Installation guide

4G DCP 2.0

MU-845XXMK101-GB V1

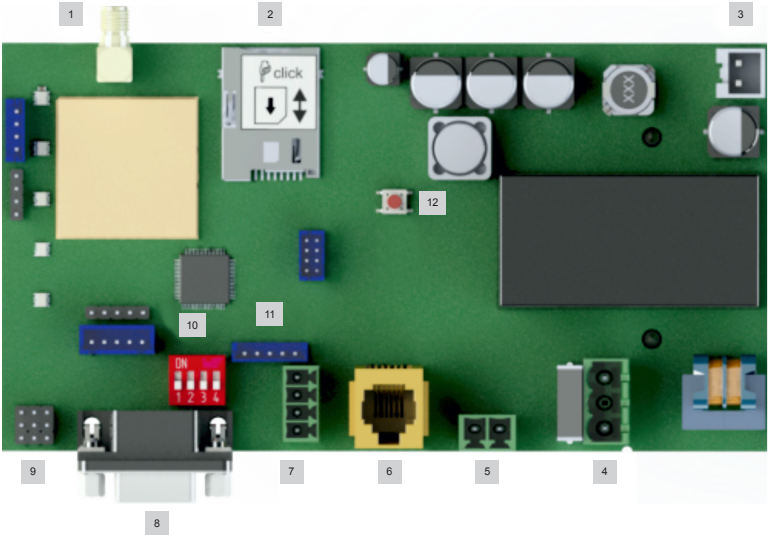
4G DCP 2.0

Guide to be used with products: 4G DCP 2.0

The 4G Digital Communication Platform (DCP) 2.0 provides a communication gateway between all compatible connected devices in the lift shaft and our cloud-based platform, the AVIRE Hub. This allows you to manage the 4G DCP 2.0 as well as any connected MEMCO Digital Audio Unit (DAU) or third party P100 compatible phone.

The 4G DCP 2.0 also allows for connectivity to the lift controller via the serial port (RS232), for purposes of remote monitoring and maintenance.

Connections for 4G DCP 2.0



1

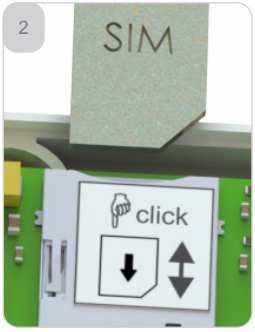
The antenna supplied with the device should be attached to this connector. Insert and thread it in by hand until the antenna is secure. If the antenna is loose, the device will not function properly.

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.

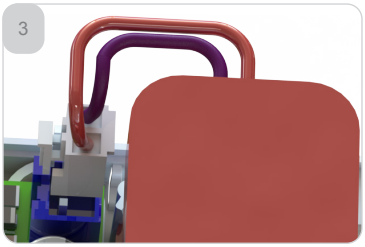
IMPORTANT: In locations with low coverage a separate outdoor antenna may be required. Consult our technical department for the best solutions in each situation.

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



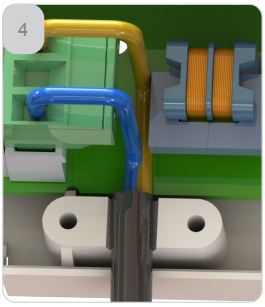
Wiring and battery colours may differ from image.

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 external protection on the electrical panel.

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



Wiring colours may differ from image.

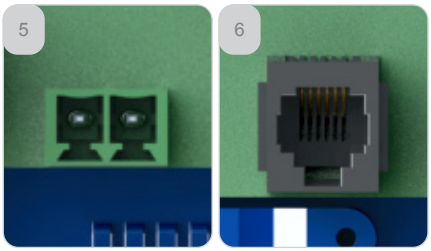
Connections

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

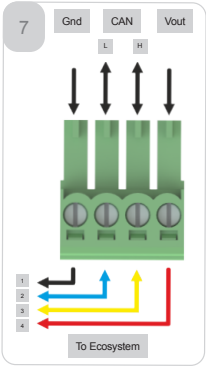
Can Bus

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

The 4G DCP 2.0 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 4G DCP 2.0 can support up to four lift cars with one audio module installed in each. If the number of lift cars is lower, other devices can be supported, on condition they do not exceed the maximum consumption of four audio modules.

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



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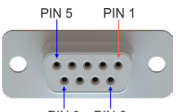
The 4G DCP 2.0 includes a serial port that can be either RS-232 or RS422/485 (depending on the model purchased)

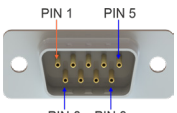
RS-232		
Pin	Signal	
2	Txd	Output
3	Rxd	Input
5	Ground	Reference
7	Rts	Output
8	Cts	Input

RS 422/485		
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



Female connector



Male connector

Connections

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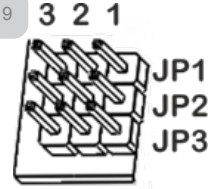
RS422/485 configuration (Only on some models)

JP1 This communications port can be configured as RS-485 (2-3) half duplex or RS-422 (1-2) full duplex.

JP2 allows a 120H resistor to be connected (2-3) as an end-of-bus load resistor to the R+ and R- branch of the full duplex configuration if required.

JP3 allows you to connect (2-3) a bus-end load resistor on the T/R+ and T/R- branch in the full duplex or half duplex configuration if required.

9



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SW1 Switch

1.	Installation mode	Used to activate the coverage test process (see Testing Coverage below)
2.	Unused	Reserved for future use
3.	Monitor Mode	To activate the serial port as a status monitor
4.	CAN (T/R) Ω (Model dependent)	Connects the load resistor to the CAN communication bus.

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Programmable Input / Output

This may be used to connect, for example, to the lift controller for a Lift-Out-of-Service signal, a Lift-Engineer-on-Site signal, a Pit Flood Sensor or a Siren/Beacon.

Please consult our technical department for assistance setting this up.

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The SW2 push button

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

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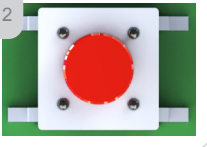


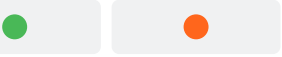
Push button colour may differ from image

Indicator Lights

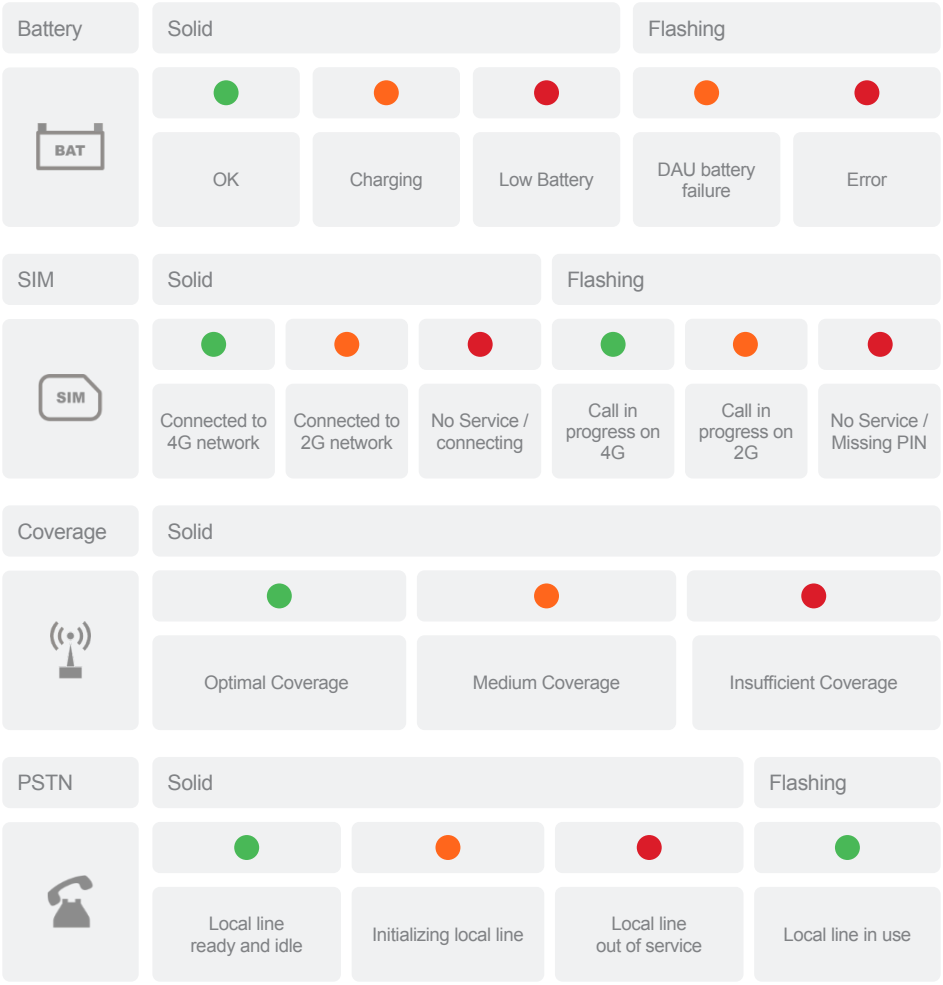
The 4G DCP 2.0 has five indicator lights that indicate the device status at all times. Each indicator can be lit in green, amber, or red and can either be lit solid or flashing intermittently. After 60 seconds of starting up the 4G DCP 2.0, the following should be visible:

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 status:

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

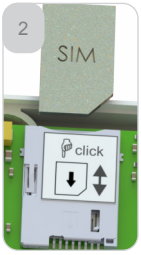
Indicator Lights



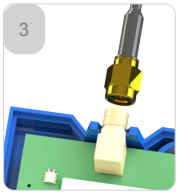
Installation and Commissioning 4G DCP 2.0

1 Remove the screw on the top and remove the cover of the 4G DCP 2.0.

2 Insert the SIM card in the SIM card slot.



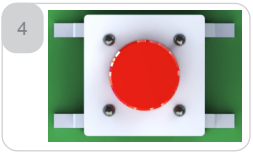
3 Connect the antenna



4 Press the SW2 button for a minimum of 3 seconds.

Wait for the indicator lights to turn on. Once the indicator lights are on, the 4G DCP 2.0 will start to register with the relevant operator network. This process usually takes 2-5 minutes but can take longer depending on the SIM card being used.

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

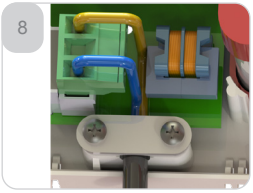


5 Test the coverage (See Testing Coverage on page 10).

6 Mount the device onto its permanent location (see Mounting the 4G DCP 2.0 on the next page).

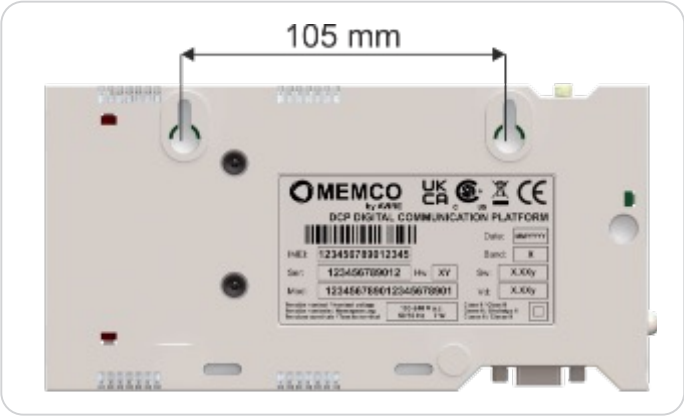
7 Connect all peripherals as required ((5), (6), (7), (8), and (11)) .

8 Insert the mains power and secure the cable using the clamp and screws supplied.



Mounting the 4G DCP 2.0

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 4G DCP 2.0 on the two screws using the teardrop-shaped holes located in the rear casing (the midpoints of the holes are 105mm apart).



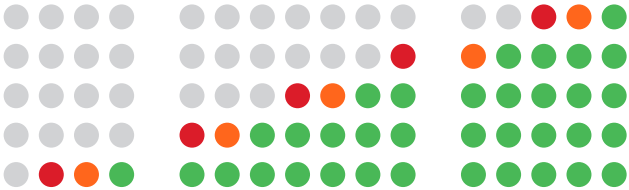
Testing Coverage

The 4G DCP 2.0 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.



Low Coverage	Acceptable Coverage	Optimal Coverage

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 antena provided, an alternate indoor antena 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 4G DCP 2.0 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 4G DCP 2.0 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 4G DCP 2.0

Option One

Using the AVIRE app

The AVIRE app (available on the Apple App Store and Google Play) allows installers to set up the 4G DCP 2.0 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:

Scan for iPhone & Android

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 4G DCP 2.0 settings according to the tables below:

Digit (1)	Digit (2)	Digit (3)	Digit (4)
Country (Area)	Operator	Call Centre	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 digit defines the type of call centre selected and the protocol through which the data is to be communicated. The fourth digit will be zero by default.

Setting up the 4G DCP 2.0 (cont.)

Option Two (cont.)

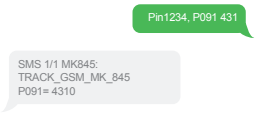
D1	Country (Area)
0	Factory Default
1	Spain
2	Portugal
3	Italy
4	UK
5	Germany
6	France
7	USA
8	AUS

Example SMS:

Text sample shown on the right is for the following:

Country = UK, Operator = EE

Call Centre - AVIRE Hub Europe



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 / 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

D2 will take a different value based on the selected D1 value

Setting up the 4G DCP 2.0 (cont.)

D3	Type of Call Centre	
0	Transparent Gateway	Allows the 4G DCP 2.0 to provide a linked device. This setting is often used when connecting the 4G DCP 2.0 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, via the P100 protocol, with any Call Centre
3	P100+AVIRE Hub Europe	Allows a connection, via the P100 protocol and monitoring through the AVIRE Hub
4	AVIRE Hub Asia	The AVIRE Hub Asia setting is used when monitoring via the AVIRE Hub (AVIRE Ecosystem Devices) is required
5	AVIRE Hub USA	The AVIRE Hub USA setting is used when monitoring via the AVIRE Hub (AVIRE Ecosystem Devices) is required
6	AVIRE Hub China	The AVIRE Hub China setting is used when monitoring via the AVIRE Hub (AVIRE Ecosystem Devices) is required

If the APN details of your SIM card do not appear in the above 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.

General Parameters Available

SMS Commands

Almost all the parameters of the 4G DCP 2.0 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 4G DCP 2.0. The factory PIN is “1234”.

The SMS formats are as follows:

Programming a Parameter	Description
Pin1234,Pzzzxxx (send)	Pin 1234 is the factory default PIN. Pzzz is the command to be modfied. 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 response will be: P031=0123456789

To check telephone number 1 (parameter 31) proceed as follows:
Pin1234,P031?
The response will be: P031=0123456789 (programmed number).

General Parameters Available

Identification & Status

Parameter	Description	Range	Factory Value
002	Alphanumeric identification	40 characters	TRACK_GSM_MK_845
003	Hardware & firmware version	Read-only	According to manufacturing
004	IMEI number	Read-only	-
007	Hardware status	Read-only	-
008	Identification message (2= DAU at installation)	0 = Off 1 = On 2 = Only if there is a DAU present	0

Hardware

Parameter	Description	Rank	Factory 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. Mains failure (power supply) 5. GSM failure (no service) 6. Controlled by virtual device 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. 4G DCP 2.0 - battery 2. 4G DCP 2.0 - customer battery 3. 4G DCP 2.0 - power supply 4. 4G DCP 2.0 - customer power supply 5. 4G DCP 2.0 - 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	00111111111110

General Parameters Available

Serial Port

Parameter	Description	Rank	Factory Value
016	0 = Not used, 4= AT Modem	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 = 8N1, 1 = 8N2, 3 = 8E3, 4 = 8O1, 5=8O2	0-5	0
019	Flow Control 0 = No, 1 = Yes (CTS/RTS)	0-1	0

M2M Customers

Parameter	Description	Rank	Factory Value
020	Type of M2M customer 00 = Transparent, 06 = DAU, 20 = P100, 21 = P100 Memcom, 99 = General	00-99	00

Phone Lists

Parameter	Description	Rank	Factory Value
030	Whitelist Alarm 1 voice call	21 digits maximum for each position	
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		

Note: P030 = “Maintenance phone”. This should not be used if there is not hotline or has not been set up.

General Parameters Available

Phone List Options

Parameter	Description	Rank	Factory 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)	0/1	0

Carrier Settings

Parameter	Description	Rank	Factory Value
043	Voice call from SLIC. 0 = Transparent, 1 = Outband, 2 = Unused, 3= P100 client	0 – 3	0
044	Data call from SLIC 0 = Disabled, 1 = DTMF, 3 = MQTT	0 – 3	0
047	DTMF Frame Detection = x*0.1 seconds If 00 + 0.5 seconds is programmed	00 – 99	05 (0.5 seconds)

Downloads

Parameter	Description	Rank	Factory Value
050	Remote Downloads x = 0 4G DCP 2.0 Firmware x = 1 Voice files x = 2 CANBus firmware x = 3 SSL Certificates x = 4 Factory Default Programming x = 5 Script x = 6 Voice ID x = 7 Public Signature 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.

General Parameters Available

GPRS Settings

Parameter	Description	Rank	Factory 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
067	IP or Hostname A		--
069	Host Port A m2mLIFT		8883

Audio & SLIC Settings

Parameter	Description	Rank	Factory Value
080	SLIC Impedance and Polarity Setting 0 = 600Ω resistive 1 = 270Ω + (750Ω ll 150nF) – ETSI TS103201-3 2 = 600Ω resistive + polarity reversal, 3 = 270Ω + (750Ω ll 150nF) + polarity reversal 4 = 600Ω resistive + current extraction 5 = 220Ω + (820Ω ll 120nF) 6 = 220Ω + (820Ω ll 120nF) + polarity reversal	0 – 6	0
085	Language settings: 0 = Spanish, 1 = Portuguese, 2 = Italian, 3 = English, 4 = German, 5 = French	0 – 5	3

DNS Settings

Parameter	Description	Rank	Factory Value
086	DNS Server IP (empty for automatic DNS)	xxxx	0.0.0.0

General Parameters Available

SLIC Tones Settings

Parameter	Description	Rank	Factory Value
087	Setting the different indicative tones: A = Dial tone B = Ring tone (Ring) C = Engaged tone (communicating) D = Line congestion tone	ABCD	4335

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	Rank	Factory Value
088	Phone used to test the voice line. (15 digits maximum)	XX ... XX	-

Codes

Parameter	Description	Rank	Factory Value
090	SIM Card PIN: 4 Digits	XXXX	-
091	APN Configuration (see “Option 2 – Setting up via SMS” above. Note the fourth digit is “0” by default if the device is a single SIM.	0000 – 9999	0000
093	Programming Access Code (PIN)	0000 – 9999	1234

General Parameters Available

Special Functions (Direct Commands)

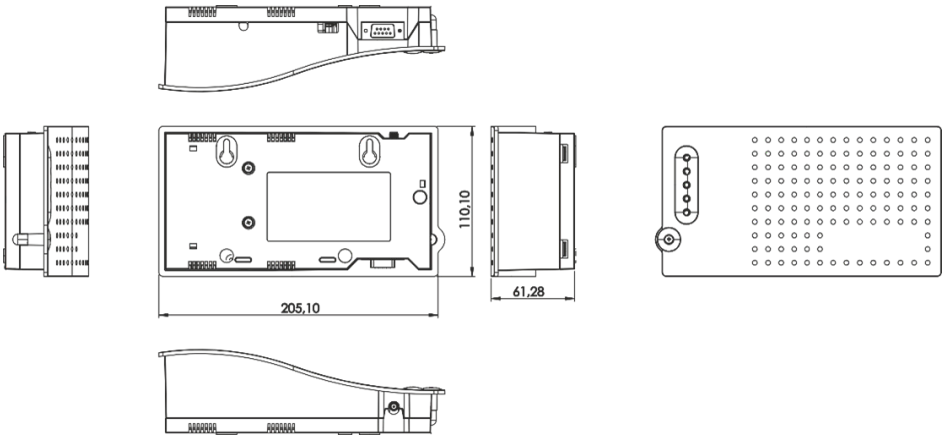
Parameter	Description	Value
094	Triggers an immediate test call	094 = 1
	Enables serial port in transparent mode	094 = Server name; port
	Displays data consumption in KB	094 = 3

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

Reset and Factory Default Values for 4G DCP 2.0

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

Device Dimensions



Safety Instructions

MEMCO by AVIRE

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 temperature exceeds 45°C.

Battery

This device includes a 12V/800mAh NiMH battery that must be replaced every 3 years.
Install 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.

CE

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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