











Protection against defeating your machine safeguarding



Safety Interlock switches

Actuation principle	Operated by	Safety guard Functions	Special application	Series	Appearance	Page
Physical contact, force, pressure	Lever	Monitoring		D4N		4
			Manual Reset	D4N-R		
	Hinge		Rotary doors	D4NH		
	Tongue		Monitoring and locking	D4NS		5
		D4GS				
		Monitoring and locking	D4NL		6	
			D4JL			
			D4SL-N			
		High-coded actuator	D41G		8	
	Hygienic	F3S-TGR-KHL		7		
		Star handle	D41L		8	

Complete offer that covers all your safeguarding applications

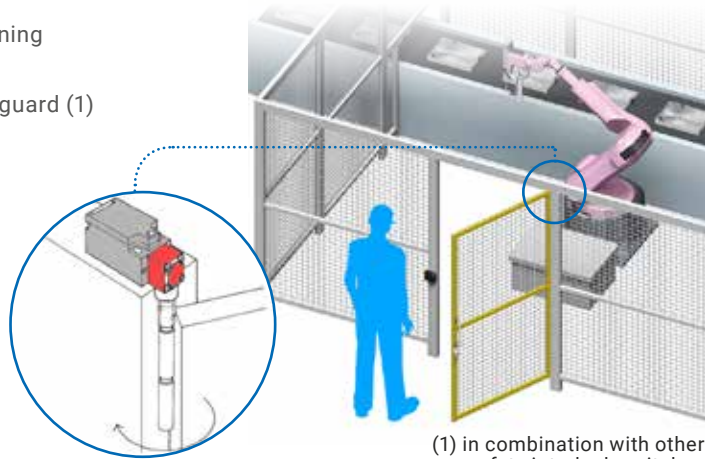
Actuation principle	Detection technology	Safety guard Functions	Special application	Series	Appearance	Page	
Non-contact	RFID coded tag	Monitoring	High-coded actuator	D41D		11	
				F3S-TGR-N_U			
			D40Z				
			F3S-TGR-N_M				
	Hall effect coded magnet		D40A		10		
			F3S-TGR-N_C				
	Magnetic uncoded		F3S-TGR-N_R				
			ATEX	F3S-TGR-N_X			
	RFID coded tag		Monitoring and locking	High-coded actuator	D4ML_U		11
					D40ML_B		



Safety Limit switches for limiting and positioning

- Machine parts or tools positioning
- Overtravel limiting
- Position detection for moving guard (1)

Hinge operated switches are designed to be integrated in the guard profile to save space and avoid tampering



(1) in combination with other safety interlock switches

Type 1*	Actuation principle		Actuator type		Product series		
	Mechanical	Physical contact, force, pressure	Uncoded	Switching cam	D4N-D4N-R		
				Lever arm			
				Hinge Shaft	D4NH-AS		
				Hinge Arm Lever	D4NH-BC		

(*) According to EN ISO14119:2013 Standard

Manual reset limit switch D4N-R series

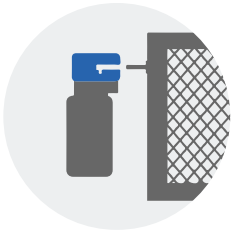


- Pull-reset function integrated with a wide range of actuator types
- 2NC/1NO and 3NC contacts version in addition to standard 1NC/ 1NO and 2NC version
- Gold-plated contacts provide high contact reliability for handling micro-loads
- M12-connector models to set up easy installation and simplify maintenance
- Conforms to escalators and lift Standards

Safety door hinge switch D4NH series



- Designed to save space by integrating it in the guard protection of the machine
- Shaft or arm lever actuator with direct opening mechanism
- 2NC/1NO and 3NC contacts version in addition to standard 1NC/ 1NO and 2NC version
- Version with 'Make Before Break' (MBB) contacts meet applications for advanced requirements
- M12-connector models to set up easy installation and simplify maintenance



Tongue interlock switches for monitoring

- Position detection for moving guards (2)
- Safety gates for access protection (2)



4-head orientation possible, make tongue interlock switches suitable for left and right hinged doors and sliding guards



(2) when hazardous motion stops immediately

Type 2*	Actuation principle		Actuator type		Product series		
	Mechanical	Physical contact, force, pressure	Low Coded	Tongue	D4NS		
					D4GS		

(*) According to EN ISO14119:2013 Standard

Tongue interlock switches D4NS series



- Compact size for saving space and high mounting versatility with four head orientations possible
- Wide variety of operation keys (tongues) and accessories to be fixed on the guard protection
- 2NC/1NO and 3NC contacts version in addition to standard 1NC/ 1NO and 2NC version
- Version with 'Make Before Break' (MBB) contacts meet applications for advanced requirements
- M12-connector models to set up easy installation and simplify maintenance

Tongue interlock switches D4GS series

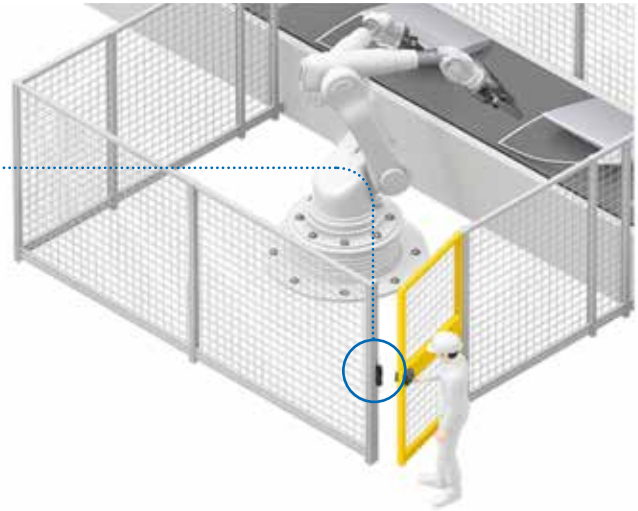


- Slim housing with only 17 mm of width (half size as standard models) to save space in the machine
- High mounting versatility with reversible design allowing either front or rear mounting
- Operation Key with rubber mounting hole to absorb vibration and shock
- Build-in switches with 2NC/1NO and 3NC contacts version in addition to 1NC/ 1NO and 2NC version
- Made with rust-resistant materials to avoid issues caused by water (IP67)



Guard locking switches for monitoring and locking

- Position detection for moving guards and solenoid locking for high-inertia machines (3)
- Safety gates for access protection (3)



Guard locking switches can be adapted to aluminum profiles and include accessories with trapped key or emergency exit lever

(3) when hazardous motion takes a long time to stop

Type 2*	Actuation principle		Actuator type		Product series		
	Mechanical	Physical contact, force, pressure	Low Coded	Tongue + Solenoid	D4JL		
					D4NL		D4DS-K1 D4DS-K2 D4DS-K3 D4DS-K5
					D4SL-N		
					F3S-TGR-KHL		Stainless steel
			High Coded		D41L D41G		

(*) According to EN ISO14119:2013 Standard

Guard locking switches D4JL series



- High robustness with holding force up to 3000 N prevents heavy guards from opening inadvertently
- Two safety circuits and two monitor contacts provide an array of monitoring patterns
- Models with trapped keys prevent operator from being locked in hazardous areas
- Rear release version to unlock the switch and escape from hazardous area
- Special slide key reduces mounting design time and includes a padlock to prevent from restarting

Guard locking switches D4NL series



- Models including metallic head version to increase robustness against shocks
- Wide variety of models with multi-contacts (up to 5-contact) built-in switches available
- High mounting versatility with 4 head orientation
- Operation key insertion direction and adjustable mounting (compatible with D4NS models) increases installation flexibility
- Release key version to unlock the switch in case of emergency or if the power supply stops available

Guard locking switches D4SL-N series



- Vertical design to be easily mounted on 40 × 40 mm frames
- Wide variety of models with multi-contacts (up to 5-contact) built-in switches available
- Simplify installation by changing the operation key insertion point without detaching the head
- Wiring time is reduced with two types of wiring methods of one-touch attachment and removal
- Release key included to unlock the switch in case of emergency or if the power supply stops available
- Solenoid can be driven directly from Controller

Hygienic guard locking switches F3S-TGR-KHL series



- Stainless-steel body with IP69K protection degree complying with hygienic requirements
- Vertical design to be easily mounted on 40 × 40 mm frames
- High robustness with holding force up to 3000 N prevents heavy guards from opening inadvertently
- Models with 6-contact built-in switches
- Rear release version to unlock the switch and escape from hazardous area
- Release key included to unlock the switch in case of emergency or if the power supply stops available

Hygienic guard locking switches D41L series



- Hygiene-compliant design with ECOLAB certification (IP66, IP67 and IP69)
- Excellent versatility of mounting with same actuator for left, right hinged and sliding guard protection
- Star handle with high resistance to impacts
- Best protection against defeating by high-level RFID coding
- Rear lever release version to mechanically unlock the switch and escape from the hazardous area



Hygienic guard locking switches are resistant to high pressure water jet with a wide range of cleaning agents

Gate guard locking switches D41G series



- Compatible with 40 mm profiles with actuators adapted for hinged left and right and sliding guards
- Risk of injury from protruding parts has been removed; no supplementary door handles required
- High holding force (up to 2600 N) prevents even heavy guards from opening inadvertently
- Best protection against defeating by high-level RFID coding
- Actuators assembled with integrated emergency exit collar for compact version or lockout tag for door handle version
- Emergency exit handle to mechanically unlock the switch and escape from the hazardous area

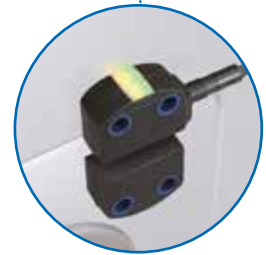


Emergency exit handle is designed to be mounted inside of the hazardous area. It is mechanically linked with the actuator that is in the other side



Non-contact switches for monitoring

- Position detection for moving guards (2)
- Safety gates for access protection (2)



The compact size of the non-contact switches fits into a narrow space. They are suitable for aluminum profiles as well as glass doors and panels

(2) when hazardous motion stops immediately

Type 3*	Actuation principle		Actuator type		Product series	
	Non-Contact	Magnetic	Magnet	Non-coded	F3S-TGR-N_R	Output signal: Reed contact
					F3S-TGR-N_X (ATEX)	

(*) According to EN ISO14119:2013 Standard

Type 4*	Actuation principle		Actuator type		Product series		
	Non-Contact	Hall effect	Magnet	Low-coded	D40A	F3S-TGR-N_C	F3S-TGR-S_A/ S_D
		RFID	RFID tag	Low-coded	D40Z	F3S-TGR-N_M	D40ML_B**
		RFID	RFID tag	High-coded	D41D	F3S-TGR-N_U	D40ML_U**

(*) According to EN ISO14119:2013 Standard

(**) Includes Guard locking function with magnetic latching by solenoid

Non-contact switches F3S-TGR-N

Housing	Polyester	Stainless steel	Hygienic
Version			
Elongated			
Small			
Miniature			
Barrel			

R series

- Suitable for high pressure cleaning processes due to IP69K (only for pre-wired types)
- Stainless-steel housing and Hygienic designed versions
- Economic solution based on Reed technology
- Series-wiring up to 20 sets (PL d)
- Compensation of mechanical disalignment tolerances

C series

- Suitable for high pressure cleaning processes due to IP69K (only for pre-wired types)
- Stainless-steel housing and Hygienic designed versions
- Series-wiring up to 20 sets (PL d)
- Based on Hall effect technology with medium protection against defeating
- Compensation of mechanical disalignment tolerances

Non-contact switches F3S-TGR-N_X series



- Designed for applications where explosive atmospheres (Gas and dust) are present
- Stainless-steel housing version
- Suitable for high pressure cleaning processes
- Economic solution based on Reed technology
- Series-wiring up to 20 sets (PL d)

Non-contact switches D40A series



- Compact design to fit in narrow spaces
- Suitable for hinge and sliding guards thanks to different actuating directions
- Quick connection with any PLC thanks to the bipolar (PNP/NPN) auxiliary output
- Series-wiring up to 30 sets (PL d)
- Based on Hall effect technology with medium protection against defeating

Standalone Non-contact switches F3S-TGR-S_A/ S_D series



- Models with single or dual actuator available (for one or two door systems)
- Stainless steel versions rated IP69K suitable for clean/ sanitize in place (only for pre-wired types)
- Easy monitoring by diagnostic LED indicator
- Up to 20 units serial connection (PL d)
- Based on Hall effect technology with medium protection against defeating

Non-contact switches D40Z series



- Compact design to fit in narrow spaces
- Suitable for hinge and sliding guards thanks to different actuating directions
- Ongoing monitoring by integrated self-diagnostics
- Series-wiring up to 30 sets without reduction of the safety level (PL e)
- Quick connection with any PLC thanks to the bipolar (PNP/NPN) auxiliary output

Non-contact switches F3S-TGR-N__M/U series



- Suitable for high pressure cleaning processes due to IP69K (only for pre-wired types)
- Based on RFID technology (code) and hall technology (distance check)
- Stable detection even when guard closes slowly
- Up to 20 units serial connection (PL d)
- High-level coding version (U) with high protection against defeating

Non-contact switches D40ML series



- Stainless steel versions rated IP69K suitable for clean/sanitize in place
- Heavy duty version with high holding force (up to 1500 N) prevents heavy guards from opening
- Easy monitoring by diagnostic LED indicator
- Up to 20 units serial connection (PL d)
- High-level coding version (U) with high protection against defeating

Non-contact switches D41D series



- Compact design and three types of actuators to fit in narrow spaces and corners
- Suitable for hinge and sliding guards thanks to different actuating directions
- Best protection against defeating by high-level coding based on RFID technology
- Smart diagnostic by means of 3-color LED (11 patterns for status)
- Series-wiring up to 30 sets without reduction of the safety level (PL e)
- Easy and quick pairing by teach-in procedure (30 seconds)

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