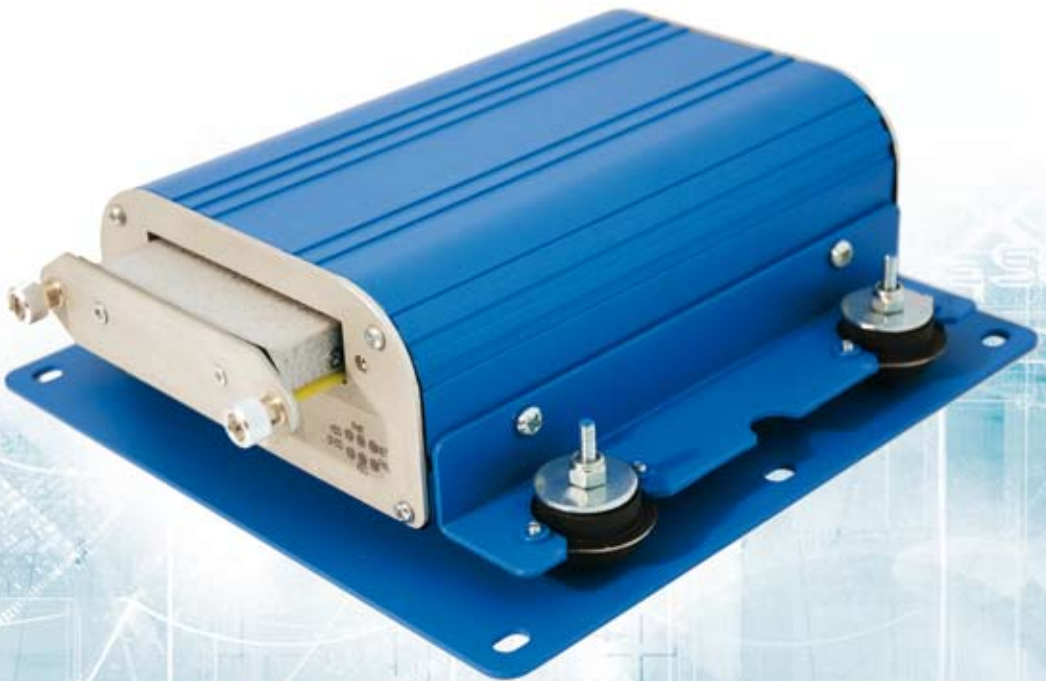


TransVu Express

Installation Guide



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Whilst every attempt is made to ensure these manuals are accurate and current, AD Holdings reserves the right to alter or modify the specification of the machine described herein without prejudice.

Introduction

TransVu Express is a Digital Video Recorder and network server designed specifically for transport and mobile applications. Rugged case design and aerospace grade anti-vibration (A/V) mounts allow the unit to withstand the vibrations generated within vehicles whilst a single connector keeps installation simple.

In addition to moving vehicle applications TransVu Express is ideal for mobile surveillance, rapid deployment and covert operations.

Vehicles – buses, taxis, vans, trains and heavy goods vehicles are ideal candidates for TransVu Express.

Rapid Deployment/Mines/High Risk Areas – the 10 to 30 volt supply voltage range and low current consumption make the TransVu Express product range ideal for remote CCTV applications, for example in areas where solar panels with battery backup provides the only option for power, or recording in mines, mine vehicles or other high risk areas where health and safety issues place constraints on power supplies.

Part of the NetVu Connected product range, the TransVu Express is fully network capable and supports the Internet standard TCP/IP protocol. As the TransVu Express is a mobile product the unit can be accessed via wireless LAN or GSM / GPRS / CDPD / UTMS / HSDPA. Supporting up to eight video inputs, two audio channels, three alarm inputs and intelligent power management the TransVu Express is a powerful, cost effective transportation recorder.

The TransVu Express range includes:

- 4 or 8 video input - fixed 2.5" hard disk drive
- 4 or 8 video input - removable 2.5" hard disk drive
- 4 or 8 video input - removable Flash card (CF or SD supported)

System Documentation

The Installation and Operation of the TransVu Express are detailed in the manual suite which consists of:

- Quick Start Guide - Initial steps to get the TransVu Express up and running to basic operation.
- Installation Guide - Full instructions to install the TransVu Express unit.
- Configuration and Operation Guide - Full configuration documentation for the TransVu Express.

Installation

This section is separated into two parts;

- Physical Installation - (fitting the baseplate, shock absorbers etc.)
- Product Orientation - (cable connections, etc.)

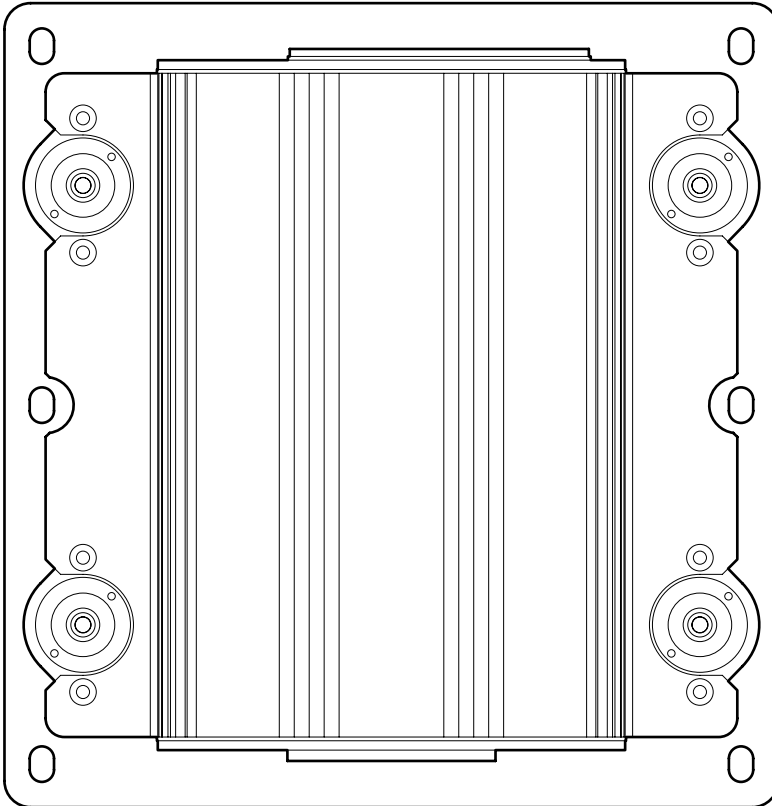
The TransVu Express can be mounted horizontally or vertically. It is recommended that it is mounted horizontally; the unit does not have to be orientated to the direction of vehicle travel.

Sufficient space must be provided around the unit, connector and cable to allow a small amount of movement, particularly in the vertical axis, for the anti-vibration mounts to work effectively.

Installation requirements

Note: *Read all the instructions before commencing installation.*

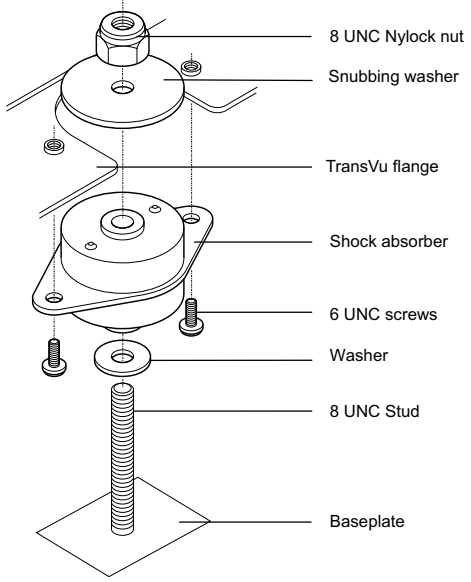
The TransVu Express is fixed to the vehicle via a mounting plate.



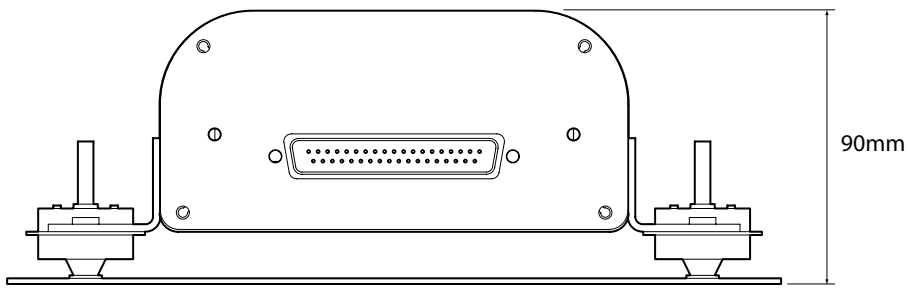
It should be mounted as low as possible within the vehicle, on a secure base free from resonance and secondary vibrations.

The TransVu Express is secured to the mounting plate via four shock absorbing fixings. This dramatically reduces the effects of vehicle borne vibrations and enables the system to operate in harsh shock environments.

- 1) Fix each of the four shock absorbers to the TransVu base from underneath using two 6 UNC screws provided. These must be fixed using loctite on the screw threads.
- 2) Fit the lower washer to the stud.
- 3) Lower the TransVu and mounted shock absorbers onto the baseplate. (See section "Fitting the TransVu to the Baseplate".)
- 4) Put a snubbing washer on each of the four studs on top of the shock absorbers.
- 5) Fix the TransVu in place by using four 8 UNC Nylock nuts.



Vibration will cause the TransVu Express to move on the shock mounts. Allow clearance around the unit to accommodate this movement. It is recommended that a minimum fitment volume of 290mm (11½ ") x 190mm (7½ ") x 90mm (3½ ") is allowed.



Total height of enclosure for TransVu Express is 90mm (3½ ")

LED's

Six status LEDs are visible on the opposite end of the unit to the connector.



They are labelled as follows:

PWR

HDD ○ ○ ○ NET

CF/SD ○ ○ ○ FAIL

REC

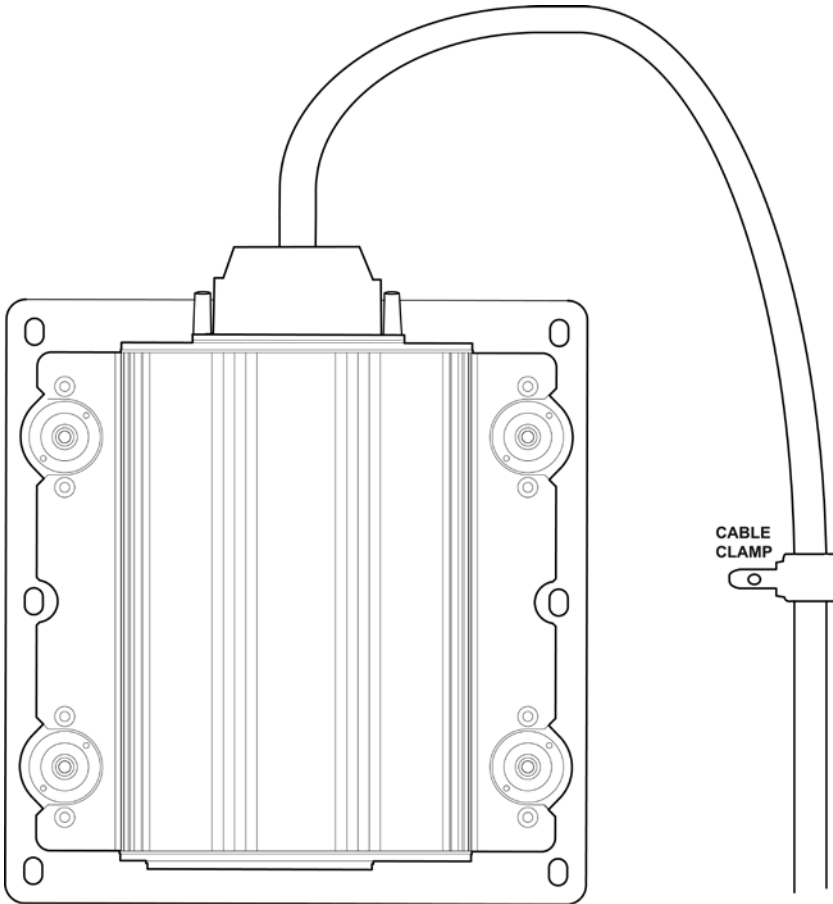
Description	Function
HDD	Illuminates red to indicate power to the hard disk drive
CF/SD	Illuminates red to indicate power to the CF/SD slots
PWR	Illuminates green when Power is connected to the unit
REC	Illuminates green when the unit is recording
NET	Illuminates green when the unit is connected to the network
FAIL	Illuminates green until the unit senses a failure condition

Care in feeding cables

Ensure the cables feeding the 37 way connector are clamped to the same mounting surface as the TransVu Express. This will help avoid any vibration being transmitted along them to the unit.

Recommended fitment area - 285mm (11¼") x 195mm (7¾")

Minimum height of enclosure - 90mm (3½")



Notes on installation space

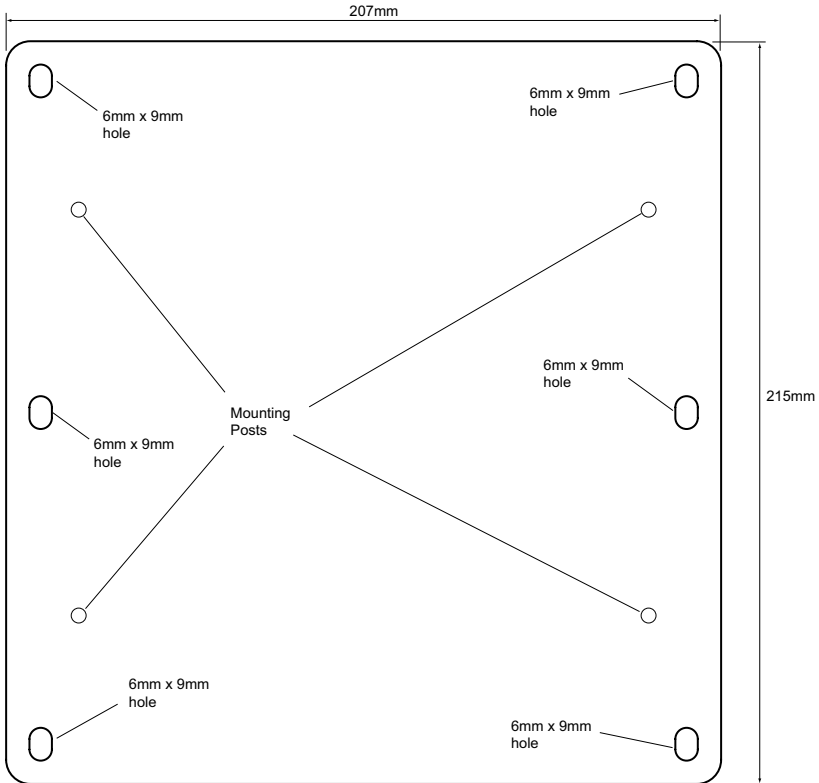
Additional space is required around the electrical connector to allow the disconnection of the cable from the unit.

Mounting the Baseplate

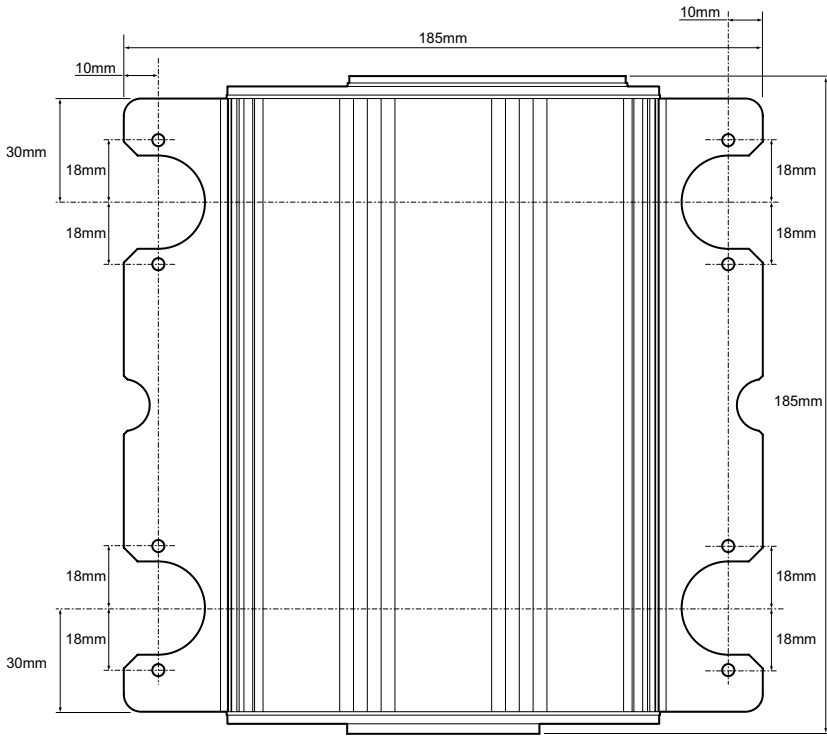
The TransVu Express baseplate should be secured to the vehicle using appropriate nuts, bolts and shakeproof washers. The baseplate should preferably be mounted horizontally although it can be mounted vertically if absolutely necessary.

The unit does not require alignment with the normal direction of travel of the vehicle.

Baseplate dimensions & measurements:

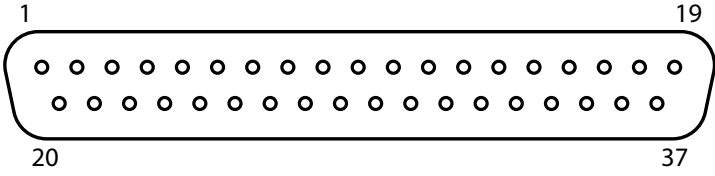


TransVu Express top view dimensions



37 way Connector Layout

Numbers looking at the front of the male connector.



Pin	Signal Description	Pin	Signal Description
1	Monitor Output	20	Camera 7
2	Video ground	21	Camera 6
3	Camera 8	22	Video ground
4	Camera 5	23	Camera 3
5	Video ground	24	Camera 2
6	Camera 4	25	Video ground
7	Camera 1	26	Audio Input 1 (line)
8	Audio ground	27	Relay output (positive side)
9	Audio Input 2 (mic)	28	Alarm ground
10	Relay output (negative side)	29	Alarm Input 2
11	COM1 port: RS-232 TXD	30	Ignition sense input
12	10/100 Ethernet port: TX+	31	COM1 port: RS-232 RXD
13	10/100 Ethernet port: TX-	32	COM1 ground
14	Alarm Input 1	33	10/100 Ethernet port: RX+
15	Alarm Input 3	34	10/100 Ethernet port: RX-
16	Switched power output – negative	35	Switched power output – positive (1A)
17	Power input - negative: ground	36	Power input - positive: 10V – 30V DC
18	Power input - negative: ground	37	Power input - positive: 10V – 30V DC
19	Video ground		



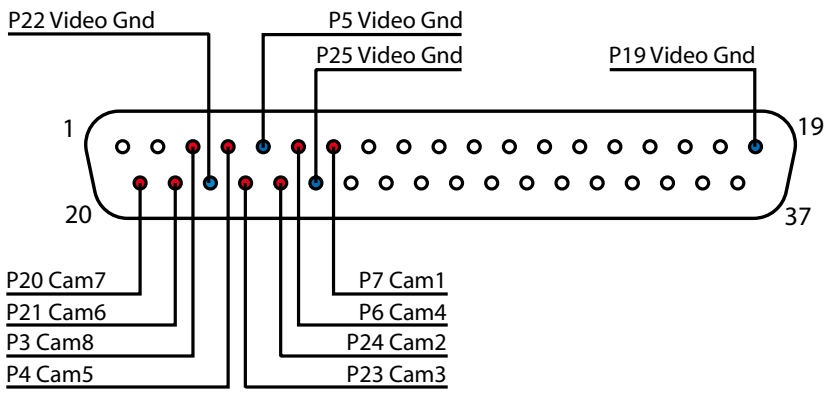
Warning!

Always disconnect power before making connections to the unit.

Connecting Cameras

- Signal type: Unbalanced, ground common to chassis
- Signal level: 1 volt peak to peak
- Signal termination: 75 ohms, fixed
- Recommended cable: Coaxial, 75 ohm impedance, 90% copper braid, copper multicore central conductor.

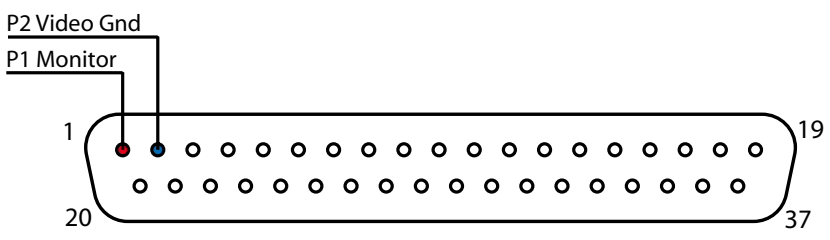
Note: Ensure all camera cable screens are firmly bonded together and securely connected to connector pins 5, 19, 22, 25.



Connecting a Composite Monitor

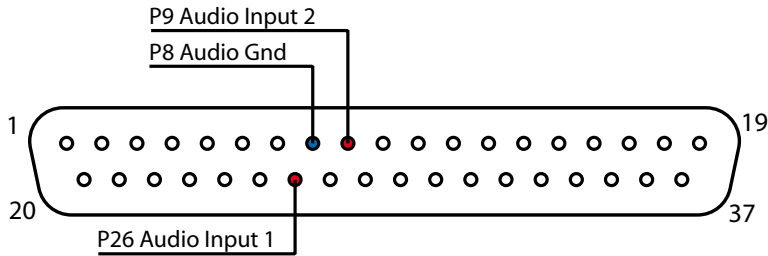
TransVu Express incorporates a 75 ohm composite video output.

Note: The exact functionality of this output depends upon the product variant.



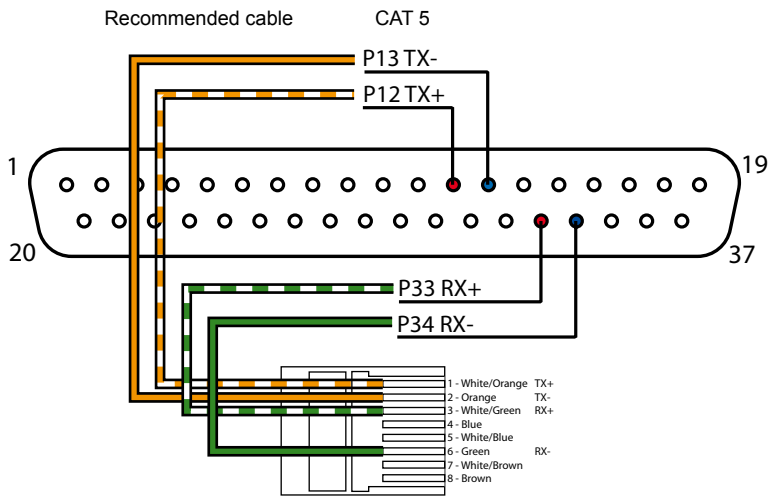
Connecting Audio

Signal type: Unbalanced, common analog ground
 Input type: Microphone or line sensitivity software selectable for both channels
 Signal levels: Microphone input 25mv to 500mv
 Line input 50mv to 1000mv RMS
 Impedance 10 k ohm
 AGC: Software selectable
 Bias supply: 3V, 3mA max., software selectable.*
 Recommended cable: Single core screened audio cable
 * Available on Audio input channel 2 only.

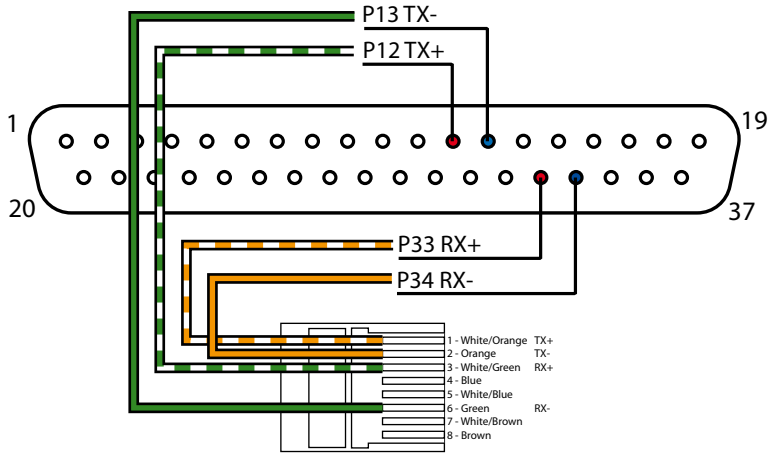


Network Connections

This wiring configuration uses an RJ45-11 connector to plug into a network hub on an ethernet network.

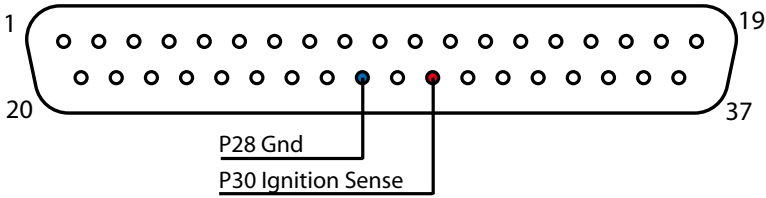


This wiring configuration uses an RJ45-11 connector to plug into a PC Network port.



Ignition Sense Input

To detect ignition switch off and power down after a set period of time. Active high input requiring application of 7 volts minimum.

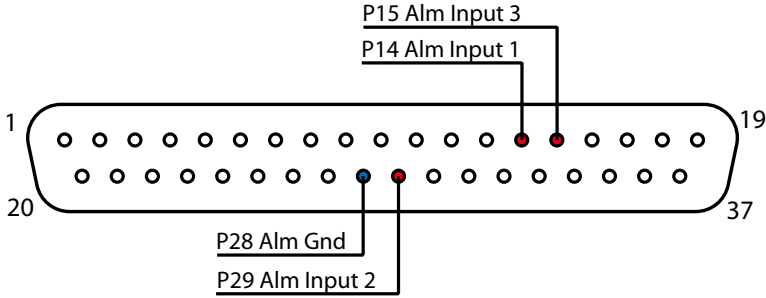


Alarm Inputs

Three analogue alarm inputs are available which can be configured via the web pages as follows:

- Normally open contact
- Normally closed contact
- Tamper detect

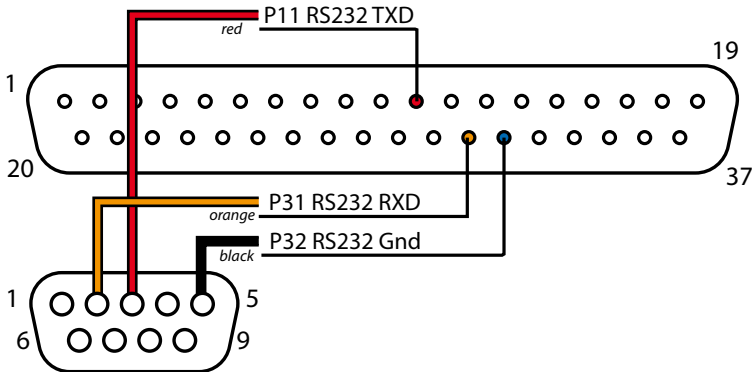
Alarm recognised when a short circuit to 0V is applied
 Alarm recognised when input is open circuit
 If a detector is configured with end of line (EOL) resistors four detector states can be detected, no activity, alarm, tamper (open circuit), tamper (short circuit)



Serial Port

COM1 is a three wire RS232 port which defaults to the debug function.

Baud	38400
Data	8
Parity	0
Stop	1
Flow control	none

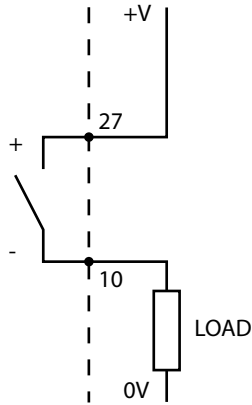
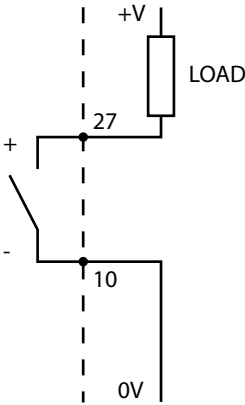
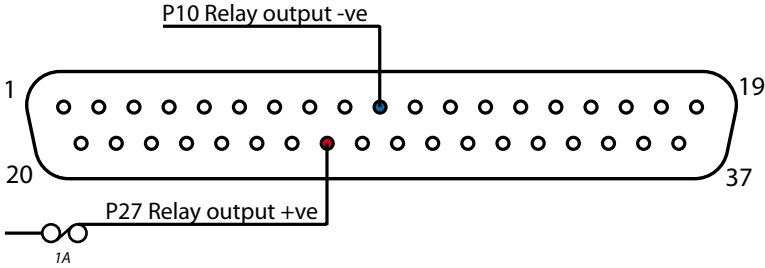


Relay Output (solid state)

This is a single pole solid state relay which can be activated by the software based upon user-defined events.



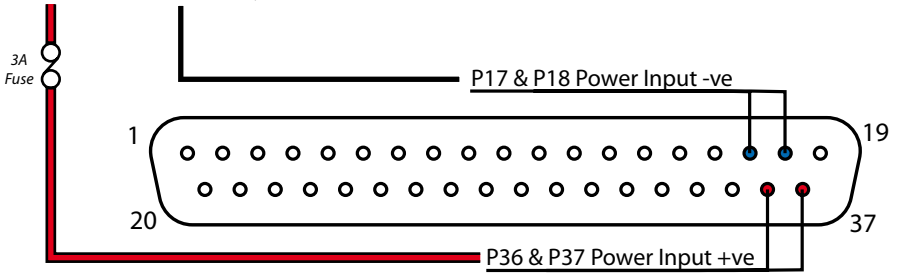
Note: *The relay is polarised and must always be connected in one of the ways shown below. **Damage will occur otherwise.** The maximum switching load is 600mA.*



Connecting Vehicle Power

TransVu Express is designed to run on vehicles with a negative earth or negative ground system.

From Vehicle Power supply



Connecting Ancillary Equipment

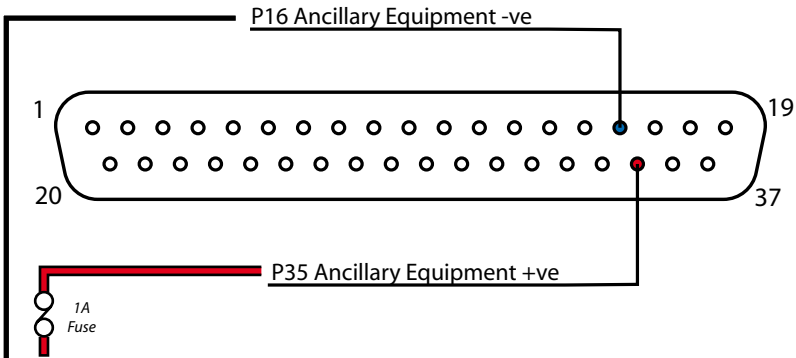
When the unit is running, a solid state switch reflects the power input voltage onto the power pin 35. This allows ancillary equipment such as cameras etc. to be powered down automatically preventing unnecessary drain on the vehicle battery. The ancillary equipment should be grounded using pin 16.

The current drawn from this output must not exceed 1A. If it is necessary to switch loads exceeding this a slave relay must be used.



Warning!

The switch will be irreparably damaged if subjected to a short circuit, no matter how momentary.



To ancillary equipment

Technical Specification

Power

Voltage	10 to 30 volts
Power consumption	Typically 8 watts
Power Management features	Ignition sensing with auto shut down of system and cameras after user preset time. Auto shut down on nominal low voltage detection after user preset time. Immediate shut down of system on critical low voltage detection.

Video

Video standard	PAL or NTSC (software switchable)
Video inputs	4 or 8
Video Signal	Composite 1 volt peak to peak
Termination	Fixed at 75 ohms

Monitor

Monitor Output	User selectable functions.
----------------	----------------------------

Video Recording

Standard multiplex method or variable record rate per individual camera.	Standard multiplex method or variable record rate per individual camera.
25/50 images per second PAL, 30/60 images per second NTSC at 2CIF <i>(dependant on model ordered)</i>	25/50 images per second PAL, 30/60 images per second NTSC at 2CIF <i>(dependant on model ordered)</i>
Record on alarm	Changes the standard record rate on alarm or individual camera record rates. Pre and post alarm recording with image archiving.
Video Storage	80 or 120GB permanent or removable hard disk storage. Solid State storage via Compact Flash or SD card.

Audio

Audio Inputs	2, Mic or Line sensitivity
Mic input level	25 to 500 mV
Line input level	50 to 1000 mV
Frequency response	150 Hz – 3500 Hz
Mic / Line select	Software selectable
Mic bias (channel 2 only)	3V 3mA max (software switchable)
Alarms	3 x alarm inputs 1 x ignition sense (+7V min activates when power management is enabled)

On Board Indicators

Six red/green LED on-board indicators show;	Six red/green LED on-board indicators show;
Main power, HDD power, CF/SD power, network, recording & record failure.	Main power, HDD power, CF/SD power, network, recording & record failure.

Serial Connection

RS232	Via main connector
-------	--------------------

Ethernet

Ethernet connection	10/100baseT full & half duplex, auto sensing or software selected.
Bandwidth	Default LAN or can be optimised for WAN operation.
GSM / GPRS / UTMS / HSDPA	Supports image transmission over mobile telephone / internet access networks.

Dimensions / weight

Case overall	185mm x 185mm x 65mm (inc mounting flanges) 7.28in x 7.28in x 2.56in
Base plate area	215mm x 207mm 8.46in x 8.15in
Required mounting space	290mm x 200mm x 90mm (excluding cable access) 11.4in x 7.87in x 3.54in

Weight (without mounting kit)

HDD version	1.14 Kilograms / 8.3 oz
CF version	1.05 Kilograms / 7.64oz
Mounting Kit	0.75 Kilograms / 5.45oz

Construction

Extruded aluminium case	Extruded aluminium case
Stainless steel end plates with gasket seals	Stainless steel end plates with gasket seals
Aerospace suspension bushes	Aerospace suspension bushes
Environmentally sealed 37 pin connector carries power, data and video.	Environmentally sealed 37 pin connector carries power, data and video.

Temperature Range	5 to 55 degrees Centigrade (41 to 131 deg Fahrenheit)
Hard Drive version	0 to 60 degrees Centigrade (32 to 140 deg Fahrenheit)
Solid State version	0 to 60 degrees Centigrade (32 to 140 deg Fahrenheit)

Appendix

Telnet to FTP

See Configuration and Operation Guide

Upgrading software

See Configuration and Operation Guide

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1200 Daresbury Park, Daresbury,
Cheshire, WA4 4HS, UK

Dedicated Micros France
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75013 Paris, France

Dedicated Micros, Australia PTY.
5/3 Packard Avenue, Castle Hill,
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