WIJ BESCHERMEN
uw meest belangrijke kapitaal
UW MEDEWERKERS

Fortress Interlocks

am Gard pro

Protecting People, Protecting Productivity
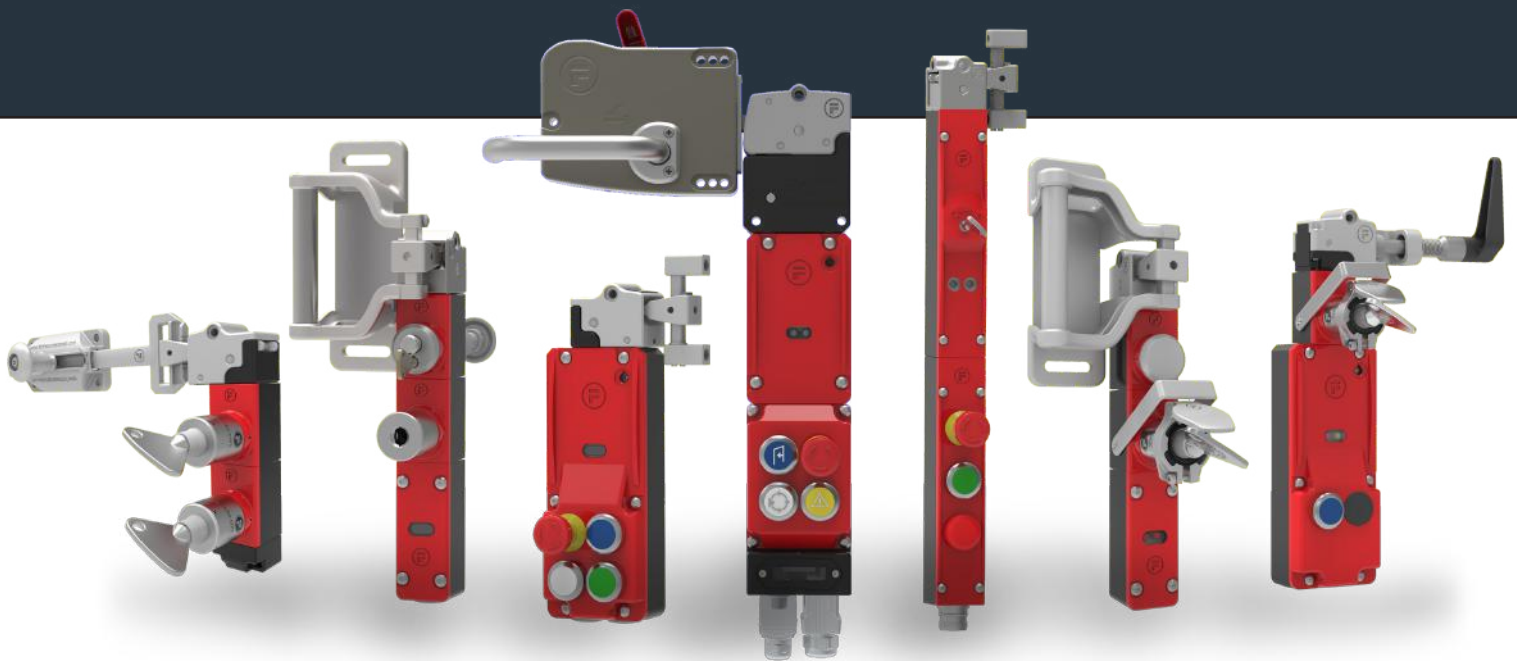
am Gard pro

Modular Gate Switches for Safeguarding Hazardous Machinery

Index

amGardpro "The Interlock of Choice"

The Company

"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.

The Concept

amGard 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 62061), Category 4 and PLe (EN/ISO 13849-1).

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, E-stops 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 amGard*pro* configurations, resulting in the most flexible safety interlock solution available for today's industrial environment.

Actuators

Actuators
Handle Actuators
Hinged Handle Actuators
Tongue Actuator
Slimline 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

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 Lok Bodies
Extended body Solenoid Controlled Lok Bodies
Slimline Solenoid Controlled Lok Bodies
Explosion Proof Switch Bodies
Foot (to terminate mechanical lock)
PROFINET and PROFIsafe versions available
Ethernet/IP CIP Safety versions available
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
Slimline Pushbutton Option Pod
PROFINET and PROFIsafe versions available
Ethernet/IP CIP Safety versions available
AS-interface versions available
*European, Canadian and North American approvals*

The Concept

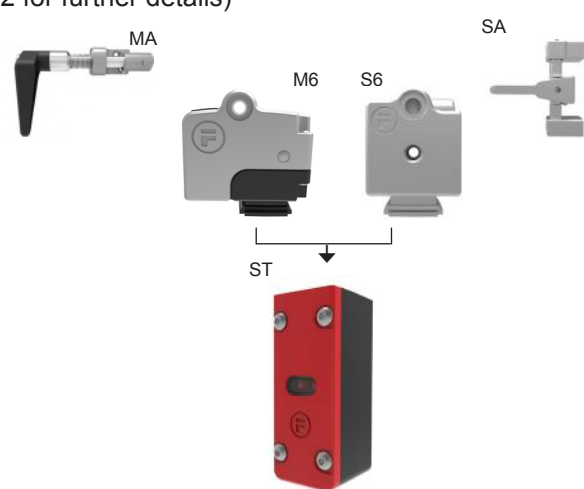## amGard pro Technical Specifications

MA2M6SL411 & TA4T6SL411 & EI4I6SR411

The solenoid controlled safety switch body (*pro*LOK) can be equipped with four different head types, creating door/hatch lock configurations that restrict access to the safeguarded area until it is safe to enter. (Please see amGard*pro* Range Card on page 22 for further details)

MA
M6
T6
EI4I6
TA
SL
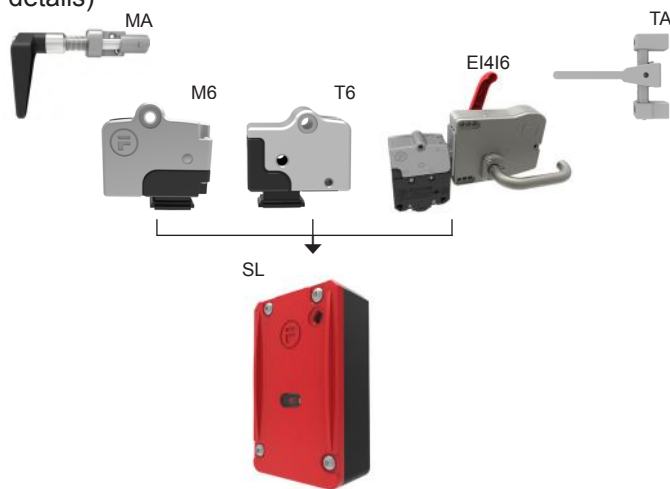
MA2M6ST401 & SA4S6ST401

The safety switch body (*pro*STOP) can be equipped with four different head types. These configurations select machine stop and detect the position of doors/hatches that give access to the safeguarded area or machine. (Please see amGard*pro* Range Card on page 22 for further details)

MA
M6
S6
SA
ST

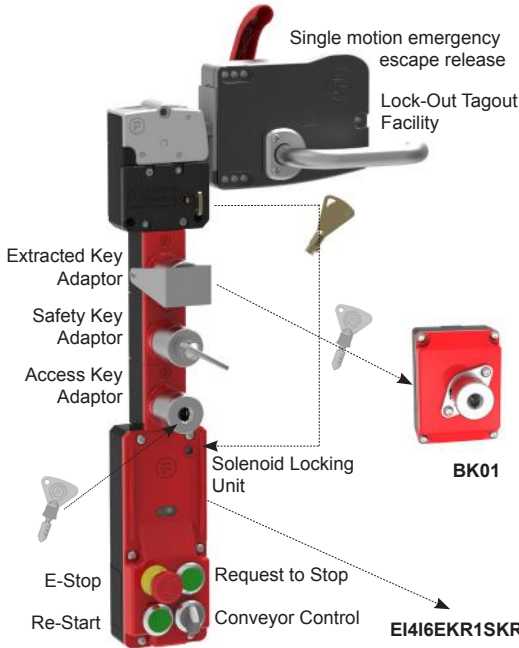| amGard*pro* Technical Specification	
Housing Materials	Zinc Alloy to BSEN12844 & Stainless Steel to BS3146-2 ANC4B
Paint Finishes	Glass powder coat on passivated base material
Ingress Protection	IP65 + IP67
Mechanical Life	1,000,000 Switching Cycles
Performance Level	PLe
B10d	5,000,000
Ambient Temperature	-5°C to +40°C / 60°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

amGard*pro* Switching Specifications	
Switching Principal	Positive Break (safety circuits)
Switch Circuit Current	3A
Minimum Switch Current	1mA at 5 VDC
Maximum Switch Current	230V AC Max
Utilisation Category	AC15 or DC13
Switching Contact Element	4NC/2NO (*pro*LOK), 2NC/1NO (*pro*STOP)
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)
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

Compliance

amGardpro "The Interlock of Choice"

Single motion emergency escape release

Lock-Out Tagout Facility

Extracted Key Adaptor

Safety Key Adaptor

Access Key Adaptor

Solenoid Locking Unit

BK01

E-Stop

Re-Start

Request to Stop

Conveyor Control

EI4I6EKR1SKR11AKR11LR411L0EGGLN

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 8 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.

EU machinery safety standards are regarded as the most stringent in the world and are adopted via IEC on a global basis. Fortress strive to adhere to such standards from design phase through to final product delivery, so that our customers can have peace of mind that their product or system selection from Fortress complies with the very latest machinery safety standards, regardless of where in the world the equipment is deployed.

Our amGardpro range complies with the EU Machinery Directive 2006/42/EC and the following standards:

• EN ISO 13849-1 Safety of Machinery - Safety related parts of control systems

• EN ISO 14119 Safety of Machinery - Interlocking devices associated with guards - Principles for design and selection

These products also carry TÜV SÜD NTRL Approval for U.S.A / Canada.
They comply with the following standards:

• UL508:1999R

• CAN/CSA 22.2 No 14

Extensive testing of all of our products is inherent in our design for industrial applications. In addition, all of the equipment within the amGardpro range has been independently assessed by TÜV SÜD to achieve Cat. 4, PLe.

We have several functional safety experts within our global applications team who are always on hand to offer advice on product selection, application and standards compliance.

Fortress - "The interlock of choice"

Our Competency

amGard pro Application Examples

Fortress Interlocks core competency is the design of safety interlock systems and products which are suitable for use in a wide cross section of industries and applications.

Our application expertise covers the following industrial sectors: Manufacturing, Power, Process and Transport.

The following section contains a selection of typical applications for Fortress amGard*pro* products.

amGard*pro* Application Example 1

This example shows the safeguarding of robot areas in which amGardpro 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.

MA2M6SKL11AKL11FT0   TN2T6SKL11AKL11FT0   NO2C6SKL12LL411L0WB00N
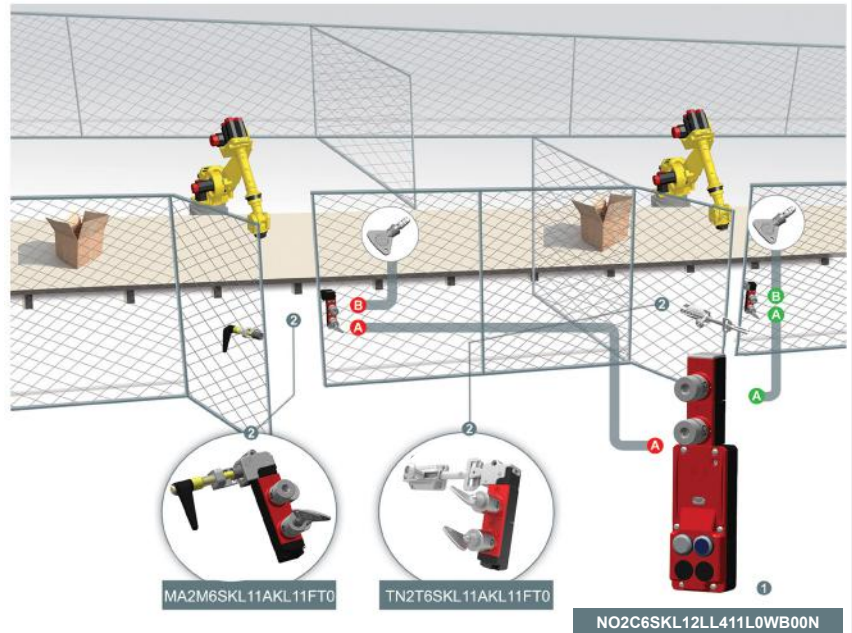
amGard*pro* Application Example 2

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 then have to be manually reset before the machine can re-start.
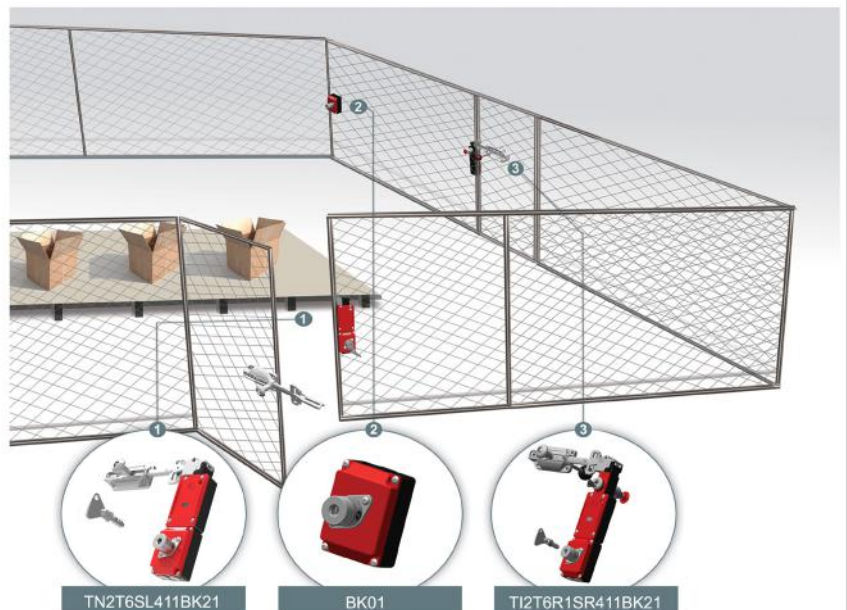
TN2T6SL411BK21   BK01   TI2T6R1SR411BK21

Our Competency

Application Requirement

The metal die stamping presses in an automotive manufacturing plant are used to form various automotive body parts that will later be welded together to 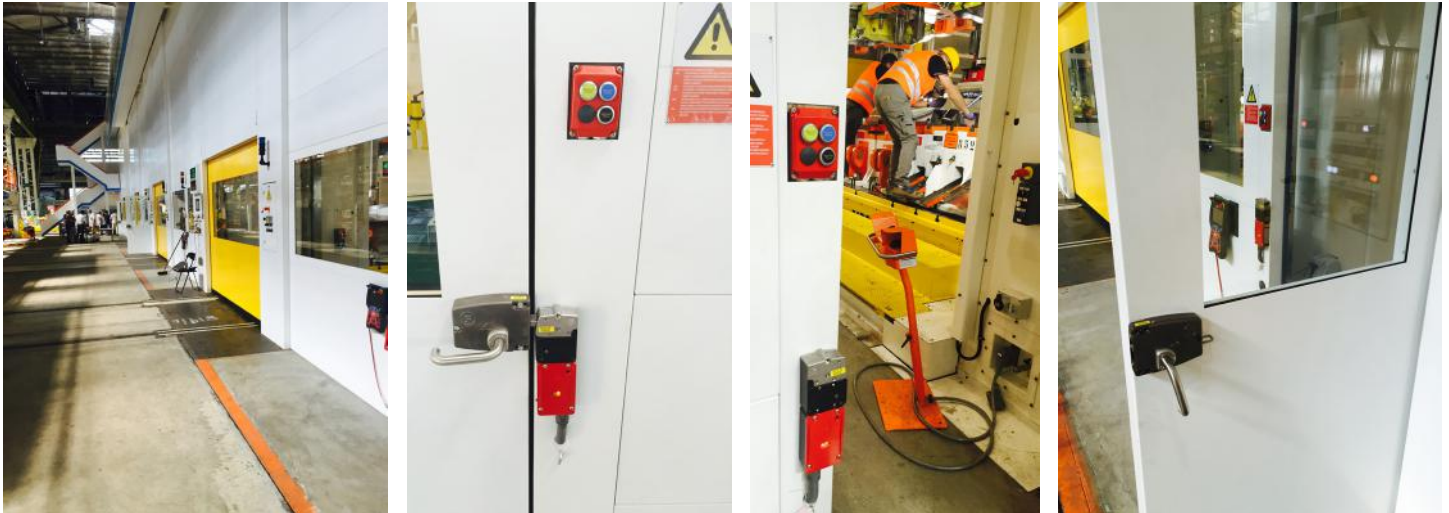assemble the finished vehicle. These presses are used to create body parts of a series of different models therefore personnel may require entry in order to alter the current stamping operation. However, due to the series of hazards that arise from such a dangerous process, operators must only be able to gain entry once all moving parts of the presses have come to a complete stop.

System Schematic

EI4A6SR411

B0YB0KN

Fortress Solution

EI4A6SR411
Solenoid Gate Switch with Escape Handle
B0YB0KN
Machine Control Push Button Station

Sequence of Operation

To gain entry into any of the press and die cells, an operator must request entry by pressing the yellow pushbutton on the machine control station sending a signal to the machine's control system, bringing that specific cell to a controlled rest. When it is safe, a signal is sent from the machine control system to energise the solenoid gate switch enabling the handle to be operated in order to unlock the door. The machine will not restart until the door is closed and an operator has pressed the illuminated blue pushbutton to reset the machine. In an emergency the red escape handle can be used as an internal release to open the locked cell from the inside.

Our Competency

Gard Applications **Brick Press**

Application Requirement

A brick press is used in the forming process within a brick manufacturing plant. The clay material is placed in a die and then compacted with a steel plunger set at a desired pressure. Operators may need to gain access to the brick press for scheduled cleaning, or to remove pieces of lodged clay that are holding up the production process. However, access into the machine should not be possible until power to the machine has been isolated. Therefore, each door is fitted with a safety gate switch. Sliding doors are fitted with tongue operated gate switches and hinged doors are fitted with handle operated gate switches.

System Schematic

MA2M6ST401
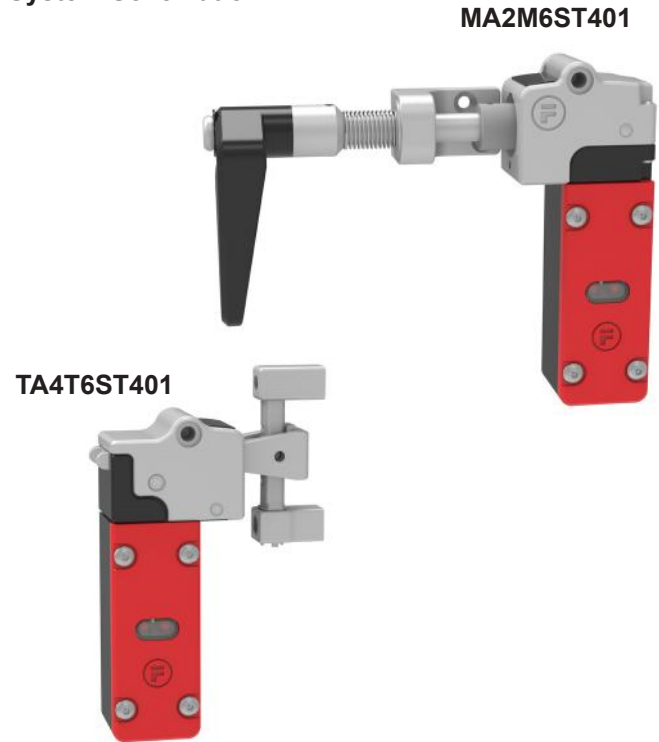
TA4T6ST401

Fortress Solution
MA2M6ST401
Handle Operated Safety Switch
TA4T6ST401
Tongue Operated Safety Switch

Sequence of Operation

To gain entry into a sliding door, an operator simply opens the door which disengages the tongue from the interlocks head, isolating power to the machine. Whereas, to gain entry into a hinged door requires an operator to pull and rotate the latching handle 90 degrees clockwise before the door can be unlocked. The handle's latching feature is compensate against guard doors that are located to the actual press itself that is subject to high vibration.

Our Competency

Gard **Applications** **Automated Beverage Rinser and Filler**
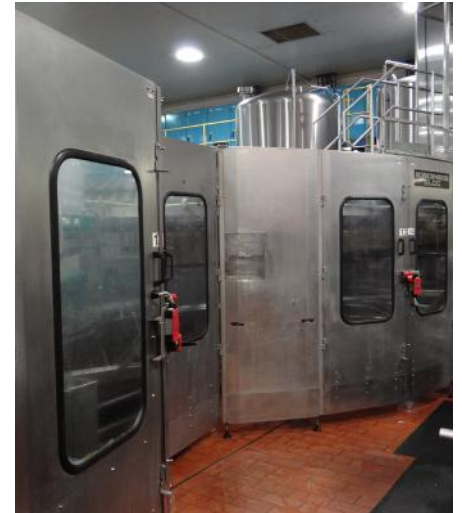
Application Requirement

Beverage bottling plants use automated rinser and filler machines to inject water into each plastic bottle as it moves down the production line to rinse out any unwanted material or bacteria before the filler machine fills the empty bottle with the freshly produced beverage. To comply with global safety and hygiene regulations, such machinery is protected with an interlocked guard to limit the possibility of external contamination. However, maintenance personnel may require access to the machine in the event of a blockage, but access can only be achieved once the machine has come to the end of its current operating cycle.

System Schematic

MA2M6SL411

Fortress Solution

MA2M6SL411

Handle Operated Solenoid Gate Switch

Sequence of Operation

In the event of a machine breakdown or minor maintenance task, a maintenance engineer needs to request entry using a nearby machine control panel, sending a signal to the machine's control system, bringing the machine to a controlled rest. Once the automated rinser and filler has finished its current operating cycle, a signal is sent to energise the solenoid, enabling the handle actuator to be operated. Maintenance personnel can now gain entry into the required section on the filling line by rotating the handle actuator 90 degrees clockwise to unlock the guard door.

Fortress Interlocks

Our Competency

amGard pro Applications

Beverage Can Bodymaker

Application Requirement

Beverage can manufacturers use a specialist press machine called a bodymaker in order to produce the finished beverage can bodies in rapid succession. Unfinished beverage cans are fed into the machine and pressed to create the final shape of the beverage can. Operators may need to gain access into the bodymaker if a misaligned beverage can were to cause the machine to breakdown. However as each can is pressed every $1/5^{th}$ of a second, access into the machine should only be achieved once power to the machine has been isolated and all moving parts have come to a controlled stop.

System Schematic

TA2T6SL411

Fortress Solution
TA2T6SL411
Left Handed Tongue Operated Solenoid Switch

Sequence of Operation
To gain entry into one of the maintenance hatches on the bodymaker, an operator must request entry using a nearby control panel. This sends a signal to the machine's control panel, isolating power to the machine and bringing all moving parts to a complete stop. Once it is safe to enter, the machine's control system will energise the solenoid enabling the tongue actuator to be removed from the interlocks head which enables the hatch door to be opened.

Our Competency

amGard pro Applications — Combined Palletiser & Stretch Wrapper

Application Requirement

The combined Palletiser & Stretch Wrapper in a food manufacturing plant is an automated 'end of line' process of stacking cases of finished goods onto pallets and wrapping them in a layer of protective film, ready for final shipment. Personnel may require entry into the guarded area in the event of a machine breakdown, but should only be able to gain access once the machine has finished its cycle. Therefore, such machinery is extensively guarded and interlocked to ensure that access inside the guarded area can only be achieved once power has been isolated and all moving parts have come to a complete stop.

System Schematic

MA4M6EKL2LL411L0B000N

Fortress Solution

MA4M6EKL2LL411L0B000N
Handle Operated Solenoid Gate Switch

Sequence of Operation

To gain entry into the machine, an operator must request entry by pressing the blue pushbutton, sending a signal to the machine's control system to bring the machine to the end of its current cycle. When it is safe to enter, the blue pushbutton will illuminate and flash intermittently, enabling an operator to turn and remove the extracted key before the door can be opened. This key must remain on the operator's person while they remain inside the danger zone to avoid inadvertent machine restart.

Our Competency

Gard **Applications**   **Hot Rolling Mill - Steel Industry**

Application Requirement

A hot rolling mill in a steel strip plant is the process in which semi-finished steel slabs, that are nearly at their melting point, are passed through a series of rolls to increase the length and reduce the thickness so that it forms a steel strip before coiling up the lengthened steel strip. There are six access doors into the hot rolling mill that might be accessed in the event of a machine breakdown therefore, each door has been fitted with a solenoid controlled safety gate switch to prevent access into the area until all moving parts of the mill have come to a complete stop.

System Schematic

TA2T6R7LR416L0E3YKN

Fortress Solution

TA2T6R7LR416L0E3YKN

Tongue Operated Solenoid Gate Switch with an Escape Release Pushbutton

Sequence of Operation

In order for an operator to gain entry into the hot rolling mill area, they must request entry using the black pushbutton which sends a signal to the machine's control system, bringing the line to a controlled stop. Once it is safe to enter, a signal is sent to energise the solenoid and the green lamp is illuminated, indicating to the operator that access inside the area can now be achieved. In the unlikely event that an operator finds themselves trapped on the inside of the area, they can gain immediate exit by pressing the red escape release pushbutton.

Fortress Interlocks

Our Competency

amGard pro Applications — Mixing Vessel
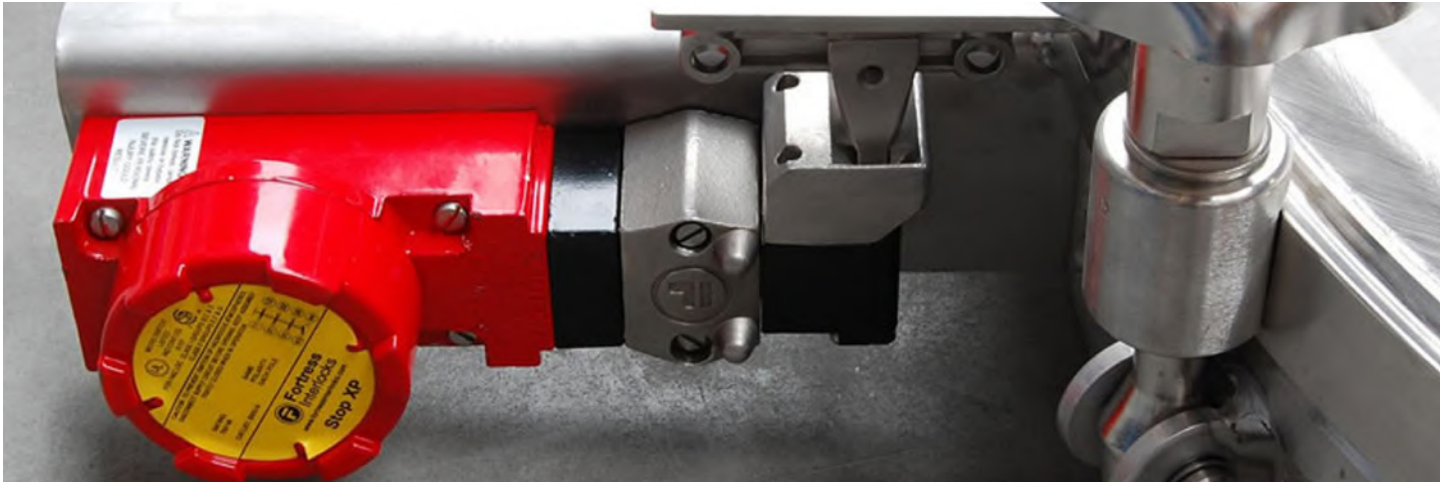
Application Requirement

Mixing vessels in chemical processing plants are used to house the chemical compounds that have been mixed together to form the finished product. All vessels are air-tight to ensure that no outside contaminants can affect the chemical reaction that is taking place within the mixing vessels. There are a series of blades on the inside of the mixer that operate at incredibly fast speeds to blend the chemicals together. Therefore, such chemical processing machinery is extensively interlocked to ensure that cleaning and/or maintenance personnel can only gain entry to the vessels once power to the machine has been isolated and the chemicals being processed have been removed from the mixing vessels.

System Schematic
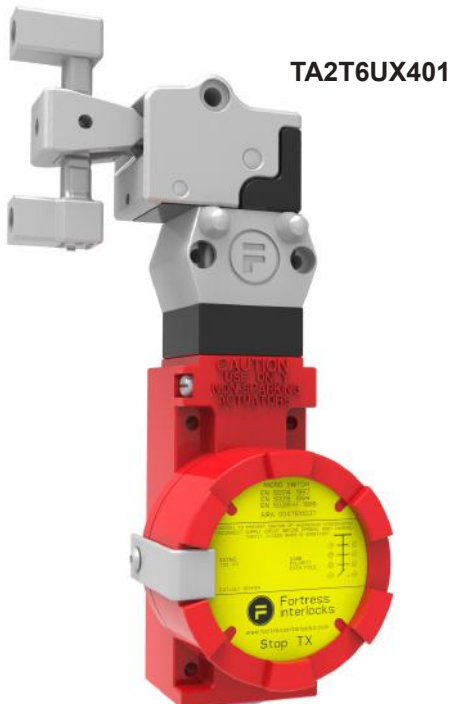
TA2T6UX401

Fortress Solution
TA2T6UX401
Explosion Proof Safety Switch

Sequence of Operation

In order to gain entry to the mixing vessels, an operator must isolate the power using a nearby control panel. The operator must then unscrew all the air tight fixings holding the vessels hatch door closed. Once all of these fixings are removed, the operator can gain entry by using the handle to open the mixing vessels hatch door. Upon opening the hatch door, this disengages the tongue from the locking mechanism on the 'TA2T6UX401' explosion proof safety switch to ensure that power to the machine cannot be restarted.

Fortress Interlocks

Our Competency

amGard pro Applications

Dehacking Line

Application Requirement

Setting machines pile dried bricks onto a kiln car in a selected setting pattern before conveying the pile onto the Dehacker which unloads the bricks before packing and palletising ready for final shipment. Due to the dangerous nature of this process, the following safety system prevents access to operators until power to the machine has been isolated and the machines cycle has ended. Using the Profi-enabled device makes installation much simpler as the four core Profi-cables significantly reduces wiring while increasing real-time diagostic capability and maintaining the safety integrity.

System Schematic

EI2I6EKR2SR411N2EY0BNPF08

Pin Out

Power	Data
1, 5, 4, 2, 3	1, 2, 4, 3
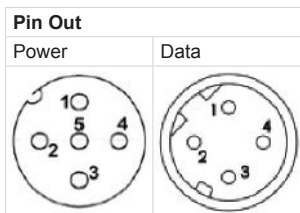
Fortress Solution
EI2I6EKR2SR411N2EY0BNPF08
Left Handed Handle Operated Profi-enabled Solenoid Switch with Escape Release

Sequence of Operation

To gain access to the Dehacker, an operator must request entry by pressing the yellow illuminated pushbutton marked 'Access'. This sends a signal to the machine's control system bringing the machine to a controlled rest. Once the machine has finished its cycle, a signal is sent from the control system, energising the solenoid and enabling an operator to remove the extracted key before access into the machine can be achieved. This safety key must remain upon the operator's person while they remain inside the danger zone. Communication control is transmitted via the PROFINET network and the safety is managed via the PROFIsafe network. If an operator should find themselves locked on the inside of the machine for any unforseen circumstance, the red internal escape release handle can be used to immediately isolate power to the machine and grants instant exit from the cell.

Configurations Part 1

amGardpro is a modular design that enables the user to configure a wide range of safety gate switches to exactly meet the specific application. The products can therefore be used to satisfy a range of machine guarding situations. You simply select the actuator and head mechanism and then add in key adaptors and/or control units, as needed.

Actuator and Head

+

+

Common Configurations

MA2M6SL411
Handle Operated
Solenoid Switch

TA2T6ST401
Non Solenoid
Tongue Switch
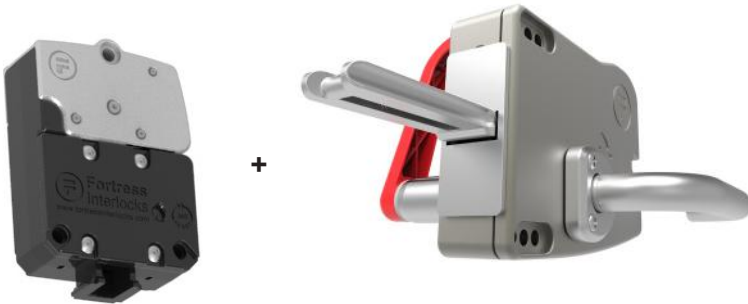
Key Adaptors

+

+

Control Unit

EH2T6EKL1ST401
Handle Operated
Tongue Switch with
Safety Key

EH2T6LL411L0RGRGN
Handle Operated
Solenoid Switch with
Pushbutton Control

Configurations Part 2

amGard pro

| | Approvals Ethernet/IP - CIP | EtherNet/IP | ODVA APPROVAL PENDING | TÜV SÜD APPROVAL PENDING c us |

Communications / Networked Safety Switches

| | Approvals PROFINET & PROFIsafe | PI CERTIFIED PROFIBUS · PROFINET | PROFIsafe | PROFI NET | TÜV SÜD Functional of Safety | TÜV SÜD c us |

What is *pro*Net?

amGard *pro*Net is an addition to the amGard*pro* range
that adds an Ethernet based networking capability to the range. It is designed as an add-on module that replaces, or can be used in addition to, an option pod so that any configurable unit can be converted to communicate over Ethernet. The two supported protocols are:

• 'PROFINET' with the 'PROFIsafe' functional safety extension.
• "Ethernet/IP" with the "CIP Safety" function safety extension

These protocols allow non-safety control functions (lamp outputs, switches, monitor signals) and safety functions (gate switch safety functions, E-stop functions) to be communicated over the same network, using the same connection. It is therefore now possible to create the following types of interlocks with industrial communication built in:

• Solenoid control guard switches with escape release
• Solenoid control guard switches with "safety key" protection
• Solenoid control guard switches with machine control functionality
• Control stations with E-stop included

The following features are built in to *pro*Net units:

• One cable for control and safety communication
• One cable for power – reducing installation time and cost
• 100% diagnostic capability – increasing up time
• Quick connection connections via M12 or 7/8 plug and socket or AIDA standard connectors
• Addressing flexibility either by web interface or dip switches aiding installation and maintainability
• An integrated network switch – 'daisy chain' bus topologies with no additional hardware
• Up to two power connectors – 'daisy chain' power topologies with no additional hardware
• Optional external safety switch connection

Common Configurations

EI2A6SR411N2B0WYNPF15

EI4A7SR411N5GAYUNPF10

MA4M6EKL2SL411N2EY0BNPF10

Configurations Part 3

Eazi-fit Mounting System

Simple System

Fortress new Eazi-fit mounting system is a series of packing and mounting plates to ensure any configured amGard*pro* safety switch can easily and simply be fitted to machine guarding. The configurable plates are a robust design of die cast aluminium and are suitable for both hinged and sliding guards with a choice of colour finishes. The packing and mounting plates are pre-fitted to the interlock when ordered together and the mounting plates can also be ordered separately.

Easy to use Configurator

The online configurator tool provides you with 2D Drawings, 2D and 3D Images and Models together with a part number for ordering purposes. To add our new Eazi-fit mounting system to your configurations visit www.fortressinterlocks.com and select the amGard*pro* configurator.

Eazi-fit Mounting System Benefits

- **Robust Design - 10KN Retention Force (when plate mounted correctly to amGard*pro* Unit)**
- **Configurable**
- **Accommodates most amGard*pro* configurations**
- **Pre-assembled**
- **Handle/tongue packing plates included**
- **Easy to order: Online configurator selects safety interlock and mounting plate to suit**
- **Easy to install: Interlock comes pre-fitted to mounting plate with actuator packing plate**
- **Painted Die Cast Aluminium either black finish or grey finish (to suit guarding finish)**
- **Standard designs for speedy delivery**

Common Configurations

EI2I6EKR2LR411L0E70BNMPB1

TA2T6R1EKR2AKR12SR411MPB1

EH4T6EKL2SL411MPB1

Configurations Part 4

amGard pro Slimline *pro*

What is Slimline *pro*?

amGard*pro* now has two additions to the range which are in a slimline housing - a Solenoid Controlled LOK body and an Option Pod for up to three control or pushbutton elements. Both are compatible with the standard modules within the amGard*pro* range and enable numerous configurations of guard switches for machine guarding applications all within a width of just 40mm. The control elements of the Slimline *pro*Option Pod unit can be prewired with a common power supply to minimise external wiring or supplied with volt free contacts.

Slimline *pro* Benefits

- **Slim profile - ideal for narrow guarding at just 40mm wide.**
- **Sealed to IP65 & IP67**
- **Choice of actuators (handle or tongue)**
- **Internal release option**
- **Keyed override (in event of power failure)**

For more information on the **Slimline *pro*Option Pod** and **Slimline *pro*Lok** units visit our website www.fortressinterlocks.com or request our individual datasheets and installation instructions from your local Fortress rep

Common Configurations

HS1S6ZL411D200

HS1S6R2AKR11ZR411D200

SA4S6SKL21AKL21ZL411Y1EG10ND900

HS1S6ZL411Y1BW00ND600

Fortress Interlocks

amGard*pro* Component Range Card

Protecting People, Protecting Productivity

Actuators

AM Handle
MA*
MI*

AT Tongue
TA*
TK*
SA*

Short Reach — Hinged Handle
HS1

Long Reach — Hinged Handle
HL1

Slidebar
TI*   TF*   SI*   SF*
TS*   TM*   SS*   SN*
TN*   TG*

Handle Actuator
SD2
SD4

All in 1 Head & Handle Combination
EI2   EI4
I6   I7
A6   A7

EN Handle
EN2
EN4

EF Handle
EF2
EF4

EH Handle
EH2
EH4

Head Modules

Cap
C6

AM Head
M6
M7
M8

AT Head
T6
T7
T8

AT Slimline Head
S6

Adaptors

Extracted Key Adaptor
EK**

Safety Key Adaptor
SK**

Access Key Adaptor
AK**

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

Electrical Switching / Locking

Non Solenoid Switch Body
ST***

Explosion Proof Safety Switch Body
EX***
UX***

Solenoid Controlled Switch Body
SL***
SR***

Extended Solenoid Controlled Switch Body
LL***
LR***

Slimline Solenoid Controlled Switch Body
ZL***
ZR***

Solenoid Controlled Switch Body with Internal Release
SE***

Foot
FT0

LE***

Option Pods

RFID Pod
B*****T
B*****S

Key Switch Pod
BK**

Pushbutton / Lamp Pod
B0*****
B1*****
B2*****
B5*****
B6*****
B7*****

Slimline Pushbutton / Lamp Pod
Y0***0N
Y1***0N
W0***0N
W1***0N

proNet Option Pod
N0****NPF**
N2****NPF**
N3****NPF**
N5****NPF**

Accessories

AM Lock-Out Clip
AML

AM Lock-Out Clip
ATL

Drop Down Lock-Out
DD7

Mounting Plates
....MPB1

amGard*pro* Configuration Tool

Also available on our website www.fortressinterlocks.com
as an online configurator

LEARN MORE

amGard pro

Actuators

---

proAM Handle

Part No.	Description
MA	AM Handle

Turning motion holds door closed. Ideal for non locking set ups (i.e. proSTOP devices)

Part No.	Description
MI	AM Handle with Internal Release

Turning motion holds door closed. Internal handle allows user to open door from inside (pushIR may be required depending on application)

proAT Tongue

62.5

Part No.	Description
TA	AT Tongue

High strength and ease of opening makes this the most popular actuator in the amGardpro range.

53.5

Part No.	Description
TK	Short AT Tongue (allows padlocks through the tongue to work as a lock out tag out, but reduces over travel).

Allows padlocks through the tongue to work as a lock out tag out, but reduces over travel

---

proSlidebar Options

Part No.	Description
TN	Slidebar without a spring

Sliding motion holds door closed. With no return spring unit remains in the position it is left in

Part No.	Description
TS	Slidebar with a return spring

Sliding motion holds door closed. Return spring pulls the slidebar open, preventing clashes with the head (but requires the slidebar to be held forward whilst locking)

Part No.	Description
TI	Slidebar with Internal handle but no return spring

Sliding motion holds door closed. Same as a TN but IR knob allows door to be opened (but not closed) from the inside when main unit is unlocked

Part No.	Description
TM	Slidebar with Internal handle c/w TK Short Tongue

Sliding motion holds door closed. Short TK tongue allows padlock through tongue to act as a lock out. Additional lock out space at rear of slidebar

Part No.	Description
TG	Slidebar with Internal handle for GM

Sliding motion holds door closed. Short TK tongue allows padlock through tongue to act as a lock out. No additional lock out space at rear of slidebar

Part No.	Description
TF	Slidebar with Internal handle c/w spacer behind the knob

Same as a TN but IR knob allows door to be opened and closed from the inside when main unit is locked

proHandle Options

Part No.	Description
EN	proHandle, no Internal Release

Handle motion holds door closed, but no method to open door from inside

Part No.	Description
EF	proHandle, with Internal Access Handle

Handle motion holds door closed. Internal access handle allows door to be opened and closed from the inside

Part No.	Description
EH	proHandle (the red internal release handle only works with units with no locking (i.e. stops) or in conjunction with a Push IR unit).

The red internal release handle only works with units with no locking (i.e. Stops) or in conjunction with a pushIR unit

pro i

MI, TI, TM, TG, TF and EH work well with a Push IR unit (see step 4)

---

proRelease IR Handle

Part No.	Description
EI	proIR Handle to allow emergency release (only to be used with I6 or I7 head).

Handle motion holds door closed. Red handle overrides all locking mechanisms and opens safety contacts to allow escape release

NO Actuator Required

X

Part No.	Description
NO	No Actuator required

Select this when you wish to specify head direction (Handing) but are not purchasing an actuator

"If no Actuator is required go to Step 3, where you can select a Head or Cap (C6)"

pro Hand Operated Actuator

Part No.	Description
SD	Hand Operated Sprung Actuator with Slimline tongue

proHinged Handle Options

Part No.	Description
HS1	proHinged Handle - Short Reach for use with proStop units (40mm wide)

Particularly useful for applications using small radius hinged doors (250mm min)

Part No.	Description
HL1	proHinged Handle - Long Reach for use with proLok units (80mm wide)

Particularly useful for applications using small radius hinged doors (250mm min)

pro Slimline Tongue

34.5

Part No.	Description
*SA	Slimline Tongue

High strength, but suitable for all Slimline configurations

"If you select an SA, SI, SN, SF, SS, SD, HS, HL you must then select Slimline Head S6 only"

proSlidebar - Short Tongue Options

Part No.	Description
SN	Slimline Tongue Slidebar without a spring

Sliding motion holds door closed. With no return spring unit remains in the position it is left in

Part No.	Description
SS	Slimline Tongue Slidebar with a return spring

Sliding motion holds door closed. Return spring pulls the slidebar open, preventing clashes with the head (but requires the slidebar to be held forward whilst locking)

Part No.	Description
SI	Slimline Tongue Slidebar with Internal handle but no return spring

Sliding motion holds door closed. Same as a SN but IR knob allows door to be opened (but not closed) from the inside when main unit is unlocked

Part No.	Description
SF	Slimline Tongue Slidebar with Internal handle c/w spacer behind the knob

Same as a SN but IR knob allows door to be opened and closed from the inside when main unit is locked

Actuators

Part No.	Handing Description
1	Front Facing

Part No.	Handing Description
2	Left Hand

Part No.	Handing Description
3	Rear Facing

Part No.	Handing Description
4	Right Hand

HS1S6ST401

pro i

If you choose a HS/HL Handle & an S6 Head it is recommended you choose a Front Facing configuration

pro i

If you chosen an EI Actuator from Step 1, Front Facing,1 and Rear Facing, 3 Handing options are not allowed

pro i

Even if you have not chosen an actuator from Step 1 you can still choose handing for the head module

Head Modules

proCap Options

Part No.	Description
C6	To terminate assemblies without heads

Terminates assemblies without heads

proAM Head Options

For use with actuators:
MA
MI

Part No.	Description
M6	proAM Head

Turning motion holds door closed. Ideal for non locking set ups (i.e. proSTOP devices)

For use with actuators:
MA
MI

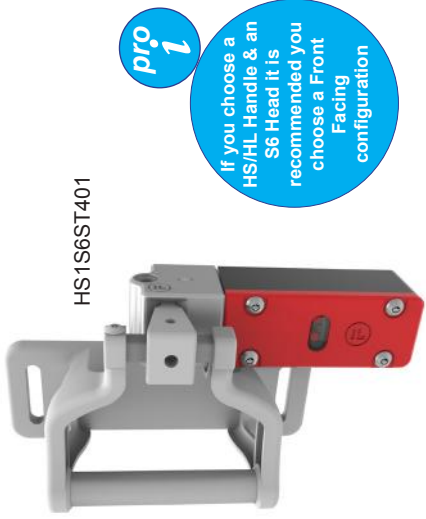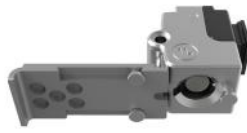| Part No.	Description
M7	proAM Head c/w Drop Down Lockout

M6 head with drop down lockout. This lockout features slides into place every time actuator is removed. Ideal for applications where lockout is to be used on every entry

For use with actuators:
MA
MI

Part No.	Description
M8	proAM Head c/w Lock-Out Clip

M6 head with drop down clip. Ideal for applications where lockout is not to be used on every entry

proAT Head Options

For use with actuators:
TA   TS
TK   TM
TI   TG
TN   TF
EH   EN

Part No.	Description
T6	proAT Head

High strength and ease of opening makes this the most popular head in the amGardpro range

For use with actuators:
TA   TS
TK   TM
TI   TG
TN   TF
EH   EN

Part No.	Description
T7	proAT Head c/w Drop Down Lockout

T6 head with drop down lockout. This lockout features slides into place every time actuator is removed. Ideal for applications where lockout is to be used on every entry
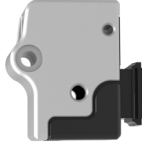
For use with actuators:
TA   TS
TK   TM
TI   TG
TN   TF
EH   EN

Part No.	Description
T8	proAT Head c/w ATL Lock-Out Clip

T6 head with drop down clip. Ideal for applications where lockout is not to be used on every entry

proAT Slimline Head Options

For use with actuators:
SA   SF
SI   SD
SS   HS
SN   HL

Part No.	Description
S6	proAT Slimline Head

S6 Head with the HL1 for the Lok must be forward facing only.

S6 Head with the HS1 for the Stop / Safety Key must be forward facing only.

S6 Head with the SA* Tongue for the Lok / Safety Key can be any facing.

proRelease IR Handle Options

For use with actuators:
EI

Part No.	Description
I6	proIR Head (only works in conjunction with EI handle)
A6	Auto reset all in one head (only works in conjunction with EI handle)

Handle motion holds door closed. Red handle overrides all locking mechanisms and opens safety contacts to allow escape release

For use with actuators:
EI

Part No.	Description
I7	proIR Head c/w drop down lockout (only works in conjunction with EI handle)
A7	Auto reset all in one head c/w drop down lockout (only works in conjunction with EI handle)

I6 / A6 head with drop down lockout. This lockout features slides into place every time actuator is removed. Ideal for applications where lockout is to be used on every entry

pro i — An S6 head works especially well with a slimline proLok to give a final product that is only 40mm wide

pro i — Ensure the head module you have selected works with the actuator you have selected in Step 1

pro i — If a head module is not required, leave the part number blank and continue to Step 4

amGard *pro*

A Push IR will allow Internal Escape Release even if unit is locked by keys and or solenoid. A Push IR is **not** needed if an EI Handle and I6 / I7 or A6 / A7 Head have already been specified. (note, a pull reset (R6, R7, R8 & R9) reduces the safety of the system).

Part No.	Push IR Description
R4	Key Reset (variable length - for panel thickness over 80mm and up to 1m)

Same as RZ but key reset to ensure all incidents are reported

Part No.	Push IR Description
R9	Pull Reset (variable length for panel thickness over 80mm and up to 1m)

Same as RZ but pull reset allows door to be relocked from the inside (requires careful risk assessment to ensure this is acceptable)

Part No.	Push IR Description
RZ	Front Reset no key (variable length for panel thickness over 80mm up to 1m)

Overrides all locking mechanisms and open safety contacts to allow escape release. Simple push reset allows quick restart. Suitable for panels up to 300mm thick

Part No.	Push IR Description
R3	Key Reset (up to 80mm panel thickness)

Same as RY but key reset to ensure all incidents are reported

Part No.	Push IR Description
R8	Pull Reset (up to 80mm panel thickness)

Same as RY but pull reset allows door to be relocked from the inside (requires careful risk assessment to ensure this is acceptable)

Part No.	Push IR Description
RY	Front Reset no key (up to 80mm panel thickness)

Overrides all locking mechanisms and opens safety contacts to allow escape release. Simple push reset allows quick restart. Suitable for panels up to 80mm thick

Part No.	Push IR Description
R2	Key Reset (up to 60mm panel thickness)

Same as RX but key reset to ensure all incidents are reported

Part No.	Push IR Description
R7	Pull Reset (up to 60mm panel thickness)

Same as RX but pull reset allows door to be relocked from the inside (requires careful risk assessment to ensure this is acceptable)

Part No.	Push IR Description
RX	Front Reset no key (up to 60mm panel thickness)

Overrides all locking mechanisms and opens safety contacts to allow escape release. Simple push reset allows quick restart. Suitable for panels up to 60mm thick

Part No.	Push IR Description
R1	Key Reset (up to 40mm panel thickness)

Same as RW but key reset to ensure all incidents are reported

Part No.	Push IR Description
R6	Pull Reset (up to 40mm panel thickness)

Same as RW but pull reset allows door to be relocked from the inside (requires careful risk assessment to ensure this is acceptable)

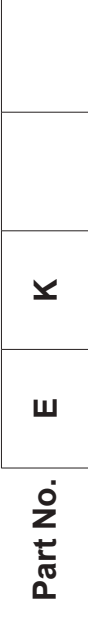| Part No.	Push IR Description
RW	Front Reset no key (up to 40mm panel thickness)

Overrides all locking mechanisms and opens safety contacts to allow escape release. Simple push reset allows quick restart. Suitable for panels up to 40mm thick

pro i

If a Push IR is not required leave part number blank and go to Step 5

Adaptors

Adaptors

Part No.	E	K		

	Description	Part No.
	Standard Lock	L
	Releasing Lock (must be used if a Push IR or EI Handle and Head used).	R

Description	Information		Part No.
Standard Lock no dustover	Removed key ensures door cannot be locked until operator returns from cell with the key. Extracted version will not open door until key is removed	CLIN	1
Standard Lock with dustcover	Same as EK_1 but with dustcover for dusty environments	CLIS	2
Standard Lock with padlockable dustcover	Same as EK_1 but padlockable dustcover allows lockout feature	CLIL	3
Masterable Lock no dustcover	Same as EK_1 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIN	6
Masterable Lock with dustcover	Same as EK_2 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIS	7
Masterable Lock with padlockable dustcover	Same as EK_3 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIL	8

CLIN & MLIN

CLIS & MLIS

CLIL & MLIL

pro
i
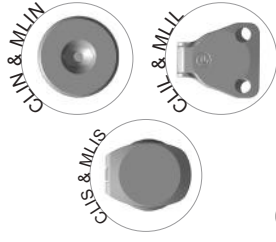
If an Extracted Key Adaptor is not required leave part number blank and go to Step 6

If you've selected a Push IR adaptor then select a releasing lock.

or

If you've selected an I6/I7 or A6/A7 then select a releasing lock.

am Gard *pro*

Adaptors

Part No. | | | S | K

Description	Part No.
Standard Lock	L
Releasing Lock (must be used if a Push IR or EI Handle and Head used).	R

Description	Information		Part No.
Standard Lock no dustcover	Removed key ensures door cannot be locked until operator returns from cell with the key	CLIN	1
Standard Lock with dustcover	Same as SK_1 but with dustcover for dusty environments	CLIS	2
Standard Lock with padlockable dustcover	Same as SK_1 but padlockable dustcover allows lockout feature	CLIL	3
Masterable Lock no dustcover	Same as SK_1 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIN	6
Masterable Lock with dustcover	Same as SK_2 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIS	7
Masterable Lock with padlockable dustcover	Same as SK_3 but master lock allows a single key to override all locks (master key mst be carefully controlled on site)	MLIL	8

Description	Part No.
No. of Safety Key Adaptors required	1 - 9

pro i
Total Extracted, Safety & Access Locks in one configuration is Max 9
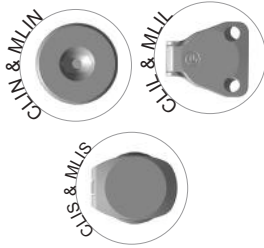
pro i
If a Safety Key Adaptor is not required leave part number blank and go to Step 7

CLIN & MLIN

CLIS & MLIS

CLIL & MLIL

If you've selected an I6/I7 or A6/A7 then select a releasing lock.

or

If you've selected a Push IR adaptor then select a releasing lock.

amGard *pro*

Adaptors

Part No.			A	K

Description	Part No.
Standard Lock	L
Releasing Lock (must be used if a Push IR or EI Handle and Head used).	R
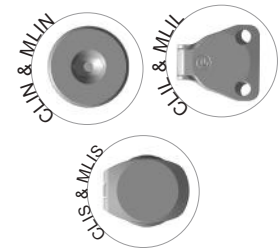
Description	Information		Part No.
Standard Lock no dustcover	Ensures door cannot be opened without access key. Access key could be held by authorised individuals (e.g. maintenance) or it could have been released by a seperate unit	CLIN	1
Standard Lock with dustcover	Same as AK_1 but with dustcover for dusty environments	CLIS	2
Standard Lock with padlockable dustcover	Same as AK_1 but padlockable dustcover allows lockout feature	CLIL	3
Masterable Lock no dustcover	Same as AK_1 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIN	6
Masterable Lock with dustcover	Same as AK_2 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIS	7
Masterable Lock with padlockable dustcover	Same as AK_3 but master lock allows a single key to override all locks (master key must be carefully controlled on site)	MLIL	8

Description	Part No.
No. of Access Key Adaptors required	1 - 9

pro i — Total Extracted, Safety & Access Locks in one configuration is Max 9

pro i — If an Access Key Adaptor is not required leave part number blank and go to Step 8

CLIN & MLIN

CLIL & MLIL

CLIS & MLIS

If you've selected an I6/I7 or A6/A7 then select a releasing lock.

or

If you've selected a Push IR adaptor then select a releasing lock.

am Gard pro

proStop Foot

proStop EX/UX Body

proStop Body

Slimline proLok Body

proLOK+ Body

proLOK Body

Electrical Switching / Locking

SL · SE · LL · LE · SR

pro i — If an Electrical Switching / Locking Body is not required leave part number blank and continue to Step 10

pro i — A Slimline proLOK works best with an S6 head to give a final product that is only 40mm wide

pro i — For proNet configurations proLOK+ body is only needed if 5 - 8 pushbutton / lamp options are required

Part No.	Description	Information
FT	To Terminate non-switch configurations	Terminates non-switch configurations (not suitable for units with Push IR or EI handle)

Part No.	Description	Information
EX	EU Explosion Stop Body	Safety switches suitable for explosive environments with EU certification
UX	US Explosion Stop Body	Safety switches suitable for explosive environments with US certification

Part No.	Description	Information
ST	Stop Body	Safety switch

Part No.	Description	Information
ZL	Slimline LOK Body	Solenoid controlled safety switch. Holds door locked until signal sent to unlock. No provision for control buttons. Only 40mm wide
ZR	Slimline LOK Body - Releasing (must be used if a Push IR or EI handle and head used).	Same as ZL but allows Push IR or EI handle to override it. Only 40mm wide

Part No.	Description	Information
LL	Long LOK Body	Solenoid controlled safety switch. Holds door locked until signal sent to unlock. With space for control buttons
LR	Long LOK Body - Releasing (must be used if a Push IR or EI handle and head used).	Same as LL but allows Push IR or EI handle to override it
LE	Long LOK Body - Integrated Escape Release	Same as LL but it's integrated escape release button overrides locking mechanism and opens safety contacts (Does not work with key adaptors, EI or Push IR)

Part No.	Description	Information
SL	Short LOK Body	Solenoid controlled safety switch. Holds door locked until signal sent to unlock. No provision for control buttons
SR	Short LOK Body - Releasing (must be used if a Push IR or EI handle and head used).	Same as SL but allows Push IR or EI handle to override it
SE	Short LOK Body - Integrated Escape Release	Same as SL but it's integrated escape release button overrides locking mechanism and opens safety contacts (Does not work with key adaptors, EI or Push IR)

If you've selected I6/I7 or A6/A7 then select a releasing lock.

or

If you've selected a Push IR adaptor then select a releasing lock.

IMPORTANT NOTE:
- For all *pro*LOK *pro*Net configurations go to step 10b.
- For all *pro*LOK+ *pro*Net configurations first go to step 10a then 10b.

Part No.

Voltage Options	Part No.
No Voltage (eg Foot)	0
110v	1
230v	2
24v	4
100v	5
48v	7
Asi	8
110v Solenoid / 24v Control (LOK only)	S
110v Control / 24v Solenoid (LOK only)	C
*pro*Net Connection (Not available for Slimline *pro*LOK)	P

pro i

Slimline *pro*LOK can only be configured in 24v
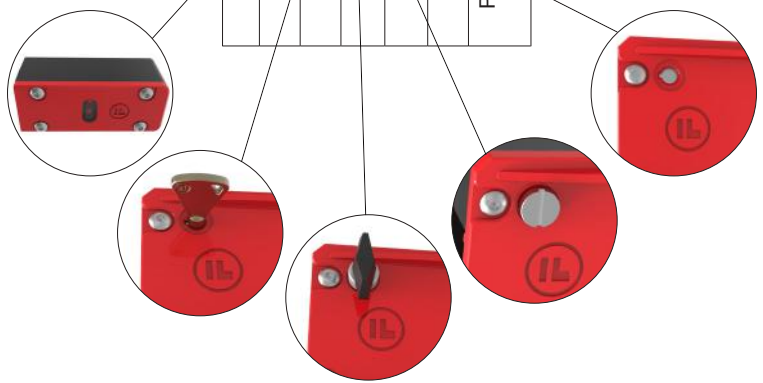
Override Options	Part No.
Stop/EXP/UXP	0
PTU - Key Override	1
PTU - Knob Override	2
PTU - Screwdriver Override	3
PTL (24v, 110v & ASi only)	6
PTL with fully monitored solenoid (ZL / ZR only)	7

pro i

Not available for ZL or ZR

Other PCB Options	*pro*Body Types	Part No.
Std & Sourcing	ALL	1
Std & Sinking	ST Only	2
Std & Sourcing (3 x NC)	ST Only	3
Std & Sourcing (Y&G LEDS)	SL, SR, LL & LR Only	4
Un-Monitored Sol & Sourcing	SL, SR, LL, ZL & LR, ZR Only	6
Un-Monitored Sol & Sourcing (Y&G LEDS)	SL, SR, LL & LR Only	7
Individual Safety Control for Sol & Actuator	SL, SR, LL, LR, SE & LE Only	8

pro i

This is ordered by 99% of our customers

Option Pods

Part No.

Top Left	Top Right	Bottom Left	Bottom Right		

pro i — If you order just one or two pushbuttons we will retain the order but position them top left and top right

Sensors - 24v only

Part No.	Sensors - 24v only
N	No additional switch required
C	Coded Magnet - Left Hand (see step 2 for handing)
D	Coded Magnet - Right Hand (see step 2 for handing)
S	RFID - Left Hand (see step 2 for handing)
T	RFID - Right Hand (see step 2 for handing)

Pushbutton / Lamp Options - 24v only

Part No.	Pushbutton / Lamp Options - 24v only
0	Blank
1	Red Lamp
2	Yellow Lamp
3	Green Lamp
6	Blue Lamp
7	White Lamp
E	E-Stop (twist reset)
H	E-Stop (with additional monitoring contacts, twist reset)
P	E-Stop (pull reset)
U	E-Stop (illuminated twist reset)
L*	Latching selector switch (illuminated)
M*	Momentary selector switch (illuminated)
A*	Latching key switch (90 degree)
R	Red illuminated pushbutton non latching
Y	Yellow illuminated pushbutton non latching
G	Green illuminated pushbutton non latching
B	Blue illuminated pushbutton non latching
W	White illuminated pushbutton non latching
K	Black non illuminated pushbutton non latching

pro i — L, M & A Options can only be fitted in top right or bottom left positions

pro i — If an Option Pod or Long LOK Body is not required leave part number blank and continue to Step 11

Select Unit

Select Unit	Pod Type	Terminals OR QD	AS-i
Stand alone Pod with No holes on top of pod case (stand alone unit)	B	0	5
Pod with one hole on top of pod case for fitting to *proStop* Body	B	1	6
Pod with two holes on top of pod case for fitting to *proLOK* Body	B	2	7
proLOK+ Body switch information	L	0	5

Separate Option Pod with 4 hole positions

Separate Option Pod with 2 hole positions
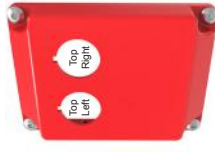
proLOK+ Body with 2 hole positions

proLOK+ Body with 4 hole positions

Option Pods

Part No.

N						

	Top Left	Top Right	Bottom Left	Bottom Right		

N	**P**	**F**			

Select Unit

Select Unit	PROFINET	PROFINET MRP	Ethernet/IP
Stand alone *pro*Net Pod	0	6	3
*pro*Net Pod mounted below a *pro*LOK or *pro*LOK+ unit or *pro*Stop unit	2	8	5

Pushbutton / Lamp Options - 24v only

Part No.	Pushbutton / Lamp Options - 24v only
0	Blank
1	Red Lamp
2	Yellow Lamp
3	Green Lamp
6	Blue Lamp
7	White Lamp
E	E-Stop (twist reset)
H	E-Stop (with additional monitoring contacts, twist reset)
P	E-Stop (pull reset)
U	E-Stop (illuminated twist reset)
L*	Latching selector switch (illuminated)
M*	Momentary selector switch (illuminated)
A*	Latching key switch (90 degree)
R	Red illuminated pushbutton non-latching
Y	Yellow illuminated pushbutton non-latching
G	Green illuminated pushbutton non-latching
B	Blue illuminated pushbutton non-latching
W	White illuminated pushbutton non-latching
K	Black non illuminated pushbutton non-latching

L, M & A Options can only be fitted in top right or bottom left positions

Connection Options

Connection Options		
AIDA with 'B coded' external safety switch	0	4
AIDA with 'A coded' external safety switch	0	5
AIDA connectors	0	6
3 M12 QD set - 1 Power 2 Data	0	7
4 M12 QD set - 1 Power 1 External Safety Switch 2 Data	0	9
4 M12 QD set - 2 Power 2 Data	1	0
4 QD set - 2 Power (7/8s) 2 Data (M12)	1	1
AIDA connectors with 'A coded' external double safety switch	1	5

Pushbutton / Lamp positions for up to 4 selections

Pushbutton / Lamp positions for up to 2 selections

am Gard pro

Part No.

				O	N
		Top Position	Middle Position	Bottom Position	

Part No.	Pushbutton / Lamp Options - 24v only
0	Blank
1	Red Lamp
2	Yellow Lamp
3	Green Lamp
6	Blue Lamp
7	White Lamp
E	E-Stop (twist reset)
H	E-Stop (with additional monitoring contacts, twist reset)
P	E-Stop (pull reset)
U	E-Stop (illuminated twist reset)
L	Latching selector switch (illuminated)
M	Momentary selector switch (illuminated)
A	Latching key switch (90 degree)
R	Red illuminated pushbutton non-latching
Y	Yellow illuminated pushbutton non-latching
G	Green illuminated pushbutton non-latching
B	Blue illuminated pushbutton non-latching
W	White illuminated pushbutton non-latching
K	Black non illuminated pushbutton non-latching

Select Unit	Wiring Type	Pod Type
Stand alone Slimline Pod with common power supply	Y	0
Slimline Pod to be fitted below *proStop* or Slimline *proLOK* unit with common power supply	Y	1
Stand alone Slimline Pod (with power supply wired individually volt-free contacts)	W	0
Slimline Pod to be fitted below *proStop* or Slimline *proLOK* unit (with power supply wired individually volt-free contacts)	W	1

Ordering Sequence
1 - Top Position
2 - Middle Position
3 - Bottom Position

pro i — Majority of customers prefer common power supply due to the reduced wiring complexity

Step 11: Do you want a Key Switch Option Pod?

Option Pods

Part No.

B	K

Select Unit	Part No.
Stand alone Pod with No holes on top of pod case (stand alone unit)	0
Pod with one hole on top of pod case for fitting to *pro*Stop Body	1
Pod with two holes on top of pod case for fitting to *pro*LOK Body	2

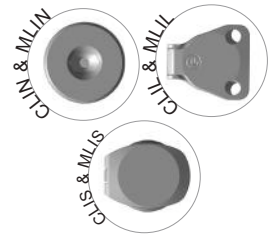| Description		Part No.
Standard Lock no dustcover	CLIN	1
Standard Lock with dustcover	CLIS	2
Standard Lock with padlockable dustcover	CLIL	3
Masterable Lock no dustcover	MLIN	6
Masterable Lock with dustcover	MLIS	7
Masterable Lock with padlockable dustcover	MLIL	8

CLIN & MLIN

CLIS & MLIS

CLIL & MLIL

pro *i*
Removal of the key operates a set of safety rated switches. Common uses are: request machine stop, enable teach mode and prevent inadvertent re-start

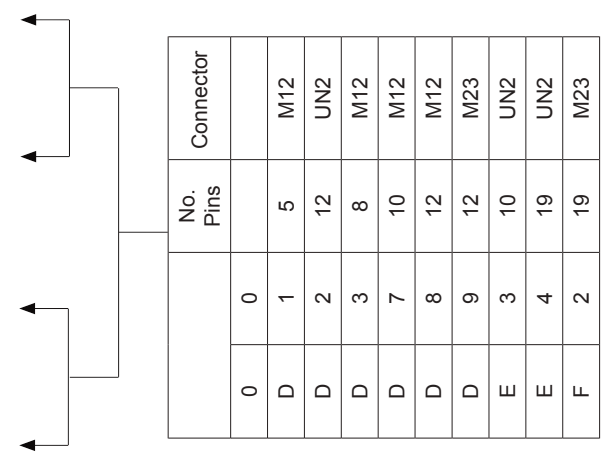**pro** *i*
If a Key Switch Option Pod is not required leave part number blank and continue to Step 12

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	

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	

Part No.

T Wiring						Left Hand QD		Right Hand QD	
T	#	#	#	#	#				

Contact Fortress engineering to be assigned T Wiring number

		No. Pins	Connector
0	0		
D	1	5	M12
D	2	12	UN2
D	3	8	M12
D	7	10	M12
D	8	12	M12
D	9	12	M23
E	3	10	UN2
E	4	19	UN2
F	2	19	M23

Image showing no connectors - 0 0

Left Hand QD

Right Hand QD

Protecting People, Protecting Productivity

A HALMA COMPANY

Fortress Interlocks Ltd
☎ +44 (0)1902 349000
🖷 +44 (0)1902 349090
✉ sales@fortressinterlocks.com

Fortress Interlocks Europe
☎ +31 (0)10 7536060
🖷 +31 (0)10 7536050
✉ europe@fortressinterlocks.com

Fortress Interlocks USA
☎ +1 (859) 578 2390
🖷 +1 (859) 341 2302
✉ us@fortressinterlocks.com

Fortress Interlocks Pty Ltd
☎ +61 (0)3 9771 5350
🖷 +61 (0)3 9771 5360
✉ australia@fortressinterlocks.com

Fortress Interlocks China
☎ +86 (021) 6016 7611
🖷 china@fortressinterlocks.com

Official Distributor

www.fortressinterlocks.com