
Switch Current	Ref N°
3A	-
Switch Contacts	Ref N°
1NO / 1NC	-
Lock Type	
For key and lock specifications view page 12	
Bolt Lengths	Ref N°
See BM specification	

BMR



Bolt Interlock with Switch

This device is used to interlock circuit breakers, valves, earth switches etc. It additionally provides electrical indication of the bolt position.

- No product handling issues
- 16mm diameter bolt with 16mm of travel standard (extended bolt lengths available)
- Standard operation: Key free, bolt shot (other sequences available)
- Special switch ratings and/or contact arrangements available on request
- Additional modules/keys can be added
- Each key can be monitored using 20A or 32A switches

This product may not be used as an access lock.

Product Types

N° of Locks	Ref N°
1 » 10	BMR1 » BMR10
N° of Locks (Full Stainless Steel)	Ref N°
1 » 5	BMSR1 » BMSR5
Lock type	
For key and lock specifications view page 12	
Switch Current	Ref N°
20A	020
32A	032
63A	063
Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22
Bolt Lengths	Ref N°
See BM specification	

AC090AB



Circuit Breaker Locks

When mounted on the front of the circuit breaker, this lock allows or prevents switching of the breaker.

- All circuit breakers make and type must be specified

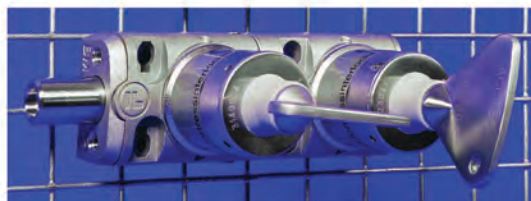
Product Types

Breaker Type	Ref N°
ABB (SACE EMAX)	CLIN-AC090AB
Merlin Gerin (Masterpact)	CLIN-MC090MG
Siemens (3WL)	CLIN-X002
Key type	
For key specifications view page 12	

Bolt Interlocks

For isolation of existing machinery or equipment, Fortress bolt interlocks are a simple mechanical solution to guarantee a safe work place, without the need for wiring.

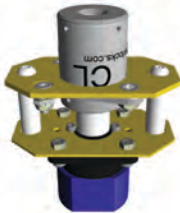
The robust design for both keys and locks can withstand harsh environments, such as dust, moisture and vibration.



Control Isolation

S

CCC UL US SF switch approval



Key Switch

The S(E) unit is suitable for isolation or switching current and may be used to isolate power to machinery.

- Direct drive operation - positively opens contacts
- The standard sequence is: Key trapped (but not locked) - Power on, Key free - Power off (other sequences to be specified)
- Special switch ratings and/or contact arrangements available on request
- Enclosed version (SE) in Polycarbonate (IP66)

Product Types

Mounting	Ref N°
Back of Board	S
In Enclosure (IP66)	SE

Lock Type

For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

S-WP

CCC UL US SF switch approval



Key Switch WP (water proof)

The S(WP) unit is suitable for isolation or switching current and may be used to isolate power to machinery.

- Seal system is rated to IP67
- Direct drive operation - positively opens contacts.
- The standard sequence is: Key trapped - Power on, Key free - Power off (other sequences can be specified)
- Special switch ratings and/or contact arrangements available on request

Product Types

Mounting	Ref N°
Back of Board	S

Lock Type

For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

Type	Ref N°
Water proof	WP

SR

CCC UL US SF switch approval



Key Switch (in metal enclosure)

The SR unit is suitable for isolation or switching current and may be used to isolate power to machinery.

- Direct drive operation - positively opens contacts.
- The standard sequence is: Key trapped - Power on, Key free - Power off (other sequences can be specified)
- Special switch ratings and/or contact arrangements available on request.
- Robust metal enclosure.
- IP 65/66/67 rated

Product Types

N° of Locks	Ref N°
1	SR

Lock type

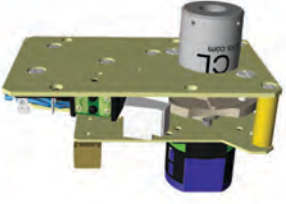
For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

SS

CCC UL US SF switch approval



Solenoid Controlled Key Switch

The SS unit is used where the key(s) need to remain trapped until an electrical signal has been received.

- Direct drive operation - positively opens contacts
- Suitable for machines with a rundown cycle
- The standard sequence is: Solenoid de-energised - Key trapped, Solenoid energised - Key free, (other sequences available)
- Special switch ratings, solenoid voltage and/or contact arrangements available on request
- Solenoid monitoring contacts as standard
- Enclosed version (SS-F) in Polycarbonate (IP66)

Product Types

N° of Locks	Ref N°
1 » 8	SS1 » SS8

Lock type

For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

Solenoid Voltage	Ref N°
24V DC	D024
110V AC / 110V DC	A110 / D110

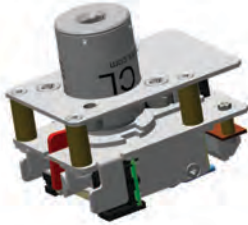
Mounting	Ref N°
Back of Board	B
In Enclosure (IP66)	F

Solenoid Controlled Key Switch

The device is used where the key(s) need to remain trapped until an electrical signal has been received. (e.g. for machine rundown time or cycle end)



MSS1 MSS Standard
MSS1WP MSS (weather proof)



Mini Solenoid Controlled Key Switch (back of board)

The mini SS unit is used where the key needs to remain trapped until an electrical signal has been received, where space is limited.

- Fits within a 65mm(W) x 95mm(L) x 55mm(H) envelope.
- Suitable for machines with a rundown cycle.
- The standard sequence is: Solenoid de-energised - Key trapped, Solenoid energised - Key free (other sequences available upon request).
- 2 x NC 3A Key monitoring contacts.
- 2 x NC 3A Solenoid monitoring contacts.
- Weather proof version is IP67 rated.

Product Types

N° of Locks	Ref N°
1	MSS1
1 - Weather proof	MSS1 WP

Lock type

For key and lock specifications view page 12

Solenoid Voltage	Ref N°
24V DC	D024
48V DC	D048
110V AC / 110V DC	A110 / D110
230V AC	A230

MSSR1



Mini Solenoid Controlled Key Switch in enclosure

The mini SSR unit is used where the key needs to remain trapped until an electrical signal has been received and where space is limited. When the signal is received the push button illuminates. On pressing the illuminated push button the key is released.

- IP67 rated.
- Laser marking available on push button on request.
- Suitable for machines with a rundown cycle.
- The standard sequence is:
Solenoid de-energised - Key trapped
Solenoid energised - Key free (other sequences available upon request).
- 2 x NC 3A Key monitoring contacts.
- 2 x NC 3A Solenoid monitoring contacts.

Product Types

N° of Locks	Ref N°
1	MSSR1

Lock type

For key and lock specifications view page 12

Solenoid Voltage	Ref N°
24V DC	D024
48V DC	D048
110V AC / 110V DC	A110 / D110
230V AC	A230

ODL Key operated
ODS Knob operated

CCC UL US switch approval



Knob/Key Operated Switch Control Unit

The ODS Releases key(s) after switching the knob into a visible off position.

The ODL is a 'key bank' with a switch. It incorporates one or more rotary switches and any combination of trapped or freed keys.

- Direct drive operation - positively opens contacts
- Mild steel enclosure as standard
- Special switch ratings and/or contact arrangements available on request

Product Types

Operation Type	Ref N°
Knob operated	ODS
Key operated	ODL

N° of Locks Released or Trapped	Ref N°
1 » 8	OD(S/L)1 » OD(S/L)8

Lock type

For key and lock specifications view page 12

Vertical/Horizontal	Ref N°
Vertical	V1
Horizontal	H1

Linking System	Ref N°
Cams (stainless steel)	C(S)
Runnerbar (stainless steel)	R(S)

Mounting	Ref N°
Back of Board	B
In Enclosure	F

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063
150A (ODS only)	A150

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

FLP II 2GD EExd IIB T4-T6



ATEX Key Switch

A key switch for use in areas where explosive/flammable gases or dust particles may be present.

- Direct drive operation - positively opens contacts
- The standard sequence is: Key trapped (but not locked) - Power on, Key free - Power off (other sequences to be specified)
- Special switch ratings and/or contact arrangements available on request

Product Types

Mounting	Ref N°
In Enclosure (IP65)	FLP

Lock type

For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

EEXSS1

ATEX Ex II 2G Ex d IIC T6



ATEX Solenoid Controlled Key Switch

A solenoid key switch for use in areas where explosive, flammable gases or dust particles may be present.

- Direct drive operation - positively opens contacts.
- The standard sequence is: Solenoid de-energised - Key trapped, Solenoid energised - Key Free, (other sequences available)
- Special switch ratings, solenoid voltage and/or contact arrangements available on request.
- Solenoid monitoring contacts as standard.

Product Types

N° of Locks (excl. override lock)	Ref N°
1 » 6	SLS1 » SLS6
<u>Lock type</u>	
For key and lock specifications view page 12	
<u>Switch Current</u>	Ref N°
10A	A010
<u>Switch Contacts</u>	Ref N°
2NO / 2NC	22
<u>Solenoid Voltage</u>	Ref N°
24V DC	D024
110V AC / 110V DC	A110 / D110

SLS

switch approval



Solenoid Controlled Key Switch Unit

This device ensures that keys may not be released until both the solenoid has been energised and the control power has been isolated.

- Suitable for machines with a rundown cycle
- Fortress key operated override facility for mechanical release of the keys
- LED status indication

Product Types

N° of Locks (excl. override lock)	Ref N°
1 » 6	SLS1 » SLS6
<u>Lock type</u>	
For key and lock specifications view page 12	
<u>Switch Current</u>	Ref N°
10A	A010
<u>Switch Contacts</u>	Ref N°
2NO / 2NC	22
<u>Solenoid Voltage</u>	Ref N°
24V DC	D024
110V AC / 110V DC	A110 / D110

- TD** Key Operated
- TR** Remotely operated
- TS** Switch operated

switch approval



Electronic Time Delay Unit

The TD unit releases keys at the end of a pre-determined time period.

- Direct drive operation - positively opens contacts
- Suitable for machines with a rundown cycle
- Enclosures in Stainless Steel (IP65) as standard
- Special switch ratings, solenoid voltage and/or contact arrangements available on request
- Solenoid monitoring contacts as standard
- Remotely (TR) and switch operated (TS) version available on request

Product Types

N° of Locks	Ref N°
1 » 3	TD1 » TD3
<u>Lock type</u>	
For key and lock specifications view page 12	
<u>Switch Current</u>	Ref N°
20A	A020
32A	A032
63A	A063
<u>Switch Contacts</u>	Ref N°
4NO / 0NC	40
2NO / 2NC	22
<u>Solenoid Voltage</u>	Ref N°
24V DC	D024
110V AC / 110V DC	A110 / D110
<u>Time Delay Up To</u>	Ref N°
5 Min	05
30 Min	30

VS

switch approval



Voltage Sensing Unit

Releases key(s) after zero voltage detection of the induced voltage (Back EMF) of a motors windings.

- Direct drive operation - positively opens contacts
- Permits access as soon as the machine comes to rest
- No additional "timer safety margin" required
- Suitable for machines with a rundown cycle
- Enclosures in Stainless Steel (IP65) as standard
- Special switch ratings, solenoid voltage and/or contact arrangements available on request
- Solenoid monitoring contacts as standard

Product Types

N° of Locks	Ref N°
1	VS1
<u>Lock type</u>	
For key and lock specifications view page 12	
<u>Switch Current</u>	Ref N°
20A	-
<u>Switch Contacts</u>	Ref N°
2NO / 2NC	-
<u>Solenoid Voltage</u>	Ref N°
24V AC	024
110V AC	110
230V AC	230

Key Exchange

XM



Modular Key Exchange Unit

The XM unit is used to exchange one or more keys for a number of other keys. This device forms the link between isolation devices and access locks.

- No product handling issues
- Extremely varied combination of isolation/access keys possible
- Sequential or Non-sequential key operation
- Simply add modules to existing configurations

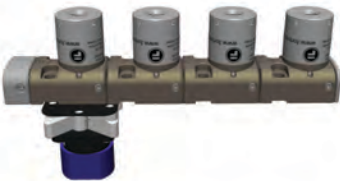
Product Types

N° of Locks	Ref N°
2 » 10	XM2 » XM10
N° of Locks (Full Stainless Steel)	Ref N°
2 » 5	XMS2 » XMS5

Lock type

For key and lock specifications view page 12

XMR



Modular Key Exchange Unit with Switch

Besides exchanging one or more keys for a number of other keys the XMR is additionally fitted with rotary switch(es) that can be used for power or control isolation.

- No product handling issues
- Extremely varied combination of isolation/access keys possible
- Sequential or Non-sequential key operation
- Simply add modules to existing configurations
- Enclosed version (XMR-E) in Polycarbonate (IP67)
- Each key/lock can be fitted with a 20A or 32A rotary switch

Product Types

N° of Locks	Ref N°
1 » 10	XMR1 » XMR10
N° of Locks (Full Stainless Steel)	Ref N°
1 » 5	XMSR1 » XMSR5

Lock type

For key and lock specifications view page 12

Switch Current	Ref N°
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref N°
4NO / 0NC	40
2NO / 2NC	22

Mounting	Ref N°
Sealed Enclosure (IP67)	-E
Back of Board	-P

Door Locks

DM1



Single Door Interlock

- No product handling issues:
4 head rotation angles with an adjustment of 360° at 90° increments with +/- 5° fine adjustment
Two actuator entry points
- All DM locks have stainless steel heads
- Tamper resistant head mechanism
- Choice of actuators

Product Types

N° of Locks	Ref N°
1	DM1
N° of Locks (Full Stainless Steel)	Ref N°
1	DMS1

Lock type

For key and lock specifications view page 12

DM



Multiple Modular Door Interlock

- No product handling issues:
4 head rotation angles with an adjustment of 360° at 90° increments with +/- 5° fine adjustment
Two actuator entry points
- Extremely varied combination of isolation/access keys possible
- Sequential or Non-sequential key operation
- Simply add modules to existing configurations
- All DM locks have stainless steel heads
- Tamper resistant head mechanism
- Choice of actuators


Product Types

N° of Locks	Ref N°
2 » 10	DM2 » DM10
N° of Locks (Full Stainless Steel)	Ref N°
2 » 5	DMS2 » DMS5

Lock type

For key and lock specifications view page 12

DMI



Multiple Door Interlock with Internal Release

- No product handling issues
- 4 head rotation angles with an adjustment of 360° at 90° increments with +/-5° fine adjustment
- Two actuator entry points.
- Any combination of isolation/access keys possible.
- Sequential or Non-sequential key operation.
- Simply add modules to existing configurations.
- All DM locks have stainless steel heads.
- Tamper resistant head mechanism.
- Provides internal release facility - particularly useful in multi-access applications.
- Monitoring switches provide feedback of operation.
- Easily re-set.
- Wide variety of panel thickness catered for.

Product Types


N° of Locks	Ref N°
1 » 10	DM1 » DM10
N° of Locks (Full Stainless Steel)	
1 » 5	DMS1 » DMS5

Lock type

For key and lock specifications view page 12

Internal Release	Ref N°
XXX = Panel Thickness (min) DM-I	IRXXX
XXX = Panel Thickness (min) DM-H	IRHXXX

DMSK



Hygienic Door Interlock

The DMSK is a robust interlock intended for hygienic areas and suitable for all types of doors.

- Minimal design / crevases to reduce dirt trapment.
- Fully suited to jet wash and steam cleaning.
- No product handling issues:
- 4 head rotation angles with an adjustment of 360° at 90° increments.
- Two actuator entry points.
- Full stainless steel assembly
- Tamper resistant head mechanism
- Choice of actuator.


Product Types

N° of Locks	Ref N°
1	DMSK

Lock type

For key and lock specifications view page 12

DMSK2



Hygienic Double Door Interlock

The DMSK2 is a robust interlock intended for hygienic areas and suitable for all types of doors.

- Minimal design / crevases to reduce dirt trapment.
- Fully suited to jet wash and steam cleaning.
- No product handling issues:
- 4 head rotation angles with an adjustment of 360° at 90° increments.
- Two actuator entry points.
- Full stainless steel assembly
- Tamper resistant head mechanism
- Choice of actuator.

Product Types

N° of Locks	Ref N°
2	DMSK2

Lock type

For key and lock specifications view page 12

DMS2E - CLSS



Forced Safety Key Extraction Door Interlock

- No product handling issues:
- 4 head rotation angles with an adjustment of 360° at 90° increments with +/- 5° fine adjustment
- Two actuator entry points
- Stainless steel construction head unit
- Door will not open until safety key has been removed.
- Any combination of isolation/access keys possible.
- Sequential or Non-sequential key operation.
- Simply add modules to existing configurations.
- Tamper resistant head mechanism.
- Choice of actuator
- Dust caps supplied as standard.

Product Types

N° of Locks (Full Stainless Steel)	Ref N°
2 » 5	DMS2E » DMS5E

Lock type

For key and lock specifications view page 12

DM Handling Options

The DM and DMS modules benefit from a revolutionary new head design. With six actuators to choose from, the head features a choice of four head rotation angles and two actuator entry points with an adjustment of 360° at 90° increments with +/- 5° fine adjustment.



Actuators

Fixed Actuator

DM-F * -F in part N°



- For use with all DM type locks
- Ideal for most aligned guarding doors
- Compact (fits within DM body's space envelope)
- Version with chain available (DM-F-chain)

Handle Operated Actuator

DM-H * -H in part N°



- For use with all DM type locks
- Suitable for use where secondary action is required
- Overcomes misalignment
- Vertical adjustment: +/- 6mm
- Rotational adjustment of bracket, to suit all four DM handling options
- Detent holds actuator in place when the door is open

Spring Loaded Handle Operated Actuator

DM-A * -A in part N°



- For use with all DM type locks
- Suitable for use where secondary action is required
- Overcomes misalignment
- Vertical adjustment: +/- 6mm
- Rotational adjustment of bracket, to suit all four DM handling options
- Detent holds actuator in place when the door is open

Self Aligning Actuator

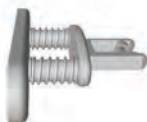
DM-S * -S in part N°



- For use with all DM type locks
- Ideal for small radius hinged doors
- Horizontal adjustment: +/- 7.50mm
- Vertical adjustment: +/- 3.75mm
- Rotational adjustment: any angle in 360°




Compressible Actuator

DM-C * -C in part N°



- For use with all DM type locks
- Ideal to absorb vibration on hatches/doors
- Can be used on small radius hinged doors
- Suitable for situations where the door is likely to be slammed

Accessories











<p>XMA</p> 	<p>Extension Module</p> <ul style="list-style-type: none"> For adding lock units onto existing BM, BMR, XM, XMR, DM and DMR configurations 	<p>Product Types</p> <table border="1"> <tr> <td>Housing Material</td> <td>Ref N°</td> </tr> <tr> <td>Standard</td> <td>XMA</td> </tr> <tr> <td>Full Stainless Steel</td> <td>XMSA</td> </tr> </table> <p><u>Lock type</u> For key and lock specifications view page 12</p>	Housing Material	Ref N°	Standard	XMA	Full Stainless Steel	XMSA
Housing Material	Ref N°							
Standard	XMA							
Full Stainless Steel	XMSA							
<p>MBOB</p> 	<p>Back of Board Mounting Kit</p> <ul style="list-style-type: none"> To provide back of board mounting possibilities for BM, BMR, XM, XMR, DM and DMR configurations <p><i>Not suitable for use onto full stainless steel configurations</i></p>	<p>Product Types</p> <table border="1"> <tr> <td>Housing Material</td> <td>Ref N°</td> </tr> <tr> <td>Standard</td> <td>MBOB</td> </tr> </table>	Housing Material	Ref N°	Standard	MBOB		
Housing Material	Ref N°							
Standard	MBOB							
<p>LOK LINK</p> 	<p>LOK Link - mGard to amGardpro Link Adaptor</p> <p>This module allows mGard components to be linked directly to proLok and proStop units in the amGardpro range, and in doing so adds a directly attached safety switch and direct solenoid control option to the mGard range.</p>	<p>Product Types</p> <table border="1"> <tr> <td>Housing Material</td> <td>Ref N°</td> </tr> <tr> <td>Full Stainless Steel</td> <td>Link</td> </tr> </table>	Housing Material	Ref N°	Full Stainless Steel	Link		
Housing Material	Ref N°							
Full Stainless Steel	Link							

Lock and Key Specifications

Fortress locks have over 200,000 different lock combinations. Besides the standard basic (CL) it is also possible to have a master series (ML) lock. The ML lock which can be operated by a special cut master key (MLK-SUGS) that fits any mastered lock in a specific mastered lock series. For ease of use all Fortress locks provide key insertion in two orientations.

Lock and key engravings

Each different key combination is allocated with an engraved code onto the lock and key, of up to maximum 30 characters (3 lines of 10 characters). This engraving code is used to identify locks and keys and is recorded in a database for continuous cross reference. Required engraving details are therefore to be provided with each order.

Standard	 <p>CLIN lock Standard CL lock no dustcover</p>	 <p>CLIS lock Standard CL lock with stainless steel dustcover</p>	 <p>CLSS lock Full Stainless Steel CL lock with stainless steel dustcover</p>	 <p>CLK-SUS Standard key for use on all CL lock types</p>  <p>CLK-LP Standard low profile key for use on all CL lock types</p>
Master	 <p>MLIN lock Masterable ML lock no dustcover</p>	 <p>MLIS lock Masterable ML lock with stainless steel dustcover</p>	 <p>MLSS lock Full Stainless Steel masterable ML lock with stainless steel dustcover</p>	 <p>MLK-SUGS Standard cut key for use on all ML type locks</p>  <p>MLK-SUCM Master cut key for use on all ML lock types</p>





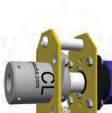
























As an option Fortress locks can also be supplied with Padlockable dustcovers, that incorporates two padlock holes which can be fitted with lockout hasps and scissor hasps between 3mm and 8mm in diameter as shown below.

Dustcover Options	<p>CLDC Stainless Steel Dustcover</p> 	<p>PLDC Stainless Steel Padlockable Dustcover</p> 	<p>LOS3 Lock-Out Scissor Hasp LOS3C Lock-Out Scissor Hasp c/w Cable</p> 
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Key and lock engravings



Maximum 30 characters
(3 lines of 10 characters)

<p>Power Isolation</p>	<p>Mechanical Bolt Interlock</p>  <p>BM BM1 » BM10 (Standard) BMS BMS1 » BMS5 (Full Stainless Steel)</p>	<p>Bolt Interlock with Limit Switch</p>  <p>BML BML1 » BML4 (Standard) BMSL BMSL1 » BMSL4 (Full Stainless Steel)</p>	<p>Bolt Interlock with Switch</p>  <p>BMR BMR1 » BMR10 (Standard) BMSR BMSR1 » BMSR5 (Full Stainless Steel)</p>	<p>Circuit Breakers</p>  <p>CLIN-AC090AB ABB (SACE EMAX) CLIN-MIC090MG Merlin Gerin (Masterpact) CLIN-X002 Siemens (3WL)</p>			
<p>Control Isolation</p>	<p>Key Switch</p>  <p>S Back of Board SE In Enclosure</p>	<p>Key Switch (water proof)</p>  <p>S-WP</p>	<p>Key Switch in Metal Enclosure</p>  <p>SR In Enclosure</p>	<p>Solenoid Controlled Key Switch</p>  <p>SS-F SS1-F » SS8-F (In Enclosure) SS-B SS1-B » SS8-B (Back of Board)</p>	<p>Mfni Solenoid Controlled Key Switch</p>  <p>MSS1 Standard MSS1 W/P Weather proof MSSR1 In Enclosure</p>	<p>Solenoid Controlled Key Switch Unit</p>  <p>SLS SLS1 » SLS6</p>	
<p>Control Isolation</p>	<p>Electronic Time Delay Unit</p>  <p>TD TD1 » TD3 TR TR1 » TR3 TS TS1 » TS3</p>	<p>Voltage Sensing Unit</p>  <p>VS In Enclosure</p>	<p>Knob Operated Switch Control Unit</p>  <p>ODS ODS1 » ODS8 (In Enclosure)</p>	<p>Key Operated Switch Control Unit</p>  <p>ODL ODL1 » ODL8 (In Enclosure)</p>	<p>ATEX Solenoid Controlled Key Switch</p>  <p>EEXSS1 In Enclosure</p>	<p>ATEX Key Switch</p>  <p>FLP In Enclosure</p>	
<p>Key Exchange</p>	<p>Modular Key Exchange Unit</p>  <p>XM XM2 » XM10 (Standard) XMS XMS2 » XMS5 (Full Stainless Steel)</p>	<p>Modular Key Exchange Unit with Switch(es)</p>  <p>XMR XMR1 » XMR10 (Standard) XMSR XMSR1 » XMSR5 (Full Stainless Steel)</p>	<p>Door Locks</p>  <p>DM1 Standard DMS1 Full Stainless Steel</p>	<p>Single Door Interlock</p>  <p>DM DM2 » DM10 (Standard) DMS DMS2 » DMS5 (Full Stainless Steel)</p>	<p>Multiple Modular Door Interlock</p>  <p>DM1 DM1 » DM10 (Standard) DMS1 DMS2 » DMS5 (Full Stainless Steel)</p>	<p>Multiple Door Interlock with Internal Release</p>  <p>DMSK DMSK2 DMSK2 Hygienic Door Interlock DMSK2 Hygienic Double Door Interlock</p>	<p>Hygienic Door Interlock</p>  <p>DMS2E DMS2E » DMS5E</p>
<p>Accessories</p>	<p>Extension Module</p>  <p>XMA Standard XMSA Full Stainless Steel</p>	<p>Back of Board Mounting Kit</p>  <p>MBOB</p>	<p>Dustcovers</p>  <p>CLDC Stainless Steel Dustcover PLDC Padlockable Dustcover</p>	<p>Lock-Out Hasps</p>  <p>LOS3 Scissor Hasp LOS3C Scissor Hasp w/w cable</p>	<p>Actuators</p>  <p>DM-F DM-H DM-A DM-S</p>	<p>Compressible Actuator</p>  <p>DM-C</p>	

A HALMA COMPANY



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