



594-337 to 374

COMPACT SAFETY INTERLOCK SWITCH



**5 CONTACTS: 2 N/C + 1 N/O FOR
DOOR POSITION MONITORING
1 N/C + 1 N/O FOR INTERLOCK
MONITORING**



**ROTATABLE HEAD: 4 POSSIBLE KEY
ENTRY SLOTS**



**REPLACEABLE ACTUATOR GUIDE:
TOLERANT TO MISALIGNMENT &
ALLOWS NEAT UNOBTUSIVE
INSTALLATION**



HIGH LOCKING FORCE = 1500N



**3 X CONDUIT ENTRIES
(BS 20MM OR PG13.5)**



**IP67 WATER TIGHT HOUSING -
CAN BE HIGH PRESSURE HOSED**



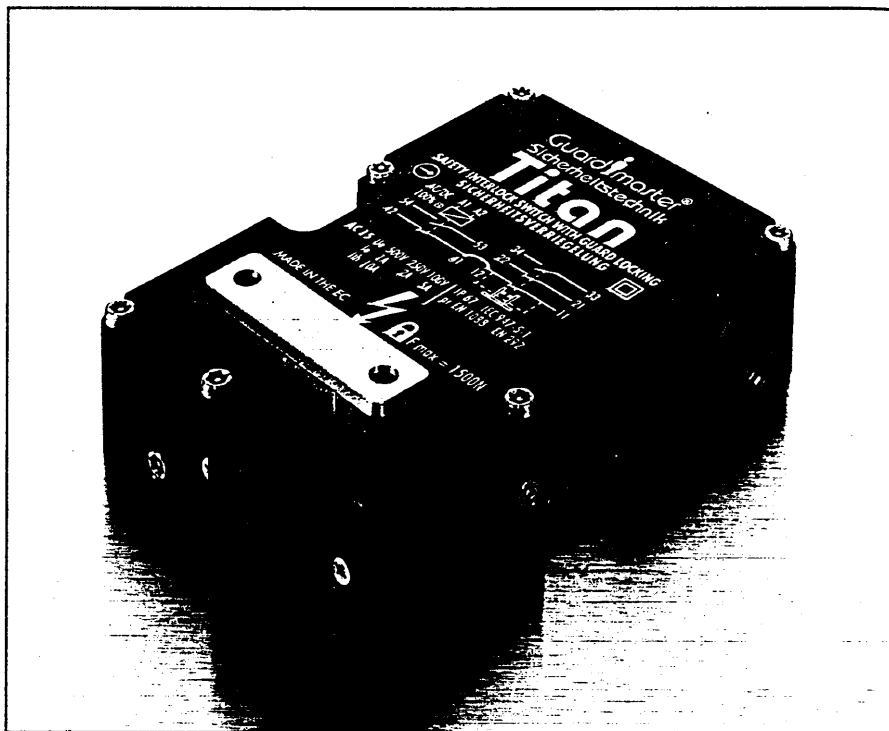
**4 MANUAL RELEASE ACCESS POINTS
WITH SECURITY SCREWS**



**CONFORMS TO EN60947-5-1,
EN1088 & BG. GS-ET-19**



The New Guardmaster Titan is a compact, guard interlocking safety switch with guard locking. The switch provides (a) fail-safe electrical interlocking of the guard. (b) physical locking, preventing the guard being opened at will. The guard may only be opened when a continuous voltage is applied to the internal solenoid, releasing the integral lock mechanism. This signal should only be generated when the machine has come to a safe stop. The Titan is therefore ideal for machines which do not stop immediately (i.e. have run



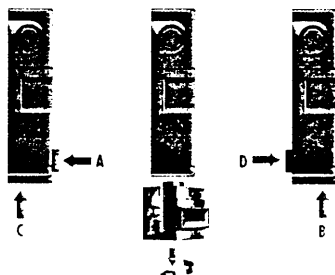
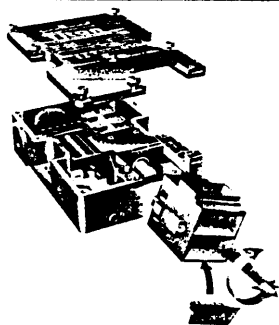
down) or where premature interruption of the machine or process cycle could cause damage to tooling & components or cause an additional hazard. The requirement of a command signal adds an additional level of safety to any control system. The ability to keep machine guards locked can prevent unnecessary stop/start cycles and may enhance productivity.

To open the guard, the machine must come to rest, at which point a voltage may be supplied to the switch. An additional optional run down fail-safe timer or speed sensor units are available from Guardmaster for this function if required. See Cerberus units.

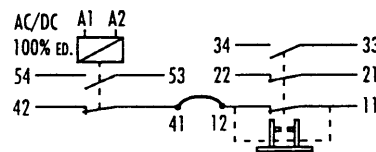
Energising the internal solenoid

releases the lock mechanism. The lock incorporates a unique patented design that ensures if there is a load applied to the mechanism (by either the weight of the door or the operator prematurely attempting to open it) the mechanism operates smoothly and reliably. When securely closed the locking mechanism has been designed to withstand forces in excess of 1500N (>150Kg).

The solenoid lock incorporates monitoring, positive guided safety contacts (1N/C 1N/O) which will break the safety circuit, when the lock is energised. This also prevents the machine from starting if the door is closed but not locked. Also the removal of the actuator operates 2



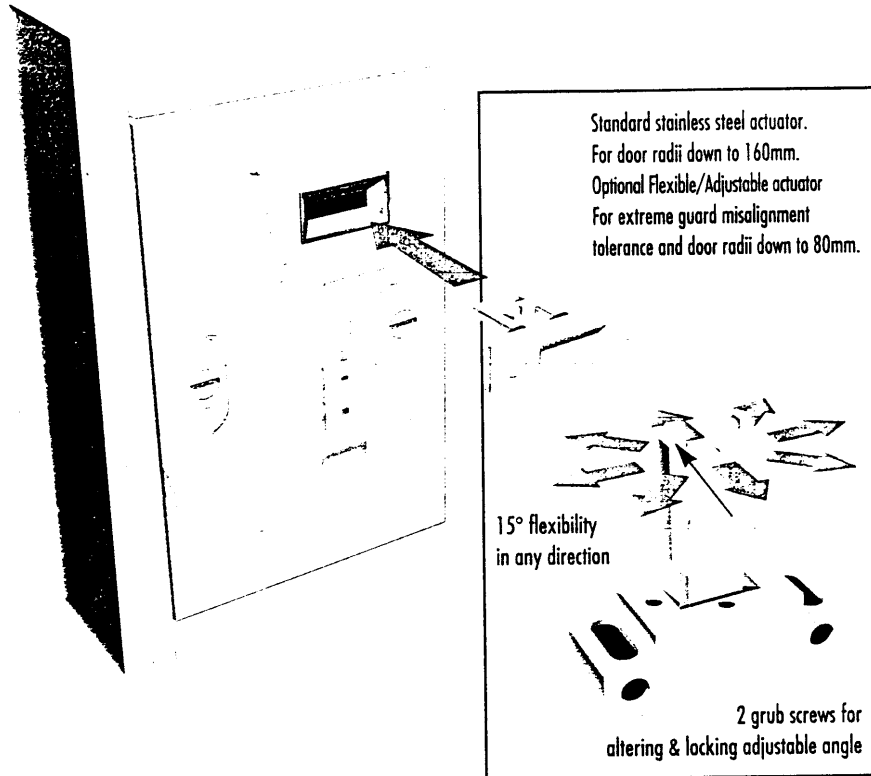
4 possible key entry points



Internal Circuit

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The safety contacts of the Guardmaster switches are described as normally closed (N/C) ie. with the guard closed, actuator in place (where relevant) and the machine able to be started.



contacts & 1 auxiliary or monitoring circuit. The Titan therefore has 5 available output contacts to monitor guard position, lock engagement and solenoid condition in either dual or single channel safety related control systems.

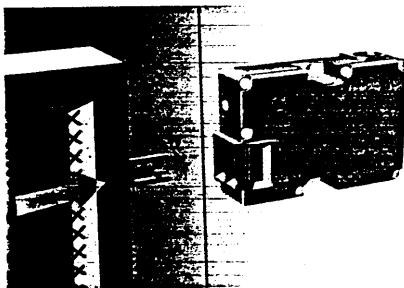
The Titan also has a unique rotatable head giving 4 possible key entry positions allowing it to be mounted in almost any position. A slot guide to protect the unit from actuator damage due to poor guard alignment is also supplied which may be replaced if required. This guide also provides an ideal 'letter box' feature should the unit be installed behind a fixed panel.

The cover is secured by anti-tamper screws and 2 additional M5 x 20 security screws are provided for either fixing the actuator or the main body of the switch. 4 manual release points with security screws allows the locked Titan to be released in the event of total power failure on a machine.

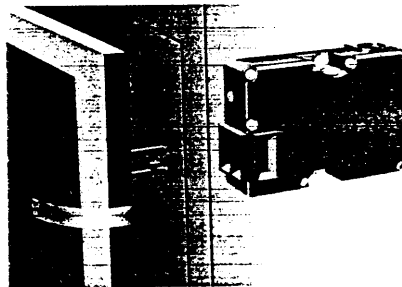
An optional flexible/adjustable actuator is available for applications with door radii down to 80mm, making the Titan ideal for small machine access gates as well as larger applications.

additional positive operating safety

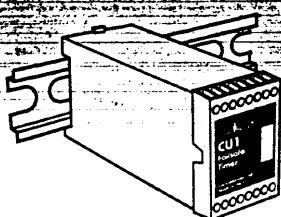
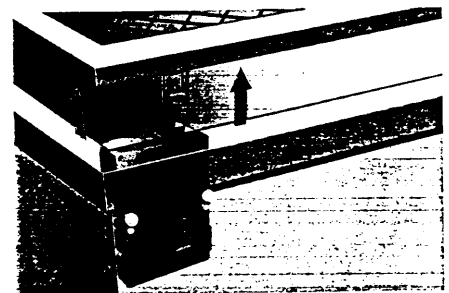
Sliding Guards



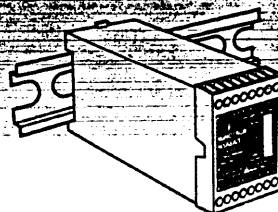
Hinged Guards



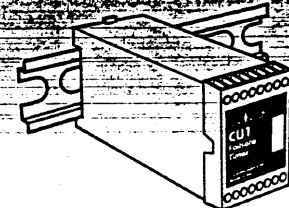
Removable Guards



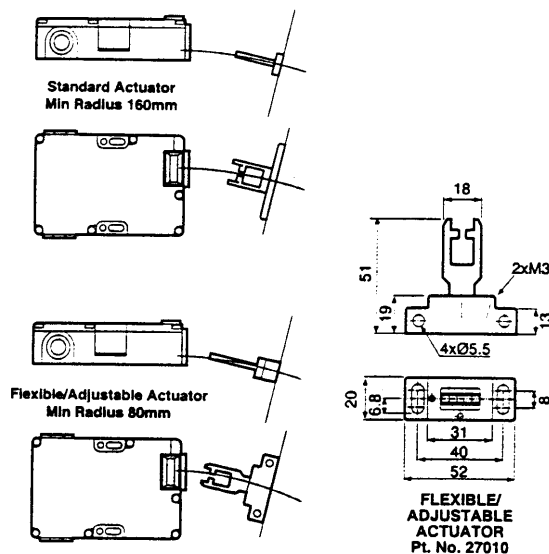
CU1 Timer Unit



Minotaur MSR6R/T
Monitoring Safety Relay Unit



CU2 Stop Motion Detector Unit



EN60947-5-1, GS-ET-19,
BS5304, pr EN1088

Safety contacts	3 N/C positive break
Utilization cat	AC 15

a.c. (Ue)	500V	250V	100V
(Ie)	1A	2A	5A
d.c.	250V 0.5A, 24V 2A		

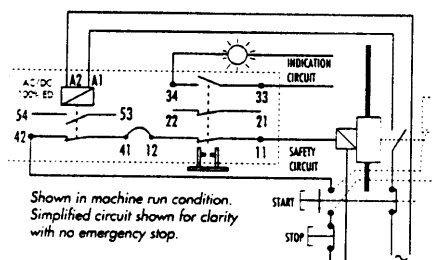
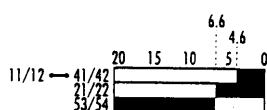
Thermal current (Ith)	10A
Safety contact app	>2 x2mm

Rtd. insulation voltage	(U _i) 500V
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Rtd. Impulse withstand voltage (U_{imp}) 2500V

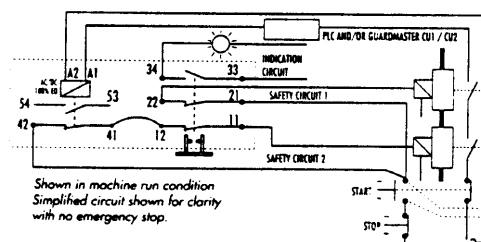
Auxiliary contacts	2 N/O
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Pollution degree	3
Actuator travel for positive opening	7 mm



*Titan connected to a single contactor.
Will not unlock until contactor is in 'OFF' state.*

Break contact min. force	10N
Max. actuation speed	160mm/sec.
Max. actuation frequency	1 cycle per second
Case material	Self extinguishing glass reinforced Nylon UL
Actuator material	Stainless steel
Protection	IP67
Conduit entry	3 x M20/3 x PG13.5
Ambient operating temp.	-20° to + 60°C
Fixing	M5 (2 x Anti-tamper resistorx, supplied)
Mounting	Any position
Cleaning	May be high pressure steam cleaned
Mechanical Life	>10 ⁶
Max holding force (locked)	1500N
Max releasable load	100N (TLS2 = 35N)



*Titan connected to two contactors (high risk situations; through CU1 or CU2 unit.
Will not unlock until contactor is in 'OFF' state and motion has stopped.*

Compact Safety interlock switch

TLS-2 Power to lock, spring release

CU2 Stop Motion Detector Unit

24VAC/DC	07139
110/230V(Selectable)	07140
2 x Motion Sensors	07141
Minotaur MSR6R/T	
24V	23017
110V	23018
240V	23019