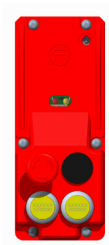
Fortress Interlocks

amGard pro

Datasheet

Electrical Switching / Locking

*pro*Lok+ - Extended Solenoid Controlled Body including extra control functionality - Standard, Power to Lock,ASi, Un-Monitored and Individual Safety Circuits



***pro*Lok+** Extended Solenoid Controlled Body is used to manage activities by means of a solenoid control element. There are five basic types, Standard, Power to Lock,ASi, Un-Monitored and Individual Safety Circuits. It may be used to include the use of pushbuttons, selector switches, lamps, E-Stops, and/or Magnetic/ RFID sensors within one enclosure.

NOTE! Standard, Power to Lock and ASi body types have 2 derivitives, normal and releasing. The releasing version is the type that **MUST** be used if used in conjunction with any type of internal release function (push I/R) or all in one head module with IR Handle.

*pro*Lok+ - Standard

On supplying power to the solenoid the unit becomes unlocked. This is the recommended set up for most machine guarding applications. A special key driven override facility is included to unlock the unit in the event of a power failure. Available in Standard and Releasing Versions.

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

*pro*Lok+ - Power to Lock

On supplying power to the solenoid the unit becomes locked. This is not the recommended set up for most machine guarding applications. However, it allows faster access and exit in the event of a power failure. Available in Standard and Releasing Versions.

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

*pro*Lok+ - AS-interface

On supplying power to the solenoid the unit becomes unlocked. This is the recommended set up for most machine guarding applications. A special key driven override facility is included to unlock the unit in the event of a power failure. Available in Standard and Releasing Versions.

- 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

*pro*Lok+ - Un-Monitored Solenoid

On supplying power to the solenoid the unit becomes unlocked, however only a single monitoring contact is closed. This is a popular configuration for where the solenoid performs a process control rather than safety function. A special key driven override facility is included to unlock the unit in the event of a power failure. Available in Standard and Releasing Versions.

- LED indicators for status identification.
- To be used with safety relay and/or safety PLC control systems.

Approvals

NOTICE!
If, as a result of risk assesment, it cannot be discounted that persons can be enclosed within a danger zone, the guard locks with additional removeable keys (safety keys) must be used or comparable measures must be taken - GS ET 19.

*pro*Lok+ - Individual

On supplying power to the solenoid the unit becomes unlocked. This is the recommended set up for most machine guarding applications. A special key driven override facility is included to unlock the unit in the event of a power failure.

- 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 contact and 1 x NO contact (input shared with solenoid).

***pro*Lok+ Technical Specification**		**Standard *pro*Lok**	**Power to Lock *pro*Lok**	**ASi *pro*Lok**	**Un-Monitored Solenoid *pro*Lok**	**Individual Safety Circuits *pro*Lok**
Housing Materials	Zinc Alloy to BSEN12844	•	•	•	•	•
Paint Finishes	Gloss Powder Coat on Passivated Base Material	•	•	•	•	•
Ingress Protection	IP67***	•	•	•	•	•
Mechanical Life	>1,000,000 Switching Cycles	•	•	•	•	•
Performance Level		PLe	PLc to PLe*	PLe	PLc to PLe*	PLe
Ambient Temperature	-5°C to + 40°C (23°F to 104°F)	•**	•	•**	•**	•**
Switches Conformance	DIN VDE 0060 Part 206 & IEC 947-5-1	•	•	•	•	•
Actuator Contact		2NC 1NO	2NC 1NO	2NC 1NO	2NC 1NO	1NC 1NO
Solenoid Contacts		2NC 1NO	1NO	2NC 1NO	1NO	1NC 1NO
Safety Circuit Switching Principal	Positive Break Dual Channel	•	•	•	•	•
Maximum Switch Current	3A	•	•		•	•
Minimum Switch Current	1mA at 5 VDC	•	•		•	•
Maxiumum Switching Voltage	230V AC Max	•	•		•	•
Control Voltages	24V / 110V / 230V ac/dc	•	•		•	•
Solenoid Power Rating	12W (Solenoid current at Nominal 24V dc = 500mA. Quasient current = 350mA).	•	•	•	•	•
Solenoid Rating (Duty Cycle)	100%	•	•	•	•	•
Solenoid Voltage	24V / 110V / 230V ac/dc	•	•		•	•
Solenoid Voltage Tolerance	90% to 110% of nominal	•	•	•	•	•
Connector Type	M12 male			•		
Gate Control Cable Size	28 - 24 AWG	•	•		•	•
Push Button Cable Size	26 - 14 AWG	•	•		•	•
B10d	5,000,000	•	•	•	•	•
DC	99%	•	•	•	•	•
λ_d	10%	•	•	•	•	•
Diagnostic Coverage	Position Monitoring	•	•	•	•	•
Quick Disconnects*	Various Options	•	•		•	•
Environment	Indoor & Outdoor	•	•	•	•	•

*** Depending on application**
**** Unit can be used in +60°C environment if solenoid is wired in series with a momentary push button to ensure solenoid is not left energised for over 60 seconds**
***** Lamps and switches reduce unit to IP65**

proLok+ Option Pod Technical Specification		**Lamps**	**Pushbutton**	**Sensor**
Performance Level	PLe			•
B10d	7,300,000			•
Connector Type	Spring Activated Vibration Proof Block	•	•	•
Control Voltages	24V DC	•	•	•
Lamp Life	100,000 hrs on time	•	•	
Switches Conformance	DIN VDE 0060 Part 206 & IEC 947-5-1		•	
Switching Contact Element	Emergency Stop - 2NC		•	
	Pushbutton - 1NO		•	
	RFID - 2NC 1NO			•
	Coded Magnet - 2NC			•
EStop Switching Principle	Positive Break		•	
Environment	Indoor & Outdoor	•	•	•

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Electrical Switching / Locking

*pro*Lok+ - Extended Solenoid Controlled Body including extra control functionality - Standard, Power to Lock and ASi

*pro*Lok+ Ordering Information

Version	Control Voltage (AC/DC)	Solenoid Voltage (AC/DC)	Sourcing*	Part No.
Standard	24V	24V	✓	LL411
Standard	110V	110V	✓	LL111
Standard	230V	230V	✓	LL211
Standard - Releasing	24V	24V	✓	LR411
Standard - Releasing	110V	110V	✓	LR111
Standard - Releasing	230V	230V	✓	LR211
Power to Lock	24V	24V	✓	LL461
Power to Lock	110V	110V	✓	LL161
Power to Lock - Releasing	24V	24V	✓	LR461
Power to Lock - Releasing	110V	110V	✓	LR161
ASi	N/A	24V DC	N/A	LL811
ASi - Releasing	N/A	24V DC	N/A	LR811
Un-Monitored Solenoid	24V	24V	✓	LL416
Un-Monitored Solenoid	110V	110V	✓	LL116
Un-Monitored Solenoid	230V	230V	✓	LL216
Un-Monitored Solenoid - Releasing	24V	24V	✓	LR416
Un-Monitored Solenoid - Releasing	110V	110V	✓	LR116
Un-Monitored Solenoid - Releasing	230V	230V	✓	LR216
Individual - Releasing	24V	24V	✓	LR468
Individual - Releasing	110V	110V	✓	LR168
Individual - Power to Lock	24V	24V	✓	LL468
Individual - Power to Lock	110V	110V	✓	LL168
Individual Safety	24V	24V	✓	LL418
Individual Releasing	24V	24V	✓	LR418

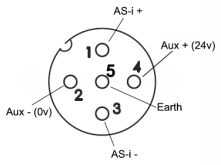
* Sourcing ouput supplied as standard, Sinking option available on request

Safety Functions - *pro*Lok+		Part No
Safety Function 1	Turns mechanical movement of head / lock into operation of safety contacts	LL/R
Safety Function 2	Retains e-Stop and non-contact switch	

AS-i Profiles

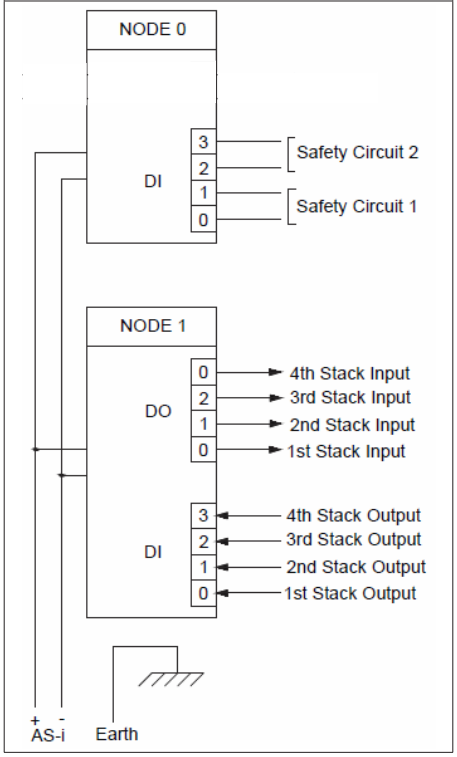
	IO	ID	ID1	ID2
Safety	7	B	-	F
I/O	7	A	7	7

Pin Out



Pin	Connection	Colour (Cable-_M-D1)
1	AS-i +	Brown
2	Aux -	White
3	AS-i -	Blue
4	Aux +	Black
5	Earth (optional)	Grey

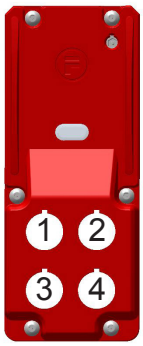
Wiring Diagram



*pro*Lok+ Body - Pushbutton / Lamps / Sensor Selecting / Ordering Information

	Part No.
proLok+ Body proLok+ As-i Body	L0 L5

Laser Engraving Information
Engraving for each button:-
2 Lines of 8 Characters

2. Select proOption Body Buttons / Lamps / Switches	Button Type	Colour / Option	Part No.
	Illuminated Buttons:	Red	R
		Yellow	Y
		Green	G
		Blue	B
		White	W
		E-Stop (Twist)	U
	Non-illuminated Buttons:	Black	K
		E-Stop (with additional monitoring contacts, twist release)	H
		E-Stop (Twist)	E
		E-Stop (Pull)	P
	Lamps:	Red	1
		Yellow	2
		Green	3
		Blue	6
		White	7
	Illuminated Selector Switch:	Latching	L
		Momentary	M
		Latching Selector Switch (1NO 1NC)	V
		Latching Key Switch	A
	Blank:	No Button Fitted	0

Ordering Sequence
1 - Top Left
2 - Top Right
3- Bottom Left
4 - Bottom Right

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

3. Select Sensor Type if required.	No Sensor	N/A	N
	Magnetic Sensor - Left Hand	Unique Coding	C
	Magnetic Sensor - Right Hand	Unique Coding	D
	RFID Sensor - Left Hand	High Coding	S
	RFID Sensor - Right Hand	High Coding	T

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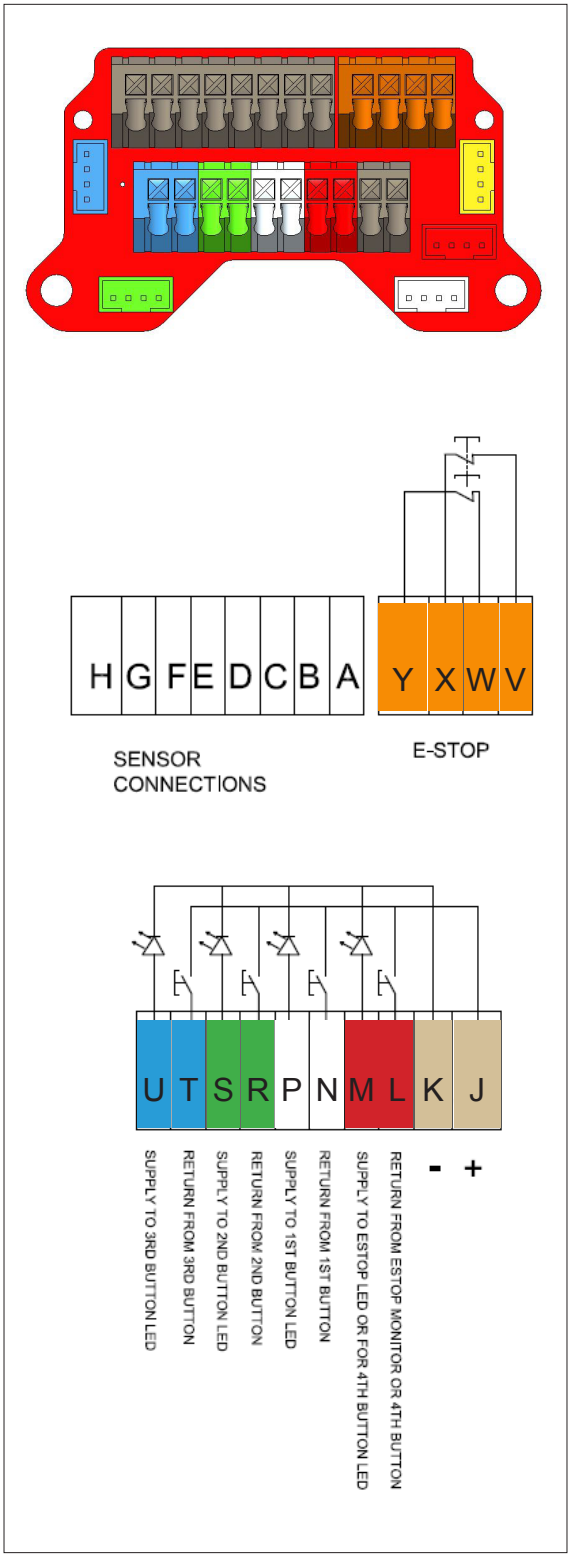
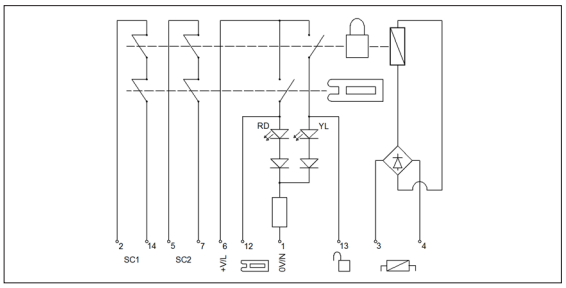
Terminal Layout for Pushbuttons and Sensor

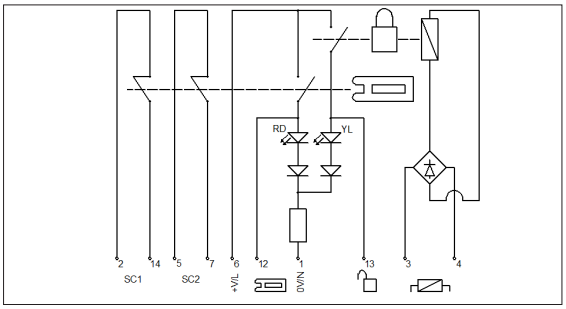
Terminal Layout - Version 2
Red PCB



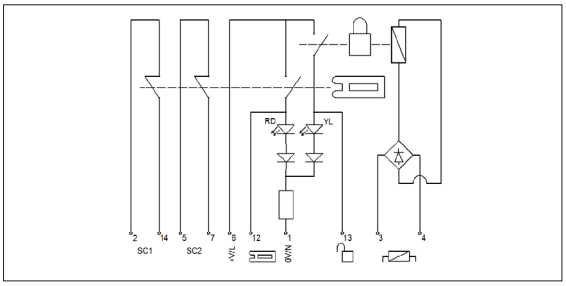
***pro*Lok+ Standard Wiring Diagram**



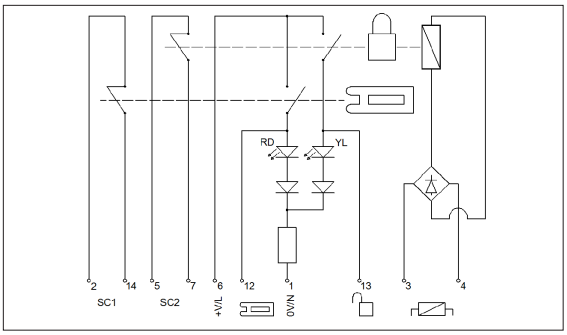
***pro*Lok+ Un-Monitored Solenoid Wiring Diagram**



***pro*Lok+ Power to Lock Wiring Diagram**



***pro*Lok+ Individual Safety Circuits Wiring Diagram**



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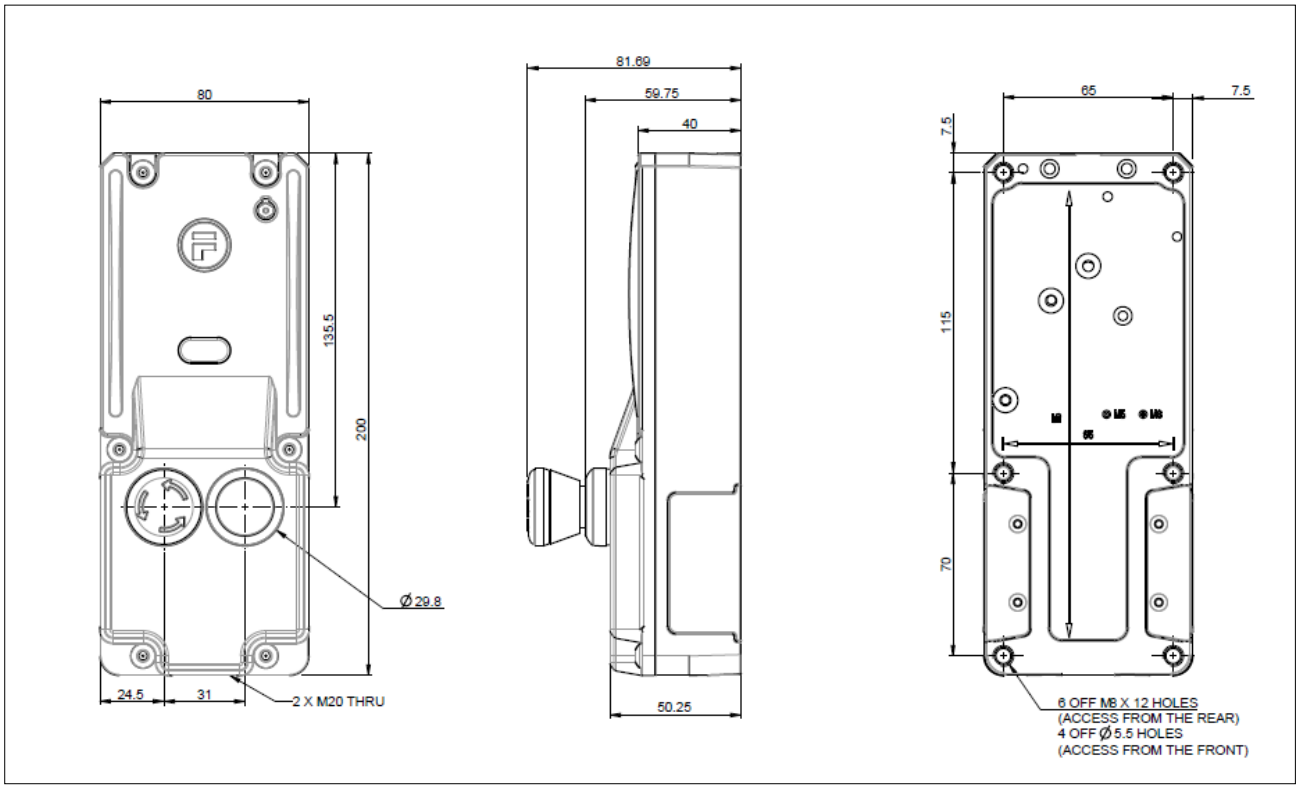
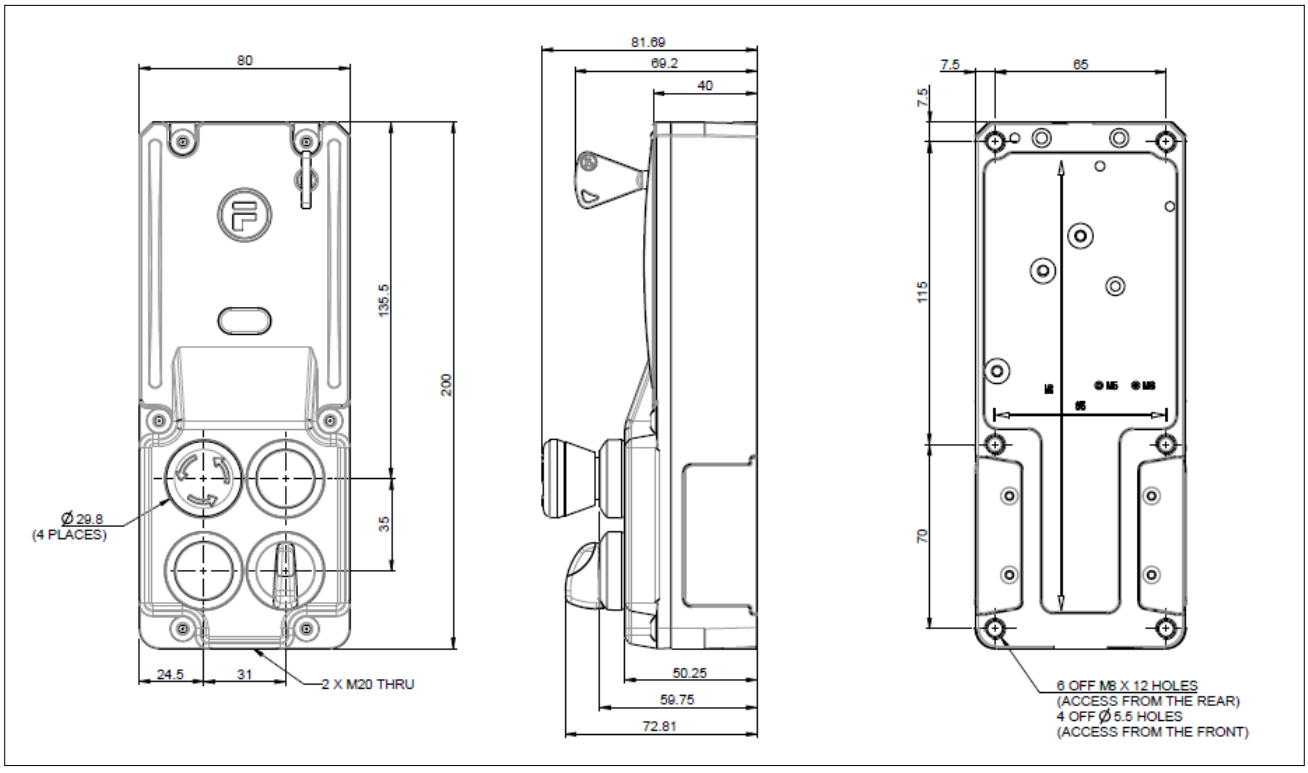
***pro*Lok+ Dimension Drawings**

2 Position Pushbutton / Lamps



4 Position Pushbutton / Lamps



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Sensor Dimension Drawing