



AIES-FSS-E-2

The AIES is a dual key access interlock complete with electrical contacts for use on hinged or sliding doors. The AIES contacts can be used to switch off the machine via its control circuitry or to initialise a signal to visual beacons/sounders. The switch is sealed to IP65 with 1N/O 2N/C contacts, it is rated to 6 amps making it ideal for use in cross monitored safety systems. The interlock is manufactured in a durable stainless steel making it ideal for use in harsh or corrosive environments and where the lock is subject to heavy use.

Operation

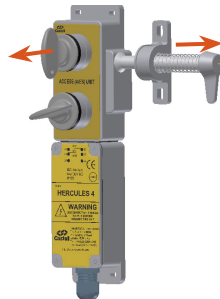
The AIES access interlock with safety switch is used for machine isolation in order to protect the hazardous area from full body access while power is on.

AIES dual key access interlock with safety switch, exchange key condition (bolt trapped - personnel key trapped/ isolation key free)

- ① Power is on, bolt is trapped. Isolation key is free, personnel key is trapped



- ② Insert and turn isolation key to change the switch contacts condition and release the bolt. Then release the personnel key.



- ③ Power is off, isolation key is trapped. Bolt is free and personnel key is free.



1. While the power in the hazardous area is on, the sidebolt of the AIES is trapped in the mechanism. The door is locked.
2. By inserting and turning the isolation key, the contact condition is changed switching the power off. The bolt can now be released. This enables the release of the personnel key. The released personnel key should be taken by the personnel to the hazardous area, ensuring the power cannot be turned on as long as the door is opened.
3. The switch condition cannot be reversed until the personnel key is returned, the side bolt is trapped and the isolation key is released.

Operation

AIES dual key access interlock with safety switch, double key condition (bolt trapped - keys free)

- ① Power is on, bolt is trapped. Both keys are free.



- ② Insert and turn both keys to change the switch contacts condition and release the bolt.



- ③ Power is off, both keys are trapped and bolt is free.



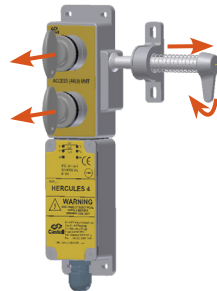
1. While the power in the hazardous area is on, the sidebolt of the AIES is trapped in the mechanism. The door is locked. Both keys are free.
2. By inserting and turning both keys, the contact condition changes switching the power off. The bolt can now be released. This traps the keys.
3. The switch condition cannot be reversed until the sidebolt is trapped in the locking mechanism and the keys are turned and released.

AIES dual key access interlock with safety switch, double key condition (bolt trapped - keys trapped)

- ① Power is on, bolt is trapped. Both keys are trapped.



- ② Turn and release both keys to change the switch contact condition and release the bolt.



- ③ Power is off, bolt is free. Both keys are free.



1. While the power in the hazardous area is on, the sidebolt of the AIES is trapped in the mechanism. The door is locked. Both keys are trapped.
2. By turning and releasing both keys, the contact condition changes switching the power off. The bolt can now be released. Both keys can be released and should be taken by the personnel to the hazardous area.
3. The switch condition cannot be reversed until both keys are returned, the side bolt is trapped and both keys are trapped in the AIES access interlock locking the door.

Usage

The AIES access interlock with safety switch is designed to be part of a safety system and is used to isolate the power which then allows to gain access to a hazardous area.



The AIES access interlock is not designed for security purposes.

Installation

The housing of the AIES access interlock with safety switch should normally be mounted on the static frame of the guard and the bolt to the sliding or hinged door using suitable fasteners. Fixed bolt bracket is highly tolerant to misaligned guards and should be fitted with suitable fasteners. Please refer to the drawing on page 4 for hole details and maximum and minimum mounting distance for the housing and bolt. The AIES interlocks are available in Hand 1 and Hand 2 version suitable for left or right hinged doors, respectively. Anti vibration pads should be used on machines that generate a high level of vibration

IMPORTANT:

The AIES access interlock with safety switch should be mounted on the guard using anti-tamper fasteners to prevent unauthorised removal.



The AIES access interlock must be installed by a competent and qualified person who has read and understood these instructions. Please retain this document in your technical file.



Force required to shear lock bolt is 24KN.

Maintenance

Periodic visual checks should be carried out by the site manager / safety officer.
Do not lubricate lock barrel with oil or grease, use CK Dry Powder Graphite if necessary.



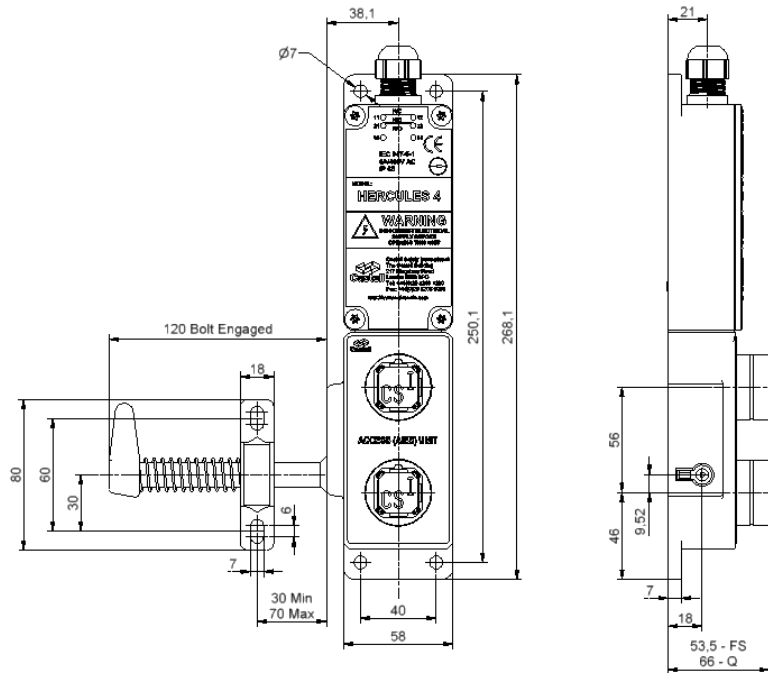
In case of defects being detected please contact your nearest Castell Support Department for further actions.
Please see Contact section for contact details.

Drawing

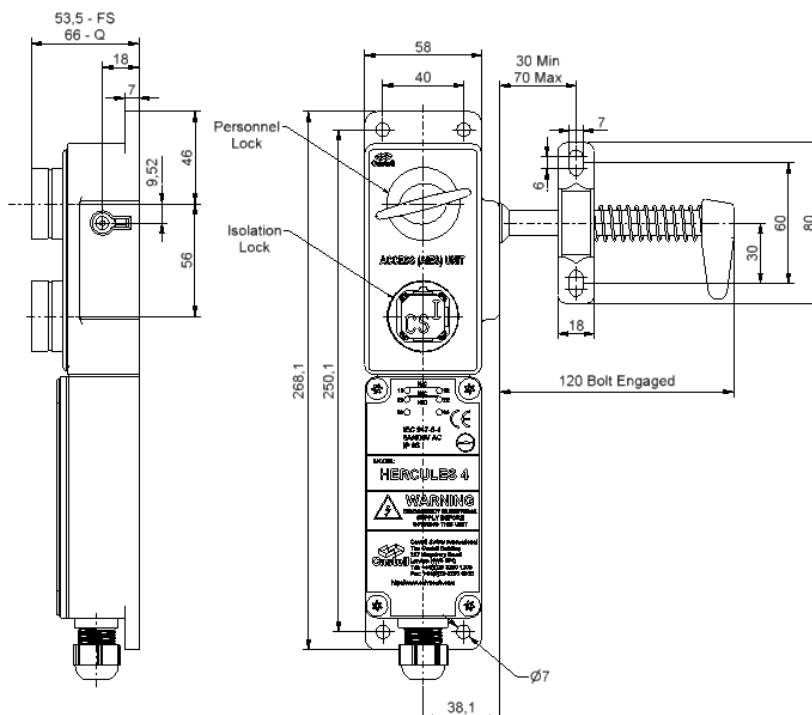
Dimensions:
in mm

Note: For safe mounting, use security screws

AIES, Hand 1, double key condition



AIES, Hand 2, exchange key condition

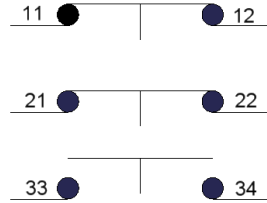


While every effort has been made to ensure the accuracy of the information provided, no liability can be taken for any errors or omission. Castell Safety International Limited reserves the right to alter specifications and introduce improvements without prior notice.

Wiring Diagram

Note: For safe mounting, use security screws

2NC/1NO



Contacts as shown in the following positions:

| | Isolation Key | Personnel Key | Bolt |
|--|---------------|---------------|---------|
| Version 1 - Exchange Key | FREE | TRAPPED | TRAPPED |
| Version 2 - Double Key, KF (Keys free, bolt trapped) | FREE | FREE | TRAPPED |
| Version 3 - Double Key, KT (Keys trapped, bolt trapped) | TRAPPED | TRAPPED | TRAPPED |

Technical Data

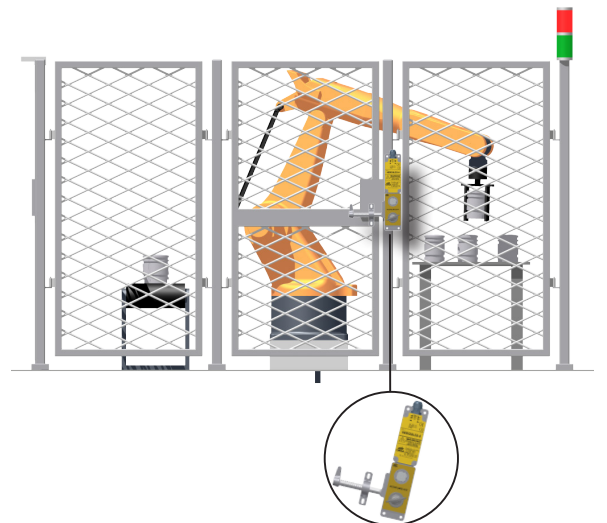
| | |
|------------------------------------|---|
| Temperature rating | Ambient temperature of stages: open at 100% lu/lth - 55°C during 24 hours with peaks up to 60°C, enclosed at 100% lthe - 35°C during 24 hours with peaks up to 40°C |
| | Storage temperature: -40°C to 85°C (in case temperature below -5°C no shock load permissible) |
| Type of mounting | Surface mount using suitable fasteners (see drawing on page 4 for mounting details) |
| Weight | 2,5 kg |
| Material | Stainless steel |
| Power isolation | 10A |
| Motor isolation (AC Values) | 400V AC |
| Switch approvals | CE, UL, CSA, IP65 |
| MTTF Certification | Available on request |

Application

A typical application of the AIES Access interlock with Safety switch is machine guarding.

The removal of the key from the AIES, isolates the electrical supply to the machine and allows the removal of the sidebolt and the personell key. This will trap the isolation key. Therefore the guard can only be opened when the electrical supply has been switched into a safe condition. The personell key is then taken into the area by the operative to safeguard against accidental lock in or start up or to initialize another part of the process, i.e. switching the machine into a teach mode.

The machine cannot be restarted until the door is closed, the bolt is trapped and the personell key replaced in the AIES dual key access interlock.



AIES Access interlock with safety switch

EC-Declaration

We, the manufacturers, declare that the components, detailed herein and placed on the market, comply with all the essential health and safety requirements applying to them.

Empowered signatory:

Mr T.C. Whelan
Managing Director



Order Information

| | | | | | |
|---------------------|----------|----------|----------|-----------|----------|
| Product Type | 1 | 2 | 3 | 4* | 5 |
| Part Number | AIES | - | - | - | - |
| Example | AIES | - | FS S | - | E KT - 1 |

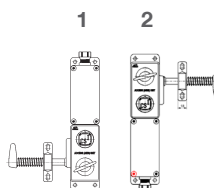
| | | | | | |
|---|----|---|---|----|---|
| 6 | A1 | Isolation Key Symbol (exchange key condition) | 7 | B1 | Personnel Key Symbol (exchange key condition) |
| | OR | Primary Key Symbol (double key condition) | | OR | Secondary Key Symbol (double key condition) |

| | | |
|-----------|--|---|
| 1 | Lock portion type | FS ⁽¹⁾ / Q ⁽¹⁾ |
| 2 | Material | S = Stainless steel (standard) |
| 3 | Key Condition 1 | E = exchange key Condition D = double key Condition |
| 4* | Key condition 2 - in bolt trapped condition (applies for double key condition only, see item 3) | KT = keys are trapped while bolt is trapped KF = keys are free while bolt is trapped |
| 5 | Handing | 1 = left hinged door ⁽²⁾ 2 = right hinged door ⁽²⁾ |
| 6 | Lock portion symbol: Isolation key symbol (for exchange key condition) Primary key symbol (for double key condition, lock next to the bolt) | FS ⁽¹⁾ up to 3 characters / Q ⁽¹⁾ up to 6 characters |
| 7 | Lock portion symbol: Personnel key symbol (for exchange key condition) Secondary key symbol (for double key condition) | FS ⁽¹⁾ up to 3 characters / Q ⁽¹⁾ up to 6 characters |

(1) **FS - Lock type** Up to 3 characters **Q - Lock type** Up to 6 characters



(2) **Handing**



Special construction available upon enquiry

Contact Information

Castell Safety International Ltd.
The Castell Building
217 Kingsbury Road
London, England NW9 9PQ

t: +44 (0) 20 8200 1200
f: +44 (0) 20 8905 9378
e: uksales@castell.com

Castell Safety International Ltd.
Oskar-Jäger-Strasse 137
50825 Köln
Germany

t: +49 (0) 221 1694 794
f: +49 (0) 221 1694 795
e: vertrieb@castell.com

Castell Interlocks Inc.
Suite 800
150 N Michigan Avenue,
Chicago, Illinois 60601
USA

t: +1.312.360.1516
f: +1.312.268.5174
e: ussales@castell.com

Castell Safety China
Building 1, No. 123,
Lane 1165, Jindu Road,
Minhang District,
Shanghai 201108, China.

t: +86 21 61519023
f: +86 21 61519030
e: chinasales@castell.com

While every effort has been made to ensure the accuracy of the information provided, no liability can be taken for any errors or omission. Castell Safety International Limited reserves the right to alter specifications and introduce improvements without prior notice.