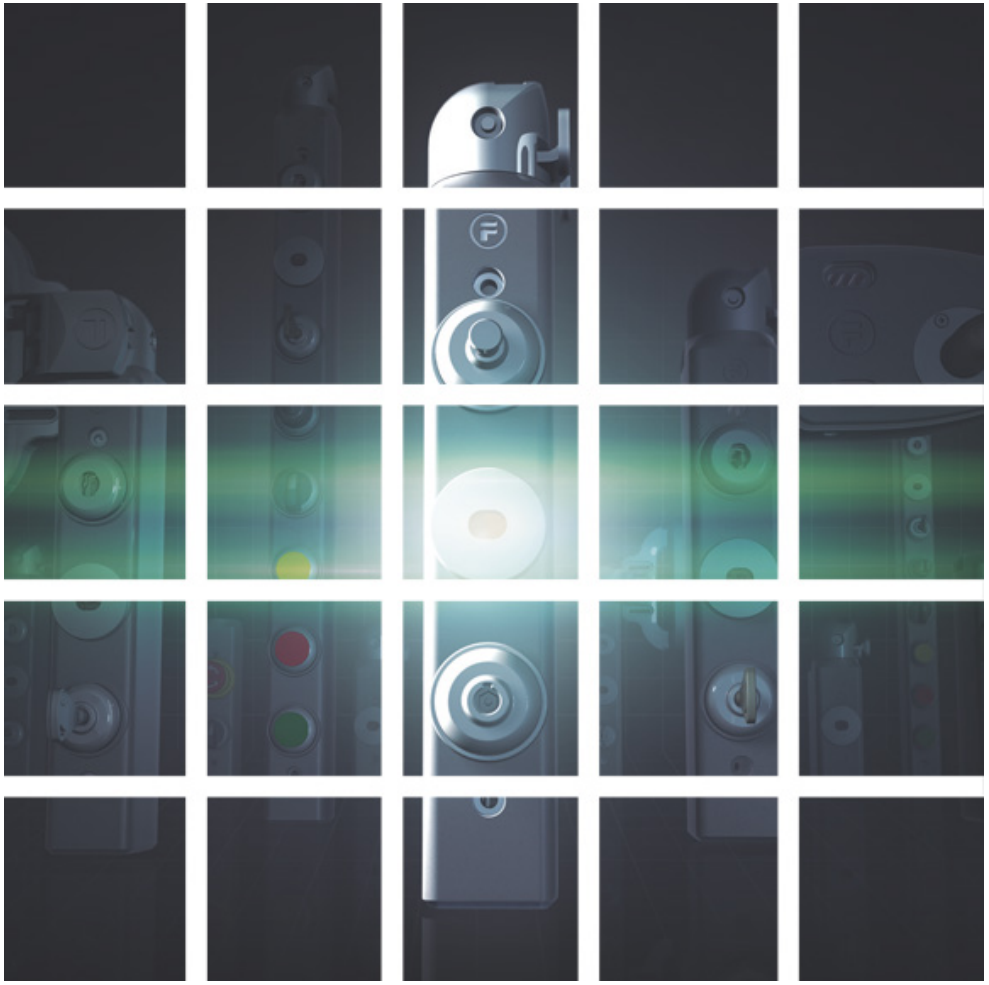
Fortress Interlocks

tGard

Integrated Control & Safety



tGard Part Number Configurator

tGard

An Innovative Platform for Machine Safety

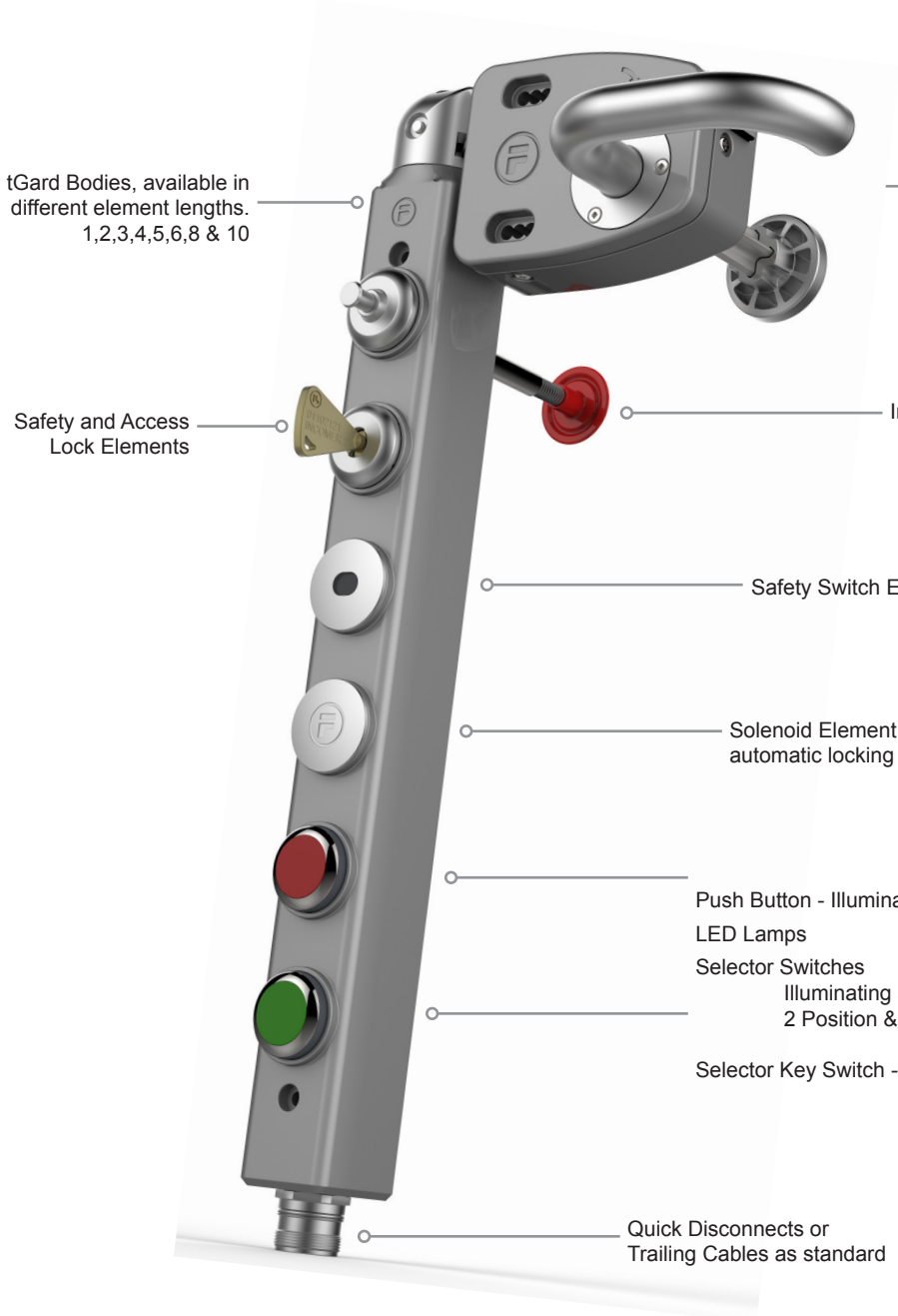
tGard is the new innovative approach to controlling access to hazardous machinery and equipment. It is a compact metal bodied system that enables the configuration of various safety products including electrical safety gate switches (with or without guard locking), mechanical trapped key interlocks, and electrical operator controls, either as separate devices or integrated into one device.

tGard offers “a customised safety solution, as standard” and is defined by a range of **tGard** elements, including selector switches, safety switches (solenoid and non solenoid), personnel keys, emergency release, push buttons, estops, indicator lamps and a choice of operating handles for both hinged and sliding guard doors. These elements are simply selected and then assembled into a robust housing, suitable for mounting onto machine guarding, providing the user with an exact configuration specific to the application.

tGard is quick and easy to install and can be mounted directly onto a flat surface, doors or extruded aluminium profiles without the need for mounting plates or brackets. It is IP65 as standard and has been designed to be fully compliant with the new machinery safety standards.

Customised Safety Solutions as Standard

- Simply Robust
- Customisable
- Future proof for future element expansion
- Easy to Install
- Quick Disconnects as standard
- Standards compliant
- Trailing Cables as standard
- Safety Gate Switches
- Trapped Key Interlocks
- Operator Control



Step 1: Choose the Actuators

Actuators

TAF		TAH		TAS		THB		TEN		TEH	
											
Part No.	**TAF**	**Part No.**	**TAH**	**Part No.**	**TAS**	**Part No.**	**THB**	**Part No.**	**TEN**	**Part No.**	**TEH**
Description	Fixed Actuator	**Description**	Handle Actuator - Hinged Door	**Description**	Handle Actuator - Sliding Door	**Description**	Blank Handle	**Description**	Handle Actuator - (no internal knob)	**Description**	Handle Actuator
Features & Benefits		**Features & Benefits**		**Features & Benefits**		**Features & Benefits**		**Features & Benefits**		**Features & Benefits**	
• Fixed Actuator suitable for mounting on either sliding or hinged doors. • Padlock through tongue. • 2500N Retention force.		• Handle actuators suitable for bracketless mounting to hinged doors. • 4mm misalignment feature. • TAH actuator can be converted to a TAS actuator on site (special tool required). • Padlock through tongue. • 2500N Retention force. • Quick bolt to Aluminium extrude (no brackets).		• Handle actuators suitable for bracketless mounting to sliding doors. • 4mm misalignment feature. • TAS actuator can be converted to a TAH actuator on site (special tool required). • Padlock through tongue. • 2500N Retention force. • Quick bolt to Aluminium extrude (no brackets).		• Blank Handle (without actuator) for use on inside of doors.		• Intuitive handle actuator giving latching feature on hinged doors. • 4mm misalignment feature. • Lock out feature. • Handing can be changed on site. • Prevents force of door slamming against interlock. • 2500N Retention force. • Quick bolt to Aluminium extrude.		• Intuitive handle actuator giving latching feature on hinged doors. • 4mm misalignment feature. • Lock out feature. • Handing can be changed on site. • Prevents force of door slamming against interlock. • 2500N Retention force. • Quick bolt to Aluminium extrude. • Internal knob allows actuator to be retracted but not extended.	

All Actuators to be used in combination with a THM head module.

Note: The internal knob on TEH handle does not override the solenoid or lock. A TRX/Z (internal release element) must be used to deliver that functionality.

Head Modules

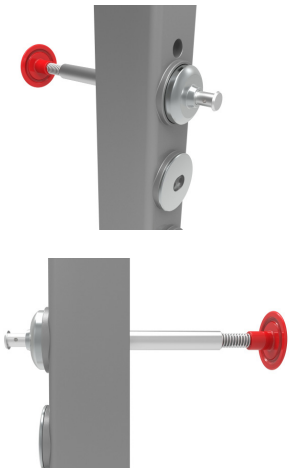
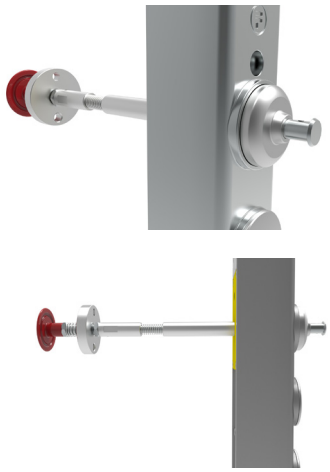
THC		THM	
			
Part No.	**THC**	**Part No.**	**THM**
Description	Cap Element	**Description**	Actuator Head Element
Features & Benefits		**Features & Benefits**	
• Used to terminate all non door lock or gate switch configurations. • Used in mechanical exchange box, machine control or key switch configurations.		• Ideally suited for authorised access only, or linked access to other machinery. • 5 orientations (left, right, front, back and top). • Can be used to lock door when used with keys or solenoid or just as driver for safety switches. • Rotatable through 90º (remove screws). • 2500N retention force. • Metal construction with no extra fixing required.	

You can combine a actuator with a head to generate a single part number

Head + Actuator Combined Part Number Options

THF		THH		THS		THE		THN	
									
Part No.	**THM + TAF = THF**	**Part No.**	**THM + TAH = THH**	**Part No.**	**THM + TAS = THS**	**Part No.**	**THM + TEH = THE**	**Part No.**	**THM + TEN = THN**
Description	Head module including fixed actuator	**Description**	Head module including hinged actuator	**Description**	Head module including sliding actuator	**Description**	Head module including handle actuator	**Description**	Head module including handle actuator (no internal knob)

Core Elements

TRX		TRZ	
			
Part No.	**TRX**	**Part No.**	**TRZ**
Description	Standard 60mm Internal Release	**Description**	Variable length Internal Release

Features & Benefits

- Element allows emergency exit even if unit is locked by keys and or solenoid.
- Unit automatically breaks safety circuits and holds them open until unit is reset.
- When present, the push IR always occupies the top element.
- TRX works through wall thickness upto 60mm.
- TRZ allows customer to customise length of emergency release.
- Post should be supported if not going through aluminum extrude.

Extended version available (TRZ) - any length possible

Core Elements

TSN	TGN	TAB	TQB
			

Part No.	TSN	TGN
Description	Standard Safety Lock (no key)*	Master Safety Lock (no key)*

Features & Benefits

- Prevent closure of door and start up until key returned.
- Safety Lock must be directly under head / cap (or under internal release element if one is fitted).
- Robust radial disc tumbler lock.
- >3000 combinations.
- 10 mastered combinations (can be used with all 3000 individual combinations).
- The key is laser marked with the Fortress key code.
- No key included.
  *Keys Ordered Separately.
- Max. No. of mechanical locks = 10.

Part No.	TAB	TQB
Description	Standard Access Lock (no key)*	Master Access Lock (no key)*

Features & Benefits

- Only allow access with correct key.
- Access keys must be directly under safety locks (or under head or internal release if no safety locks).
- Robust radial disc tumbler lock.
- >3000 combinations.
- 10 mastered combinations (can be used with all 3000 individual combinations).
- The key is laser marked with the Fortress key code.
- No key included.
  *Keys Ordered Separately.
- Max. No. of mechanical locks = 10.

All keys need to be ordered separately

Core Elements

TSM / TSP		TSS	
			
Part No.	**TSM / TSP**	**Part No.**	**TSS**
Description	Safety Switch	**Description**	Safety Switch - No N/O monitor contact
Features & Benefits		**Features & Benefits**	
• Can be driven by either the operation of the head element (removal of actuator) or a mechanical lock. • Operates on dual safety circuits. • 2 positively driven force break NC contacts (uses none of the I/O pins). • IP65. • 1 Normally Open (N/O) contact giving 24V signal on I/O pin. • Red LED illumination to show door open. • First element after all mechanical elements (Head, Internal Release and Locks). • Extra retention force available (TSP).		• Can be driven by either the operation of the head element (removal of actuator) or a mechanical lock. • Operates on dual safety circuits. • 2 positively driven force break NC contacts (uses none of the I/O pins). • IP65. • First element after all mechanical elements (Head, Internal Release and Locks). • No monitor contact & no LED. • Uses 4 pins for safety circuits (no power required). *Works with TQ1 (5 Pin QD).	
Number of Safety Circuits	2	**Number of Safety Circuits**	2
Number of Control I/O	1	**Number of Control I/O**	0

Location of safety switch in stack is first element after all mechanical elements (Head, Internal Release and Locks).

Step 6: Solenoid Controlled Lock & Safety Switch Elements - Power to Un-Lock / Power to Lock

Core Elements

TSMDU/L	TSMEU/L	TSMFU/L	TSSEU/L

Power to Un-lock

Power to Lock

- 1 input used to energise solenoid.
- Power to Lock and Power to Unlock options available.
- Solenoid override key provided with power to unlock units.
- First element after all mechanical elements (Head, Internal Release and Locks).

Part No.	TSMDU / TSMDL	TSMEU / TSMEL	TSMFU / TSMFL	TSSEU / TSSEL
Description	Head & solenoid safety in series TSMDU (Power to Un-lock) TSMDL (Power to Lock)	Safety on head element only TSMEU (Power to Un-lock) TSMEL (Power to Lock)	Four safety circuits TSMFU (Power to Un-lock) TSMFL (Power to Lock)	Safety on head element only (no monitoring contact on head) TSSEU (Power to Un-lock) TSSEL (Power to Lock)
Features & Benefits	• 2500N retention force. • 2 X Normally closed safety circuits run through head safety switches and solenoid safety switches. • Non safety monitor circuit on head gives 24V when door opened. • Non safety monitor circuit on solenoid gives 24V when unlocked. • LED sequence: *Green = Door closed & locked *Green & Red = Door closed but unlocked *Red = Door open	• 2500N retention force. • 2 X Normally closed safety contacts driven by head only (not solenoid). • Non safety monitor circuit on head gives 24V when door opened. • Non safety monitor circuit on solenoid gives 24V when locked. • LED sequence: *Green = Door closed & locked *Green & Red = Door closed but unlocked *Red = Door open	• 2500N retention force. • Four safety circuits - 2 independent NC circuits for the head and 2 independent NC circuits for the solenoid. • Non safety monitor circuit on head gives 24V when door opened. • Non safety monitor circuit on solenoid gives 24V when unlocked. • LED sequence: *Green = Door closed & locked *Green & Red = Door closed but unlocked *Red = Door open	• 2500N retention force. • 2 X Normally closed safety contacts driven by head only (not solenoid). • Non safety monitor circuit on solenoid gives 24V when locked. • LED sequence: *Nothing = Door closed & locked *Red = Door unlocked
Number of Safety Circuits	2	2	4	2
Number of Control I/O	3	3	3	2

90% of customers select TSMDU

Location of safety switch in stack is first element after all mechanical elements (Head, Internal Release and Locks).

Core Elements

TEC, TED, TEW, TEV, TET, TEM, TEP, TEI

Features & Benefits

- Emergency stop element, version available with a monitoring contact or illumination.
- 2 positively driven force break N/C Safety contacts.
- Monitored version also has 1 output signal and this uses 1 output pin.
- Illuminated version also has 1 input signal and this uses 1 input pin (it is illuminated by the controlling PLC, not by the action of pressing the e-stop).
- e-Stop is always mounted at the top of any control elements, but below solenoid / head / safety switches / locks.
- TEM & TEI e-stops can also be positioned at the bottom of the stack.
- TED/C/W/V safety contacts are wired in series with another element in the stack e.g. TSS, to reduce pin requirements.
- TET/M/P/I safety contacts are wired separately to all other elements in the stack.

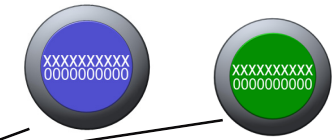
Part No.	TEC	TEW	TED	TEV	TET	TEP	TEM	TEI
Reset Type	Twist	Pull	Twist	Twist	Twist	Pull	Twist	Twist
Extra Features	-	-	Additional 1xNO Contact	Illuminated	-	-	Additional 1xNO Contact	Illuminated
Number of Control I/O	0	0	1	1	0	0	1	1
Number of Safety Circuits	0 - wired in series with TSS or TSM unit				2 - independently wired			

e-Stop is always mounted at the top of any control elements, but below solenoid / head / safety switches / locks. TEM & TEI e-stops can also be positioned at the bottom of the stack.

Step 8: Start Re-Start Switch

Core Elements

TSR	TS3
 	

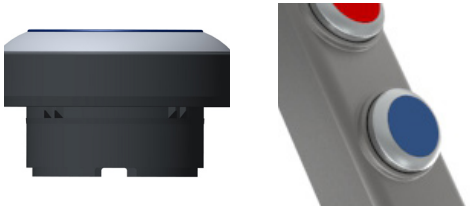
Part No.	TSR	TS3
Description	Start Re-start Switch - Blue	Start Re-start Switch - Green
Features & Benefits	• TSR (Blue) & TS3 (Green) Re-start switch operating on 1 Normally Open (N/O) and 1 Normally Closed (N/C). • For Safety relay reset. • Works on own separate dual safety circuit. • Volt free contacts. • Safety circuit 1 opens on button depression. • Highest control element after e-Stop's. • Must be wired independently to all other safety switches (head / solenoid / e-stop).  **Laser Engraving Information:** Engraving for each button is 2 lines of 10 characters.	
Number of Control I/O	0	
Number of Safety Circuits	2	

Location of Start Re-Start Switch in stack is highest control element after e-Stop's.

Step 9: Blue Independently Wired Switch & Potentiometer

Core Elements

TSZ



Part No.	TSZ
Description	Blue Independently Wired Change Over Switch
Features & Benefits	• Blue Independently Wired Change Over Switch operating on 1 Normally Open (N/O) and 1 Normall Closed (N/C). • For safety relay / safety PLC connection • Works on own separate supply.  **Laser Engraving Information:** Engraving for each button is 2 lines of 10 characters.
Number of Control I/O	3
Number of Safety Circuits	0

TV4

Part No.	TV4
Description	Potentiometer 10K
Features & Benefits	• Common uses include speed control for variable frequency drives. • No centre detent. • Inputs to tGard are always assigned before outputs.
Number of Control I/O	3
Number of Safety Circuits	0

Core Elements

Illuminated Pushbuttons	TP1	TP2	TP3	TP6	TP7
					
Part No.	**TP1**	**TP2**	**TP3**	**TP6**	**TP7**
Description	Illuminated Push Button - Red	Illuminated Push Button - Yellow	Illuminated Push Button - Green	Illuminated Push Button - Blue	Illuminated Push Button - White

Illuminated Pushbuttons - Protruding	TG1	TG3	TG5	TG6	TG7
					
Part No.	**TG1**	**TG3**	**TG5**	**TG6**	**TG7**
Description	Protruding Illuminated Push Button - Red	Protruding Illuminated Push Button - Green	Protruding Illuminated Push Button - Yellow	Protruding Illuminated Push Button - Blue	Protruding Illuminated Push Button - White

1 N/O Illuminated Pushbuttons - Latching	TJ1	TJ2	TJ3	TJ6	TJ7
					
Part No.	**TJ1**	**TJ2**	**TJ3**	**TJ4**	**TJ5**
Description	1 N/O Illuminated Push Button (Latching) - Red	1 N/O Illuminated Push Button (Latching) - Yellow	1 N/O Illuminated Push Button (Latching) - Green	1 N/O Illuminated Push Button (Latching) - Blue	1 N/O Illuminated Push Button (Latching) - White

1 N/O & 1 N/C Illuminated Pushbuttons	TX1	TX2	TX3	TX6	TX7
					
Part No.	**TX1**	**TX2**	**TX3**	**TX6**	**TX7**
Description	1 N/O & 1 N/C Illuminated Push Button - Red	1 N/O & 1 N/C Illuminated Push Button - Yellow	1 N/O & 1 N/C Illuminated Push Button - Green	1 N/O & 1 N/C Illuminated Push Button - Blue	1 N/O & 1 N/C Illuminated Push Button - White

Step 10b: Illuminating Switches

Core Elements

Volt Free Contacts Illuminated Pushbuttons	TU1		TU2		TU3		TU6		TU7	
										
	Part No.	**TU1**	**Part No.**	**TU2**	**Part No.**	**TU3**	**Part No.**	**TU6**	**Part No.**	**TU7**
	Description	Volt Free Contacts Illuminated Push Button - Red	**Description**	Volt Free Contacts Illuminated Push Button - Green	**Description**	Volt Free Contacts Illuminated Push Button - Yellow	**Description**	Volt Free Contacts Illuminated Push Button - Blue	**Description**	Volt Free Contacts Illuminated Push Button - White

2 Position Illuminated Selector Switch	T2E		T2F		Features & Benefits
					
	Part No.	**T2E**	**Part No.**	**T2F**	
	Description	2 Position Illuminated Selector Switch - Latching	**Description**	2 Position Illuminated Selector Switch - Momentary	

1 Normally Open (N/O) Illuminated Switch for machine control.

- Each switch uses 1 input and 1 output pin.
- Inputs to the tGard stack are always assigned before outputs.
- High input will illuminate the lamp, irrespective of selector.
- Range of options:
  - Push Button
  - Protruding Push Button
  - 2 Position Selector Switches
    - Latching
    - Momentary

Laser Engraving Information:
Engraving for each button is 2 lines of 10 characters.

Engraving available for 2 position selector switch is 10 characters at each switch position.

Core Elements

1 N/O Non-Illuminated Pushbuttons	TPB		TPR		TPG		TPW		TPY		TPZ	
												
Part No.	**TPB**	**Part No.**	**TPR**	**Part No.**	**TPG**	**Part No.**	**TPW**	**Part No.**	**TPY**	**Part No.**	**TPZ**	
Description	1 N/O Non-Illuminated Push Button - Black	**Description**	1 N/O Non-Illuminated Push Button - Red	**Description**	1 N/O Non-Illuminated Push Button - Green	**Description**	1 N/O Non-Illuminated Push Button - White	**Description**	1 N/O Non-Illuminated Push Button - Yellow	**Description**	1 N/O Non-Illuminated Push Button - Blue	
1 N/O Non-Illuminated Pushbuttons - Protruding	**TGB**		**TGR**		**TGG**		**TGW**		**TGY**		**TGZ**	
												
Part No.	**TGB**	**Part No.**	**TGR**	**Part No.**	**TGG**	**Part No.**	**TGW**	**Part No.**	**TGY**	**Part No.**	**TGZ**	
Description	Protruding 1 N/O Non-Illuminated Push Button - Black	**Description**	Protruding 1 N/O Non-Illuminated Push Button - Red	**Description**	Protruding 1 N/O Non-Illuminated Push Button - Green	**Description**	Protruding 1 N/O Non-Illuminated Push Button - White	**Description**	Protruding 1 N/O Non-Illuminated Push Button - Yellow	**Description**	Protruding 1 N/O Non-Illuminated Push Button - Blue	
1 N/O & 1 N/C Non-Illuminated Pushbuttons	**TXB**		**TXR**		**TXG**		**TXW**		**TXY**		**TXZ**	
												
Part No.	**TXB**	**Part No.**	**TXR**	**Part No.**	**TXG**	**Part No.**	**TXW**	**Part No.**	**TXY**	**Part No.**	**TXZ**	
Description	1 N/O & 1 N/C Non-Illuminated Push Button - Black	**Description**	1 N/O & 1 N/C Non-Illuminated Push Button - Red	**Description**	1 N/O & 1 N/C Non-Illuminated Push Button - Green	**Description**	1 N/O & 1 N/C Non-Illuminated Push Button - White	**Description**	1 N/O & 1 N/C Non-Illuminated Push Button - Yellow	**Description**	1 N/O & 1 N/C Non-Illuminated Push Button - Blue	

Step 11b: Non-Illuminating Switches

Core Elements

Volt Free Contacts Push Buttons	TUB	TUR	TUG	TUW	TUY	TUZ
	 					
Part No.	**TUB**	**TUR**	**TUG**	**TUW**	**TUY**	**TUZ**
Description	Volt Free Contacts Non-Illuminated Push Button - Black	Volt Free Contacts Non-Illuminated Push Button - Red	Volt Free Contacts Non-Illuminated Push Button - Green	Volt Free Contacts Non-Illuminated Push Button - White	Volt Free Contacts Non-Illuminated Push Button - Yellow	Volt Free Contacts Non-Illuminated Push Button - Blue

2 Position Selector Switch	T2A	T2D	T2V	2 Position Selector Key Switch	TK5	TK6
	 					
Part No.	**T2A**	**T2D**	**T2V**		**TK5**	**TK6**
Description	2 Position Non-Illuminated Selector Switch - Latching	2 Position Non-Illuminated Selector Switch - Momentary	2 Position Non-Illuminated Selector Switch - 1 N/O & 1 N/C		2 Position Non-Illuminated Selector Key Switch - Latching	2 Position Non-Illuminated Selector Key Switch - Momentary

1 N/O Mushroom Push Button	TMB	1 N/O Non-Illuminated Pushbuttons - Latching	TPS	Features & Benefits
	 			
Part No.	**TMB**		**TPS**	
Description	1 N/O Non-Illuminated Mushroom Push Button - Black		1 N/O Non-Illuminated Push Button (Latching) - Black	

1 N/O Switch for machine control.

- Each switch uses 1 output pin.
- Range of options:
  - Push Button
  - Protruding Push Button
  - 2 Position Selector Switches
    - Latching
    - Momentary
    - Key Latching
    - Key Momentary

1 N/O Switch & 1 N/C Switch for machine control.

- Each switch uses 2 output pin.
- Contacts are <u>not</u> volt free.

Laser Engraving Information:

Engraving for each button is 2 lines of 10 characters.

Engraving available for 2 position selector switch is 10 characters at each switch position.

Step 12: LED Lamp Element

Core Elements

	TLB	TLG	TLR	TLW	TLY
					
Part No.	**TLB**	**TLG**	**TLR**	**TLW**	**TLY**
Description	LED Lamp Element - Blue	LED Lamp Element - Green	LED Lamp Element - Red	LED Lamp Element - White	LED Lamp Element - Yellow

Features & Benefits

Lamp element for status indication can be configured to indicate machine status.

- LED status indicator.
- Each lamp uses 1 input pin.

Laser Engraving Information:

Engraving for each lamp is 2 lines of 10 characters.

Core Elements

T3A, T3D, T3E, T3F, T3H, TK7

Part No.	T3A	T3D	T3E	T3F	T3H	TK7
Description	Latching (Both Sides)	Momentary	Latching (Both Sides) Illuminated	Momentary Illuminated	Momentary / Latching	Key Latching (Both Sides)

Features & Benefits

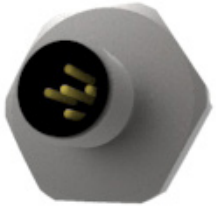
Each 3 position selector switch uses 2 output pins.

- Clockwise operation sets the lower assigned output High.
- Middle position - output pins Low.
- Anti-clockwise sets higher assigned output High.
- Non-latching - spring return to original position.
- Illumination (when selected) uses an additional 1 input pin.

Laser Engraving Information:

Engraving available for 3 position selector switch is 10 characters at each switch position.

Base Elements

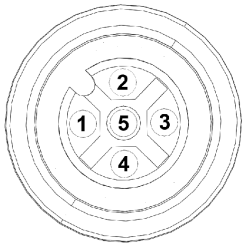
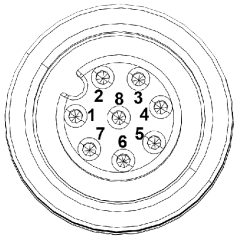
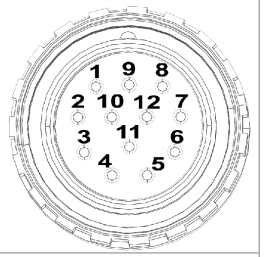
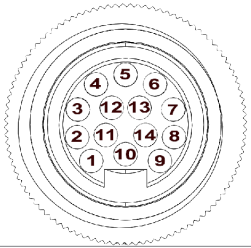
	TBF	TQ1	TQ2	TQ3	TQ4
					
Part No.	**TBF**	**TQ1**	**TQ2**	**TQ3**	**TQ4**
Description	Foot - For terminating purely mechanical configurations (no wiring).	5 Pin M12 QD	8 Pin M12 QD	8 Pin M12 QD	12 Pin M23 QD
Number of Control I/O	0	0	5	1	9
Number of Safety Circuits	0	2	0	2	0
	TQ5	**TQ7**	**TQ8**	**TQ9**	
					
Part No.	**TQ5**	**TQ7**	**TQ8**	**TQ9**	
Description	12 Pin M23 QD	14 Pin 7/8" UN2 QD	19 Pin M23 QD	19 Pin M23 QD	
Number of Control I/O	5	7	12	8	
Number of Safety Circuits	2	2	2	4	

Step 15: Mating Cables for Quick Disconnect Connectors

Base Elements

Quick Disconnect Mating Cable

Part No.	Cable-_M-TQ1			Cable-_M-TQ2 / TQ3				Cable-_M-TQ4 / TQ5				Cable-_M-TQ7			Cable-_M-TQ8 / TQ9				
No. Pins	5			8				12				14			19				
Connector	M12			M12				M23				MIN SIZE I			M23				
Pin #	Wire Colour		TQ1 Function	Wire Colour		TQ2 Function	TQ3 Function	Wire Colour		TQ4 Function	TQ5 Function	Wire Colour		TQ6 Function	Wire Colour		TQ8 Function	TQ9 Function	
1	Brown		SC1 in	White		I/O 0	SC1 in	Brown		+24v	+24v	Grey / Pink		I/O 3	Violet		SC1 in	SC1 in	
2	White		SC2 in	Brown		+24v	+24v	Brown/ White		I/O 0	SC1 in	White / Green		I/O 2	Red		SC2 in	SC2 in	
3	Blue		SC1 out	Green		Earth	Earth	Blue		0v	0v	White / Yellow		I/O 1	Grey		SC1 out	SC1 out	
4	Black		SC2 out	Yellow		I/O 1	SC2 in	White		I/O 1	SC2 in	Brown		+24v	Red/ Blue		SC2 out	SC2 out	
5	Grey		Earth	Grey		I/O 2	SC1 out	Green		I/O 2	SC1 out	Brown / Yellow		SC2 in	Green		I/O 0	I/O 0	
6				Pink		I/O 3	SC2 out	Yellow		I/O 3	SC2 out	Blue		0v	Blue		0v	0v	
7				Blue		0v	0v	Grey		I/O 4	I/O 0	Yellow		I/O 6	Grey/ Pink		I/O 1	I/O 1	
8				Red		I/O 4	I/O 0	Pink		I/O 5	I/O 1	Green		I/O 5	White/ Green		I/O 2	I/O 2	
9								Red		I/O 6	I/O 2	Pink		I/O 4	White/ Yellow		I/O 3	I/O 3	
10								Black		I/O 7	I/O 3	White		SC1 in	White/ Grey		I/O 4	I/O 4	
11								Violet		I/O 8	I/O 4	Red / Blue		I/O 0	Black		I/O 5	I/O 5	
12								Green/ Yellow		Earth	Earth	Brown / Green		SC2 out	Green/ Yellow		Earth	Earth	
13												Grey		SC1 out	Yellow/ Brown		I/O 6	I/O 6	
14												Red		Earth	Brown/ Green		I/O 7	I/O 7	
15															White		I/O 8	SC3 in	
16															Yellow		I/O 9	SC4 in	
17															Pink		I/O 10	SC3 out	
18															Grey/ Brown		I/O 11	SC4 out	
19															Brown		+24v	+24V	

Part No.	Pin Heads
Cable-_M-TQ1	
Cable-_M-TQ2 / TQ3	
Cable-_M-TQ4 / TQ5	
Cable-_M-TQ7	
Cable-_M-TQ8 / TQ9	

Connector Type	Cable Length	Cable Part Number
TQ1	2M	Cable-2M-TQ1
	5M	Cable-5M-TQ1
	10M	Cable-10M-TQ1
	20M	Cable-20M-TQ1
TQ2	2M	Cable-2M-TQ2
	5M	Cable-5M-TQ2
	10M	Cable-10M-TQ2
	20M	Cable-20M-TQ2
TQ3	2M	Cable-2M-TQ3
	5M	Cable-5M-TQ3
	10M	Cable-10M-TQ3
	20M	Cable-20M-TQ3
TQ4	2M	Cable-2M-TQ4
	5M	Cable-5M-TQ4
	10M	Cable-10M-TQ4
	20M	Cable-20M-TQ4
TQ5	2M	Cable-2M-TQ5
	5M	Cable-5M-TQ5
	10M	Cable-10M-TQ5
	20M	Cable-20M-TQ5
TQ7	2M	Cable-2M-TQ7
	5M	Cable-5M-TQ7
	10M	Cable-10M-TQ7
	20M	Cable-20M-TQ7
TQ8	2M	Cable-2M-TQ8
	5M	Cable-5M-TQ8
	10M	Cable-10M-TQ8
	20M	Cable-20M-TQ8
TQ9	2M	Cable-2M-TQ9
	5M	Cable-5M-TQ9
	10M	Cable-10M-TQ9
	20M	Cable-20M-TQ9

Base Elements

	TW1	TW3	TW4
			
Part No.	**TW1**	**TW3**	**TW4**
Description	12 Terminals	24 Terminals	24 Terminals
Number of Control I/O	6	14	10
Number of Safety Circuits	2	4	6

Features & Benefits

- For applications where the customer wishes to make their own connections.
- Push fit terminals.
- Cable size 26-14 AWG.
- Available with 12 or 24 connections.
- Control only and Safety and Control versions available.
- M20 gland thread.
- Requires no additional mounting to frame.
- Large opening for easy wiring.

Base Elements

	TEBB4	TEBB8
		
Part No.	**TEBB4**	**TEBB8**
Description	Up to 2 AS-i nodes	Up to 4 AS-i nodes
Number of Control I/O	Up to 4 inputs, 4 outputs	Up to 8 inputs, 8 outputs
Number of Safety Circuits	1 dual safety circuit	2 dual safety circuits

Features & Benefits

- AS-interface base elements are used when you want to connect all of the features of tGard to an AS-i-bus.
- **TEBB4** Element - Connect up to 4 inputs, 4 outputs and 1 dual channel safety circuit to the bus in one stack.
- **TEBB8** Element - Connect up to 8 inputs, 8 outputs and 2 dual channel safety circuits to the bus in one stack.
- Each node address can handle either 4 inputs and 4 outputs, or 1 dual channel safety circuits; you only get the nodes you need to maximise available bus addresses.
- Extended addressing is used for the I/O nodes allowing 62 nodes on a bus; double the number possible on a standard bus.
- Connections are made by the standard M12 5 pin QD.
- Mating cables are available, part no. Cable-_M-TQ1;2,5,10 and 20m lengths.
- Most elements are powered directly from the bus meaning only two wires are necessary to run the whole stack; the Aux power supply is required if a solenoid lock is included in the stack.
- The element takes one bay to house the AS-i electronics and includes the base connection element.

Accessories

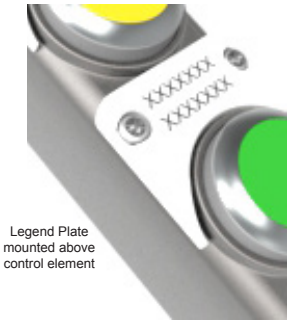
TKS	TKM

Part No.	TKS	TKM
Description	Standard Key	Master Key

Features & Benefits

- Torque rating 10Nm.
- High corrosive resistance.
- Over 5,000 non-masterable combinations available.
- 10 masterable combinations available.
- The key is laser marked with the Fortress key code.

TWL



Part No.	TWL
Description	White Legend Plate

Features & Benefits

- For marking of control elements.
- Mechanically fixed using M3 screws.
- Can be mounted above or below control element (Note: When marking in the top orientation the first bay is unable to be marked).
- Laser marked.
- 2 lines of 10 characters.
- Text can be marked upside down.
- Legend plate requirement must be specified at point of ordering a tGard configuration, otherwise housing will not be drilled to accept legend plate.

Item is ordered separately to main stack