Fortress Interlocks

amGard pro

Total Access & Control

amGard*pro* Product Catalogue

Modular Safety Gate Switches

"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) as certified by TÜV SÜD. 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) as certified by TÜV SÜD.

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

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With its unrivalled design concept, amGard*pro* offers a range of fully integrated safety interlocks, including solenoid and non-solenoid safety switches complete with a host of additional options including key control modules, emergency release, redundant sensors, lock out/tag out and push buttons, estops and indication lights for enhanced functionality. The robust construction of this range makes it ideal for use in a wide range of industrial applications when safety, strength and reliability are of paramount importance.

The **amGard*pro*** system replaces all adaptions normally fitted within a guarding system, such that additional hardware like door catches, actuators, closing mechanisms, internal mechanisms, key functions including authorised access and deadlocks may be no longer needed.All of these separate functions can be incorporated into amGardpro configurations, resulting in the most flexible safety interlock solution available for today's industrial environment.

Actuators

Actuators

Handle Actuators
Tongue Actuator
All in One Head and Handle Actuator
Slidebars

Head Modules

Head Modules

Handle Actuator Head Module
Tongue Actuator Head Module
All in One Head and Handle Unit
Padlock Adaptor
Foot (to terminate mechanical lock)

Adaptors

Adaptors

Safety Key Adaptors
Access Key Adaptors
Extracted Key Adaptors
Internal Release Adaptors

Electrical Switching / Locking

Electrical Switching / Locking

Safety Switch Bodies
Solenoid Controlled Lock Bodies
Extended body Solenoid Controlled Lock Bodies
Explosion Proof Switch Bodies
Foot (to terminate mechanical lock)

AS-interface versions available
European, Canadian and North American approvals

Option PODs

Option PODs

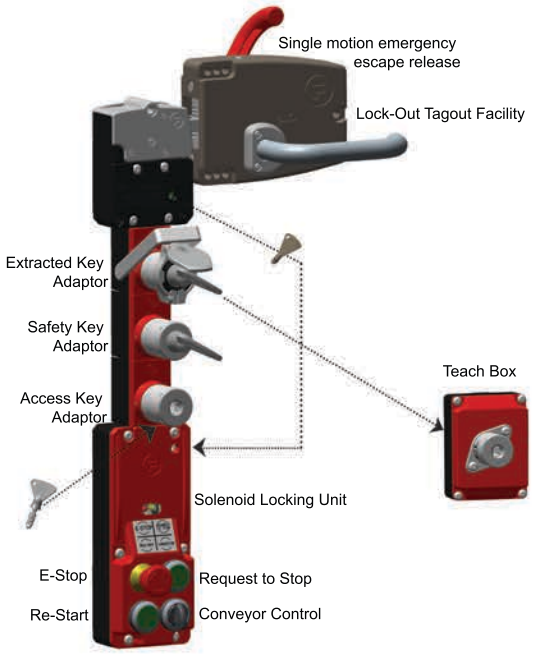
Key Switch Option Pod
Indicator Lamp Option Pod
Pushbutton Option Pod

AS-interface versions available
European, Canadian and North American approvals

Improved Standards Compliance
•Complies with all new and forthcoming machine safety standards.
•Integrated redundancy sensor solution (with coding options).
•Single motion emergency escape release regardless of solenoid or trapped key locking mechanisms.

Enhanced Machine Control Functionality
•Integrated pushbutton control in single unit.
•Up to 4 Illuminated Pushbuttons/Lamps/Selector Switches, including 1 E-Stop.
•Up to 10 Safety/Access keys in one configuration.

Enhanced Strength
•Stainless steel heads with mounting point, increasing retention force to **market leading 10KN**.
•Standardisation and enhancement of all anti-vibration features.
•Improved weather resistance.



amGard*pro* Application Example I

This example shows the safeguarding of robot areas in which **amGard*pro*** products offer a combined mechanical and electrical solution.

1 NO2C6SKL12LL411L0WB00N
By pressing the access request button, the machine or installation is shut down, by the machine control system.

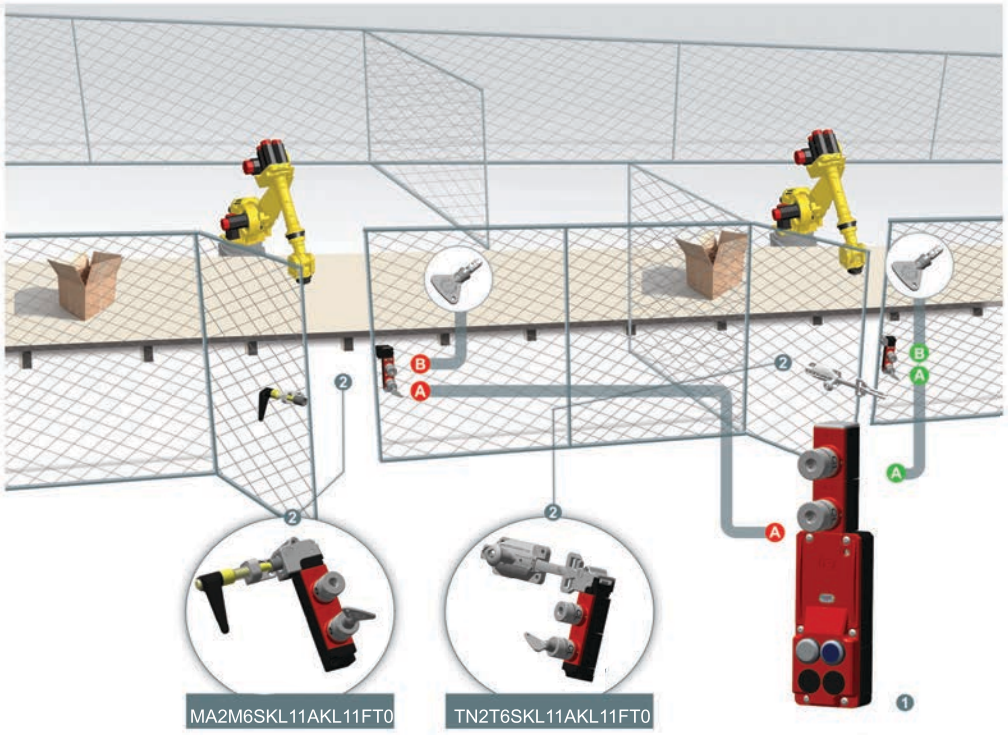
The solenoid, controlled by the machine control system restricts the release of keys A until the guarded area or machine is safe to enter (indicated by the yellow status LEDs).

Energising the solenoid breaks the dual safety circuits to prevent unexpected re-start.

Both safety keys A can now be released indicated by the red status LED.

2 TN2T6SKL11AKL11FT0
Keys A can be used to unlock the door locks and release the safety keys B. These can be taken inside the guarded area to prevent personnel being trapped and/or an accidental machine restart.

By reversing this compulsory procedure the machine can safely be restarted.



amGard Application Example II

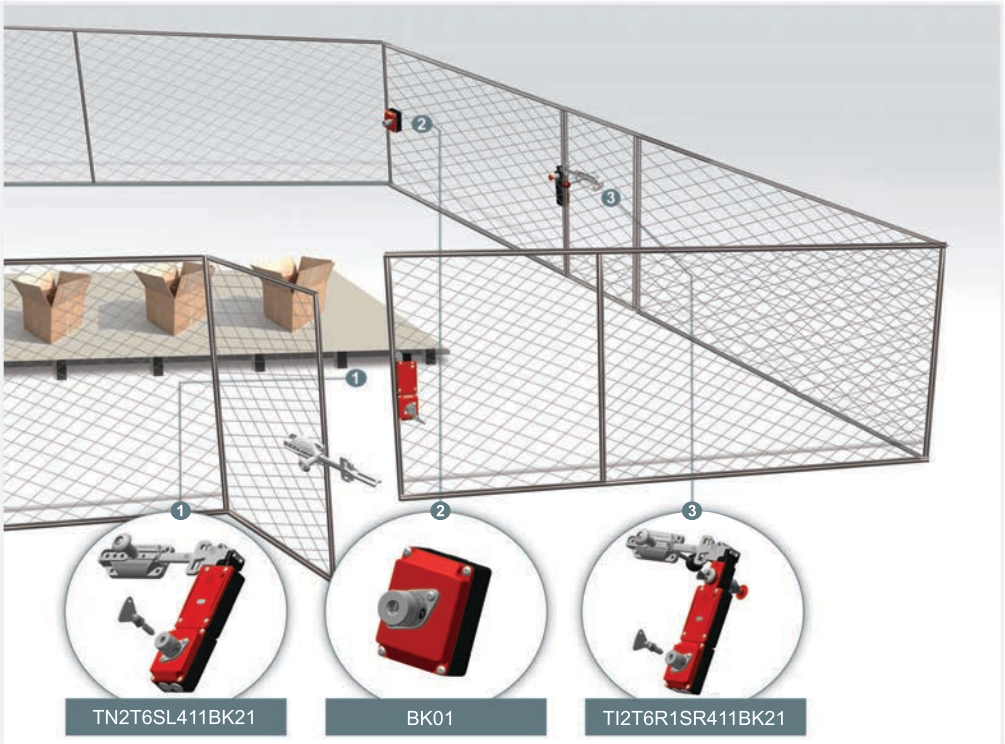
This example shows the safeguarding of a potentially dangerous area with a teach mode function inside.

1 TN2T6SL411BK21
Removal of the key from one of the pods at the doors selects machine stop at the end of a run down cycle. The solenoid is then energised by the machine control system and access can be gained.

The operator can take the safety key into the potentially hazardous area preventing restart.

2 BK01
By inserting one of the keys in the stand alone pod inside the guarded area safe programming can be initiated

3 TI2T6R1SR411BK21
The LOK internal release option can be used to unlock the door from inside a guarded area should personnel become trapped. By pushing the button on the rear of the unit, the tongue is released from the actuator head and the door can be opened from the inside. This also breaks both safety circuits, which than have to be manually reset before the machine can re-start.



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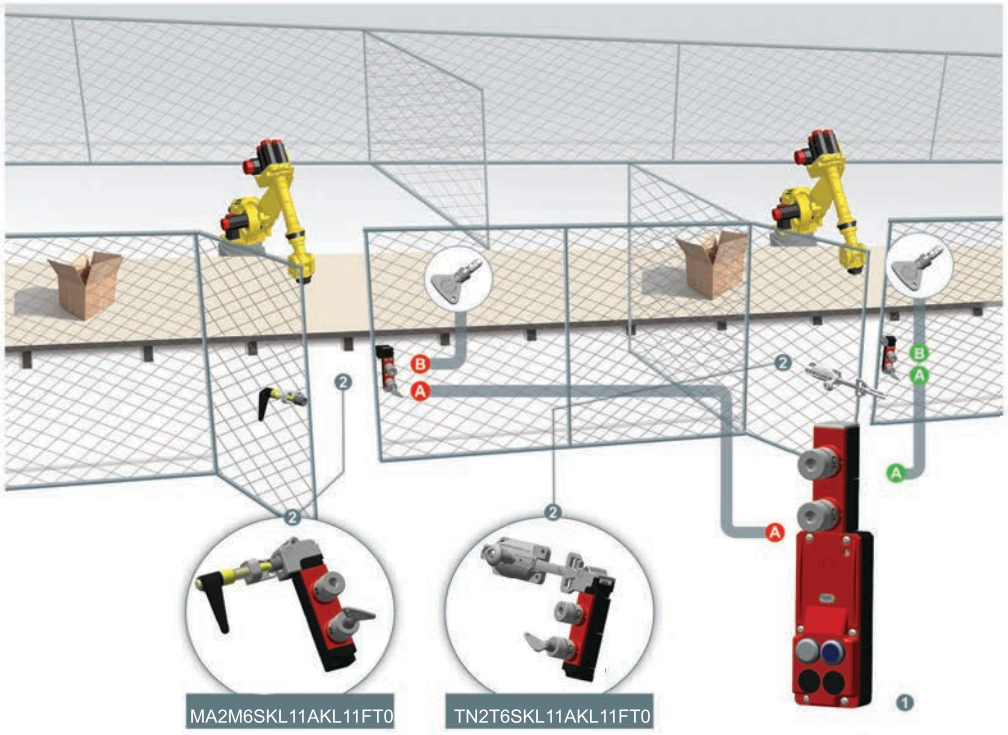

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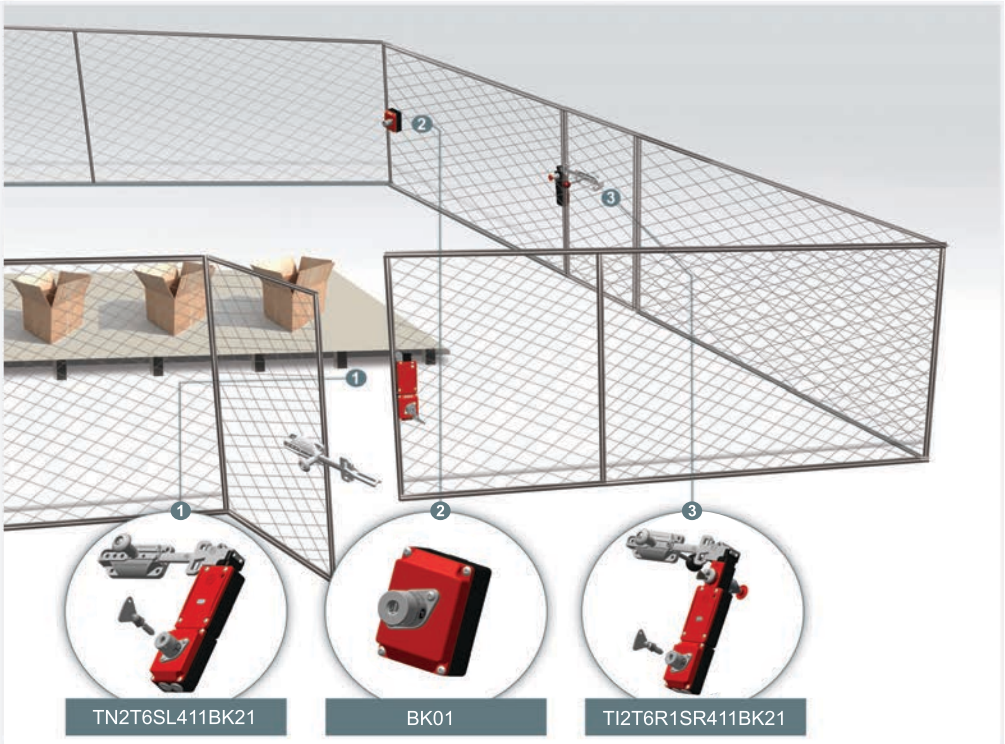
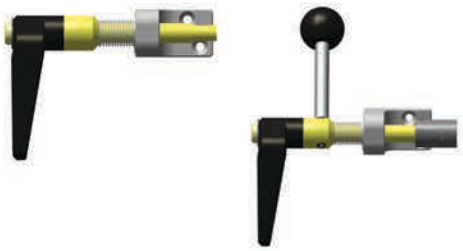


Actuators

proAM Handle

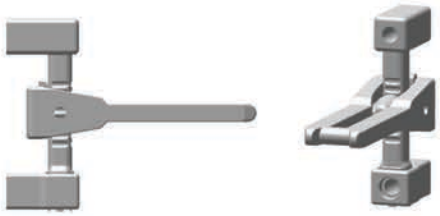
MA proAM Handle
MI proAM Handle with Internal Release



- Used in conjunction with proAM Head.
- Heavy duty handle unit.
- Operating handle can be rotated in 45º increments
- Allows for guard misalignment
- Turning motion holds door closed preventing nuisance trips.
- Extremely high retention force when used in locking applications.
- Ideal for hinged guard doors (especially double doors)

proAT Tongue

TA / TK



- Used in conjunction with proAT Head.
- Heavy duty tongue unit.
- Ideal for fast, frequent access.
- Operating radius - 900mm.
- 3 position fixing at 90º increments.
- Misalignment tolerance of +/- 12mm.
- 12mm over travel allowance.
- Short TK version available ....

proSlidebar

TN no spring & no internal release
TS spring loaded
TI internal release
TM internal release & short tongue
TF internal release & spacer

- Used in conjunction with the proAT Head
- Particulary useful for applications using small radius, hinged doors
- Stainless steel casting
- Built in lock-out facility to accommodate a maximum of 4 padlocks with up to 8 mm diameter shackles

Spring loaded version (TS) is advised when exposed to vibration

proHandle

EN no internal release
EH internal release

- Used in conjunction with the proAT Head
- Particularly useful for applications using small radius hinged doors.
- Intuitive opening style.
- Zinc alloy casing.
- Built in lock-out facility to accommodate a maxomim of 4 padlocks with up to 8mm diameter shackles.
- Mis-alignment +/- 12mm.
- Escape release option for use with non-locking system (proStop) or push IR only.
- On site handing change possible (refer to installation instructions).

proRelease IR Handle

EI

To be used in conjunction with proRelease Head units I6 and I7

- Intuitive handle emergency release.
- Emergency release activation releases tongue and opens safety contacts.
- Heavy duty tongue unit.
- Ideal for fast frequent access.
- 2 position mounting at 180º increments allowing on site handing change.
- Mis-alignment tolerance of +/- 10mm
- Multiple mounting options (refer to installation instructions)
- Pin hex key reset function

Add-Ons

AM Lock-Out Clip

Once inserted into the head and padlocked in position, it blocks the handle entry preventing the door being closed and the machine from being restarted.

AML

AT Lock-Out Clip

Once inserted into the head and padlocked in position, it blocks the tongue entry preventing the door being closed and the machine from being restarted.

ATL

Head Modules

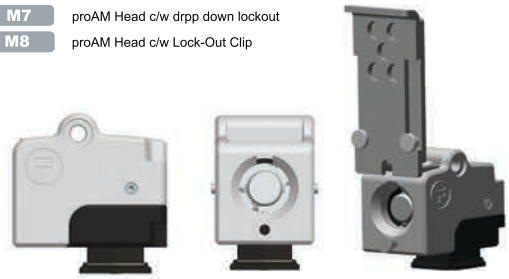
proCap

C6 proCap

- To terminate assemblies without head modules, for example, solenoid controlled key release
- Removeable to allow for modification.

proAM Head

M6 proAM Head
M7 proAM Head c/w drpp down lockout
M8 proAM Head c/w Lock-Out Clip



- Used in conjunction with proAM Handle.
- Operating handle can be rotated in 45° increments
- 4 position fixing at 90° increments allowing on site handing change.
- Allows for guard misalignment
- Turning motion holds door closed preventing nuisance trips
- Extremely high retention force when used in locking applications - 10,000N
- Can be fitted with lock-out devices for additional safety

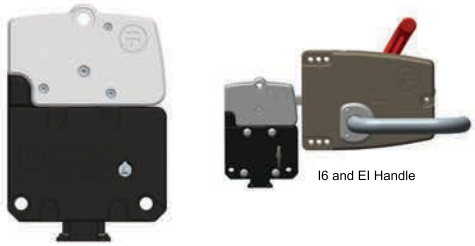
proAT Head

T6 proAT Head
T7 proAT Head c/w drop down lock-out
T8 proAT Head c/w lock-out clip

- Used in conjunction with the proAT Tongue.
- Ideal for fast, frequent access.
- 4 position fixing at 90° increments allowing on site handing change.
- Misalignment tolerance of +/- 12mm.
- 12mm Overtravel allowance.
- Retention force 10,000N when top fixing is used.
- Can be fitted with lock-out devices for additional safety.
- Mounted upside down it is self cleaning, ideal for dusty environments.

proRelease IR Handle

I6 proIR Head (to be used in conjuction with EI)
I7 proIR Head (to be used in conjunction with EI)



I6 and EI Handle

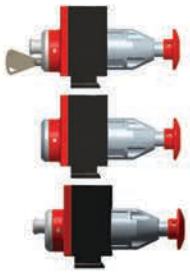
The proRelease head is a means of achieving a single action emergency release function from inside a guarded area. It consists of a releasing head and handle pair

- To be used in conjunction with proRelease Handle unit EI which when operated will override any key modules in configuration and stop process.
- Intuitive handle emergency release.
- Emergency release activation releases tongue and opens safety contacts.
- Heavy duty tongue unit.
- Ideal for fast frequent access.

Adaptors

proIR - Escape Release Adaptor

R1-4 proPushIR - Key reset
R6-9 proPushIR - Pull reset
RW-Z proPushIR - Front reset

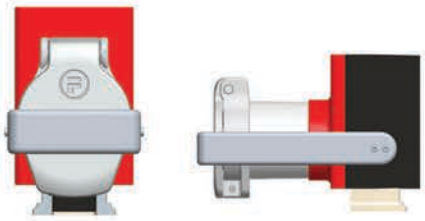


proIR Escape release adaptor module is used in conjunction with a releasing amGardpro unit to provide an escape function from an interlocked hazardous area.

- Only 1 proIR adaptor can be fitted in a configuration.
- proIR adaptor must be used in conjunction with 'releasing' type units in the amGardpro range.
- Available for various panel thicknesses (40mm, 60mm, 80mm as standard & variable length).

proE - Extracted Key Adaptor

EK proE - Extracted Key Adaptor



The proE - Extracted key adaptor ensures that the door cannot be opened until the key has been removed from the lock, and the machine/process cannot be restarted without returning the key(s). It can furthermore prevent personnel being accidentally locked inside a guarded area.

- Provides enhanced safety key function.
- Provides a unique link to mGard range.
- Only 1 Extracted key adaptor can be fitted in a configuration.

proLock - Safety Key Adaptor

SK proLock - Safety Key Adaptor

The proLock - Adaptor for safety ensures that the door cannot be opened until the key has been turned, and the machine/process cannot be restarted without returning the key(s).

- Provides a safety key function.
- Provides a unique link to mGard range.
- Up to 10 key adaptors in one configuration.

proLock - Access Key Adaptor

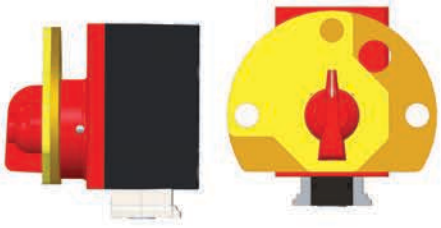
AK **proLock - Access Key Adaptor**

The proLock Adaptor for Access is ideally suited for authorised access only, or linked access to other machinery. It ensures a specific sequence or operation and can be stacked or combined with other adaptors.

- Provides Access key function.
- Provides a unique link to the mGard range.
- Up to 10 key adaptors in one configuration.

Dual Lock-Out Padlock Adaptor

LT



This unit is equipped with two padlock positions for use as a voluntary lock-out facility.

- Provides a link with other lock-out tag-out safety procedures
- Accommodates one padlock with 8mm diameter shakles
- Enables quick and easy access

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- Provides Access key function.
- Provides a unique link to the mGard range.
- Up to 10 key adaptors in one configuration.

Single Lock-Out Padlock Adaptor

LO

Provides padlocking only in one position.

- Provides a link with other lock-out tag-out safety procedures
- Accomodates up to 5 padlocks with 7.5mm diameter shackles
- Facilitates enhanced supervisor security

Dual Lock-Out Padlock Adaptor

LT

This unit is equipped with two padlock positions for use as a voluntary lock-out facility.

- Provides a link with other lock-out tag-out safety procedures
- Accommodates one padlock with 8mm diameter shakles
- Enables quick and easy access

proFoot

FOOT

To terminate all non-switch configurations.

- Secures unit firmly to mounting surface
- Removable to allow for modification
- For use in trapped key solutions.
- Seals from dust ingress.

Electrical Switching/Locking

Base units are the electromechanical elements of the heavy duty modular amGardpro range that interface with safety relays and PLC's providing controlled access to machinery or a guarded area. Tested to over 1 million operations, these units contain dual channel safety circuitry making them suitable for use in applications up to SIL3 (EN/IEC 62061) Category 4 and PLe (ENISO 13849-1).

proStop - Non Solenoid Safety Switch Body

ST proStop

available

The proStop - non solenoid safety switch is ideal for quick access to machines with no or short run-down cycles.

- LED indicators for status identification
- To be used with safety relay and/or safety PLC control systems.
- European, Canadian and North American Approvals

Product Types

Control	Ref No
24V AC/DC	ST401
110V AC	ST101
230V AC	ST201

proLok and proLok+ - Solenoid Controlled Body

SL proLok

SR proLok - Releasing version

available

The proLok solenoid controlled body is used to manage activities by means of a solenoid control element. There are several versions of this unit.

The proLok+ extended solenoid controlled body is used to manage activities by means of a solenoid contol element. There are three basic types, Standard, Power to Lock and ASi. It may be used to include the use of pushbuttons, selector switches, lamps, E-Stops and/or Magnetic/RFID sensors within one enclosure.

proLok & proLok+ - Standard
- LED indicators for status identification.
- Ideal for machines with run-down cycles.
- Split voltage available on request.
- To be used with safety relay and/or safety PLC control systems.

proLok & proLok+ - Power to Lock
- LED indicators for status identification.
- Split voltage available on request.
- To be used with safety relay and/or safety PLC control systems.

proLok & proLok+- AS interface
- Ideal for machines with run-down cycles
- LED indicators for status identification
- To be used with a safety relay and/or safety PLC control systems.

proLok & proLok+- Un-Monitored Solenoid
- LED indicators for status identification
- To be used with safety relay and/or safety PLC control systems.

LL proLok+

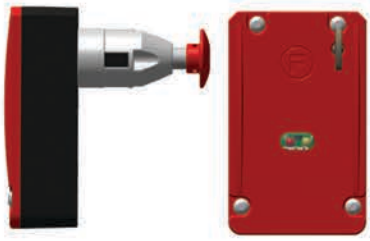
LR proLok+ - Releasing version

Product Types

	proLok	proLok+
Control / Solenoid - Standard	Ref No	Ref No
24V AC/DC / 24V AC/DC	SL411	LL411
110V AC / 110V AC	SL111	LL111
230V AC / 230V AC	SL211	LL211
Control / Solenoid - Releasing	Ref No	Ref No
24V AC/DC / 24V AC/DC	SR411	LR411
110V AC / 110V AC	SR111	LR111
230V AC / 230V AC	SR211	LR211
Control / Solenoid - Pwr to Lock	Ref No	Ref No
24V AC/DC / 24V AC/DC	SL461	LL461
110V AC / 110V AC	SL161	LL161
Pwr to Lock - Releasing	Ref No	Ref No
24V AC/DC / 24V AC/DC	SR461	LR461
110V AC / 110V AC	SR161	LR161
Asi	Ref No	Ref No
24V AC/DC / 24V AC/DC	SL811	LL811
ASi - Releasing	Ref No	Ref No
24V AC/DC / 24V AC/DC	SR811	LR811
Un-Monitored Solenoid	Ref No	Ref No
24V AC/DC / 24V AC/DC	SL416	LL416
110V AC / 110V AC	SL116	LL116
230V AC / 230V AC	SL216	LL216
Un-Monitored Solenoid Releasing		Ref No
24V AC/DC / 24V AC/DC		LR416
110V AC / 110V AC		LR116
230V AC / 230V AC		LR216
Individual Safety Circuits Releasing	Ref No	Ref No
24V AC/DC / 24V AC/DC	SR468	LR468
110V AC / 110V AC	SR168	LR168
Power to Lock	Ref No	Ref No
24V AC/DC / 24V AC/DC	SL468	LL468
110V AC / 110V AC	SL168	LL168

proLokIR and proLokIR+ - Solenoid controlled body with Escape Release

SE proLokIR



These units are equipped with escape release

proLokIR & proLokIR+ - Standard
- LED indicators for status identification.
- Ideal for machines with run-down cycles.
- To be used with safety relay and/or safety PLC control systems.
- On activation of escape release, the safety contacts are broken.

proLokIR & proLokIR+ - AS interface
- Ideal for machines with run-down cycles.
- LED indicators for status identification.
- To be used with safety relay and/or safety PLC control systems.
- For use in AS-i Safe environments
- On activation of escape release the safety contacts are broken.

Product Types

	proLokIR	proLokIR+
Control / Solenoid - Standard	Ref No	Ref No
24V AC/DC / 24V AC/DC	SE411	LE411
110V AC / 110V AC	SE111	LE111
230V AC / 230V AC	SE211	LE211
Asi	Ref No	Ref No
24V AC/DC / 24V AC/DC	SE811	LE811

proLokIR+ - Solenoid controlled body with Escape Release

LE proLokIR+

These units are equipped with escape release

proLok & proLokIR+ - Individual
- Ideal for machines with run-down cycles.
- LED indicators for status identification.
- To be used with safety relay and/or safety PLC control systems.
- On activation of escape release, the safety contacts are broken.
- Solenoid monitored by 1 x NC volt free contact and 1 x NO contact (input shared with head).
- Head monitored by 1 x NC volt free and 1 x NO contact input shared with solenoid.

Product Types — proLokIR proLokIR+

Individual	Ref No	Ref No
24V AC/DC / 24V AC/DC	SE418	LE418
110V AC / 110V AC	SE118	LE118
Individual Power to Lock	**Ref No**	**Ref No**
24V AC/DC / 24V AC/DC	SE468	LE468
110V AC / 110V AC	SE168	LE168

Explosion Protected Safety Switch Body

STOPEX ATEX certified
STOPUX UL/CSA certified

STOPEX: ATEX certified product. Heavy duty explosion protected safety gate switch. Suitable for zone 1 & 2 environments.

STOPUX : UL / CSA certified product. Heavy duty explosion protected safety gate switch. Suitable for zone 1 & 2 environments.

Product Types

	Ref No
STOPEX	EX401
STOPUX	UX401

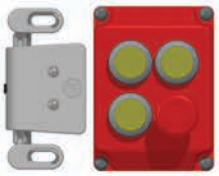
Option PODs

*pro*Option Pod module is used to either to add to an amGard*pro* unit, or use as a standalone product. It may be used to include the use of pushbuttons, selector switches, lamps, E-Stops, and/or Magnetic/RFID sensors within one enclosure. Alternatively, it can be used to house a keyswitch, controlled using a standard Fortress lock and key arrangement.

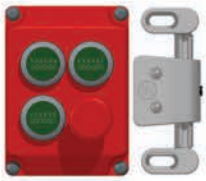
proOption Pod - Lamps/Pushbuttons/Sensors

B0 Stand Alone Pod
B1 Pod to proStop Body
B2 Pod to proLok Body
L0 Pod to proLok+ Body

B.....C Coded Magnet - Left
B.....D Coded Magnet - Right



B.....S RFID - Left
B.....T RFID - Right



Lamp Option pod is an ideal complimentary module where multiple interlocks are used to enhance identification of status. Pushbutton Option pod is ideal for use as an emergency stop or request to start/stop.

Lamps
- Easy, clear identification of machine status.
- Can be configured up to three lamps.

Pushbuttons
- Request start/stop at the gate.
- Can be configured up to three pushbuttons.
- Illuminated pushbuttons.
- 2 Position selector switch.
- eStop.
  - 2 NC Safety contacts
  - Twist or Pull
  - Illuminated option for twist

Product Types — proOption Pod

Lamps/Pushbuttons Option Pod	Ref No
Stand Alone Pod	B0.....
Fit to proStop Body	B1.....
Fit to proLok Body	B2.....
Fit to proLok+ Body	L0.....

proOption Pod - ASi

If you require e-stops, push buttons, coded magnet switch or key switch options pods to be ASi enabled you must select one of the options below.

ASi	Ref No
ASi Option pod with control only	BA1
ASi Option pod with Safey only	BA2
ASi Option pod with 1 safety 1 control	BA3
ASi Option pod with 2 safety only	BA4
ASi Option pod with 1 control 2 safety	BA5
ASi Option pod with 3 safety only	BA6
ASi Option pod wiht 1 control 3 safety	BA7

proOption Pod - Sensors

To provide a contactless means of veryifying the door open/closed position. This may be used as the primary door sensor when a stand alone option pod is used, or as means of adding a secondary (coded) door sensor to a full door interlock product.

Sensors	Ref No
Coded Magnet - Left hand	B.....C
Coded Magnet - Right hand	B.....D
RFID - Left hand	B.....S
RFID - Right hand	B.....T

proOption Pod - Key Switch

BK0.	Stand Alone Pod
BK1.	Fit to proStop Body
BK2.	Fit to proLok Body

The removal of the key operates a set of switches. These can be used for a variety of functions.

- Requesting machine stop at the end of a rundown cycle.
- Enabling teach mode activation.
- Preventing inadvertent re-start.
- Contains 2NC/2NO contact arrangement.
- Switch rating 3A.
- Can be used as a 'stand alone' key switch.

Product Types	proOption Pod
Key Switch Option Pod	Ref No
Stand Alone Pod	BK0.
Fit to proStop Body	BK1.
Fit to proLok Body	BK2.

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

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.

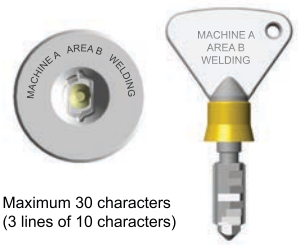
Dustcover Options

CLDC Stainless Steel Dustcover

PLDC Stainless Steel Padlockable Dustcover

LOS3 Lock-Out Scissor Hasp
LOS3C Lock-Out Scissor Hasp c/w Cable

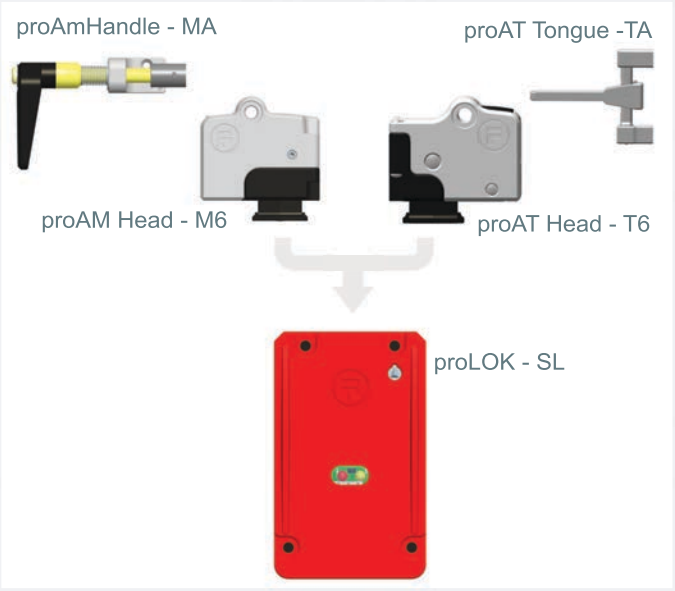
Key and lock engravings



Maximum 30 characters
(3 lines of 10 characters)

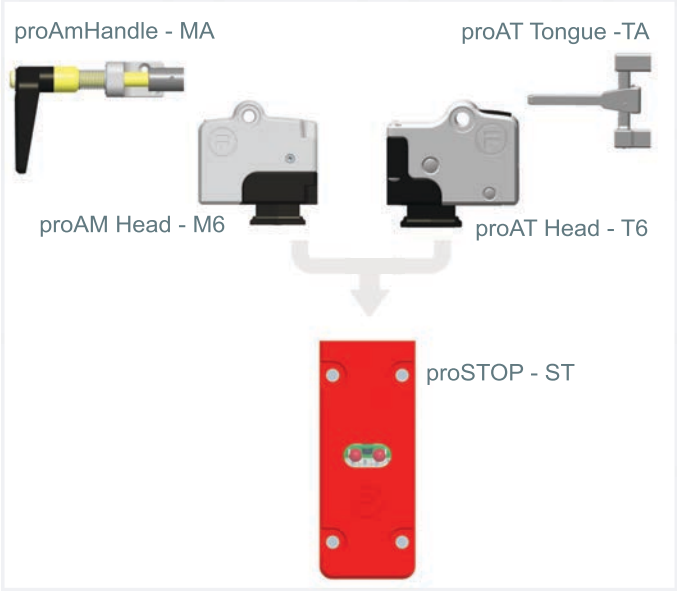
MAM6SL401 & TAT6SL401

The solenoid controlled safety switch body (proLOK) can be equipped with two different head types, creating door/hatch lock configurations that restrict access to the safeguarded area until it is safe to enter.



MAM6ST401 & TAT6ST401

The safety switch body (proSTOP) can be equipped with two different head types. These configurations select machine stop and detect the position of doors/hatches that gives access to the safeguarded area or machine.



amGardpro Technical Specification

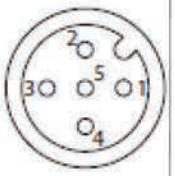
Housing Materials	Zinc Alloy to BSEN12844 & Stainless Steel
Paint Finishes	Glass powder coat on passivated base material
Ingress Protection	IP67
Mechanical Life	>1,000,000 Switching Cycles
Performance Level	PLe
B10d	5,000,000
Ambient Temperature	-5^{0}C to +40^{0}C / 60^{0}C
Switches Conformance	DIN VDE 0060 Part 206 & IEC 947-5-1
Maximum Frequency of Ops	7,200 per hour
Connector Type	Spring Activated Vibration Proof Block

Switching Specifications

Switching Principal	Positive Break (safety circuits)
Switch Circuit Current	3A
Minimum Switch Current	1mA at 5 VDC
Maximum Switching Voltage	230V AC Max
Utilisation Category	AC 15 or DC13
Switching Contact Element	4NC/2NO (proLOK), 2NC/1NO (proSTOP)
Control Voltage	24V AC/DC, 110V AC or 230V AC
Insulating Resistance	20M 0hm
Insulating Voltage	2500V AC
Solenoid Power Rating	12W (current at Nominal 24V DC = 500mA. Quasient current = 350mA)
Solenoid Rating (Duty Cycle)	100%
Solenoid Voltage	24V AC/DC, 110V AC and 230V AC
Solenoid Voltage Tolerance	90% to 110% of nominal
Cable Size	26 - 14 AWG

Quick Disconnect Connector Options

D1



No. Pins	5
Max Voltage	300v
Connector	M12

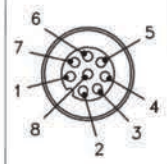
1	Brown	
2	White	
3	Blue	
4	Black	
5	Grey	

D2

No. Pins	12
Max Voltage	300v
Connector	UN2

1	Orange	
2	Blue	
3	White/Black	
4	Red/Black	
5	Green/Black	
6	Orange/Black	
7	Blue/Black	
8	Black/White	
9	Green/Yellow	
10	Red	
11	White	
12	Black	

D3



No. Pins	8
Max Voltage	60v
Connector	M12

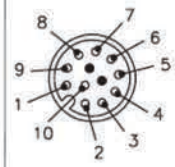
1	White	
2	Brown	
3	Green	
4	Yellow	
5	Grey	
6	Pink	
7	Blue	
8	Red	

D6

No. Pins	14
Max Voltage	30v
Connector	M16

A	Brown	
C	Red/Blue	
E	Black	
G	Pink	
J	Green	
L	Blue	
M	Orange	
N	Grey/Brown	
O	Violet	
P	Red	
R	White	
S	Grey	
T	Yellow	
U	Tan	

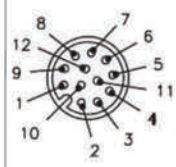
D7



No. Pins	10
Max Voltage	60v
Connector	M12

1	White	
2	Brown	
3	Green	
4	Yellow	
5	Grey	
6	Pink	
7	Blue	
8	Red	
9	Orange	
10	Tan	

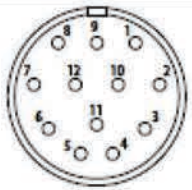
D8



No. Pins	12
Max Voltage	60v
Connector	M12

1	White	
2	Brown	
3	Green	
4	Yellow	
5	Grey	
6	Pink	
7	Blue	
8	Red	
9	Orange	
10	Tan	
11	Black	
12	Violet	

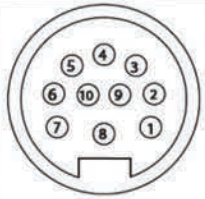
D9



No. Pins	12
Max Voltage	300v
Connector	M23

1	Brown	
2	Brown/White	
3	Blue	
4	White	
5	Green	
6	Yellow	
7	Grey	
8	Pink	
9	Red	
10	Black	
11	Violet	
12	Green/Yellow	

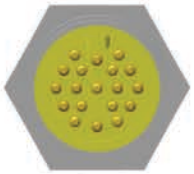
E3



No. Pins	10
Max Voltage	300v
Connector	UN2

1	Orange	
2	Blue	
3	White/Black	
4	Red/Black	
5	Green/Black	
6	Orange/Black	
7	Red	
8	Green/Yellow	
9	Black	
10	White	

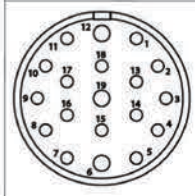
E4



No. Pins	19
Max Voltage	300v
Connector	UN2

1	Violet	
2	Red	
3	Grey	
4	Red/Blue	
5	Blue	
6	Green	
7	Brown	
8	White/Green	
9	White/Yellow	
10	White/Grey	
11	Black	
12	Green/Yellow	
13	Yellow/Brown	
14	Brown/Green	
15	White	
16	Yellow	
17	Pink	
18	Grey/Brown	
19	Grey/Pink	

F2



No. Pins	19
Max Voltage	300v
Connector	M23

1	Violet	
2	Red	
3	Grey	
4	Red/Blue	
5	Green	
6	Blue	
7	Grey/Pink	
8	White/Green	
9	White/Yellow	
10	White/Grey	
11	Black	
12	Green/Yellow	
13	Yellow/Brown	
14	Brown/Green	
15	White	
16	Yellow	
17	Pink	
18	Grey/Brown	
19	Brown	

Fortress Interlocks

amGard pro **Range Card**

Actuators

AM Handle

MA*

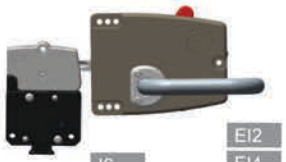
AT Tongue

TA*

Slidebar

TI*
TN*
TS*

All in 1 Head & Handle Combination



I6
I7
EI2
EI4

EH / EN Handle

EN4

EH2
EH4

Head Modules

Cap

C6

AM Head

M6
M7
M8

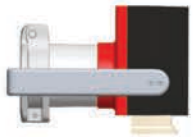
AT Head

T6
T7
T8

Adaptors

Extracted Key Adaptor

EK**



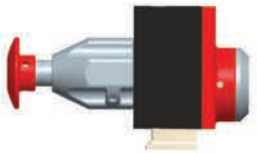
Safety Key Adaptor

SK**

Access Key Adaptor

AK**

Internal Release



R1	R6	RW
R2	R7	RX
R3	R8	RY
R4	R9	RZ

Electrical Switching / Locking

Extended Solenoid Controlled Switch Body

LL***
LR***

Non Solenoid Switch Body

ST***

Solenoid Controlled Switch Body

SL***
SR***

Solenoid Controlled Switch Body with Internal Release

SE***

LE***

Explosion Proof Safety Switch Body

EX
UX

Foot

FT0

Option Pods

RFID Pod

B0*
B1*
B2*

Key Switch Pod

BK**

Pushbutton / Lamp Pod

B0****
B1****
B2****

Accessories

AM Lock-Out Clip

AML

AT Lock-Out Clip

ATL

Drop Down Lock-Out

DD7

Fortress Interlocks

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Total Access & Control

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