DIGIAIR PRO 3

DigiAir Pro 3

Introduction

The DigiAir Pro 3 range offers installers easier, faster installation of a professional signalling system with even greater resilience, plus access to CSL Live, our ordering and management portal.

Using the onboard serial connections, pins triggering or dial capture, DigiAir Pro 3 is compatible with a wide range of control equipment including systems installed to EN50136 & PD6662. The range consists of DigiAir Pro 3 Radio and DigiAir Pro 3 LAN - our single-path solutions that utilise either a Radio path or LAN to signal an alarm.
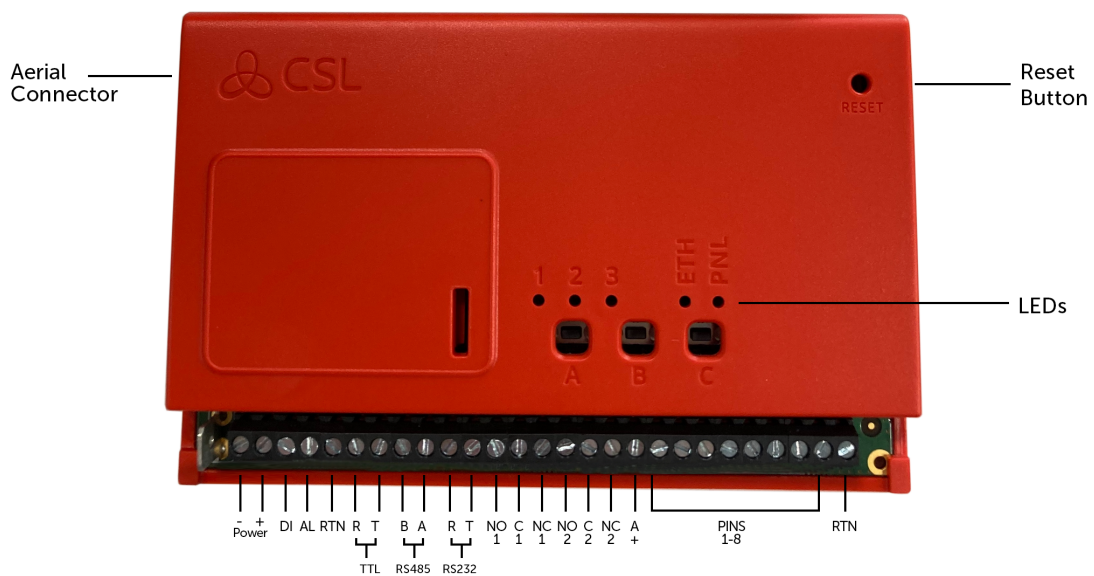

Figure 1 - Exploded View of DigiAir Pro 3

DigiAir Pro 3

Step 1 - Site Setup

DIGIAIR PRO 3 - RADIO

Use a Signal Analyser (available from the CSL Installer Shop) to determine if enough base stations (2 or more) are available at the site and that they can supply sufficient signal strength (30% and above). This will determine the optimum location for the DigiAir Pro 3's aerial to be mounted.

If you do not have a Signal Analyser, we recommend powering up the DigiAir Pro 3, connecting the aerial/s, going through the commissioning process then checking the signal strength before permanently fitting the aerial.

Press the A button to show the signal strength - LED 1 should be green to show an acceptable level of Radio signal/quality. See [View Signal Strength](#) section for more information.

DIGIAIR PRO 3 - LAN

DigiAir Pro 3 uses DHCP as the default IP settings. Fixed IP settings can be added or amended using the My Base App. Fit the Ethernet Cable to the device and connect to the customer's router. Ensure the customer's LAN socket is live and their network allows access to the CSL servers - see https://csl-group.com/uk/installer-zone/survey-form/customer-it-survey-form/ for more information on what is required.

The ETH LED will flash between red, amber and green to indicate the connection is operational and data is being seen on the local network link.

DigiAir Pro 3

Step 2 - Installation

DigiAir Pro 3 must be installed within an enclosure suitable for the installation certification. The unit should be fixed securely using the adhesive pads supplied or via the screw fixings accessible by removing the lid.

Once fitted, ensure:

- The aerial is connected or the ethernet cable is installed, as appropriate
- The alarm panel or PSU is powered down
- Wire the DigiAir Pro 3 in this order.

1. Negative (-) power,
2. Positive (+) power,
3. Serial cable or inputs

- If required, connect the serial cable - RS485, RS232 or TTL (panel dependent) – see Panel Connections section for more information
- Connect any hardwired alarms into the device – see Pin Triggering section for more information
- Connect the fault output
- Ensure that all inputs are electrically isolated
- Restore power to the alarm panel or PSU

IN ORDER TO MAINTAIN COMPLIANCE WITH THE REQUIREMENTS FOR ELECTRICAL SAFETY THE DIGIAIR PRO 3 SHOULD BE POWERED FROM A FUSED CONNECTION WITH THE FOLLOWING RATING:

- **FOR A 12V DC SYSTEM (SUPPLY VOLTAGE IN THE RANGE 10V TO 14V DC) A FUSE RATED AT 1.25 A**
- **FOR A 24V DC SYSTEM (SUPPLY VOLTAGE IN THE RANGE 20V DC TO 36V DC) A FUSE RATED AT 600 MA**

IF THE POWER SOURCE IS NOT LIMITED TO THESE VALUES, THEN A FUSE WITH THE CORRECT RATING MUST BE FITTED IN LINE WITH THE POSITIVE CONNECTION FROM THE POWER SOURCE.

POSITIONING AERIAL

DO	• INSTALL VERTICALLY IN AN OPEN SPACE. • COMPLETE A SIGNAL TEST BEFORE INSTALLING IN THE FINAL POSITION.
DON'T	• INSTALL CLOSE TO METAL OR SOURCES OF INTERFERENCE, E.G. WIRING, LIGHTING, ELECTRICAL INSTALLATIONS, COMPUTERS, MONITORS, ROUTERS & OTHER EQUIPMENT.

DigiAir Pro 3

Step 3 - Commissioning

On power-up, the DigiAir Pro 3 will automatically contact the Gemini Global Platform to perform its commissioning process, which can take up to 5-8 minutes.

Once commissioned, all 3 LEDs will light green for 5 seconds. The device will then reboot.

LED 1 - Power	LED 2 - Comms Path	LED 3 - Commissioned
🟢	🟢	🟢

Figure 2 - Commissioning

On next boot, LED 3 will go green to indicate that the device is fully commissioned.

LED 1 - N/A	LED 2 - N/A	LED 3 - Device Status
⚪	⚪	🟢

Figure 3 - Quiescent/Normal State

If using input pins, whilst in quiescent/normal state, press button C for 5 second to self-learn the current panel input status. LED 3 will flash amber then red and return to sold green once completed.

DigiAir Pro 3

Step 4 - Testing

Before leaving site you must test the DigiAir Pro 3 device as per these steps.

1 - Place device on test at the ARC and send a range of signals from the panel

2 - Perform a path test by tapping button C whilst in quiescent/normal state

3 - LED 3 will flash to show signals are being sent

4 - Check signals are received at the ARC

See [Troubleshooting](#) for further details.

DigiAir Pro 3

Customising the DigiAir Pro 3

All device programming can be performed using the My Base App or website. Download the app from App Store or Google Play and enter your credentials. Alternatively in a browser go to My Base.

If need be, you can use the one-time access page to install a device using your mobile phone or web browser without login details. Follow this link and enter the device serial number and connection ID.

USING THE BUTTONS & LEDs

Once commissioned, the DigiAir Pro 3 enters the quiescent or normal state. In this state, LED 3 will show the device status and there will be no other activity on LED 1 or 2. See Figure 3 - Quiescent/Normal State above. The LED colour indicates the current status

- Green = path and system are OK
- Amber = path is not working
- Red = error

From this state you can
- Press Button A to view the signal strength/LAN connectivity
- Press Button C to generate a Test Call
- Press and hold Button C to execute Pin Learn

VIEW SIGNAL STRENGTH

Press Button A once to view the signal strength. LED 1 will show the signal/connectivity status of your path.

- Solid green = good signal
- Flashing green = acceptable signal
- Flashing amber = emergency, only/low signal available (move aerial)
- Flashing red = SIM not ready/no signal available (move aerial).
- Red = error

VIEW LAN CONNECTIVITY

Press Button A once to view the LAN connectivity. LED 1 will show the connectivity status of your path.

- Solid green = good connection
- Amber = connection to local network is good but no access to internet/CSL
- Red = error – check the ethernet cable and ETH LED

Press Button A again to return to Quiescent/Normal State.

LED 1 - Primary Path	LED 2 - N/A	LED 3 - N/A
🟢	⚪	⚪

Figure 4 - Connectivity

GENERATE A TEST CALL

Press Button C once from Quiescent/Normal State to send a Test Call

EXECUTE PIN LEARN

From the Quiescent/Normal State, press and hold Button C for 5 seconds to allow the device to perform a self-learn of the current input pins. LED C will flash once complete. See Pin Triggering for more information.

DigiAir Pro 3

Panel Integrations

Your device will come pre-configured to connect to the panel using pin triggering. In My Base it will show Panel Type = pins only.

A panel can also be connected using

• Dial Capture (PSTN Modem)
• TTL
• RS232 (including ATS 7090)
• RS485
• Ethernet

To enable any of these connections to a control panel, install the appropriate cabling then go to the My Base App and select the correct panel type. See Panel Integrations for more information.

Panel guides can be found by

• Clicking the panel type (after selection) via the My Base App
• Scanning the QR code below
• Visit the Installer Zone on our website.

PIN TRIGGERING

For this operation, the device is triggered by removing or applying zero volts to input terminals 1-8. No external pull-up resistors will be required. This is generally achieved via the digital communicator outputs of a control panel. On receiving an input to the pin terminals, the unit will signal alarm conditions and will generate the relevant messages and forward them via the Gemini Global Platform to the ARC. Installers are advised that the intended use should avoid situations where the rate of trigger exceeds the rate at which messages are received at the ARC receiver.

Please read the panel installation guide with regards to the triggering of DualCom Pro input pins.

If the installation does not use relays to trigger the input pins (for example positive applied) then the zero volts must be common between the power supplies of the panel and the DualCom Pro.

If the input pins are driven by relays from the panel and these are not electrically isolated then consider introducing opto-isolators between the relays and the input pins, otherwise the pins may not operate as intended.
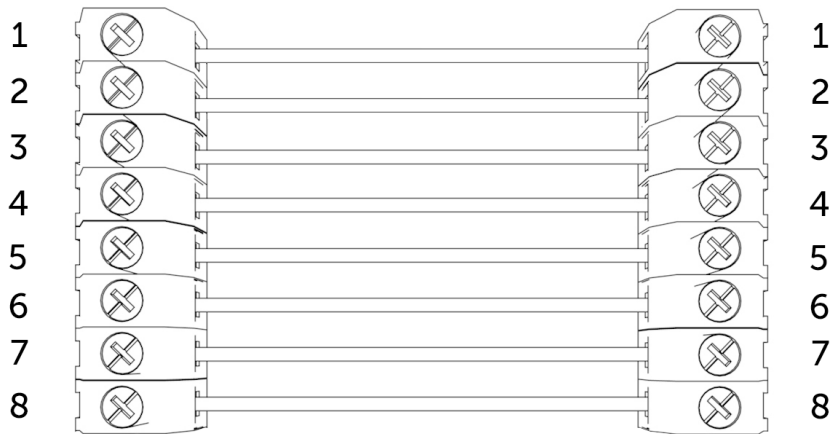
Control Panel

DigiAir Pro 3

Figure 5 – Example of pin triggering wiring

CONFIGURING PIN INPUTS

To self-learn the current panel input status, press button C whilst in quiescent/normal state for 5 seconds. LED 3 will flash red twice once completed.

To change the input from negative removed or applied to positive removed or applied, change the pin bias via My Base under the Hardware menu button and use the A+ terminal instead of RTN.

IF YOU CANNOT CHANGE THE PANEL'S POLARITY AND YOU DO NOT HAVE ACCESS TO MY BASE OR THE WEBSITE, PLEASE SPEAK TO OUR TECHNICAL SUPPORT TEAM.

DualCom Pro pin inputs 1, 2, 3, 5 – 8 generate SIA untyped alarms UA/UR8001 to 8012 on standard product configuration e.g.

[#123456|NUA8001|AChannel 1 Alarm]
[#123456|NUR8001|AChannel 1 Restore]

DualCom Pro pin 4 Open / Close inputs generate SIA alarm OP and CL OP/CL8004 on standard product configuration e.g.

[#123456|NOP8004|ASystem Set]
[#123456|NCL8004|ASystem Unset]

CONFIGURING OUTPUTS

Both outputs can be configured as either Normally Open (NO) or Normally Closed (NC), as required. Output 1 is defaulted to indicate a total path fail condition to the

control panel. Output 1 can be reconfigured to indicate another path failure type, Output 2 can be configured as a manual trigger. To make any amendments please use the My Base App.

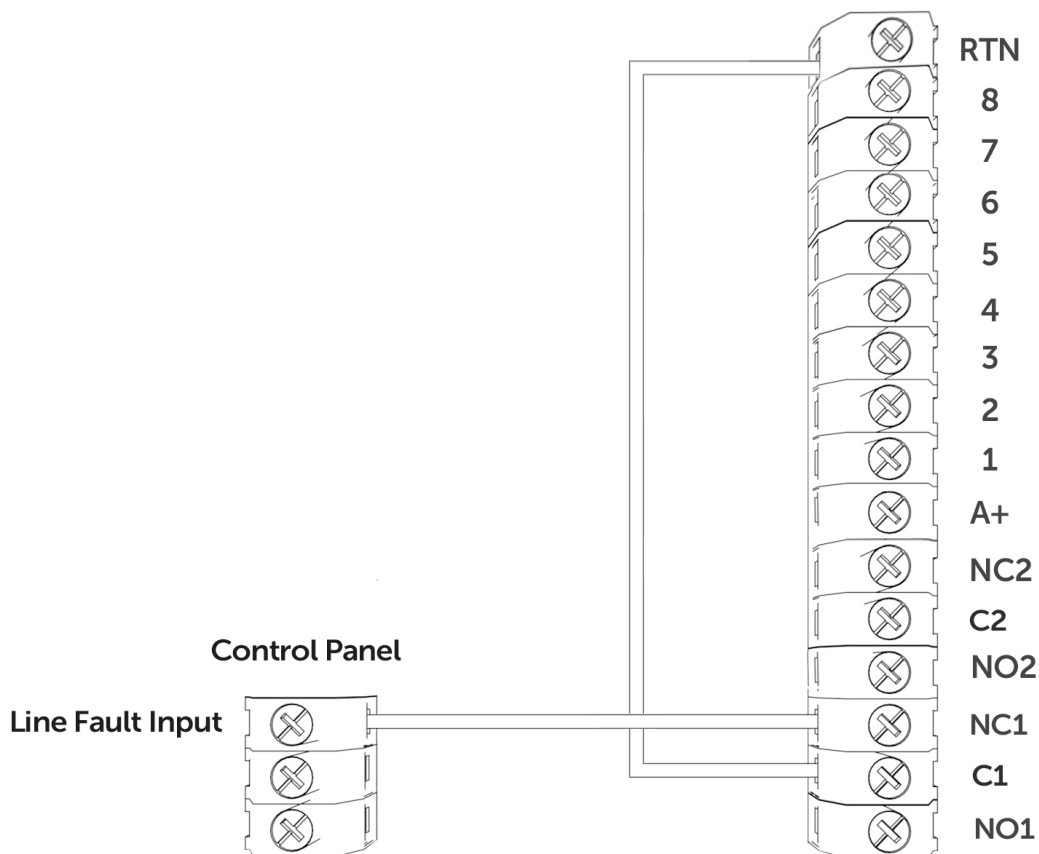> IF THE DEVICE IS POWERED BY A 24V (FIRE PANEL) SUPPLY, THE A+ TERMINAL WILL STILL DELIVER 12V

Figure 6 - Example of Fault Output Wiring

PANEL CONNECTIONS

DIAL CAPTURE

DigiAir Pro 3 simulates and replaces the phone line connection to the control panel's Digi-Modem. The control panel's Digi-Modem must use one of the following alarm formats: Fast Format*, Contact ID or SIA. In the event the control panel needs to send a signal to the ARC, DigiAir Pro 3 will capture the message and forward it, via Gemini, to the ARC. The Digi-Modem must have an ARC telephone number (ie 01)

and account number (i.e. 1234) programmed for Dial Capture to work. If you want to monitor the Dial Capture connection, you will need to connect an output configured as PSTN line fault on your control panel, to one of the DigiAir Pro 3's inputs. That input then needs to be designated as Dial Capture Fail at your ARC.

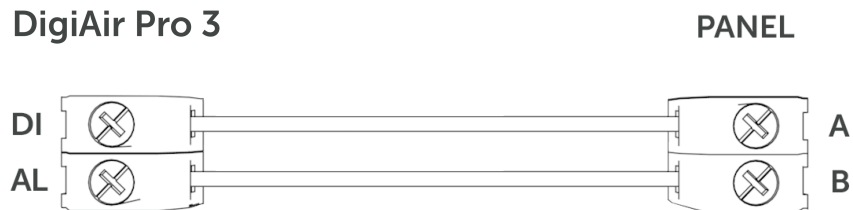*Please confirm compatibility of Fast Format with DigiAir Pro 3 via your ARC.

Figure 7 - Dial Capture Wiring

DC09 CONNECTIONS

Only the DigiAir Pro 3 LAN can connect to a panel using DC09. The panel and the DigiAir Pro 3 must both be connected to the customers LAN. See the Generic DC-09 TCP/IP Guide for set up instructions.

SERIAL / RS232 / 485 / TTL PANEL CONNECTIONS

As standard, DigiAir Pro 3 is supplied with a serial cable compatible with Honeywell (RS485), Orisec (TTL), Pyronix (RS232), Texecom (TTL) and HKC (TTL) panels. Other types may require an additional cable/plug-in that can be purchased on our Installer Shop. It is possible to use pins and serial cable together, if required.

MANUFACTURER	PANEL	CONNECTION	CABLE PLUG	WIRE	CONNECTOR
Honeywell	Galaxy	RS485	4 Pin (cable provided)	Green	RTN
				Blue	RS485-B
				Red	RS485-A
Orisec	All	TTL	4 Pin (cable provided)	Green	RTN
				Blue	TTL-T
				Red	TTL-R

Pyronix	Euro/Enforcer	RS232	6 Pin (cable provided)	Green	RTN
				Blue	RS232-R
				Red	RS232-T
Texecom	Premier/Elite	TTL	5 Pin (cable provided)	Green	RTN
				Blue	TTL-R
				Red	TTL-T
HKC	1070/10270	TTL	4 Pin (cable provided)	Green	TTL-R
				Blue	RTN
				Red	TTL-T

Figure 8 – Panel Connection Information

Figure 9 – Serial Cable (RS232/485/TTL)

YOU MUST POWER DOWN THE CONTROL PANEL AND DUALCOM DIGIAIR PRO 3 BEFORE CONNECTING THE SERIAL LEAD, TO AVOID DAMAGE.

For RISCO, Eaton, UTC and other panels, please purchase the relevant cable from CSL Live. For other connections or further instructions on Control Panel programming, panel guides can be found by clicking the panel type (after selection) via the My Base App, by clicking the link below or visiting the Installer Zone of our website.

CLICK HERE TO FIND YOUR PANEL

DigiAir Pro 3

Troubleshooting

Interpreting the LEDs

The LEDs provide summary information as to the state of the device is. For further information go to [My Base.](#)

⚪	LED off
🔴	Red Flashing
🔴	Red Solid
🟠	Amber Flashing
🟠	Amber Solid
🟢	Green Flashing
🟢	Green Solid

Figure 10 - LED Key

As the DigiAir Pro 3 powers up for the very first time it will run through its commissioning process. You will need to wait for LEDs 1, 2 & 3 to go green before the unit reboots.

LED 1	LED 2	LED 3
⚪ No power	🔴 No comms	🔴 No comms
🔴 Power start up	🟠 1 path comms (dual-path systems)	🟠 Comms path found
🟢 Power on		🟠 Commissioning server found. Contacting alarm server
		🟢 Fully commissioned

Figure 11 – Commissioning LEDs

Once commissioned, the unit will return to its quiescent/normal state. LED 3 should be visible and LEDs 1 & 2 will be off. LED 3 will show you whether the unit has any errors or is transmitting data.

LED 3

🔴
Red: Internal error (not commissioned or configuration error) – please contact Tech Support
🟠
Flashing Amber: Communication error – please press Button A for more details
🟢
Green: Device is operating normally
◑
Flashing Green: Device is operating normally and transmitting or receiving data

Figure 12 - Quiescent/Normal State LEDs

From the quiescent/normal state, press button A. Only LED 1 will show.

LED 1
🔴
No signal / SIM not ready or LAN not connected
🟠
Registering / Signal is unacceptable / LAN connected but cannot transmit data
◑
Signal is acceptable (3/10) but could be improved
🟢
Signal 4/10 (or above) or LAN connected

Figure 13 – Connectivity Section

There are 2 additional LEDs shown as PNL and ETH.

LED	DESCRIPTION	LED DESCRIPTION
PNL	Serial connection to panel	⚪ ◑ ◑ Indicates if any of the serial connections to a panel are in use. If the LED is flashing green, data is being transferred. This LED will not be lit if there is no serial integration to the panel.
ETH	LAN connection to customer's network	⚪ ◑ ◑ Indicates if there is a LAN connection to the customer's router. If the LED is flashing green, data is being detected on the local link. This LED will not be lit if there is no physical LAN connected.

Figure 14 – Additional LEDs

RADIO ONLY TROUBLESHOOTING

Q. How can I fail my signalling paths without having to disconnect them?

A. To fail each path, from Quiescent/Normal state, press Button A. Press and hold B for 5 seconds to fail the primary path. The path will stay in fail for 15 mins unless you tap B again to restore the path.

Q. How can I check the signal strength of each radio module?

A. You can check the signal strength of the radio module on a commissioned device via the [My Base App](#). Alternatively, when in the quiescent/normal state, you can press button A to toggle to the connectivity menu. Once there, LED 1 (first path) will show you the signal strength. We recommend a solid green LED (40% or 4/10 and above).

Q. Does my unit have a roaming SIM?

A. Yes, all DigiAir Pro 3 Radio devices come with 2 Roaming 4G SIMs

Q. My signal strength is 30% (3/10) or less or my LED is orange/red. What can I do to improve it?

A. You can improve this by:

• Avoiding coiling the aerial cable
• Moving the aerial away from electrical equipment/wiring
• Moving the aerial to a higher point in the property or closer to a window/door

LAN TROUBLESHOOTING ONLY

Q. Why is my LAN path not working if my ETH LED is flashing green?

A. This means the device can see it is connected to the customer's router but there is a network configuration error. This type of fault can be due to the below:

• The network administrator has not amended the firewall rules as required. The required information can be found in the "Customer IT Survey Form" on [the installer zone](#).

• If the device requires static IP addresses and these have not been added to the "Edit LAN Config" section of My Base. As standard the site records are setup with DHCP.

Q. Why is my ETH LED not flashing if I have connected the ethernet cable to the device?

A. This means the device is not able to see a physical connection. We would advise testing the RJ45 ethernet cable and also making sure the port the cable is plugged into is live and not disabled/suspended.

Q. Does my device require static IP addresses?

A. No, it will also work with DHCP.

Q. Does the DigiAir Pro 3 support any type of negotiation speed?

A. No, the DigiAir Pro 3 will only support negotiation speeds of up to 100Mbps.
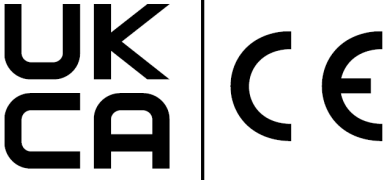
DigiAir Pro 3

Technical Specifications

Dimensions	Radio: 75 mm (h) x 115mm (w) x 16mm (d) LAN: 75mm (h) x 115mm (w) x 23mm (d)
Weight	106g excluding aerial
Temperature	-10 °C to + 55 °C
Humidity	0 - 90% non-condensing
Mounting	Via fixing points under main cover
Warranty	Please refer to our [terms and conditions](#).
Power Requirement	10 - 36 Volts. In order to maintain compliance with requirements for electrical safety the Dualcom Pro should always be powered from a fused supply with following rating: • For a 12V DC system (supply voltage in the range 10 Volts DC to 14 Volts DC) a fuse rated at 1.25 • For a 24V DC system (supply voltage in the range 20 Volts DC to 36 Volts DC) a fuse rated at 600 mA If the power source is not limited to these values, then a fuse with the correct rating must be fitted in line with the positive connection from the power source. The SPT will shut down on detecting a low supply of 7.6 Volts DC +/- 0.5 Volts DC
Current Consumption	DigiAir Pro 3 Radio attached to Security Panel: 66 mA (average value) DigiAir Pro 3 Radio attached to Fire Panel: 55 mA (average value) DigiAir Pro 3 LANattached to Security Panel: 78 mA (average value) DigiAir Pro 3 LAN attached to Fire Panel: 62 mA (average value)
Radio Path	2G, 3G, 4G
Output Ratings	Maximum applied voltage = 60V Maximum current = 150mA
Aerial	50 ohms (nominal) on MMCX socket
Operation Method	Store and forward
CIE Interconnections	Input triggering (standardised parallel), RS232, RS485, TTL
RCT Protocols	Surgard MLR2
Input Terminals	Max +30 Volts, Min 0 Volts DC (reference supply 0V) with a + or – 40% change for > 200ms.
User Serviceable Parts	There are no serviceable parts within the DualCom Pro Range
Applicable Standards	Suitable for use in alarm systems complying to: • EN50131-1:2006+A1:2009+A2:2017+A3:2020 • EN50136-1:2012+A1:2018 • PD6662:2017 • PD6669:2017 Emissions Standard – Radio Equipment Directive 2014/53/EU (RED) EN 50130-5 Environmental Class II ATS Classification EN 50136-2:2013 SP2, SP3, SP4 ATS Configuration EN 50131-10:2014 Type Y ATS Classification EN 50136-1-1:1998 • Radio D3, M3, T4, S2, I3, A4 (ATS5) • LAN D3, M3, T5, S2, I3, A4 (ATS5)

DIGIAIR PRO 3

PATH	AVAILABLE GRADES	WHAT'S IN THE BOX	PART NUMBER
Radio	SP2	DigiAir Pro 3, serial cable & small aerial	CS.51.R2
LAN	SP2, SP4	DigiAir Pro 3, serial cable & small aerial	CS.51.L2, CS.51.L4

UK CA | **CE**

24

CS.51.HWR.03 / CS.51.HWL.03

CSL DualCom ltd.
Building 4, Croxley Park, Hatters
Lane, Watford, WD18 8YF

KIWA 0063-CPR-242190032/00

EN 54-21:2006
Fire detection and fire alarm
systems / Alarm transmission and
fault warning routing equipment

EN 50131-10:2014
EN 50136-1:2012/A1:2018
EN 50136-2:2013
PD6662:2017 / PD6669:2017

Type of transmission system: Fire
Safety - Type 1
Security - SP2, SP3, SP4, SP5
Security Grade: 1- 4 depending
on the
I&HAS housing in which it is
installed.
Environmental Class: II
Certification Body:Kiwa
Nederland B.V.

www.csl-group.com

DigiAir Pro 3

Fire Guide

DualCom Pro Fire Guide

This document covers the requirements of a Fire installation and is a supplement for the GradeShift Pro 2 and DigiAir Pro 3. The guide uses DualCom Pro Fire to refer to both product variants.

Mounting

The enclosure requirements for the DualCom Pro Fire are the same as for the Fire Alarm Panel itself which must meet the requirements of the EN54-21 standard.

The DualCom Pro Fire should be mounted inside the Fire Alarm Panel or inside a separately powered housing that meets the requirements of section 7.3 of the EN54-21 standard.

Input Pins

The default pin profile configured at installation is "PinLearn Fire". With this, pins 1 and 2 are configured for use with fire alarm panels (EOL mode) and will generate a SIA Tamper Alarm/Restore in response to additional conditions along with Alarm and Restore with the other pins:

- Open circuit and open circuit restore
- Short circuit and short circuit restore
- Fault

If additional pins are required in EOL mode, use My Base to configure the DualCom Pro Fire to use pin profile "PinLearn EOL Pins 1-12". In this configuration all pins on the DualCom Pro Fire will respond to the additional conditions and generate the corresponding events to the Gemini Global Platform.

Pin 1: intended for receiving the Fire Alarm/Restore signal from the Fire Alarm Panel.

Pin 2: intended for receiving Fault/Restore signal from the Fire Alarm Panel.

Remaining Pins: used for receiving notifications from any other device (e.g. an Intruder Panel). These pins take a lower priority than pins 1 & 2 when signalling to the Gemini Global Platform.

Input Pin Wiring

Please read the panel installation guide with regards to the triggering of DualCom Pro input pins.

If the installation does not use relays to trigger the input pins (for example positive

applied) then the zero volts must be common between the power supplies of the panel and the DualCom Pro.

If the input pins are driven by relays from the panel and these are not electrically isolated then consider introducing opto-isolators between the relays and the input pins, otherwise the pins may not operate as intended.

Input pins, which are configured in EOL mode, require 10k and 4k7 Ohm resistors to be wired in line as shown below.

The DualCom Pro Fire uses a normally closed configuration so that a power fail on the Fire Alarm Panel will signal an alarm to the Gemini Global Platform.

- If the circuit is broken, then an open circuit tamper alarm will be generated
- If it detects 0v, then a short circuit tamper alarm will be generated
- If the wrong resistor values have been used, then a fault tamper alarm will be generated

Example Of Wiring Using Normally Closed

DualCom Pro Fire

Fire alarm relay   Fire fault relay

Fire Alarm Panel
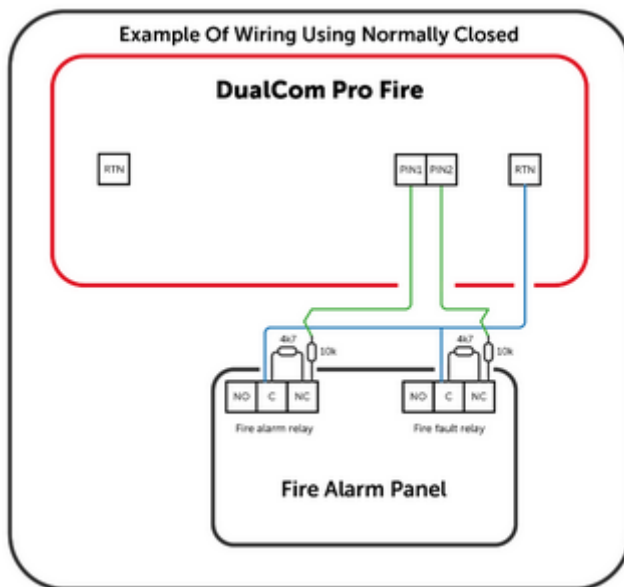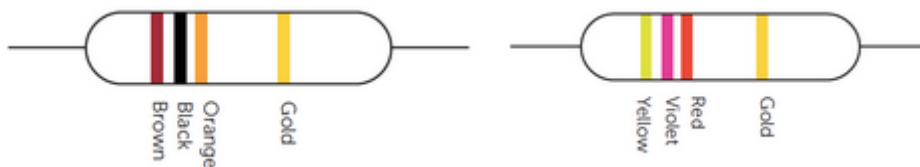
Resistors

These are the colour code markings for the 10k Ohm and 4k7 Ohm resistors respectively.

Self-Learn

If the self-learn functionality (Press Button C for 5 seconds) is invoked when an EOL pin is Alarm State then the DualCom Pro Fire will switch to generating a Restore event when a high voltage is detected for that pin going forward and an Alarm event

when a low voltage is detected.

Relays

The relays are intended to notify the Fire Alarm Panel of events on the DualCom Pro, Gemini Global Platform or from the ARC. Their configuration is fixed in Fire Mode and cannot be changed via My Base.

When the DualCom Pro is unpowered, NC is connected to C and NO is not connected to C.

When the DualCom Pro is powered and in a quiescent state, Relay 1 has the NO1 connected to C1 and the NC1 is not connected to C1.

If a fault occurs then, Relay 1 changes such that NO1 is not connected to C1 and NC1 is connected to C1. When the fault is cleared it will revert.

Fault conditions include:

- If any of the input pins being monitored enter a fault state
- If there are communication path issues (Line Fault)
- If there is an alarm/restore that is sent to the ARC for one of the monitored pins and a response is not received within the configured timeout
- If there is a power failure

Relay 2 will connect NO2 to C2 and disconnect NC2 from C2 relay for 5 seconds to indicate that the ARC has acknowledged successful receipt of an event.

Relay Wiring
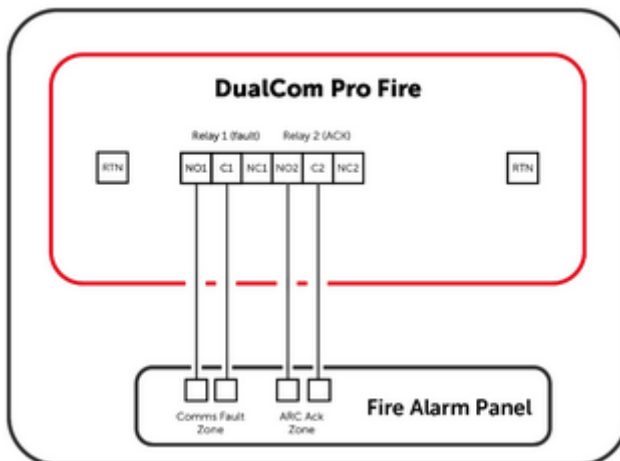
Fault Reporting

To meet the EN54-21 requirements for monitoring on Type 1 Fire systems, this device sends regular polling calls to the Gemini Global Platform on all connected and active transmission paths. The Installer shall ensure that appropriate reporting actions have been agreed with the ARC for all alarm codes, transmission path failure notifications and polling failure reports from the Gemini Global Platform.