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

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

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 now embrace the benefits of digital age and be sure of the highest security standards.

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

Contents

Page 2	Key Features
Page 3	Before you Start
Page 4	TCD Components
Page 5-8	Step-by-Step Guide to Commissioning
Page 9	Technical Data and Power Supply Requirements
Page 10	Error and Fault Codes
Page 11	Compliance

Key Features

- ⇒ **Security**
- ⇒ Dual-path service; broadband and GPRS secondary
- ⇒ Full audit-trail on both paths
- ⇒ **Ease Of Install**
- ⇒ No on-site configuration
- ⇒ Fits into existing panels
- ⇒ **Value**
- ⇒ No connection or call charges
- ⇒ Avoids need for a dedicated PSTN line
- ⇒ Online maintenance service including upload/download UDL and remote site diagnostics
- ⇒ **Future-Proof**
- ⇒ Designed specifically for IP networks
- ⇒ Compatible with fibre and BT's 21CN deployment

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). EN5022 Emissions Class B. EN50130-4 Immunity. And 89/336 Electro Magnetic Compatibility Directive) as amended by 92/31/EEC.

Signalling Compliance

Emizon 21 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.

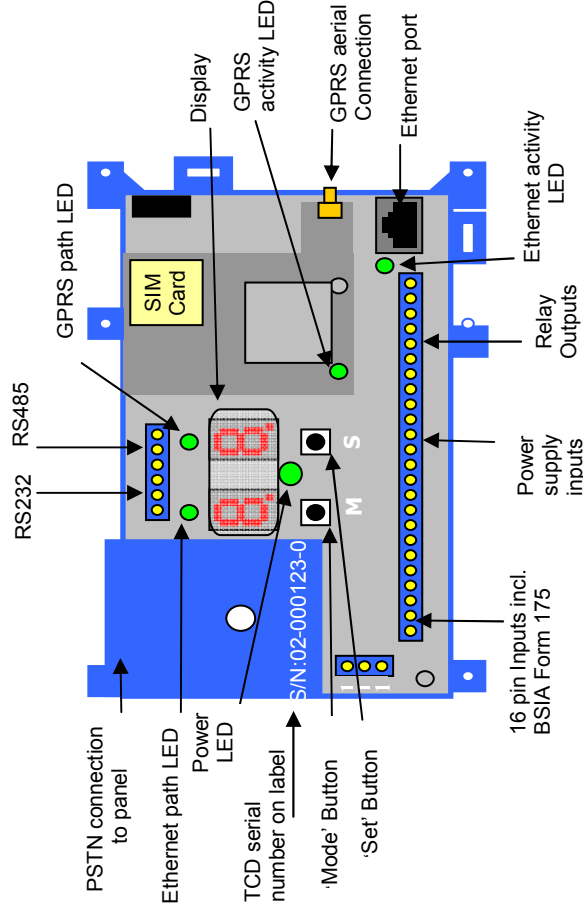
Error and Fault Codes

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 light flashing on Ethernet port on TCD?).
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 GPRS connection is unable to connect to the GPRS IP service.
E 4	Serial Connection to Alarm Panel failed (if configured). Check the serial connection to the panel on the RS232/RS384 ports.
E 5	PSTN Connection failed (if configured). The physical wiring between the TCD and the panel on the PSTN connection has failed.
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 the firmware update process. Repeat process 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

Before You Start

- 1. Complete the Customer IT Survey Form**
 To take account of any network security requirements and downloadable at: www.emizon.com/surveyform/ The TCD comes with DHCP enabled and will automatically request an IP address. If required, a static IP address can be assigned by calling the Emizon helpdesk.
- 2. 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.
- 3. Check Wireless GPRS Signal Strength**
 The TCD GPRS module is already enabled and will require sufficient signal strength to operate. Place a mobile phone next to the panel for a quick indication of signal strength - 2 bars or more is usually sufficient. For a more accurate indication, use the TCD diagnostic facility which displays the signal strength in a range from 0 to 31. The TCD requires a signal strength of 12 or more. Extension and high-gain aerials can be used to provide additional signal strength and are available from: orders@emizon.com.
- 4. Power Down the Panel**
 As with the process for installing any type of alarm communications (Digi/STU) the panel must be on test and powered down.
- 5. 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.
- 6. Make a Note of the TCD Serial Number**
 You will need to give this number to your ARC during the commissioning process so that it can be matched with the customer details.



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

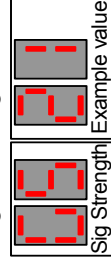
11.25v DC to 14v DC
 Low battery threshold 10.8v +/- 0.2v DC
 Current typical 320 mA and 350 mA max at 12 volts DC

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.

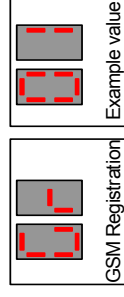
GPRS Signal Strength (GS)

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 Vodafone network. GR '05' is the registered state for a roaming SIM.

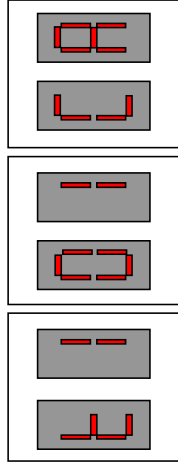


- Notes:**
- ⇒ Each TCD has a unique serial number located on the manufacturer's label - you will need this number during the ARC commissioning process.
 - ⇒ The TCD can be used for compliance to EN signalling Grades 2, 3 or 4. The signalling Grade is specified when ordering the Emizon IP service.

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 't1', '01' and then display 'CA' (completely activated) indicating a successful activation. The GPRS and Ethernet path LEDs will change to solid green to indicate that they are communicating with the Emizon Service Platform.
- ⇒ For added security there is a time out period of around 20mins to commission the TCD 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

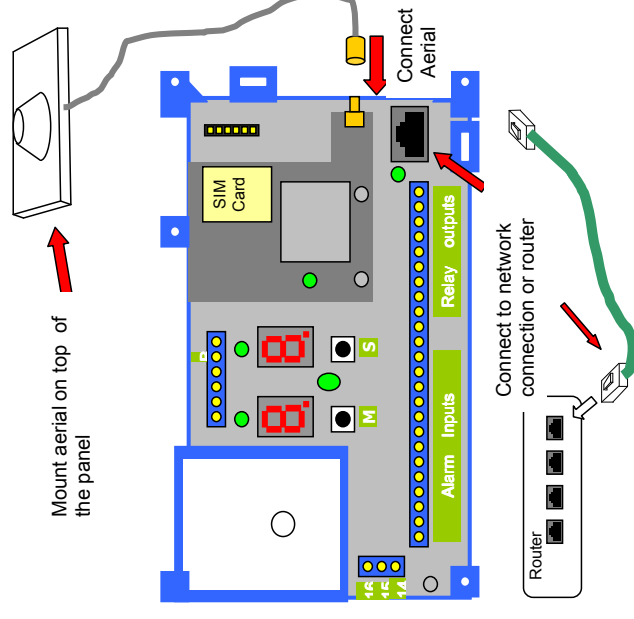
- ⇒ Following successful activation test all alarms on both signalling paths.
- ⇒ When testing is complete, affix the aerial in place on top of the panel.

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

Step-by-Step by Guide to Commissioning

Step 1: Fit the TCD in the Alarm Control Panel

- ⇒ Position the TCD in the panel and fix in place using either the sticky strips supplied or your own screws.
- ⇒ Mount the aerial on top of the alarm panel (wait till final testing complete to affix in place) and run connector wire down the back of the panel and connect on the antenna connector.
- ⇒ Connect the Ethernet port to the network connection/router in the customer's premises using Cat5 cable.



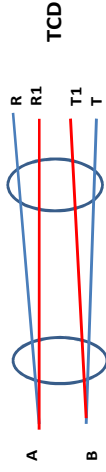
Step 2: Connect TCD to the Panel

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 and Dial Capture



Emizon Online Maintenance

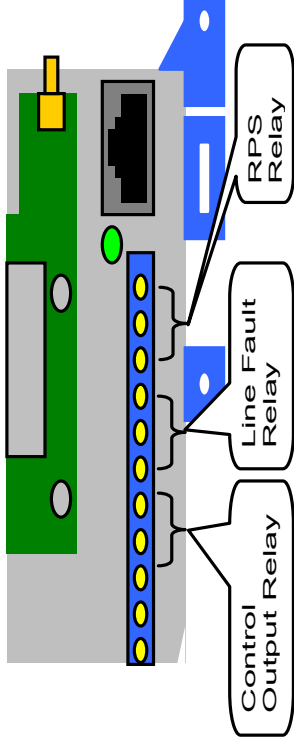
- ⇒ **Site Diagnostics.** Allows you to communicate securely with TCDs across all your installations. Use this service to check alarm status, change pin configuration, check signal strength, set the panel type or set and unset relays connected to CCTV systems.
- ⇒ **Upload Download (UDL)** for panel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

Register for Online Maintenance on the IZone section of emizon.com

Step 3: Connect and Check Relays

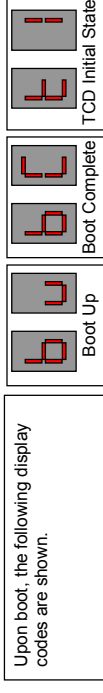
The three changeover relays are rated at 30voltsDC @ 1A:

- ⇒ **Control Output** – Controlled by the ARC and used for various purposes such as re-setting the alarm panel following an event.
- ⇒ **Line Fault** – Activated when the TCD is unable to transmit a message. 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.



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:



- ⇒ Check Ethernet activity LED is lit up, it flickers if data present.
- ⇒ If this is the first time this TCD is being installed, 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 download the latest firmware. 'rr' indicates the update has taken place, UC indicates the TCD already has the latest software.
- ⇒ The TCD will automatically **REBOOT** after 20 seconds.
- ⇒ Allow the TCD to boot up (15sec) and go to 't' state.