iris Connect

Alarm over IP

IRIS Connect Series

Quick Installation & Maintenance Guide

Version 1.3

CE EN 50131/6 Independently certified VdS

Contents

1. Introduction

The IRIS Connect range, consisting of the Solo and Duo models, offers a new concept in Alarm over IP (AoIP) providing cost effective AoIP for the residential sector.

Both IRIS Connects are certified as suitable for all Grade 2 systems with an Alarm Transmission System (ATS) configuration up to SP6 for single path (IRIS Connect Solo / Duo), or ATS configuration DP4 for dual path (IRIS Connect Duo).

The IRIS Connect range is based on Chiron's successful IRIS Connect range of AoIP diallers with the same hardware and software used in all IRIS diallers; with the same level of security and features provided to military, governments, banks and commercial industry but now also available to the residential sector.

The IRIS Connect Solo and Duo offers Wi-Fi as standard for configuration, polling and alerting, whereas the Duo also offers a dual path system with GPRS/3G communications (4G and CDMA on request).

Using Chiron's advances in hardware and software, the IRIS Connect is unique in providing battery backup for over 15 hours support in the case of main power source failure. This backup is provided with only 4 small NiMH AA rechargeable batteries, which allow a longer replacement life and a smaller design.

Note 1: The 15 hours standby is based on 15 minute polling and recommended quality batteries. Performance may be reduced with faster polling or other system loading.

***Note 2: The IRIS Connect can be fitted without batteries and will* run as a standalone device without battery backup.**

This manual provides a quick guide to the installation of products from the IRIS Connect family. For the full manual, including multi-lingual versions, please visit our website
http://www.chironsc.com/downloads_security.html

2. Product Features

Features	IRIS Connect	
	Solo	Duo
Fire retardant enclosure	●	●
NiMH battery backup	>15 hrs	>15 hrs
Wi-Fi	●	●
GPRS/3G	-	●
Dial capture	●	●
Relays	2	2
Inputs (Pins)	2	2
Serial RS485	Selectable	Selectable
Serial TTL		
RS232 (BASIC)		
Text messaging	-	●
Multi language menus	●	●
VoIP & SIP services	●	●
Option available on request	4G / CDMA	

3. Package Contents

Contents dependent on model type:

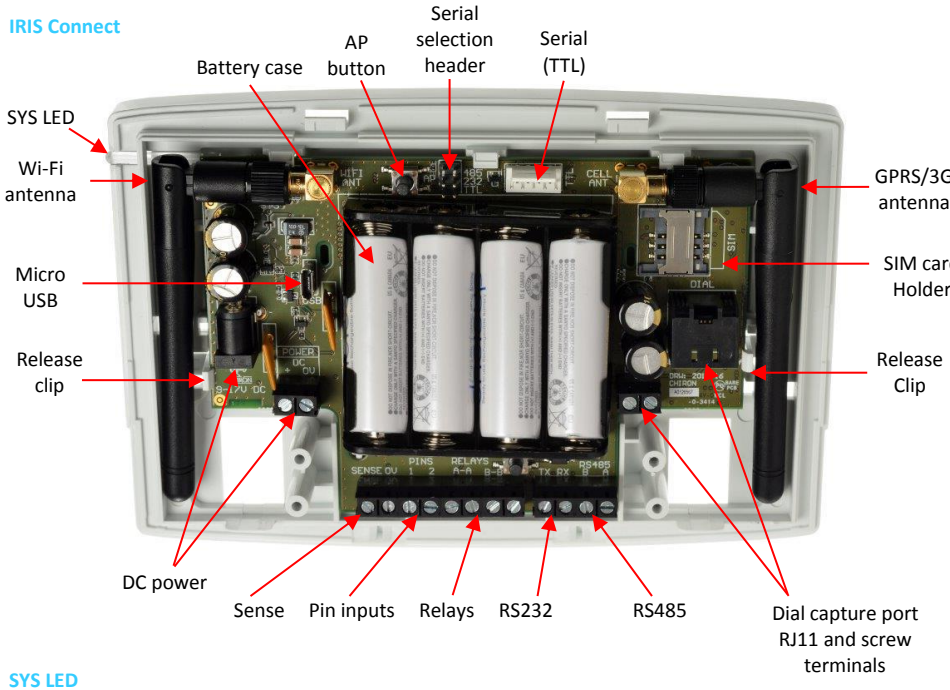
- Dialler board in plastic housing
- 3 x screws and plugs for fixing the housing to a flat surface
- RJ11 cable
- 18k Ohms sense resistor

Already fitted on dialler board

- GPRS/3G antenna (IRIS Connect Duo)
- Wi-Fi antenna

4. Board Configuration

IRIS Connect



SYS LED

LED Colour	Indication
Red Flashing	Default state not currently configured
Red Constant	Wi-Fi successfully connected but still outstanding faults
Blue Flashing	In Access point mode (AP) for configuration but with no current connection
Blue Constant	In Access point mode for configuration and a device is connected (AP)
Green Constant	Communicating and no current faults (flickers on every poll)

5. Before You Start

Monitoring Centre (ARC)

Make sure that the monitoring centre to which the IRIS Connect device will send alarm signals is equipped with the appropriate IRIS Secure Apps receiving system. The following information should be obtained from the monitoring centre.

Dialler account number	
Monitoring centre IP address	

Wi-Fi Connection Details

The customer's Wi-Fi network details are required in order to connect the IRIS Connect and your configuration device (e.g. Smart Phone). The following information should be obtained from the customer.

Network name (SSID)	
Security type (WEP/WPA/WPA2)	
Password	

GPRS/3G SIM Card and Access Point Name

If the installation uses GPRS/3G then a SIM card will be required. The IRIS Connect will also need to be given a GPRS/3G 'Access Point Name' (APN) and other possible configurations as shown below. These can be obtained from the SIM card provider.

Access Point Name (APN)	
User Name (USR)	
Password (PWD)	
SIM Pin	

6. Installing the IRIS Connect Dialler

Use the following procedure to install your IRIS Connect dialler:

6.1. Mounting

Choose a suitable location, taking into consideration the routing of both power and dialler interface cables. To remove the cover push the two release prongs on the underside of the plastic case as indicated on the back of the case.

Once released, lift the lid slightly and push up until lid comes off, remove the dialler PCB (retained by two clips to left and right off the board). Position the housing on the wall and drill three holes. Feed the cables through the opening at the base of the plate, or via the 'knockouts', and secure the plate to the wall with the three screws supplied.

6.2. Power

The IRIS Connect dialler complies with the requirements of EN50131-6 Type A power supply and can be powered from a separate or Aux 9-17V DC power supply specified to deliver up to 1A current and can either use DC jack (centre positive polarity as shown below) or screw terminals indicated in Section 4 "Board Configuration".

Note: For Radio & Telecoms Terminal Equipment Directive compliance the power cable must be no longer than 3 meters in length.

Fit the power cable. DO NOT APPLY POWER TO THE DIALLER UNTIL INDICATED.

6.3. Backup Batteries (optional)

IRIS Connect series has a battery backup capability and is designed to continue reporting to the IRIS Secure Apps System at the monitoring centre to maintain confidence of link status in the case of a failure of the main power source. The design provides over 15 hours battery support with 15 minute polling across either Wi-Fi or GPRS/3G. Should the polling period be shortened or other activities such as alarm alerting by the panel, then the 15 hours standby may be shortened.

IRIS Connect Solo:

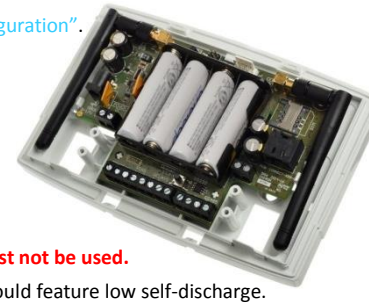
If required please fit the batteries at this point.

IRIS Connect Duo using GPRS/3G communications:

If batteries are required DO NOT FIT until indicated in Section 6.8 "Configuration".

Batteries must be approved to IEC61951-2 (EN61951-2).

The IRIS Connect requires 4 x 1.5V NiMh AA size rechargeable batteries (not included).



Recommended manufacturers/types are:

- GP ReCyko 210AAHCB
- Annsman maxE 2100

Note: Other battery types – including non-rechargeable batteries – must not be used.

The required battery capacity is 2000mAH minimum and ideally they should feature low self-discharge.

Maximum time to recharge to 80% = 32 Hours.

Overvoltage protection is triggered at 6.5V DC, with a deep discharge protection of 4V DC.

Note: System standby life and battery life can be reduced if lower quality batteries are fitted, this is not recommended.

6.4. Connections

Connect cables to the PCB for your system as shown on in Section 4 "Board Configuration":

- Wi-Fi: Wi-Fi (wireless) antenna already fitted to board.
- GPRS/3G enabled systems (IRIS Connect Duo): GPRS/3G antenna already fitted to board.
  Note: An external GPRS/3G antenna can be fitted if required.
- Dial capture port (optional and for more information see section below).
- 2 x Pin inputs (optional for more information see IRIS Connect Series Engineer manual).

Optional Serial Connection

The following 3 connections are optional and depend on the panel connection method to be used. Use the 'Serial Selection Header' and put the Jumper link on the option required.

- RS485 currently available for Honeywell Galaxy data bus (Alarms and Upload/download) or Risco ProSys bus (Upload/download) connections (optional).
- Serial (TTL) currently available for Texecom Com1 connections (optional).
- RS232 screw terminal (optional).

Note: The actual wiring / connections can be found in the IRIS Connect Series Engineer Manual available from http://www.chironsc.com/downloads_security.html

6.5. GPRS/3G SIM Card (IRIS Connect Duo only)

DO NOT FIT SIM card until after you have performed the GPRS/3G Network Scan detailed in the Section 6.8 "Configuration" you will be prompted when to insert the SIM card.

6.6. Dial Capture

Dial Capture enabled systems: Connect either the dial port RJ45 or the 2 dial screw terminals with the supplied RJ11 dialler cable to the alarm panel dialler telecoms line connection. If the alarm panel has screw connections, cut the connector off the cable and strip the cable using the 2 inner wires.

Note: Polarity is not important in this instance.

Fit the supplied 18K sense resistor in parallel with the dialler output of the alarm panel, at the alarm panel end of the cable.

Note: This resistor enables the dialler to detect cable faults and/or tampers and must be fitted at the alarm panel end of the cable to function correctly, the monitoring centre will also need to enable the dial port monitoring from the IRIS Secure Apps software to receive alarm notifications.

6.7. Switch On and Test

To confirm power is applied, look for the indicator SYS LED flashing red  on the IRIS Connect dialler board, top left hand corner.

6.8. Configuration

To configure your dialler, use any of the following the methods:

- Web browser via Wi-Fi.
- Alarm panel integration e.g. Honeywell Galaxy (RS485 connection) Texecom Premier range (RS232 TTL connection).

  Note: For connections to Honeywell Galaxy or Texecom Premier on the serial integration ensure that the alarm panel is configured first as this will transmit configuration to the IRIS Connect dialler.

  For more details on the alarm panel integration download the full panel installation manual from http://www.chironsc.com/downloads_security.html.
- Connect the board's Micro USB connector to a laptop / PC running the IRIS Toolbox software.

  Download the IRIS Toolbox user guide from http://www.chironsc.com/downloads_security.html.

Defaulting

If at any point a complete default of the dialler is required, use the following procedure:

1. Completely power down the IRIS Connect by removing the power and one of the batteries (if fitted).
2. Now press and hold down the AP button.
3. Reconnect the batteries if needed and reapply power whilst still holding down the AP button for 10 seconds.

Configuration via Web Browser using Wi-Fi Connection

IRIS Connect dialler can be configured by the Wi-Fi connection and supports the following network security WEP/WPA/WPA2 using a standard Web browser from any smart phone / tablet or laptop device.

The IRIS Web browser interface currently supports the following operating systems. Please note below if any additional software is required to be installed:

Microsoft

Microsoft Windows based operating system (smart phone / tablet or laptop device) will require the initial installation of the Apple Bonjour service. This can be downloaded from the following link:

http://support.apple.com/kb/DL999

ANDROID

Android operating system will need the Chiron Connect Configuration App downloaded from: http://www.chironsc.com/downloads_security.html.

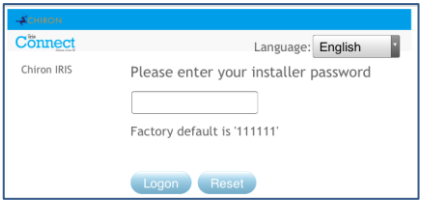
Apple iOS

Apple iOS operation system will work using the Safari web interface and already has the Apple Bonjour service installed.

To initiate the Wi-Fi connection ensure that the IRIS Connect has power and the Wi-Fi antenna is connected and then press the button labelled AP on the IRIS Connect.

When the AP button is pressed the SYS LED will flash 'blue' to indicate AP mode has been activated and is awaiting a connection. You now have a 30 minute time window to search and find the IRIS Connect using either a smart phone, tablet or laptop's Wi-Fi connect search function.

An 'IRIS' network should appear. Please connect to this which should turn the SYS LED solid 'blue' and using your web browser connect to the IRIS Connect web interface by browsing to 'iris.local'.

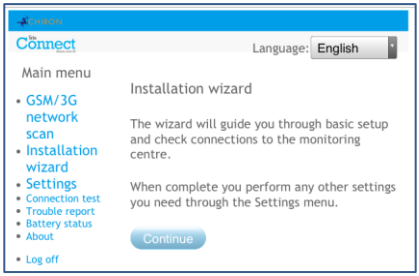


Enter the default installer code: 111111 and then click Logon.

You will be prompted to change the password, please record the new password.

Enter and confirm a new password and press Submit.

Note: You are currently only communicating with the IRIS Connect and this is via its internal Wi-Fi Access Point.



The *Main Menu* is displayed.

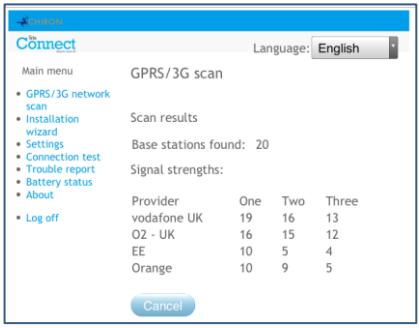
IRIS Connect Duo with GPRS/3G connection only:

GPRS/3G Network Scan

Select the 'GPRS/3G network scan'.

The scan must be carried out **without** the SIM card fitted.

The dialler listens for every base station in range, requests operator name and records the signal strength. This will take a few minutes to complete.



For a reliable GPRS/3G connection it is recommended that for the chosen network (SIM card) used there should be at least two base stations with signal strength (CSQ) of 10 or more.

If the signal strength is below or close to minimum then try to reposition the IRIS Connect or use an external building or high gain antenna (if necessary), and rerun the network scan to check signal strength.

Once you have the required GPRS/3G signal strength power down the dialler and insert the SIM card into the SIM card holder, and insert the 4 x AA batteries if required then power the dialler back up.

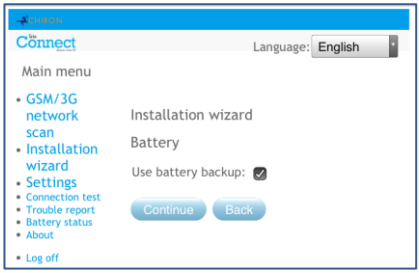
Now press the button labelled AP again and on your connection device connect to the 'IRIS' network and using your web browser connect to the IRIS Connect web interface again by browsing to 'iris.local'.

Enter in the installer code setup beforehand and then select the Installation Wizard as indicated next.

IRIS Connect Solo or Duo without GPRS/3G or after network scan completed on Duo:

Installation Wizard

Select the Installation Wizard and follow the on screen prompts.



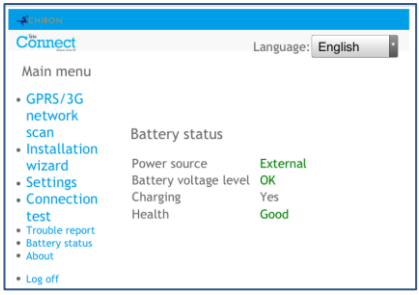
Note 1: If installing the IRIS Connect without batteries then please untick the 'Use battery backup' option.

Note 2: During the Installation Wizard the Wi-Fi status screen and the signal strength will be displayed. For a reliable Wi-Fi connection it is recommended that the Wi-Fi network used should have a signal strength of 20 or more. If this signal strength is lower than suggested try moving the IRIS Connect nearer the Wi-Fi router.

Once Installation Wizard is completed and any additional panel interface configuration setup via the settings menu, check / configure the panel for the connection method being used and the current battery status.

To check the current battery statuses go to the option 'Battery status' in the main menu and this will indicate the current status of the batteries.

Please go into the Battery Status option and confirm that the Health Status is showing as "Good" before leaving site, as shown below:



6.9. Panel Configuration

Panel configuration for dial capture

If connecting the IRIS Connect dialler via the dial capture method which is connecting the Telecoms module to the dial port of the IRIS Connect, the following options will need to be configured:

Telephone Number = the 12 digit format of the monitoring centre IP address (e.g. 192.168.0.34 would become 192168000034).

Account Number: 4 – 6 digit account number allocated by the monitoring centre.

Note: If the 'Alarm Override' mode is selected, the IRIS Connect dialler replaces the phone number and the account number used by the alarm dialler with the IP address of the monitoring centre and account number entered during configuration, so there is no need to change any settings on the alarm panel.

Alarm panel integration e.g. Honeywell Galaxy (RS485 connection) Texecom Premier range (RS232 TTL connection).

If you have not already made the changes to the relevant configurations in the panel for the integration, and require further details on these configurations then please download the full panel installation manual from http://www.chironsc.com/downloads_security.html.

6.10. Testing

Once all configurations are complete perform a full commissioning test with the monitoring centre. This will normally involve testing normal alarm transmissions over all communication paths from the alarm panel to the monitoring centre, and verifying that these are successfully received.

7. Maintenance

The dialler should be inspected on a yearly basis. At each inspection please perform the following:

- Confirm the status of the IRIS Connect unit.
- Clear any faults on the dialler.
- Check battery status and replace if below required level.
- Reflash IRIS Connect software to latest version.
- Test the configured communication paths (Wi-Fi / GPRS / 3G).
- Perform full test of alarms from the alarm panel and confirm these are received at the monitoring centre.

The IRIS Connect will give a visual indication of the current system status via the SYS LED on top left side of case. If this is green the dialler is all reporting ok, if red the dialler has some trouble events being reported.

To further investigate any faults or to perform checks, the IRIS Connect dialler gives engineers the option via the Web Browser screen, to see current faults, reflash to latest software and perform communication path checks.

To initiate the Wi-Fi connection engineers will need to ensure the IRIS Connect has power and then remove the front cover via the release clips x 2 located at the bottom on the dialler, then press the button labelled AP on the IRIS Connect.

When the AP button is pressed the SYS LED will flash ‘blue’ to indicate AP mode has been activated and is awaiting a connection. You now have a 30 minute time window to search and find the IRIS Connect using either a smart phone, tablet or laptop’s Wi-Fi connect search function.

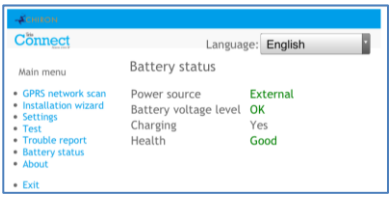
An ‘IRIS’ network should appear. Please connect to this which should turn the SYS LED solid ‘blue’ and using your web browser connect to the IRIS Connect web interface by browsing to ‘iris.local’.

Note: If engineers have never used / connected to an IRIS Connect before it may be necessary to download / install some application / software to connect via the Wi-Fi Web browser, please refer to Section 6.8 “Configuration – Configuration via Web Browser using Wi-Fi connection”.

Enter the installer code (should be noted somewhere, possibly installation notes) and then click Logon.

Engineers will now be in the Main Menu and can perform the following checks:

7.1. Confirm Current Status



If the SYS LED is green then the current status is being reported as ok go straight to Section 7.2 "Checking battery status". If the SYS LED is red which indicates the dialler has a trouble reported go to the option for "Trouble report". This will redirect the engineer to connect the IRIS Connect Web browser interface via the Wi-Fi network.

Once connected via the Wi-Fi network the engineer can then check the current system troubles being reported via the "Trouble report" menu. Please refer to the IRIS Connect Engineer Manual available from http://www.chironsc.com/downloads_security.html.

7.2. Checking Battery Status

The IRIS Connect dialler allows engineers to check the current battery status and will indicate any issues with the batteries.

Go into the "Battery Status" option and confirm that the Health Status is showing as "Good" before leaving site.

7.3. Replacing Batteries

If the backup batteries (optional) have been fitted then these should be replaced every two years.

7.4. Check Software Version / Reflash

Go to the settings menu and then select "Latest software?" this will then check with the Chiron Reflash server if there is a later version available.

If a later version is available the engineer will see the option to press the reflash button.

On first entry to the reflash option which could be during installation or maintenance, the engineer need to change the password as required for EN50136-2 compliance. Please record the password on the installation documentation.

The reflash will take up to 15 minutes if via GPRS/3G and approximately 2 minutes with the Ethernet connection. Once completed the dialler will reboot and switch to the new software. All configurations are saved and there is no need to reconfigure the IRIS Connect dialler.

7.5. Communication Paths Checks

The engineers can test the communication paths for both polling and alarm communications using the 'Connection Test' option in the Main Menu. This will direct engineers to connect the IRIS Connect Web browser interface via the Wi-Fi network if they are not already connected and perform communication path checks for each path configured. Please refer to the IRIS Connect Engineer Manual available from http://www.chironsc.com/downloads_security.html.

7.6. Test Alarm Panel Alarms and Communication to ARC

Depending on the monitoring centre (ARC) engineers will now be required to perform alarm test and possibly other tests to the ARC. Before the engineer leaves site get confirmation from the ARC that all is working correctly.

8. Specifications

Transmission paths		IRIS Connect Solo	IRIS Connect Duo
Wi-Fi	Standard	IEEE 802.11 b/g	
	Connection	SMA socket for Wi-Fi antenna connection	
	Connection fault detection	Loss of association/data	
GPRS/3G (4G/CDMA optional on request)	Standard	–	Dual band GSM 900/1800 MHz Dual band UMTS 900/2100 MHz
	Connection	–	SMA socket for GPRS/3G antenna connection
	Connection fault detection	–	Loss of registration with network
IP			
TCP ports (outbound)		53165 (Alarms & Polling), 51292 (Diagnostic & Reflashing), 10001 (Upload / Download)	
Alarm transmission			
Interface to monitoring centre		IRIS Secure Apps or IRIS Management suite via EN 50136-2 pass-through mode	
Dial capture interface to alarm panel		Two wire interface via RJ45 socket & terminal block	
Serial interface to alarm panel		RS485, TTL, RS232 **Note: RS232 cabling must not exceed 30 meters**	
PIN Inputs interface to alarm panel		Maximum input voltage range 0V to +24V	
		Input 'low' (alarm) threshold < 1V	
		Input 'high' (restore) threshold > 2V	
		Internal pull-up impedance 10K to 3.3V supply	
Alarm protocols		SIA (level 1 to 3) reference SIA DC-03-1990.01(R2003.10)	
		Contact ID reference SIA DC-05-1999.09	
		Fast format (Scancom) for dial capture and serial connections	
		Robofon (Dial capture only)	
Tamper detection reporting to monitoring centre		Dial capture interface, Lid & back tamper, Serial interface, Pin inputs	
Fault reporting to monitoring centre		External power supply fail, low battery, Transmission interface/path fault	
Relay outputs			
Maximum operating voltage		24V DC	
Maximum current rating		100mA DC	
Power supply			
Power supply type		A	
Supply voltage		9V to 17V DC	
Typical current		78mA @ 12V DC	83mA @ 12V DC
Maximum current		1A @ 12V DC	
Recommended external PSU		12V DC 1A 12 Watt DC Barrel 2.5mm centre **Note: For Radio & Telecoms Terminal Equipment Directive the power cable needs to be no longer than 3 meters in length** 	
Power storage			
Storage device type		4 x AA NiMH rechargeable batteries	
Storage device capacity		2000mAh	
Storage device time to recharge to 80% capacity		32 hours	
Storage device – voltage at which fault is reported		4.5V DC	
Storage device – voltage at which fault is restored		5V DC	
Storage device – over voltage protection triggered		6.5V DC	
Storage device – deep discharge protection		4V DC	

Environmental	
Operating temperature range	-10°C to 55°C
Operating humidity range	95% max., non-condensing
Weights and Dimensions	
Physical dimensions (L x W x D)	11.5 cm x 17.5 cm x 4.5 cm
PCB weight	400 grams
Fully packaged weight	600 grams

Safety

Care should be taken when connecting telecommunications equipment to ensure only like interfaces are connected to avoid safety hazards.

SELV: SELV (Safety Extra-Low Voltage) is defined as a secondary circuit which is so designed and protected that under normal and single fault conditions the voltage between any two accessible parts does not exceed a safe value (42.4V peak or 60V dc maximum)

The interfaces on the IRIS Connect have the following safety classifications:

- Dial capture interface: SELV suitable for connection to the TNV interface of single line telecommunications equipment such as telephones, alarm panels, etc.
- Power Interface: SELV for connection to a DC supply
- Inputs: SELV for connection to alarm output pin.

Conformance

European Directives

The IRIS Connect complies with the following European Directives:

- 1999/5/EC (Radio & Telecoms Terminal Equipment Directive)
- 2006/95/EC (Low Voltage Directive)
- 2004/108/EC (Electromagnetic Compatibility Directive)

EN50131, EN50136 (VdS Certified)

The dialler is compliant with the requirements of European Standards:

EN50131-1: 2006, EN50131-6: 2008 & EN50131-10: 2014
EN50136-1: 2012 & EN50136-2: 2013
Security Grade 2
ATS-SP6 over Wi-Fi, ATS-SP5 over GPRS/3G, ATS-DP4 (IRIS Connect Duo)

Environmental Class II

The future of security, secured

IP by security professionals, for the professional security industry

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