

TDI Electronic Time Delay Isolator



The TDI electronic time delay isolator is a heavy duty trapped key interlock switch controlled by a fail-safe timer and solenoid. The TDI unit is designed to control access to hazardous machines with run down times and can be used in high risk applications. It incorporates a dual channel fail-safe timer, a heavy duty continuously rated solenoid, solenoid position monitoring, a 20A isolation switch, a front panel lamp indication of solenoid position and a timer failure with one or more lock portions for multiple access applications.

OPERATION

The Castell TDI electronic time delay isolator is typically used for machine isolation in applications in order to protect the hazardous area from access while power is on.

TDI electronic time delay isolator

1 Power is on, keys are trapped. Red LED is illuminated.



While the power is on, all keys are trapped in the TDI unit. The red LED is illuminated.

2 Turn the knob to OFF position, switching the power off. Once the timer is complete, the green LED illuminates. Release the keys by pushing the green button.



Turn the switch to OFF position to switch the power off. The TDI timer starts running. Once complete, the green LED illuminates. All keys can now be released by pushing the green button. The keys can be taken to unlock the access locks, which protect the motor or machine area.

3 Keys are released, power is off.



The power is off until all keys are replaced in the TDI electronic timer and the power knob turned back to the ON position.

The TDI is available with different solenoid voltages as 24 VDC and 240 VAC, 110 VAC (see order information on page 6 for more details).

The TDI comes with 6 contacts as standard with contacts arrangements as 3NO/3NC, but auxiliary set of contacts are available on request.

USAGE

The TDI electronic time delay isolator is designed to be part of a safety system and is used to switch off the power once the pre-set time (set longer than the run-down time of the machine) has elapsed before releasing a key or a set of keys. This key is then used to gain access to a hazardous area via an access interlock such as the AI.



The TDI electronic time delay isolator is not designed for security purposes.

INSTALLATION

The TDI electronic time delay isolator should be mounted to a surface using suitable fasteners (please refer to drawing on page 4 for more details). The back of board mounted version should be sealed to the panel for ingress protection.

Cables should be connected to the switch in accordance with the applicable wiring diagrams. Ensure that the unit is bonded for earth continuity (please refer to drawing on page 4 for more installation details).



IMPORTANT: The interlock should be mounted using anti-tamper fasteners to prevent unauthorised removal.



The TDI range of electronic timer with power isolations must be installed by a competent and qualified person who has read and understood these instructions. Please retain this document in your technical file.



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

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 can only be removed in the correct safety operating conditions (see page 1).



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

TECHNICAL DATA

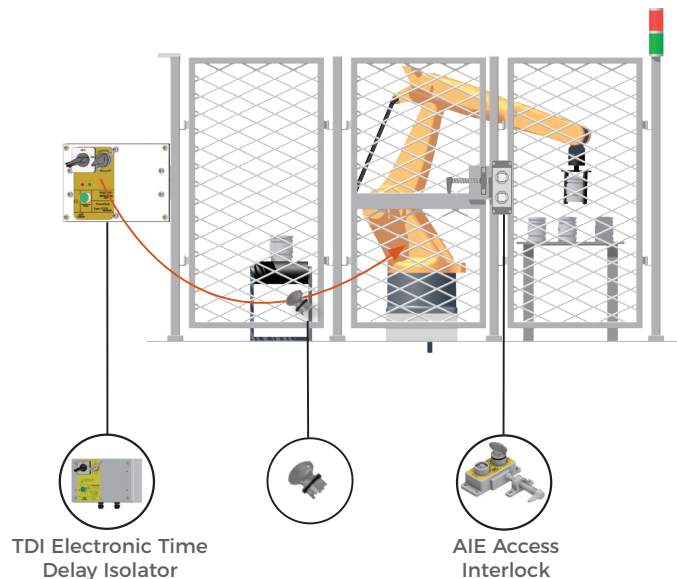
Temperature rating	Minimum: -5°C [23°F]
	Maximum: 55°C [131°F]
Type of mounting	Surface mount using suitable fasteners (please refer to drawing on page 4 for more details)
Weight	5 kg
Material	Brass or Stainless steel lock portions, powder coated mild steel enclosure
Cable size	M20 Gland x 2
IP rating	IP65, NEMA 4 enclosure
Voltage	24 VDC and 240 VAC, 110 VAC
B10d	2,000,000
PL rating	PLe
Shock & vibration	In accordance with BS EN 50155 & IEC 61373
Motor rating	400 MA to 20 AMP at nominal 690 V 3x380-440 V AC 23A 7.5 KW or AC3 5.5 KW

APPLICATION

The TDI safety component is designed to operate as part of an integrated safety system, controlling access to hazardous areas to motor driven, high risk applications where a certain rundown time is required before access is granted.

When the machine is running, the key of the TDI interlock cannot be removed, preventing access to the hazardous area. To gain access to the machine area, the electrical supply must be switched off by turning the switch to OFF position. When the machine stop sequence is initiated, a signal from the machine control circuits starts the internal timer. After a pre-set time (which must exceed the machine run down time), the timer energizes the solenoid illuminating the green LED. By pushing the green button the key can be released from the TDI unit. This key is taken by the personnel to the AIE access interlock.

The machine cannot be restarted until the door is locked closed and the key is returned to the TDI electronic timer.



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.

ISO 13849-1:2015 Safety of Machinery

2006/42/EC Machinery Directive

Empowered signatory:

Kirstie Van Oerle
Business Unit Director 

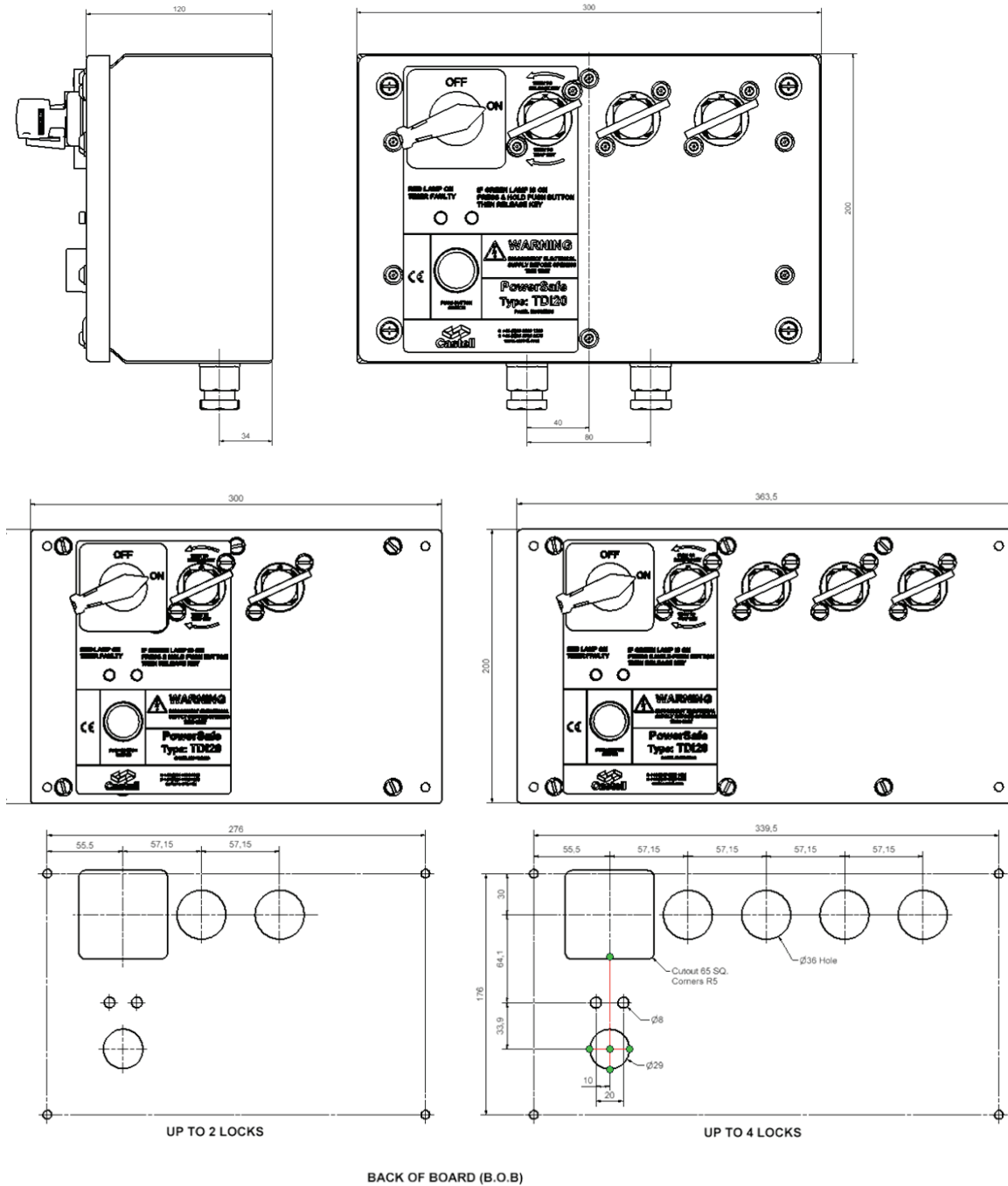
TDI Electronic Time Delay Isolator

DRAWING

Dimensions: in mm

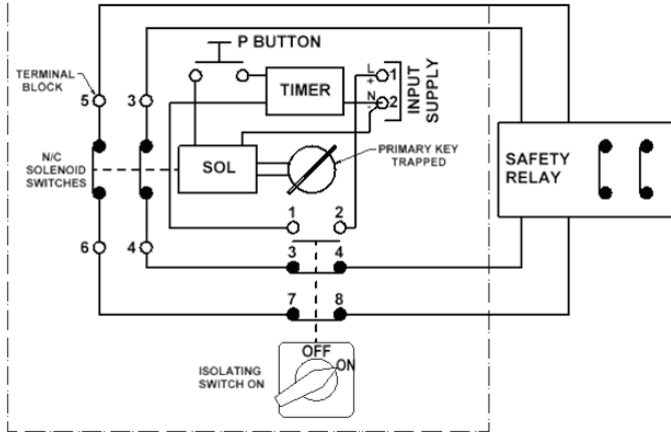
Note: For safe mounting, use security screws

TDI

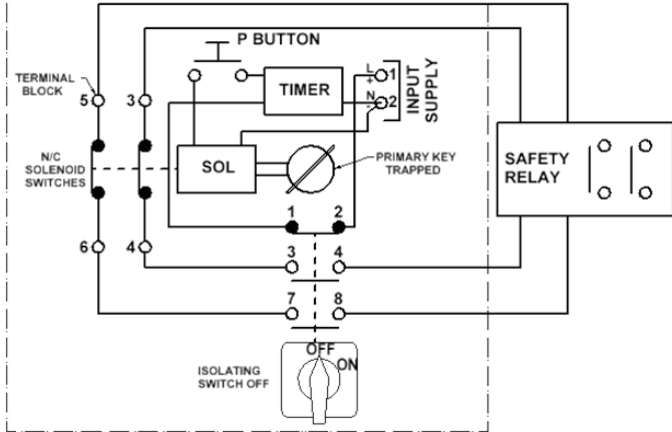


WIRING DIAGRAM

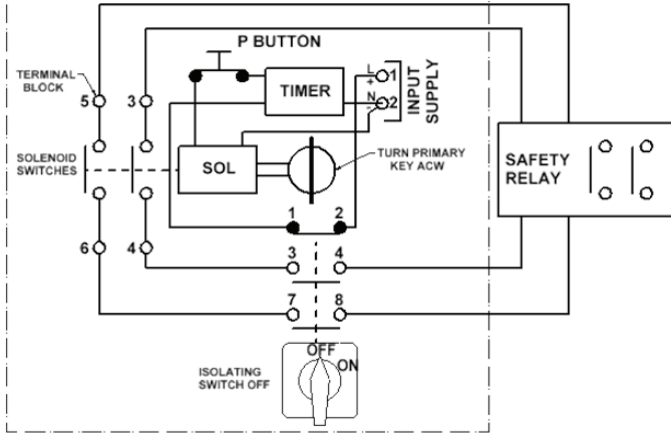
1) MACHINE CYCLE RUNNING, PRIMARY KEY FREE
SECONDARY KEY TRAPPED, SOLENOID DE-ENERGISED



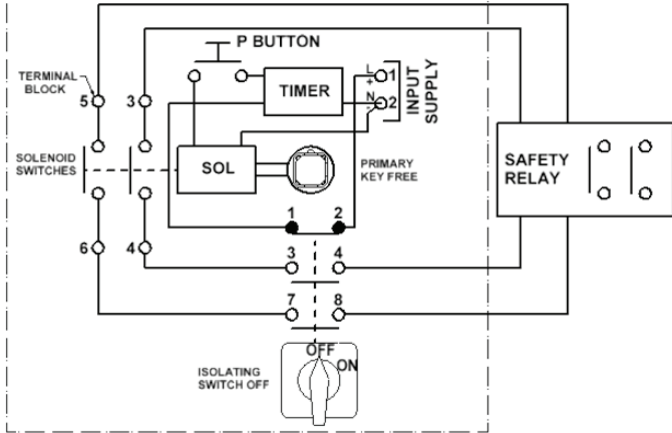
2) SWITCH OFF, ISOLATING SWITCH MACHINE RUNDOWN
STARTED, TIMER ENERGISED



3) TIME DELAY IS FINISHED, PRESS PUSH BUTTON TO
ENERGISE SOLENOID, TURN KEY ACW TO RELEASE





4) KEY IS RELEASED, MACHINE IS ISOLATED
SOLENOID DE-ENERGISED



ORDER INFORMATION

	Component	1	2	3	4	5	6	7	8	9	10	11
Part	TDI											
Example	TDI	FS	B	F			N/O	6	110	A	30	TBA

1	Lock portion type	FS ⁽¹⁾ / Q ⁽¹⁾
2	Material	B = Brass / S = Stainless steel
3	Mounting	F = Front of board mount, with enclosure P = Panel mount
4	Optional: Secondary lock portion(s)	1 / 2 / 3 or more secondary lock portions available
5	Refers to item 4: Key condition	S = Secondary lock portions, if sequential removal of all keys required E = Secondary lock portions, if exchange key condition required ⁽¹⁾
6	Contacts arrangement in normal position	N/O = NO/NC arrangement (contacts closed/open)
7	Contacts number	6, standard
8	Control voltage	110 / 24 / 240, standard
9	Current	VAC (110, 240) / VDC (24)
10	Time delay	30 / 60 or 90 sec, standard or as required (max. 300 min)
11	Lock portion symbol: Please advise for each lock separately as for isolation key/lock and personnel key/lock	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 
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Special construction available upon enquiry

CONTACT INFORMATION

Castell Safety

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