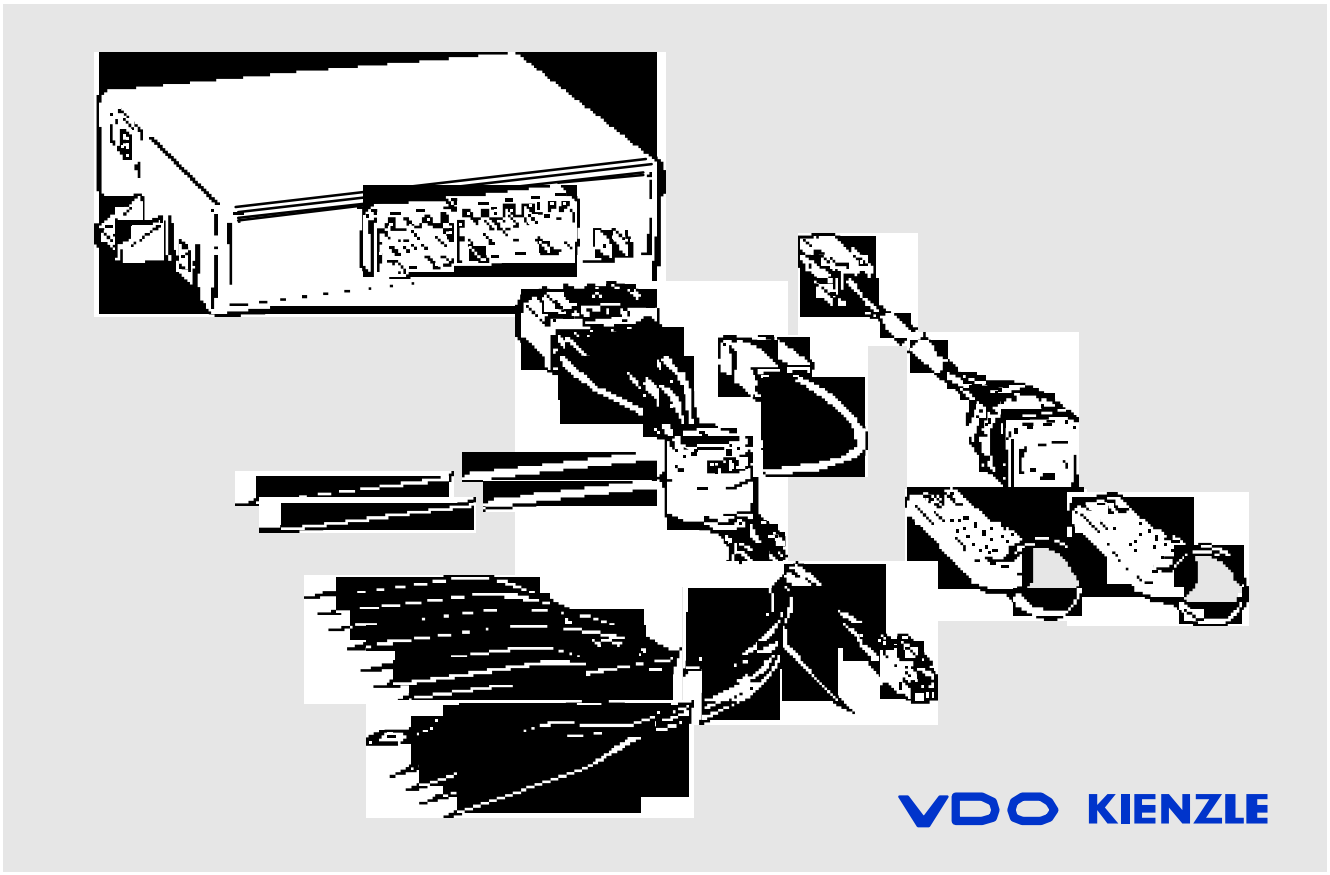
VDO KIENZLE



VDO Kienzle Fleet Manager 200

Product Manual

Rev. 2.1 November 1998

TU00.0028.00 000 02

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2. Safety regulations

2.1 Note before installation

Requirements

We would like to emphasise that installation by an unqualified technician may adversely affect the operating reliability of the vehicle and could endanger other road users.

A basic knowledge of vehicle electrical and mechanical systems is required to successfully install the VDO Kienzle Fleet Manager 200 system. The system should only be installed by a suitably qualified vehicle technician with a basic knowledge of the operation of computers. We strongly recommend that technicians attend a VDO Kienzle training course to acquire the skills needed for installation, configuration and operation of the VDO Kienzle Fleet Manager 200 system.

Installers should consult the manufacturers' documentation for the specific vehicle make and model prior to undertaking an installation.

Installers should pay particular attention to the location of fuel systems, hydraulic systems, compressed air systems and other electrical and mechanical systems, which may have a bearing on the installation.

Installers should pay attention to any changes to the vehicle's systems or settings, which should be noted prior to the installation.

Installers should refrain from smoking and the use of naked flames, which could cause an ignition in or near the vehicle.

Secure the workplace

Remove the ignition key from the vehicle's ignition lock.

Ensure that the vehicle's engine cannot be unintentionally started during the installation.

Record all data stored in the volatile memory of the vehicle's systems to ensure that such data can be restored. When the negative terminal of the battery is disconnected, all volatile memory will be lost. Please ensure that such information is recorded prior to disconnection so that systems can be reconfigured correctly.

Short-circuiting the vehicle's electrical system may result in fire, explosion of the battery and/or damage to other electrical systems.

The negative terminal of the vehicle's battery should be disconnected before commencing installation. If the vehicle has additional batteries, it may be necessary to disconnect the negative terminals of these batteries too.

Note during installation

Should it be necessary to remove seats, covers or other components, care should be taken to avoid accidental damage and/or disconnection of cables.

All components should be checked for damage prior to being installed into the vehicle.

Installation position

Installers should ensure that the components of the product do not influence or hamper the functioning of the vehicle’s systems. Care should be taken to ensure that the product’s components do not get damaged during installation.

Ensure that sufficient space is available for all components of the product prior to commencing the installation.

Please pay attention to the routing of cables and wiring.

Do not install the product in or near the location of mechanical or electrical airbags.

Do not drill into supporting or stabilising braces or beams.

Procedure

For small installation openings, a drill should be used. For larger openings, a conical milling cutter, compass saw or file should be used. All rough edges should be trimmed. Careful attention must be paid to the manufacturers’ safety regulations for all tools used.

Oils and fuels must be collected in appropriate containers and disposed of in accordance with the law.

Wiring

Note the product’s wire gauge.

If the wire gauge is reduced, current density increases which may cause the wiring to overheat.

Cables should be routed in existing channels and should not be routed parallel to ignition cables or other cables subject to high current. Cables should be fixed with cable-ties or adhesive tape.

Do not route cables over moving parts. Do not fix cables on the steering column.

Ensure that the cables are not exposed to pulling, pressure or shearing deformation.

If the cables are routed through drilled holes, rubber grommets or similar protection should be provided.

Suitable cable-strippers should be used to strip insulating material from cables and cable-strippers

should be adjusted to avoid damaging or separating the wire strands.

Cables should only be connected using smooth solder or suitable crimping lugs.

A proper crimping tool should be used on all crimping lugs.

Careful attention must be paid to the manufacturers' safety regulations for all tools used.

Insulate free strands to prevent short-circuits.

Connections to vehicle power supply must be installed with a fuse or current limiting device.

Be aware that short-circuiting may be caused by faulty connections and crushed or damaged cables.
Short-circuiting the vehicle's electrical system may result in fire, explosion of the battery and/or damage to other electrical systems. To prevent this, all connections carrying current must be soldered and insulated correctly. Other connections such as the speed signal, RPM signal, brake light or clutch switch can be made with crimping lugs.

Incorrect connections can lead to short circuits. Connections should only be made in accordance with the vehicle's wiring diagram.

Current and voltage should be measured with a multimeter or diode test lamp. The use of inadequate test equipment may result in the damage to control devices or other electrical systems.

2.2 Note after installation

Reconnect the vehicle's ground cable to the negative terminal of the battery.

Re-configure the values in the volatile memory of all systems.

Check all vehicle functions.

Explain the functions of the VDO Kienzle Fleet Manager 200 system to the customer and give the customer the attached operating manual.

2.3 Note during operation

The product must be operated in accordance with operating instructions. Failure to use the product as directed might result in personal injury, material damage and/or damage to the environment.

3. Introduction

3.1 Confirmation of conformity

The product was developed, produced and tested according to regulations 71/245/EWG, which were updated with 95/54/EG and the recognized state-of-the-art.

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3.2 Utilisation as directed

The product is only for the use in earthbound vehicles and working machines.

3.3 Declaration of conformity

We declare on our own responsibility that the product is in compliance with following norm(s) or documents:

DIN EN 50081-1 (03/93), DIN EN 50082-2 (02/96)

3.4 Product overview

Vehicle Unit

Rated voltage	12 / 24 Volt
Operating voltage	9 ... 36 V
Operating voltage max.	40 Volt for 1 hour, 50 Volt for 5 min.
Current consumption	30 mA (Stand by)
Storage temperature	- 4 °F (- 20 °C) ... + 158 °F (+ 70 °C)
Working temperature	- 40 °F (- 40 °C) ... + 185 °F (+ 85 °C)
Humidity (max.)	95%
Serial interface	Master /Slave bus technology
Clock component	Real Time Clock (RTC)
Backup	Lithium Battery
Memory	1MB EEPROM (512 kB for trips, 128 kB for tacho data, 360 kB for operating system and device drivers)
Interrupter relay	max. 25A
Relay output	max. 150 mA
Indicator	Integrated buzzer
Interface	I^2C for the connection of the vehicle interface
Speed signal	Square wave signal / Sine signal
Offset	- 50 Volt to + 50 Volt
Voltage $_{pp}$	$_{pp}$ > 0,5 V
Duty cycle	1% - 99%
Frequency	max. 5000 Hz
Protection	$^{+}/_{-}$ 600 Volt spike, $^{+}/_{-}$ 50 Volt DC

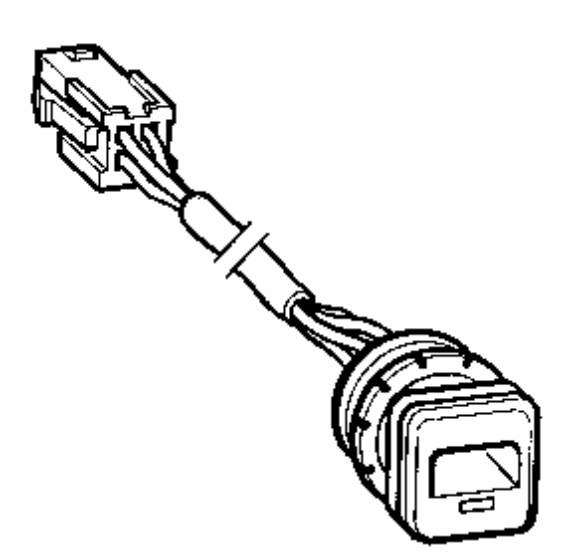
RPM – signal	Square wave signal / Sine signal
Offset	- 50 Volt to + 50 Volt
Voltage $_{pp}$	$_{pp}$ > 0,5 V
Duty cycle	1% - 99%
Frequency	max. 5000 Hz
Protection	$^{+}/_{-}$ 600 Volt spike, $^{+}/_{-}$ 100 Volt DC

3. Frequency input	Square wave signal / Sine signal
Offset	- 50 Volt to + 50 Volt
Duty cycle	1% - 99%
Frequency	max. 10.000 Hz
Protection	$^{+}/_{-}$ 600 Volt spike, $^{+}/_{-}$ 50 Volt DC

Digital inputs / Analog inputs	4
Trigger voltage	0 – 38,33 Volt (programmable)
Resolution	150 mV
Frequency	max. 1 Hz
Protection	$^{+}/_{-}$ 300 Volt spike, $^{+}/_{-}$ 50 Volt DC

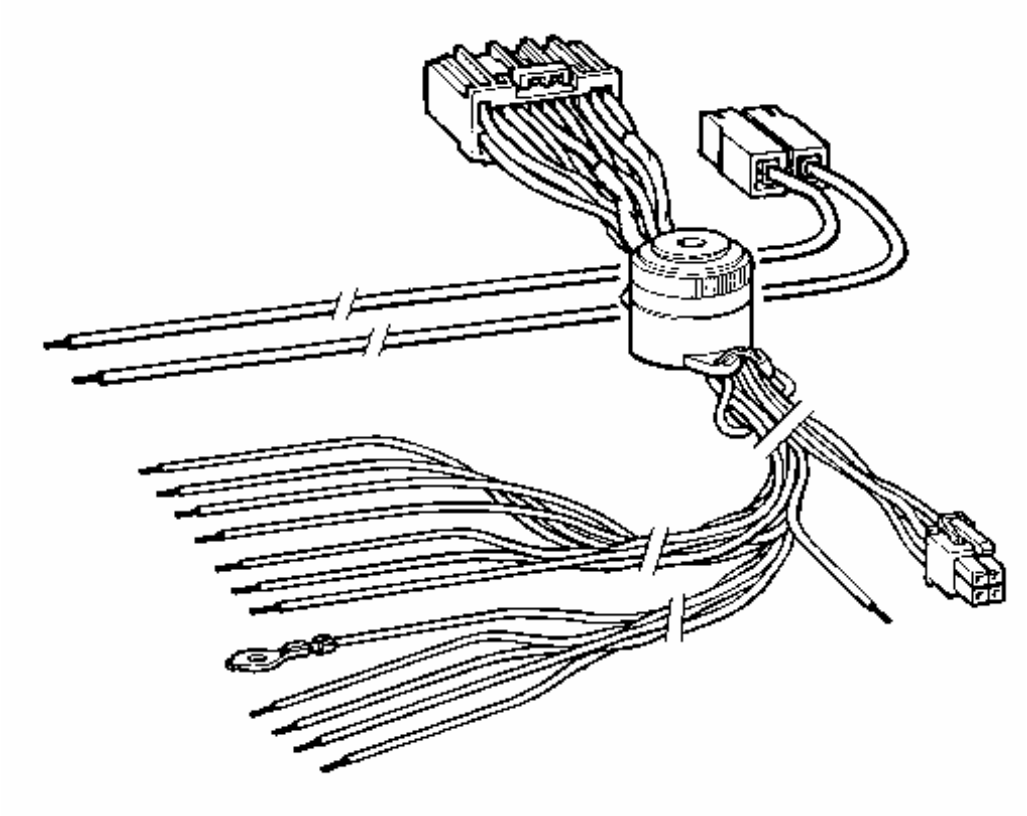
Protection class	IP 54

Vehicle Interface



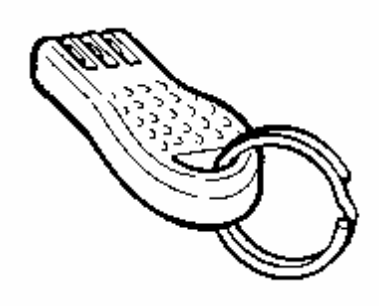
Connection	Compact plug
Attachment	One way push nut

Wiring Harness



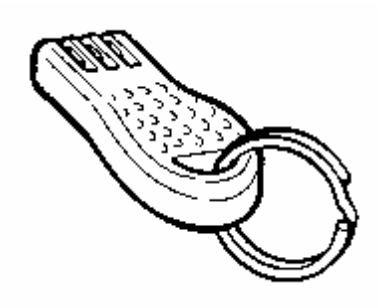
Plug connections	Compact plug for FM 200 vehicle unit Compact plug for vehicle interface Compact plug for starter interrupt connection
Indicator	Integrated buzzer
Connections for	Power supply Speed signal RPM signal 3rd. Frequency input Digital input / analog input (4) Switching output

Driver Plug (blue)



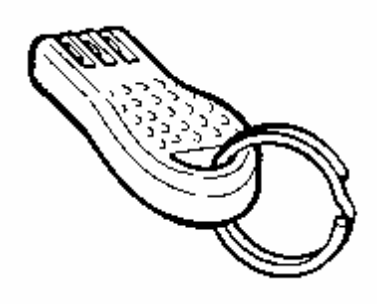
Case	Plastic
Memory	8kb EEPROM Driver ID, Access authorization, Date and Time

Vehicle Plug (green)

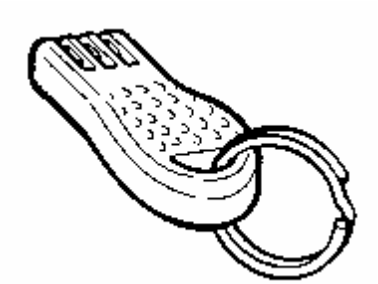


Case	Plastic
Memory	256kb EEPROM Several memory sectors for trips and tacho data

Calibration Kit



SPDCAL
Speed Calibration Plug



RPMCAL
RPM Calibration Plug

3.5 Order numbers

X10.723/002/002	VDO Kienzle Fleet Manager 200 Kit Hardware
X39.723/002/029	Vehicle Unit FM 200
X39.723/002/030	Wiring Harness FM 200
X39.723/002/033	Vehicle plug FM 200 (green, 256 kB)
X39.723/002/006	Driver plug FM 200 (blue, same as FM 100)
X39.723/002/005	Vehicle Interface
X39.723/002/031	Metal housing FM 200
X39.723/002/004	One way screws FM (4x)
X39.723/002/034	PC Software Fleet Manager 2001 CD
X39.723/002/009	PC Download Module
X39.723/002/051	Harness Converter FM100 => FM200
X39.723/002/035	Installation and User Manual Software, German/English
X39.723/002/042	User Manual Hardware, German/English
X39.723/002/043	Free
X39.723/002/028	Calibration Kit (2x calibration plugs, same as FM 100)

3.6 System requirements

The VDO Kienzle Fleet Manager 200 is designed for utilisation in vehicles, special vehicles and working machines with a 12/24 electrical system. VDO Kienzle Fleet Manager 2001 application software is required to complete the installation process.

3.7 System description

The VDO Kienzle Fleet Manager 200 is an on-board computer for utilisation in earthbound vehicles, special vehicles and working machines. The system is designed to record vehicle information as speed, RPM, temperature data and fuel data, parking, stop and driving times as well as other vehicle status information. It is possible to configure the system to record tacho data with a one second interval. This tacho data can include date, time, speed, RPM as well as the current status of the digital/analog inputs. To enforce driver identification, the VDO Kienzle Fleet Manager 200 is equipped with a relay, which can be used to interrupt the vehicle’s starter circuit. Driver identification is carried out by means of a driver specific blue plug. A vehicle specific green plug is provided for the data extraction. Trip and status data is analysed and processed using the VDO Kienzle Fleet Manager 2001 application software. The Microsoft SQL Server database provides flexibility and simplifies the processing and exporting of information.

4. Installation

4.1 Technical requirements

To install the VDO Kienzle Fleet Manager 200 system, the workshop needs:

- Standard technical equipment and appropriate tools for use with vehicles .
- Personal computer with a CD-ROM drive (minimum Pentium 100 with a minimum of 16 MB RAM and a minimum of 80 MB of free disk space, CD – ROM drive, available parallel port). The personal computer should be running the Microsoft Windows 95 or Windows 98 operating system.
- VDO Kienzle Fleet Manager calibration set (calibration kit).

4.2 Personal requirements

The technician who will undertake the installation of the VDO Kienzle Fleet Manager 200 system:

- Must be a trained vehicle technician.
- Should have a knowledge of how to use a personal computer.

Attention

Installation should only be undertaken by a vehicle technician with comprehensive occupation specific knowledge whom has complete command of the actions required by the occupation.

We would like to emphasize that installation by an unqualified technician may adversely affect the operating reliability of the vehicle and could endanger other road users.

Please take note of the safety information starting on page 3 of the section entitled "2. Safety regulations".

4.3 Tools

Standard technical equipment and appropriate tools for use with vehicles are required to install the VDO Kienzle Fleet Manager 200 system. Vehicle specific tools may be required for the removal of consoles and covers.

4.4 Installation vehicle unit

Installation position

The vehicle unit must be installed inside the passenger compartment or the driver cabin, to protect it from possible damage by water or other environmental factors.

Attention!

Please take note of the safety regulations on page 4 concerning the Installation position. The unit should not be installed in or near the ventilation or heating systems, which may cause it to overheat.

The unit should be installed in a position where it will not be subjected to pressure, impact or excessive vibration.

Select the installation position carefully before proceeding with the installation.

Mark and drill the required holes.

Route cables from the unit to the appropriate senders within the vehicle. Additional information can be found in the wiring diagram.

After connecting the system components and performing a system test, mount the vehicle unit securely, making use of the optional metal armoured housing if required. The armoured housing is available as a spare part. It can be used as protection against manipulation.

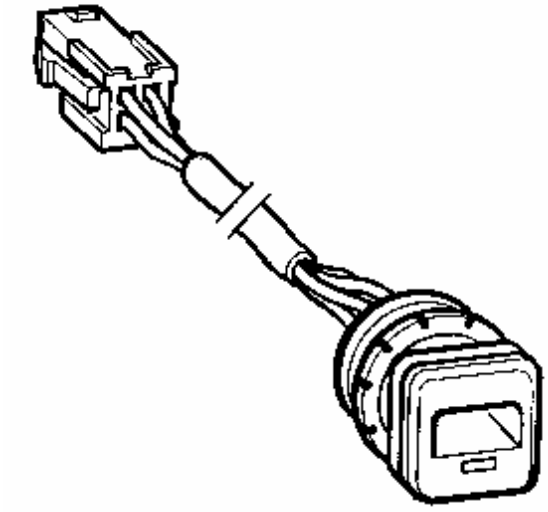
4.5 Installation vehicle interface

Installation position The vehicle interface must be installed inside the passenger compartment or the driver cabin, to protect it from possible damage by water or other environmental factors.

Attention! Please take note of the safety regulations on page 4 concerning the Installation position. The vehicle interface should not be installed in or near the ventilation or heating systems, which may cause it to overheat.

The vehicle interface should be installed in a position where it will not be subjected to pressure, impact or excessive vibration.

Select the installation position carefully before proceeding with the installation.



Drill size 13/16” - 20 mm

Mark and drill or cut the required hole.

Remove the mounting clip from the vehicle interface. Remove the protection film from the gummed surface of the protection ring and press it firmly against the back of the interface. Insert the interface into the mounting hole and slide the mounting clip into position.

4.6 Wiring

Connect the cables according to the following table:

Colour	Pin-	Connection	Term
Red	12	Battery PWR (use 7.5 amp in	30
Black	1	Ignition (use 7.5 amp in line	15
Brown	2	GND	31
Blue/white	19	Speed	
Black/whit	18	Speed PWR (For powered sending	
Brown/whit	2	Speed GND	
Green	20	RPM signal	
Brown/red	22	Switching output	
Violet	21	Additional frequency input	
White/viol	5	Digital/analog input no. 1	
White/red	6	Digital/analog input no. 2	
White/gree	3	Digital/analog input no. 3	
White/yell	4	Digital/analog input no. 4	
Black	A1	Starter interruption	
Black	A2	Starter interruption	
(red)	12	Buzzer PWR	
(brown)	7	Buzzer GND	
Black	9	Code Plug PWR	
Black	8	Code Plug Data	
Black	10	LED	
Black	13	Code Plug GND	

Note: The wires on the grey coloured ground are already connected and need not be linked. All power connections must be fuse protected.

4.6.1 Interruption

The VDO Kienzle Fleet Manager 200 has an internal relay intended exclusively for the interruption of the vehicle’s starter circuit.

Connection

Connect the two starter interruption wires to the corresponding terminals on the back of the vehicle unit. Cut the wire from the ignition lock to the starter (term 50) and solder the starter interruption wires from the VDO Kienzle Fleet Manager 200 unit onto the ends of the wires from the starter circuit. These wires can be connected either way around because the relay is a normally closed relay, which is opened upon driver registration.

Attention!

The internal relay is intended only for starter circuit interruption (term 50). This relay should not be used to interrupt the fuel pump or ignition (term +15) power supplies. For high current starter solenoid applications an additional relay may be required.

4.6.2 Additional switching output

The VDO Kienzle Fleet Manager 200 has an additional switching output protected from overloading. To activate this output, one or more events must be configured in the Fleet Manager 2001 application software. The output signal of the Fleet Manager 200 is *ground*. The maximum current of a device connected to this output must not exceed 150 mA.

Connection

Connect the brown/red wire (FM pin 22) to the ground contact of the relay (Relay pin 85). Connect the positive contact of the relay (Relay pin 86) to term key on power or constant power (depending on the operation) of the vehicle power supply.

4.7 Status inputs

The VDO Kienzle Fleet Manager 200 is equipped with four status inputs. These inputs are programmable and can be used to monitor either digital or analog signals. The operating range of these inputs is between 0 and 38,88 Volts at a resolution of 150mV. The specific switching thresholds for the vehicle are stipulated in the Fleet Manager 2001 software. The system can be configured to record information when such events occur. This information can be transmitted to the Fleet Manager 2001 software via the green vehicle plug.

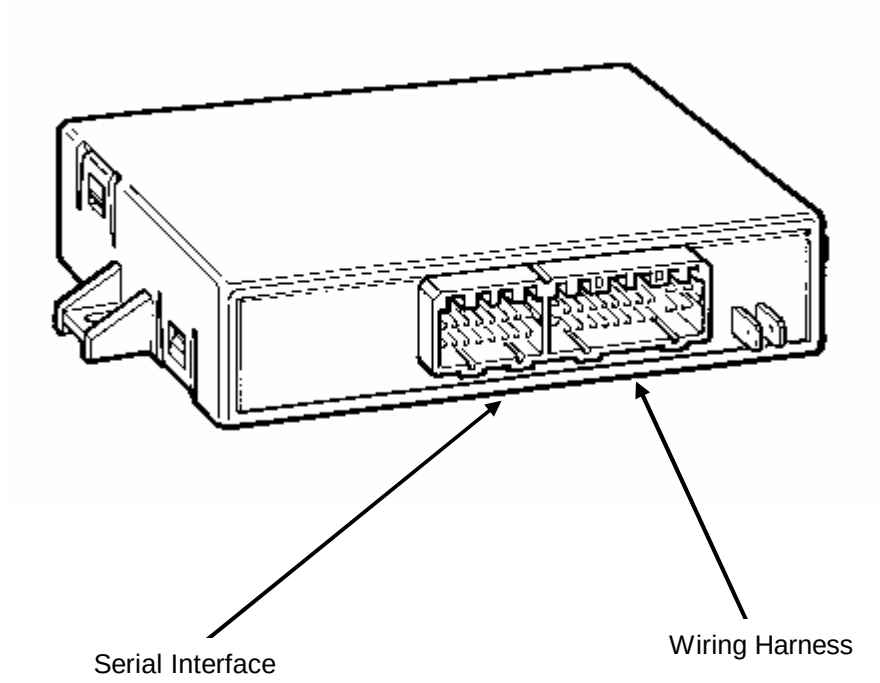
Note

This signal must be > 0 volt and can be processed by the unit in steps of 150mV. As a result, the signal from certain devices which operate on a variable resistance may not be registered correctly when connected directly to the Fleet Manager 200 unit.

Please also refer to the technical specifications the section entitled ” 3.4 Product Overview”.

4.8 Serial interface

The serial interface is currently not supported. It will be used for additional features such as GSM data extraction, integration with the **G**lobal **P**ositioning **S**ystem or the connection of a keyboard. In principle the interface is based on the **U**niversal **S**erial **B**us like ”Master/Slave” technology, well-known in the computer industry. This technology allows for more than one device to be connected to the interface. Appropriate device drivers for connected devices will be uploaded via the green vehicle plug to the Fleet Manager 200 unit.



5. Configuration

This section describes the initial configuration of the Fleet Manager 200 system. For more detailed information please refer to the *Installation and User Manual* of the Fleet Manager 2001 application software or to the online help function.

5.1 Vehicle plug and Driver plug

Configuration

Take the blue and the green plug out of the Fleet Manager 200 package. Start the Fleet Manager 2001 application software on your computer.

Note

The FM 2001 software has to be set up for the specific customer. You must configure the events to be monitored by your Fleet Manager 2001 system before continuing. Please refer to the online help for more information about parameters and events.

Insert the green vehicle plug into the download module. From the “Code Plug” menu, click on "Initialise Plug". Choose "Vehicle Plug" from the menu. If the vehicle to be initialised is not shown in the list, click the "Add" button. Enter an ID number, registration number and description of the vehicle into the vehicle properties dialog. Select the appropriate unit type (here FM 200). Information such as Site and Configuration Group are not transferred into the unit and can be configured by the customer at a later stage.

If Configuration Groups have already been defined, these should be used to configure new vehicles so that the appropriate default settings are inserted automatically into the new vehicle records.

Default settings include details on the threshold values for speed and rpm, and whether the exceeding of a limit is recorded with or without start and end odometer.

Click the "Ok" button to save the new vehicle record.

Additional tabs will become available in the vehicle properties dialog. Use the “Input Configuration”, “Event Configuration” and “Tacho Configuration” tabs to specify which devices are connected to the unit and which information you would like recorded.

On the “Input configuration” tab, you will notice that the Speed and RPM inputs are shown as being connected by default. If there is no RPM signal connected, please uncheck this item.

Please ensure that all inputs are calibrated correctly. For inputs connected to digital devices (switches), please specify a trigger value in mV. For analog inputs, please enter any two pairs of values as well as the corresponding unit of measure. This information will be used to display information on the tacho data graph.

Use the “Tacho Configuration” tab to specify which inputs should be recorded at one-second intervals. It is recommended that you enable recording of all inputs after installation. Once the configuration has been uploaded and a test performed, this setting can be changed to suit the customer’s requirements.

For more detailed information on these procedures please refer to the *Installation and User Manual* of the Fleet Manager 2001 software or to the online help function.

All further details of vehicle settings can be entered subsequently during commissioning at the customer’s premises.

Then select „Load“ and „Exit“.

Device drivers

The Fleet Manager 200 memory only contains the operating system at the time of delivery. Before the on-board computer can be configured with the specific vehicle data, the current device drivers must be loaded. This is done with the menu option „Code Plug“ - „Initialise plug“ - „Device driver“, or with a specially programmed „driver plug“, if programming tool FMDealer.exe is available.

In order to load the device drivers to the green vehicle plug, it first has to be initialised for the relevant vehicle.

Open the menu option „Code Plug“ and click on the sub-option „Initialise plug“. Select the option „Vehicle plug“. Follow the instructions on the screen up to step 3 of 4 (Initialise plug with the following data). Deselect the „Update event configuration“ option and click on „Continue“. The following screen tells you that only the vehicle ID is being transmitted to the plug. Confirm this message.

Open the „Code Plug“ menu option and click on the sub-option „Initialise plug“. Select the option „Device drivers“. Follow the further instructions on the screen. When you have finished your entries, the device drivers are loaded to the previously initialised green vehicle plug.

Insert the vehicle plug into the reader socket in the vehicle. The device drivers and the vehicle ID are loaded into the on-board computer. This process lasts approx. 1 minute.

Caution!

Always wait until the data transfer is concluded before removing the plug from the reader socket. Correct transfer is indicated by two short signal tones. If a different tone sequence is heard, data transfer is defective and must be repeated. To do this, the vehicle plug has to be re-initialised and the device drivers then loaded again. This is necessary, as the transmission of the vehicle ID and the device drivers only functions once after re-initialisation.

Note

Using the program FMDealer.exe, it is possible to format a green vehicle plug in such a way that it can

be used as a permanently functioning „device driver plug“. It is recommended that this plug be stored together with the calibration plugs.

Configuration

Open the menu option „Code Plug“ and click on the entry „Initialise plug“. Select the option „Vehicle plug“. Follow the further instructions on the screen up to step 3 of 4 (Initialise plug with the following data). Activate the entries „Update event configuration“ and „Set mileage“. Then you can change the plug format by moving the relevant control. Confirm the entries by clicking on the „Continue“ button. The data to be transferred to the plug are then shown. Confirm this entry. The data are then transferred to the vehicle plug.

The configuration data and the odometer reading are then loaded into the green plug and can be transferred to the on-board computer. Insert the green vehicle plug into the reader socket in the vehicle. The data are then transferred. This process is announced by a short signal tone at the start and end of the transmission.

The on-board computer is now programmed with the vehicle ID, the configuration settings and the mileage.

Note

If the vehicle ID is to be changed at a later date, the green vehicle plug has to be formatted first and then initialised with the new vehicle ID. The configuration of the on-board computer remains unchanged.

For configuration of the blue plug and for transfer of the date and time, proceed as follows:

From the “Code Plug” menu, click on "Initialise Plug". Choose the second item, "Driver Plug". Insert the blue driver plug into the download module and click the “Ok” button. If the required driver is not shown on the list click the "Add" button. Enter an ID number and the driver’s name into the driver properties dialog. Select the „Vehicle access“ tab and select the appropriate vehicles. In addition, data on the personnel number and report group membership can be entered, but these are not written to the key and can therefore be added during commissioning at the customer’s premises. On conclusion of your entries, click on „OK“. The blue key is now assigned to the previously selected driver and contains not only the driver ID but also the vehicle access table.

After installing the VDO Kienzle Fleet Manager 200, the unit’s real-time clock should be set to the current date and time.

Note

The software defaults to a time ten minutes ahead of the current time. You may change this to any time but you should allow yourself sufficient time to get to the vehicle to insert the plug into the vehicle interface.

Caution!

Ensure that the daylight saving is enabled in the VDO Kienzle Fleet Manager 2001 software!

Software

From the “Code Plug” menu, click on "Set Date / Time” and then enter the date and time at which you will

	insert the plug into the vehicle interface. The driver plug will be configured with the specified date and time.
Vehicle	Insert the blue driver plug into the vehicle interface at exactly the pre-programmed date and time. The unit will beep three times indicating the date and time has been set successfully.

5.2 First initialising

First initialising — Insert the green vehicle plug into the vehicle interface. The Fleet Manager 200 reads the data on the plug and records the vehicle ID, the odometer and configuration information. The system is now ready for operation.

Note — Before recording driving information, the system must be calibrated as described below.

5.3 Distance

Two calibration plugs ("SPD CAL" and "RPM CAL") are provided for calibrating the VDO Kienzle Fleet Manager 200 system. Before calibrating the system, the blue driver plug should be initialised as described above.

Calibration (1) — Disarm the system using the blue plug and drive to the beginning of a demarcated 20 meter distance. Insert the violet plug labelled "SPD CAL" into the vehicle interface and drive the demarcated 20 meters. Remove the violet plug from the vehicle interface. The Fleet Manager 200 unit is now calibrated with the correct distance to pulse ratio.

Note — The speed calibration plug “SPD CAL” is pre-programmed for use over 20 meters. This value can be changed voluntarily.

Calibration (2) — Disarm the system using the blue plug and drive to the beginning of a demarcated 20 meter distance. Now measure the exact distance to pulse ratio using the appropriate measurement tools. It is also possible to determine the distance to pulse ratio using a roller test bench. Set the speed calibration plug “SPD CAL” to the correct distance to pulse ratio using the “FMDealer.EXE” workshop software. Disarm the system using the blue driver plug and turn the ignition on. Insert the calibration plug into the vehicle interface. The unit will beep three times indicating that it has been calibrated successfully.

5.4 Number of revolutions

Calibration (1)	Disarm the system using the blue driver plug. Insert the violet plug labelled "RPM CAL" into the vehicle interface and start the engine. Increase the engine speed to 2001 RPM and keep this value constant for a few seconds. Remove the violet plug from the vehicle interface. The Fleet Manager 200 will now be calibrated to the engine speed of the vehicle.
Note	The RPM calibration plug “RPM CAL” is pre-programmed for use at 2000 RPM. This value can be changed using the “FMDealer.EXE” workshop software.
Calibration (2)	Disarm the system using the blue driver plug. Now measure the exact frequency of the RPM signal using the appropriate measurement tools. Set the RPM calibration plug to the correct frequency using the “FMDealer.EXE” workshop software. Disarm the system using the blue driver plug and turn the ignition on. Insert the calibration plug into the vehicle interface of the vehicle. The unit will beep three times indicating that it has been calibrated successfully.
Note	For further information on the program FMDealer.exe, please consult the relevant documentation.

6. Function test

6.1 Download data

Test drive	Disarm the system by inserting the blue plug into the vehicle interface and wait for the acoustic signal. Remove the plug and start the engine. Allow the vehicle to idle in neutral gear for at least two minutes so that the unit records a sub-trip. Carry out a test drive.
Read out	After the test drive, turn off the ignition and insert the green vehicle plug into the vehicle interface. A beep will be heard indicating the start of data transmission. At the same time the LED on the vehicle interface will flash. A second beep will be heard once data transmission has completed. Remove the green vehicle plug and insert it into the download module to transfer the Data to the VDO Kienzle Fleet Manager 2001.
Note	More information on this procedure on this can be found in the documentation and the online help function of the VDO Kienzle Fleet Manager 2001 application software.

7. Starting

7.1 Setting of the vehicle root data

The VDO Kienzle Fleet Manager 200 system allows the setting of vehicle specific values e.g. threshold values for speed, RPM, standing times, parking times etc. These values are defined in the VDO Kienzle Fleet Manager application software and are transferred to the vehicle using the green vehicle plug.

Software

For information on programming the vehicle root data, please refer to the documentation and the online help functions of the VDO Kienzle Fleet Manager 2001 application software.

After the vehicle root data has been entered, it should be transferred onto the green vehicle plug.

Vehicle

Insert the green vehicle plug into the vehicle interface. The data on the plug will be transferred automatically into the on-board computer. Test drive the vehicle and download the data into the VDO Kienzle Fleet Manager 2001 application software to ensure that the configuration changes were successful.

8. Maintenance

The VDO Kienzle Fleet Manager 200 unit is maintenance - free.

Please ensure that the vehicle interface is kept clean and free of dust and dirt.

9. Troubleshooting

LED does not flash	No voltage	Check the voltage supply of the Fleet Manager 200.
The Fleet Manager 200 can not be released	The blue driver plug is not released for the vehicle	Use the correct driver plug or get the driver plug released for the vehicle
The recorded vehicle data is incorrect	The Fleet Manager 200 has not been calibrated correctly	Calibrate the Fleet Manager as described again
Time/Date of the trips are incorrect	The clock in the Fleet Manager 200 is misadjust	Set the date and time by means of the blue driver plug
The buzzer warns when turning on the ignition	The driver registration was not done or	Register with your blue driver plug
	there is no using permission for this vehicle	Get your blue driver plug released for the vehicle and register with it

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10.1 Driver registration and disarming of the on-board computer

For driver registration, insert the blue driver plug containing your personal ID into the vehicle interface. The on-board computer issues two beeps and the LED in the vehicle interface stops flashing. You may now start the engine. If the LED in the vehicle interface remains flashing, this indicates that registration has failed and you do not have permission to drive the vehicle. Repeat the procedure if you believe you have been granted permission to drive the vehicle. Permission to use the vehicle is defined using the Fleet Manager 2001 application software.

10.2 Data transmission

To transmit data to or from the unit, insert the green vehicle plug into the vehicle interface.

A short beep indicates the start of data transmission. The LED in the vehicle interface will flash quickly during data transmission. A second beep indicates the start of the second phase of data transmission. A third beep indicates that data transmission is complete and the LED will flash at one-second intervals. Only data recorded since the last download will be transferred. This is why the time between beeps may be very short. Should a failure occur during transmission an acoustic code will sound. Please refer to section "10.5 Acoustic signals" for more information.

10.3 Setting of the vehicle root data

The green vehicle plug is used to set the vehicle root data. This plug should be initialised with the vehicle threshold values using the Fleet Manager 2001 application software. These values will be transferred into the on-board computer the next time the plug is inserted into the vehicle interface.

Details on the various threshold values can be found in the software manual or the online help function of the software.

10.4 Setting of date and time

If it is necessary to set the date and time of the vehicle unit, please refer to the Fleet Manager 2001 software manual.

Insert the blue plug into the vehicle interface at the exact time pre-programmed with the software. The buzzer issues three short beeps indicating that the date and

time have been set successfully.

10.5 Acoustic signals

The FM 200 on-board computer has a diagnostic function, which provides information about memory capacity, communication with plugs and operating conditions. This information is conveyed by means of the buzzer and the LED in the vehicle interface.

General communication failure		
Communication failure at data transmission:	LED: Buzzer: :	No changes –––
During start-up		
Armed:	LED: Buzzer: :	? ? ? . . . continuous flashing off
Requesting driver registration:	LED: Buzzer: :	Off –– –– –– 10 times while turning on ignition or until driver registration
Driver registration correct:	LED: Buzzer: :	Goes off – –
Driver registration wrong:	LED: Buzzer: :	? ? ? . . . continuous flashing – –
FM200 used memory capacity 80%-95%:	LED: Buzzer: :	Off after driver registration one second after driver registration – – –
FM200 used memory capacity 95%-100%:	LED: Buzzer: :	Off after driver registration one second after driver registration –– –– ––
During calibration		
Calibration:	LED: Buzzer: :	? ? ? ? ? ? flickers –––––––– –––––––– ... until removal of calibration plug
Setting date/time with blue plug:	LED: Buzzer: :	? flickers during data transmission ? – – –
While driving		
Exceed threshold value while driving:	LED: Buzzer: :	Off ––––– while exceeding ––––––
During data transmission		
Vehicle registration correct:	LED: Buzzer: :	? flickers during data transmission ? ? . . . regular flashing –
Vehicle registration wrong:	LED: Buzzer: :	? ? ? . . . continuous flashing – – ––––
Memory of green plug full, but still data to transmit:	LED: Buzzer: :	Flickers as long as memory available, followed by ? ? ? – –– 5 Seconds tone ––

–––––––––––– = 1 second

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11. FMDealer Utility

The FMDealer Utility replaces the FM100 dealer utility (Dealer.exe) and contains more enhanced funcionality. The utility caters for FM200 plugs as well as for FM100 plugs.

Setup

The FMDealer Utility comes with a Windows setup. For installation please doubleclick on the setup.exe file and follow the instructions.

FMDealer.exe runs under:

- Windows 3.1
- Windows 3.11
- Windows 95
- Windows 98

Functionality

Menu **FILE**

- Exit Shuts down the program.

Menu **EDIT**

- App Setup: Sets the Date Format (DD/MM/YY or MM/DD/YY).
- Plug Comms: Sets the communications port (LPT1 or LPT2). Autopolling On/Off (The download module is automatically polled to see if a plug has been inserted).
- Language: Sets the language.

Menu **CALIBRATION**

- RPM/SPEED: Configures the calibration plugs.

  Window "CALIBRATION":

  Plug Type: Calibration plug for RPM or Speed.

  Min: Valid min. value

  Max: Valid max. value

  Calibration Increment: The Calibration value can be a multiple of this increment.

  Button Increment: Number by which the calibration value increments or decrements, when the up or down arrow buttons are pressed.

	Calibration Method:
Manual	Speed: The vehicle is driven the set distance with the "SPD CAL" plug inserted, then removed. RPM: The "RPM CAL" plug is inserted, the engine is revved to the calibration speed and held there. The plug is then removed. During calibration, the unit beep in 1 second intervals. The LED will flash as the unit receives pulses. When the plug is removed, the unit should beep 3 times to indicate that the calibration is successful.
Automatic	For known pulses, at the specified engine speed or distance, { Speed: (pulses/1000m), RPM: (pulses/sec at 1000RPM) } insert plug and wait for 3 beeps.
Diagnostic	The inserted plug is set as a diagnostic plug. The plug behaves similarly to a manual calibration plug, except values in the OBC are not changed. It is used to verify whether the unit is detecting pulses, the unit code plug socket LED will flash at a rate preportional to the pulse rate.

Menu **OPTIONS**

- Set Date/Time	Setting Date/Time onto a blue plug.
Note	If required, set Daylight Saving Time!
- Initialise Plugs:	Driver (ID) Vehicle (ID) Update vehicle unit (Overwrites the vehicle ID in the FM200 unit if the checkbox is checked) Odo (green plug) Clear FM200 memory Formats a blue plug which can be used to clear the memory of a FM200 unit
Note	This feature does not work with FM100 units!
- Calibration	Configures calibration plugs.
- Format Plugs	Formats plug memory. - Calibration (violet) - Driver (blue) - Vehicle (green) - Device Drivers Format Device Drivers allows one to format a green FM200 vehicle plug in such way, that the device drivers can be uploaded more than one time to a FM200 unit. This allows one to go from vehicle to vehicle without

re-loading the device driver. No vehicle ID is transferred during this operation. Caution must be taken to label this plug carefully so that vehicles are not inadvertantly loaded with incorrect device drivers.

Note — Take care that the appropriate plug is always chosen. The "FORMAT" function can also be used to repair corrupt plugs.

12. Service Information

This chapter contains service information concerning the Fleet Manager 200.