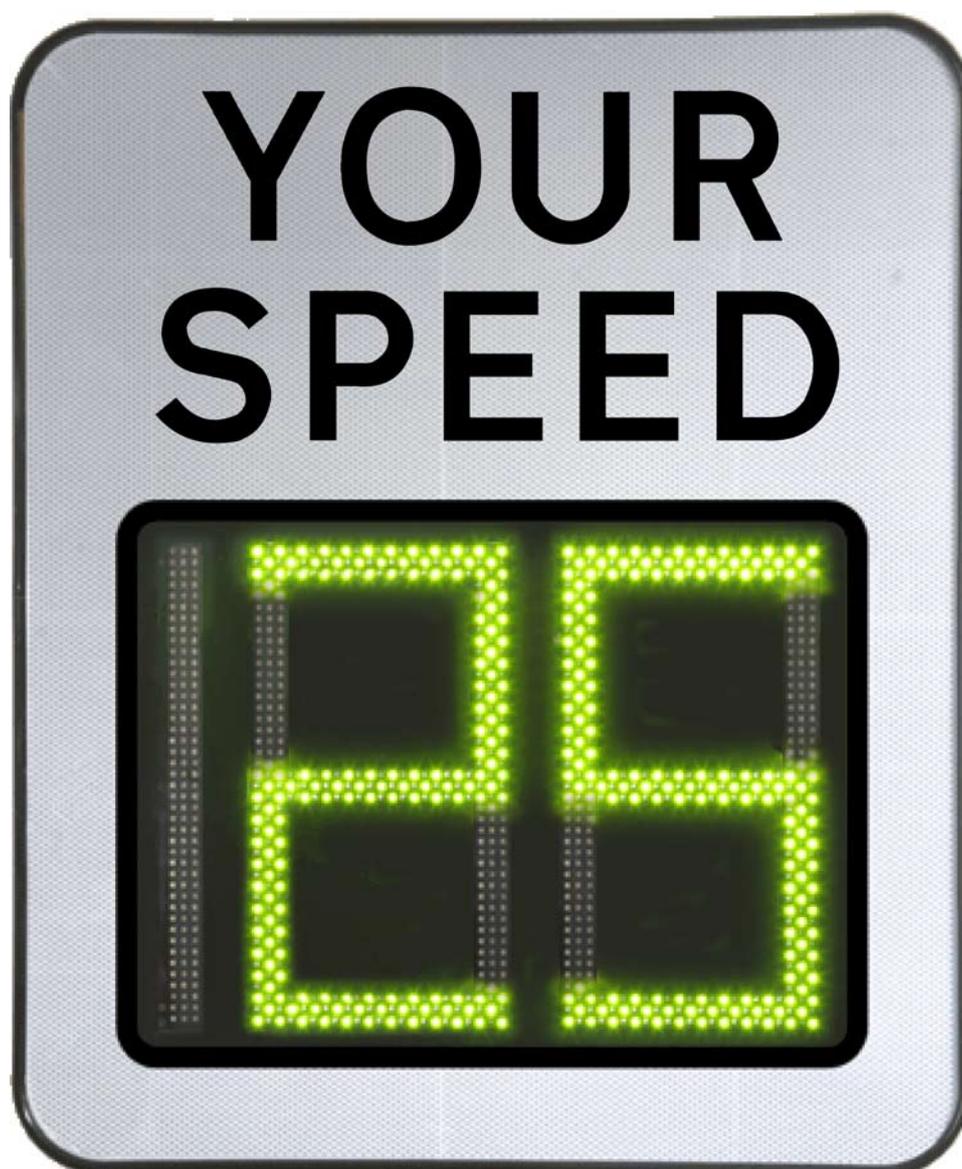


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Frequently Asked Questions and Answers
3M™ Driver Feedback Sign DFS 700



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Traffic Situation

How often does the radar measure the speed of the car whilst the car is in range of the radar?

Every 23 milliseconds and the display is updated every half second.

Does the Driver Feedback Sign record the speed of every vehicle it encounters?

If vehicles are clearly spaced apart, then it will record the speed of every vehicle. If vehicles are driving closely, the DFS will try to estimate when a new vehicle is in the beam. Success rates are typically 70%.

Can the DFS 700 be used on a motorway?

The DFS 700 is not designed for use on motorways as the height of the number is not large enough for motorway traffic and the radar is not suitable for multiple lanes.

How often does the software save the data? What happens in the case of several vehicles following each other?

The data will be saved in RAM every 23 milliseconds as long as the vehicle is in range of the radar. Afterwards only the date, time, entrance and average speed will be saved in the permanent memory. It also needs some logic e.g. if five cars pass the DFS sign very close to each other, it looks like one very long car, but the logic counts it as several cars.

At what angles can the LEDs be seen at maximum intensity and how do they lose intensity while increasing the observation angle?

The LEDs can be seen at maximum intensity, if you are exactly in front of them. If the observation angle is greater or less than 9°, they will theoretically lose intensity.

Which car will be detected first in continuous traffic?

If two vehicles of a similar size reach the radar beam, the closest one will be detected first. If one of the vehicles is much larger than the other one it will reflect the radar beam better, so the larger one will be detected first.

How far from each other must the vehicles be in order to be measured/considered as two vehicles?

The speed of the vehicle with the strongest signal (depends of shape, distance and dimension) will be shown. The signal must be cut off for a minimum of 0.5 seconds to be handled as a new vehicle.

On dual carriageways, where two lanes are going in the same direction, is it possible to tilt the DFS in order to measure only one lane?

The radar beam has 14 degrees angularity, so in 100m distance it will be 24 metres wide. This means it will cover multiple lanes. However, the internal data logging will not register different lanes. Also, the radar cannot pick up more than one vehicle at a time.

Can it deal with more than one lane?

The radar beam has 14 degrees angularity, so in 100m distance it will be 24 meters wide. This means it will cover multiple lanes. However, the internal data logging will not register different lanes. Also, the radar can not pick up more than one vehicle at a time.

If a single vehicle passes through the radar, will it be counted as only one vehicle?

Yes

How much data can the DFS memory hold?

The memory of the DFS 700 can hold up to 135,000 measurements.

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Installation

How should the electrical cable and connector exit the mounting box when the DFS needs to be connected to mains electrical power? Is it possible to go inside the pole and create a hole in the back of the mounting box?

There are two possibilities:

- 1) You can drill through the box to the pole in order to directly route and hide the cable in the pole.
- 2) In the bottom of the box there are punched-out exit holes, which can be opened with a screwdriver. This should be done using a sealing gasket or bung, e.g. a PG type one. For outdoor installations you should cut the connector off and connect the blank wires to terminal blocks where the phase is connected to a switchable 6 Ampere overcurrent protective device.

I don't understand the way you plug the battery and charger on the DFS. What is the role of the charger if you plug it into the DFS?

In some locations 230V power is only available at night-time (e.g. streetlamp). In this situation you need so called buffered line power; this means the DFS keeps running at daytime from the battery when there is no 230V power. At night the battery will be recharged. This ensures continuous 24hr operation.

How could you connect an external device such as a variable message sign to the DFS 700 sign as a slave device, making the DFS 700 the master device?

The DFS 700 has an internal on / off switch for external devices. In the DFS-CAS software you can choose the speed when the external device should be activated. The simplest way would be that your complementary panel displays the text in green even if no speed is displayed on the DFS 700. If a vehicle approaches the DFS 700 faster than the speed limit that was chosen in the Parameter settings, the internal DFS switch will activate the red display colour on the complementary panel. Please contact us for any further information.

What size post can I install the unit on?

60 – 140mm diameter posts.

Can I install the unit on a lamp column where the area must be less than or equal to 0.33 square metres?

In its standard form the unit is larger than this; however our distributors may be able to modify the unit for you. Please look at our list of approved distributors.

How should I mount my unit for optimum radar performance?

The unit should be mounted between 2.1 and 3.0 metres to the bottom of the sign for optimum performance.

For dual carriageways, should individual DFS units be installed for each lane?

If you want to detect and log each lane separately, then you have to install two DFS units. The DFS is usually used to detect only one lane, but you can also adjust the DFS so that you are able to log two lanes without any separation of the lanes.

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Hardware

What does it mean if a status code is displayed when the DFS unit starts up or when I check the status of the DFS 700?

The DFS unit has a self-diagnostic feature at start-up. Check the Status code definition document for further information.

Status Code 10: Diagnostics says that real time clock battery is empty.

Replace backup battery of the DFS 700 unit. DFS date and time have to be redefined after this operation. In some cases, DFS data has to be deleted in order to keep new date and time settings.

How long would the battery last in demo mode?

Approximately 18 hours.

What should I do if the DFS 700 unit is not performing the self test (Hand test) and is not connecting to the computer or system?

Please install the latest firmware in a direct method (using the serial port)

Is the display protected against graffiti?

The unit is not currently protected, however your distributor may be able to supply some anti graffiti film for application to the unit.

Is the DFS unit resistant to tropical conditions?

The DFS is specified for temperatures between -35° to +75°C and humidity up to 95%.

What is the estimated working time of the battery without charging?

It depends on traffic density, application, and settings - 3 to 5 days for regular operation for a single battery (6-10 days for 2 batteries), with average traffic density and typical settings. It will last less time in more demanding conditions and more in less demanding conditions. By setting the parameters to show an amber display (overlapping the green and red display settings) the unit will use more energy and therefore use more battery power.

Is it possible to have the front panel in different dimensions or colours?

Your distributor will be able to offer this service.

Is there a way of charging the batteries directly with the charger?

If the charger and battery are plugged in as shown in the manual, the battery will be charged. But if preferred, you can connect the charger and the battery directly together to charge the battery.

What is the IP value of DFS 700 unit?

The DFS 700 unit has a rating of IP55.

How long does it take to charge an empty DFS battery?

Charging a complete empty battery of the DFS requires approximately 6 hours, however to maximise the battery life it should be charged overnight. Please charge the battery before using it the first time.

What triggers the notification SMS for the real-time clock battery to be sent out?

Every two hours the status of the real-time clock battery will be checked. If the power goes below 2.25 V the SMS will be sent out. The clock will still run until it reaches 2V, after which the DFS data and settings will be lost and a replacement backup battery will need to be fitted and the unit reset.

The DFS 700 Sign will not properly close and lock securely.

You can request a modified door lock pin by contacting us.

Can I get a master key for my DFS 700 mounting box?

You can request a master key by contacting us.

Where is the radar of the DFS unit?

The radar is safely installed behind the polycarbonate front in the lower section of the middle number.

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What is the clear circle in the top of the middle digit?

A photocell to detect ambient light and adjust the LED power accordingly

The unit does not work when switched on.

Ensure the batteries are charged. Check main power is connected to the unit.

The solar panel is not charging the DFS 700.

Ensure the panel is located facing due south and has not been damaged / vandalised (including cabling).

What should I do if my DFS Unit does not function properly?

Reset unit and report any status codes to 3M. Please contact us on 01344 857950 to report any issues.

How can I maximise my radar's performance?

You can adjust the radar sensitivity through the DFS-CAS software and increase the DFS parameter setting to 100%. Ensure you have the latest firmware installed.

How can I reduce my radar's sensitivity?

You can adjust the radar sensitivity through the DFS-CAS software, and increase the DFS parameter setting to 100%. Ensure you have the latest firmware installed.

Does it register exit speed?

No, only entrance and average speeds. While the car is in the radar beam, exit speeds are hard to measure because the vehicle will be in a high angle to the radar beam when exiting it, which makes the measurement unreliable. To calculate a theoretical exit speed, double the difference between the entrance speed and the average speed.

What is the level of resistance of the DFS 700 unit against vandalism?

The DFS unit is vandal resistant but not vandal proof. The DFS passed the shock test (EN 60598-1). A steel ball (0.51kg) dropped from 1.3m through the display without damaging the device. The unit is protected by means of a strong outer casing and polycarbonate screen. Care has been taken to house all fixing mechanisms and components within this safe structure.

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Communication

What are the specifications of the Bluetooth dongle to communicate with the DFS 700 unit?

Please use the internal Bluetooth of your PC, or if you don't have one, use the Bluetooth dongle, which is given with the DFS or any other Bluetooth stick for USB 2.0.

I cannot connect via Bluetooth to the DFS 700 unit.

Ensure that the Bluetooth is activated on your PC, that your PC and the DFS unit are paired and that you are within the distance frame of the DFS unit (10 metres). Set the correct COM port for Bluetooth in the DFS-CAS connection menu as shown when the unit was paired with the DFS unit via add a new device / new connection procedure.

The PC crashes with a blue screen when trying to communicate via Bluetooth to the DFS 700 unit.

Ensure you have the latest DFS 700 firmware and DFS-CAS software installed. If you are using the integrated Bluetooth device of your laptop, please ensure that you have the latest driver version and that only one driver is installed in your PC. A Bluetooth dongle that is using a Bluetooth driver different from "Widcomm/Broadcom" could help. For more information, please contact us.

Connection fails when downloading data from the DFS 700 unit.

Ensure you have the latest firmware and software installed.

The computer has assigned a COM Port >16 and the DFS-CAS software will not allow me to use COM Port > than 16.

Install the latest version of software Version.

Bluetooth asked for COM port 9, but after editing the COM port, it automatically switches back to COM 6.

Due to some security settings of the PC, COM port settings may only be changed by an administrator. Ask your IT staff to give you the rights on your PC.

I cannot connect via GSM modem to the DFS 700 unit.

Ensure that your PC is equipped with a modem connected to an analogue line and the DFS you have purchased is fitted with a modem. Ensure you have the latest version of firmware installed on your unit. Ensure your DFS is located in an area where there is signal reception.

USB connection is not possible with DFS 700. Error 41 is displayed in the DFS-CAS Software.

The error 41 code that means the port is already open. This could be caused:

- by another program that has access to this port
- by an earlier attempt to get connected and the "connection" was cancelled before it timed out. In this case please wait until you receive the message "COMxx closed" before cancelling. Please ensure you are using the latest firmware and software.

I cannot connect via USB to the DFS 700 unit.

Ensure the USB driver is installed and the USB cable is connected to both the DFS and the PC. Select the com port which has the suffix (VCPO) in the drop down list in the connections section of the software.

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DFS-CAS Software

How can I share my reports with others?

The data once applied can be saved as an excel file, or the charts generated in the software can be saved as .bmp or .wmf files for distribution for those who cannot view the data through the software. Please view the user manual for directions on how to do this.

Can I download measurements into my PDA?

Yes, with the PDA software provided on the CD. All functions in the main windows software can be carried out on a PDA, except for the manipulation and viewing of the downloaded data which must be transferred to a normal PC and then assigned as data to a location.

Is the software compatible with Windows NT, windows 98 and windows XP?

DFS-CAS is fully compatible with Microsoft Windows 2000 and Windows XP SP2 or above.

Is it possible to use several different operating modes in the same day within the schedule of the DFS-CAS, for example, radar mode then limit mode etc?

It is only possible to switch from standby to one other mode (radar, limit...) called selected mode in DFS-CAS software.

Which speed is displayed if the car exceeds the upper speed limit set in the DFS?

The display will be blank. However if the 'measure and log speeds from and to' are above the upper display threshold, the unit will record data even though nothing is displayed on the sign face.

Would it be possible to display the speed limit of the road?

If the unit is set in limit mode under the operating mode tab in the parameter settings, the unit will display the speed entered in the 'show this in speed limit mode' value (in the settings tab).

Is the internal clock set to switch by one hour at the beginning and end of British summer time?

No, this change would need to be done manually in the parameter settings.

How do you change the language setting in the DFS-CAS for PDA?

The language in the PDA software is changed from English in the "Settings" section of the software. This can be found in the "menu" on the bottom right of the main screen. Don't forget to click "save" in the bottom left corner after changing the language. The PDA language file has to be in the correct folder before this change can be made.

In Speed Limit mode, can the device display the speed limit in green, amber or red and be set to flash?

Yes. Colour and flashing settings are independent and also available in limit mode.

Can the units be programmed with a full school calendar that includes weekends and holidays and the various times children are entering / leaving school?

The DFS 700 can be scheduled by weekday. This means you can define a behaviour for weekends and weekdays, but you cannot define single specific dates like holidays.

Would be possible to display "00" or "- -" or "blank" on the DFS 700 LED display when the max speed is exceeded?

Yes, a blank display is possible. You just have to set the maximum speed limit to the value of your choice in the DFS parameter setting menu.

What version of Windows do I need to run the software?

Windows 2000 or XP SP2.

Will the software run on MAC or on LINUX?

No, only on Windows.

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Data

How long does it take to download the data?

It depends on the type of connection and whether or not the memory is full. To speed up data downloads, ensure that the data is deleted from the memory after the download has taken place.

The data shows dates in 19504s' and the data cannot be reviewed.

Go to the technical support section and see the backup battery replacement guide.

I have downloaded the data from the DFS 5040 unit but cannot find it on my PC.

Unless you have checked the data deletion after download box, you can re-download data and choose the folder destination. By default data is stored in DFS-CAS installation folder under c:\Program Files\3M\

How can I look at the data once it has been downloaded from the DFS 5040 unit?

The data has to be assigned to a location. Check the manual for this operation.

What happens if the power is lost while recording the data of one vehicle?

The DFS 700 memory management collects 33 measurements before these are stored in the non-volatile permanent main memory. Before this happens the data cannot be downloaded. In the worst case only the buffered data would be lost in the event of sudden power failure, meaning the loss of a maximum of 32 measurements. Saving the 33 measurements in the non-volatile permanent main memory takes 3 ms.

How many measurements are logged and can be used for the statistics for each vehicle?

The data will be saved in RAM every 23 milliseconds as long as the vehicle is in range of the radar. Afterwards only the date, time, entrance and average speed will be saved in the permanent memory. The display changes every half second.

How can I create reports and graphs with DFS-CAS?

You have to download and assign data to a location first. When this has been done, right click each location and choose "Create report" (or "View measurements" if you want to see the individual measurements). There is an example location in the software called 3M with data in it. After choosing "Create report" you can select the reporting period you wish to create the report for.

Is it possible to download speed data immediately after it was measured?

The DFS 700 memory management collects 33 measurements before these are stored in the non-volatile permanent main memory. Before this happens the data cannot be downloaded. In the worst case the buffered data could be lost in case of sudden power failure.

I am not able to export data to MS Excel.

MS Excel is limited to 256 columns. You have to minimise the number of days or change the interval of the hours so that you don't have more than 256 columns to export (for example set the time bin width to 24:00).

What is shown in the Report Table in the Data report? Is it the average speed or entrance speed?

You can choose if you want to see average speed or entrance speed. Go to menu settings/ options/ speed for report.