TQx Specification

The TQx system is available in a number of configurations on both mobile bands and cellular IoT bands.

The inputs can be configured via the user interface, over the air, as 4x 0-36VDC analogue or digital (on/off) type inputs for use with volt free contacts. In the digital configuration the input sources a weak pull up current (<1mA) at 2.8V.

The TQ5 PCB features a 1-wire input for Dallas 1-wire devices including temperature probes, input/output expansion and I2C adapters.

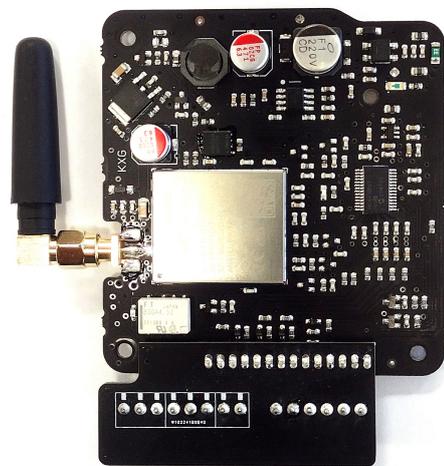The TQX PCB features a volt-free relay output capable of handling 50VDC up to 2A.

The TQX has an additional open collector output capable of sinking up to 100mA.

All inputs can be configured to control the local and remote outputs using the iot-portal.com Monitored Remote Control (MRC) system.

	TQ4	**TQ5**
Cellular Technology	4G LTE Cat-1bis R13, 2G	5G NB-IoT & Cat-M1, 2G GPRS
Aerial	SMA Female Penta-Band	SMA Female Penta-Band
Power Supply	12-24VDC/AC 20mA-100mA	12-24VDCAC 20mA-100mA
Reader Interface	Wiegand 5V	Wiegand 5V
Exit/Fire Inputs	NO/NC/GND	NO/NC/GND
Output Relay	NO/NC/COM 2A 50V Max.	NO/NC/COM 2A 50V Max.
Output Transistor	100mA 50V max.	100mA 50V max.
Timers	7-day, 2 events per day	7-day, 2 events per day
Keycode Length	1-7 digits	1-7 digits
Tag ID	7 characters	7 characters

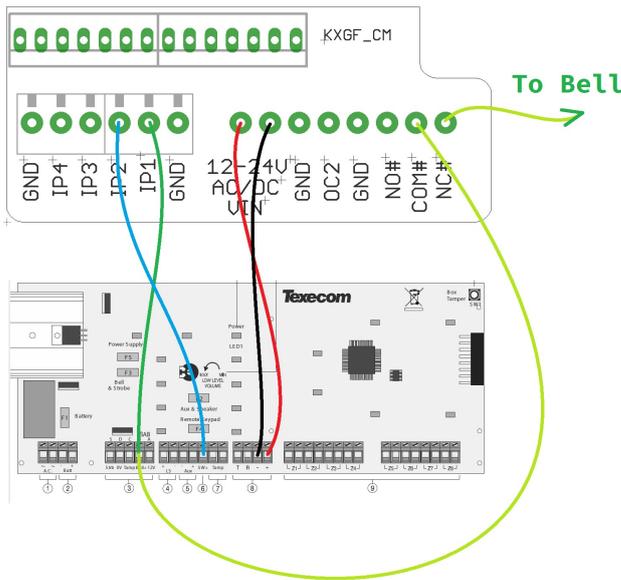**Alarm Wiring Guide TQx Alarm Dialler (IoT)**

Figure 1. Typical Alarm Wiring Diagram

Power should be derived from the alarm panel auxiliary output. Typically, these will be marked +, +VE, +12V and 0V. The +12V terminal should be connected to the AC/DC VIN terminals as shown above. The 0V terminal should be connected to the GND terminal on the alarm dialler.

The Bell or -V terminal on the alarm panel should be connected to the IP1 terminal on the alarm dialler. If a SET terminal is available, connect this to IP2. On the Texecom panel shown the terminal is marked SW+.

If the set/unset messages are inverted, we recommend going to the Live Screen for your device and simply reversing the messages here.

Figure 2. IP2 Message Edit Button

If intruder alarm allows a zone to be configured as a keyswitch input, then connect this to the relay terminals NC & COM. This will require some programming to be performed on the alarm panel. Please refer to your panel manufacturer's installation manual.

To silence an alarm remotely, the bell -ve connection may be routed through the output relay NC and COM terminals as shown above. Activating the output relay from the Live Screen will silence the bell. This can also be achieved by sending the on and off commands to the dialler SMS programming number.
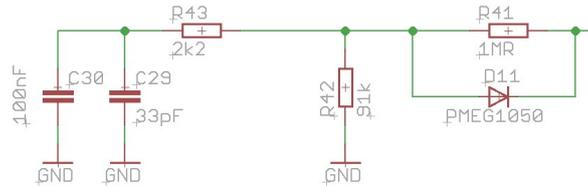
We do not recommend remote control of alarm panels. However, we recommend using a zone as a keyswitch input instead of wiring the bell -ve terminal through the dialler output relay where possible.

IIoT Monitoring and Control System

The Industrial IoT System allows monitoring and control of your industrial control systems remotely via SMS, Web or call, using the 4G and 5G mobile phone networks. The eSIM provides connectivity to multiple networks in over 130 countries.

Each input can be used to send SMS and email messages and initiate a Text-to-Speech voice call. Inputs can be used to operate outputs on the local device and also on remote devices creating a long-range switch connection. Output relays can switch currents up to 1A at 50V.

Input Configuration

Input Reference Circuit (1.091MR Impedance)

Digital Mode

Each input can be configured as an analogue or digital input. The mode is selected using the settings button on the input card on the Live Screen (circled in orange below).
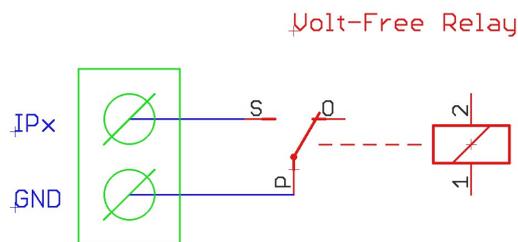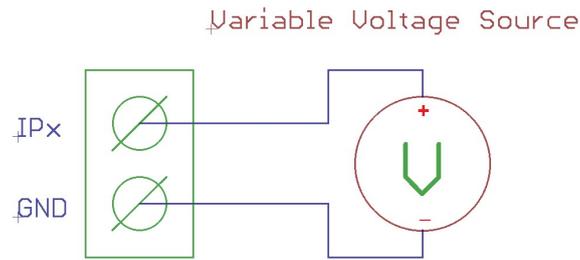

Input Settings Button

The Input Settings modal features the Digital/not Analogue checkbox. To switch the input over to digital, ensure this checkbox is checked and click the Save button immediately below the checkbox. **The device must be powered on and registered on the network for the change to the input to be made.**

Digital inputs have 2 states; High and Low and are designed to be connected to a volt free switch or relay. Setting the input to digital sets the device to source a small current through the input channel. This allows it to sense when a switch contact has been connected to the GND terminal. This corresponds to the 'Low' state. When the input is open circuit, it is considered to be in the 'High' state.

Setting the input to digital will overwrite the upper and lower threshold voltages to 20V and 10V respectively. The source voltage will be 2.8V maximum.

Variable Voltage Source

To switch to analogue mode the 'Digital/not Analogue' checkbox should be unchecked and the 'Save' button should be clicked only when the device is powered up and registered on the network.
In analogue mode there are 3 states.
Under the Low Voltage Threshold value, the input is considered 'Low'
Above the 'High Voltage Threshold' value the input is considered 'High'
A voltage between the high and low voltage is regarded as the 'idle' voltage. There should be a difference between the high and low threshold voltages of at least 2x the input hysteresis voltage which is typically 0.5V. Hence, when setting the upper and lower threshold voltages, ensure they are at least 1V apart.

The inputs can measure a voltage from 0V to 36V. By default, there is 0.5V of hysteresis (adjustable) on each input. This means the input will not retrigger until the voltage is more than 0.5V away from the threshold voltage. This stops a minor voltage fluctuation repeatedly triggering the input.

Outputs

The TQx device has 1-output relay with a maximum terminal voltage of 50V and current rating up to 2A. The second output (2/*) is an open collector transistor with maximum collector current of 100mA.

The outputs can be controlled at any time via the 'Live Screen' and can also be operated by SMS or dialling. Please see the supplementary 'SMS Programming and Operation' Quick Start Guide for SMS control.

To get or change the telephone number to dial for each output, click the telephone icon on the output card. This number can be changed to any one of our international telephone numbers. Each relay can have its own unique telephone number.
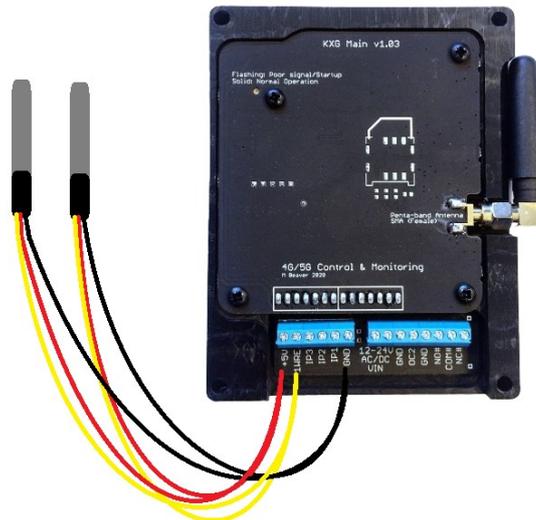

Click the telephone to change the number

If your number is present in two or more IoT devices, then you should select unique numbers for all relays as ringing this number will operate all relays where you phone number is valid. This may or may not be desirable.

1-Wire Input

A variety of sensors and output devices can be connected to Input 4; the 1-Wire input on the TQ5 model. The standard TQ5 can accept up to 16 devices connected to this input.
A 5V power output terminal is available to power the 1-Wire devices (**red**). Input 1 (1-WIRE) is the 1-Wire data terminal (**yellow**). The GND terminal (**black**) should also be used with these devices.

The TQ5 needs to scan the 1-Wire bus in order to use any devices connected to the 1-Wire input.
To do this, go to the 'Live Screen' > 'Tools' (Blue Button) > '1-Wire'.
This brings up the 1-Wire modal. Click 'Scan Bus' to find all devices connected to the 1-Wire bus.

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The Internet-of-Things Portal

Programming Online: https://iot-portal.com

QR Code

A QR code supplied with the product will grant immediate access to the Live Screen. These codes can be destroyed and created on the Live Screen. Scanning the 'Live Screen' QR Code will take you to the Live Screen for that unit. From here you can add your email address and/or phone number on the 'Users' page. You require data on your SIM for this to work!

If you add your phone number as an 'Admin' phone you will then be able to get back to the 'Live Screen' by sending:

Live Screen - **grants access to the Live Screen for programming and operation**
View Screen - **grants access to the View Screen which allows monitoring only**
Enrol Screen - **for enrolling devices onto the portal (for installers)**
Box Label - **description of package contents**
Invite QR - **links to the app login page and bypasses the restriction on unknown numbers**

Website Enrolment/Email Link

If a device is new and has no users, the enrol screen (https://iot-portal.com/enrol) can be used to insert your email into the device for access as a 'Full Access' email address. A semi-permanent link is then sent to you via email which will return you to the Live Screen should you click on it.
If the link is lost you can visit https://iot-portal.com/index#login3 in order to send a new email with a link in it.

The Portal: https://iot-portal.com/

You can view all devices that contain your phone number as an 'Admin' or 'Master' number on the portal website. Additionally, any unit that has your email address set to 'Full Access' will be displayed in the portal. If you have a unique product code for your devices they will also be displayed in the portal.
You can click on the device and visit that device's Live Screen via the portal. You can also manage a group of devices via the portal itself. We recommend emailing support@iot-portal.com should you require more than a basic means of logging into the individual devices.
The portal stores your credentials as a session so will log you out when not in use.

IoT Portal App: https://iot-portal.com/app (Recommended for most users)

The app is a simplified version of the portal. It allows you to quickly get to the Live Screen for any device that has your email address stored in it as a 'Full Access' email address or any device that has your phone number in it stored as an 'Admin' or 'Master' phone.
Your credentials are stored in a cookie which allows you to remain logged in for up to 390 days.

Lost Access

Should you have a device without valid QR Codes and with users already registered in it, please email a picture of the unit to support@iot-portal.com and we will assist you with gaining access.

Quick Start User Guide

Programming via App

The device can be programmed by SMS or via the iot-portal.com app or a mixture of both.
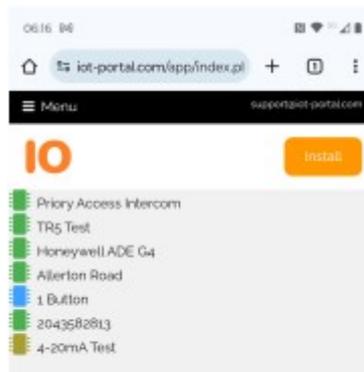
New Users

New installers should scan the 'App Invite' QR code to get to the iot-portal.com app login page. New user phone numbers will not be known to the portal so it will not be possible for the portal to send login SMS messages to these numbers. The 'App Invite' QR code bypasses this restriction. New users can get the app by email address at any time.

Regular Installers

For users known to the portal, it is preferable to scan the Enrol QR code which will automatically add the device to the user's app.

Installing the App: Android/PC

On Android and PC, installing the app can be achieved by clicking the Orange 'Install' button in the top right of the display.

Quick Start User Guide

Installing the App: iPhone

It is likely on iPhones that the 'Install' button does not appear unless using Chrome. To *install* the app, follow the below procedure.
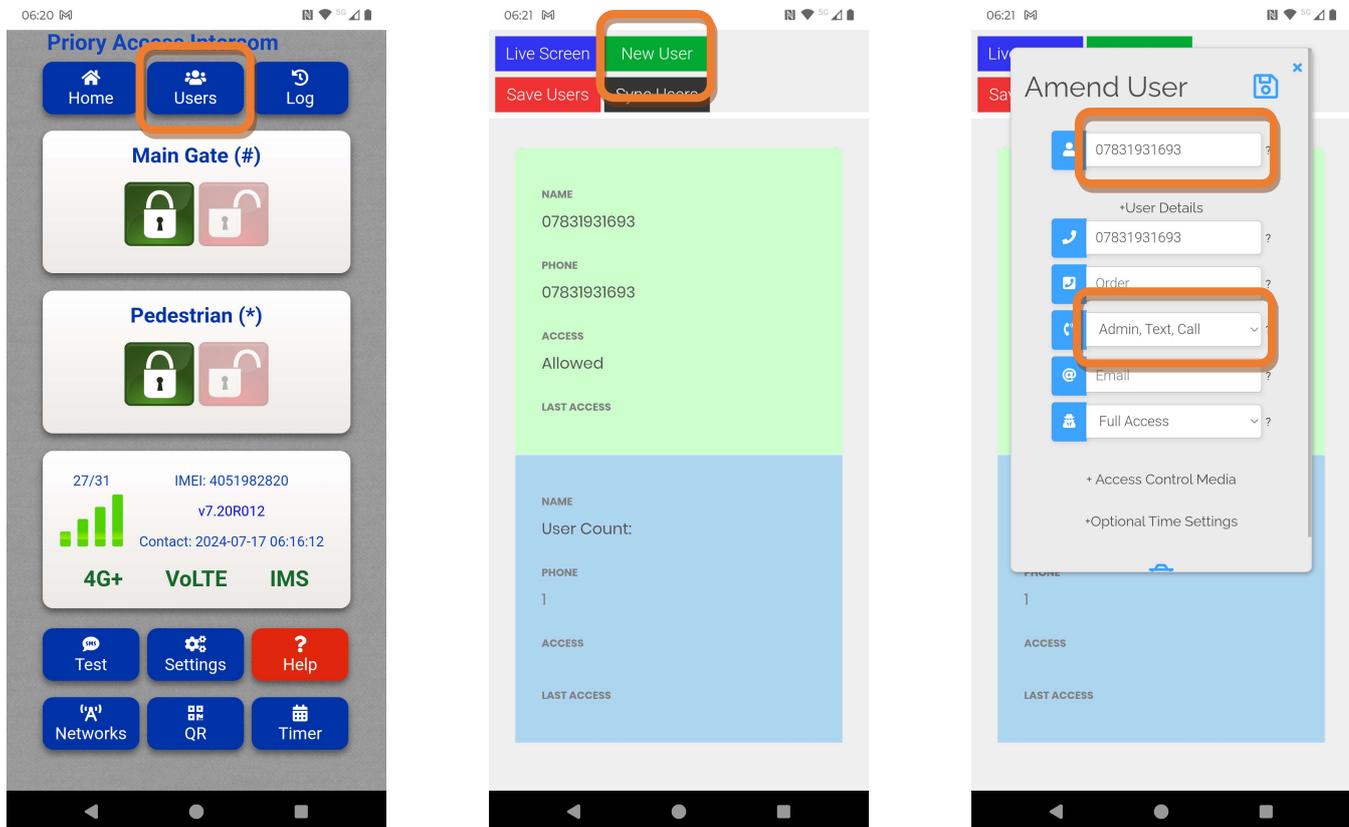

Click the 'Add to Home Screen' button to have app appear as an installed app on the home screen of your device.

Quick Start User Guide

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The Internet-of-Things Portal

Adding/Amending Users

From the app Home Screen, click the device name (this will be a 10-digit ID unless amended). This will bring up the Live Screen for this device. Clicking the 10-digit ID (or name) will bring up the Change Name modal in order to name the device.

To add and/or amend users, click the Users button at the top of the Live Screen. Click on either an existing user or click the '**New User**' button at the top (green button).
The username will be the phone number unless amended on this screen (see orange box above).

Name	Enter the user's name
Phone	Enter the user's phone number
Order	Enter a digit (1,2,3 etc…) to specify the order of dialling
Type	Admin, Call and Text are the relevant options for diallers
Email	Enter an email address to login to the app via email (backup method)
Permission (email)	Enter Full Access on any user with access via email

Hover or click the question mark '?' at the end of each input box for more information.

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SMS Programming and Operation

Whilst on-site it is often easier to program and operate the system via SMS. Both online and SMS programming/operation are available and can be used in conjunction with each other. There is a small charge made against your PAYG balance for receiving SMS messages. This is typically £0.01. Please check your 'Live Screen' for per unit pricing. The optional reply is charged at your standard SMS rate.

To enrol your phone via SMS you will need the 10-digit PIN number for your device shown above. Please send the following SMS to +44 7429 750 090:

Enrol <pin>

For example, if your PIN is 0123456789 then you should send:

Enrol 0123456789

The system will reply to your message with your Output 1 telephone number. This should be stored as your SMS programming telephone number. It is also the number for operating Output 1 by SMS and dial-in.

Output 2 has its own telephone number which is also contained in the message and can be found by sending the following message to your new Output 1/SMS programming number (obtained in the previous step):

Output 2

To operate the output relay on your unit simply send the following commands via SMS to the corresponding telephone number

On	…active the output indefinitely
Open	…active the output indefinitely
On 10	…active the output for 10 seconds
On 5m	…activate the output for 5 minutes
Close	…deactivate the output
Off	…deactivate the output

Please note, it does **not** matter whether the message Is in **UPPER CASE, lower case or a MiXtUrE** of both upper and lower case.

To **add** dial-to-open number the ADD command is used as follows:

Add 07123456789.   …adds 07123456789

To remove all occurrences of a number:

Remove 07123456789.   …removes 07123456789 (all occurrences)

To add numbers to call and text when the alarm sounds/inputs are triggered send the following commands:

Call 07123456789   …calls 07123456789 when the inputs are triggered
Text 07123456789   …text message 07123456789 when the inputs are triggered

To add a master number (who can administer other users) send the following SMS:

Master 07123456789   …gives 07123456789 admin rights to the unit (along with the original enroller)

There is no limit to how many numbers of any variety that can be stored. We recommend only 1 or 2 master numbers as they are contacted when there is a problem or the accounts needs topping up.

To get a list of numbers associated with this unit send the following SMS

List   …returns a list of all of the numbers in the database

Quick Start User Guide

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To access the Live Screen on a unit enrolled by SMS, send the following message:

Get link   …returns a clickable link to the 'Live Screen'

To check you PAYG Balance send the following SMS:

Balance   …returns your current balance (in GBP)

To check your current incoming and outgoing call charges send the following:

Charges   …return incoming and outgoing SMS and Call charges

List of Commands

	Additional Instructions			
Add	*<number>*			Adds a 'dial-to-open' number
Balance				Displays PAYG Balance
Call	*<number>*			Add number to call when input triggered
Charges				Displays usage charges
Close				Deactivates relay corresponding to number
CSQ				Returns signal strength out of 31
Enrol	*<pin number>*			Enrols a new phone
Get Link				Returns a clickable link for Live Screen
List				Returns numbers in database
Master	*<number>*			Adds admin phone number
On		*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Open		*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Output	*<output>*			Displays output information
Pulse				Pulses relay corresponding to number
Remove	*<number>*			Removes a number from the database
Relay Time	*<seconds>*	*<minutes>m*		Changes relay pulse time (dial-to-open)
Reply	***On***	*Off*		Switches SMS confirmation on and off
Signal				Returns signal strength out of 31
Status				Input and Output states

Further help and information is available at: https://iot-portal.com/help

Declaration of Conformity

Document Number: DOC_TQX_103_DoC

Issuer's Name: Priory Access Ltd

Issuer's Address: 95A Allerton Road, Liverpool, L18 2DD

Object of the declaration: TQX1.03

The object of the declaration described above is in the conformity with the relevant Union harmonisation legislation:

2014/108/EC The Electromagnetic Compatibility

Directive 2011/65/EU The Restriction of Hazardous Substances
Directive 2014/53/EU RED Art3.1(b) Radio Equipment Directive Conformity is shown by compliance with the applicable requirements of the following documents:

Safety: EN 60950-1:2006+A2:2013

EMC: EN 301 489-1 V1.9.2 (2011-09) EN 301 489-7 V1.3.1 (2005-11) EN 301 489-17 V2.2.1 (2012-09) EN 301 489-24 V1.5.1 (2010-10)

Radio: EN 301 511 V12.0.0 (2015-02) EN 300 328 V1.9.1 (2015-02) EN 301908-1 V7.0.1 (2014-11) EN 301908-2 V6.2.1 (2013-10)

Technical Construction File required by this directive is maintained at 95A Allerton Road, Liverpool, L18 2DD

Signed for and on behalf of Priory Access Ltd

Name: Michael Beaver
Position: Director
Date: 02/06/2023

Made in UK

TQx Specification

The TQx system is available in a number of configurations on both mobile bands and cellular IoT bands.

The inputs can be configured via the user interface, over the air, as 4x 0-36VDC analogue or digital (on/off) type inputs for use with volt free contacts. In the digital configuration the input sources a weak pull up current (<1mA) at 2.8V.

The TQ5 PCB features a 1-wire input for Dallas 1-wire devices including temperature probes, input/output expansion and I2C adapters.

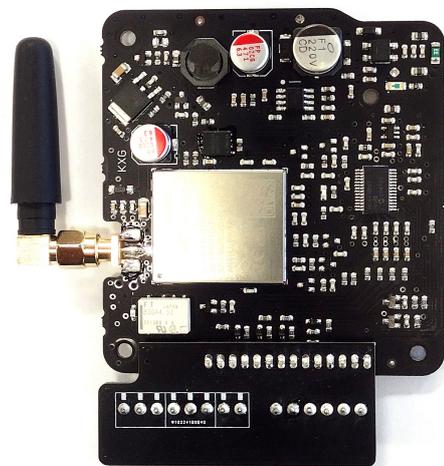The TQX PCB features a volt-free relay output capable of handling 50VDC up to 2A.

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	TQ4	TQ5
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Power Supply	12-24VDC/AC 20mA-100mA	12-24VDCAC 20mA-100mA
Reader Interface	Wiegand 5V	Wiegand 5V
Exit/Fire Inputs	NO/NC/GND	NO/NC/GND
Output Relay	NO/NC/COM 2A 50V Max.	NO/NC/COM 2A 50V Max.
Output Transistor	100mA 50V max.	100mA 50V max.
Timers	7-day, 2 events per day	7-day, 2 events per day
Keycode Length	1-7 digits	1-7 digits
Tag ID	7 characters	7 characters

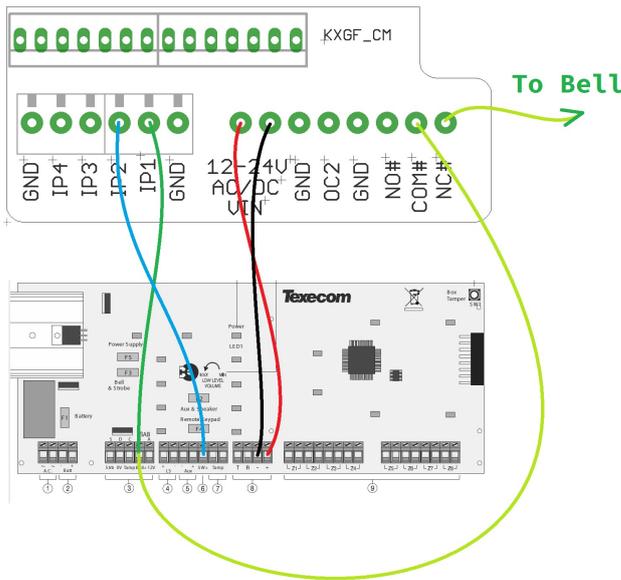**Alarm Wiring Guide TQx Alarm Dialler (IoT)**

Figure 1. Typical Alarm Wiring Diagram

Power should be derived from the alarm panel auxiliary output. Typically, these will be marked +, +VE, +12V and 0V. The +12V terminal should be connected to the AC/DC VIN terminals as shown above. The 0V terminal should be connected to the GND terminal on the alarm dialler.

The Bell or -V terminal on the alarm panel should be connected to the IP1 terminal on the alarm dialler. If a SET terminal is available, connect this to IP2. On the Texecom panel shown the terminal is marked SW+.

If the set/unset messages are inverted, we recommend going to the Live Screen for your device and simply reversing the messages here.

Figure 2. IP2 Message Edit Button

If intruder alarm allows a zone to be configured as a keyswitch input, then connect this to the relay terminals NC & COM. This will require some programming to be performed on the alarm panel. Please refer to your panel manufacturer's installation manual.

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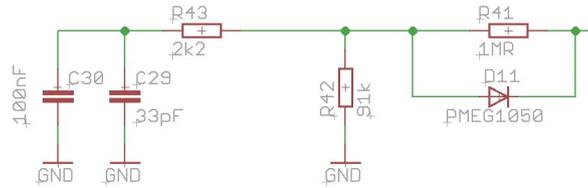
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Input Configuration

Input Reference Circuit (1.091MR Impedance)

Digital Mode

Each input can be configured as an analogue or digital input. The mode is selected using the settings button on the input card on the Live Screen (circled in orange below).
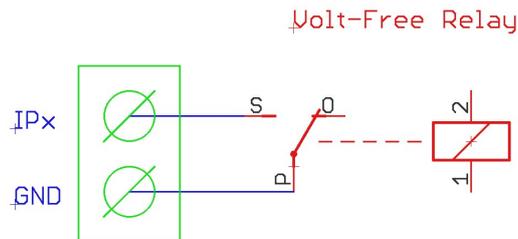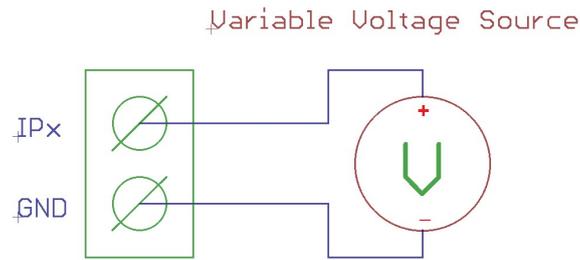

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Outputs

The TQx device has 1-output relay with a maximum terminal voltage of 50V and current rating up to 2A. The second output (2/*) is an open collector transistor with maximum collector current of 100mA.

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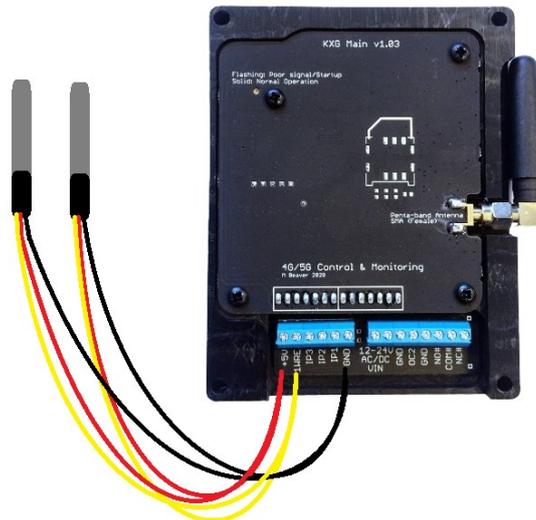

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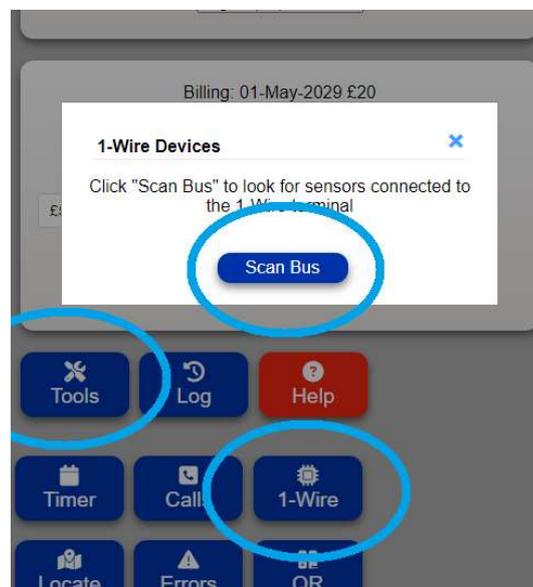
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The portal stores your credentials as a session so will log you out when not in use.

IoT Portal App: https://iot-portal.com/app (Recommended for most users)

The app is a simplified version of the portal. It allows you to quickly get to the Live Screen for any device that has your email address stored in it as a 'Full Access' email address or any device that has your phone number in it stored as an 'Admin' or 'Master' phone.
Your credentials are stored in a cookie which allows you to remain logged in for up to 390 days.

Lost Access

Should you have a device without valid QR Codes and with users already registered in it, please email a picture of the unit to support@iot-portal.com and we will assist you with gaining access.

Quick Start User Guide

Programming via App

The device can be programmed by SMS or via the iot-portal.com app or a mixture of both.
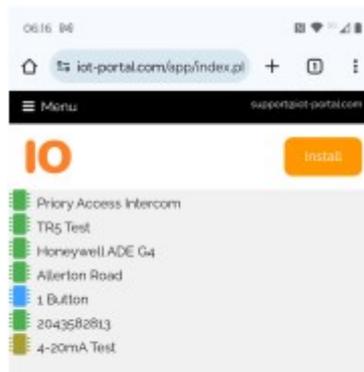
New Users

New installers should scan the 'App Invite' QR code to get to the iot-portal.com app login page. New user phone numbers will not be known to the portal so it will not be possible for the portal to send login SMS messages to these numbers. The 'App Invite' QR code bypasses this restriction. New users can get the app by email address at any time.

Regular Installers

For users known to the portal, it is preferable to scan the Enrol QR code which will automatically add the device to the user's app.

Installing the App: Android/PC

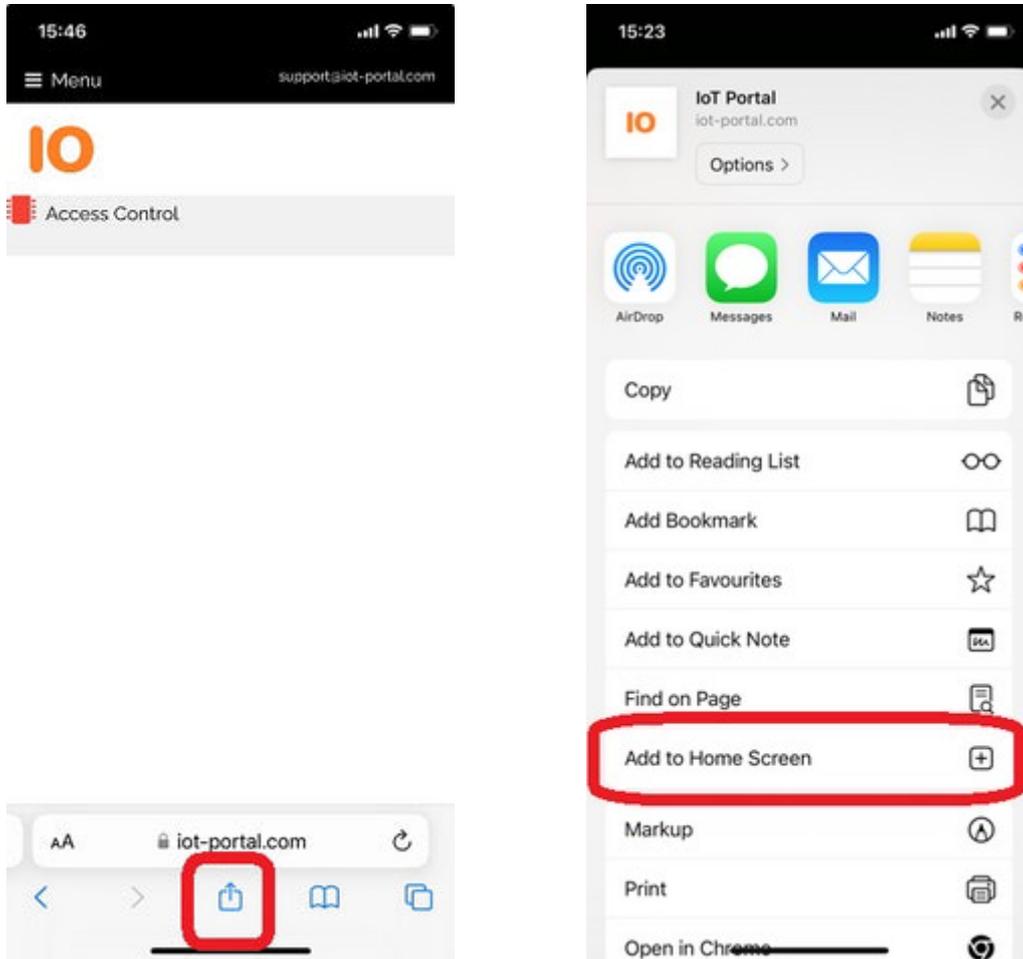On Android and PC, installing the app can be achieved by clicking the Orange 'Install' button in the top right of the display.

Installing the App: iPhone

It is likely on iPhones that the 'Install' button does not appear unless using Chrome. To *install* the app, follow the below procedure.
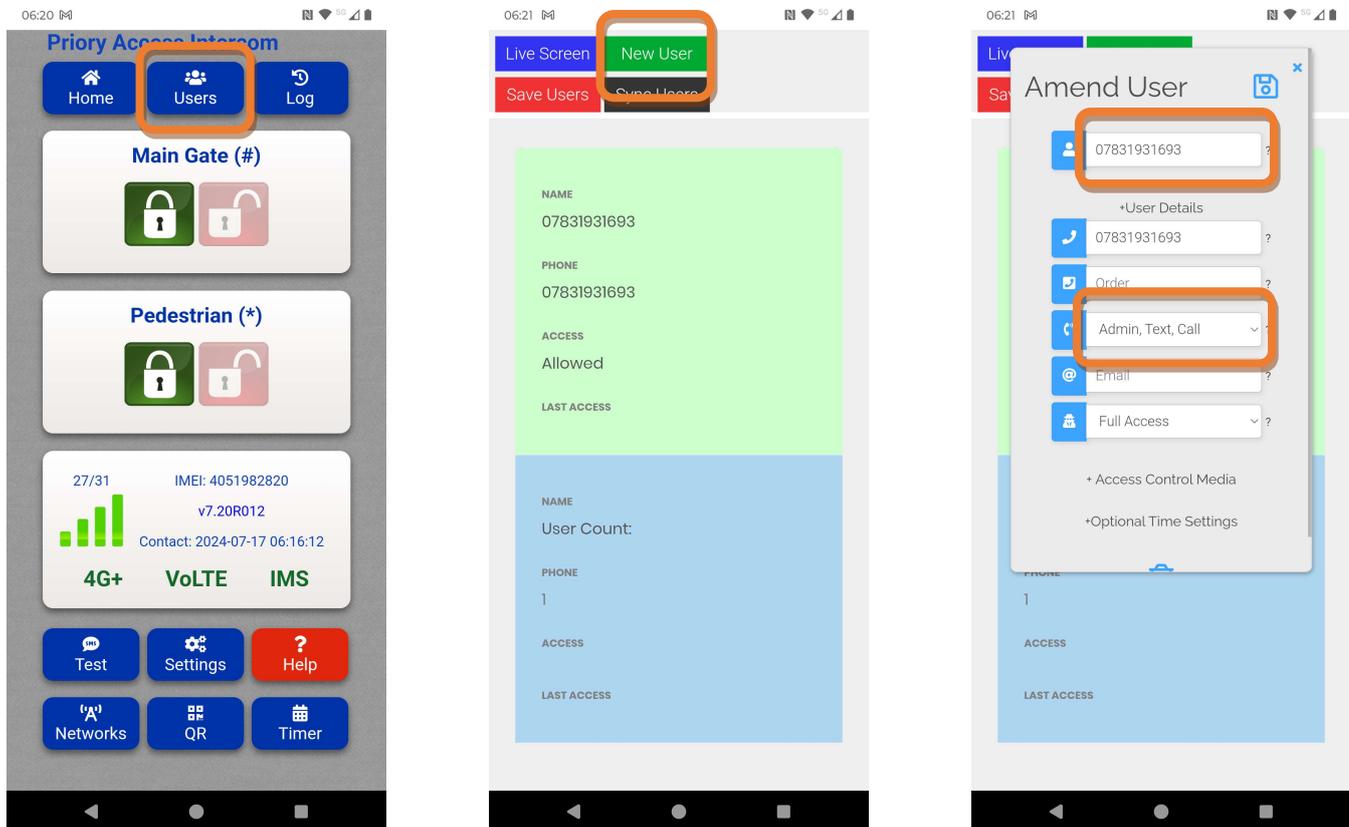

Click the 'Add to Home Screen' button to have app appear as an installed app on the home screen of your device.

Quick Start User Guide

Adding/Amending Users

From the app Home Screen, click the device name (this will be a 10-digit ID unless amended). This will bring up the Live Screen for this device. Clicking the 10-digit ID (or name) will bring up the Change Name modal in order to name the device.

To add and/or amend users, click the Users button at the top of the Live Screen. Click on either an existing user or click the '**New User**' button at the top (green button).
The username will be the phone number unless amended on this screen (see orange box above).

Name	Enter the user's name
Phone	Enter the user's phone number
Order	Enter a digit (1,2,3 etc...) to specify the order of dialling
Type	Admin, Call and Text are the relevant options for diallers
Email	Enter an email address to login to the app via email (backup method)
Permission (email)	Enter Full Access on any user with access via email

Hover or click the question mark '?' at the end of each input box for more information.

Quick Start User Guide

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SMS Programming and Operation

Whilst on-site it is often easier to program and operate the system via SMS. Both online and SMS programming/operation are available and can be used in conjunction with each other. There is a small charge made against your PAYG balance for receiving SMS messages. This is typically £0.01. Please check your 'Live Screen' for per unit pricing. The optional reply is charged at your standard SMS rate.

To enrol your phone via SMS you will need the 10-digit PIN number for your device shown above. Please send the following SMS to +44 7429 750 090:

Enrol <pin>

For example, if your PIN is 0123456789 then you should send:

Enrol 0123456789

The system will reply to your message with your Output 1 telephone number. This should be stored as your SMS programming telephone number. It is also the number for operating Output 1 by SMS and dial-in.

Output 2 has its own telephone number which is also contained in the message and can be found by sending the following message to your new Output 1/SMS programming number (obtained in the previous step):

Output 2

To operate the output relay on your unit simply send the following commands via SMS to the corresponding telephone number

On	…active the output indefinitely
Open	…active the output indefinitely
On 10	…active the output for 10 seconds
On 5m	…activate the output for 5 minutes
Close	…deactivate the output
Off	…deactivate the output

Please note, it does **not** matter whether the message Is in **UPPER CASE, lower case or a MiXtUrE** of both upper and lower case.

To **add** dial-to-open number the ADD command is used as follows:

Add 07123456789.   …adds 07123456789

To remove all occurrences of a number:

Remove 07123456789.   …removes 07123456789 (all occurrences)

To add numbers to call and text when the alarm sounds/inputs are triggered send the following commands:

Call 07123456789   …calls 07123456789 when the inputs are triggered
Text 07123456789   …text message 07123456789 when the inputs are triggered

To add a master number (who can administer other users) send the following SMS:

Master 07123456789   …gives 07123456789 admin rights to the unit (along with the original enroller)

There is no limit to how many numbers of any variety that can be stored. We recommend only 1 or 2 master numbers as they are contacted when there is a problem or the accounts needs topping up.

To get a list of numbers associated with this unit send the following SMS

List   …returns a list of all of the numbers in the database

Quick Start User Guide

iot-portal
The Internet-of-Things Portal

To access the Live Screen on a unit enrolled by SMS, send the following message:

Get link   ...returns a clickable link to the 'Live Screen'

To check you PAYG Balance send the following SMS:

Balance   ...returns your current balance (in GBP)

To check your current incoming and outgoing call charges send the following:

Charges   ...return incoming and outgoing SMS and Call charges

List of Commands

	Additional Instructions		
Add	*<number>*		Adds a 'dial-to-open' number
Balance			Displays PAYG Balance
Call	*<number>*		Add number to call when input triggered
Charges			Displays usage charges
Close			Deactivates relay corresponding to number
CSQ			Returns signal strength out of 31
Enrol	*<pin number>*		Enrols a new phone
Get Link			Returns a clickable link for Live Screen
List			Returns numbers in database
Master	*<number>*		Adds admin phone number
On	*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Open	*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Output	*<output>*		Displays output information
Pulse			Pulses relay corresponding to number
Remove	*<number>*		Removes a number from the database
Relay Time	*<seconds>*	*<minutes>m*	Changes relay pulse time (dial-to-open)
Reply	***On***	*Off*	Switches SMS confirmation on and off
Signal			Returns signal strength out of 31
Status			Input and Output states

Further help and information is available at: https://iot-portal.com/help

Declaration of Conformity

Document Number: DOC_TQX_103_DoC

Issuer's Name: Priory Access Ltd

Issuer's Address: 95A Allerton Road, Liverpool, L18 2DD

Object of the declaration: TQX1.03

The object of the declaration described above is in the conformity with the relevant Union harmonisation legislation:

2014/108/EC The Electromagnetic Compatibility

Directive 2011/65/EU The Restriction of Hazardous Substances
Directive 2014/53/EU RED Art3.1(b) Radio Equipment Directive Conformity is shown by compliance with the applicable requirements of the following documents:

Safety: EN 60950-1:2006+A2:2013

EMC: EN 301 489-1 V1.9.2 (2011-09) EN 301 489-7 V1.3.1 (2005-11) EN 301 489-17 V2.2.1 (2012-09) EN 301 489-24 V1.5.1 (2010-10)

Radio: EN 301 511 V12.0.0 (2015-02) EN 300 328 V1.9.1 (2015-02) EN 301908-1 V7.0.1 (2014-11) EN 301908-2 V6.2.1 (2013-10)

Technical Construction File required by this directive is maintained at 95A Allerton Road, Liverpool, L18 2DD

Signed for and on behalf of Priory Access Ltd

Name: Michael Beaver
Position: Director
Date: 02/06/2023

Made in UK

TQx Specification

The TQx system is available in a number of configurations on both mobile bands and cellular IoT bands.
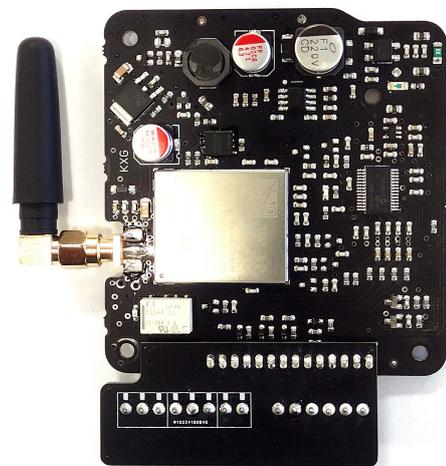
The inputs can be configured via the user interface, over the air, as 4x 0-36VDC analogue or digital (on/off) type inputs for use with volt free contacts. In the digital configuration the input sources a weak pull up current (<1mA) at 2.8V.

The TQ5 PCB features a 1-wire input for Dallas 1-wire devices including temperature probes, input/output expansion and I2C adapters.

The TQX PCB features a volt-free relay output capable of handling 50VDC up to 2A.

The TQX has an additional open collector output capable of sinking up to 100mA.

All inputs can be configured to control the local and remote outputs using the iot-portal.com Monitored Remote Control (MRC) system.

TQ4		**TQ5**
Cellular Technology	4G LTE Cat-1bis R13, 2G	5G NB-IoT & Cat-M1, 2G GPRS
Aerial	SMA Female Penta-Band	SMA Female Penta-Band
Power Supply	12-24VDC/AC 20mA-100mA	12-24VDCAC 20mA-100mA
Reader Interface	Wiegand 5V	Wiegand 5V
Exit/Fire Inputs	NO/NC/GND	NO/NC/GND
Output Relay	NO/NC/COM 2A 50V Max.	NO/NC/COM 2A 50V Max.
Output Transistor	100mA 50V max.	100mA 50V max.
Timers	7-day, 2 events per day	7-day, 2 events per day
Keycode Length	1-7 digits	1-7 digits
Tag ID	7 characters	7 characters

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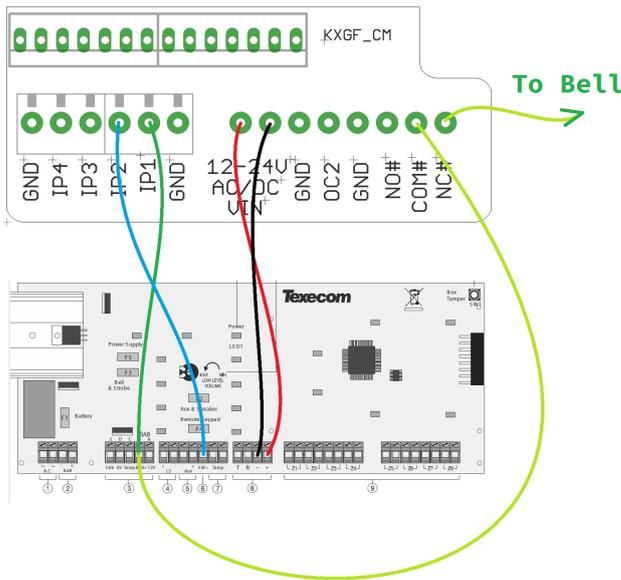## Alarm Wiring Guide TQx Alarm Dialler (IoT)

Figure 1. Typical Alarm Wiring Diagram

Power should be derived from the alarm panel auxiliary output. Typically, these will be marked +, +VE, +12V and 0V. The +12V terminal should be connected to the AC/DC VIN terminals as shown above. The 0V terminal should be connected to the GND terminal on the alarm dialler.

The Bell or -V terminal on the alarm panel should be connected to the IP1 terminal on the alarm dialler. If a SET terminal is available, connect this to IP2. On the Texecom panel shown the terminal is marked SW+.

If the set/unset messages are inverted, we recommend going to the Live Screen for your device and simply reversing the messages here.

Figure 2. IP2 Message Edit Button

If intruder alarm allows a zone to be configured as a keyswitch input, then connect this to the relay terminals NC & COM. This will require some programming to be performed on the alarm panel. Please refer to your panel manufacturer's installation manual.

To silence an alarm remotely, the bell -ve connection may be routed through the output relay NC and COM terminals as shown above. Activating the output relay from the Live Screen will silence the bell. This can also be achieved by sending the on and off commands to the dialler SMS programming number.
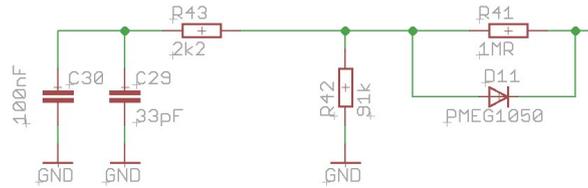
We do not recommend remote control of alarm panels. However, we recommend using a zone as a keyswitch input instead of wiring the bell -ve terminal through the dialler output relay where possible.

IIoT Monitoring and Control System

The Industrial IoT System allows monitoring and control of your industrial control systems remotely via SMS, Web or call, using the 4G and 5G mobile phone networks. The eSIM provides connectivity to multiple networks in over 130 countries.

Each input can be used to send SMS and email messages and initiate a Text-to-Speech voice call. Inputs can be used to operate outputs on the local device and also on remote devices creating a long-range switch connection. Output relays can switch currents up to 1A at 50V.
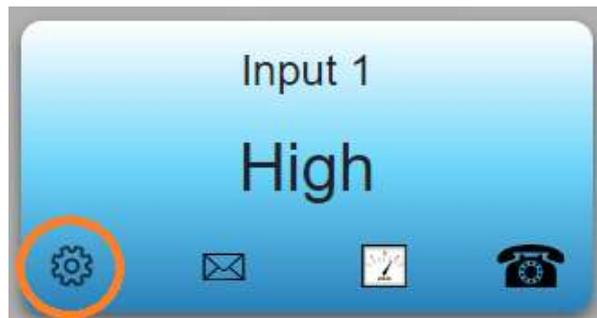
Input Configuration

Input Reference Circuit (1.091MR Impedance)

Digital Mode

Each input can be configured as an analogue or digital input. The mode is selected using the settings button on the input card on the Live Screen (circled in orange below).
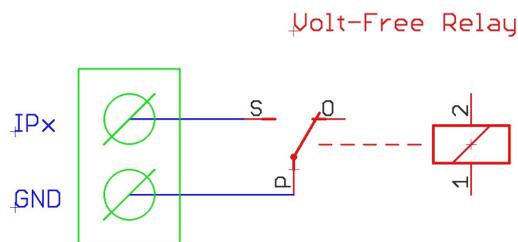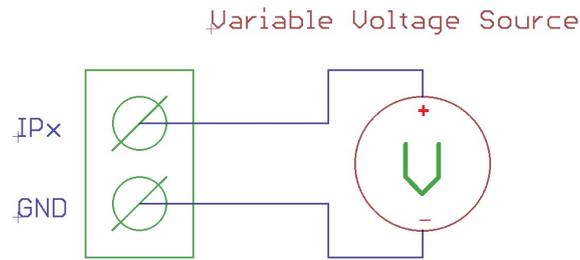

Input Settings Button

The Input Settings modal features the Digital/not Analogue checkbox. To switch the input over to digital, ensure this checkbox is checked and click the Save button immediately below the checkbox. **The device must be powered on and registered on the network for the change to the input to be made.**

Digital inputs have 2 states; High and Low and are designed to be connected to a volt free switch or relay. Setting the input to digital sets the device to source a small current through the input channel. This allows it to sense when a switch contact has been connected to the GND terminal. This corresponds to the 'Low' state. When the input is open circuit, it is considered to be in the 'High' state.

Setting the input to digital will overwrite the upper and lower threshold voltages to 20V and 10V respectively. The source voltage will be 2.8V maximum.

Variable Voltage Source

To switch to analogue mode the 'Digital/not Analogue' checkbox should be unchecked and the 'Save' button should be clicked only when the device is powered up and registered on the network.

In analogue mode there are 3 states.

Under the Low Voltage Threshold value, the input is considered 'Low'

Above the 'High Voltage Threshold' value the input is considered 'High'

A voltage between the high and low voltage is regarded as the 'idle' voltage. There should be a difference between the high and low threshold voltages of at least 2x the input hysteresis voltage which is typically 0.5V. Hence, when setting the upper and lower threshold voltages, ensure they are at least 1V apart.

The inputs can measure a voltage from 0V to 36V. By default, there is 0.5V of hysteresis (adjustable) on each input. This means the input will not retrigger until the voltage is more than 0.5V away from the threshold voltage. This stops a minor voltage fluctuation repeatedly triggering the input.

Outputs

The TQx device has 1-output relay with a maximum terminal voltage of 50V and current rating up to 2A. The second output (2/*) is an open collector transistor with maximum collector current of 100mA.

The outputs can be controlled at any time via the 'Live Screen' and can also be operated by SMS or dialling. Please see the supplementary 'SMS Programming and Operation' Quick Start Guide for SMS control.

To get or change the telephone number to dial for each output, click the telephone icon on the output card. This number can be changed to any one of our international telephone numbers. Each relay can have its own unique telephone number.
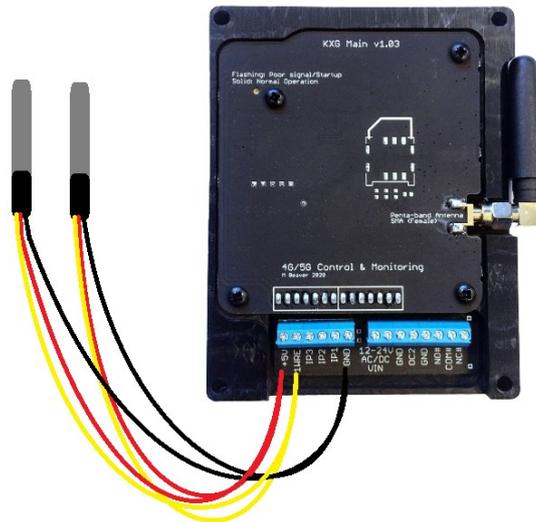

Click the telephone to change the number

If your number is present in two or more IoT devices, then you should select unique numbers for all relays as ringing this number will operate all relays where you phone number is valid. This may or may not be desirable.

1-Wire Input

A variety of sensors and output devices can be connected to Input 4; the 1-Wire input on the TQ5 model. The standard TQ5 can accept up to 16 devices connected to this input.
A 5V power output terminal is available to power the 1-Wire devices (**red**). Input 1 (1-WIRE) is the 1-Wire data terminal (**yellow**). The GND terminal (**black**) should also be used with these devices.

The TQ5 needs to scan the 1-Wire bus in order to use any devices connected to the 1-Wire input.
To do this, go to the 'Live Screen' > 'Tools' (Blue Button) > '1-Wire'.
This brings up the 1-Wire modal. Click 'Scan Bus' to find all devices connected to the 1-Wire bus.

Quick Start User Guide

Programming Online: https://iot-portal.com

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QR Code

A QR code supplied with the product will grant immediate access to the Live Screen. These codes can be destroyed and created on the Live Screen. Scanning the 'Live Screen' QR Code will take you to the Live Screen for that unit. From here you can add your email address and/or phone number on the 'Users' page. You require data on your SIM for this to work!

If you add your phone number as an 'Admin' phone you will then be able to get back to the 'Live Screen' by sending:

Live Screen - grants access to the Live Screen for programming and operation
View Screen - grants access to the View Screen which allows monitoring only
Enrol Screen - for enrolling devices onto the portal (for installers)
Box Label - description of package contents
Invite QR - links to the app login page and bypasses the restriction on unknown numbers

Website Enrolment/Email Link

If a device is new and has no users, the enrol screen (https://iot-portal.com/enrol) can be used to insert your email into the device for access as a 'Full Access' email address. A semi-permanent link is then sent to you via email which will return you to the Live Screen should you click on it.
If the link is lost you can visit https://iot-portal.com/index#login3 in order to send a new email with a link in it.

The Portal: https://iot-portal.com/

You can view all devices that contain your phone number as an 'Admin' or 'Master' number on the portal website. Additionally, any unit that has your email address set to 'Full Access' will be displayed in the portal. If you have a unique product code for your devices they will also be displayed in the portal.
You can click on the device and visit that device's Live Screen via the portal. You can also manage a group of devices via the portal itself. We recommend emailing support@iot-portal.com should you require more than a basic means of logging into the individual devices.
The portal stores your credentials as a session so will log you out when not in use.

IoT Portal App: https://iot-portal.com/app (Recommended for most users)

The app is a simplified version of the portal. It allows you to quickly get to the Live Screen for any device that has your email address stored in it as a 'Full Access' email address or any device that has your phone number in it stored as an 'Admin' or 'Master' phone.
Your credentials are stored in a cookie which allows you to remain logged in for up to 390 days.

Lost Access

Should you have a device without valid QR Codes and with users already registered in it, please email a picture of the unit to support@iot-portal.com and we will assist you with gaining access.

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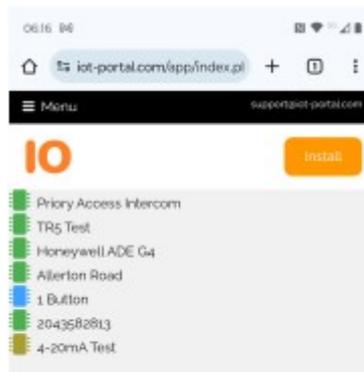
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New installers should scan the 'App Invite' QR code to get to the iot-portal.com app login page. New user phone numbers will not be known to the portal so it will not be possible for the portal to send login SMS messages to these numbers. The 'App Invite' QR code bypasses this restriction. New users can get the app by email address at any time.

Regular Installers

For users known to the portal, it is preferable to scan the Enrol QR code which will automatically add the device to the user's app.

Installing the App: Android/PC

On Android and PC, installing the app can be achieved by clicking the Orange 'Install' button in the top right of the display.

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Installing the App: iPhone

It is likely on iPhones that the 'Install' button does not appear unless using Chrome. To *install* the app, follow the below procedure.
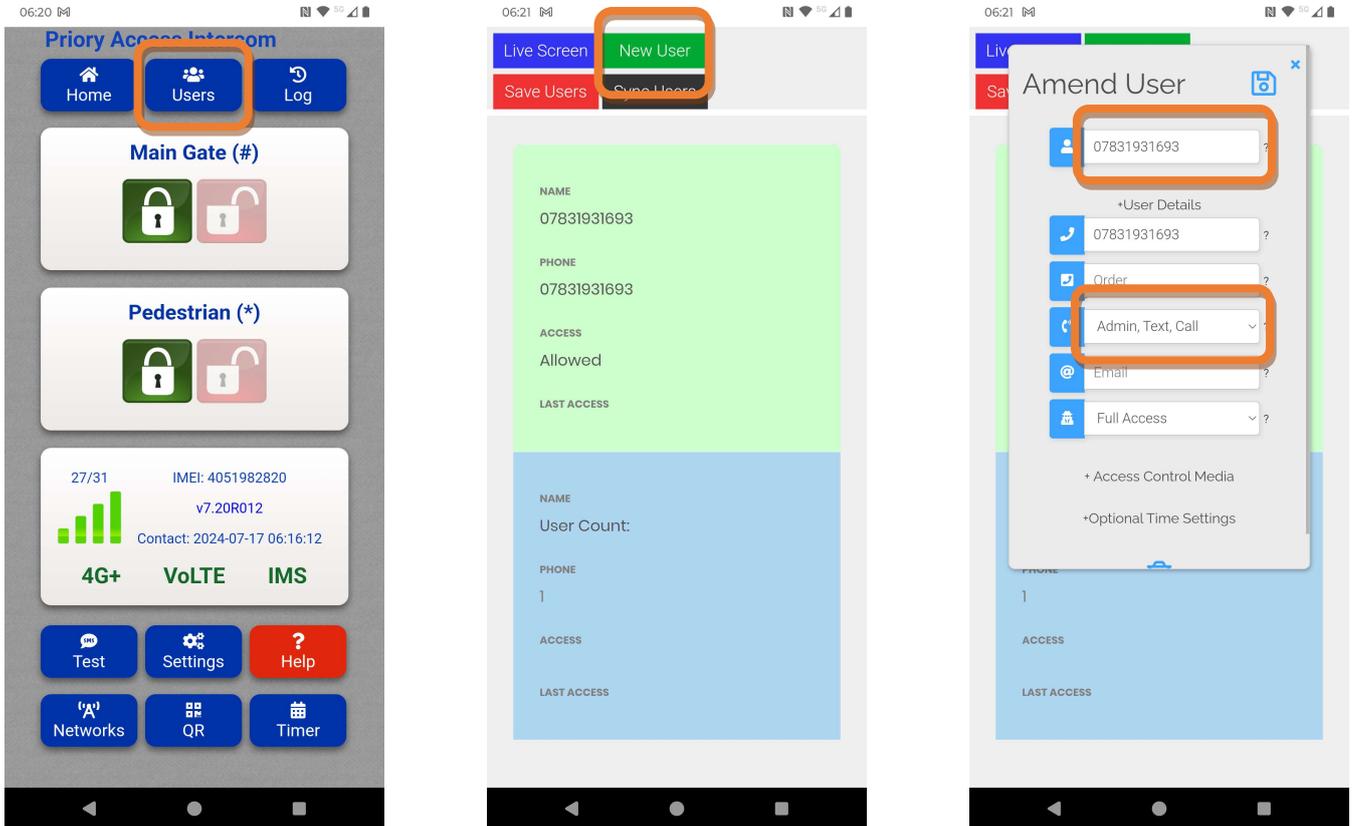

Click the 'Add to Home Screen' button to have app appear as an installed app on the home screen of your device.

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Adding/Amending Users

From the app Home Screen, click the device name (this will be a 10-digit ID unless amended). This will bring up the Live Screen for this device. Clicking the 10-digit ID (or name) will bring up the Change Name modal in order to name the device.

To add and/or amend users, click the Users button at the top of the Live Screen. Click on either an existing user or click the '**New User**' button at the top (green button).
The username will be the phone number unless amended on this screen (see orange box above).

Name   Enter the user's name
Phone   Enter the user's phone number
Order   Enter a digit (1,2,3 etc…) to specify the order of dialling
Type   Admin, Call and Text are the relevant options for diallers
Email   Enter an email address to login to the app via email (backup method)
Permission (email) Enter Full Access on any user with access via email

Hover or click the question mark '?' at the end of each input box for more information.

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SMS Programming and Operation

Whilst on-site it is often easier to program and operate the system via SMS. Both online and SMS programming/operation are available and can be used in conjunction with each other. There is a small charge made against your PAYG balance for receiving SMS messages. This is typically £0.01. Please check your 'Live Screen' for per unit pricing. The optional reply is charged at your standard SMS rate.

To enrol your phone via SMS you will need the 10-digit PIN number for your device shown above. Please send the following SMS to +44 7429 750 090:

Enrol <pin>

For example, if your PIN is 0123456789 then you should send:

Enrol 0123456789

The system will reply to your message with your Output 1 telephone number. This should be stored as your SMS programming telephone number. It is also the number for operating Output 1 by SMS and dial-in.

Output 2 has its own telephone number which is also contained in the message and can be found by sending the following message to your new Output 1/SMS programming number (obtained in the previous step):

Output 2

To operate the output relay on your unit simply send the following commands via SMS to the corresponding telephone number

On	…active the output indefinitely
Open	…active the output indefinitely
On 10	…active the output for 10 seconds
On 5m	…activate the output for 5 minutes
Close	…deactivate the output
Off	…deactivate the output

Please note, it does **not** matter whether the message Is in **UPPER CASE, lower case or a MiXtUrE** of both upper and lower case.

To **add** dial-to-open number the ADD command is used as follows:

Add 07123456789.   …adds 07123456789

To remove all occurrences of a number:

Remove 07123456789.   …removes 07123456789 (all occurrences)

To add numbers to call and text when the alarm sounds/inputs are triggered send the following commands:

Call 07123456789   …calls 07123456789 when the inputs are triggered
Text 07123456789   …text message 07123456789 when the inputs are triggered

To add a master number (who can administer other users) send the following SMS:

Master 07123456789   …gives 07123456789 admin rights to the unit (along with the original enroller)

There is no limit to how many numbers of any variety that can be stored. We recommend only 1 or 2 master numbers as they are contacted when there is a problem or the accounts needs topping up.

To get a list of numbers associated with this unit send the following SMS

List   …returns a list of all of the numbers in the database

Quick Start User Guide

iot-portal
The Internet-of-Things Portal

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Get link   …returns a clickable link to the 'Live Screen'

To check you PAYG Balance send the following SMS:

Balance   …returns your current balance (in GBP)

To check your current incoming and outgoing call charges send the following:

Charges   …return incoming and outgoing SMS and Call charges

List of Commands

	Additional Instructions			
Add	*<number>*			Adds a 'dial-to-open' number
Balance				Displays PAYG Balance
Call	*<number>*			Add number to call when input triggered
Charges				Displays usage charges
Close				Deactivates relay corresponding to number
CSQ				Returns signal strength out of 31
Enrol	*<pin number>*			Enrols a new phone
Get Link				Returns a clickable link for Live Screen
List				Returns numbers in database
Master	*<number>*			Adds admin phone number
On		*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Open		*<seconds>*	*<minutes>m*	Activates relay corresponding to number
Output	*<output>*			Displays output information
Pulse				Pulses relay corresponding to number
Remove	*<number>*			Removes a number from the database
Relay Time	*<seconds>*	*<minutes>m*		Changes relay pulse time (dial-to-open)
Reply	***On***	*Off*		Switches SMS confirmation on and off
Signal				Returns signal strength out of 31
Status				Input and Output states

Further help and information is available at: https://iot-portal.com/help

Declaration of Conformity

Document Number: DOC_TQX_103_DoC

Issuer's Name: Priory Access Ltd

Issuer's Address: 95A Allerton Road, Liverpool, L18 2DD

Object of the declaration: TQX1.03

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Technical Construction File required by this directive is maintained at 95A Allerton Road, Liverpool, L18 2DD

Signed for and on behalf of Priory Access Ltd

Name: Michael Beaver
Position: Director
Date: 02/06/2023

Made in UK