AIES

Dual Key Access Interlock with Safety Switch



The AIES is a dual key access interlock complete with electrical contacts for use on hinged 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 10 amps making it ideal for use in cross monitored safety systems. The interlock is manufactured in a durable stainless steel.

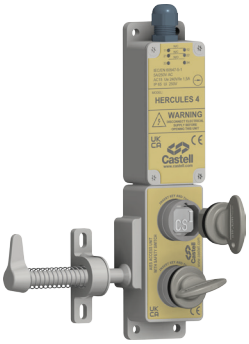
OPERATION

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

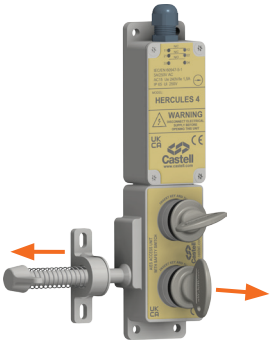
Power is on, bolt is trapped. Isolation key is free, personnel key is trapped, switch contacts 1N/C 2N/O



While the power in the hazardous area is on, the sidebolt of the AIES is trapped in the mechanism. The door is locked.

2

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



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 operator into the hazardous area, ensuring the power cannot be turned on as long as the door is opened.

3

Power is on, bolt is trapped. Isolation key is free, personnel key is trapped, switch contacts 2N/C 1N/O



The switch condition cannot be reversed until the personnel key is returned, the side bolt is trapped and the isolation key is released.

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Sentric Safety Group reserves the right to alter specifications and introduce improvements without prior notice.

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AIES Dual Key Access Interlock with Safety Switch, double key condition (bolt trapped - keys free)

1

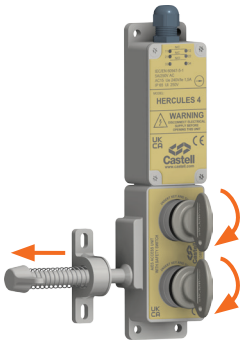
Power is on, bolt is trapped. Both keys are free, switch contacts 2N/C 1N/O



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

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



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

Power is off, bolt is free, both keys are trapped, switch contacts 1N/C 2N/O



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

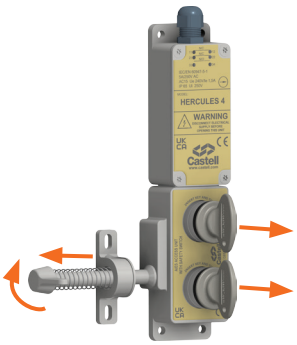
Power is on, bolt is trapped. Both keys are trapped, switch contacts 2N/C 1N/O



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

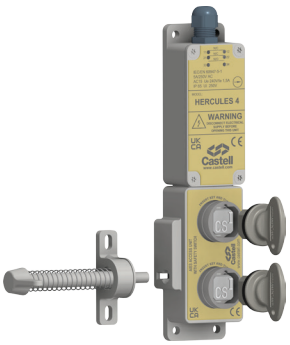
Turn and release both keys to change the switch contact condition and release the bolt.



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

Power is off, bolt is free. Both keys are free, switch contacts 1N/C 2N/O



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.

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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 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 5 for mounting 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 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.

You must use M6 anti-tamper stainless steel screws secured using threadlock set to a torque of 5 Nm.

Alignment limits of 0.5mm must be set in all planes. Angular displacement +/- 1˚ between lock and bolt.

The manufacturer should be consulted when use in a corrosive environment is planned.

Use middle strength threadlock on all four switch lid fixing screws and tighten to a torque of a 5 Nm to retain IP65 rating.

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.

The interlock must be inspected every 6 months. Safety checks should include ensuring the keys and lock bolt can only be removed in the correct safety operating conditions (see page 1).

Check the limit switch is operating correctly with a continuity checker.

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

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Dual Key Access Interlock with Safety Switch

TECHNICAL DATA

	AIES Dual Key Access Interlock with Safety Switch
Temperature rating	-30°C to 80°C
Type of mounting	Surface mount using M6 stainless steel anti-tamper fasteners
Weight	2.5 kg
Material	Stainless steel
Control isolation	5A @240VAC
Motor isolation (AC Values)	250 V AC rated insulation voltage
Switch approvals & standards	CSA IP65 EN60947-1 EN60947-5-1
B10d	1,250,000
Shock & vibration	In accordance with BS EN 60068-2-6 & BS EN 60068-2-27
Conformity declaration	CE
Retention force	3.4 KN
Environment	Suitable for IP65 rating
PL rating	PLc

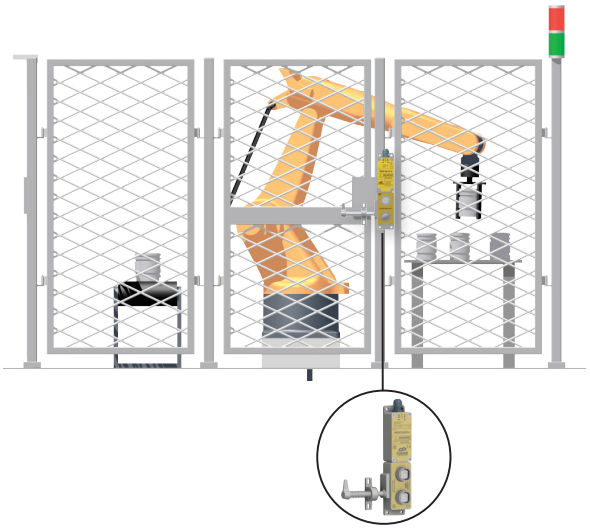
APPLICATION

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

The AIES safety component is used as part of an integrated safety system.

While the machine is running, the door is closed and both keys are trapped in the AIES. The removal of the first key isolates the electrical supply to the machine and allows the second key to be removed. The side bolt can then be removed.

The machine can not be restarted until the door is closed, the side bolt is trapped and both replaced in the AIES access interlock.



AIES Access Interlock with Safety Switch

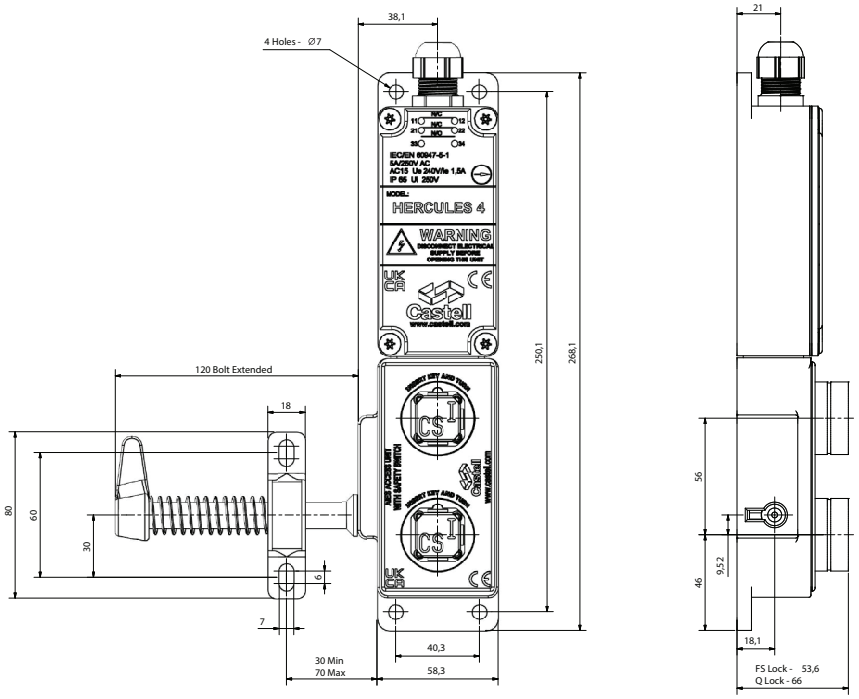
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DRAWING

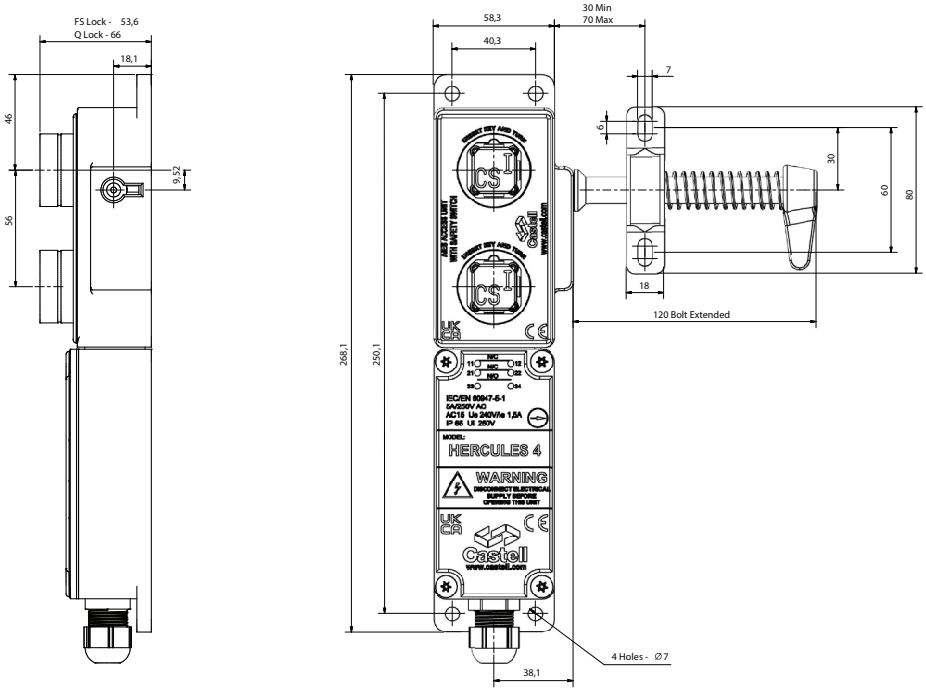
Dimensions: in mm

Note: For safe mounting, use security screws

AIES, Hand 1, double key condition



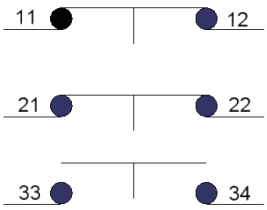
AIES, Hand 2, exchange key condition



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WIRING DIAGRAM

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

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ORDER INFORMATION

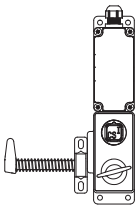
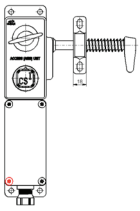
	Component type	1	2	3	4	5	6	7
Part number	AIES							
Example	AIES	FS	S	E	KF	1	A1	B1

1	**Lock portion type**	FS / Q [1]
2	**Material**	S = Stainless steel
3	**Key condition**	D = Double key condition E = Exchange key condition
4	**Key condition by bolt trapped**	KF = Both Keys free - bolt trapped - switch contacts 2NC/1NO for double key condition & Isolation key free - personnel key trapped - bolt trapped - switch contacts 2NC/1NO for exchange key condition / KT = both keys trapped - bolt trapped - switch contacts 2NC/1NO (applicable only for double key condition) (available upon request)
5	**Handing**	1 = Left hinged door [2] 2 = Right hinged door [2]
6	**Lock portion symbol** Primary/Personnel key (lock next to the bolt)	FS [1] up to 3 characters / Q [1] up to 6 characters
7	**Lock portion symbol** Secondary/Isolation key	FS [1] up to 3 characters / Q [1] up to 6 characters

(1)

FS - Lock type	Q - Lock type
Up to 3 characters	Up to 6 characters
	

(2)

Handing	
1	2
	

Special construction available upon enquiry

Castell Safety International
The Castell Building, 217 Kingsbury Road, London, NW9 9PQ, UK
Tel: +44 (0)20 8200 1200 **Email:** sales@castell.com

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