# Sensys Networks VDS240 Wireless Vehicle Detection System

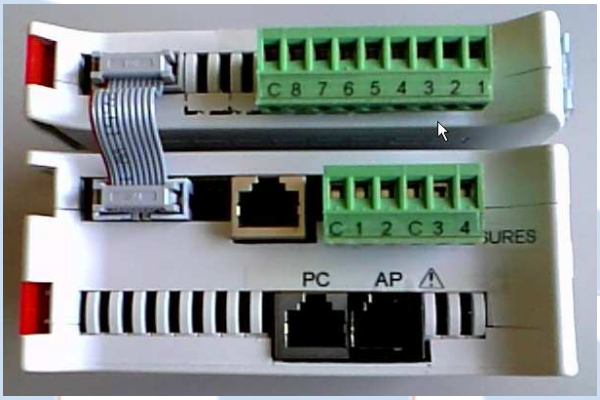
# CTS CC Card


# Guide

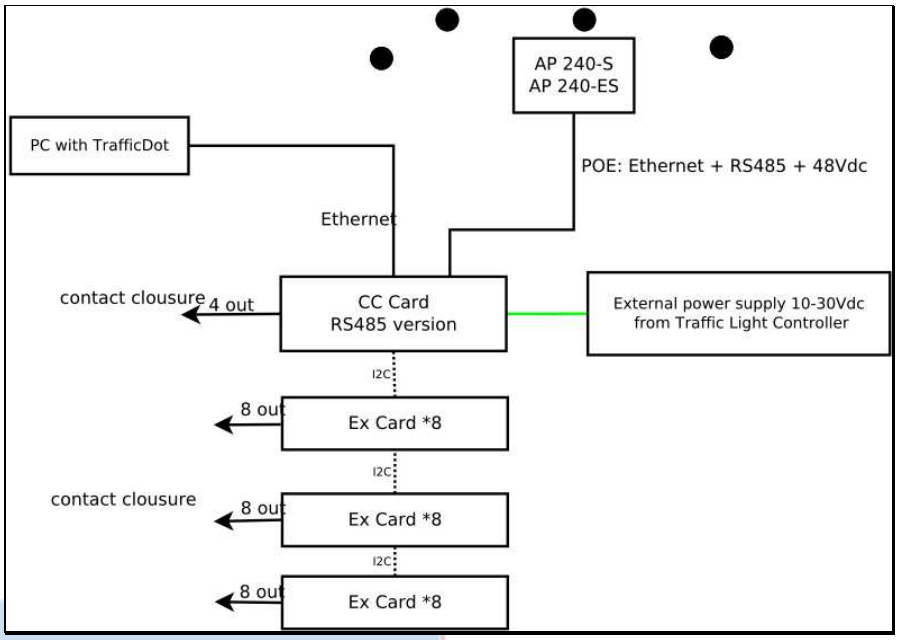
Version 1.0

# 1 CC Card specifications

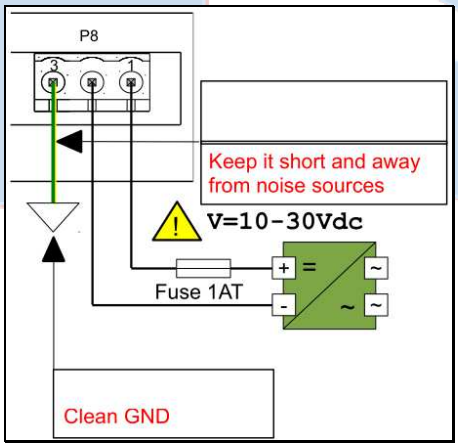
The new CTS-CC Contact Closure Card is designed to interface to Sensys Networks AP240-S, AP240-ES with 48V power supply, and provides four optically isolated contact closure relays. Up to 16 EX cards (8 channels each) can be daisy-chained via the I2C bus.
The CC Card communicates with the AP via an RS485 bidirectional connection.


| | |
|---|---|
| Power Supply | 10-30Vdc 6W (with Chard + 1*EXT + AP connected) |
| Processor | NXP LPC2387 (ARM7TDMI) |
| Digital Outputs | 4 Relay, 5A@250Vac, max. (1 common every 2 out) |
| Status indicators | Power, RUN, READY, USB activity, Output Status |
| USB I/F | On mini-USB B connectors (device mode) |
| RS232 I/F | 1 * DTE on RJ45 connector |
| AP Ethernet connection | 4PIN Ethernet + 2PIN RS485 + 2PIN 48V POE |
| Operating temperature | from -20 to +70°C |
| Storage temperature | from -40° to +80°C |
| Relative Humidity | Max. 90% |
| Dimensions | 119 mm L x 101 mm W x 45 mm H |
| Approvals | CEI EN50081-1, CEI EN50082-2 |
| Warranty | 2 Years |




## 1.1 Power supply

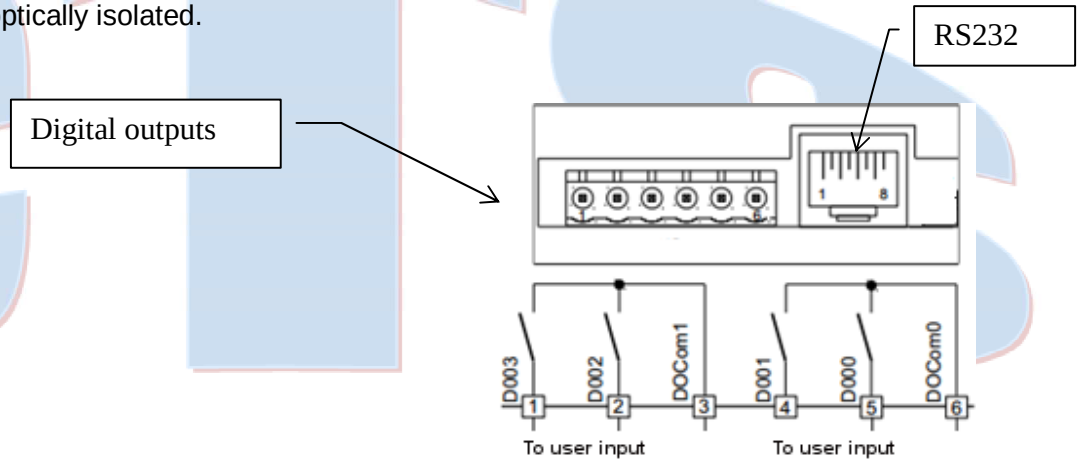


## 1.2 CPU STATUS

| CPU Status | |
|---|---|
| **LED** | **Function** |
| PWR (Green) | ON=Power OK |
| | OFF= Power fault |
| RUN (Yellow) | Regular Blink = System OK |
| RDY (Green) | ON=System Ready |
| | OFF=System Stopped |

## 1.3 CPU Digital Outputs

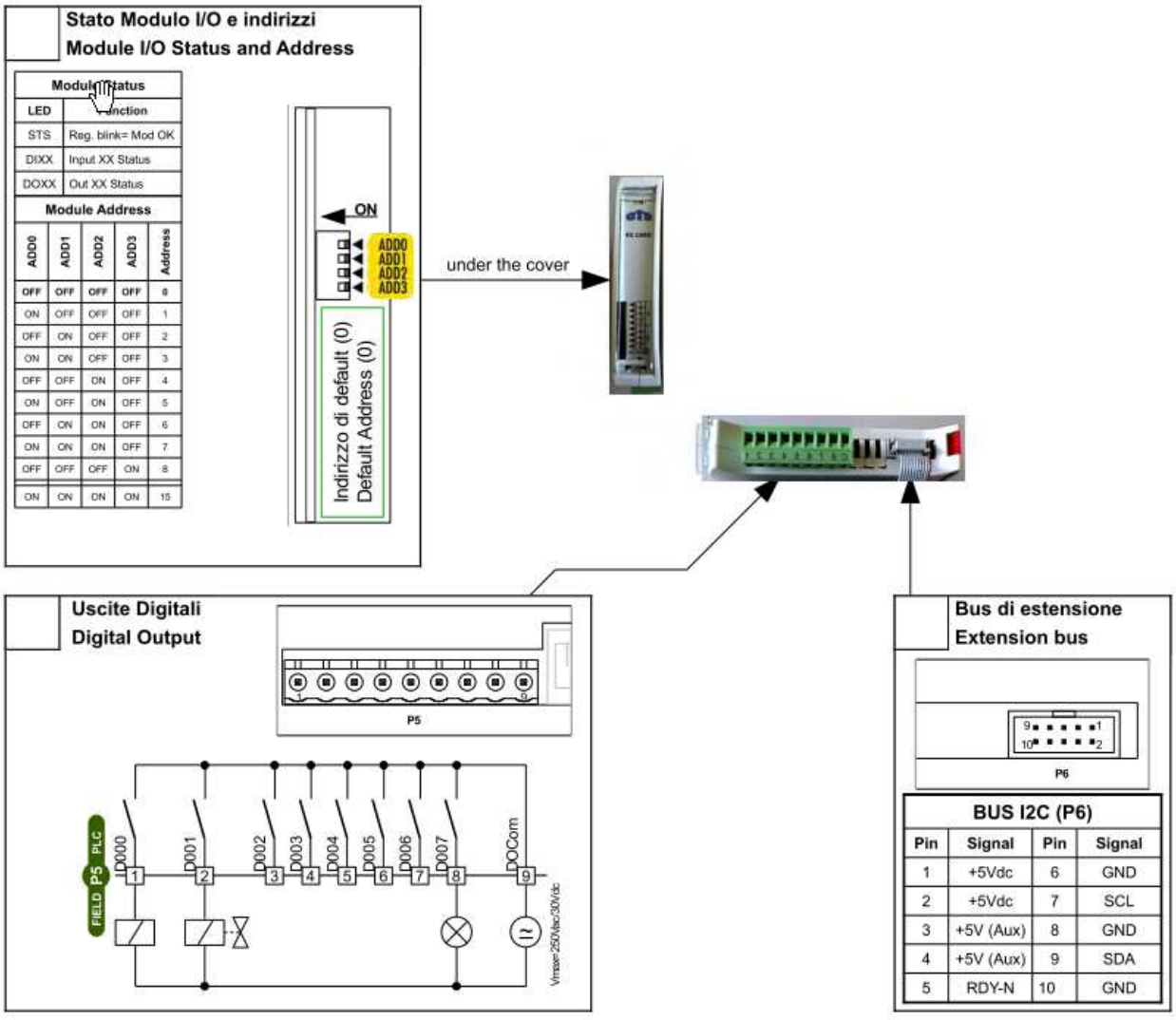
The CTS-CC module has 4 digital outputs, relay or open collector (depending on version), optically isolated.




## 1.4 RS232 / USB

| RS232 | | | |
|---|---|---|---|
| **Pin** | **Signal** | **Pin** | **Signal** |
| 1 | Not connected | 6 | TX |
| 2 | Not connected | 7 | CTS |
| 3 | DTR | 8 | RTS |
| 4 | GND | | |
| 5 | RX | | |

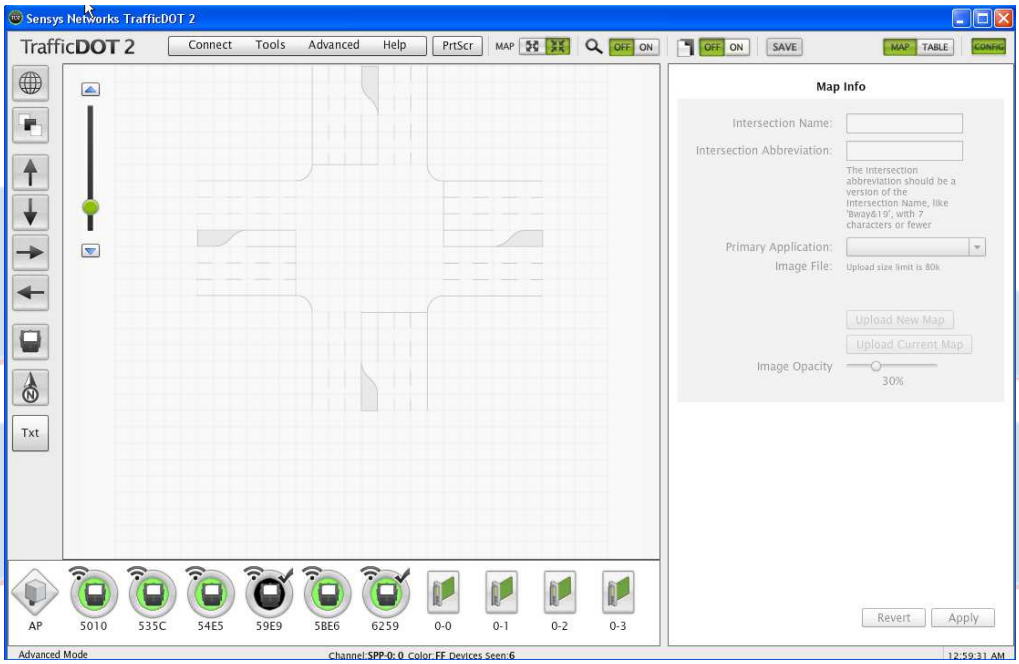
# 2 EX Card



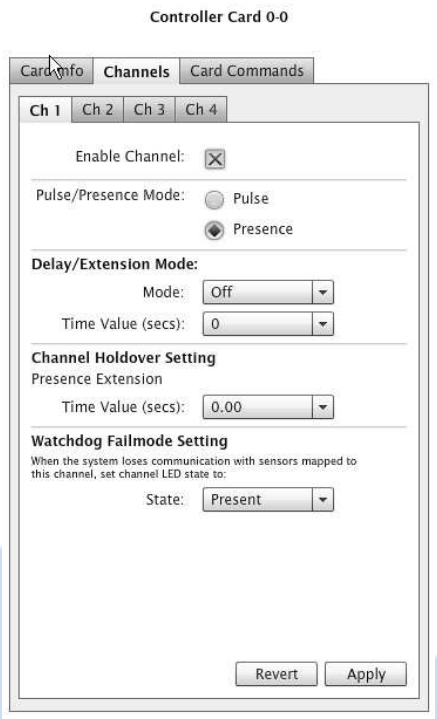

If the Ready LED blinks then the EX Card works properly.

# 3 Using TrafficDOT2

CTS-CC + EX appears in TrafficDot2 as a standard CC card + EX.
When a CTS-CC is connected to AP the TD2 shows the card icon and its extensions (with address in the range 0-0 a 0-3) on the device bar1.
The channel's properties can be set by clicking on the card icon, and then the Channels tab.
Currently only 'ENABLE CHANNEL' is supported. The setting is permanently stored on CTS-CC.




[1] CTS-CC emulates a card with its expansions up to a maximum of 64 outputs




Extension e Delay are also supported.
The value of shelf must be set to 0.


Under **CARD COMMANDS** it's possible to:

- Reset Card
- Reset checksum failures count
- Reset card to factory settings
- Refresh

- 
Controller Card 0-0
Card Info
Channels
Card Commands
Commands to Controller Card:
Reset Card
Reset CF Count
Reset Card to Default
Identify Card
Refresh

# 4 WEB Interface

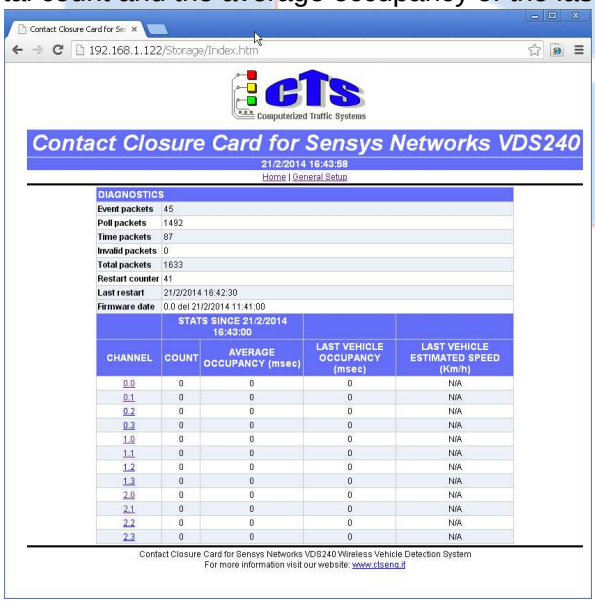
You can connect CTS-CC to a Windows XP/7 PC (USB A to mini B cable) running RNDIS-Remote Network Driver Interface Specification protocol2.

Once RNDIS drivers have been installed, the *Network and Sharing Center* window[3] will show the new virtual network card. Now you can set the IP address of the card (CTS-CC has the default address 192.168.1.122, then a valid address could be 192.168.1.10) and reach CTS-CC via TCP/IP as any other module connected on the network.
Entering the CTS-CC address 192.168.1.122 in a browser you will access its home page.

## 4.1 Home page

The Home page is composed of two sections:

- a diagnostic section, where the exchanged packets counts are shown.
- a statistic section, where, for each channel, are shown:
  - the occupancy of the last vehicle with its estimated speed
  - the total count and the average occupancy of the last period4




[2] The Remote Network Driver Interface Specification (RNDIS) is a Microsoft proprietary protocol used mostly on top of USB. It provides a virtual Ethernet link to most versions of the Windows operating system.
Windows 7 support natively RNDIS but XP/Vista needs to install the drivers.

[3] To display the Network and Sharing Center window from the Control Panel Home, select View Network Status and Tasks from beneath the Network and Internet heading. From the Control Panel Classic View, open the Network and Sharing Center icon.

[4] See parag. 4.2

# 4.2 Setup page

The setup page allows to set:

- CTS-CC's internal clock delay (referred to AP Reference Time). Default value=0.)
- Length of test vehicle length (dm) used to estimate the speed
- Count period (minutes)
- Name of the channel and its data archive enable in CTS-CC's flash disk (function currently not operating).
- Synchronize the Real Time Clock of CTS-CC with PC's clock.