

Simply protected

EMiZON

Seriously secure

EMiZON IP

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TCD

Telemetry Communications Device

Installation Guide

For alarm control panels using up to 16 pins, RS232, RS485 and dial capture.
For compliance with EN alarm signalling Grade 2, 3 and 4 and BS 8418 for CCTV broadband service monitoring.

www.emizon.com

Emizon reserves the right to adjust specifications of this system, at any time and without notice, in the interests of product improvement.

Welcome to Emizon IP

Emizon IP is the always on, dual-path, alarm and CCTV communications monitoring service for Broadband/IP networks. It means that your customers can embrace the benefits of the digital age and be sure of the highest security standards.

This guide contains a step-by-step guide to the installation and commissioning of the TCD, the gateway to the Emizon IP service.

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Emizon Online Maintenance

- ⇒ **Site Diagnostics.** Allows you to communicate securely with TCDs across all your installations. Use this service to check alarm status, change pin configuration, check signal strength, set the panel type or set and unset relays connected to CCTV systems.
 - ⇒ **Upload Download (UDL)** for panel maintenance - a secure connection from the TCD to the panel, using RS232, RS485 or dial capture.
- Register for Online Maintenance at the iZone section of emizon.com

Compliance

CE The TCD complies with the requirements of the European EMC Directive (89/336/EC), the Low Voltage Directive (72/23/EC and 93/68/EC) & from (1/1/2006) the 'Reduction of Hazardous Substances Directive' (2002/95/EC). Appropriate components also comply with the requirements of the R&TTE Directive (1995/5/EC). EN55022 Emissions Class B. EN50130-4 Immunity. And 89/336 Electro Magnetic Compatibility Directive) as amended by 92/31/EEC.

Signalling Compliance

Emizon IP is suitable for installation in systems complying with EN 50131-1 and is available to comply with EN Signalling Grades 2, 3 and 4. Emizon IP Grade 4 has been tested and passed to LPS.1277 by BRE/LPCB for compliance with the highest Grade 4 EN signalling standards.

Environmental Compliance: Environmental Class 2

Warranty

Emizon will repair or replace, at our discretion, any Stand-Alone TCD developing a fault within 18 months, free of charge. Products for repair should be returned to Emizon suitable packed to prevent damage (including any damage from electrostatic discharges), and be accompanied by full details of the fault and the return address.



Disposal

The symbol shown here and on the product, means that the product is classed as Electrical or Electronic Equipment and should not be disposed of with other household or commercial waste at the end of its working life. The Waste Electrical and Electronic Equipment (WEEE) Directive. (2002/96/EC) has been put in place to recycle products using the best available recovery and recycling techniques to minimise the impact on the environment, treat any hazardous substances and avoid the increasing landfill.

Product disposal instructions for residential users:

When you have no further use for it, please dispose of the product as per your local authority's recycling processes. For more information please contact your local authority.

Error and Fault Codes

The TCD comes with in-built fault finding capability. When detected, error and fault conditions are shown on the display with the letter E or F. The display may also show a number code to indicate the nature of the problem. The most common codes together with the potential reasons and solutions are shown on the table below:

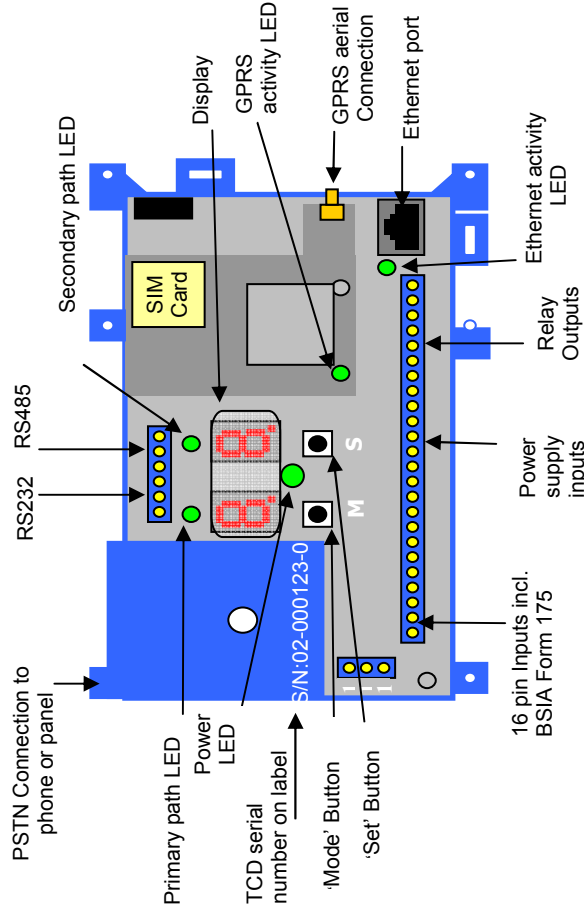
Display Code	Possible reason and Solution
F 0	Fault code 0: Configuration read from flash failed – device is faulty please replace with a new TCD.
E 0	Error code 0: IP path not connected. Check Ethernet cable from TCD to router/network connection. Make sure connectivity to router and that either DHCP is enabled on the router or a static IP address has been input by the Emizon helpdesk.
E 1	Error Code 1: Unable to contact Emizon Service Platform for configuration parameters. Check IP path is continuous to customers router (is green LED flashing on Ethernet port ?).
E 2	GPRS Registration state not 1 or 5. If this persists, it indicates poor GPRS coverage or an aerial location problem.
E 3	GPRS Connection not available. If this persists it indicates the TCD is unable to connect to the GPRS IP network.
E 4	Serial Connection to Alarm Panel failed (if configured). Check the panel serial connection on the RS232/RS384 ports.
E 5	Dial capture Connection failed (if configured). Physical wiring connection between the TCD and the panel has failed.
E 6	Not ARP Response. Cannot detect local gateway/ router. Indicates no response from router. Most likely causes; TCD plugged into wrong network, router not online or has a different IP address.
E 7	Cannot detect Emizon Service Platform. Most likely causes; customers internet connection is down or Firewall blocking internet access on desired port range (TCP 18000-18049)
Firmware Update Codes	
U F	UF followed by a value of between 00 and 99 indicates that the firmware update process is in progress.
F E	FE followed by any value indicates an error in firmware update process. Repeat and if same result check network connection.
r r	rr followed by 11, 01 or 10 indicates the firmware update is complete and the TCD is ready to be rebooted.
U C	Update process complete

10 For help and advice our Helpdesk **0844 412 9009**

Before You Start

- 1. Complete the Customer IT Survey Form**
Downloadable at: www.emizon.com/surveyform/ The TCD is DHCP enabled and will automatically request an IP address. A static IP address can be assigned using the site diagnostic service or by calling the Emizon technical desk.
- 2. Firmware Update and Dial Prefix for PSTN lines**
Please conduct a firmware update on IP to make sure that the TCD is updated with the latest firmware before going to site. The dial prefix number can be assigned to the TCD via the GPRS path using the site diagnostic service or by calling the Emizon technical service desk.
- 3. Check the Router Port Connection**
The Ethernet port on the TCD connects to an Ethernet connection at the customer's premises using a standard Cat5 Ethernet cable. If required additional ports on a router can be made available by using an Ethernet hub, sourced from IT suppliers, who also supply Ethernet cable lengths. Instructions to make up a Cat5 patch cable can be found in the downloads section of the website emizon.com.
- 4. Check Wireless GPRS Signal Strength**
The GPRS module is enabled but will require sufficient signal strength to operate. For a quick indication place a mobile phone next to the panel - 2 bars or more is usually sufficient. For a more precise reading use the TCD diagnostic facility which displays the signal strength in a range from 0 to 31—a reading of 12 is required. High gain aerials can be used to boost GPRS reception and are available from: orders@emizon.com or online at <http://shop.emizon.com>
- 5. Power Down the Panel**
As with the process for installing any type of alarm communications (Digi/STU) the panel must be on test and then powered down.
- 6. Protect against Static Electricity**
To protect the electrical components of the TCD from static electricity we recommend that you are earthed whenever you handle the equipment using a wrist strap and a 1M resistor.

TCD Components



Technical and Power Supply Data

Technical Data

16 Pin alarm inputs:
 Logic low -0.5v to +0.8v. Logic high 3.6v to +30v
 3 relay outputs - Contact rating is:1A@30V DC

Power Supply Requirements

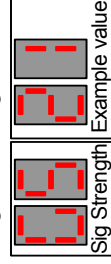
11.25v DC to 14v DC
 Low battery threshold 10.8v +/- 0.2v DC
 Current typical 320 mA and 350 mA max at 12 volts DC

Diagnostics and Fault Finding

The TCD incorporates a diagnostic mode for specific types of information, such as signal strength and GPRS registration; shown in digital format on the display. To access the diagnostics give the "Mode" button a **light tap**—the display will remain in this state for a period of 2 minutes. The display will show a code for the parameter on display for example "GS" is for signal strength together with the associated value.

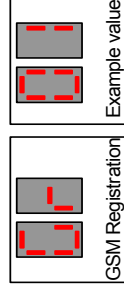
GPRS Signal Strength (GS)

Signal strength value ranges from 0 (zero strength) to 31 (maximum strength). A value of **12** or more is normally acceptable. '99' indicates that the GPRS modem cannot properly discern the signal strength.



GPRS Registration Status (GR)

The display will then show the GPRS registration status. GR '01' indicates that the TCD is registered on the home network. GR '05' is the registered state for a roaming SIM.



Notes:

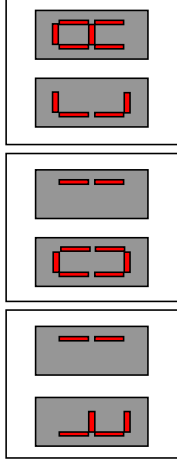
- ⇒ Each TCD has a unique serial number located on the manufacturer's label - you will need this number during the ARC commissioning process.
- ⇒ The TCD can be used for compliance to BS.8418 for CCTV and for EN signalling Grades 2, 3 or 4. The signalling Grade is specified when ordering the Emizon IP service.
- ⇒ For IP/broadband connections the fixed IP path is the primary and the GPRS is the secondary path.
- ⇒ For PSTN connections the GPRS is the primary and the PSTN is the secondary path.

Step-by-Step by Guide to Commissioning

Step 5: Commissioning with your ARC

- ⇒ Call your ARC with the TCD serial number. The ARC will then 'associate' or link the TCD to the customer details on their system and 'activate' it.
- ⇒ Press the 'Set' (RH) button for 5 seconds.
- ⇒ The display will then alternate between 'tl', '01' and then display 'CA' (completely activated) indicating a successful activation. The primary and secondary path LEDs will change to solid green to indicate that they are communicating with the Emizon Service Platform.
- ⇒ PSTN connections will take longer to register than IP.
- ⇒ For added security there is a time out period, usually 20mins, to press the set button following ARC activation.

The following codes are shown on the display:



Note: If the TCD is re-powered at any time you will need to repeat the ARC commissioning process

Step 6: System Test and Fix Aerial

- ⇒ Following successful activation, press and hold the set button for 5 seconds and the TCD will automatically send test alarms on both of the signalling paths.
- ⇒ Check with your ARC that the signals have been received—GPRS and IP alarms will be faster than those using PSTN.
- ⇒ Testing complete, affix the aerial in place on top of the panel.

NB: Emizon IP is a dual-path service - the TCD must be commissioned with both paths fully activated before leaving site.

Step 1: Fit the TCD in the Alarm Control Panel

The TCD can be connected using pin inputs, RS 232/485 or dial capture:

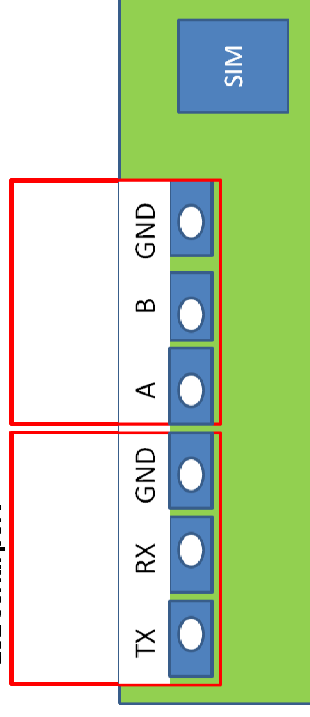
Using Pin Inputs

- ⇒ Connect the TCD pin inputs to the panel. The default is +ve removed.
- ⇒ Connect the power supply to the TCD power supply input, carefully observing the correct polarity

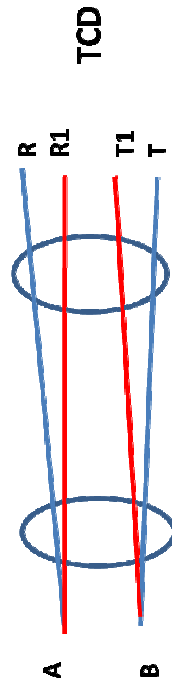
Using RS232/RS485 Connection

RS232, 3 wires for connection to panel 232 serial port

RS485, 3 wires for connection to panel bus



Using Dial Capture



Connect the A and B terminals on the panel to the R, R1, T1, T terminals on the TCD. For dial capture the TCD is used as the input.

Step 2: Connect TCD signalling paths

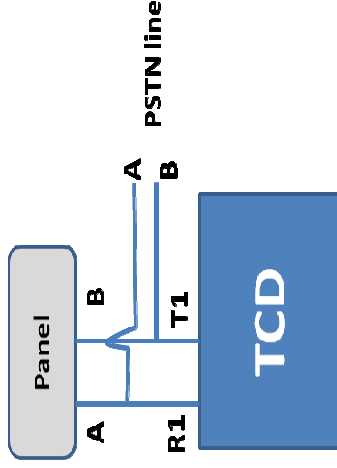
GPRS Place the aerial on top of the panel but wait until final testing before fixing in place with sticky pads. Run the connector wire down the back of the panel and connect the aerial to the MMCX connector on the GPRS board.

Using IP/Broadband

⇒ Connect the Ethernet port to the network connection/router in the customer's premises using Cat5 cable.

Using PSTN

⇒ Remove the plastic casing and connect the pstn line to Terminals T1 and R1. NB: **Only T1 and R1 will work with PSTN** .



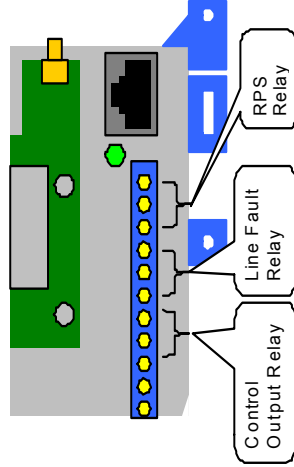
Using UDL with PSTN

Diagram to show wiring for a TCD connected to the PSTN line for alarms and upload/download from the panel.

Step 3: Connect and Check Relays

The three changeover relays are rated at 30voltsDC @ 1A. Five mode settings are available, by default Mode 0 setting is deployed:

- ⇒ **Control Output** – Controlled by the ARC, used for various purposes such as re-setting the alarm panel following an event.
- ⇒ **Line Fault** – Activated when one or more signalling paths fail. This relay is defaulted to operate in BSIA Form 175 mode to report a path failure on either path.



- ⇒ **RPS – Return Path**
Signalling-activates when an alarm is sent and resets when all alarms are acknowledged.

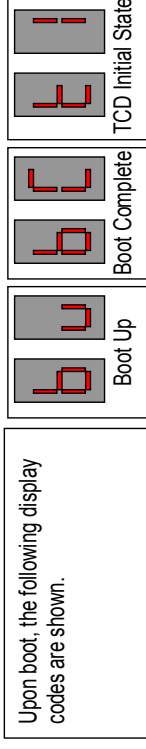
Details of the four alternative mode settings can be found in the TCD section of the website.

Step 4: Boot Up and Signalling Check

Turn on the power supply to the panel, wait 15 secs (approx):

⇒ The power status **red** LED will illuminate.

⇒ The display sequence is shown below:



⇒ The GPRS activity LED will flicker and flash every second, and then once registered, it will flash once every 3 seconds.

⇒ **With IP/broadband** check the Ethernet activity LED is lit up, it flickers if data is present. Also check TCD has latest firmware; wait for 't' on the display, and then press and hold the **Set and Mode** buttons together until the display shows UF. The TCD will make contact with the Emizon Service Platform and check it has the latest version. 'rr' indicates an update has taken place, UC indicates the TCD has the latest software. The TCD will automatically **REBOOT** after 20 seconds and return to the 't' state.

⇒ **With GPRS/PSTN**. The status display may initially show error codes EO, E1, E6 until it recognises the PSTN connection. The IP service will take less time to initialise than the PSTN service.

Take control of your monitored base with the Emizon site diagnostic service . Register on the iZone section of emizon.com