

Safety Switches

Guard Locking Switches

Atlas™ 5



Description

The Atlas 5 is a positive-mode, tongue-operated guard-locking interlock switch that locks a machine guard closed until power is isolated to ensure that it remains isolated while the guard is open. A heavy-duty switch, the Atlas 5 locking mechanism is designed to withstand forces up to 5000 N (1124 lb) and the die-cast alloy housing is ideal for use in harsh environments. A unique feature of the Atlas 5 is a patented self-aligning head that tolerates actuator or guard misalignment, making it particularly useful for heavy machine guards.

The Atlas 5 is designed for machines that do not stop immediately or where premature interruption of the machine could cause damage to tooling and components or cause an additional hazard. With 2 safety (N.C.) contacts and 2 auxiliary (N.O.) contact, Atlas 5 is ideal for PLC controlled machines.

Features

- Mechanical lock
- High locking force—5000 N (1124 lb)
- Heavy duty die-cast alloy housing ideal for harsh environments
- Patented self-aligning head tolerates actuator misalignment

Specifications

Safety Ratings	
Standards	EN954-1, ISO13849-1, IEC/EN60204-1, NFPA79, EN1088, ISO14119, IEC/EN60947-5-1, ANSI B11.19, AS4024.1
Safety Classification	Cat. 1 Device per EN954-1 Dual channel interlocks suitable for Cat. 3 or 4 systems
Functional Safety Data (related to Safety Contacts) *	B10d: > 2 x 10 ⁶ operations at min. load PFH _D : < 3 x10 ⁻⁷ MTTFd: > 385 years May be suitable for use in performance levels Ple or Pld systems (according to ISO 13849-1:2006) and for use in SIL2 or SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics
Certifications	CE Marked for all applicable directives, cULus, CSA, and TÜV
Outputs	
Safety Contacts *	Atlas 5: 2 N.C. direct opening action; 1 N.O. direct opening action Atlas 5 trapped key (left hand): 2 N.C. direct opening action; 1 N.O. direct opening action
Auxiliary Contacts	1 N.O.
Thermal Current I _{th}	10 A
Rated Insulation Voltage	(Ui) 500V
Switching Current @ Voltage, Min.	5 mA @ 5V DC
Utilization Category	
AC-15	(Ue) 240V 120V (Ie) 1.5 A 3 A
DC-13	(Ue) 24V (Ie) 2 A
Solenoid Characteristics	
Locking Type	Power to Release
Holding Force, Max.	5000 N (1124 lbf)
Power Supply	24V AC/DC or 110V AC or 230V AC (solenoid)
Solenoid Power	13 W typical 100% ED
Operating Characteristics	
Break Contact Force, Min.	12 N (2.7 lbf)
Actuation Speed, Max.*	160 mm (6.29 in.)/s
Actuation Frequency, Max.	2 cycles/s
Operating Radius, Min	300 mm end entry, 800 mm entry front
Operating Life @ 100 mA load	1,000,000 operations
Environmental	
Enclosure Type Rating	IP65
Operating Temperature [C (F)]	-10...+60° (+14...+140°)
Physical Characteristics	
Housing Material	Die-cast alloy
Actuator Material	Stainless Steel
Weight [g (lb)]	1200 (2.65)
Color	Red

* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the B10d value given and:
 - Usage rate of 1op/10mins., 24hrs/day, 360 days/year, representing 51840 operations per year
 - Mission time/Proof test interval of 38 years

* The safety contacts are described as normally closed (N.C.) i.e., with the guard closed, actuator in place (where relevant) and the machine able to be started.

3-Interlock Switches

Product Selection

Module Type	Actuator Type	Contact		Solenoid Contacts	Solenoid Voltage	Cat. No.			
		Safety	Auxiliary			M20 Conduit		Connector§	
						M20	1/2 inch NPT Adaptor	12-Pin M23	8-Pin Micro (M12)*
Standard	Standard	2 N.C.	1 N.O.	2 N.C. & 1 N.O.	24V AC/DC	440G-L07264	440G-L07258	440G-L07298	440G-L2NNSDH-3N
					110V AC/DC	440G-L07263	440G-L07257	—	—
					230V AC/DC	440G-L07262	440G-L07256	—	—
LH Key Lock					24V AC/DC	440G-L07255	440G-L07249	440G-L07301	440G-L2NNSDH-38
110V AC/DC					440G-L07254	440G-L07248	—	—	
230V AC/DC					440G-L07253	440G-L07247	—	—	

§ For connector ratings, see 3-9.

* With an 8-pin micro connector, not all contacts are connected. See page 3-49 for wiring details.

Recommended Logic Interfaces

Description	Safety Outputs	Auxiliary Outputs	Time Delay	Terminals	Reset Type	Power Supply	Cat. Page No.	Cat. No.
Single-Function Safety Relays								
MSR127RP	3 N.O.	1 N.C.	—	Removable (Screw)	Monitored Manual	24V AC/DC	5-26	440R-N23135
MSR127TP	3 N.O.	1 N.C.	—	Removable (Screw)	Auto./Manual	24V AC/DC	5-26	440R-N23132
MSR126T	2 N.O.	None	—	Fixed	Auto./Manual	24V AC/DC	5-24	440R-N23117
MSR30RT	2 N.O. Solid State	1 N.O. Solid State	—	Removable	Auto./Manual or Monitored Manual	24V DC	5-16	440R-N23198
Specialty Safety Relays								
MSR178	3 N.O.	2 N.C.	0.5 s...30 min	Removable	Automatic	24V AC/DC, 115V AC or 230V AC	5-40	440R-M23227
CU2	2 N.O.	1 N.C.	0.1 s...40 min	Fixed	—	24V AC/DC	5-56	440R-S07281
CU3	2 N.O.	1 N.C.	—	Fixed	Automatic/Manual	110V AC	5-64	440R-S35002
Modular Safety Relays								
MSR210P Base 2 N.C. only	2 N.O.	1 N.C. and 2 PNP Solid State	—	Removable	Auto./Manual or Monitored Manual	24V DC from the base unit	5-82	440R-H23176
MSR220P Input Module	—	—	—	Removable	—	24V DC	5-86	440R-H23178
MSR310P Base	MSR300 Series Output Modules	3 PNP Solid State	—	Removable	Auto./Manual Monitored Manual	24V DC	5-102	440R-W23219
MSR320P Input Module	—	2 PNP Solid State	—	Removable	—	24V DC from the base unit	5-106	440R-W23218

Note: For additional Safety Relays connectivity, see page 5-12.

For additional Safety I/O and Safety PLC connectivity, see page 5-116.

For application and wiring diagrams, see page 10-1.

Connection Systems

Description	8-Pin Micro (M12)	12-Pin M23
Cordset	889D-F8AB*	889M-F12AH*
Patchcord	889D-F8ABDM*†	889M-F12AHMU-‡

* Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

† Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

‡ Replace symbol with 0M3, (0.3 m), 0M6 (0.6 m), 1 (1 m), 2 (2 m) or 3 (3 m) for standard lengths.

Note: For additional information, see page 7-1.





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Safety Switches

Guard Locking Switches

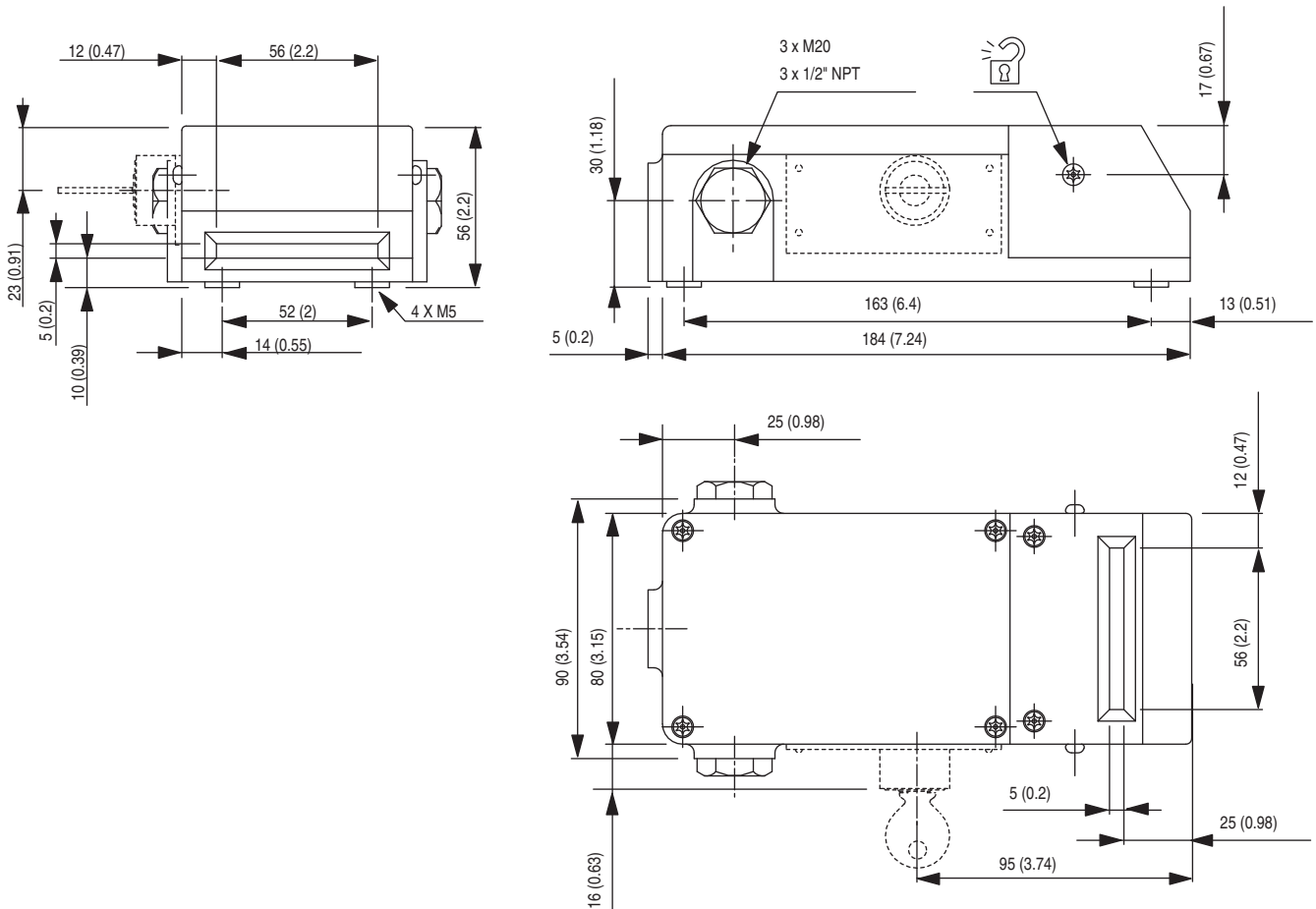
Atlas™ 5

Accessories

Description	Dimensions	Cat. No.
 Standard actuator	3-50	440G-A07136
 Atlas Replacement End Cap	—	440G-A07180
 Fully flex actuator	3-50	440G-A07269
 Dust Cover	—	440K-A17181

Approximate Dimensions

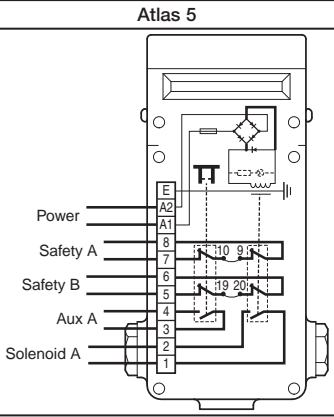
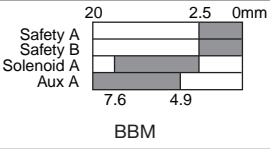
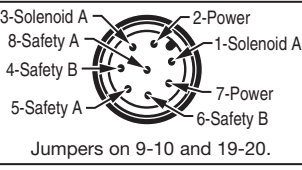
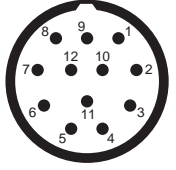
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



Note: 2D, 3D and electrical drawings are available on www.ab.com.

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Typical Wiring Diagrams

Contact Configuration	 <p style="text-align: center;">Atlas 5</p>																				
Contact Action	 <p style="text-align: center;">BBM</p>																				
8-Pin Micro (M12)	 <p style="text-align: center;">Jumpers on 9-10 and 19-20.</p>																				
12-Pin M23	 <p style="text-align: center;">Pin 11 not connected.</p>																				
8-Pin Cordset 889D-F8AB-*	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 30%;">1 and 3</td><td style="width: 30%;">Solenoid Power</td></tr> <tr><td>4 and 6</td><td>Safety A</td></tr> <tr><td>7 and 8</td><td>Safety B</td></tr> <tr><td>2 and 5</td><td>Aux A</td></tr> <tr><td>9 and 10</td><td>Solenoid A</td></tr> <tr><td>12</td><td>Ground</td></tr> </table>	1 and 3	Solenoid Power	4 and 6	Safety A	7 and 8	Safety B	2 and 5	Aux A	9 and 10	Solenoid A	12	Ground								
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12	Ground																				
12-Pin Cordset 889M-F12AH-*	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 30%;">Brown Blue</td><td style="width: 30%;">Solenoid Power</td></tr> <tr><td>Grey Red</td><td>Safety A</td></tr> <tr><td>Yellow Pink</td><td>Safety B</td></tr> <tr><td>White Green</td><td>Solenoid A</td></tr> <tr><td>Brown Grey</td><td>Solenoid Power</td></tr> <tr><td>Pink Yellow</td><td>Safety A</td></tr> <tr><td>White Red/Blue</td><td>Safety B</td></tr> <tr><td>Blue Red</td><td>Aux A</td></tr> <tr><td>Black Violet</td><td>Solenoid A</td></tr> <tr><td>Green</td><td>Ground</td></tr> </table>	Brown Blue	Solenoid Power	Grey Red	Safety A	Yellow Pink	Safety B	White Green	Solenoid A	Brown Grey	Solenoid Power	Pink Yellow	Safety A	White Red/Blue	Safety B	Blue Red	Aux A	Black Violet	Solenoid A	Green	Ground
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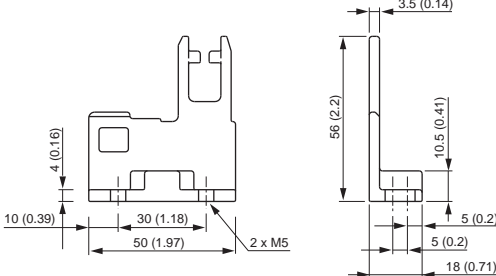

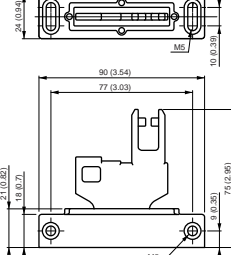

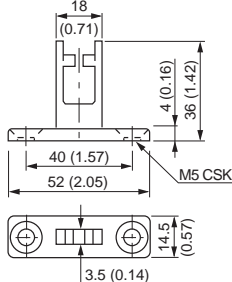

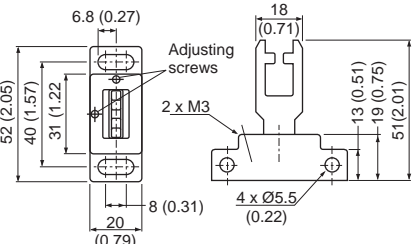

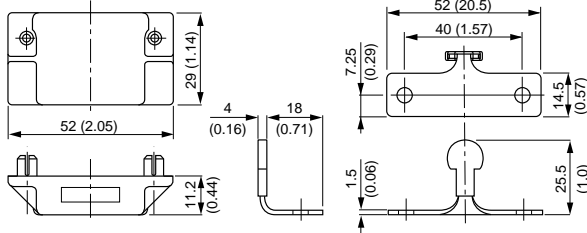
* Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.

**3-Interlock
Switches**

Safety Switches
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Accessories for Interlock and Guard Locking Switches


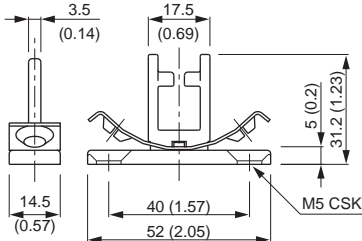

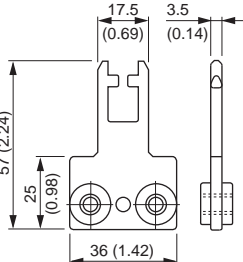

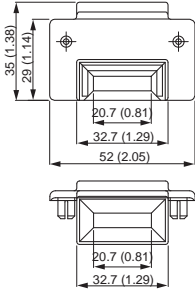

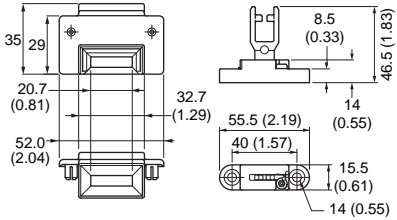

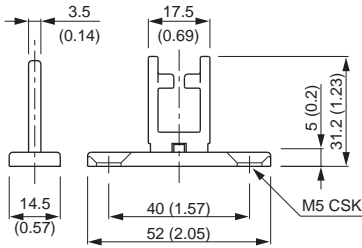

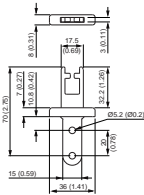
Actuators*

Item	Description	Approximate Dimensions [mm (in.)]	Cat. No.
	Standard actuator	 <p>Dimensions: 4 (0.16), 10 (0.39), 30 (1.18), 50 (1.97), 2 x M5, 56 (2.2), 3.5 (0.14), 10.5 (0.41), 5 (0.2), 5 (0.2), 18 (0.71)</p>	440G-A07136
	Fully flex actuator	 <p>Dimensions: 24 (0.94), 90 (3.54), 77 (3.03), 10 (0.39), 21 (0.83), 18 (0.71), 9 (0.35), 75 (2.95), M5</p>	440G-A07269
	GD2 standard actuator	 <p>Dimensions: 18 (0.71), 4 (0.16), 36 (1.42), 40 (1.57), 52 (2.05), M5 CSK, 14.5 (0.57), 3.5 (0.14)</p>	440G-A27011
	Fully flex actuator	 <p>Dimensions: 6.8 (0.27), 18 (0.71), 52 (2.05), 40 (1.57), 31 (1.22), Adjusting screws, 2 x M3, 13 (0.51), 19 (0.75), 51 (2.01), 8 (0.31), 4 x Ø5.5 (0.22), 20 (0.79)</p>	440G-A27143
	Catch and Retainer Kit	 <p>Dimensions: 52 (2.05), 29 (1.14), 4 (0.16), 18 (0.71), 7.25 (0.29), 52 (20.5), 40 (1.57), 14.5 (0.57), 1.5 (0.06), 25.5 (1.0), 11.2 (0.44)</p>	440K-A11094

* See page 3-8 for Switch Compatibility table.

3-Interlock Switches

Actuators* (continued)


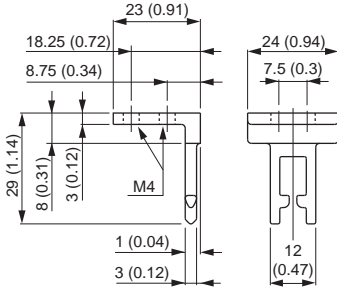

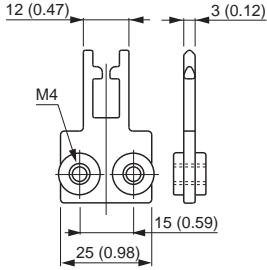

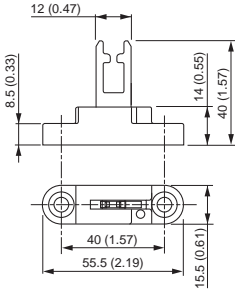

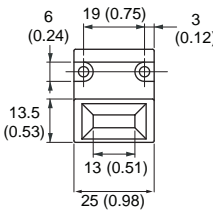
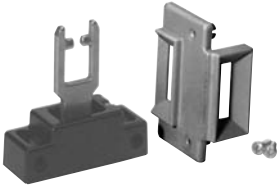
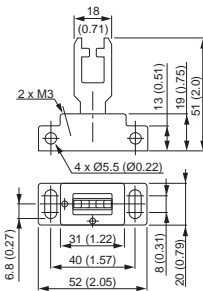
Item	Description	Approximate Dimensions [mm (in.)]	Cat. No.
	Standard actuator		440K-A11095
	GD2 flat actuator		440K-A11112
	Replacement Alignment Guide		440K-A11115
	Alignment guide with semi-flexible actuator		440K-A11144
	Standard actuator		440K-A11238
	Extended flat actuator		440K-A17116

* See page 3-8 for Switch Compatibility table.

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Safety Switches
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Actuators* (continued)

Item	Description	Approximate Dimensions [mm (in.)]	Cat. No.
	90° actuator, not to be used with metal alignment guide		440K-A21006
	Flat actuator, not to be used with metal alignment guide		440K-A21014
	Metal alignment guide with semi-flexible actuator		440K-A21030
	Metal Alignment Guide		440K-A21069
	Alignment guide with fully-flexible actuator		440K-A27010







* See page 3-8 for Switch Compatibility table.

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Beacons and Bulbs

Item	Description	Cat. No.
	Indicator, M20 Conduit Pilot Light—Amber Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately)	440A-A19001
	Indicator, M20 Conduit Pilot Light—Red Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately)	440A-A19002
	Indicator, 1/2 inch NPT Conduit Pilot Light—Amber Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately)	440A-A19005
	Indicator, 1/2 inch NPT Conduit Pilot Light—Red Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately)	440A-A19007
	Bulb, 24V for Conduit Pilot Light 2.8W T-3 1/4 Bulb, Miniature Screw Base	440A-A09056
	Bulb, 110V for Conduit Pilot Light 2.6W T-3 1/4 Bulb, Miniature Screw Base	440A-A09055
	Bulb, 240V for Conduit Pilot Light 0.75W T-3 1/4 Bulb, Miniature Screw Base	440A-A09054
	Red LED Bulb, 24V AC/DC for Conduit Pilot Light Bayonet Style Insert	800T-N319R
	Amber LED Bulb, 24V AC/DC for Conduit Pilot Light Bayonet Style Insert	800T-N319A
	Red LED Bulb, 120V AC for Conduit Pilot Light Bayonet Style Insert	800T-N320R
	Amber LED Bulb, 120V AC for Conduit Pilot Light Bayonet Style Insert	800T-N320A

Conduit Accessories









Item	Description	Cat. No.
	Blanking plug, M20 conduit	440A-A07265
	Cable Grip, M16 Conduit, Accommodates Cable Diameter 4...7 mm (0.27...0.16 in.)	440A-A09004
	Cable grip, M20 conduit, accommodates cable diameter 7...10.5 mm (0.27...0.41 in.)	440A-A09028
	Adaptor, conduit, M20 to 1/2 inch NPT, plastic	440A-A09042
	Adaptor, Conduit, 1/2 inch NPT to M16, Brass	440A-A09093
	Adaptor, Conduit, M16 to 1/2 inch NPT, Brass	440A-A09094

Safety Switches




Accessories

Replacement and Dust Covers, Emergency Override, and Flex Release


Replacement Covers

Item	Description	Cat. No.
	Elf™	440A-A33085
	Cadet™	440A-A21115
	Trojan T15	440A-A11499
	Trojan 5 Standard Models Only	440A-A11495
	Trojan T5 GD2	440A-A11496
	Trojan T6 Standard Models Only	440A-A11497
	Trojan T6 GD2	440A-A11498
	440G-MT No LED, No Override	440G-MT47120
	440G-MT LED and Override	440G-MT47123
	Cover for TLS-1 with external override key for series D and earlier	440G-A27140
	Cover for TLS-3 with external override key for series D and earlier	440G-A27142
	Cover for TLS-1 with override key attached for series D and earlier	440G-A27207
	Cover for TLS-3 with override key attached for series D and earlier	440G-A27208
	Atlas Replacement End Cap	440G-A07180

Dust Covers

Item	Applicable Switch	Cat. No.
	Elf Cadet	440K-A17182
	Trojan T15, T5, and T6 All Models MT G2 440G-MT	440K-A17180
	TLS-GD2	440K-A17183
	Atlas 5	440K-A17181


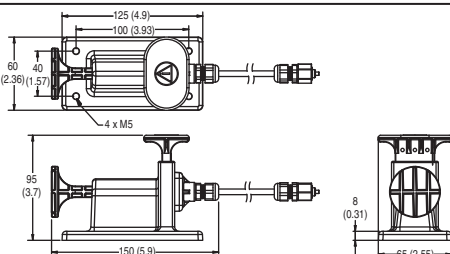
Emergency Override

Item	Description	Cat. No.
	TLS-GD2/440G-MT Solenoid Emergency Override (See Warning below.)	440G-A36026





WARNING: Do not attach the Emergency Override Key to the TLS-GD2/440G-MT switch.


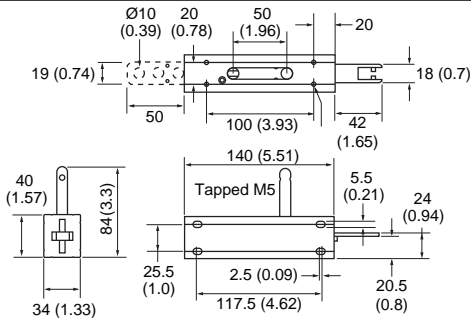

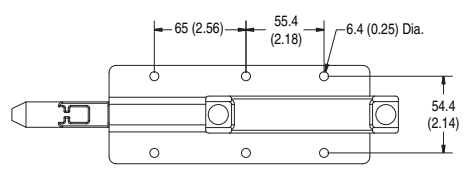
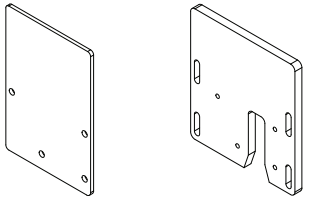
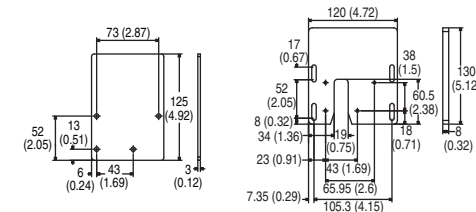
Flex Release

Item	Description	Approximate Dimensions [mm (in.)]	Cat. No.
	Flexible Release—1 m (3.28 ft) Cable		440G-A27356
	Flexible Release—3 m (9.84 ft) Cable		440G-A27357

Tools

Item	Description	Cat. No.
	Security Bit	440A-A09015
	Screwdriver Including Security Bit	440A-A09018

Door Handles

Item	Description	Dimensions [mm (in.)]	Cat. No.
	Sliding bolt actuator		440G-A27163
	Sliding Bolt		440K-AMDS
	Sliding Bolt Mounting Plate for TLS-GD2		440K-AMDSSMPB

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