

# Installation Instructions

Original Instructions



**Allen-Bradley**  
by ROCKWELL AUTOMATION



## Elf and Cadet 3 Tongue Interlock Switches

Catalog Numbers 440K-C21048, 440K-C21050, 440K-C21052, 440K-C21054, 440K-C21055, 440K-C21057, 440K-C21058, 440K-C21060, 440K-C21061, 440K-C21062, 440K-C21065, 440K-C21067, 440K-C21068, 440K-C21070, 440K-C21074, 440K-C21080, 440K-C21088, 440K-C21089, 440K-C21090, 440K-C21091, 440K-C21092, 440K-C21093, 440K-C21094, 440K-C21095, 440K-C21096, 440K-C21097, 440K-C21098, 440K-E2NNAPS, 440K-E2NNFPS, 440K-E33014, 440K-E33024, 440K-E33025, 440K-E33029, 440K-E33030, 440K-E33031, 440K-E33034, 440K-E33036, 440K-E33037, 440K-E33040, 440K-E33041, 440K-E33045, 440K-E33046, 440K-E33047, 440K-E33053, 440K-E33074, 440K-E33075, 440K-E33077, 440K-E33078, 440K-E33079, 440K-E33080

### Summary of Changes

This publication contains new and updated information as indicated in the following table.

Topic	Page
Updated Specifications table	1
Added UL 508 Information section	2
Added Attention table	3

### Installation

Installation of the Elf™ and Cadet™ 3 Tongue Interlock Switches must be in accordance with the following steps and stated specifications and should be carried out by suitably competent personnel. The unit is not to be used as a mechanical stop. Guard stops and guides must be mounted.

Adherence to the recommended maintenance instructions forms part of the warranty.



**ATTENTION:** The presence of spare actuators can compromise the integrity of the safety systems. Personal injury or death, property damage or economic loss can result. Appropriate management controls, working procedures, and alternative protective measures should be introduced to control their use and availability.



**WARNING:** Do not defeat, tamper, remove, or bypass this unit. Severe injury to personnel could result.

### Specifications

Attribute	Value
Safety contacts (Elf)	1 N.C. or 2 N.C. direct opening action
Safety contacts (Cadet 3)	2 N.C. or 3 N.C. direct opening action
Thermal current	10 A
Auxiliary contacts	1 N.O.
Switching current/voltage	3 mA/18V, min <sup>2</sup>

Attribute	Value
Contact rating	A600/AC-15 240V/3 A, 120V/6 A, N150/DC13 24V/2 A M12 QD (4-pin): 250V/4 A M12 QD (5-pin): 60V/4 A M12 QD (6-pin): 30V/2 A M12 QD (8-pin): 30V/2 A
Input	240V, 24V, 250V, 60V, 30V, 30V
Ingress protection rating	IP67
Operating temperature	-20...+80 °C (-4...+176 °F)
Mechanical life	1,000,000 operations
Torque settings, max	1.4 N·m (12.39 lb·in) mounting bolts 1.2 N·m (10.62 lb·in) lid screws 1.0 N·m (8.85 lb·in) terminal screws 0.57 N·m (5.04 lb·in) head bolts

### Maintenance

Every week, check the alignment of the actuator to the switch and the correct operation of the switching circuit. Also check for signs of abuse or interference. Inspect the switch casing and actuator for damage. Replace if needed.

At least every six months, isolate all power. Remove the lid and end cover. Inspect all terminals for tightness. Clean out any accumulation of fine dirt. Check for any sign of wear or damage, for instance, actuator wear, cam assembly wear, contact oxidation and replace if needed. Replace cover and tighten screws to specified settings. Reinstall the power and check for correct operation. Reapply tamper evident varnish or similar compound for mountings.

### Repair

If there is any malfunction or damage, no attempts at repair should be made. The unit should be replaced before machine operation is allowed. DO NOT DISMANTLE THE UNIT.

**IMPORTANT** After installation and commissioning, the actuator, switch, and switch lid mounting screws should be coated with tamper evident varnish or similar compound.

**CE** The products shown in this document, conform with the Essential Health and Safety Requirements (EHSRs) of the European Machinery Directive. These products are third-party certified to EN 60947-5-1 and EN ISO 14119.

Declaration of Conformity and certification: [rok.auto/certifications](http://rok.auto/certifications).

ISO 14119 defines types of interlocking devices and coding.

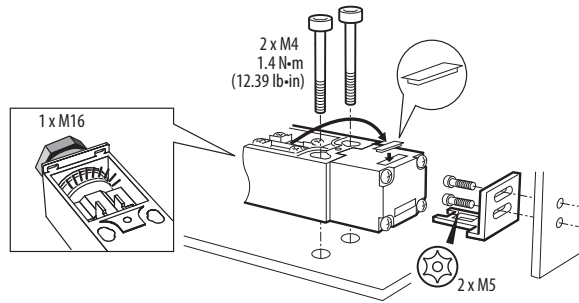
Product	Type	Coding
440K	2	Low

**ATTENTION:** Discard the plastic transit plugs (shipped with select conduit models only) at installation and replace with UL Listed outlet box plugs or the equivalent.

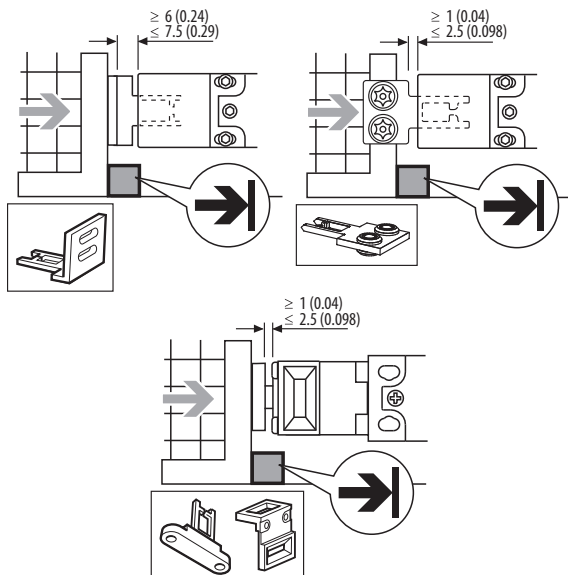
### UL 508 Information

- When used in elevated ambients, temperature rating of field wiring shall not be less than ambient.
- Use copper conductors only.
- Use polymeric conduit only. End of line device.
- Use only one conduit entrance for field connections.

### Mounting



### Key Placement



### Approximate Dimensions

Figure 1 - Elf Tongue Interlock Switch Dimensions [mm (in.)]

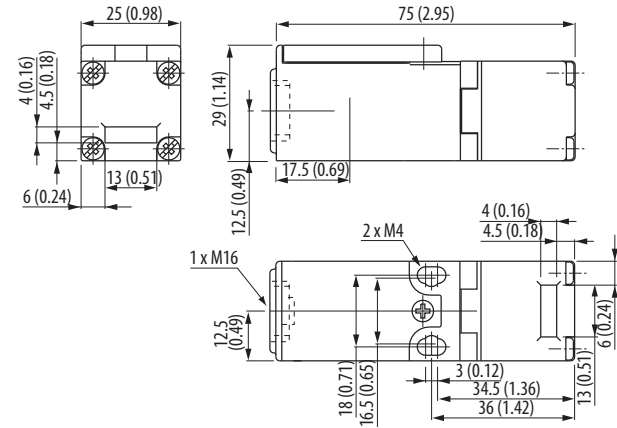


Figure 2 - Cadet 3 Tongue Interlock Switch Dimensions [mm (in.)]

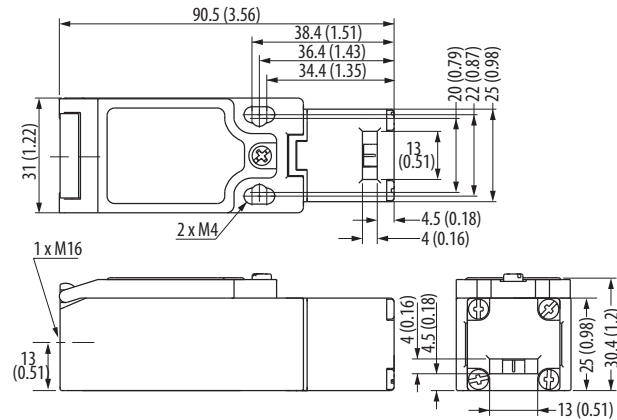
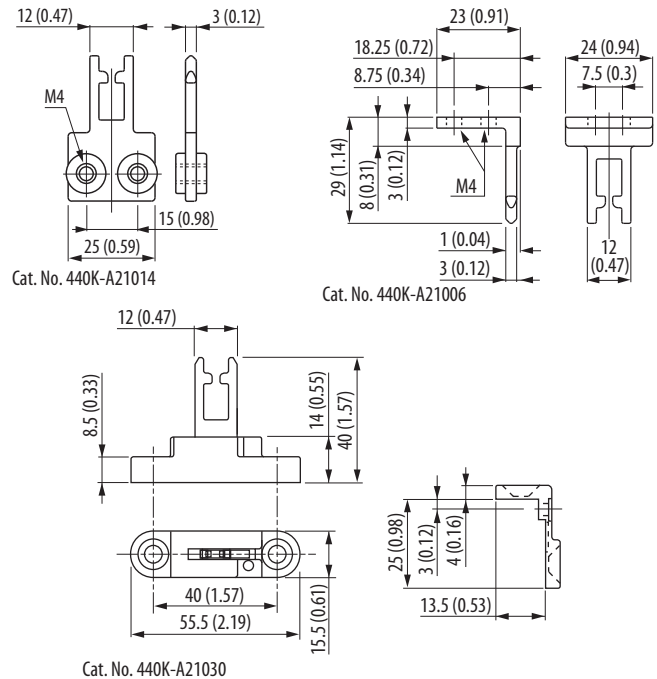
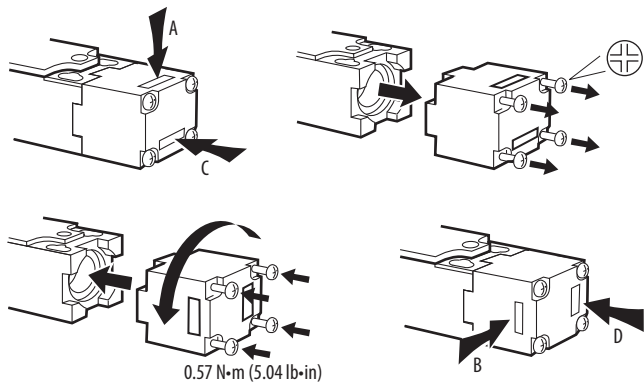


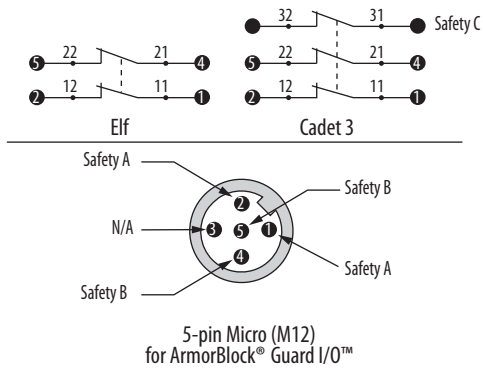
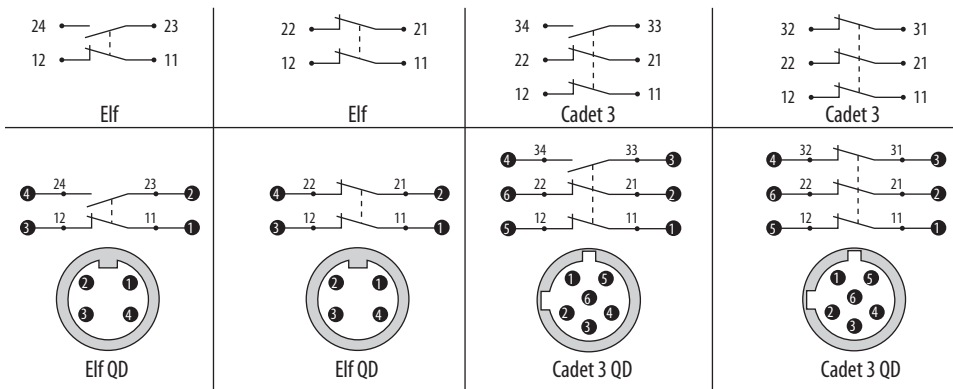
Figure 3 - Key Dimensions [mm (in.)]



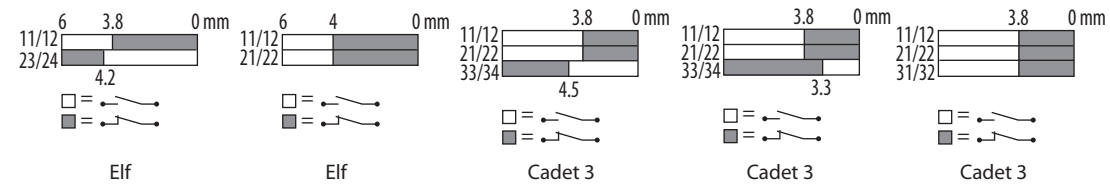
### Head Rotation



### Pinouts



### Wiring



**ATTENTION:** Improper selection or installation of the devices affects the integrity of the safety systems. Personnel injury or death, property damage or economic loss can result.

Comply with ISO 14119 including selection, accessibility to the installation, arrangement and fastening, possible substitute actuation, motivation to defeat, and actuation mode.

Management controls, working procedures, training, and additional protective measures should be used to minimize the motivation to defeat and to manage the use and availability of spare actuators.

Comply with ISO 13857 and ISO 13855 for guard openings and minimum (safe) distances.

Comply with IEC 62061 or ISO 13849-1 and ISO 13849-2 for functional safety.

## Rockwell Automation Support

Use these resources to access support information.

<b>Technical Support Center</b>	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	<a href="http://rok.auto/support">rok.auto/support</a>
<b>Knowledgebase</b>	Access Knowledgebase articles.	<a href="http://rok.auto/knowledgebase">rok.auto/knowledgebase</a>
<b>Local Technical Support Phone Numbers</b>	Locate the telephone number for your country.	<a href="http://rok.auto/phonesupport">rok.auto/phonesupport</a>
<b>Literature Library</b>	Find installation instructions, manuals, brochures, and technical data publications.	<a href="http://rok.auto/literature">rok.auto/literature</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	<a href="http://rok.auto/pcdc">rok.auto/pcdc</a>

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## Waste Electrical and Electronic Equipment (WEEE)







At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at [rok.auto/pec](http://rok.auto/pec).

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