

Installation, Operation & Maintenance Instructions



PROX-ATEX TEMPERATURE CONTROLLER Z1C

15A and 25A models



CD079-3 15/03/2019 (ATEX/IECEX)

CERTIFICATE NO: 074044



Certification Nos. CML16ATEX5167X IECEx CML 16.0077X
Certified to Standards EN60079-0, 60079-11, 60079-18 For use in Zones 1 and 2.
UK Patent Number 2539910B



The PROX-ATEX Z1C can be configured as an on-off temperature controller or temperature limiter with up to two temperature probes. It is housed in an anodised aluminium enclosure with a glass window for viewing a four-digit display. A three-button membrane keypad can be used for device configuration. The Z1C also features a near field communication (NFC) transceiver for communicating with pre-configured NFC cards.

Power supply: 100-240v. 50/60Hz

Maximum switching current: 15A or 25A (depending on model)

Minimum switching load: 50W

Temperature probe type: Thermocouple Type K

Measurement range: 0-200°C (unless limited during manufacture)

Ingress protection: IP66

Ambient temperature: - 20°C to +40°C

Dimensions: 345 x 75 x 95mm

Weight: ~3.5kg

Package contents:

1 X PROX-ATEX Temperature Controller Z1C

1 X MCB wall-mount unit

Hazardous Area Certification

The PROX-ATEX temperature controller Z1C is certificated with two models, i.e. output 25A model and 15A model.

ATEX / IECEx

25A



II 2(1) GD
Ex mb [ia] IIC T155°C(T3) Gb
Ex mb [ia] IIC T155°C Db
Ta = - 20°C to +40°C

15A



II 2(1) GD
Ex mb [ia] IIC T4 Gb
Ex mb [ia] IIC T135°C Db
Ta = - 20°C to +40°C

Certification Nos. CML 16ATEX5167X IECEx CML 16.0077X

Certified to Standards EN 60079-0:2012, EN 60079-11:2012, EN60079-18:2015.

The 25A model must be powered via a circuit breaker (Tripping curve K) not exceeding 25A and the 15A model must be powered via a circuit breaker (Tripping curve K) not exceeding 15A. The ambient temperature of the circuit breaker must not be lower than the ambient temperature of the PROX-ATEX Z1C. A circuit breaker wall-mount unit, including a 15A/25A MCB and a metal enclosure, is supplied along with the controller. This supplied MCB unit can only be installed in the safe area.



When the 25A model controller operates with a full load, the surface of the controller, in particular, the top surface, can be hot. Therefore, touching the metal surface of the controller should be avoided for precaution.

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Certification Nos. CML16ATEX5167X IECEx CML 16.0077X
Certified to Standards EN60079-0, 60079-11, 60079-18 For use in Zones 1 and 2.
UK Patent Number 2539910B



When used with a resistive heater to IEC 60079-7, this equipment is not considered to be a safety device as described by IEC 60079-7:2015 Clause 5.8.11. However, the combination of two pieces of this equipment used in series can be considered to be a safety device as described by IEC 60079-7:2015 Clause 5.8.11. The two devices in series can be configured to be a controller and a limiter in series.

Installation

This device is supplied with factory fitted cables and glands and is suitable for general ATEX and IECEx use. This device must be installed and used by qualified personal. The device must be used within the certified conditions, i.e. voltage, load current and ambient temperature. The manufacture is not liable for damages by external forces or improper usage.

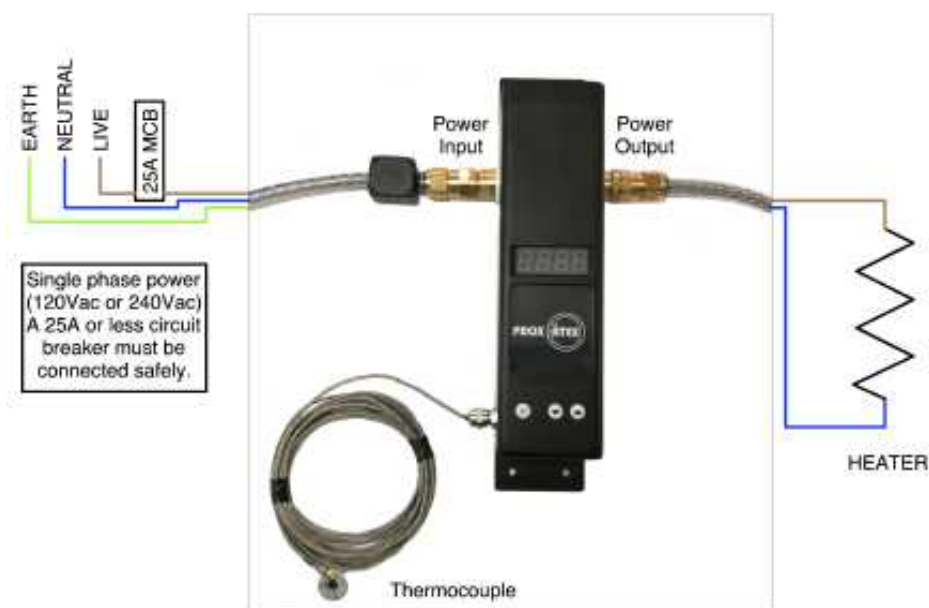


Figure 1 Typical wiring diagram for 25A model

The device must be mounted vertically to a wall, solid object or pedestal supplied by LMK Thermosafe Ltd with the device logo in the correct orientation. Safety regulations and operating instructions must be strictly observed.

The device must be installed with a means of disconnection from the power supply, i.e. a clear marked switch or circuit breaker at a suitable and easy reached location for the operator.

The 25A model must be protected with a circuit breaker not exceeding 25A and the 15A model must be protected with a circuit breaker not exceeding 15A. As the device enclosure dissipates heat constantly during operation, the device must be kept clean and free from dust.

Ensure all cables are terminated in suitably certified enclosures or a safe area. The cable must be installed to prevent pulling or twisting. Incorrect installation may result in permanent damage to the device. The magnetic temperature sensor/sensors should be placed on the surface of the target object. The set point maximum limit of the device has been set by the manufacturer to 200°C unless another temperature was requested before purchase.

Operation

Switch on power to the PROX-ATEX Z1C. After starting up, the HOME display is shown. The HOME display can be configured to show either temperature probe 1 or probe 2 (if connected). The dot (bottom right on display) indicates if **power output (PO)** is on. A simplified display as shown in figure 3 is to be used throughout these instructions.



Figure 2 Home display panel

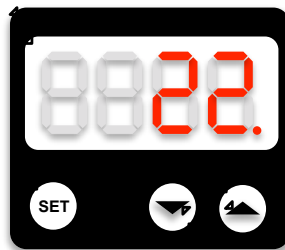





Figure 3 Simplified display panel

The operator can view and set the device configurations by using the 7-segment display and the three membrane keypad buttons –  (**SET**),  (**UP**) and  (**DOWN**).


The operations of Z1C as a Temperature Controller and a Temperature Limiter are given in Section 1 and 2 respectively. To determine if the device is set as a controller or limiter - during start up, the device will show (tC)/(Lt)(temperature **C**ontroller/temperature **L**imiter) and (v1_0)(current firmware version: v1.0 as an example) in sequence.

Temperature controller: The device will monitor the measured temperature and switch on and off the heater around the set point temperature.

Temperature limiter: If the measured temperature exceeds the set limit value, the power is cut to the output until the limiter is manually reset.

1 PROX-ATEX Z1C Controller Operation

1.1 To view controller general information

Briefly press and release the **UP** button (), the controller locking status, the controller mode (tC), display temperature unit, setpoint, measured temperature and power output are displayed in the sequence shown in figure 4. **The controller does not respond to any further button pressing during this display sequence.**

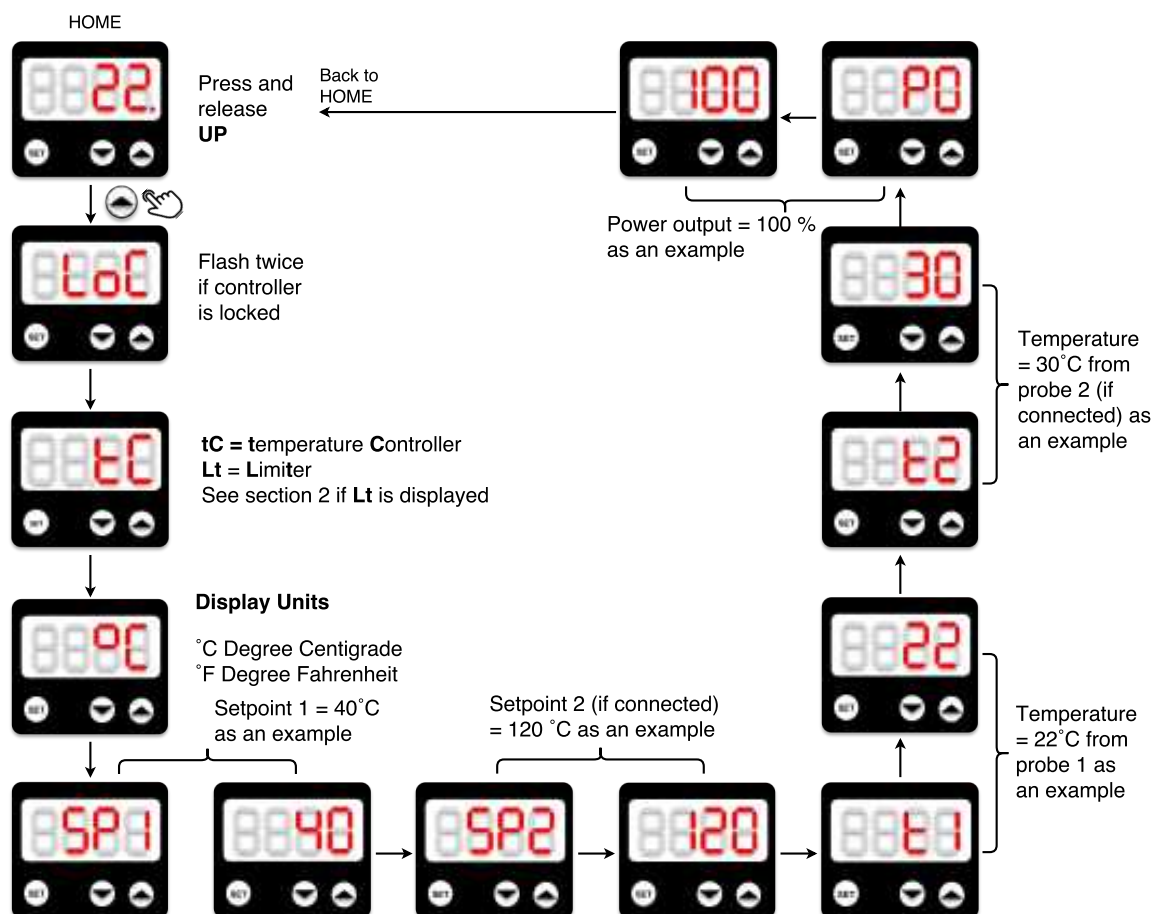

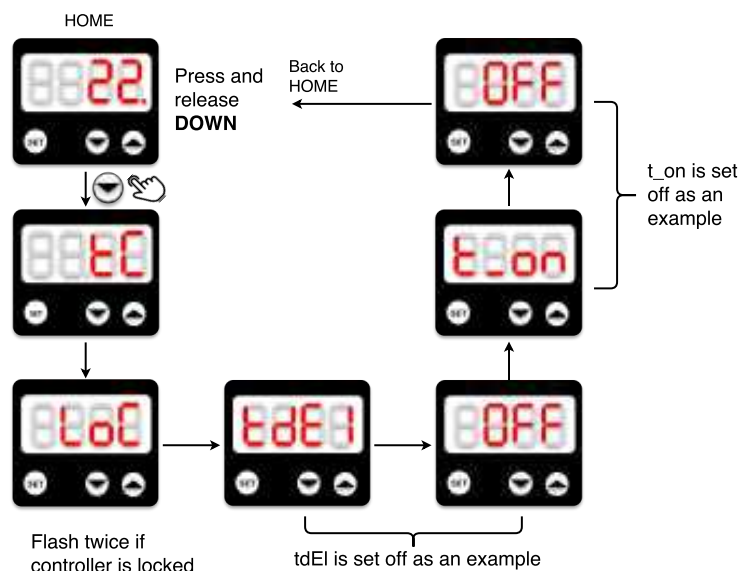


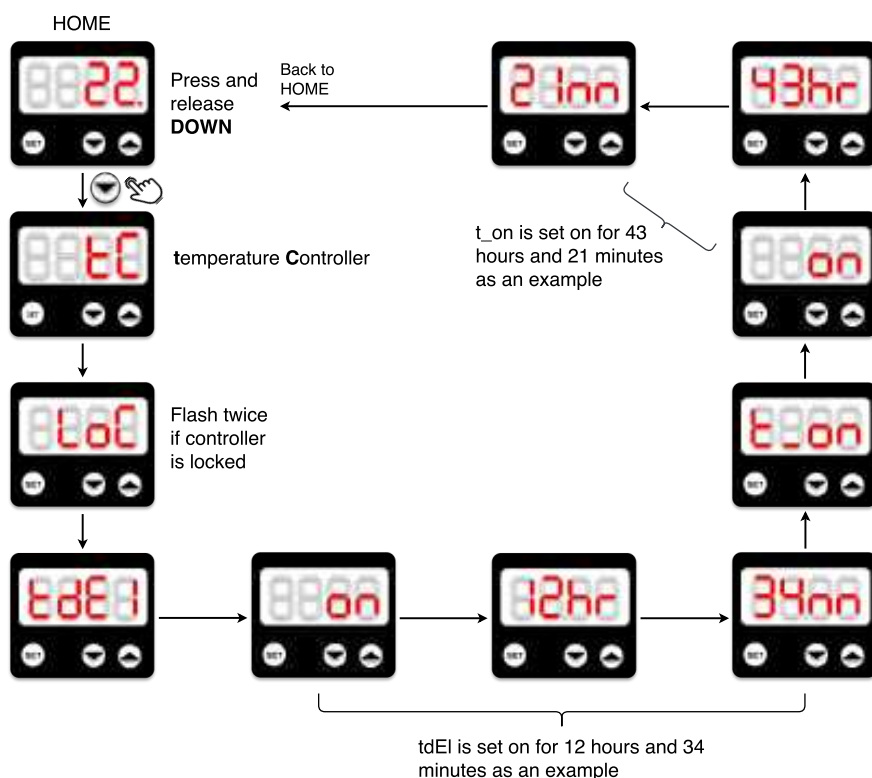
Figure 4 Z1C controller general information display

1.2 To view Z1C controller time delay (tdEI) and time on (t_on) settings

Press and release the **DOWN** button (), the controller time delay (tdEI) and time on (t_on) settings are displayed in sequence as shown in figure 5 (a) and (b). The definitions of the tdEI and t_on are illustrated in figure 6.



(a) tdEI and t_on are off



(b) tdEI and t_on are on

Figure 5 Z1C controller time delay (tdEI) and time on (t_on) settings display

When Z1C controller is in an automatic control mode, the controller turns on or off automatically based on the setpoints, hysteresis settings and measured temperature (figure 17).

After tdEl is set to on with a delay time of between 0 and 99 hours and 59 minutes, Z1C switches to standby mode and immediately starts counting down. When the tdEl is timed out, the controller switches into automatic control mode. Z1C controller's power output is set to zero during standby mode.

If t_on is set on with an on time of between 0 and 99 hours and 59 minutes, the controller will switch to standby mode from automatic control mode when the t_on timer times out. **Please note that any tdEl duration adjustments will switch off t_on.** Therefore, t_on timer has to be set after tdEl if both timers are to be used.

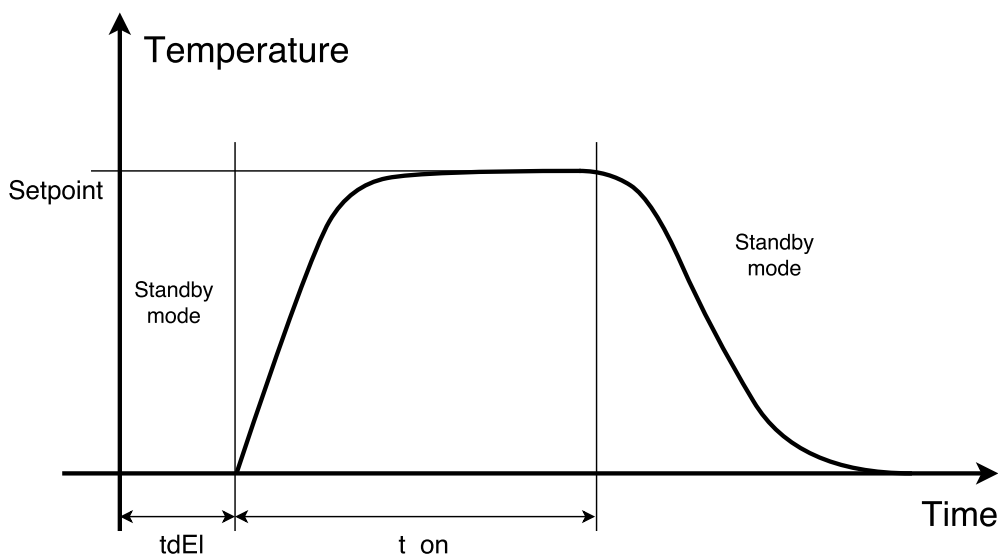


Figure 6 Illustrations of tdEl and t_on

1.3 To adjust setpoint 1 (SP1)

Setpoint1 (SP1) is the target temperature for temperature probe 1.
SP1 adjustment is illustrated in figure 7.

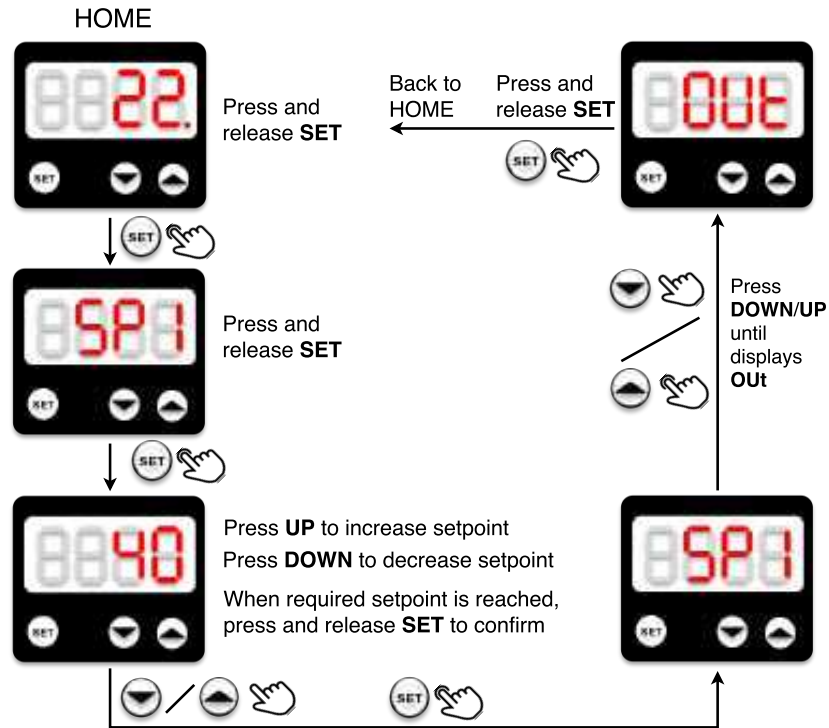


Figure 7 Setpoint 1 adjustment

Please note that if no button pressed within 8 seconds, Z1C controller will return automatically to Home display.

If Z1C controller is locked as shown in figure 8, please refer to section 1.7.1 and 1.7.7 to unlock the controller prior to SP1 adjustment.

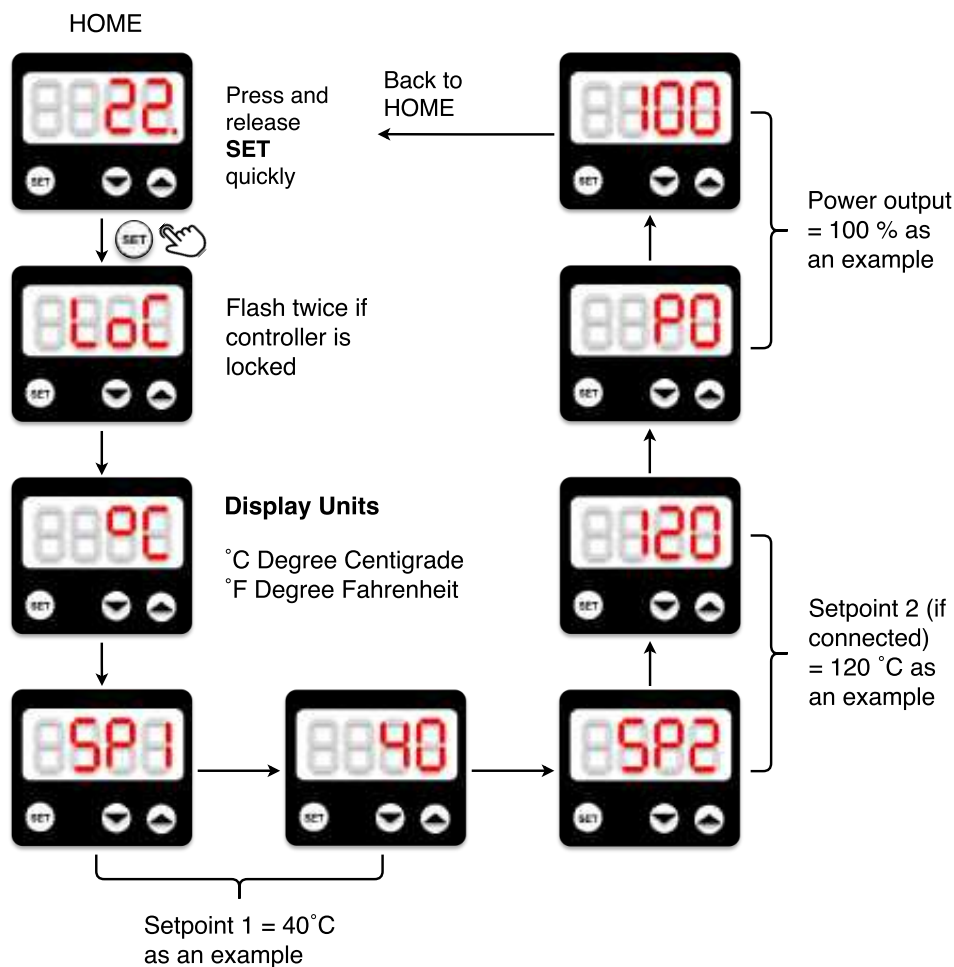


Figure 8 Displays after press and release set button if Z1C controller is locked

1.4 To adjust setpoint 2 (SP2)

Setpoint2 (SP2) is the target temperature for temperature probe 2.

If Z1C controller has this probe 2 connected, SP2 can be adjusted as in figure 9.

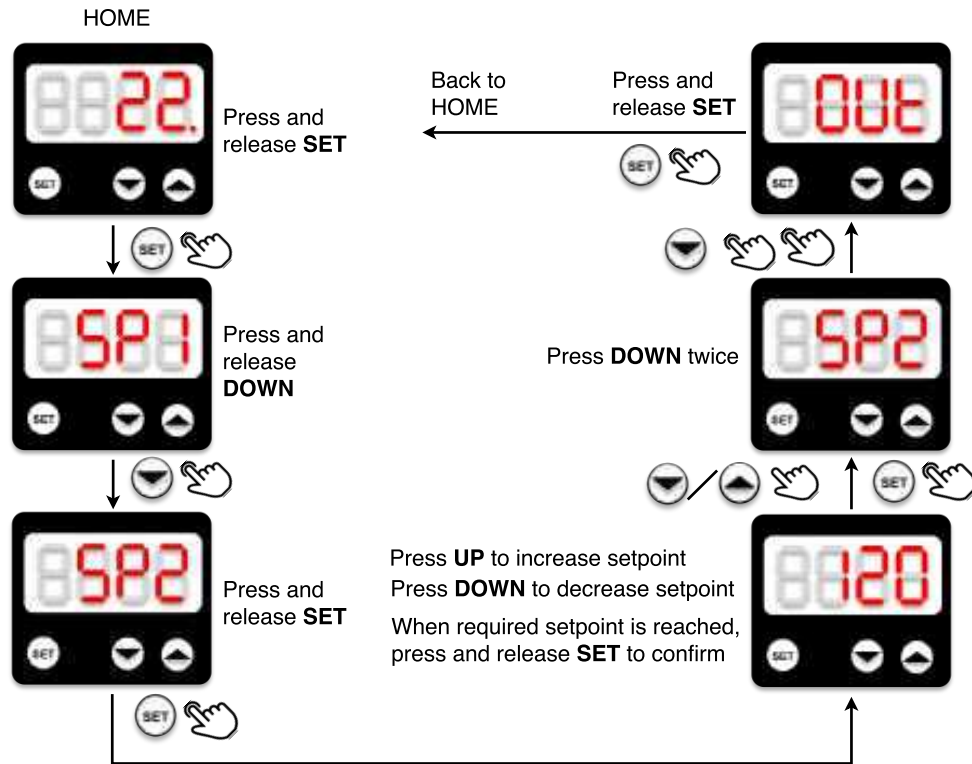


Figure 9 Setpoint 2 adjustment

Please note that if no button pressed within 8 seconds, Z1C controller will return automatically to Home display.

If Z1C controller is locked as shown in figure 8, please refer to section 1.7.1 and 1.7.7 to unlock the controller prior to SP2 adjustment.

1.5 To adjust power output (PO)

Z1C controller power output (PO) can be adjusted as shown in figure 10.

PO ranges from 0 to 100%. For example, when PO is 100%, output is always on when Z1C needs to supply output power. When PO is 50%, output will be on for 50 seconds and off for 50 seconds to achieve 50% power output over whole heating period. When PO is 75%, output will be on for 75 seconds and off for 25 seconds to achieve 75% power output. Power output at 50% and 75% are illustrated in figure 11.

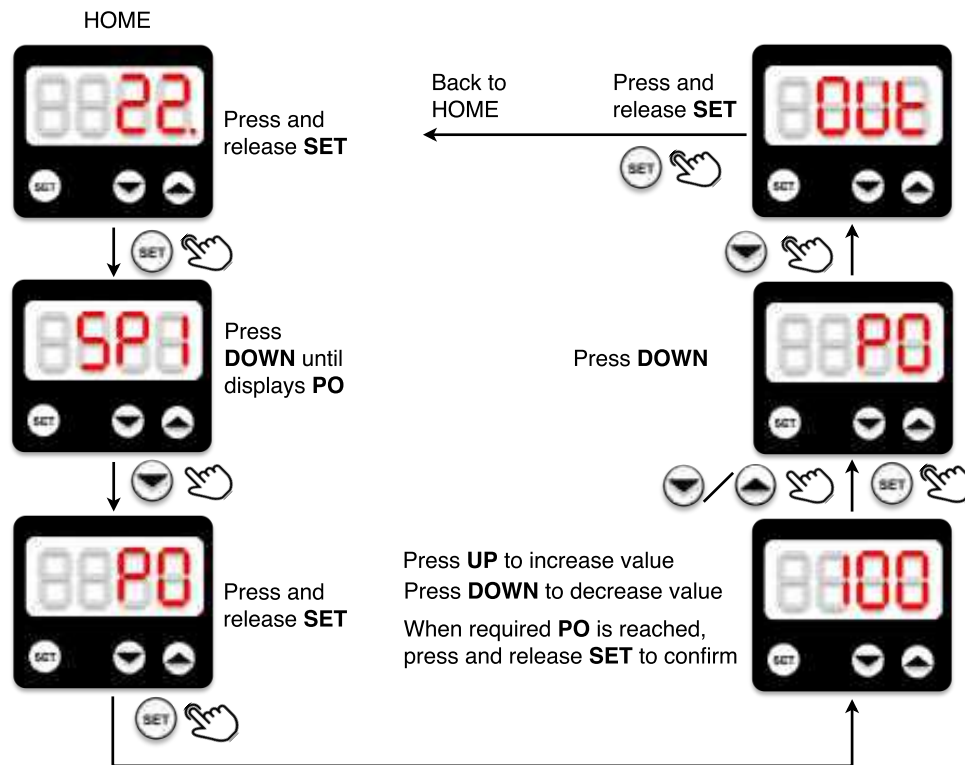


Figure 10 Power output (PO) adjustment

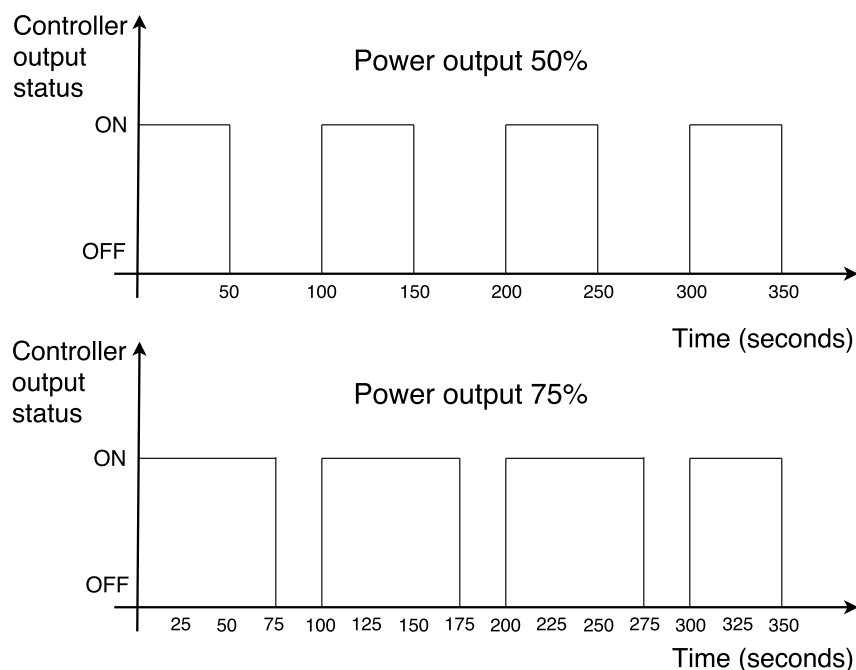



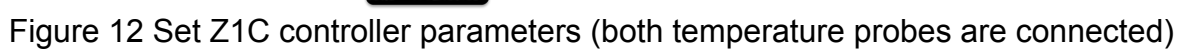
Figure 11 Power output (PO) at 50% and 75%

Please note that if no button pressed within 8 seconds, Z1C controller will return automatically to Home display.

If Z1C controller is locked as shown in figure 8, please refer to figure 12 in section 1.7.1 and 1.7.7 to unlock the controller prior to PO adjustment.

1.7 To access Z1C controller configurations

Press and hold **SET** button for more than 3 seconds () to access Z1C controller configuration parameters. Figure 12 gives a full list of parameters when two temperature probes are connected to the controller. If there is only one probe connected to the controller, the parameters of the second probe, i.e. t2, HyS2 and CAL2, will be hidden from figure 12. The configuration parameters along with SP1, SP2 and PO are listed in table 1. If Z1C controller is protected by a Code, i.e. a password, follow figure 13 to input the CodE.



1.7.1 To enter password (CodE menu)

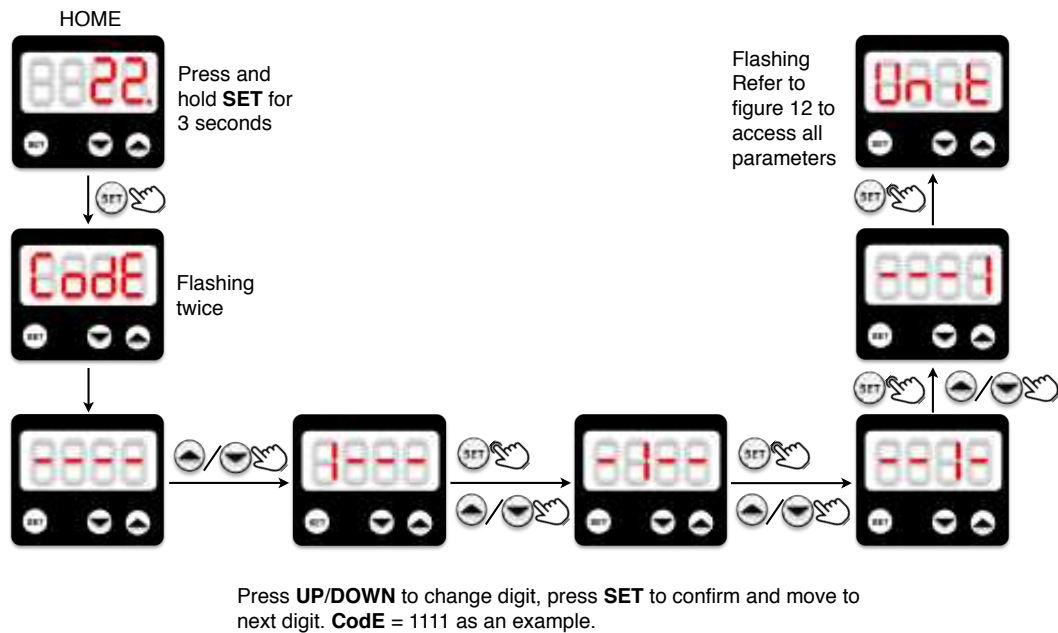


Figure 13 CodE input to access Z1C controller configurations

Please note that if no button presses for 8 seconds, Z1C will return to Home display automatically.

1.7.2 To set Z1C controller time delay (tdEI)

tdEl definition is illustrated in figure 6. tdEl ranges from 0 to 99 hour and 59 minutes. Select tdEl item following the figure 12, then follow the figure 14 to set tdEl.

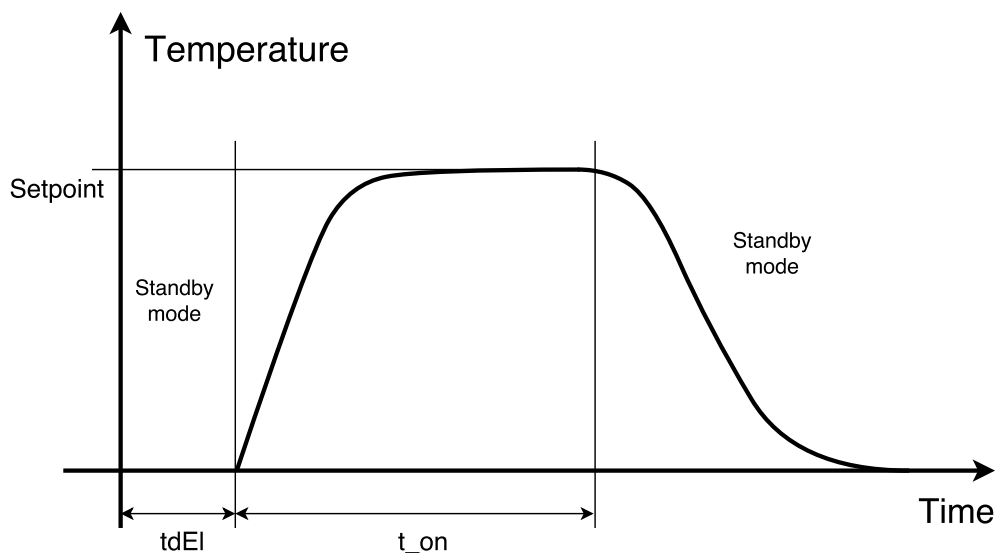
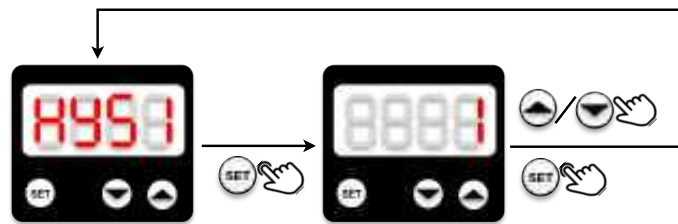


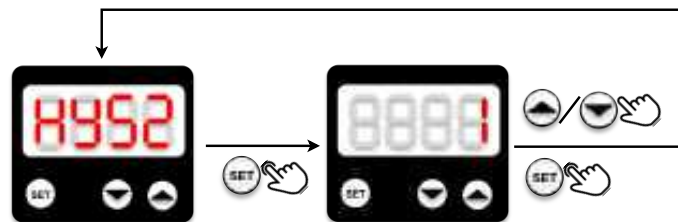
Figure 6 Illustrations of tdEI and t on

1.7.4 To set Z1C controller hysteresis (HyS1/HyS2)

Hysteresis is illustrated in figure 16. HyS1/HyS2 ranges from 1 to 30°C or 1 to 54°F. Select HyS1/HyS2 following the figure 12, then follow the figure 16 to set HyS1/HyS2. HyS2 only appears when Z1C controller has temperature probe 2 connected.



Press **UP/DOWN** to change value, press **SET** to confirm and return.
HyS1 = 1 as default. HyS1 ranges from 1 to 30°C or 1 to 54°F.



Press **UP/DOWN** to change value, press **SET** to confirm and return.
HyS2 = 1 as default. HyS2 ranges from 1 to 30°C or 1 to 54°F.

Note:

HyS2 only appears when Z1C has temperature probe 2 connected.

Figure 16 Set Z1C controller hysteresis HyS1/HyS2

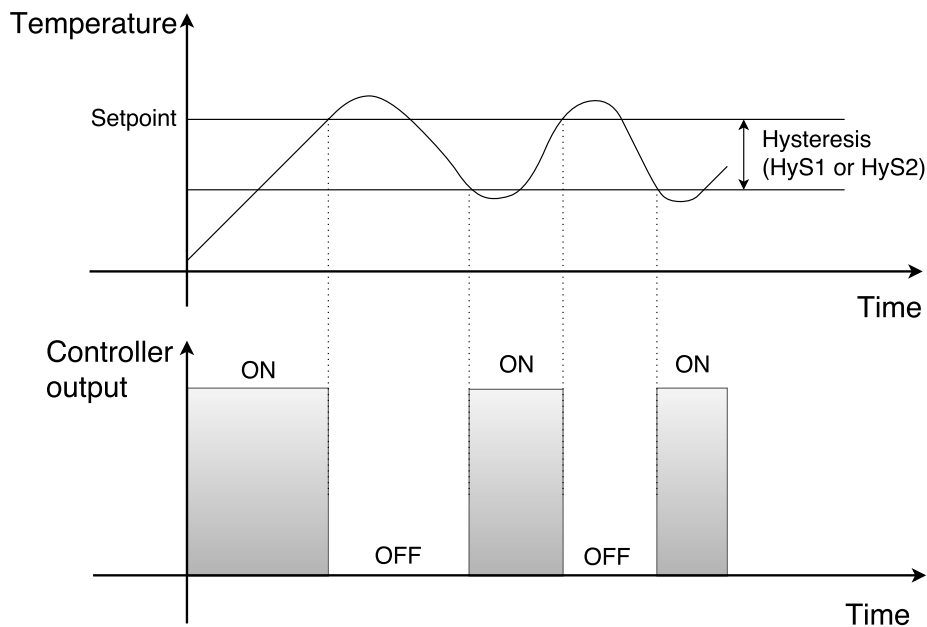
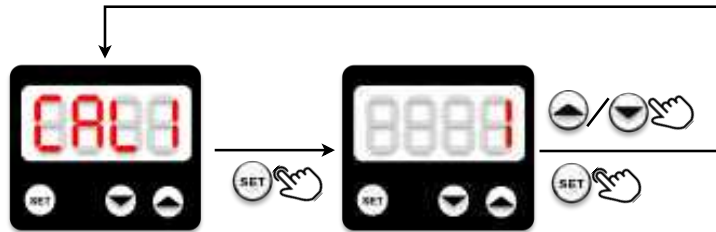


Figure 17 Definition of Z1C controller hysteresis

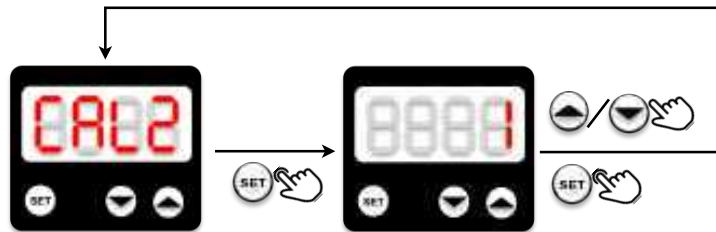
1.7.5 To set Z1C controller temperature calibration (CAL1/CAL2)

CAL1/CAL2 adds an offset to measured temperature. CAL1/CAL2 can be set in a range of -5 to 5°C or -9 to 9°F.

Select CAL1/CAL2 as in figure 12, then follow the figure 18 to set CAL1/CAL2 as required. CAL2 only appears when Z1C has temperature probe 2 connected.



Press **UP/DOWN** to change value, press **SET** to confirm and return.
CAL1 = 1 as an example. CAL1 ranges from -5 to 5°C or -9 to 9°F.



Press **UP/DOWN** to change value, press **SET** to confirm and return.
CAL2 = 1 as an example. CAL2 ranges from -5 to 5°C or -9 to 9°F.

Note:

CAL2 only appears when Z1C has optional temperature probe 2.

Figure 18 Set CAL1/CAL2

1.7.6 To set Z1C Password (CodE)

CodE is used to control access to controller configurations.

Select CodE as in figure 12, then follow the figure 19 to set Code in a range of 0000 to 9999.

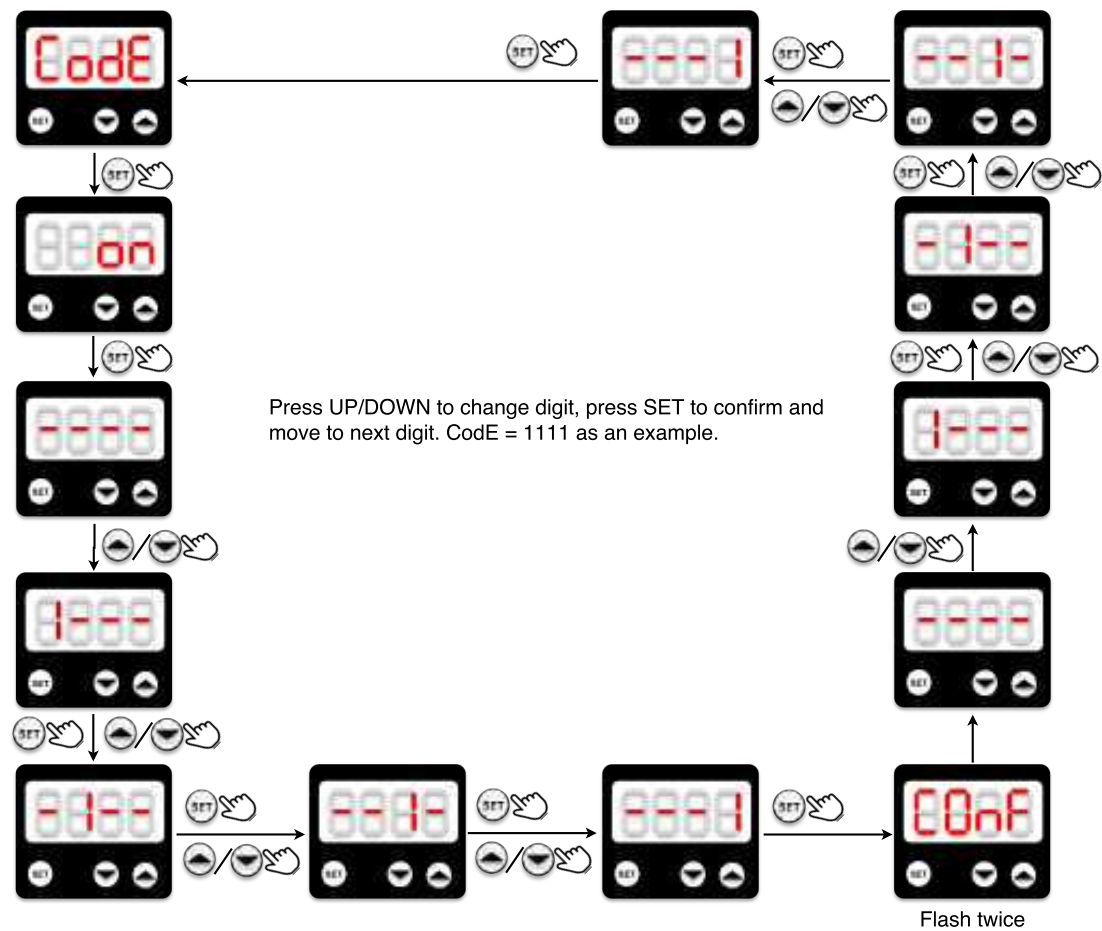


Figure 19 Set Code

1.7.7 To set Z1C controller Password (CodE) off

Select CodE→OFF as shown in figure 12.

Note: As soon as CodE is set to OFF while Z1C is in locking status, Z1C will be unlocked.

1.7.8 To lock/unlock Z1C controller






Lock Z1C controller: select LoC→ on as shown in figure 12. If Z1C has no CodE protection, CodE will be set to 1111. Otherwise, CodE remains unchanged.











Unlock Z1C controller: select LoC→ OFF as shown in figure 12. Unlock leaves CodE unchanged.

1.7.9 To set Z1C controller to Z1C limiter

Select tyPE→ Lt as shown in figure 12. See Section 2 for all settings for PROX-ATEX Z1C limiter settings.

Table 1 PROX-ATEX Z1C controller parameter list

	Parameter	Description	Adjustable range	Default setting
	Setpoint 1	Target temperature for temperature probe 1	Manufacture settings, depending on the model in °C. 0 – 40 0 – 50 0 – 70 0 – 90 0 – 120 0 – 160 0 – 180 0 – 200	0
	Setpoint 2	Target temperature for temperature probe 2 if it is connected	Same as above	Depending on the model, eg. 200°C/394°F
	Power Output	Controller power output. Z1C is an on-off controller. Power is modulated by varying the on period for every 100 seconds cycle time. For example, when PO is 100%, output is always on when Z1C needs to supply output power. When PO is 50%, output will be on for 50 seconds and off for 50 seconds. When PO is 75%, output will be on for 75 seconds and off for 25 seconds.	0 – 100%	100%
	Temperature Unit	Current temperature unit for Z1C	°C/°F	°C
	LoCK controller	Lock controller stops SP1/SP2 and PO changes without CodE. When set Z1C LoC on	on/OFF	OFF

		prior to CodE set-up, the CodE is set to 1111. Set LoC off will not change CodE.		
	time delay	Time before Z1C enabling automatic control. It is a parameter under  . See figure 6 for definition. tdEl duration adjustments will switch off t_on.	on/OFF 0 – 99 hours and 59 minutes if on.	OFF
	time_on	Z1C stays on duration . It is a parameter under  . See figure 6 for definition. tdEl duration adjustments will switch off t_on. Therefore, t_on timer has to be set after tdEl if both timers are used.	on/OFF 0 – 99 hours and 59 minutes if on.	OFF
	Home diSPay	Home display option	Temperature measured using probe 1/probe 2 (if have)	t1
	Hysteresis value for temperature probe 1	See figure 17.	1 - 30°C or 1 to 54°F.	1°C
	Hysteresis value for temperature probe 2	See figure 17. It is only available when Z1C has temperature probe 2.	1 - 30°C or 1 to 54°F.	1°C
	CALibration for probe 1	Probe 1 calibration. It is an offset value to be added to the measured temperature.	-5 – 5°C or -9 – 9°F	
	CALibration for probe 2	Probe 2 calibration. It is an offset value to be added to the measured temperature.	-5 – 5°C or -9 – 9°F	
	Access CodE	A code controlling access to the controller configurations	on/OFF 0000 – 9999 when it is on	OFF


2 PROX-ATEX Z1C Limiter Operation

When PROX-ATEX Z1C is set to operate as a limiter, if the temperature measured from the temperature probe/probes exceeds the set limit value, the electrical circuit stops power output and flashes (-AL-) in the display. The Z1C limiter can **ONLY** be restored manually via the keypad or a pre-configured NFC card providing the measured temperature is lower than the set limit value. Please note that the power output of the limiter is either 100% or 0%.

If the PROX-ATEX Z1C is to be switched from **Controller** to **Limiter**, it is a good practice to set SP1/SP2 to the intended limit temperature setting before switching. The SP1/SP2 values are retained during device type switching.

Please note that Z1C limiter is always protected by a Password / Code. Please refer to 2.2 for Code entering.

2.1 To view limiter general information

Press and release the **UP** button (), the Z1C mode (Lt), display temperature unit, setpoint, measured temperature are displayed in the sequence as shown in figure 20. **The limiter does not respond to any further button pressing during this display sequence.**

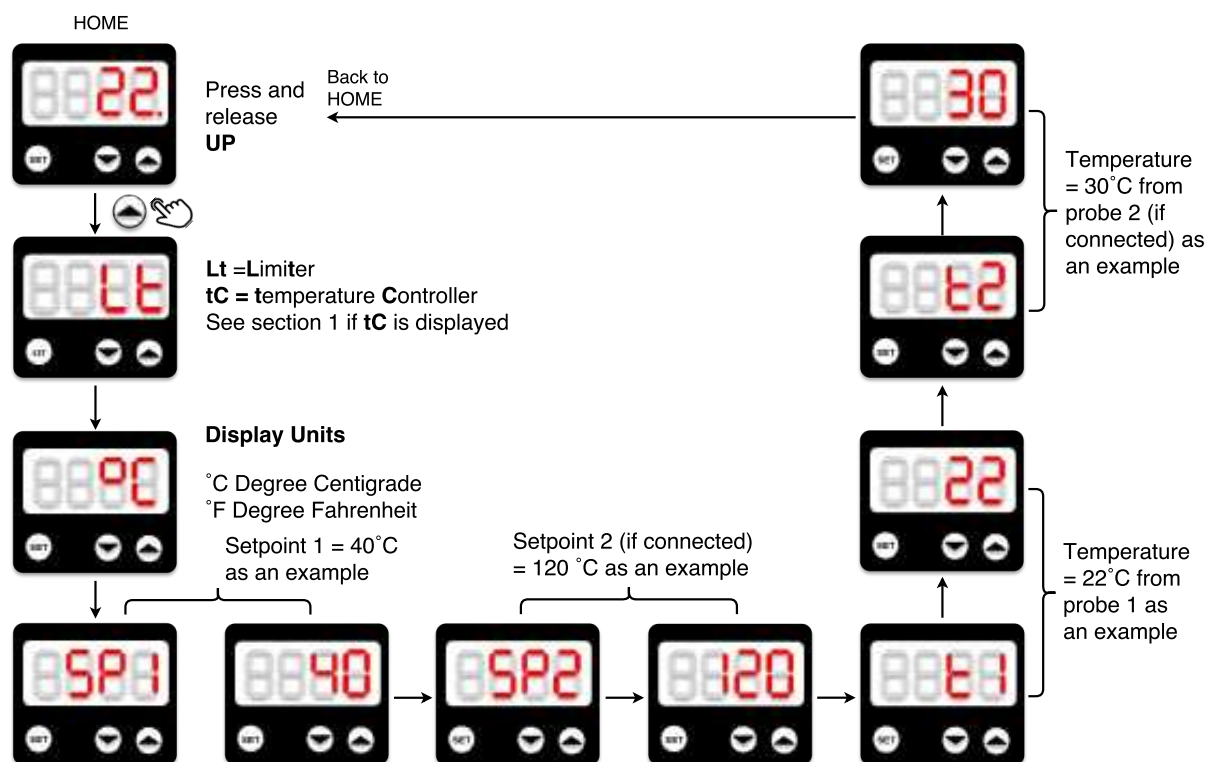
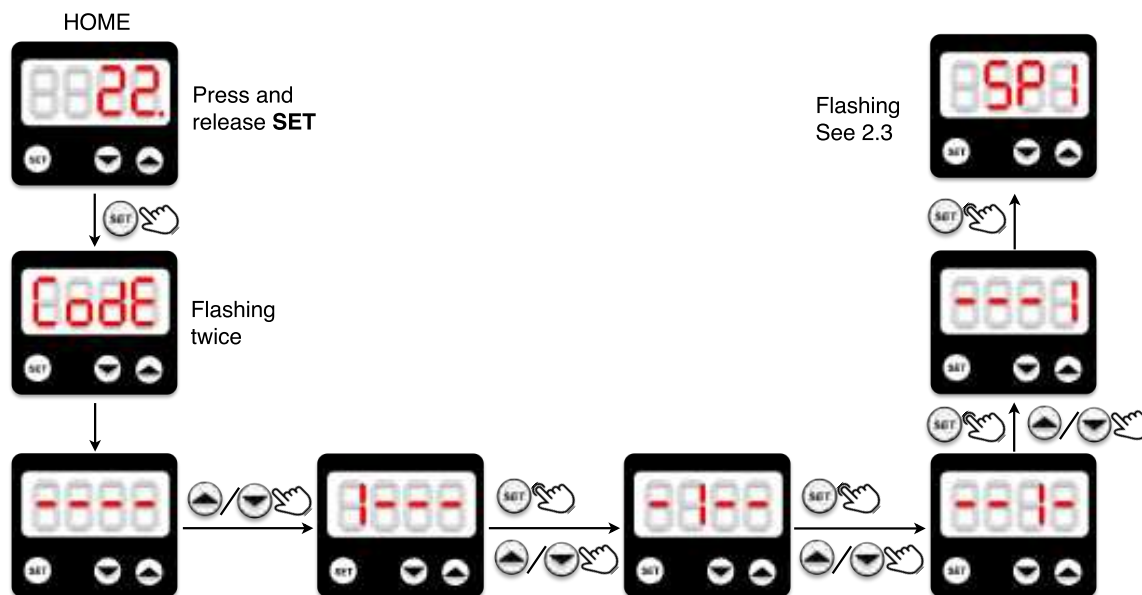


Figure 20 Z1C Limiter general information

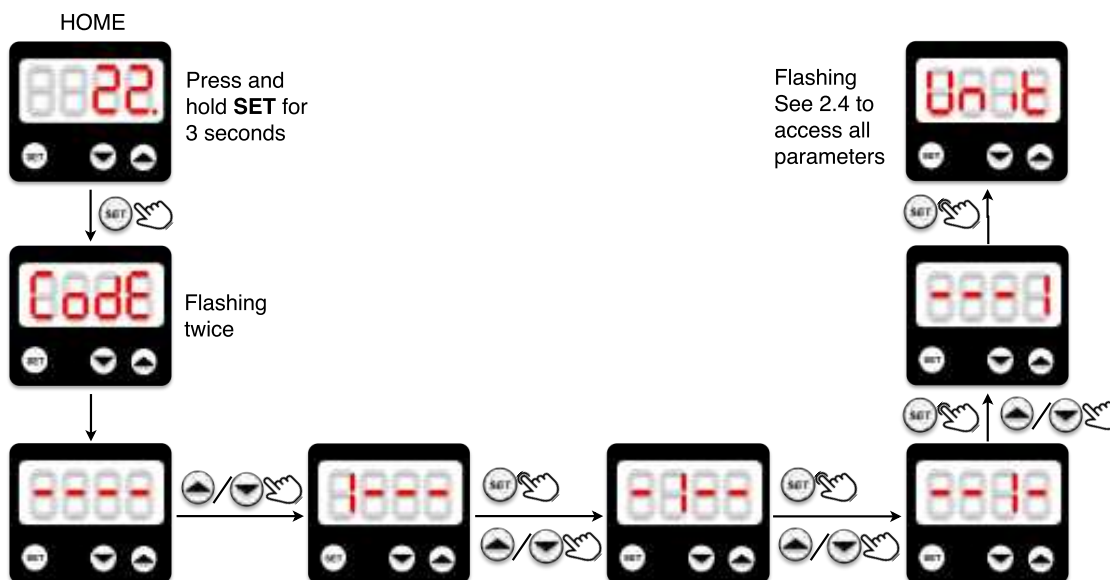
2.2 To input CodeE

Z1C limiter is protected by a Code, i.e. a password. To configure SP1, SP2 or rSET, follow figure 21 (a) to input the CodeE. To configure other parameters, follow figure 21 (b) to input the CodeE.



Press **UP/DOWN** to change digit, press **SET** to confirm and move to next digit. **CodeE** = 1111 as an example.

(a)



Press **UP/DOWN** to change digit, press **SET** to confirm and move to next digit. **CodeE** = 1111 as an example.

(b)

Figure 21 CodeE input to access Z1C limiter configurations

2.3 To adjust setpoint 1 (SP1), setpoint2 (SP2) and reset alarm (rSet)

2.3.1 To adjust setpoint 1 (SP1)

Setpoint1 (SP1) is the limit value of the temperature probe 1.
SP1 adjustment is illustrated in figure 22.

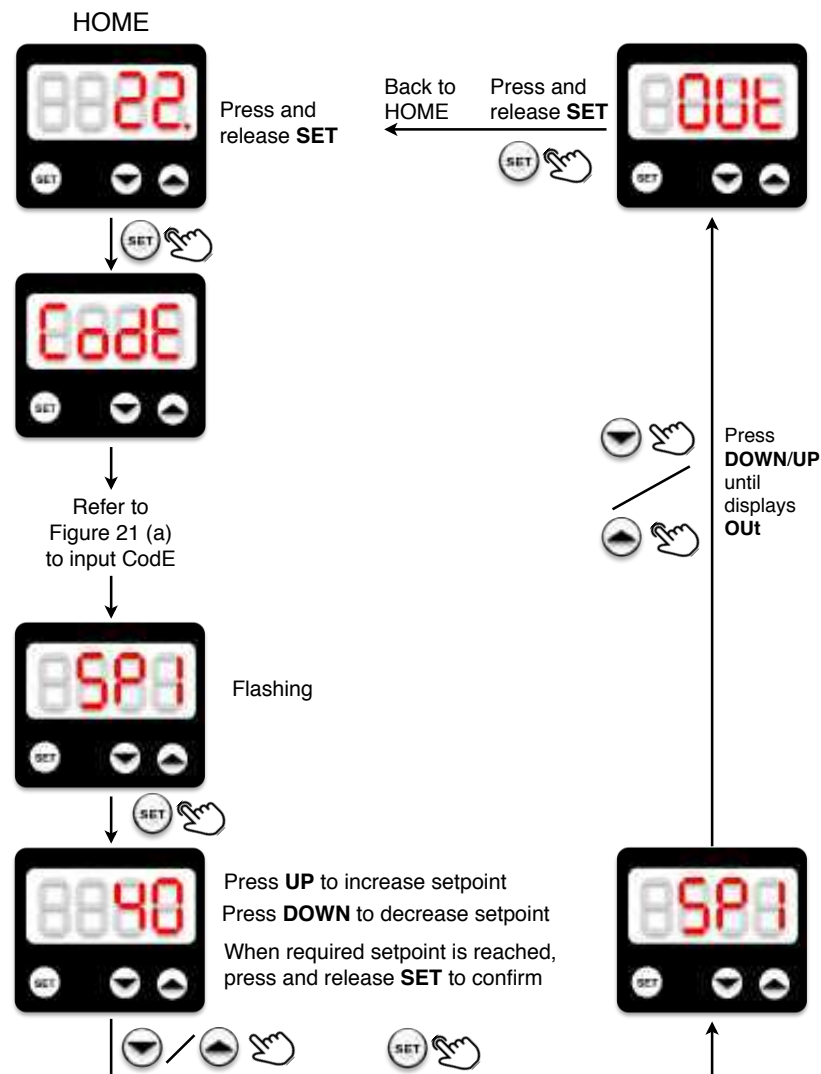


Figure 22 Limiter setpoint 1 adjustment

Please note that if no button pressed within 8 seconds, Z1C limiter will return automatically to Home display.

2.3.2 To adjust setpoint 2 (SP2)

Setpoint 2 (SP2) is the limit value of the temperature probe 2.
If Z1C limiter has this probe 2 connected, SP2 can be adjusted as in figure 23.

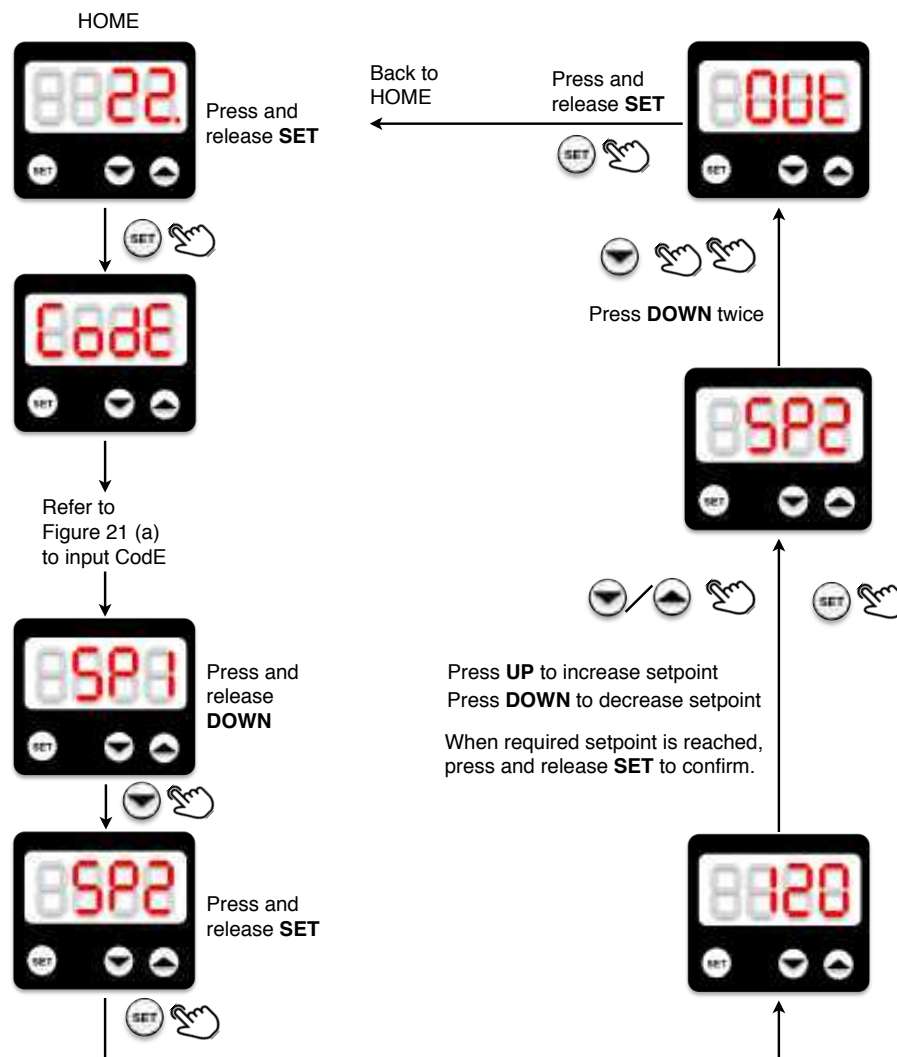


Figure 23 Limiter setpoint 2 adjustment

Please note that if no button pressed within 8 seconds, Z1C limiter will return automatically to Home display.

2.3.3 To reset limiter (rSEt)

When the temperature measured from the temperature probe 1/2 exceeds the set limit value, the limiter stops power output and flashes (-AL-) in the display. To restore/reset the limiter after the measured temperature is lower than the set limit value, follow figure 24 to reset (rSEt) the limiter.

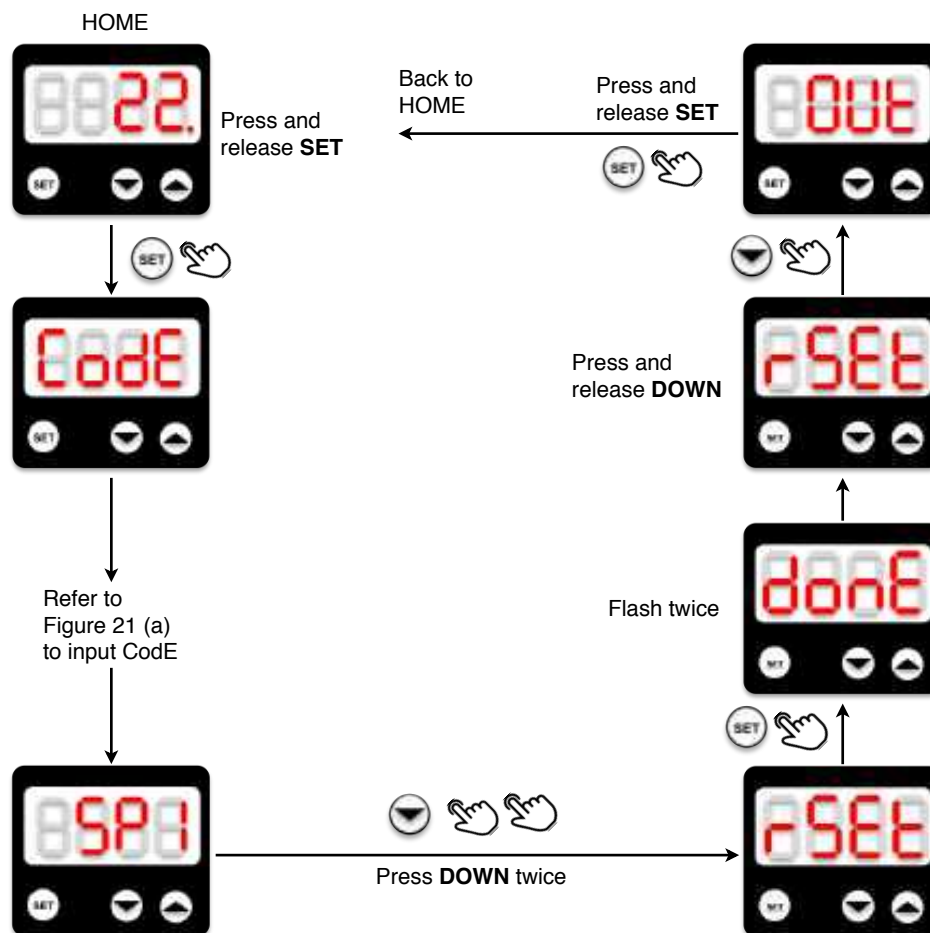



Figure 24 Limiter reset (rSEt)

2.4 To access Z1C limiter configurations

Press and hold **SET** button for more than 3 seconds () to access Z1C limiter configuration parameters. Figure 24 gives a full list of parameters when two temperature probes are connected to the limiter. If there only have one probe is connected to the controller, the parameter t2 under diSP of the second probe will be hidden from the figure 25. The configuration parameters along with SP1, SP2 and rSEt are listed in table 2. Z1C limiter is protected by a Code, i.e. a password, follow figure 21 (b) to input the CodeE.

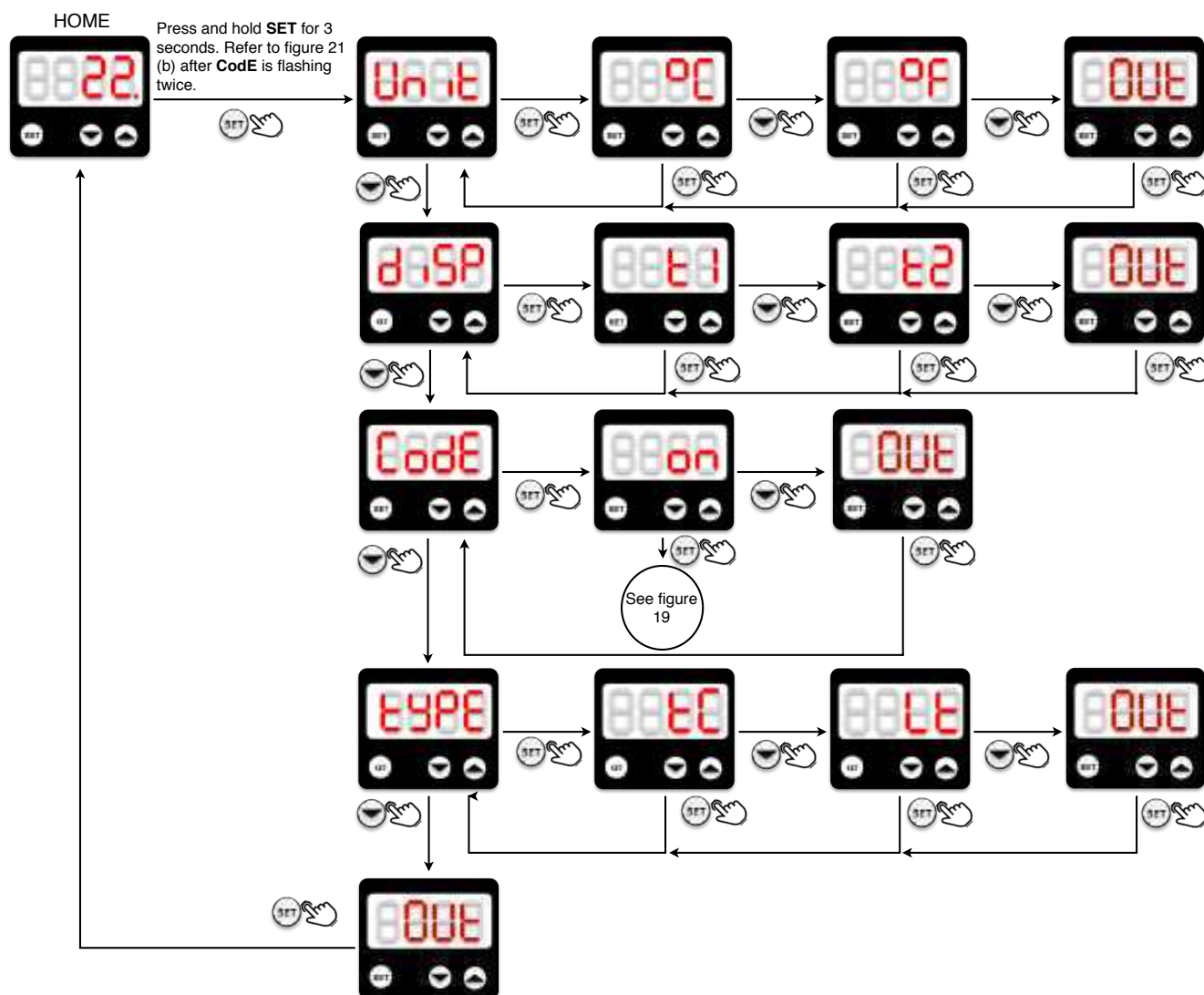







Figure 25 Set Z1C limiter parameters (both temperature probes are connected)

Table 2 PROX-ATEX Z1C limiter parameter list

	Parameter	Description	Adjustable range	Default setting
	Setpoint 1	Limit temperature for temperature probe 1	Manufacture settings, depending on the model in °C. 0 – 40 0 – 50 0 – 70 0 – 90 0 – 120 0 – 160 0 – 180 0 – 200	0
	Setpoint 2	Limit temperature for temperature probe 2 if it is connected	Same as above	Depending on the model, eg. 200°C/394°F
	Temperature Unit	Current temperature unit for Z1C	°C/°F	°C
	Home diSPlay	Home display option	Temperature measured using probe 1/probe 2 (if have)	t1
	Access Code	A code controlling access to the controller configurations	on/OFF 0000 – 9999 when it is on	OFF

3 NFC card and configurations

The PROX-ATEX Z1C has a built-in near field communication (NFC) transceiver for communicating with pre-configured NFC cards. An operator can configure the device by tapping a pre-configured NFC card on the device window. (Card) is displayed as soon as the pre-configured settings are retrieved by the device. This configuration can be done in hazardous area.

Please note that the operator should only tap ONE pre-configured NFC card on the device window rather than a stack of pre-configured cards. It is a good practice to verify the configurations through the push buttons after using the NFC card.

Customised NFC cards and the dedicated Android app are available. Please contact LMK Thermosafe Ltd. for the further details.

4 Maintenance

Under normal use, the PROX-ATEX Z1C should not need any maintenance however it is recommended that the user makes regular checks on the condition of the enclosure, cables and cable glands. If any damage is found, the product should not be used until it has been inspected and tested by a competent person. The PROX-ATEX should be kept clean and free from dust.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC Notice:

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with RSS-210 — Licence-Exempt Radio Apparatus: Category I Equipment. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Avis d'Industrie Canada:

Cet appareil numérique de classe B est conforme à la norme NMB-003.

Cet appareil est conforme à CNR-210 — Appareils radio exempts de licence : matériel de catégorie I. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur doit accepter tout brouillage radioélectrique subi par l'appareil, même si le brouillage est susceptible d'en compromettre le fonctionnement.



EU Declaration of conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer

LMK Thermosafe Ltd declares that the following product is in compliance with the EU directives listed below:

Product:

Prox-Atex Temperature Controller Z1C

EU Directives:

Equipment for use in Potentially Explosive Atmospheres 2014/34/EU

Standards: EN 60079-0:2012, EN 60079-11:2012, EN 60079-18:2015.

The harmonized standard EN60079-18:2015+A1:2017 has been compared to the standard used for certification. No changes in the “state of the art” apply to the equipment.

Certification No: CML 16ATEX5167X

By Certification Management Limited, Unit 1 Newport Business Park,
New Port Road, Ellesmere Port CH65 4LZ, UK.

Notified Body Number: 2503

Radio Equipment Directive (RED) 2014/53/EU

Complies with the relevant parts of:

EN61326-1:2013 EN301 489-1 v1.9.2, EN301 489-3 v1.6.1 and EN300 330 v2.2.1 (2017-02)

Restriction of Hazardous Substances 2011/65/EU

The Products listed above have also been tested and issued with an IECEx Certificate of Conformity.

Issued by Certification Management Limited. IECEx CML 16.0077X

This certificate may be viewed on the Official IECEx Website – WWW.IECEx.COM



Mark Newton
General Manager / Director



EU Type Examination Certificate CML 16ATEX5167X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Prox-Atex Temperature Controller Z1C**
- 3 Manufacturer **LMK Thermosafe Ltd**
- 4 Address 9/10 Moonhall Business Park
Haverhill
Suffolk
CB9 7AA
UK
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012 + A11:2013 EN 60079-11:2012 EN 60079-18:2015

- 10 The equipment shall be marked with the following:



II 2 (1) GD

Ex mb [ia] IIC T155°C (T3) Gb

Ex mb [ia] IIIC T155°C Db

Ta = -20°C to +40°C



II 2 (1) GD

Ex mb [ia] IIC T4 Gb

Ex mb [ia] IIIC T135°C Db

Ta = -20°C to +40°C

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D R Stubbings MIET
Technical Director

CD079-2

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Certification Nos. CML16ATEX5167X IECEx CML 16.0077X
Certified to Standards EN60079-0, 60079-11, 60079-18 For use in Zones 1 and 2.
UK Patent Number 2539910B





CML 16ATEX5167X
Issue 0

11 Description

The Prox-Atex Thermostatic Controller Z1C is a 250Vac rated temperature controller that can supply up to 15A or 25A into a heater load depending on the model. It features a near field communication (NFC) transceiver for communicating with suitable mobile devices. It is housed in an anodised aluminium enclosure with a glass window for viewing a four digit 7-segment display and a membrane keypad for setting parameters. Cables for the electrical supply, switched electrical output and up to two temperature probes enter the enclosure through cable glands. The three electronic circuit boards (Filter, Main and NFC) are encapsulated to exclude the atmosphere and connections to the temperature probes and keypad are intrinsically safe.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	18/10/2016	R271.1A/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- 13.2 The 25A model is to be marked T155°C (T3) Gb, T155°C Db and the 15A model is to be marked T4 Gb, T135°C Db.
- 13.3 A visual inspection shall be carried out in accordance with EN 60079-18:2015 Clause 9.1 to ensure there is no damage evident such as cracks in the compound, exposure of the encapsulated parts, flaking, shrinkage, swelling, decomposition, failure of adhesion or softening.

14 Special Conditions for Safe Use (Conditions of Certification)

The following conditions relate to safe installation and/or use of the equipment.

- 14.1 The 25A model is to be powered via a circuit breaker not exceeding 25A and the 15A model is to be powered via a circuit breaker not exceeding 15A.
- 14.2 When used with a resistive heater to EN 60079-7, this equipment is not considered to be a safety device as described by EN 60079-7:2015 Clause 5.8.11. However, the combination of two items of this equipment used in series can be considered to be a safety device as described by EN 60079-7:2015 Clause 5.8.11.

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Version: 8.0 Approval: Approved

CD079-2

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Certification Nos. CML16ATEX5167X IECEx CML 16.0077X
Certified to Standards EN60079-0, 60079-11, 60079-18 For use in Zones 1 and 2.
UK Patent Number 2539910B



Annexe to: IECEx CML 16.0077X
Applicant: LMK Thermosafe Ltd
Apparatus: Prox-Atex Temperature Controller Z1C



Description

The Prox-Atex Thermostatic Controller Z1C is a 250Vac rated temperature controller that can supply up to 15A or 25A into a heater load depending on the model. It features a near field communication (NFC) transceiver for communicating with suitable mobile devices. It is housed in an anodised aluminium enclosure with a glass window for viewing a four digit 7-segment display and a membrane keypad for setting parameters. Cables for the electrical supply, switched electrical output and up to two temperature probes enter the enclosure through cable glands. The three electronic circuit boards (Filter, Main and NFC) are encapsulated to exclude the atmosphere and connections to the temperature probes and keypad are intrinsically safe.

Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

1. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
2. The 25A model is to be marked T155°C (T3) Gb, T155°C Db and the 15A model is to be marked T4 Gb, T135°C Db.
3. A visual inspection shall be carried out in accordance with IEC 60079-18:2014 Clause 9.1 to ensure there is no damage evident such as cracks in the compound, exposure of the encapsulated parts, flaking, shrinkage, swelling, decomposition, failure of adhesion or softening

Conditions of Certification

The following conditions relate to safe installation and/or use of the equipment.

1. The 25A model is to be powered via a circuit breaker not exceeding 25A and the 15A model is to be powered via a circuit breaker not exceeding 15A.
2. When used with a resistive heater to IEC 60079-7, this equipment is not considered to be a safety device as described by IEC 60079-7:2015 Clause 5.8.11. However, the combination of two pieces of this equipment used in series can be considered to be a safety device as described by IEC 60079-7:2015 Clause 5.8.11.



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Certification Nos. CML16ATEX5167X IECEx CML 16.0077X
Certified to Standards EN60079-0, 60079-11, 60079-18 For use in Zones 1 and 2.
UK Patent Number 2539910B





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