

Connecting and
protecting people

Installation Guide 4G DCP Evo

VoIP Powered by **NEXIIIO**



MU-975XXMC100-EN

V2



Connections

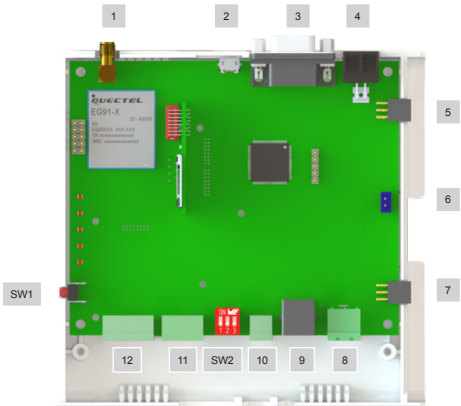
The digital communication platform (DCP Evo) facilitates communication between all Memco devices connected in the lift shaft and our online monitoring platform, Avire Hub.

It also allows for connection, via a serial port (RS232 or RS422/485), to the lift controller for remote monitoring and maintenance.

For the dual SIM version: The dual SIM device makes switching from one SIM to another possible if the connection from the first SIM is lost. With the dual SIM version, one SIM can be used for voice communication and another for data communication.

The DCP Evo is a device designed to comply with the requirements of the EN 81-28 standard within the Alarm System for lifts.

Connections for 4G DCP Evo

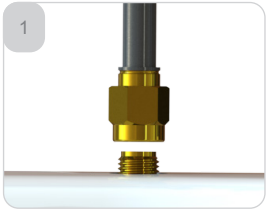


1.	Antenna
2.	Micro-USB
3.	Serial Port (RS232 or RS422/485)
4.	Specialised Connector (for Set-Up)
5 + 7.	Clip-On Power Supply Connectors
6.	Battery Back-up Connector

8.	External Power Supply Connector
9 + 10.	Analogue Telephone System (SLIC)
11.	CANBus
12.	General Purpose I/O
SW1.	Button - On/Off/Coverage Check
SW2.	Switch

1 The antenna supplied with the device must 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 is more than enough to ensure the device operates smoothly. The device contains a field meter to help with the installation.

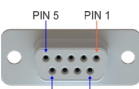


IMPORTANT: In some cases, a higher sensitivity will be needed, because in certain locations, there will be low coverage. In these cases, an external antenna can be ordered from the factory. Consult our technical department for the best solution in each situation.

Connections

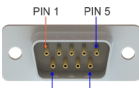
2 The micro-USB connector provides virtual Serial Port features. A computer can be connected to the device to set it up or to perform performance analysis tasks.

3 The DCP Evo incorporates a serial port that can be RS-232 or RS422/485, depending on the device model.



Female connector

RS-232	
Pin	Signal
2	Txd Output
3	Rxd Input
5	Ground Reference
7	Rts Output
8	Cts Input

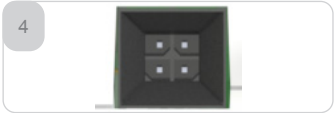


Male connector

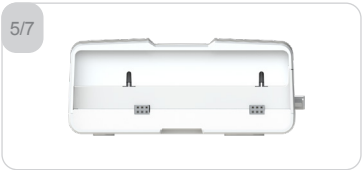
RS 485/422	
Pin	Signal
2	Tx+ Tx+ RS 422
3	Rx- Rx - RS 422x (a)
5	Ground Reference
7	Tx- TX-RS 422(b)
8	Rx+ Rx+ RS 422

a.- T/R+ RS485 Half Duplex
b.- T/R - RS485 Half Duplex

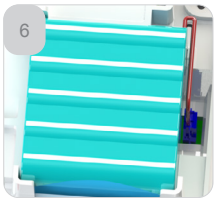
4 This specialised connector is used with an external module to setup certain features on the device. Consult our technical department for more information.



5/7 Connectors (5) and (7) are used to connect the specialised Evo Clip-On power supply.



6 The device's battery is already pre-wired and no further action is required. In case a replacement is required, it is connected at this time. The enclosure cover must be removed in order to access the device's battery.



IMPORTANT: Do not use batteries other than those supplied by Memco.
The use of an unapproved battery may cause damage to this device and any other devices connected to it.

Connections

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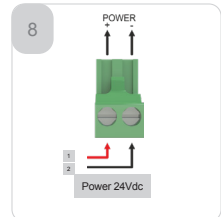
The power supply provided with the device can be connected at this point.

There are various versions of power supplies depending on the model purchased. This can be a power supply with a built-in power plug (different versions can be ordered depending on the country).

There are also versions with a screw terminal on both sides (cables for connection to the mains and DC power output cable are provided) and the device can be powered directly from a power supply available in the installation.

Always ensure that the input voltage is 24 VDC and the available power is 10W.

When an external power supply is used, a protection element (fuse or similar) must be installed to limit the current supplied to the device.



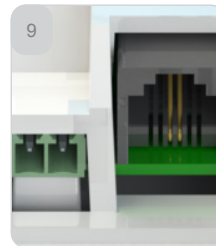
9/
10

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

Connector **9** is normally used to connect a telephone terminal located in the machine room. This is used to configure the devices installed in the same way as via an external call, and can also be used as an intercom if necessary.

Connector **10** is normally used to connect existing analogue emergency phone devices which have been installed.

A maximum of 4 devices (cars) are provided for each installation.



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Tip Ring



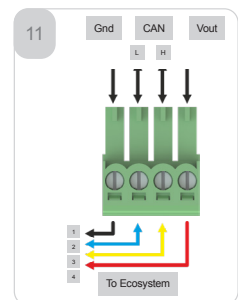
11

All Ecosystem devices are attached to this connector, whether they are audio modules, monitors or other devices for different features.

The DCP Evo supplies power, supported by the internal battery, to these devices. Should the battery capacity be exceeded by the quantity or functionality of these devices, an external power supply must be used.

The DCP Evo can support 4 cars with 1 audio module installed in each. If the number of cars is lower, other devices which do not exceed the maximum consumption of 4 audio modules per installation can be supported.

Check the characteristics of each device intended for installation to confirm that the authorised limit of 200mA is not exceeded.



Connections

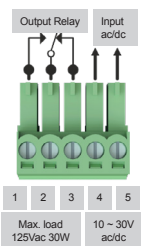
12

The DCP Evo incorporates an opto-coupled input and a switched relay output. The relay output makes switching a load of up to 125 Vac and 30W possible.

The relay output can be set up via parameters 11 and 12. (See setting up parameters).

Terminal 1 is normally open, 2 is the common one and 3 is normally closed. The input has a range of 10 to 30 V ac/dc and its features can be set up via parameter 10. (See configuration parameters)

12



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SW1 Push Button

Pushbutton SW1 performs various functions, which are described in the following table.

Device State: Off	Function
1 Press	The use of the internal battery is initiated

Device State: On	Function
1 Press	Enters the Installer Mode (Testing Coverage) for 5 minutes
1 Press	Exits installer mode if activated
Press > 5 sec.	Disconnects the internal battery (if the device is not connected to the mains)

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SW2 Switch



CAN Ω

Connects the load resistance of the CAN Bus. Normally activated by the factory.



RS 422 Ω (R)

Connects the load resistance of the RS422 Bus reception channel.








RS 485/422 (T/R) Ω







Connects the load resistance of the RS422 Bus transmission channel.
Connects the resistance of the RS485 Bus

Indicator Lights





The DCP Evo has five indicator lights which indicate the device status at all times. Each indicator can be lit in green, amber or red and can either be lit solid permanently or will be flashing intermittently. After 60 seconds of starting up the device, 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	Green	The battery is working properly and is charged.
	Solid	Amber	Connected to the 2G/3G 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 table provides information regarding all possible meanings of the indicator lights:






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	DAU Battery Failure	Error

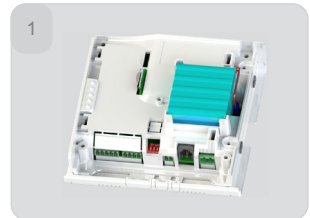
SIM	Solid			Flashing		
						
	Connected to 4G network	Connected to 2G/3G network	No Service / connecting	Call in progress on 4G	Call in progress on 2G/3G	No Service / Missing PIN

Coverage	Solid		
			
	Optimal Coverage	Medium Coverage	Insufficient Coverage

SLIC	Solid			Flashing
				
	Local line ready and idle	Initializing local line	Local line out of service	Local line in use

Installation & Implementation

- 1 Remove the screw on the top cover and remove the cover of the DCP Evo.
- 2 Insert the SIM card into the corresponding connector. Depending on the DCP Evo model, there will either be one or two SIM card slots supporting different SIM card formats.
- 3 Connect the antenna. (See 1)
- 4 Press the SW1 pushbutton for 1 second. (the internal battery of the device is now connected).
- 5 Wait for the indicator lights to turn on. Once the indicator lights are on, the DCP Evo will start to register to the corresponding operator network. This process usually takes 2-5 minutes but may take longer depending in the SIM card being used. The indicator light should remain amber or green. (See indicator lights).
- 6 Test the coverage (see "Testing coverage" on the next page).
- 7 Mount the device onto its permanent location. (see "Mounting DCP Evo" below).
- 8 As required, wire all peripherals (9, 10, 11 and 12).
- 9 Connect the external power supply provided with the device (8).



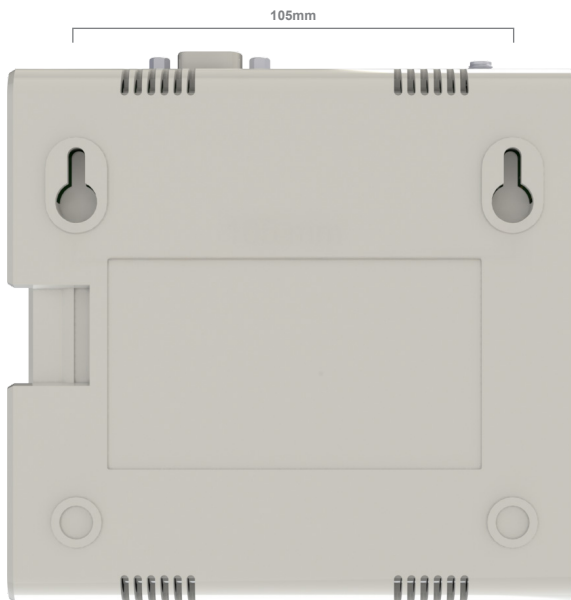
1 x Standard SIM



2 x Nano SIM

Mounting the DCP Evo

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 DCP at these two points using the teardrop-shaped holes located in the rear casing of the DCP (the midpoints of the holes should be 105 mm apart).



Testing Coverage

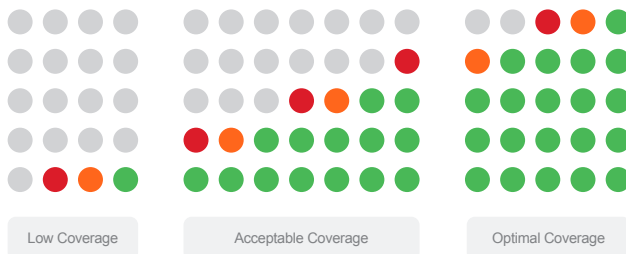
The DCP Evo includes a feature where coverage in your location can be measured. To activate this feature, please follow the steps below:

1

Press the SW1 pushbutton.

2

The DCP Evo will enter installer mode for 5 minutes and will display the coverage, according to the following pattern of indicator lights:



3

You can move around with the device in your hand to determine the best location within the room. If the coverage is too weak in any location, you can replace the antenna with an indoor antenna with greater gain or with a directional outdoor antenna. Please check the antennas available for this device.

Your DCP Access PIN Code

This device has been assigned a unique 8-digit PIN at manufacture. This PIN needs to be used when accessing or configuring the device via SMS or the analogue telephone port (SLIC).

Your unique PIN is printed on the label on the underside of the device.

Changing the DCP Access PIN Code

The unique PIN can be changed using Parameter 093.

- The new PIN must be between 4 and 8 digits long and you should avoid using common patterns.
- Ensure the new PIN is memorised or written down temporarily until it can be stored/logged safely.

Changing the Access PIN via SMS

- Send an SMS to the SIM card in the device using the following format:

PINxxxxxxx,P093yyyyyyy

x=the current 8-digit PIN;

y=new PIN code, (4-8 digits)

Changing the access PIN via an analogue handset (SLIC)

Connect a standard phone handset to the SLIC port of the device (connections 9 or 10).

- Using the handset keypad, enter `*#xxxxxxx#`
- When prompted, enter `*093#yyyyyyy#` to register the new PIN

x=the current 8-digit PIN;

y=new PIN code, (4-8 digits)

Device Timeout – Incorrect access PIN Entries

After three incorrect PIN entries, the device will block any further access attempts for a period of 5 minutes. Each further incorrect PIN entry will result in an additional 5 minute timeout period.

This applies to access attempts via SMS or Serial/USB.

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

Connect the SIM to a different mobile device and delete the SIM PIN code in the device settings.

Option Two

Program PIN via Analogue Phone

You can program the PIN code of the SIM card into DCP Evo by using an analogue telephone plugged into connection 9 or 10. If the SIM has a PIN, the PIN must be set up before the SIM is inserted to avoid exceeding the number of PIN attempts and locking the card.

- Access the DCP Evo setup mode by pressing: *1#
- Wait for the response from the DCP “Enter code” and then enter the PIN of the SIM card: 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 after a few seconds, the SIM card LED will stop flashing red. If not, ensure that the SIM has been inserted correctly and that the right PIN has been entered.

Setting up the DCP Evo

Option One

Using the AVIRE app

The Avire app (available on the Apple App Store and Google Play) allows installers to set up the DCP quickly and easily, as well as connect to the Avire hub. The Avire application removes the need to set up the device via SMS and guides you through the login process on your smartphone. (Note: the device IMEI, which can be found on the box, is required to begin the set up).

The application is available via the following link:



Scan for iPhone & Android

Setting up the DCP Evo (cont.)

Option Two

Setting up via SMS

Parameter 91 (P091) allows for a quick and easy implementation of APN settings, depending on the country and network provider. Implement the DCP Evo settings according to the tables on the right:

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

The first digit defines the country or geographical area where the DCP Evo will be installed.

The second digit defines the operator within the country or geographic area selected.

The third digit defines the type of call centre selected and the protocol through which the data is to be communicated.

D1	Country (Area)
0	Factory Default
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

Call Centre - AVIRE Hub Europe

Pinxxxxxxxx

SMS 1/1 MK975:
TRACK_GSM_MK_975
P091= 4310

Setting up the DCP Evo (cont.)

D2	Spain	Portugal	Italy	UK	Germany	France	USA	AUS
1	AVIRE SIM							
2	Telefonica	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 / Kogan
5			Lilad	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
D2 will take a different value based on the selected D1 value								

D3	Type of Call Centre	Description
0	Transparent Gateway	Allows the DCP Evo to provide a cellular connection to a linked device. This setting is often used when connecting the DCP Evo X to a PSTN phone or an incompatible lift controller.
1	AVIRE HUB Europe	The AVIRE HUB Europe setting is used when monitoring via the AVIRE HUB (Avire Ecosystem Devices) is required.
2	P100	Allows a connection, through the P100 protocol, with any Call Center.
3	P100+AVIRE Hub Europe	Allows a connection, through the P100 protocol, and monitoring through the AVIRE HUB.
4	AVIRE Hub Asia	The AVIRE HUB Asia settings are used when monitoring devices via the AVIRE HUB (Avire Ecosystem Devices) is required.
5	AVIRE Hub USA	The AVIRE HUB USA settings are used when monitoring devices via the AVIRE HUB (Avire Ecosystem Devices) is required.
6	AVIRE Hub China	The AVIRE HUB China settings are used when monitoring devices via the AVIRE HUB (Avire Ecosystem Devices) is required.

If the APN details of your SIM card do not appear in the above tables, this information will need to be obtained from the service provider and the details will then need to be manually programmed using the P060 and P061 settings. More details on these settings can be found via the following link: go.avire-global.com/DCP

General Parameters Available

SMS Commands

Almost all parameters of the DCP Evo can be checked and/or modified by sending an SMS to the device itself.

In a single SMS, it is possible to modify and/or check several parameters by separating each of the parameters to be checked and/or programmed with a comma “,”.

Each SMS must begin with “PINxxxxxxx”. xxxxxxxx is the 8 digit unique PIN assigned to the DCP Evo. See ‘Your DCP Access PIN Code’ section for instructions on how to change the PIN code.

The SMS formats are as follows:

Programming a Parameter	Description
PINxxxxxxx,Pzzz xxx (send)	Pinxxxxxxx is the 4-8 digit PIN. Pzzz is the command to be modified. xxx is the value to be assigned to the parameter.
Querying a Parameter	Description
PINxxxxxxx,Pzzz? (send)	Pinxxxxxxx is the 4-8 digit 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:

Pinxxxxxxx,P0310123456789 (send) —
The response will be: P031=0123456789

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

Pinxxxxxxx,P031? —
The response will be: P031=0123456789 (programmed number).

Programming via an analogue handset (SLIC)

Almost all the parameters of the 4G DCP Evo can be checked and/or modified via the SLIC port on the device (connections 9 or 10). Connect a standard phone handset and use the keypad to enter the commands.

Programming a Parameter	Description
Enter “*#xxxxxxx*#” When prompted enter “PPP#new value#”	xxxxxxx is the PIN. PPP is the three digit parameter. New value is the new parameter value.
Querying a Parameter	Description
Enter “*#xxxxxxx*#” When prompted, enter “PPP”	xxxxxxx is the 4-8 digit PIN. PPP is the three digit parameter.

General Parameters Available

Identification & Status

Parameter	Description	Range	Default Value
002	Alphanumeric Identification	40 characters	TRACK_GSM_MK_975
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 = Activated 2 = Only if DAU is present	0

Hardware

Parameter	Description	Range	Default Value
010	Input filter time	00-99 sec.	01
011	Operation of output 1.- Bistable by remote control 2.- Monostable by remote control 3.- Low battery 4.- Network failure (power supply) 5.- GSM failure (No service) 7.- Flashing car alarm	0-7	0
012	Pulse time of output in monostable mode	00-99 sec.	05
013	Change of output status in remote mode	0 = Off 1 = On	
014	Event reporting settings 1.- DCP EVO battery 2.- DCP EVO customer battery 3. DCP EVO power supply 4.- DCP customer power supply 5. DCP output status 6. – Customer alarm button 7.- Audio test 8.- Test call 9.- Alarm call 10.- End of alarm (EOA) 11.- Lift status 12.- SMS attack 13.- MK Script events	000..00/111..11	001111111111110

General Parameters Available

Serial Port

Parameter	Description	Range	Default Value
016	0= Not used, 4=LAM-VDS	0/4	0
017	Baud rate of the Port 0=1200, 1=2400, 3=9600, 4=14400, 5=19200, 6=38400, 7=57600, 8=115200	0-8	3
018	Communications format	0-5	0
019	Flow control 0=No, 1=Yes (CTS/RTS)	0-1	0

M2M Customers

Parameter	Description	Range	Default Value
020	Type of M2M customer 00=No customer, 06=DAU, 20=P100, 21=P100 Memcom, 99=General	00-99 sec.	00
021- 028 = Parameters associated to different M2M clients. Please contact our technical department if you need access to these features.			

Telephone Lists

Parameter	Description	Range	Default Value
030	White List Voice Telephone 1	21 digits maximum for each position	
031	White List Voice Telephone 2		
032	White List Voice Telephone 3		
033	White List Voice Telephone 4		
034	White List Voice Telephone 5		
035	White List Data Telephone 1		
036	White List Data Telephone 2		

General Parameters Available

Phone List Options

Parameter	Description	Range	Default Value
040	Whitelist filter activated on incoming calls. (0=No, 1=Yes)	0/1	0
041	Speed dial calls. (0=No, 1=Yes)	0-8	3
042	Blocking of outgoing calls from the intercom. (0=No, 1=Yes)	0/1	0

Carrier Settings

Parameter	Description	Range	Default Value
043	Voice call from SLIC. 0=Transparent, 1=Rx DTMF regenerated, 2=Rx+TX DTMF regenerated, 3= P100 customer	0-3	0
044	Data call from SLIC 0=Disabled, 1=Voice (See P043), 2= TCP	0-2	0
045	Transparent serial connections. (0 Disabled, 1= Enabled)	0/1	1
047	DTMF Frame Detection = x*0.1 seconds If programmed 00 = 0.5 seconds	00 – 99	05 (0.5 seconds)

Downloads

Parameter	Description	Range	Default Value
050	Remote downloads x=0 DCP EVO firmware x=1 Voice files x=2 CANBus customer files x=3 SSL certificates x=4 Factory default programming x=6 Resource files download x=8 4G module FOTA update	x.yy..yzzz	

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

General Parameters Available

Dual SIM Settings

Parameter	Description	Range	Default Value
051	<p>SIM management</p> <p>x=0 Only 1 SIM0 used</p> <p>x=1 SIM0 is used and if unsuccessful, SIM1 is used x=2 Saved</p> <p>x=3 SIM0 is used and if unsuccessful, SIM1 is used. Retry in 30 min.</p> <p>x=4 SIM0 is used and if unsuccessful, SIM1 is used. Retry in 60 min.</p> <p>x=5 SIM0 is used and if unsuccessful, SIM1 is used. Retry in 4 hours.</p> <p>x=6 SIM0 is used and if unsuccessful, SIM1 is used. Retry in 12 Hrs.</p> <p>x=7 SIM1 and SIM0 are used for voice calls.</p>	0-7	0

AES Key

Parameter	Description	Range	Default Value
053	AES VDS-2465 key (32 hexadecimal digits)	xx.xx	00000000...000

GPRS Settings

Parameter	Description	Range	Default Value
060	APN for SIM0	Apn;usr;psw	
061	APN for SIM1	Apn;usr;psw	
063	<p>Contexts</p> <p>0= Default context</p> <p>5= CHAP</p> <p>6= VDS reports</p>		
064	Pulses from server in minutes	0000-9999	4320
066	IP or Host Name A		avirehub.avire-global.com
067	IP or Host Name B		
069	Host Port A m2mLIFT		8883
070	Host Port B m2mLIFT		

General Parameters Available

Audio & SLIC Settings

Parameter	Description	Range	Default Value
080	SLIC impedances 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	0
085	Language settings: 0=Spanish, 1=Portuguese, 2=Italian, 3=English, 4=German, 5=French	0–5	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

Country

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

General Parameters Available

Test Telephone

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

Codes

Parameter	Description	Range	Default Value
090	SIM card PIN 4 or 8 digits. The first 4 correspond to SIM0 (xxxx) The next 4 correspond to SIM1 (yyyy) Send 4 digits (8 if 2 SIMs are used)	xxxxyyyy	
091	If the DCP EVO is not dual SIM, the fourth digit is not used.	0000-9999	0000
092	VDS parameters kkkk = Encryption key (16Bits) aaa.aaa = BCD identification (12 digits max.)	kkkkaa...aaa	
093	Programming access code (PIN)	0000-99999999	Unique PIN

Codes

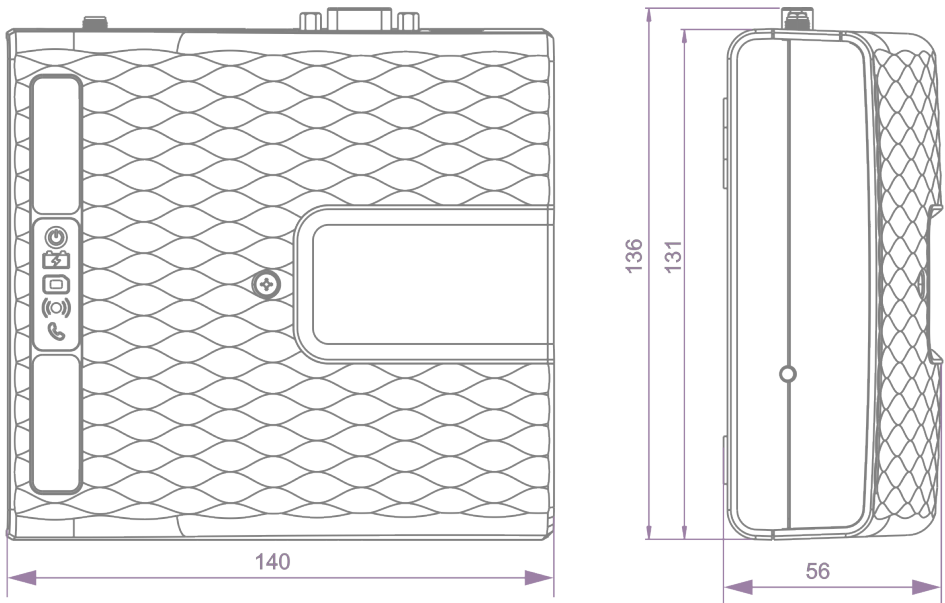
Parameter	Description	Default Value
094	Triggers an immediate test call	094=1
	Activates the serial port in transparent mode	094=Server name;port
	All VDS events to OFF	094=*1

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

Reset and Factory Default Values for DCP Evo

Parameter	Description	Default 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/650mAh 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 EN81-28 and EN18031 standards and the following Directives: 2014/53/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.



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