AVIRE

4G DCP
Digital Communication Platform
Installation Guide

Part numbers:
4G Single SIM card (RS232): AC-4CM10-610-F-20-000
4G Dual SIM card (RS232): AC-4CM10-810-F-20-000

Single SIM card (RS422/485): AC-4CM10-710-F-40-000
Dual SIM card (RS422/485): AC-4CM10-910-F-40-000

PRODUCT DESCRIPTION

The Digital Communications Platform (DCP) provides an information gateway between all compatible connected Avire devices in the lift shaft and our online monitoring platform the Avire Hub. The product is installed as a stand-alone device and doesn't require connection to the controller panel.

Dual SIM card DCP version: A dual SIM card version allows switching from one SIM to another in case the connection is lost. The dual SIM card version also allows the use of one SIM card for voice and the other one for data only.

In the Box

+ 4G DCP - either single or dual version
+ Antenna
+ P-5 H-2V connector (x1)
+ P-3.5 H-4V connector (x1)
+ P-10 H-2V connector (x1)
+ Screw POZ 4.5x35 (x2)
+ Grey clamp (x2)
+ Manual

Not Included

+ Screwdriver
+ SIM card(s)

*Configure your DCP using the Avire App

ELEVATOR SAFETY

Please follow all Health and Safety rules and take all necessary precautions before and during installation.

IMPORTANT – This device must be installed by qualified personnel and always in a restricted area where only such personnel have access. All input and output circuits of the device are classified as ES2 and cannot be accessible to any end user or connected to any ES1 or SELV circuit.

SETTING UP THE DCP

Avire SIM cards come activated and ready to be installed. If a non-Avire SIM card is used, please make sure that the SIM card is activated and unlocked.

1. Open the DCP with a PZ1 screwdriver.

2. Depending on the version of the DCP insert SIM(s) into J4, pushing the SIM(s) until it (they) click(s). The Dual SIM card version will still work with only 1 SIM installed.
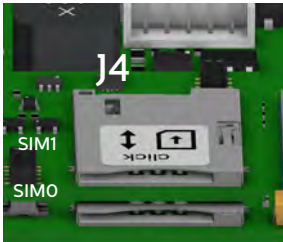

Dual SIM card
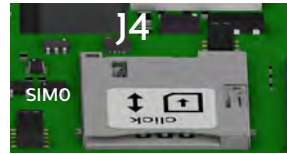
Single SIM card

3. Connect the antenna on the DCP to J2 and ensure it is completely tightened.

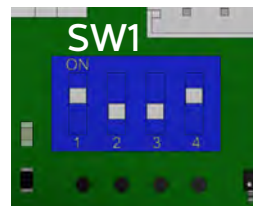**NOTE: Only use antennas authorised by Avire.**

4. Connect the battery to J3.

5. Wait for the LEDs to turn on. Once the LEDs turn on, the SIM card will begin to register with the network which can take 2–5mins. Having allowed time for the SIM to register, check the SIM LED to make sure it is green or amber (check step 10). If it's flashing red check it's been inserted correctly and then unlock the SIM card using instructions on page 5.
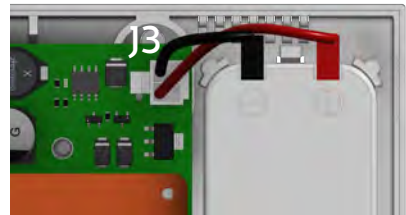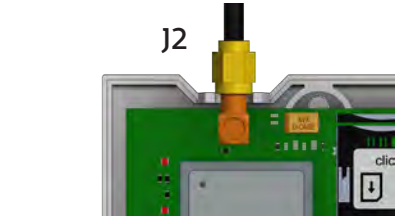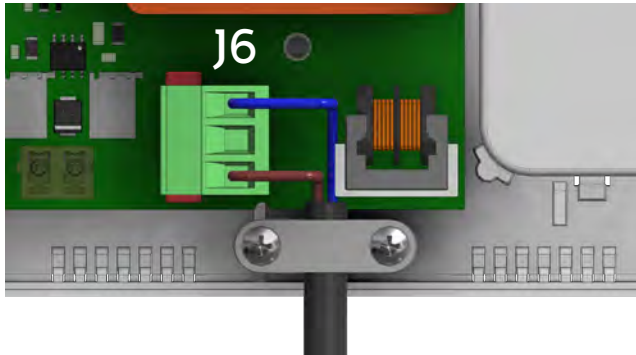

6. Check the signal strength by using the built-in network signal strength scanner. To use the signal scanner function:

   + Turn SW1 dipswitch 1 to ON (check dipswitch 4 is also ON)

Please refer to pages 13 and 14 for the full picture and connector information

+ LEDs on the front of the DCP unit will show the network signal level

| LOW COVERAGE | | | | MEDIUM COVERAGE | | | | | | | | OPTIMAL COVERAGE | | | |

Note: The signal scanner will indicate the best location for the device to receive signal, Network coverage will vary based on local conditions.

LED COLOURS

OFF — RED — AMBER — GREEN

+ Once finished turn SW1 dipswitch 1 back to OFF.

SW1

You can check the status of the power supply, battery, connection, coverage or Phone Line (SLIC) at any time by referring to the LED Indicators (page 15).

7. With the power supply turned off, connect the positive and negative wires to the removable plug on connector J6, and then insert the plug into the base of the circuit.

IMPORTANT – The device must be connected to a circuit protected by a circuit breaker so that both the positive and the neutral that supply the equipment can be disconnected. To avoid accidents, the circuit breaker must be turned off before handling the power cables.

Neutral

Live

Voltage range is 100–240 V A.C. 50–60Hz

8. Clamp the power cable using the grey clamp provided inside the box.


9. Place the lid back on the top of the DCP and fasten the lid with the screw.

10. Turn on the power to the DCP. The RUN LED on the DCP should change colour from flashing amber to flashing green when the mains power connection is made. If you see any other colour, please consult the LED Indication list on page 15.
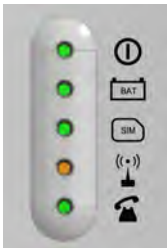
RUN LED flashes green	Power supply is OK
BAT LED is always on	Battery is OK
SIM LED is green or amber	Device is connected to the network
Coverage LED is green or amber	Good coverage
SLIC LED is green	Device is in standby

11. To fix the device in position, drill two holes in the wall and insert the plugs and screws (POZ 4.5x35) provided with the device. Hang the DCP on these two points using the tear-shaped holes at the back box of the DCP (mid points of holes are 105mm apart).

105mm
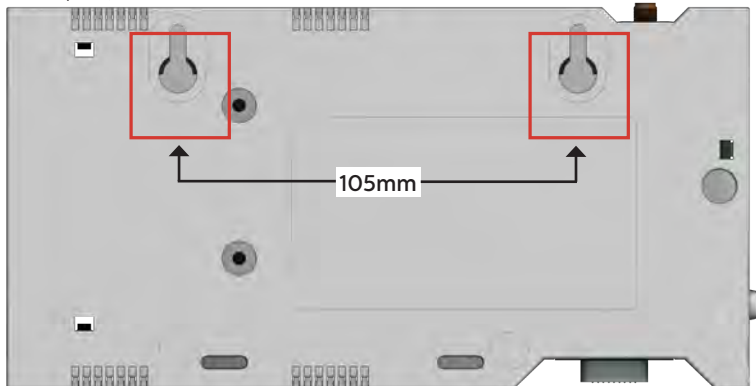
12. If a non-Avire SIM card is used, APN settings must be set prior to configuring it on the Avire Hub; please refer to "Setting Parameters on non-Avire SIM cards" (page 6). If the SIM LED is flashing red, please see "SIM Card unlocking" (see page 5).

SIM CARD UNLOCKING

Important Note: An Avire SIM card doesn't have a SIM PIN code; if the SIM LED is flashing red, please make sure that the SIM card has been inserted correctly. The SIM PIN code for other network providers may vary and it can usually be found on the outer plastic case of the SIM card.

OPTION 1

Disable the blocking PIN code using a conventional mobile phone. Plug the SIM into a different mobile device and delete SIM PIN code in the device settings.

OPTION 2

You can program the PIN code of the SIM card into the DCP using an analogue phone plugged into to the J1A or J9 connection (please see page 13 for more details).

Single SIM card version:

Enter DCP configuration mode: [*] [1] [#] wait for DCP voice command

Enter SIM card PIN parameter: [X] [X] [X] [X] [#]

xxxx is the SIM PIN code given by the service provider for SIM0.

Dual SIM card version:

Enter DCP configuration mode: [*] [1] [#] wait for DCP voice command

Enter SIM card PIN parameter: [X] [X] [X] [X] [#] [y] [y] [y] [y] [#]

xxxx is the SIM PIN code given by the service provider for SIM0

yyyy is the SIM PIN code for SIM1 (if installed and required).

Example if only 1 SIM PIN code is required:

If SIM0 PIN is needed – *1# xxxx#

If SIM1 PIN is needed please remove PIN code from SIM1 or install SIM into SIM0 port.

At this point, the SIM card LED (middle LED) will stop flashing red. If it does not, make sure the SIM is correctly inserted and you have entered the correct PIN.

Important Note: Check ADDITIONAL INFORMATION FOR PROGRAMMING THE DCP on page 12 for more information.

CONFIGURING THE DCP

Avire App

The Avire App (available on Apple App store and Google play) allows installers to quickly and intuitively setup/configure the DCP and connect to the Avire Hub. The Avire App removes the need for configuration using SMS and instead walks you through the connection process on your smart phone. The App is available at the links below:
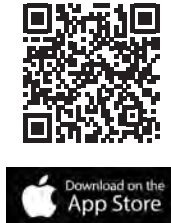
SMS Setup

Parameter 91 (P091) allows quick and easy configuration of APN settings, depending on the country and network provider. Configure settings for the DCP based on the tables below by texting the DCP using P091.

Example

P091	Digit 1	Digit 2	Digit 3	Digit 4
	Country	SIM0 Network	Type of Connection	SIM1 Network
Single Sim	4 = (UK)	3 = (EE)	1 = (Avire HUB)	0 = (No SIM)
Dual Sim	4 = (UK)	3 = (EE)	1 = (Avire HUB)	2 = (O2)

Pin1234,P0914312

MK-775: TRACK_GSM_MK_775
P091=4312

The Digital Communications Platform comes pre-configured with factory settings of 0000 (this configuration doesn't specify any use case or country).

Digit 1	Digit 2	Digit 3	Digit 4
Continent	SIM0 Network	Type of connection	SIM1 Network

Digit 1	0	1-6	7	8
Continent	Default	Europe	Americas	Australasia

Digit 2 & 4	1	2	3	4	5	6
Country	Spain	Portugal	Italy	UK	Germany	France
0	default	default	default	default	default	default
1	AvireSim	AvireSim	AvireSim	AvireSim	AvireSim	AvireSim
2	Telefonica	MEO	Wind	O2	Telekom DE	Orange
3	Orange	NOS	TIM	EE	ABD	SFR
4	Vodafone	Vodafone	Vodafone	Vodafone	Vodafone DE	Bouygues Telecom
5			Iliad	3	O2 DE	Free Mobile
6			tre(3)	Virgin	BASE	
7				1P	Swisscom	
8	Telit	Telit	Telit	BT	A1	Telit
9				GiffGaff	tmobileAT	

Digit 3	0	1	2	3
Type	Transparent Gateway	Avire Hub	P100	P100 + Avire Hub

Transparent Gateway	Enables DCP to provide data/cellular connection to a device which is connected to it. This setting is often used when connecting the DCP to a non-avire PSTN phone or to a lift controller.
Avire Hub	Avire Hub setting is used when the intention is to monitor your *devices using the Avire Hub
P100	P100 setting allows connection to devices utilising the P100 protocol without connection to the Avire Hub
P100 + Hub	P100 + Hub allows connection to devices utilising P100 protocol and monitoring of devices through the Avire Hub

*Avire Ecosystem devices only

If your SIM's APN details are not listed on the previous tables, you will need to obtain this information and then manually programme the details using Parameters 60, 61 & 62. Further details on these settings can be found using this link.

go.avire-global.com/DCP

OBTAINING THE CCID NUMBER

AVIRE SIM CARDS

Avire SIM cards come unlocked to be used with our products immediately after plugging them in and setting correct Super settings. You will need to know the CCID number to add this information to the Avire Hub.

The CCID Number is shown on the back of the SIM card and also on the outer plastic case of the SIM card (highlighted in red on the picture below).


Important Note: The CCID number consists of 19 digits.

NON–AVIRE SIM CARDS

It is also possible to retrieve the CCID number by sending a SMS command to a SIM card telephone number; the command needs to be separated by a comma as shown below:

Pin1234, P005?

You will receive a text with the CCID number back within a few minutes; in this example, the number shown after "P005=" is the CCID number of this SIM card.
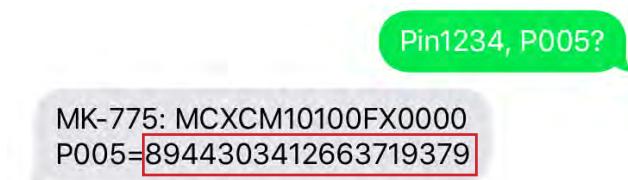
Important note: Example CCID number is highlighted in red on picture above.

You will need to retrieve the CCID number when the DCP installation is set up on the Avire Hub online platform. Please ensure that the person configuring the DCP on the Avire Hub has both the CCID and detail relating to location of the DCP to ensure proper setup.
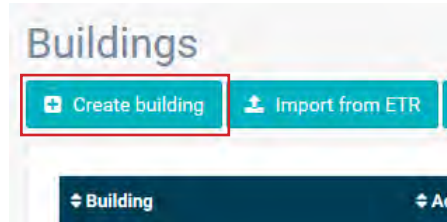
AVIRE HUB

Please contact your local sales office for access to the Avire Hub.

The link to the Avire Hub is **https://avirehub.avire-global.com**

To view installation tutorial videos please go to the "Help" section of the Avire Hub.
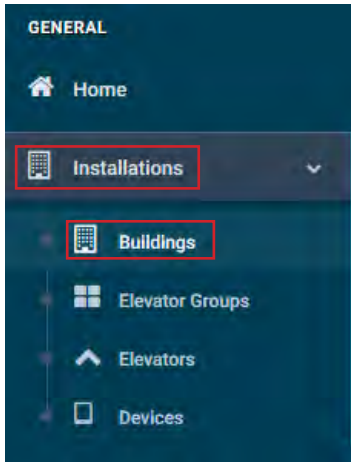
Click on "Installations" in the menu on the side and then on "Buildings". Inside of "Buildings" tab click on "Create Building"

Enter information relevant to your installation in General data

On the other side of the page please enter the number of elevator group you have in this installation and how many elevators you have in the group. As an example, if this is a simplex installation the number of elevator groups will be "1" and the number of elevators will also be "1". If it's a duplex installation it will be "1" and "2" respectively.

Form

Number of elevator groups

| 1 | ∨ |

Number of elevators per elevator group

Change name of elevators group	Select number of elevators
Group 1	1 ∨

Next »

You can also edit the group names to easily identify installations. Once all information is entered click "Next".

In the new page, you should be able to see Groups and Elevators. Click on "Add Gateway" under "Gateway" tab and select "DCP 4G". A pop up window will appear where you can enter the SIM information (Note: Avire SIMs are (+31), but this doesn't affect costs). Enter all required information and then click "Apply".
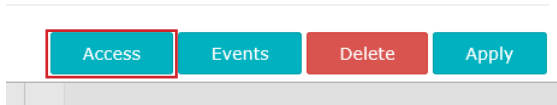
Note: The Background Call Period is the frequency of test checks and 72hrs is the maximum period as per guidance from standards.

Click "Save" in the left corner under the General data column.

Group   Administrator   ∨

💾 Save   ✖ Cancel
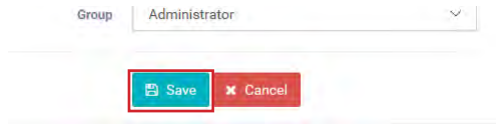
To make sure that everything has been set up correctly click on the green DCP button.
The buttons "Access" and "Events" should now be accessible.

Access   Events   Delete   Apply

Click on the "Access" button.

Parameter groups

Basic   Advanced

Track GSM V:1.59b
    Status and identification
    Hard options
    RS-232 Connection
    CAN port
    m2mLIFT options
    Phone lists
        Voice Alarm Numbers
        Data whitelist
        RS-232 Whitelist
        Special phones
    Call settings
    Carriers
    GPRS
        Connection data
        GPRS destinations
    GSM Audio Settings
    Acesos/Claves
    Utilities
    Telemonitorizacion

Log

08/10/2019 05:24:06 pm
2019-10-08 16:22:28 -- Connecting
2019-10-08 10:34:12 -- Track hangup received

2019-10-08 10:34:12 -- P029 ✔
2019-10-08 10:34:11 -- P004=355856051818470
2019-10-08 10:34:10 -- P003=BOOT:1.00;BIOS:1.00;APP:1.59b ...
2019-10-08 07:42:50 -- Track hangup received

2019-10-08 07:42:49 -- P029 ✔

🕐 Retry connection

Read parameters   Program

Please click on the "Read Parameters" button. On the right hand side of the page you
will see a window with time, date and the word "Connecting" shown in green. Once
the DCP is connected to the Avire Hub parameters will appear. This means your DCP is
ready to be connected to emergency phones and other products within our Ecosystem.

ADDITIONAL INFORMATION FOR PROGRAMMING THE DCP
SMS COMMANDS

+ All DCP parameters can be remotely configured via SMS sent to the SIM card's number.
+ Each SMS message should begin with 'Pin1234' which is the access code to read or make any changes to the configuration of the DCP.
+ You can modify or check several parameters in each SMS by separating them with commas ","

To send parameter information:

Text	Description
Pin1234, Pzzz xxx *(send)*	• Pin1234 is default PIN code for DCP • Pzzz is the programming command • xxx is the parameter

To read parameter information:

Text	Description
PinXXXX, Pzzz? *(send)*	• Pin1234 is default PIN code for DCP • Pzzz is the programming command • "?" is to request a parameter read

Note: Use a question mark '?' when you are reading parameters.

Examples:

1. To program telephone number 1 in the DCP when connected to a DAU

E.g: Pin1234, P031 0123456789 (send, text message will come back with P031=0123456789)

2. To retrieve telephone number 1 in the DCP when connected to a DAU

E.g: Pin1234, P031? (send, text message will come back with P031= or with the programmed number)

CMD	Description	Default value
P005	CCID– Unique Identifier of the Sim Card	Country dependent
P020	DCP Background Call Mode P020=00 –> Transparent Protocol P020=06 –> CAN Protocol P020=21 –> P100 Protocol	21 (Autodialler's need to make Background calls in P100 Protocol)
P064	Background Call Periodicity (in Minutes)	4320 (3 days)
P030	Maintenance Alarm Number	(Blank)
P031	Alarm Number 1	(Blank – Insert your alarm number here)
P032	Alarm Number 2	(Blank)
P033	Alarm Number 3	(Blank)
P034	Alarm Number 4	(Blank)
P035	Background Number (not used with DAU)	3308084431 (must match Background Number in Autodialler, without prefixes)
P008	Enable Guidance Message *	0 (disabled)
P085	Language	1 – Spanish, 2 – Portuguese, 3 – Italian, 4 – English, 5 – German, 6 – French
P091	Super settings set up	0000
P003	DCP information (software version, type of DCP)	As per package
P051	Dual SIM settings	0

Parameter P051 – Dual SIM card version:

0	SIM0 acting as a primary SIM card. In case of failure of primary SIM, it will switch to SIM1.
1	SIM1 acting as a primary SIM card. In case of failure of primary SIM, it will switch to SIM0.
2	SIM0 – Voice SIM, SIM1 – Data SIM. SIM1 is attahed to network, listening to any incoming calls, once an alarm call is active, the DCP will switch to SIM0 and stay active till the end of alarm.

Important Note: The default PIN code for DCP is always 1234.

Connector Description
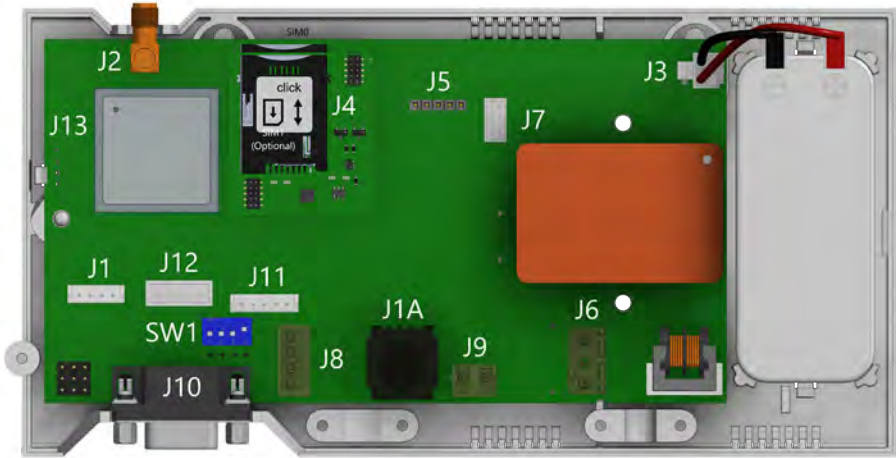
	Description
J2	External antenna
J3	Battery
J6	Power Supply
J8	CANBus
J9/ J1A	Phone line
J10	Serial connector
J11	Programmable I/O

To access dipswitches and connectors, open the DCP case by unfastening the front screw (using a PZ1 screwdriver) and removing the lid.

J2 – **External antenna** – Connect the external antenna delivered with the kit to the J2 connector. Only antennas approved by Avire should be used in the installation, otherwise the device might not function properly and may be damaged.

J3 – Battery

Pin	Function	Signal
1	+12	Positive
2	GND	Negative

J8 – CANBus

Pin	Function	Signal
1	VCC	Unregulated output
2	CANH	Bus CAN H
3	CANL	Bus CAN L
4	GND	Ground

VCC is an unregulated output 10–21 VDC + battery support 10–14 VDC

J6 – Power Supply

Pin	Function	Signal
1	L	Live
2	N	Neutral

Supply voltage: 100–240 VAC, 50/60 Hz

J9/ J1A – Phone line (SLIC)

Pin	Function	Signal
1	L1	Tip
2	L2	Ring

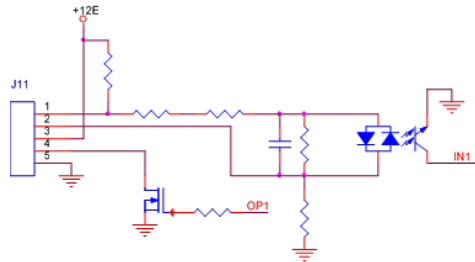## J10 CONNECTOR – RS–232 or 422/485 Serial Connector

The J10 connector is a standard serial communication port that allows the connection of computers, controls or any other device that needs remote communication through a reliable wireless data channel. The connectivity provided by the port is in real time and acts as a point to point transmitter.

Pin	Signal		Pin	Signal	
2	TX	Out	7	RTS	Out
3	RX	In	8	CTS	In
5	Ground	Ground		RS–232	

Pin	Signal		Pin	Signal	
2	T+	T+ RS422	7	T–	T– RS422
3	R–	R– RS422	8	R+	R+ RS422
5	Ground	Ground		RS–422	

J11 – Digital Input/ Output

Pin	Function	Signal
1	AK1	Input Outo–Coupler
2	AK2	Input Outo–Coupler
3	VCC	Output 10–21 VDC
4	OP1	Open collector Mosfet N
5	GND	Ground

SW1	Function	Description
1	Signal tester	Inbuilt signal tester Default OFF
2	Not used	Not used
3	Reserved	Avire internal use only Default OFF
4	CAN Ω	Activates the CANBus End of Line (EOL) for the CAN connector. Default ON − DCP is typically an End of Line device.

LED INDICATORS

The DCP has five indicator LEDs that constantly report the device status. The indicators will be either red, amber or green.

Each indicator will be fully on, fully off or flashing. On start-up, you should see the following within 2- 5 minutes (this will vary):

RUN LED flashes in green.	Power supply is OK
BAT LED is always on	Battery is OK
SIM LED is green or amber	Device is connected to the network
Coverage LED is green or amber	Good coverage
SLIC LED is green	Device is in standby

The below tables provides an overview for what each LED colour means:

RUN LED	OFF	ON			FLASHING		
		Green	Amber	Red	Green	Amber	Red
⏻		CRITICAL SYSTEM ERROR			Proper Operation (AC)	Proper Operation (BAT)	Restarting System

BATTERY	OFF	ON			FLASHING	
		Green	Amber	Red	Orange	Red
BAT		OK	Charging	Low	DAU battery failure	Error

Important Note: DCP shows battery status of DCP or battery failure of any attached DAU units as per EN81-28:2018.

SIM	OFF	ON			FLASHING		
		Green	Amber	Red	Green	Amber	Red
SIM	AT modem	Available GSM and GPRS	GSM available GPRS not available	Out of Service / Initialising	Ongoing Data Transmission	Ongoing voice call	Sim error or missing pin
						Amber/Red Missing PUK	

COVERAGE	OFF	ON		
		Green	Amber	Red
((•))	AT modem	OK	Medium	Low

SLIC	OFF	ON			FLASHING
		Green	Amber	Red	Green
☎	RS-232 local configuration	Local line ready	Initialising local line	Local line out of service	Local line in use

SYSTEM ARCHITECTURES

DCP

2 button Triphony Unit

Universal Power Supply

PIT Phone

LPBus Digital Audio Unit

Induction Loop

CAN Bus Splitter

AVIRE HUB

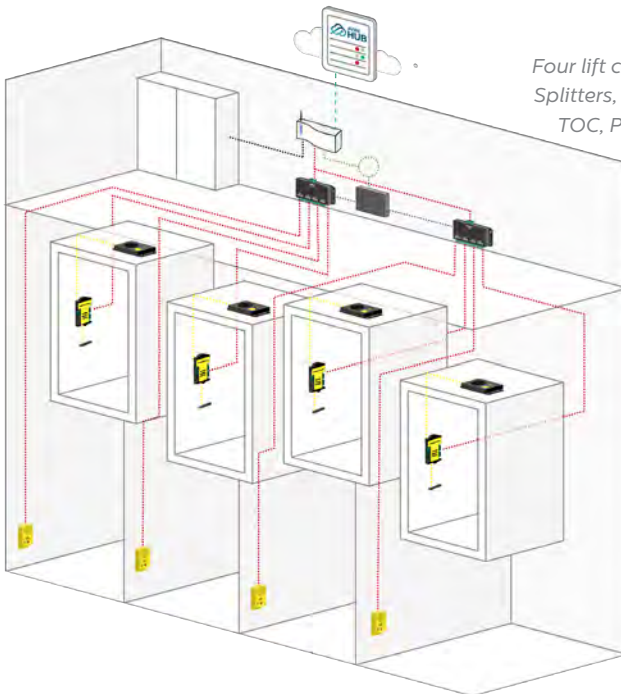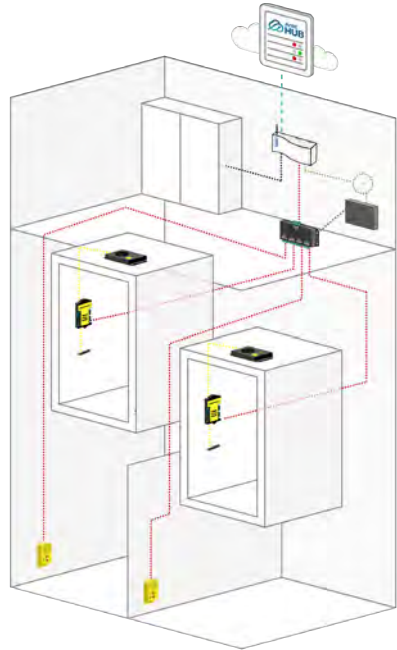*Lift car system architecture with DCP, LPBus DAU, TOC Triphony Unit and Inductive Loop*

CANBus ·······································

LPBus ·······································

Two lift car system architecture with DCP, LPBus DAU, TOC and BOC Triphony Units and Inductive Loops
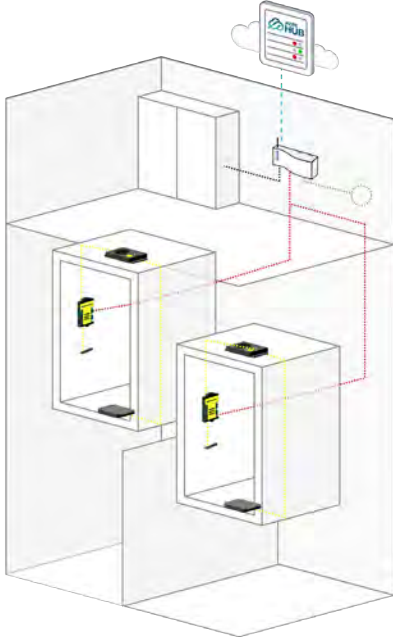
Two lift cars with DCP, UPS, CANBus Splitter, TOC Triphony Unit, LPBus DAU, PIT Phone and Inductive Loops

Four lift cars with DCP, UPS, CANBus Splitters, LPBus DAU, Triphony Units TOC, PIT Phones and Inductive Loops

Notes:

UPS battery back up only uses H and L wires from DCP.

There is a maximum of two CANBus Splitters per DCP.

## Installation with a Digital Audio Unit

When connecting a Digital Audio Unit (DAU) connect the unit or the CAN Bus Splitter to J8 using a 4–core cable (2 wires for power and 2 for communication)

+ If only connecting 1 device to the DCP (e.g. DAU) set SW1 dipswitch 4 to ON
+ It is recommended to use shielded twisted pair cables
+ If connecting 2 devices to the DCP (e.g. 1 DAU and 1 PIT unit) set SW1 dipswitch 4 to OFF
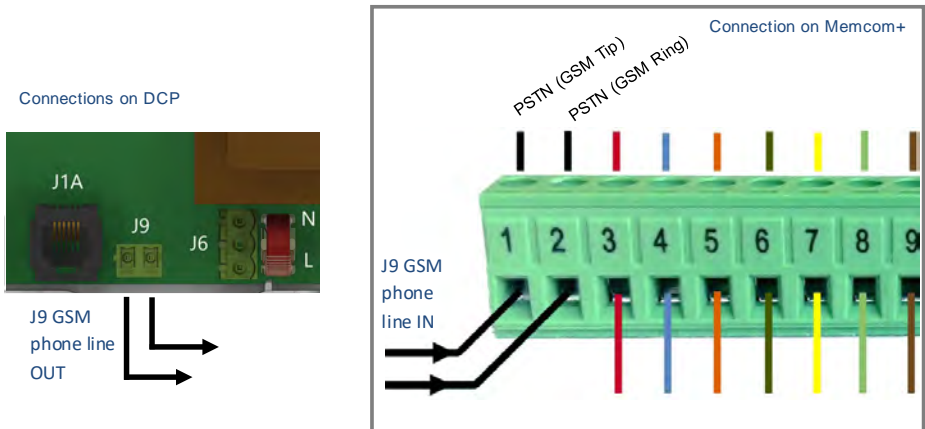+ There are no standard wiring colours for CANBus wiring
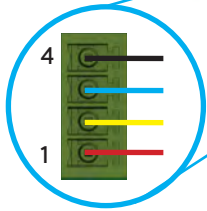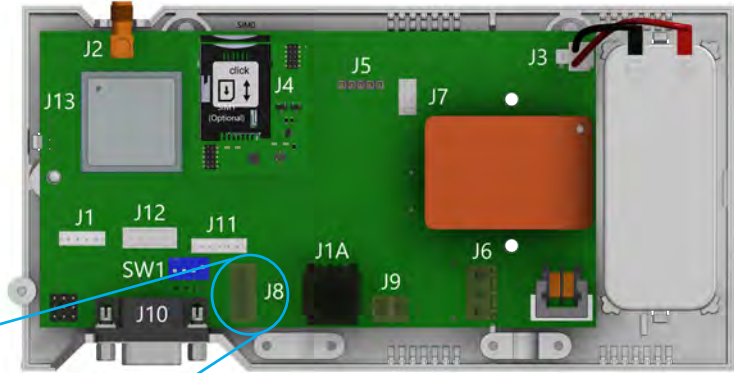
		1	+Vin
J8	CAN BUS	2	CAN H
		3	CAN L
		4	–Vin

Please refer to the DAU Installation guide for full setup of the DAU.
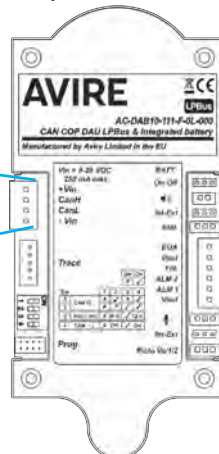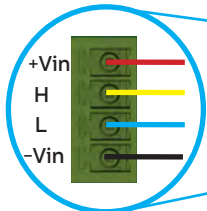
Installation with a Memcom⁺

When connecting a Memcom+ use the analogue phone line connection from J1A or J9.
Please refer to the Memcom+ installation guide for full set up of the Memcom+.

Connections on DCP

Connection on Memcom+

PSTN (GSM Tip)

PSTN (GSM Ring)

J1A

J9   J6   N

L

J9 GSM phone line OUT

J9 GSM phone line IN

1 2 3 4 5 6 7 8 9

INSTALLATION

The equipment is intended for installation in restricted areas by qualified personnel.

ENVIRONMENT CONDITIONS

This device is designed to be used indoors (0°C to 45°C with relative humidity between 20% to 80% not condensing). Sudden changes of temperature and humidity should be avoided.

CLEANING AND MAINTENANCE

Use a soft dry cloth. Do not use solvent or abrasive products.

SAFETY

Please read these safety instructions before starting the device.

+ Do not expose this device to liquids or excessive humidity. The DCP is an indoor device and is not waterproof.

+ Do not expose the device to fire.

+ Do not try to modify the device.

+ Do not use the device in potentially hazardous areas or where there is risk of explosion.

The DCP emits low levels of radio frequency when in operation.

BATTERY

The DCP includes a NiCd 12 V/600 mAh battery that allows it to keep functioning in the event of a mains power failure.

This battery should be replaced every 3 years. Only install batteries authorized by Avire, and only allow qualified personnel to replace the battery.

This battery should be properly recycled and not disposed of with unsorted household waste. Please take all necessary precautions when changing the battery.

DISPOSAL

The device complies with regulations 2002/95/CE and 2003/108/CE regarding the use and disposal of hazardous substances in electric appliances.

Do not dispose of this device with unsorted household waste. Disposing of the device in an unauthorised way could result in a fine in line with local regulations.

ENVIRONMENTAL REGULATIONS

RoHS – Avire certifies that its production process complies with the 2011/65/EU European Directive of 03 January 2013 regarding the restriction of use of hazardous substances in electric and electronic appliances.

GENERAL NOTE

Any wiring or plug used together with the equipment must be certified in line with relevant product standards. The wiring insulation must comply with the applicable IEC 60332 or IEC 60695/11/21 standards.

AVIRE