Fortress Interlocks

mGard Trapped Key Technology

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".

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2007

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2008

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

Power isolation

- Mechanical Bolt Interlock
- Bolt Interlock with Limit Switch
- Bolt Interlock with Switch
- Breaker Locks

All Fortress Interlocks rotary switches have European, Canadian, Chinese and North American approvals.

Control isolation

- 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

XMR4-CLIN

Key Exchange with Switch

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.

Personal Safety Key

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)

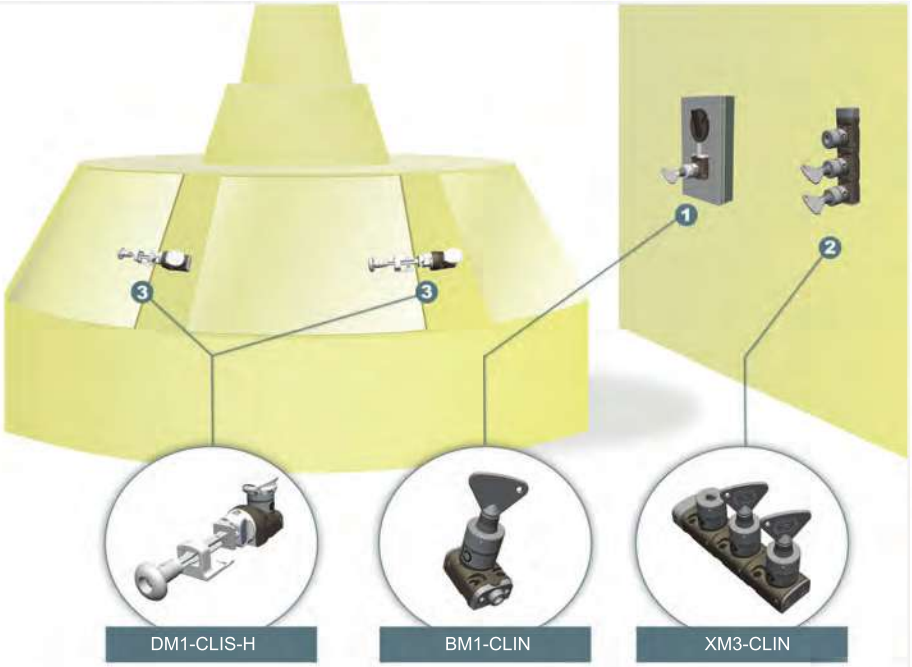
By using a trapped key system, this mixer is safeguarded in a pre-determined sequence without the need for wiring. **mGard** products are very robust and ideal for use in harsh conditions, such as heat, vibration, dust and moisture**.**

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 amGard*pro*)

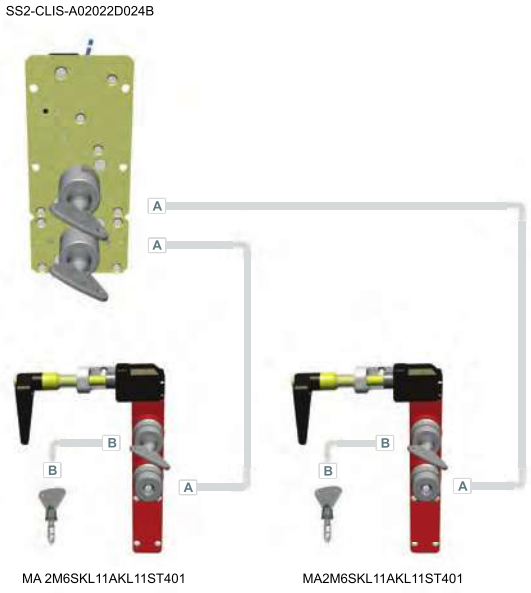
By combining the **mGard** range of trapped key interlocks, with the electro mechanical functions of the **amGard*pro*** range , additional safety features can easily be integrated to take advantage of the benefits of control isolation/interlocking.

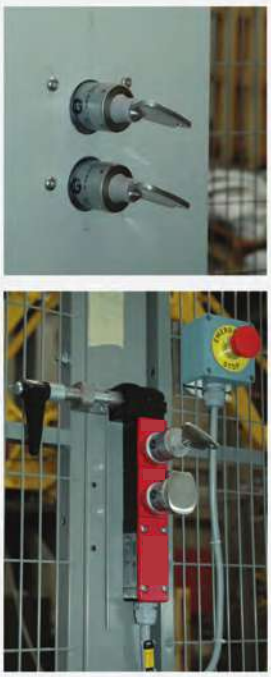
In this example an mGard solenoid controlled key switch unit is used to safely control the use of amGard switch controlled door locks.

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.





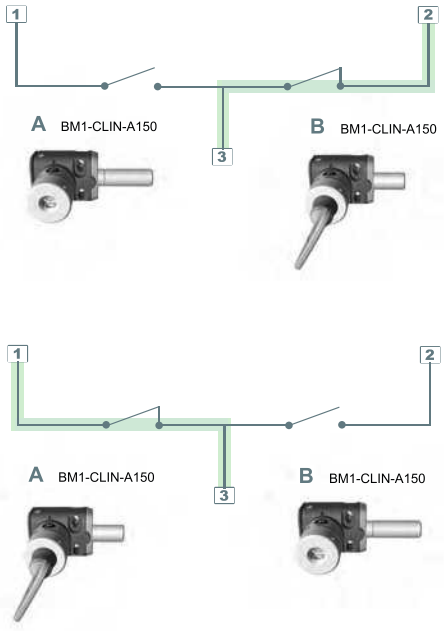
mGard Application Example IV (electrical switch gear interlocking)

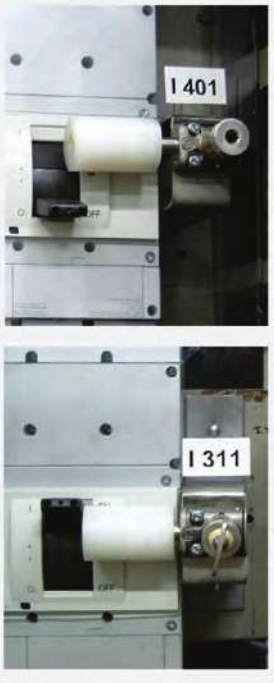
To prevent paralleling of incoming or busbar power supplies, **mGard** mechanical trapped key systems are used to control safe operation.

In this application example two incomming 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 parralleling of incoming or busbar power supplies.





Power Isolation

Mechanical Bolt Interlock

BM

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

- No product handing 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

Nº of Locks	Ref Nº
1 » 10	BM1 » BM10
Nº of Locks (Full Stainless Steel)	Ref Nº
1 » 5	BMS1 » BMS5
Lock Type	
For key and lock specifications view page 12	
Bolt Lengths	Ref Nº
6.35mm	-
50mm extension	50
150mm extension	150

Bolt Interlock with Limit Switch

BML

switch approval

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

- No product handing 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

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

Bolt Interlock with Switch

BMR

switch approval

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

- No product handing 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

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

Circuit Breaker Locks

AC090AB

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 Nº
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

Key Switch

S

switch approval

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 Nº
Back of Board	S
In Enclosure (IP66)	SE

Lock Type

For key and lock specifications view page 12

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

Key Switch WP (water proof)

S-WP

switch approval

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 Nº
Back of Board	S

Lock Type

For key and lock specifications view page 12

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

Type	Ref Nº
Water proof	WP

Key Switch (in metal enclosure)

SR

switch approval

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

Nº of Locks	Ref Nº
1	SR

Lock type

For key and lock specifications view page 12

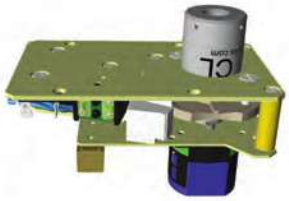
Switch Current	Ref Nº
20A	A020

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

Solenoid Controlled Key Switch

SS

switch approval



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

Nº of Locks	Ref Nº
1 » 8	SS1 » SS8

Lock type

For key and lock specifications view page 12

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

Solenoid Voltage	Ref Nº
24V DC	D024
110V AC / 110V DC	A110 / D110

Mounting	Ref Nº
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)

Mini Solenoid Controlled Key Switch (back of board)

MSS1 MSS Standard
MSS1WP MSS (weather proof)

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

Nº of Locks	Ref Nº
1	MSS1
1 - Weather proof	MSS1 WP

Lock type
For key and lock specifications view page 12

Solenoid Voltage	Ref Nº
24V DC	D024
48V DC	D048
110V AC / 110V DC	A110 / D110
230V AC	A230

Mini Solenoid Controlled Key Switch in enclosure

MSSR1

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

Nº of Locks	Ref Nº
1	MSSR1

Lock type
For key and lock specifications view page 12

Solenoid Voltage	Ref Nº
24V DC	D024
48V DC	D048
110V AC / 110V DC	A110 / D110
230V AC	A230

Knob/Key Operated Switch Control Unit

ODL Key operated
ODS Knob operated

switch approval

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 Nº
Knob operated	ODS
Key operated	ODL

Nº of Locks Released or Trapped	Ref Nº
1 » 8	OD(S/L)1 » OD(S/L)8

Lock type
For key and lock specifications view page 12

Vertical/Horizontal	Ref Nº
Vertical	V1
Horizontal	H1

Linking System	Ref Nº
Cams (stainless steel)	C(S)
Runnerbar (stainless steel)	R(S)

Mounting	Ref Nº
Back of Board	B
In Enclosure	F

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063
150A (ODS only)	A150

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

ATEX Key Switch

FLP

II 2GD EExd IIB T4-T6

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 Nº
In Enclosure (IP65)	FLP

Lock type
For key and lock specifications view page 12

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063

Switch Contacts	Ref Nº
4NO / 0NC	40
2NO / 2NC	22

ATEX Solenoid Controlled Key Switch

EEXSS1

ATEX Ex II 2G Ex d IIC T6

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

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

Solenoid Controlled Key Switch Unit

SLS

switch approval

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

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

Electronic Time Delay Unit

TD Key Operatted
TR Remotely operated
TS Switch operated

switch approval

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

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

Voltage Sensing Unit

VS

switch approval

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

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

Key Exchange

Modular Key Exchange Unit

XM

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

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

Product Types

Nº of Locks	Ref Nº
2 » 10	XM2 » XM10
Nº of Locks (Full Stainless Steel)	**Ref Nº**
2 » 5	XMS2 » XMS5

Lock type

For key and lock specifications view page 12

Modular Key Exchange Unit with Switch

XMR

switch approval

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

- No product handing 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

Nº of Locks	Ref Nº
1 » 10	XMR1 » XMR10
Nº of Locks (Full Stainless Steel)	**Ref Nº**
1 » 5	XMSR1 » XMSR5

Lock type

For key and lock specifications view page 12

Switch Current	Ref Nº
20A	A020
32A	A032
63A	A063
Switch Contacts	**Ref Nº**
4NO / 0NC	40
2NO / 2NC	22
Mounting	**Ref Nº**
Sealed Enclosure (IP67)	-E
Back of Board	-P

Door Locks

Single Door Interlock

DM1

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

Product Types

Nº of Locks	Ref Nº
1	DM1
Nº of Locks (Full Stainless Steel)	**Ref Nº**
1	DMS1

Lock type

For key and lock specifications view page 12

Multiple Modular Door Interlock

DM

- No product handing issues:
  4 head rotation angles with an adjustment of 360º at 90º increments with +/- 5º fine adjustment
  Two actuator entry points
- Extremly 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

Nº of Locks	Ref Nº
2 » 10	DM2 » DM10
Nº of Locks (Full Stainless Steel)	**Ref Nº**
2 » 5	DMS2 » DMS5

Lock type

For key and lock specifications view page 12

Multiple Door Interlock with Internal Release

DMI

- No product handing issues
  4 head rotation angles with an adjustment of 360º at 90º increments with +/-5º 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

Nº of Locks	Ref Nº
1 » 10	DM1 » DM10
Nº of Locks (Full Stainless Steel)	**Ref Nº**
1 » 5	DMS1 » DMS5

Lock type

For key and lock specifications view page 12

Internal Release	Ref Nº
XXX = Panel Thickness (min) DM-I	IRXXX
XXX = Panel Thickness (min) DM-H	IRHXXX

Hygienic Door Interlock

DMSK

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 handing issues:
  4 head rotation angles with an adjustment of 360º at 90º increments.
  Two actuator entry points.
- Full stainless steel assembly
- Tamper resistant head mechanism
- Choice of actuator.

Product Types

Nº of Locks	Ref Nº
1	DMSK

Lock type

For key and lock specifications view page 12

Hygienic Double Door Interlock

DMSK2

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 handing issues:
  4 head rotation angles with an adjustment of 360º at 90º increments.
  Two actuator entry points.
- Full stainless steel assembly
- Tamper resistant head mechanism
- Choice of actuator.

Product Types

Nº of Locks	Ref Nº
2	DMSK2

Lock type

For key and lock specifications view page 12

Forced Safety Key Extraction Door Interlock

DMS2E - CLSS

- No product handing issues:
  4 head rotation angles with an adjustment of 360º at 90º increments with +/- 5º 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

Nº of Locks (Full Stainless Steel)	Ref Nº
2 » 5	DMS2E » DMS5E

Lock type

For key and lock specifications view page 12

DM Handing 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 360º at 90º increments with +/- 5º fine adjustment.

Actuators

Fixed Actuator

DM-F * -F in part Nº

- 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 Nº

- 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 handing options
- Detent holds actuator in place when the door is open

Spring Loaded Handle Operated Actuator

DM-A * -A in part Nº

- 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 handing options
- Detent holds actuator in place when the door is open

Self Aligning Actuator

DM-S * -S in part Nº

- 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 360º

Compressible Actuator

DM-C * -C in part Nº

- 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

Extension Module

XMA

- For adding lock units onto existing BM, BMR, XM, XMR, DM and DMR configurations

Product Types

Housing Material	Ref Nº
Standard	XMA
Full Stainless Steel	XMSA

Lock type

For key and lock specifications view page 12

Back of Board Mounting Kit

MBOB

- To provide back of board mounting possibilities for BM, BMR, XM, XMR, DM and DMR configurations

  Not suitable for use onto full stainless steel configurations

Product Types

Housing Material	Ref Nº
Standard	MBOB

LOK Link - mGard to amGardpro Link Adaptor

LOK LINK

This module alllows 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.

Product Types

Housing Material	Ref Nº
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

CLIN lock
Standard CL lock no dustcover

CLIS lock
Standard CL lock with stainless steel dustcover

CLSS lock
Full Stainless Steel CL lock with stainless steel dustcover

CLK-SUS
Standard key for use on all CL lock types

CLK-LP
Standard low profile key for use on all CL lock types

Master

MLIN lock
Masterable ML lock no dustcover

MLIS lock
Masterable ML lock with stainless steel dustcover

MLSS lock
Full Stainless Steel masterable ML lock with stainless steel dustcover

MLK-SUGS
Standard cut key for use on all ML type locks

MLK-SUCM
Master cut key for use on all ML lock types

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

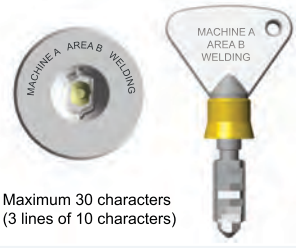
CLDC Stainless Steel Dustcover

PLDC Stainless Steel Padlockable Dustcover

LOS3 Lock-Out Scissor Hasp

LOS3C Lock-Out Scissor Hasp c/w Cable

Key and lock engravings



Maximum 30 characters
(3 lines of 10 characters)

mGard Range Card

Power Isolation

Mechanical Bolt Interlock

- BM — BM1 » BM10 (Standard)
- BMS — BMS1 » BMS5 (Full Stainless Steel)

Bolt Interlock with Limit Switch

- BML — BML1 » BML4 (Standard)
- BMSL — BMSL1 » BMSL4 (Full Stainless Steel)

Bolt Interlock with Switch

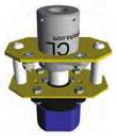
- BMR — BMR1 » BMR10 (Standard)
- BMSR — BMSR1 » BMSR5 (Full Stainless Steel)

Circuit Breakers

- CLIN-AC090AB — ABB (SACE EMAX)
- CLIN-MC090MG — Merlin Gerin (Masterpact)
- CLIN-X002 — Siemens (3WL)

Control Isolation

Key Switch



- S — Back of Board
- SE — In Enclosure

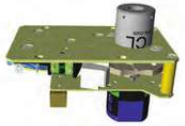
Key Switch (water proof)

- S-WP

Key Switch in Metal Enclosure

- SR — In Enclosure

Solenoid Controlled Key Switch



- SS-F — SS1-F » SS8-F (In Enclosure)
- SS-B — SS1-B » SS8-B (Back of Board)

Mini Solenoid Controlled Key Switch



- MSS1 — Standard
- MSS1 WP — Weather proof
- MSSR1 — In Enclosure

Solenoid Controlled Key Switch Unit

- SLS — SLS1 » SLS6

Electronic Time Delay Unit

- TD — TD1 » TD3
- TR — TR1 » TR3
- TS — TS1 » TS3

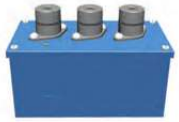
Voltage Sensing Unit

- VS — In Enclosure

Knob Operated Switch Control Unit

- ODS — ODS1 » ODS8 (In Enclosure)

Key Operated Switch Control Unit



- ODL — ODL1 » ODL8 (In Enclosure)

ATEX Solenoid Controlled Key Switch

- EEXSS1 — In Enclosure

ATEX Key Switch

- FLP — In Enclosure

Key Exchange

Modular Key Exchange Unit

- XM — XM2 » XM10 (Standard)
- XMS — XMS2 » XMS5 (Full Stainless Steel)

Modular Key Exchange Unit with Switch(es)

- XMR — XMR1 » XMR10 (Standard)
- XMSR — XMSR1 » XMSR5 (Full Stainless Steel)

Door Locks

Single Door Interlock

- DM1 — Standard
- DMS1 — Full Stainless Steel

Multiple Modular Door Interlock

- DM — DM2 » DM10 (Standard)
- DMS — DMS2 » DMS5 (Full Stainless Steel)

Multiple Door Interlock with Internal Release

- DM1 — DM1 » DM10 (Standard)
- DMS1 — DMS2 » DMS5 (Full Stainless Steel)

Hygienic Door Interlock

- DMSK — Hygienic Door Interlock
- DMSK2 — Hygienic Double Door Interlock

DMS2E

- DMS2E — DMS2E » DMS5E

Accessories

Extension Module

- XMA — Standard
- XMSA — Full Stainless Steel

Back of Board Mounting Kit

- MBOB

Dustcovers


- PLDC — Padlockable Dustcover
- CLDC — Stainless Steel Dustcover

Lock-Out Hasps

- LOS3 — Scissor Hasp
- LOS3C — Scissor Hasp c/w cable

Actuators

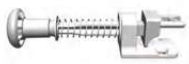
Fixed Actuator

- DM-F

Handle Operated Actuator

- DM-H

Spring Released Handle Operated Actuator



- DM-A

Self Aligning Actuator

- DM-S

Compressible Actuator

- DM-C

Fortress Interlocks

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