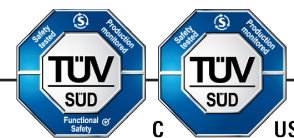
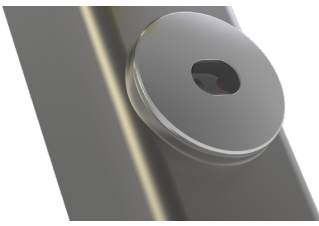



Operating Instructions: Safety Switch



Core Elements

Description	TSM, TSS & TSP
<p>Safety Switch Element</p> <p>Can be driven by either the operation of the head element (removal of actuator) or a mechanical lock.</p> <ul style="list-style-type: none"> Operates on dual safety circuits. 2 positively driven force break NC contacts (uses none of the Input/Output pins). IP65. 1 Normally Open (N/O) / monitoring contact giving 24V signal on I/O pin (TSM only). Red LED illuminated to show door open (TSM & TSP). Extra retention force available (TSP). <p>Location</p> <ul style="list-style-type: none"> First element after all mechanical elements (Head, Internal Release and Locks). 	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>TSM/TSP</p> </div> <div style="text-align: center;">  <p>TSS</p> </div> </div>

Technical Specifications	
Housing Materials	Painted die cast aluminium
Colour	Dark Grey
Ingress Protection	IP65*
Mechanical Life	1,000,000 Operations
Retention Force	7 - 9N (TSS/TSM) 38 - 40N (TSP)
Maximum Frequency of Ops	1 per second
Ambient Temperature	-25°C to 40°C (-13°F to 104°F)
Environment	Indoor use only
Switching Principle	Positive Break
Switching Contact Element	2N/C on Safety Circuits 1 N/O per Monitor (TSM only)
Safety Switches	DC13: Le=0.5A, Ue=24V DC AC15: Le=1A, Ue=24V AC
Monitoring Switches	DC13: Le=0.5A, Ue=24V DC
Voltage	24V DC
Contact Material	Silver
*IP protection is to the tGard stack that this module attaches to, when correctly fitted according to installation and maintenance instructions.	

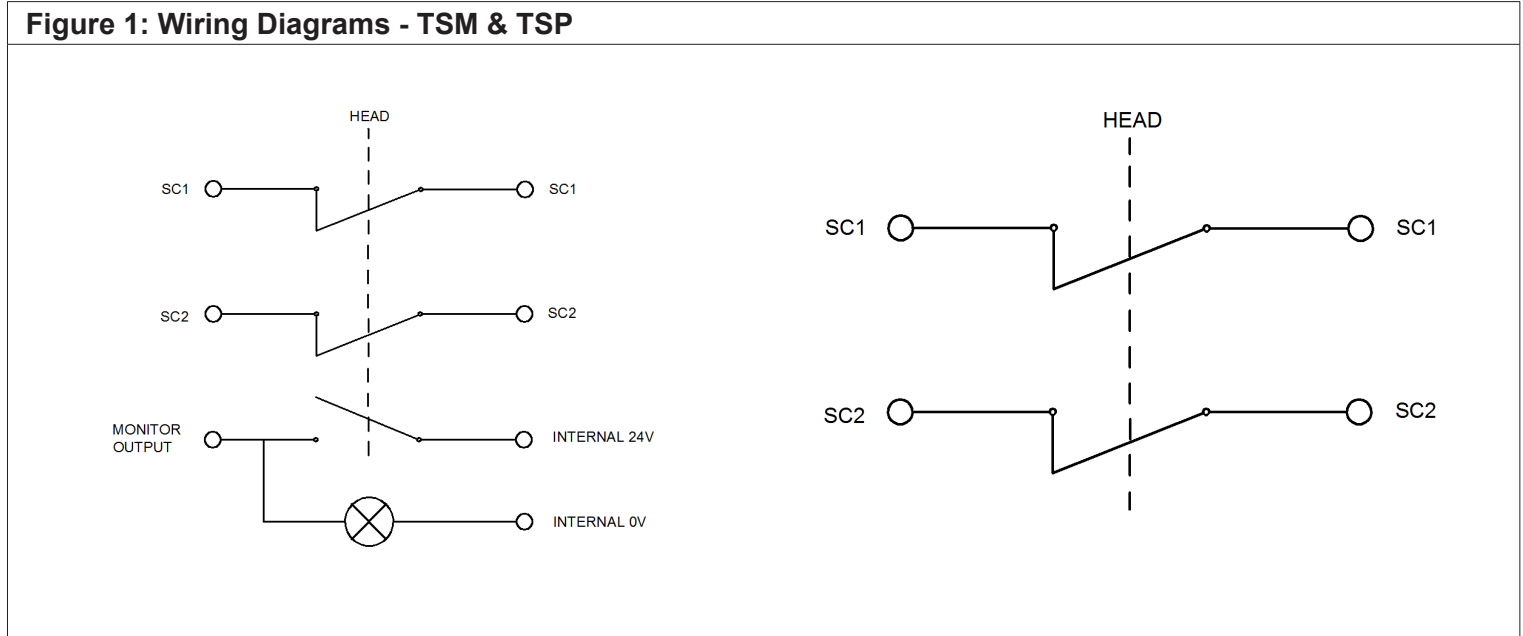
tGard Safety & Control Connector Part Number Options	
Description	Part No.
Safety Switch	TSM
Safety Switch with extra head retention force	TSP
Safety Switch - No N/O monitor contact	TSS

Operating Instructions: Safety Switch

tGard Safety Switch Safety Functions		Part No.
Safety Function	Turns mechanical movement of head / lock into operation of safety contacts	TSS / TSM / TSP

Electrical Guidance				
Part No.	Inputs	Outputs	Module operates on the safety circuits	Order of pin assignment from base to head
TSM / TSP	0	1	Yes	-
TSS	0	0	Yes	-

Safety Data	
Standards	EN13849-1 EN13849-2 EN14119
Approvals	TÜV SÜD for Europe, Canada & USA
Category	Cat. 3, PLd (EN/ISO 13849-1)
Functional Safety Data	B10d (for whole tGard device, which will contain multiple elements)/ 5,000,000



Operating Instructions: Safety Switch

Figure 2: Dimensional Drawing - TSM, TSP & TSS

