



# Connecting and protecting people

## User Manual 4G MK-930 Installation Guide

MU-93001MK101-GB

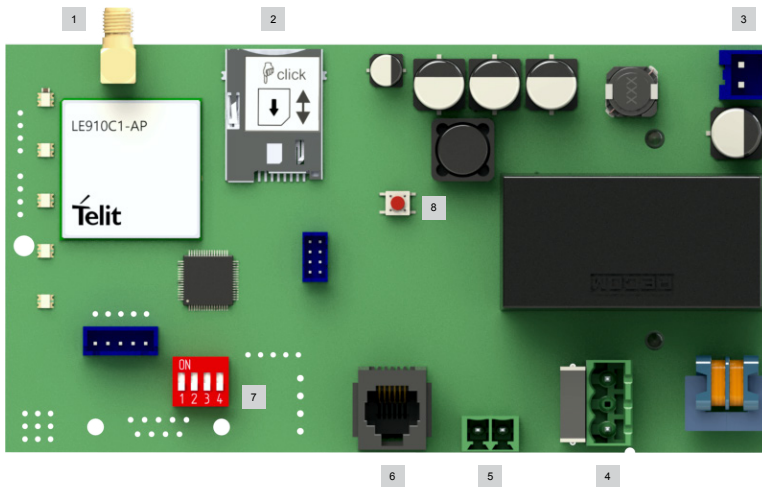
V1



# Connections

The MK-930 provides a communication gateway between all compatible connected devices in the lift shaft and our cloud-based monitoring platform, the AVIRE Hub, allowing you to manage any analogue emergency phone in place of a PSTN landline.

## Connections for MK-930



- 1 The antenna supplied with the device should be attached to this connector. Insert and thread it in by hand until the antenna is secure. If the antenna is loose, the device will not function properly.

In most cases, the antenna provided should be sufficient to ensure the device operates smoothly. The device contains a field meter to help with the installation.

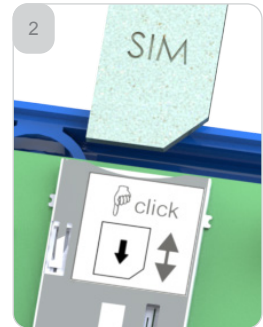


**IMPORTANT:** In locations with low coverage a separate outdoor antenna may be required. Consult our technical department for the best solutions in each situation.

# Connections

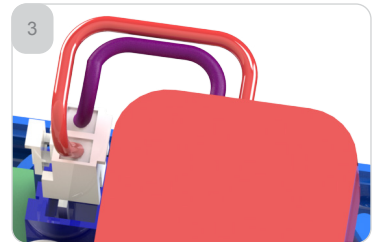
2

SIM Card Slot.



3

The device's battery will be disconnected when shipped from factory. The battery will need to be connected at this connector when first commissioning and installing the device.



Wiring and battery colours may differ from image.

**IMPORTANT:** Do not use batteries other than those supplied by MEMCO.

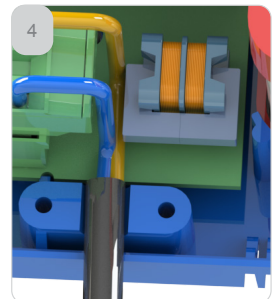
The use of a non approved battery may result in damage to the equipment and any other devices connected to it.

4

The supply voltage range of the equipment is from 100 to 240 VAC.  
with a frequency between 50 and 60 Hz.  
The maximum power consumed is 7W.

It is necessary to have an external protection on the electrical panel.

Once the cables have been connected, the main cable should be fastened using the clamp and screws supplied with the equipment.  
(See Installation and Commissioning)



Wiring colours may differ from image.

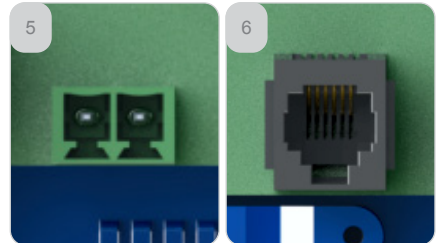
# Connections

5/6

Either of the two connectors provided can be used for connection to an analogue telephone system.

Connector (5) is normally used to connect an existing analogue emergency phone which has been installed. A maximum of 4 analogue devices (cars) can be connected.

Connector (6) is typically used to connect a telephone terminal located in the machine room. This can be used to configure the device in the same way as via an external phone call, and can also be used as an intercom if required.



7

## SW1 Switch

(1) Installation Mode –  
Used to activate the coverage test process.  
(See coverage test below)

(2) Unused –  
Reserved for future use

(3) Monitor Mode –  
Reserved for future use

(4) Unused –  
Reserved for future use

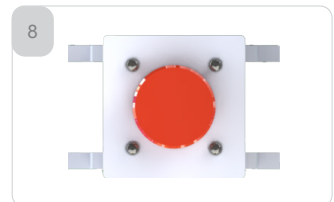


Switch colour may differ from image.

8

The SW2 push button is used to power on the device using the internal battery when there is no external supply voltage. This will typically be used when needing to perform a coverage test prior to final positioning and installation.






The push button should be held for a minimum of 3 seconds.










Push button colour may differ from image.

# Indicator Lights





















The MK-930 has five indicator lights that indicate the device status at all times. Each indicator can be lit in green, amber or red and can either be lit solid or flashing intermittently. After 60 seconds of starting up the MK-930, the following should be visible:

Indicator	The device is in good condition and fully operational		
	Flashing	Green	The device is supplied with power and working properly
	Solid	Amber	The battery is charging (may take up to 36 hours)
	Solid	Amber	Connected to the 2G network
		Green	Connected to the 4G network
	Solid	Amber	Medium coverage
		Green	Optimal coverage
	Solid	Green	The local line is ready and idle

The following tables provide the meaning for the various indicator light statuses:

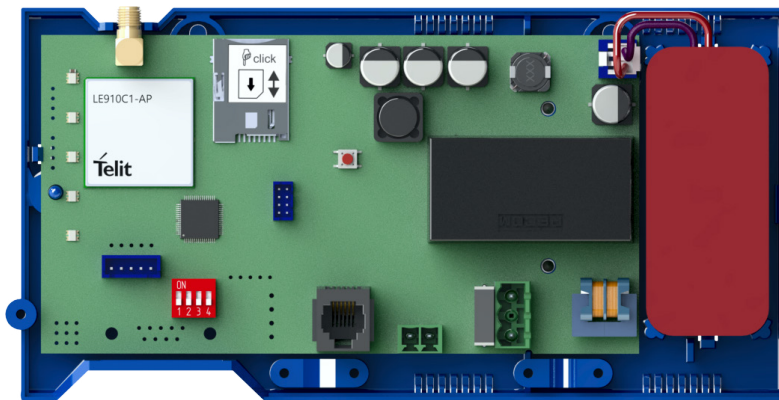
Device State	Solid			Flashing		
						
	Critical device error			Device OK Mains voltage OK	Device OK Battery in use	Restarting the device

# Indicator Lights

Battery	Solid			Flashing		
						
	OK	Charging	Low Battery	Error		
SIM	Solid			Flashing		
						
	Connected to 4G network	Connected to 2G network	No Service / connecting	Call in progress on 4G	Call in progress on 2G	No Service / Missing PIN
Coverage	Solid					
						
	Optimal Coverage	Medium Coverage	Insufficient Coverage			
PSTN	Solid			Flashing		
						
	Local line ready and idle	Initializing local line	Local line out of service	Local line in use		

# Installation & Commissioning

## MK-930

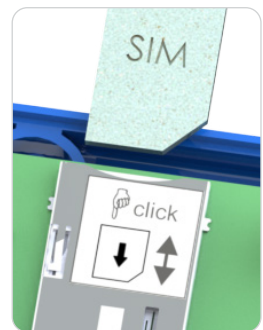


1

Remove the screw on the top and remove the cover of the MK-930.

2

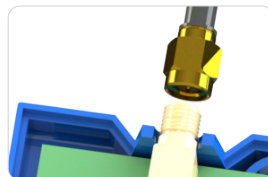
Insert the SIM card in the SIM card slot



# Installation & Commissioning

3

Connect the antenna



4

Wait for the indicator lights to turn on. Once the indicator lights are on, the MK-930 will start to register to the relevant operator network. This process usually takes 2 – 5 mins but can may take longer depending on the SIM card being used.

The coverage indicator should remain amber or green.  
(See "Indicator lights").

5

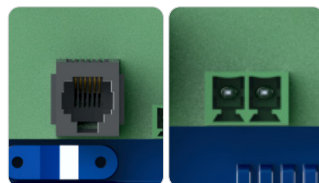
Test the coverage (See "Testing Coverage" on page 10).

6

Mount the device onto its permanent location  
(See "Mounting the MK-930" on the next page).

7

Connect all peripherals as required, including (5) & (6).



8

Connect the mains power and secure the cable using the clamp and screws supplied.





## Mounting the MK-930

To mount the device, drill two holes into the wall and insert the plugs and screws (POZ 4.5x35) supplied with the device. Hang the MK-930 on the two screws using the teardrop-shaped holes located in the rear casing of the MK-930 (the midpoints of the holes are 105mm apart).

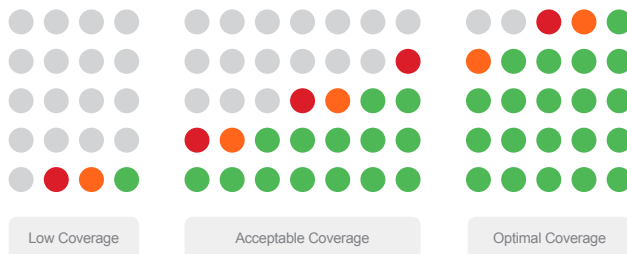


# Testing Coverage

The MK-930 includes functionality to measure coverage at your location. To activate this feature, please follow the steps below:

- 1 Move position/toggle 1 on SW1 switch to the 'ON' position.

- 2 The device will enter installation mode and the signal quality will be displayed on the indicator lights. The table to the right provides an indication of the quality of signal being received.



- 3 If the mains power has not been connected, the device can be moved around in order to determine the most suitable location.

If there is no suitable location using the antenna provided, an alternate indoor antenna with greater gain or outdoor directional antenna should be used. Please consult our technical department for which alternate solutions may be available.

- 4 Once the most suitable location has been identified, the position/toggle 1 on SW1 switch should be moved to the 'OFF' position.

# Unlocking the SIM Card

**IMPORTANT:** AVIRE SIM cards do not have a SIM PIN code. If the SIM LED is flashing red, please ensure that it has been inserted correctly. The SIM PIN code for other network providers may vary. If present, it usually appears on the outer plastic casing of the SIM card.

## Option One

### Disable PIN via Mobile Phone

Insert the SIM in a standard mobile phone, navigate to the device Settings and delete the SIM PIN code from the SIM.

## Option Two

### Program PIN via Analogue Phone

You can program the SIM card PIN code into the MK-930 using an analogue phone connected to connection **(5)** or **(6)**.

If the SIM has a PIN, the PIN must be set up before the SIM is inserted. This is to avoid exceeding the number of PIN entry attempts and locking the SIM card.

— Access the MK-930 configuration mode by pressing: \*1#

— Wait for the "Enter the code" response and then enter the PIN of the SIM card PIN followed by #: "XXXX#" (xxxx is the SIM PIN code provided by the service provider).

After programming the SIM PIN, the SIM card can be inserted into the device and the SIM card LED will stop flashing red after a few seconds. If the LED does not stop flashing red, ensure that the right PIN has been entered and that the SIM has been inserted correctly.

# Setting up the MK-930

## Option One

Using the AVIRE app

The AVIRE app (available on the Apple App Store and Google Play) allows installers to set up the MK-930 quickly and easily, as well as connect to the AVIRE Hub. The AVIRE app removes the need to set up the device via SMS and guides you through the installation process on your smartphone.  
(Important: the device IMEI is required to begin the set-up. This can be found on the packaging box.)

The application is available via the following link:



## Option Two

Setting up via SMS

Parameter 91 (P091) allows for quick and easy configuration of APN settings, depending on country and network provider. Configure the MK-930 settings according to the tables below:

Digit (1)	Digit (2)	Digit (3)	Digit (4)
Country (Area)	Operator	0	0

The first digit defines the country or geographic area where the device will be installed. The second digit defines the carrier within the selected country or geographic area. The third and fourth digits will be zero by default.

# Setting up the MK-930 (cont.)

## Option Two (cont.)

D1	Country (Area)
0	Default Factory Value
1	Spain
2	Portugal
3	Italy
4	UK
5	Germany
6	France
7	USA
8	AUS

### Example SMS:

Text sample shown on the right is for the following:

Country = UK, Operator = EE

Pin1234, P091 4300

MK930:  
TRACK\_LTE\_MK\_930  
P091= 4300

If the APN details of your SIM card do not appear in the below table, this information will need to be obtained from the service provider. These details will then need to be programmed manually using the P060 setting.

D2	Spain	Portugal	Italy	UK	Germany	France	USA	AUS
1	AVIRE SIM							
2	Telefonic	MEO	Wind	O2	Telekom DE	Orange	AT&T	Telstra Retail
3	Orange	NOS	TIM	EE	ABD	SFR	T-Mobile	Telstra Retail
4	Vodafone				Vodafone DE	Bouygues Telecom	Verizon	Vodafone / TPG / Kogan
5			Lliad	3	O2 DE	Free Mobile		Optus / Amaysim
6			Tre (3)	Virgin	Base			Belong / Aldi / Woolworths
7				1P	Swisscom			Coles
8				BT	A1	Telit		Spark / 2degrees
9				GiffGaff	T-Mobile AT			Vodafone

# General Parameters Available

## SMS Commands

Almost all the parameters of the MK-930 can be checked and/or modified by sending an SMS to the device. In a single SMS it is possible to modify and/or check several parameters by separating each of the parameters with a comma “,”. Each SMS must start with “PINxxxx”. Where xxxx is the PIN assigned to the MK-930. The factory PIN is “1234”.

The SMS formats are as follows:

Programming a Parameter	Description
Pin1234,Pzzz xxx (send)	Pin 1234 is the factory default PIN. Pzzz is the command to be modified. xxx is the value to be assigned to the parameter.
Querying a Parameter	Description
Pin1234,Pzzz? (send)	Pin 1234 is the factory default PIN. Pzzz is the command to be checked.

## Example – Alarm Number Programming

To program telephone number 1 (parameter 31) to call in case of alarm, proceed as follows:

Pin1234,P0310123456789 (send) —

The answer will be: P031=0123456789

To check telephone number 1 (parameter 31) proceed as follows:

Pin1234,P031? — The answer will be: P031=0123456789 (programmed number).

# General Parameters Available

## Identification & Status

Parameter	Description	Range	Default Value
002	Alphanumeric Identification	40 characters	TRACK_GSM_MK_930
003	Hardware & Firmware Version	Read-only	According to manufacturing
004	IMEI Number	Read-only	
007	Device Status	Read-only	
008	Identification Message	0= Off    1= On	

## Phone Lists

Parameter	Description	Range	Default Value
030	Whitelist Alarm 1 voice call	21 digits maximum for each item	
031	Whitelist Alarm 2 voice call		
032	Whitelist Alarm 3 voice call		
033	Whitelist Alarm 4 voice call		
034	Whitelist Alarm 5 voice call		
035	Whitelist Data call phone 1		

## Phone List Options

Parameter	Description	Range	Default Value
040	Whitelist filter enabled on incoming calls. (0= No, 1= Yes)	0/1	0
041	Speed dial calls (0= No, 1= Yes)	0/1	1
042	Block outgoing calls from the intercom. (0= No, 1= Yes, 3= Forwarding)	0/1/3	0

# General Parameters Available

## Carrier Settings

Parameter	Description	Range	Default Value
043	Block outgoing calls from the intercom. (0= Transparent, 1= Outband RX, 2= Outband RX TX)	0 – 2	0
044	Data call from SLIC 0= Disabled, 1= DTMF, 3= MQTT	0 – 3	0
047	DTMF Frame Detection = x*0.1 seconds eg. 05 = 0.5 seconds	00 – 99	05 (0.5 seconds)

## Downloads

Parameter	Description	Range	Default Value
050	Remote Downloads x= 0 MK-930 Firmware x= 1 Voice files x= 2 Unused x= 3 SSL Certificates x= 4 Factory Default Programming x= 5 Unused x= 6 Voice ID x= 7 Signature Public Key x= 8 4G Module FOTA Update x= 9 Binary	x,yy,y,zzz	

Please contact our technical department if you need access to these features.

## GPRS Settings

Parameter	Description	Range	Default Value
060	APN for SIM0	APN; Usr; Psw	
063	Contexts 0= No Context 1= SSL Permanent Context 2= SSL Temporary Context	0 / 2	
064	Heartbeat to the server in minutes	0000 – 9999	4320
066	IP or Hostname A		AVIREhub.AVIRE-global.com
069	Host Port A		8883



# General Parameters Available

## Audio & SLIC Settings

Parameter	Description	Range	Default Value
080	SLIC Impedance and Polarity Setting 0= 600Ω resistive 1= 270Ω + (750Ω    150nF) – ETSI TS103201-3 2= 600Ω resistive + polarity reversal, 3= 270Ω + (750Ω    150nF) + polarity reversal 4= 600Ω resistive + current draw 5= 220Ω + (820Ω    120nF) 6= 220Ω + (820Ω    120nF) + polarity reversal	0 – 6	
085	Language settings: 0= Spanish, 1= Portuguese, 2= Italian, 3= English, 4= German, 5= French	0 – 5	0
P091	Super Settings	See Setup via SMS	0000

## DNS Settings

Parameter	Description	Range	Default Value
086	DNS Server IP (empty for automatic DNS)	xxxx	0.0.0.0

## SLIC Tones Settings

Parameter	Description	Range	Default Value
087	Different indicative tones settings: A= Dial tone B= Ring tone (Ring) C= Engaged Tone (Communicating) D= Line congestion tone	ABCD	2447

# General Parameters Available

## Country Coding

Country	Value	Country	Value
Germany, Denmark, The Netherlands, Luxembourg & Switzerland	2222	France	1111
Belgium	0000	Ireland	2326
Bulgaria, Poland	2226	Italy	3223
Cyprus	0422	Norway, Portugal	2223
Croatia	3222	UK	4335
Spain	2447	Sweden	2224

## Test Phone

Parameter	Description	Range	Default Value
088	Phone used to test the voice line. (15 digits maximum)	XX ... XX	

## Codes

Parameter	Description	Range	Default Value
090	SIM Card PIN: 4 Digits	XXXXXXXX	
093	Programming Access Code (PIN)	0000 – 9999	1234

## Special Functions (Direct Commands)

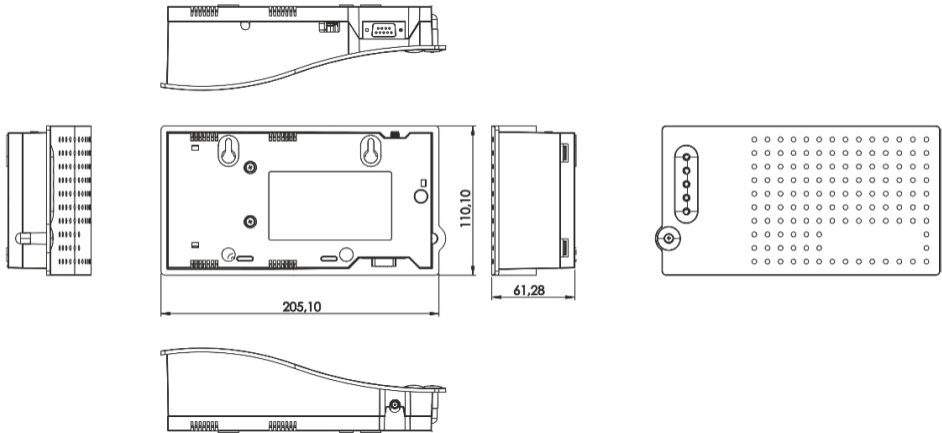
Parameter	Description	Value
094	Triggers an immediate test call	094= 1

Please contact our technical department to learn more about the other features available.

## Reset and Factory Default Values for MK-930

Parameter	Description	Value
095	Triggers a device reset	095= 1234567890
099	Restores factory default values for the device	099= 1234567890

# Device Dimensions



# Safety Instructions



## Caution

Due to the risk of electric shock, any procedure that involves opening the plastic enclosure cover or changing components should only be performed by qualified service personnel.

To reduce the risk of electric shock, disconnect the device from the power supply before removing the plastic enclosure cover.

Any wiring, cables or plugs used in conjunction with the device must be certified in accordance with the relevant product standards.

## Maintenance

All maintenance should only be performed by qualified service personnel.

There are no user-serviceable parts inside the device.

Do not use the device in a location where the maximum ambient temperature exceeds 45°C.

## Battery

This device includes a 12V/800mAh NiMH battery that must be replaced every 3 years. Insert AVIRE authorised batteries only and allow only qualified personnel to replace them.

There is a risk of explosion or damage if the battery is replaced with an incorrect type of battery. Dispose of used batteries according to the instructions.

## Environmental Conditions

This device cannot be installed outdoors. The acceptable temperature range is from 0 to +45 °C.

## Declaration of Conformity

AVIRE declares that this product complies with the essential requirements and other relevant provisions of the following Directives: EN81-28, 2014/30/EU; 2014/33/EU and 2011/65/EU.



## Disposal of Electrical / Electronic Equipment

The existence of this symbol on the product or packaging means that this product cannot be disposed of as household waste.

It is the responsibility of the user to deliver this product to a Recycling Collection Point or failing that, it must be returned to AVIRE to manage its recycling properly.



Unit 2, The Switchback  
Gardner Road  
Maidenhead  
Buckinghamshire  
SL6 7RJ



+44 (0)1628 540 100



01628 621 947



sales.uk@avire-global.com



avire-global.com

