Translation of the original
instruction manual
Version 1.4
Updated 2024-02-20

Instruction manual

Industrial router & firewall

IRF3000 series

adstec
Industrial IT

Table of Contents

1 Notes

1.1 General remark

This instruction manual is intended to ensure safe and efficient handling of the *industrial router and firewall* of type IRF3xxx, referred to in the following as "device".

The instruction manual must be read carefully by personnel before commencing any type of work.

All of the safety instructions and handling instructions given in the manual must be obeyed in order to ensure that work is carried out safely.

Operation of the device is subject to the laws and regulations which are applicable in the respective country at national, federal, European and international level.

The generally accepted rules of technology, usually in the form of standards, directives, regulations, conditions and technical rules specified by national and federal organisations as well as trade associations and committees for the field of specialisation concerned, shall apply.

Figures used in this instruction manual are provided for basic understanding and may differ from the actual design.

The operator/operating company is independently responsible for compliance with and observance of any subsequently introduced technical innovations or new legal requirements, as well as for all usual obligations of the operator/operating company.

The original version of this instruction manual was written in German. All non-German versions of this instruction manual are translations of the German instruction manual.

1.2 Manufacturer

The manufacturer of the product is ads-tec Industrial IT GmbH. The company is referred to in the following as ADS-TEC.

1.3 Limitation of liability

ADS-TEC shall not be liable for personal injury, property damage or damage caused to the device as well as consequential damage that is/was the result of non-compliance with this instruction manual, improper use of the device, repairs and other actions on the device by unqualified electricians and electricians not certified by ADS-TEC, or that is/was the result of using unapproved replacement parts. Failure to observe the maintenance intervals shall also result in exclusion from liability. Furthermore, it is strictly forbidden to make any unauthorised alterations or technical modifications to the device.

1.4 Relevant device documentation

The following documents are decisive to device setup and operation:

- This instruction manual contains information for installation, commissioning and operation of the device along with technical data of the device hardware.
- Technical data sheet (see download area)
- Website: You can download drivers, software, user manuals, leaflets and flyers from the **Support-Download center area** of our website www.ads-tec-iit.com

2 Safety instructions

2.1 Structure of safety instructions

The signal word classifies the hazard.

Reference to the type/consequences and source of the hazard is made underneath the signal word.

Information on how to avoid the hazard is indicated by an arrow (➡).

⚠ SIGNAL WORD

Type/consequences of hazard!

- Source of hazard

➡ Measures to prevent hazard

2.2 Graduation of risk level

The signal word classifies the hazard.

Instructions for preventing the hazard are identified by an arrow (➡).

2.3 Explanation of used symbols

⚠ DANGER

Indicates an imminent danger. If not avoided, death or severe injury will result.

⚠ WARNING

Indicates a possible danger. If not avoided, death or severe injury could result.

⚠ CAUTION

Indicates a possible danger. If not avoided, light or minor injuries could result.

ATTENTION

Indicates a possibly damaging situation. If not avoided, the system or something in its surroundings could be damaged.

Recommendation for use:

The symbol "Recommendation for use" indicates terms and/or conditions that strictly need to be observed to ensure optimised and/or zero-defect operation. Tips and suggestions for the efficient use of the device and software optimisation are also provided.

2.4 Symbols

Symbol	Meaning
	Label on batteries. The batteries may not be disposed of with household waste, but must rather be disposed of separately. Used batteries must be returned to the point of sale or a disposal system.
	Label on electrical and electronic devices. Electrical and electronic devices must not be disposed of with household waste, but must rather be taken to a collection point for waste electrical equipment. Such a collection point is generally operated by public waste management authorities, i.e., by municipalities.
	Symbol for the protective earth connection (PE)
	Symbol for the functional earth connection (FE)

2.5 Data, figures and modifications

All data, text and figures were prepared to the best of our knowledge. They do not represent any assurance for the properties themselves. Despite taking utmost care, no liability can be assumed for accuracy, completeness and actuality of the information. Subject to changes.

2.6 Trademarks

It is noted that any software and/or hardware trademarks and any company brand names mentioned in this documentation are all subject to the general trademark protection rights.
Big-LinX® and X-Remote® are registered trademarks of ADS-TEC.
All other third-party trademarks used are hereby acknowledged.
In the case of infringement of trademark rights, ADS-TEC reserves the right to exercise all rights.

2.7 Copyright

2.8 Conformity

The manufacturer hereby declares that this device has been marked with the CE mark in accordance with the basic requirements and other relevant conditions of the following European Directives:

- 2011/65/EU RoHs Directive
- 2014/30/EU EMC Directive (only devices without WWAN)
- 2014/53/EU RED Directive (only devices with WWAN)
- 2014/35/EU Low Voltage Directive
- EG 1907/2006 REACH Regulation

The following applies with respect to electromagnetic compatibility: The device is a **Class A** device (industrial sector).

The EU conformity declaration is available for download at
https://www.ads-tec-iit.com/en/support/eu-conformity

Recommendation for use:
For full compliance with the EMC legislation, all components and cables used for device connection must also be compliant with these requirements. It is therefore necessary to employ BUS and LAN cables with shielded connectors and these must be installed as per the instructions contained in the instruction manual.

Devices with FCC marking on the type plate:
Compliance with the requirements of the FCC (USA)

Class A digital device
This device has been tested and found to comply with the limits for a **Class A** digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when used in a commercial environment. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference. In such a case, the user must correct the interference at his own expense.

Compliance applies for models with a corresponding FCC marking on the type plate.

3 Operating and safety instructions

The device operates under electrical voltage and contains highly sensitive components. Intervention by the user is required only for connecting the power supply lines. Should any further modifications be required, it is necessary to consult either with the manufacturer directly or with service personnel authorised by the manufacturer. The device must be de-energised during work. Appropriate measures must be taken to prevent electrostatic discharges on components. If the device is opened up by an unauthorised person, the user may be subject to hazards and the warranty is invalidated.

General information

Installation, commissioning and operation may only be performed by qualified and trained personnel.

The safety instructions and the instruction manual are to be observed by all persons who work with the device.

At the installation site the valid guidelines and regulations for accident prevention must be observed.

The instruction manual contains the most important information for safely operating the device.

Appropriate storage, proper transport, installation and commissioning, as well as careful operation are prerequisites for ensuring safe and proper operation of the device.

3.1 Safety instructions

ATTENTION

To prevent damage to the device, all cable lines (power supply, interface cables) must only be connected while the device is switched off.

ATTENTION

All installation work performed on the device must be performed only under safe, secure and de-energised conditions.

Recommendation for use:
Always adhere to the safety measures applicable when handling components at risk of being damaged by electrostatic discharges (EN 61340-5-1 / EN 61340-5-2).

3.2 Operating location

This device is designed for industrial use. Make certain that the specified environmental conditions are maintained at all times. Use in non-specified environments, i.e., on board ships, in explosive atmospheres or at extreme elevations, is prohibited. See also chapter 8 Technical data.

ATTENTION

Damage caused by condensation!
To prevent short circuits and malfunctions caused by the formation of water condensate, the device may only be turned on after it has reached the specified ambient temperature. This also applies if the device is exposed to extreme temperature fluctuations.

Damage caused by heat!
→ Do not expose the device to direct radiation by sunlight or any other light or heat source!

3.3 Damage due to improper use

Should the control system have evident signs of damages caused, e.g., by improper operation or storage conditions or due to improper use or handling, the device must be shut down immediately. Ensure that it is secured against being started up accidentally.

3.4 Warranty / repairs

During the device warranty period, any repairs must only be performed by the manufacturer or by service personnel that has been authorised by the manufacturer.

3.5 Intended use

The device was developed especially for IT security in machines and plants and for secure remote maintenance via the Internet.

The following application areas are realised with the industrial firewall:

Remote maintenance, NAT router, mobile radio router, machine firewall

The device is only to be assembled, installed and operated within the permissible specifications. Use in non-specified environments is prohibited.

3.6 Improper use

Operation other than or beyond that described for the device shall be deemed improper use.

The device is not allowed to be used to control vehicles or for applications for which further approvals beyond the manufacturer's declaration are necessary, e.g. applications with explosion hazard, medical technology, shipping industry. The device must not be put into operation in the case of transport damage or nonconformity with the specifications and, if necessary, must be taken out of operation in the case of changing conditions.

In the case of improper use, ADS-TEC shall not accept responsibility or liability for injury or damage that is directly or indirectly attributable to the handling of the device. Should the device have evident signs of damages caused, e.g., by improper operation or storage conditions or due to improper use or handling, it must be shut down immediately. Ensure that it is secured against being started up accidentally.

3.7 Safety instructions

ATTENTION

Damage due to electrostatic discharge!

Damage to the device can be caused by electrostatic discharge.

- Always adhere to the relevant safety measures applicable when handling components at risk of being damaged by electrostatic discharge (e.g. EN 61340-5-1 / EN 61340-5-2).
- All installation and service work performed on the device must be performed only under safe, secure and de-energised conditions.

3.8 Safety instructions on mobile radio

⚠ WARNING

Radio interference may have unforeseeable effects in certain environments!

- The wireless card must NOT be operated in the following environments:
  – in the vicinity of medical and life-saving equipment,
  – in explosive atmospheres (e.g. in the vicinity of fuel depots or chemical plants),
  – in the vicinity of blasting operations.
- In these environments, switch the device OFF and safeguard it against unintentional startup.

⚠ WARNING

Communication via wireless connections cannot be guaranteed.

- The device must not be used for applications in which people could be injured or objects damaged due to interference of the wireless connection.

⚠ WARNING

Risk of lightning strikes if the antenna is installed in an exposed position!

- Check whether lightning protection is required at the installation location (protection from direct lightning strikes and protection from induced voltages in the event of distant lightning strikes).

⚠ WARNING

Electromagnetic radiation could be hazardous to health.

- Per the requirements of the U.S. Federal Communications Commission (FCC) and ISED (Industry Canada), maintain a minimum distance of 20 cm between the transmitting antennas and people.

⚠ WARNING

Radio interference and possible damage to health due to exceeding the permitted transmission power!

The maximum permitted field strength can be exceeded when using directional antennas with a high level of antenna gain.

- Comply with the **maximum permitted signal strength (EIRP)** as per the national or local regulations (see calculation example for EIRP).
- Observe the regulations and standards which apply at the installation site (e.g. the standards for antenna erection VDE 0855 and for lightning protection VDE 0185-305).
- Always have the planning, installation and acceptance of antenna systems carried out by a specialist with electro-technical qualifications.
- Per the requirements of the U.S. Federal Communications Commission (FCC) and the Canadian ISED (Industry Canada), the **antenna gain** (including power losses) must not exceed the following values when operating in North America:

LTE	
Band 2 (1850–1910 MHz)	6 dBi
Band 4 (1710–1755 MHz)	6 dBi
Band 5 (824–849 MHz)	6 dBi
Band 7 (2500–2570 MHz)	9 dBi
Band 12 (699–716 MHz)	6 dBi
Band 13 (777–787 MHz)	6 dBi
Band 25 (1850–1915 MHz)	6 dBi
Band 26 (814–849 MHz)	6 dBi
Band 30 (2305–2315 MHz)	1 dBi (external vehicle antennas not permitted!)
Band 41 (2496–2690 MHz)	9 dBi
UMTS	
Band 2 (1850–1910 MHz)	6 dBi
Band 4 (1710–1755 MHz)	6 dBi
Band 5 (824–849 MHz)	6 dBi

3.9 Calculation example for the transmission power (EIRP)

$EIRP = P_{out} - C_{loss} + Ant_{gain} = 22\ dBm - 8\ dB + 9\ dBi = 23\ dBm\ (\triangleq 200\ mW)$

EIRP = Equivalent Isotropically Radiated Power

P_{out} = Transmission power of the wireless card (see data sheet of the device)

C_{loss} = Losses caused by attenuation in coaxial cables and connectors

Ant_{gain} = Antenna gain

3.10 Notes on using the device according to UL approval

For devices with a UL marking on the type plate, the following applies:

- Indoor use only!
- The communication cables may only be installed inside a building.
- The device contains an internal fuse at the voltage input. This fuse and all other internal components must not be replaced by service personnel, but only by the manufacturer.

4 Introduction

The industrial firewall forms the link between the IT world and the automation system and meets the requirements of IT security as well as of the maintenance personnel in the production facility. It allows the network as well as access to this network to be monitored. A fundamental protective mechanism is situation-dependent and physical network disconnection. It additionally provides safe access for service purposes.

4.1 Equipment versions / nomenclature

Variant	Ethernet connections (1000 Mbit/s)	4G/LTE (optional)	GPS (GNSS)	Digital I/Os
IRF34x1	4 x RJ45	EU *or* EMEA/US	-	2 I / 1 O
IRF38x1	8 x RJ45		x	5 I / 4 O

Example:

DVG - IRF3421 001 - AA / AF01

A B C D E

A: Device with software

B: Model: IRF3 = Industrial Router and Firewall, third generation

IRF34xx: Device with 4 x LAN

IRF38xx: Device with 8 x LAN

IRF3x01: Device without mobile communications card (LTE)

IRF3x21: Device with mobile communications card (LTE)

C: Configuration

Numbers 001 … 100: Standard variants of the manufacturer

Numbers 101 … 899: Customer and application specific variants

Numbers 900 … 999: Sample devices (e.g. for testing purposes)

D: Operating system configuration: Letters AA … ZZ

E: Marking for Parts List version including Firmware

4.2 Event log

If the firewall is not disconnected from the power supply, an event log saves all events. The event log can be read out both locally and via a central syslog server.

4.3 Mobile radio modem (optional)

The integrated LTE modem enables mobile radio connections.

4.4 Scope of delivery

Please check that the contents of the package are complete and that they are free of damage:

Scope of delivery

1 x Industrial router and firewall, type IRF3xxx

1 x 4-pin plug for power supply

1 x 3-pin plug for Modbus RTU

1 x 4-pin plug (grey) for digital I/Os #2

Only with IRF38: 1 x 8-pin plug for digital I/Os #3…5

1 x Quick-start guide

Optional: 2 x Mobile communications antenna

Optional accessory: 1 x VESA mounting plate

4.5 Environmental conditions

The device can be put into operation and used under the following conditions. Failure to observe any one of these conditions will invalidate the warranty of the device. ADS-TEC cannot be held liable for any damages arising from improper use and handling. See also chapter 8 Technical data.

The following temperature specifications apply to an operating altitude of max. 2000 m:

Ambient temperature with mobile communications module

in operation	-30 … +50°C
for storage	-40 … +85°C

Ambient temperature without mobile communications module

in operation	IRF3401: -30 … +65°C / IRF3801: -30 … +70°C
for storage	-40 … +85°C

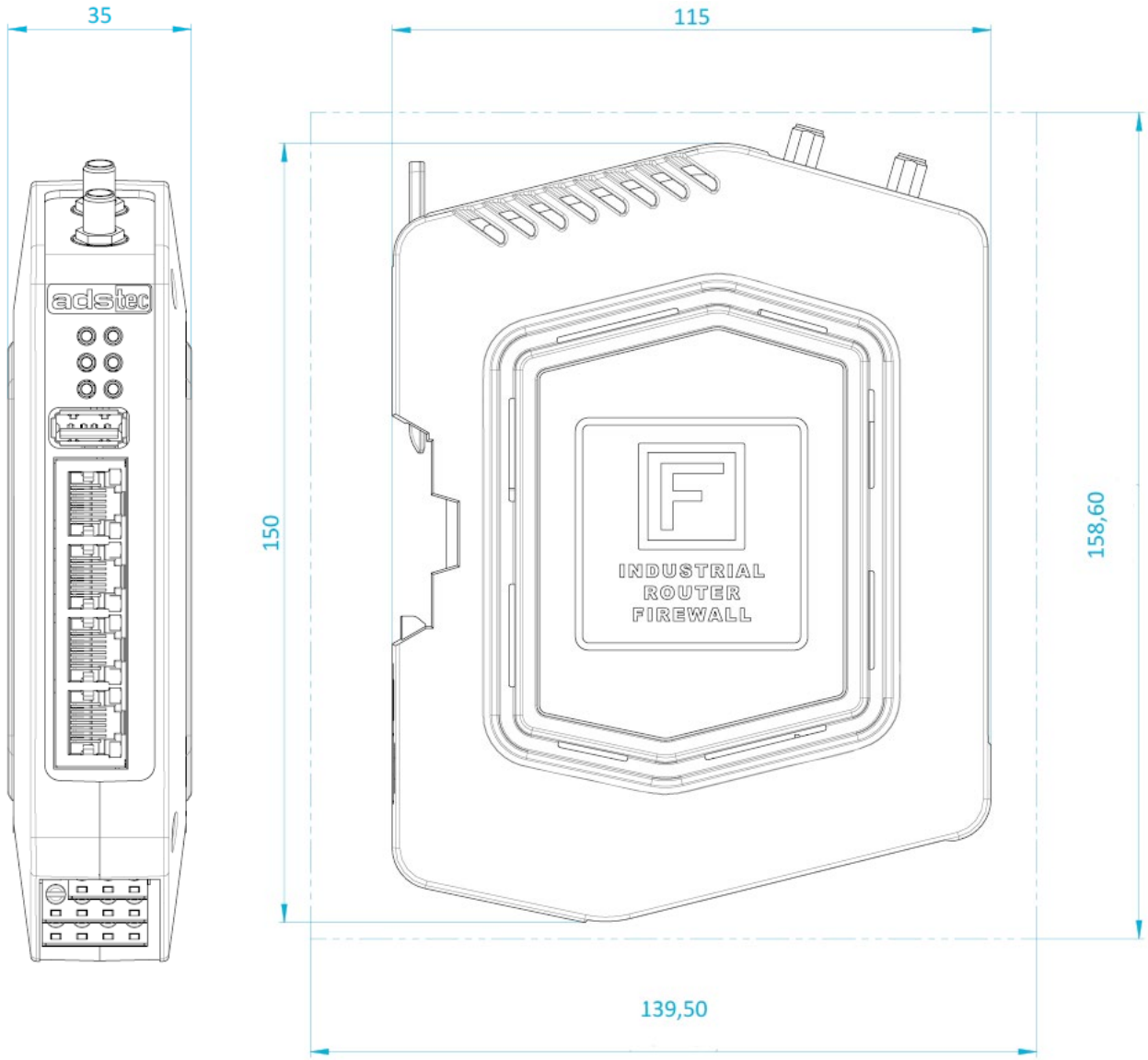
Humidity

in operation	5 … 90 %, without condensation
for storage	5 … 90%, without condensation

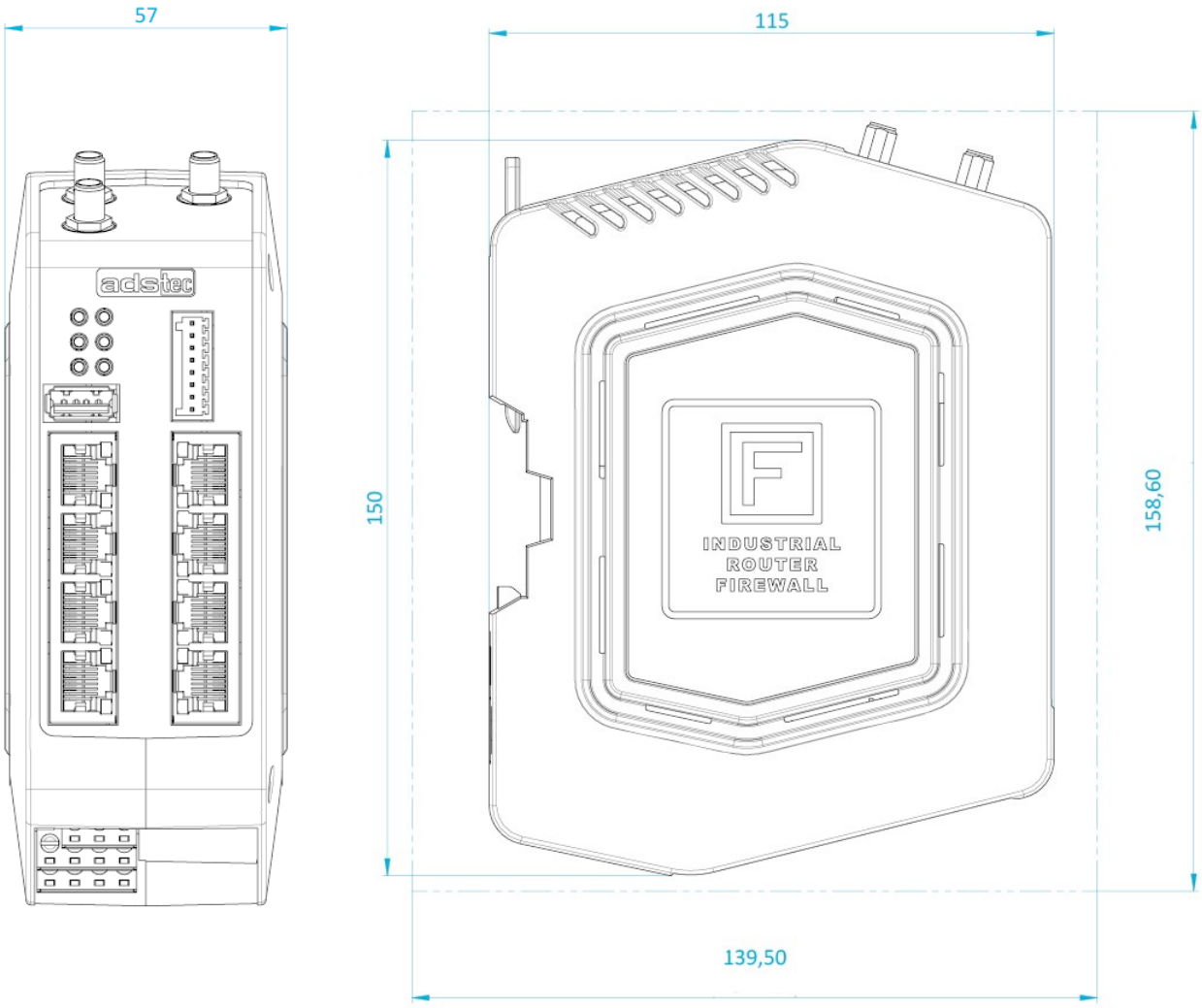
5 Installation

No other types of installation are permitted than those in subchapters 5.3 and 5.4

5.1 External device dimensions IRF34x1

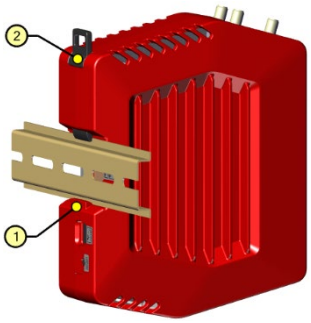


5.2 External device dimensions IRF38x1



5.3 Top-hat rail mounting

1. Position the IRF on the top-hat rail from below at an angle (1).
2. Pull the top-hat rail locking mechanism (2) upwards using a screwdriver, push the device onto the upper side of the top-hat rail and remove the screwdriver.
3. The top-hat rail locking mechanism springs back to its original position.
4. Check that the IRF is seated securely on the top-hat rail.

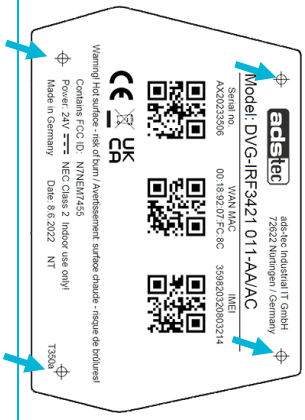


To release the device from the top-hat rail, proceed in the reverse order.

When removing, take care not to damage the top-hat rail adapter of the device.

5.4 Optional accessory: Attaching the VESA holder

Screw the mounting plate directly onto the device label using the screws provided. The positions of the screw holes are marked with target crosses (⌖) on the label.



5.5 Optional: Attaching antennas

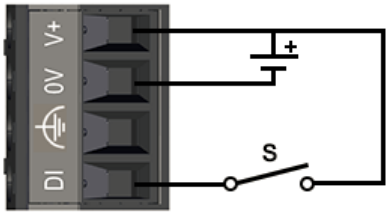
- Screw the mobile communications antennas to the antenna connections (WWAN AUX/MAIN) directly or via an SMA extension cable.
- IRF38 only: Screw the SMA cable of the GPS antenna to the GNSS connection.

6 Electrical interfaces

6.1 Power supply

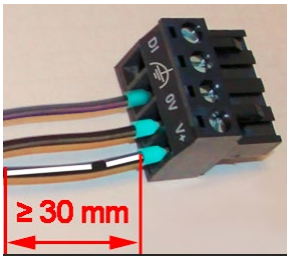
Pin	Signal
DI	Digital input #1: +24 VDC ± 20 % (Reference potential is 0V of the device)
⏚	Functional earth (FE, required for EMC)
0V	Reference potential 0 V
V+	Supply voltage +24 VDC ± 20 %

Schematic diagram for the wiring of digital input no. 1:



Recommendation for use:

- The minimum temperature rating of the cables to be connected to the field wiring terminals is 105 °C
- Use flexible cables with a wire cross section of 0.5 mm² / AWG20 and appropriate cable end sleeves.
- To minimise mechanical strain between the individual wires and the plug, the distance between jacket and plug should be at least 30 mm.



6.1.1 Requirements on the power supply

The following requirements also apply to the operation of the digital inputs and outputs:

- Conformity: Class PS2 acc. to IEC 62368-1 – *or* –
  Limited Power Source (LPS) acc. to IEC 60950-1.
- Voltage: 24 VDC ± 20 %
- Short-circuit current: < 8 A

Devices with UL certification for use in the USA and Canada:

The unit and the I/O shall be supplied by an isolated power source which fulfils the requirements of:

- Limited-Energy Circuit in accordance with UL/CSA 61010-1/ UL/CSA 61010-2-201 or
- Limited Power Source (LPS) in accordance with UL/CSA 60950-1 or
- a Class 2 supply source which complies with the National Electrical Code (NEC), NFPA 70, Clause 725.121 and Canadian Electrical Code (CEC), Part I, C22.1.
- Only use copper conductors to connect the power supply.

6.2 Modbus RTU (RS-485)

The fieldbus node is electrically isolated from the power supply of the IRF.
Its electrical bus load is 1/8 unit load (impedance 96 kΩ).

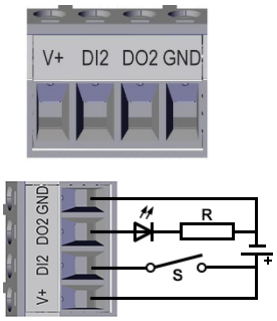
Pin	Signal
GND	Reference potential (common) for the data signals
D-	Inverted data signal
D+	Non-inverted data signal

Recommendation:
If the device is located at a bus end, a 120 Ω terminating resistor must be attached to the plug between D- and D+ (e.g. a wire resistor covered with heat-shrink tubing).

6.3 Digital I/O #2

The digital I/O #2 are electrically isolated from the power supply of the device. When operating the digital I/O, the requirements for the power supply according to section 6.1.1 must be observed.

Pin	Signal
V+	Power supply +24 VDC ± 20 %
DI2	Digital input #2 Current: max. 6 mA Low: 0 … 4.5 V / High: 10 … 30 V
DO2	Digital output #2 Current: max. 0.5 A
GND	Reference potential

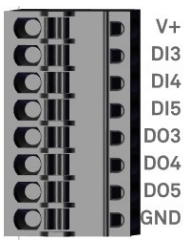


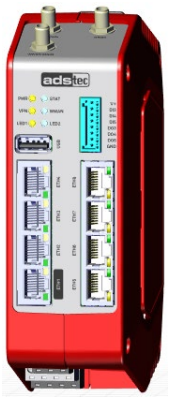
Schematic diagram

6.4 Digital I/O #3…5

These electrically isolated inputs and outputs are only available with IRF38. When operating the digital I/O, the requirements for the power supply according to section 6.1.1 must be observed. For a schematic diagram: see section 6.3.

Pin	Signal
V+	Power supply +24 VDC ± 20 %
DIx	Digital inputs #3…5 Current: max. 6 mA Low: 0 … 4.5 V / High: 10 … 30 V
DOx	Digital outputs #3…5 Current: max. 0.29 A (each)
GND	Reference potential



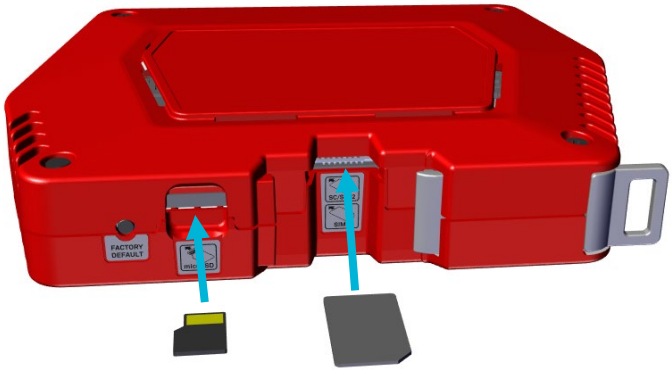


6.5 Smart card reader, SIM card and microSD card

SIM cards and smart cards (SC) in the ID-000 format as defined in ISO 7816 (25x15 mm) can be used.

- The **SIM card** for mobile communications must be inserted into the **bottom slot** (SIM1).
- The **smart card** is intended for **backing up the configuration data** or for connecting to **Big-LinX®** and must be inserted into the top slot (SC/SIM2).
- A **microSD card** with up to 2048 GB can be inserted into the left slot as a memory expansion.

Insert the cards the right way round as shown in the figure:



The **configuration data** of a device can be stored on the smart card. If service is required, the saved configuration can be transferred to the new device. The setup procedure does not need to be repeated.

Complex IT infrastructures with a large number of devices can be managed, monitored and controlled easily and conveniently using **Big-LinX®**. Further information on Big-LinX can be found at:
https://www.ads-tec-iit.com/en/reliable-remote-access/biglinx

7 Commissioning

7.1 Connecting the device to a laptop or PC

Connect the device with an appropriate power source, see chapter 6.1 Power supply.

Connect connection **ETH2** on the device via a **patch cable** with a PC or laptop.
(Please note: A DHCP client runs on ETH1 by default.)

7.2 Configuration of the network adapter of the PC

Recommendation for use:
The procedure described in the following was prepared using the Microsoft Windows operating system as an example. If you are using another operating system, the paths and properties described here may vary.

On your PC/laptop: Open the **properties** of your **network adapter** used for establishing the connection and enter the following:

- **IP address: 192.168.0.100** (The last set of digits must be a number between 1 and 253. In this example: "100".)
- **Subnet mask: 255.255.255.0** (Some input masks require the input of the short notation **/24** instead.)

Confirm your entries by clicking on **OK**.

7.3 Calling up the device web interface

Recommendation for use:
The web interface of the device was optimised for the **Mozilla Firefox** browser.
There may be functional limitations if a different browser is used.

Start up your web browser. In the browser's address bar, enter the following IP address and then confirm with **Enter**

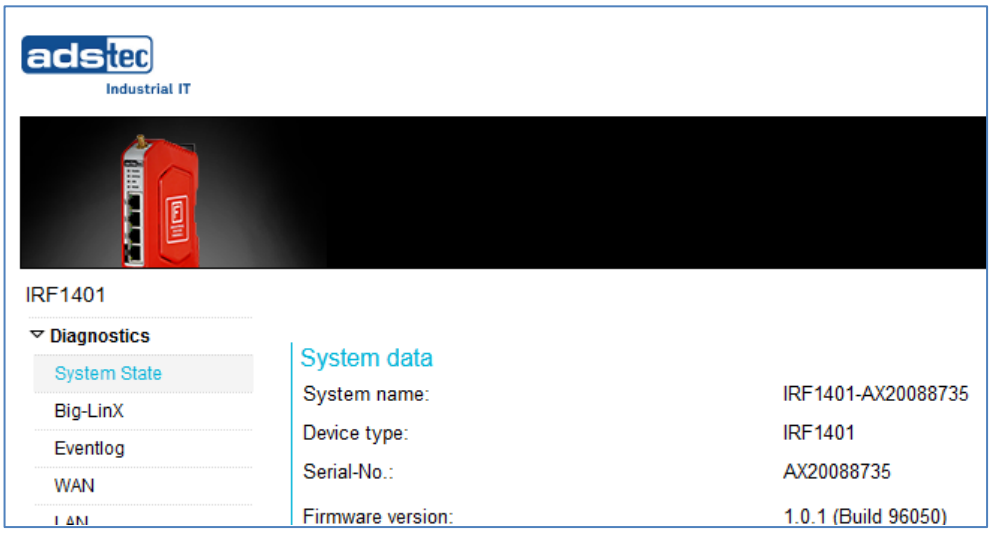
http://192.168.0.254

Once the IP address has been entered with success, the login prompt appears.
The default settings are:

User name: **admin**

Password: **admin**

Confirm your entries by clicking on OK. The device web interface then appears:



Follow the instructions of the commissioning wizard.

Hint:
If you cannot establish a connection, check the proxy and local firewall settings. Often, local subnet addresses (e.g. 192.168.x.x) are also diverted to a proxy server.
In this case, it is possible to select the "Bypass proxy server for local addresses" option to enter the address in question.

7.4 Front LEDs

	Signal	Action
PWR (Power)		The device is not supplied with voltage.
		Voltage was switched on, device booting. LED flashes slowly (1 Hz).
		Firmware is being updated. LED flashes rapidly (5 Hz).
		The device is ready for operation.
STAT (Status)		The device is not supplied with voltage.
		Error during the boot-up process / recovery image
VPN		No VPN tunnel is active.
		The tunnel activated via VPN key is active.
WWAN		No mobile radio connection active.
		Network search (1 Hz)
		Login declined (2 Hz)
		Firmware update of the radio module (5 Hz)
		Logged in, offline
		Logged in, standby (dial-on-demand)
		Logged in, online

Legend:

LED status	Representation
Off	
Illuminates green	
Flashes green	
Illuminates red	
Illuminates orange	
Flashes orange	

7.5 Operating-mode related LED status displays

7.5.1 Boot-up

The boot-up process begins as soon as the device is supplied with power. The PWR LED flashes slowly.

7.5.2 Resetting to default settings

The **Factory Default** button is used to reset the firewall back to the default factory settings at any time.

The Factory Default button must be pressed prior to the boot-up process and held down for approx. 10 seconds during the boot-up process. The PWR LED flashes rapidly while resetting to factory settings. As soon as the PWR LED illuminates constantly, it is possible to access the web interface.

7.5.3 Firmware update

A firmware update can be performed via the web interface.

- The **PWR-LED** flashes rapidly during a firmware update of the **firewall**. The actual update procedure takes a few minutes. Initialisation begins after the update procedure has been performed successfully. The PWR-LED flashes slowly during this process.
- During a firmware update of the **mobile radio module**, the yellow WWAN-LED flashes with a frequency of 5 Hz.

8 Technical data

	IRF34x1 / IRF38x1
Operating system	Embedded Linux
Hardware	ARM, 64 bit, 4 x 1.6 GHz; 4 GB RAM; 8 GB Flash
Interfaces	Ethernet: 4 x 1 Gbit/s (IRF34) / 8 x 1 Gbit/s (IRF38) 1 x USB 1 x ModbusRTU (RS485, half duplex) 1 x slot for smartcard 1 x slot for mobile communications card (SIM) 1 x slot for microSD memory extension (UHS II) Devices with mobile communication module: 2 x SMA antenna connection Only IRF3821 with mobile comm. module: 1 x SMA for external GPS antenna Digital inputs and outputs (I/O): IRF34: 2I/1O; IRF38: 5I/4O
VPN	Big-LinX, OpenVPN, IPSec
Operating modes	IP router (two subnets); IP router extended (up to 8 subnets); Transparent Bridge
Mobile (WWAN)	Optional: EU or EMEA + US
Dimensions	See dimensional drawings in chapter 5
Weight	Approx. 0,8 kg
Protection class	IP20 (tested by ADS-TEC, not evaluated by UL)
Overvoltage	Category I as per DIN EN 60664-1 (max. 1500 V)
Pollution	Degree 2 as per IEC 61010-1
Power supply	Voltage: 24 VDC ± 20 % Requirements on the power supply unit: • Class PS2 as per IEC 62368-1 – *or* – Limited Power Source (LPS) as per IEC 60950-1 • Short-circuit current: < 8 A • For devices with UL certification: NEC Class 2
Current	DVG-IRF34xx: max. 1.5 A / DVG-IRF38xx: max. 1.7 A
Ambient temperature	with mobile communications module: in operation -30 ... +50 °C for storage -40 ... +85 °C without mobile communications module: in operation IRF3401: -30 ... +65 °C / IRF3801: -30 ... +70 °C for storage -40 ... +85 °C
Altitude during operation	Max. 2000 m

9 Service & support

ADS-TEC and its partner companies offer you comprehensive maintenance and support services, ensuring quick and competent support should you have any questions or concerns with regard to ADS-TEC products and equipment.

Because ADS-TEC products are also used by partner companies, these devices may have customised configurations. Should any questions arise with regard to these specific configurations and software installations, please contact them as ads-tec will not be able to answer such questions.

ADS-TEC does not provide support services for any device that was not purchased directly from ADS-TEC. In this case, maintenance and support is provided by the partner company.

9.1 ADS-TEC support

The ADS-TEC support team is available for inquiries from direct customers between 8:30am and 5:00pm, Monday to Friday.

The support team can be reached via phone, fax or e-mail:

Phone: +49 7022 2522-202

Email: support.iit@ads-tec.de

9.2 Company address

ads-tec Industrial IT GmbH

Heinrich-Hertz-Str.1

72622 Nürtingen

Germany

Phone: +49 7022 2522-0

Email: mailbox@ads-tec.de

Web: www.ads-tec-iit.com