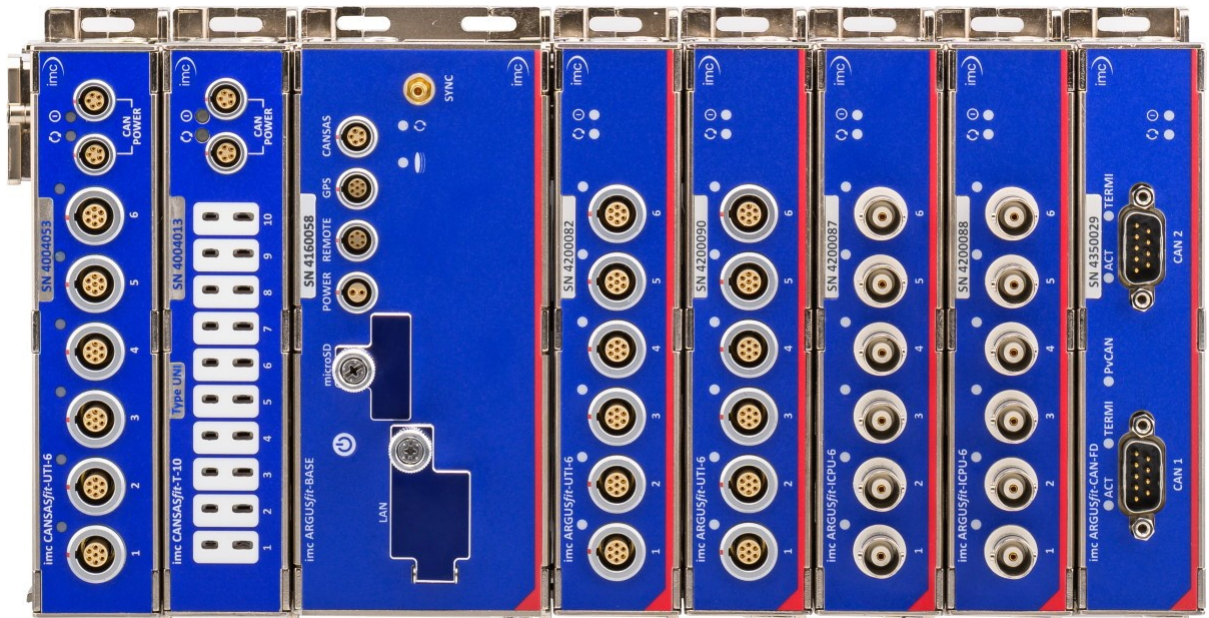


imc ARGUSfit

Getting started

Edition 4 - 2024-04-24



Disclaimer of liability

The contents of this documentation have been carefully checked for consistency with the hardware and software systems described. Nevertheless, it is impossible to completely rule out inconsistencies, so that we decline to offer any guarantee of total conformity.

We reserve the right to make technical modifications of the systems.

Copyright

© 2024 imc Test & Measurement GmbH, Germany

This documentation is the intellectual property of imc Test & Measurement GmbH. imc Test & Measurement GmbH reserves all rights to this documentation. The applicable provisions are stipulated in the "imc Software License Agreement".

The software described in this document may only be used in accordance with the provisions of the "imc Software License Agreement".

Open Source Software Licenses

Some components of imc products use software which is licensed under the GNU General Public License (GPL). Details are available in the About dialog.

A list of the open source software licenses for the imc measurement devices is located on the imc STUDIO/imc WAVE/imc STUDIO Monitor installation medium in the folder "*Products\imc DEVICES\OSS*" or "*Products\imc DEVICEcore\OSS*" or "*Products\imc STUDIO\OSS*". If you wish to receive a copy of the GPL sources used, please contact our tech support.

Notes regarding this document

This document is an excerpt from the manual of the device / the module.

This document provides important notes on using the device / the module. Safe working is conditional on compliance with all safety measures and instructions provided. The manual is to be used as a kind of reference book. You can skip the description of the modules you do not have.

Additionally, all accident prevention and general safety regulations pertinent to the location at which the device is used must be adhered to.

These instructions exclusively describe the device, **not how to operate** it by means of **the software!**

If you have any questions as to whether you can set up the device / module in the intended environment, please contact our tech support. The measurement system has been designed, manufactured and unit-tested with all due care and in accordance with the safety regulations before delivery and has left the factory in perfect condition. In order to maintain this condition and to ensure safe operation, the user must observe the notes and warnings contained in this chapter and in the specific sections applicable to the concrete device. Never use the device outside the specification.

This will protect you and prevent damage to the device.

Special notes



Warning

Warnings contain information that must be observed to protect the user from harm or to prevent damage to property.



Note

Notes denote useful additional information on a particular topic.



Reference

A reference in this document is a reference in the text to another text passage.

Table of contents

1 General introduction	5
1.1 Tech support	5
1.2 Service and maintenance	5
1.3 Legal notices	5
1.4 Explanation of symbols	8
1.5 History	9
2 Safety	10
3 Assembly and connection	13
3.1 After unpacking...	13
3.2 Before commissioning	13
3.3 Notes on connecting	14
3.3.1 Precautions for operation	15
3.3.2 Click mechanism	16
3.3.3 Using CANFT modules	17
3.3.4 Power supply	19
3.3.5 Fiber Converter	20
3.3.6 UPS-NiMH	21
3.3.7 Powering on	25
3.3.8 Powering off	25
3.3.9 Remote control of the base unit	25
3.3.10 Storage media in the device	26
3.3.11 LED display ARGFT-BASE	29
4 Maintenance and servicing	31
4.1 Maintenance and servicing	31
4.2 Cleaning	31
4.3 Storage	31
4.4 Transport	31
5 Start of operation Software / Firmware	32
5.1 Installation - Software	32
5.1.1 System requirements	32
5.2 Connect the device	32
5.3 Connecting via LAN in three steps	33
5.4 Firmware update	35
6 Pin configuration	37
6.1 Power	37
6.2 Remote	37
6.3 Base Unit	38
6.3.1 GPS	38
6.3.2 CANSAS	38
6.4 Measurement Modules	39
6.4.1 B-4	39
6.4.2 UTI-6	39
6.4.3 ICPU-6	39
6.4.4 CAN FD (DSUB-9)	40
Index	42

1 General introduction

1.1 Tech support

If you have problems or questions, please contact our tech support:

Phone: (Germany): **+49 30 467090-26**
E-Mail: hotline@imc-tm.de
Internet: <https://www.imc-tm.com/service-training/>

Tip for ensuring quick processing of your questions:

If you contact us **you would help us**, if you know the **serial number of your devices** and the **version info of the software**. This documentation should also be on hand.

- The device's serial number appears on the nameplate.
- The program version designation is available in the About-Dialog.

Product Improvement and change requests

Please help us to improve our documentation and products:

- Have you found any errors in the software, or would you suggest any changes?
- Would any change to the mechanical structure improve the operation of the device?
- Are there any terms or explanations in the manual or the technical data which are confusing?
- What amendments or enhancements would you suggest?

Our [tech support](#) will be happy to receive your feedback.

1.2 Service and maintenance

Our service team is at your disposal for service and maintenance inquiries:

E-Mail: service@imc-tm.de
Internet: <https://www.imc-tm.com/service>

Service and maintenance activities include, for example calibration and adjustment, service check, repairs.

1.3 Legal notices

Quality Management



imc Test & Measurement GmbH holds DIN EN ISO 9001 certification since May 1995 and DIN EN ISO 14001 certification since November 2023. You can download the CE Certification, current certificates and information about the imc quality system on our website:

<https://www.imc-tm.com/quality-assurance/>.

imc Warranty

Subject to the general terms and conditions of imc Test & Measurement GmbH.

Liability restrictions

All specifications and notes in this document are subject to applicable standards and regulations, and reflect the state of the art well as accumulated years of knowledge and experience. The contents of this document have been carefully checked for consistency with the hardware and the software systems described. Nevertheless, it is impossible to completely rule out inconsistencies, so that we decline to offer any guarantee of total conformity. We reserve the right to make technical modifications of the systems.

The manufacturer declines any liability for damage arising from:

- failure to comply with the provided documentation,
- inappropriate use of the equipment.

Please note that all properties described refer to a closed measurement system and not to its individual slices. Attach covers over the [module connectors](#) ¹⁵ on the upper and lower sides.

Guarantee

Each device is subjected to a 24-hour "burn-in" before leaving imc. This procedure is capable of detecting almost all cases of early failure. This does not, however, guarantee that a component will not fail after longer operation. Therefore, all imc devices are granted liability for a period of two years. The condition for this guarantee is that no alterations or modifications have been made to the device by the customer.

Unauthorized intervention in the device renders the guarantee null and void.

Notes on radio interference suppression

imc ARGUSfit devices satisfy the EMC requirements for an use in industrial settings.

Any additional products connected to the product must satisfy the EMC requirements as specified by the responsible authority (within Europe¹) in Germany the BNetzA - "Bundesnetzagentur" (formerly BMPT-Vfg. No. 1046/84 or No. 243/91) or EC Guidelines 2014/30/EU. All products which satisfy these requirements must be appropriately marked by the manufacturer or display the CE certification marking.

Products not satisfying these requirements may only be used with special approval of the regulating body in the country where operated.

All lines connected to the imc ARGUSfit should not be longer than 30 m and they should be shielded and the shielding must be grounded.

Note

The EMC tests were carried out using shielded and grounded input and output cables with the exception of the power cord. Observe this condition when designing your setup to ensure high interference immunity and low jamming.

¹ If you are located outside Europe, please refer the appropriate EMC standards used in the country of operation.

Cables and leads

In order to comply with the value limits applicable to Class B devices according to part 15 of the FCC regulations, all signal leads connected to imc ARGUSfit must be shielded.

Unless otherwise indicated, no connection leads may be long leads (< 30 m) as defined by the standard IEC 61326-1. LAN-cables (RJ 45) and CAN-Bus cables are excepted from this rule.

Only cables with suitable properties for the task (e.g. isolation for protection against electric shock) may be used.

ElektroG, RoHS, WEEE, CE

The imc Test & Measurement GmbH is registered with the authority as follows:

WEEE Reg. No. DE 43368136

valid from 24.11.2005

 Reference

<https://www.imc-tm.com/elekrog-rohs-weee/> and <https://www.imc-tm.com/ce-conformity/>

FCC-Notice

This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult our tech support or an experienced technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this product that are not expressly approved by imc may void the user's authority to operate this equipment.

1.4 Explanation of symbols



CE Conformity

see CE [chapter 1.2](#)



No household waste

Please do not dispose of the electrical/electronic device with household waste, but at the appropriate collection points for electrical waste, see also [chapter 1.2](#).



Potential compensation

Connection for potential compensation



Grounding

Connection for grounding (general, without protective function)



Protective connection

Connection for the protective conductor or grounding with protective function



Attention! General danger zone!

This symbol indicates a dangerous situation; Since there is insufficient space for indicating the rated quantity at the measuring inputs, refer to this manual for the rated quantities of the measuring inputs before operation.



Attention! Injuries from hot surfaces!

Surfaces whose temperatures can exceed the limits under certain circumstances are denoted by the symbol shown at left.



ESD-sensitive components (device/connector)

When handling unprotected circuit boards, take suitable measures to protect against ESD (e.g. insert/remove ACC/CANFT-RESET).



Possibility of electric shock

The warning generally refers to high measurement voltages or signals at high potentials and is located on devices suitable for such measurements. The device itself does not generate dangerous voltages.



DC, Direct Current

Supply of the device via a DC voltage source (in the specified voltage range)



RoHS of the PR China

The limits for hazardous substances in electrical/electronic equipment applicable in the PRC are identical to those in the EU. The restrictions are complied with (see [chapter 1.2](#)⁵). A corresponding "China-RoHS" label is omitted for formal/economic reasons. Instead, the number in the symbol indicates the number of years in which no hazardous substances are released. (This is guaranteed by the absence of named substances).



Labeling integrated energy sources

UxxRxx are integrated in the symbolism. "U" stands for the installed UPS energy sources, if 0 = not installed. "R" stands for the installed RTC energy sources, if 0 = not installed. You can download the corresponding data sheets from the imc website:

<https://www.imc-tm.com/about-imc/quality-assurance/transport-instructions/>



Observe the documentation

Read the documentation before starting work and/or operating.



On/Off

On/Off button (no complete disconnection from the power supply)

1.5 History

Amendments and bug-fix in this Getting Started Edition 4

Section	Amendments
B-4	new module added: ARGFT/B-4
Storage media	updated description

Amendments and bug-fix in Edition 3

Section	Amendments
GPS	as of imc STUDIO 2023 R5 the GPS functionality is fully supported

Amendments and bug-fix in Edition 2

Section	Amendments
CAN FD	new module added: ARGFT/CAN FD

2 Safety

This section provides an overview of all important aspects of protection of the users for reliable and trouble-free operation. Failure to comply with the instructions and protection notes provided here can result in serious danger.

Responsibility of the operator

imc ARGUSfit is for use in commercial applications. The user is therefore obligated to comply with legal regulations for work safety.

Along with the work safety procedures described in this document, the user must also conform to regulations for safety, accident prevention and environmental protection which apply to the work site. If the product is not used in a manner specified by the manufacturer, the protection supported by the product may be impaired.

The user must also ensure that any personnel assisting in the use of the imc ARGUSfit have also read and understood the content of this document.

Operating personnel

This document identifies the following qualifications for various fields of activity:

- *Users of measurement engineering*: Fundamentals of measurement engineering. Basic knowledge of electrical engineering is recommended. Familiarity with computers and the Microsoft Windows operating system. Users must not open or structurally modify the measurement device.
- *Qualified personnel* are able, due to training in the field and to possession of skills, experience and familiarity with the relevant regulations, to perform work assigned while independently recognizing any hazards.

Warning

- **Danger of injury due to inadequate qualifications!**
- Improper handling may lead to serious damage to personnel and property. When in doubt, consult qualified personnel.
- Work which may only be performed by trained imc personnel may not be performed by the user. Any exceptions are subject to prior consultation with the manufacturer and are conditional on having obtained corresponding training.

Special hazards

This segment states what residual dangers have been identified by the hazard analysis. Observe the safety notes listed here and the warnings appearing in subsequent chapters of this manual in order to reduce health risks and to avoid dangerous situations. Please operate the device only in the intended position of use if so specified.

Danger



Lethal danger from electric current!

- Contact with conducting parts is associated with immediate lethal danger.
- Damage to the insulation or to individual components can be lethally dangerous.

Therefore:

- In case of damage to the insulation, immediately cut off the power supply and have repair performed.
- Work on the electrical equipment must be performed exclusively by expert electricians.
- During all work performed on the electrical equipment, it must be deactivated and tested for static potential.

Injuries from hot surfaces!



- Devices from imc are designed so that their surface temperatures do not exceed limits stipulated in EN 61010-1 under normal conditions.

Therefore:

- Surfaces whose temperature can exceed the limits under circumstances are denoted by the symbol shown at left.

Industrial safety

We certify that imc ARGUSfit in all product configuration options corresponding to this documentation conforms to the directives in the accident prevention regulations in "Electric Installations and Industrial Equipment" (DGUV Regulation 3)*. This confirmation applies exclusively to devices of the imc ARGUS series, but not to all other components included in the scope of delivery.

This certification has the sole purpose of releasing imc from the obligation to have the electrical equipment tested prior to first use (§ 5 Sec. 1, 4 of DGUV Regulation 3). This does not affect guarantee and liability regulations of the civil code.

* previously BGV A3.

Observe notes and warnings

Devices from imc have been carefully designed, assembled and routinely tested in accordance with the safety regulations specified in the included certificate of conformity and has left imc in perfect operating condition. To maintain this condition and to ensure continued danger-free operation, the user should pay particular attention to the remarks and warnings made in this chapter. In this way, you protect yourself and prevent the device from being damaged.

Read this document before turning on the device for the first time carefully.

Warning

Before touching the device sockets and the lines connected to them, make sure static electricity is diverted to ground. Damage arising from electrostatic discharge is not covered by the warranty.

3 Assembly and connection

3.1 After unpacking...

Check the delivered system immediately upon receiving it for completeness and for possible transport damage. In case of damage visible from outside, proceed as follows:

- Do not accept the delivery or only accept it with reservations
- Note the extent of the damage on the packing documents or on the delivery service's packing list.
- Begin the claims process.

For an overview of the accessories supplied as standard, please refer to the data sheet of the supplied ARGUSfit module. Check the accessories for completeness.

Note

File a claim about every fault as soon as it is detected. Claims for damages can only be honored within the stated claims period.

3.2 Before commissioning

Condensation may form on the circuit boards when the device is moved from a cold environment to a warm one. In these situations, always wait until the device warms up to room temperature and is completely dry before turning it on. The acclimatization period should take about 2 hours.

Ambient temperature

The limits of the ambient temperature cannot be strictly specified because they depend on many factors of the specific application and environment, such as air flow/convection, heat radiation balance in the environment, contamination of the housing / contact with media, mounting structure, system configuration, connected cables, operating mode, etc. This is taken into account by specifying the operating temperature instead. Furthermore, it is not possible to predict any sharp limits for electronic components. Basically, reliability decreases when operating under extreme conditions (forced ageing). The operating temperature data represent the extreme limits at which the function of all components can still be guaranteed.

3.3 Notes on connecting

In the following chapters we use the block representation of the modules and not the original photos to illustrate the application examples.

Legend:

 	 
 	 
<p>imc ARGUSfit provides a complete integration of the imc CANSASfit module series (CANFT) for slower channels, e.g. for temperature measurement.</p>	 

3.3.1 Precautions for operation

Certain general rules for operating the system, aside from reasonable safety measures, must be observed to prevent danger to the user, third parties, the device itself and the measurement object. These are the use of the system in conformity to its design, and the refraining from altering the system, since possible later users may not be properly informed and may ill-advisedly rely on the precision and safety promised by the manufacturer.

Note

If you determine that the device cannot be operated in a safe manner, then the device is to be immediately taken out of operation and protected from unintentional use. Taking this action is justified under any of the following conditions:

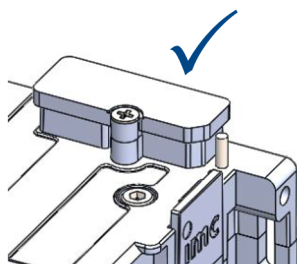
- I. the device is visibly damaged,
- II. loose parts can be heard within the device,
- III. the device does not work
- IV. the device has been stored for a long period of time under unfavorable conditions (e.g. outdoors or in high-humidity environments).

1. Observe the data in the manual chapter "Technical Specifications", to prevent damage to the unit through inappropriate signal connection.
2. Note when designing your setups that all input and output leads must be provided with shielding which is connected to the ground (see notification on the nameplate) at one end in order to ensure high immunity to interference and noisy transmission.
3. Unused, open channels (having no defined signal) should not be configured with sensitive input ranges. Configure unused channels with a broad input range or short them out. The same applies to channels not configured as active.
4. If you are using a removable storage media, observe the notes in the imc software manual. Particular care should be taken to comply with the storage device's max. ambient temperature limitation.
5. Avoid prolonged exposure of the device to sunlight.

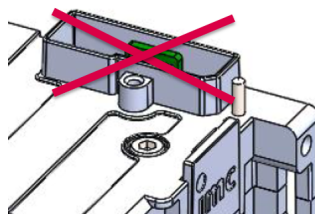
Due to their function, the imc ARGUSfit modules, just like the CANSASfit modules, are open at the connection points (module connectors). This is not a problem when used in a controlled, dry environment. In order to protect a module (or even a group connected in series) against foreign objects and moisture, please carry out the following measure:

Attach both protective caps across the module click connectors on the upper and lower sides.

Two covers per module are fixed at the left side of the module (*parking position*).



module connector protected
with covering cap



module connector
not protected

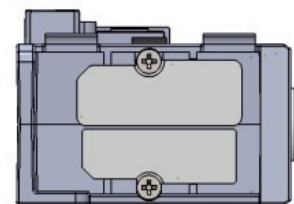


Fig. 1: parking position of
covering caps

3.3.2 Click mechanism

imc ARGUSfit (ARGFT) modules and imc CANSASfit (CANFT) modules can be mechanically and electrically connected by a click-lock, without tools and without additional connecting cables. Before you start connecting the modules together, make sure that no supply voltage is connected.

The CANFT Module are connected to the system **on the left side of the ARGFT base unit**, see Fig. 2.

ARGFT
base unit

ARGFT modules are connected to the system **on the right side of the ARGFT base unit**. Further rules, see [Fiber converter](#)^[20] and [UPS](#)^[21]

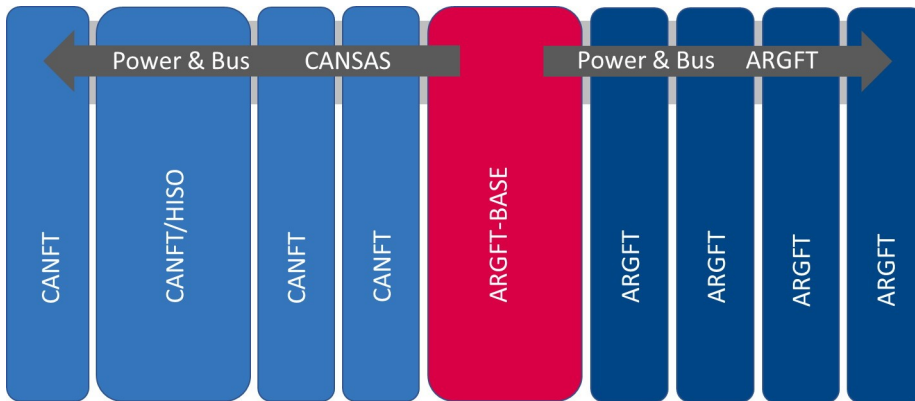


Fig. 2: Order of possible Click connections

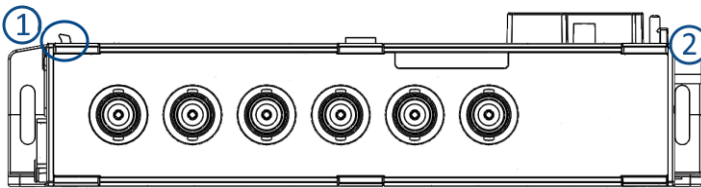


Fig. 3: Locking tongue & locking latch

Stacking the modules

1. Hook tongues into the grooves, see Fig. 3 Position (1) "tongue".
2. Press modules together

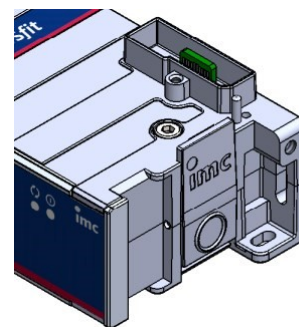
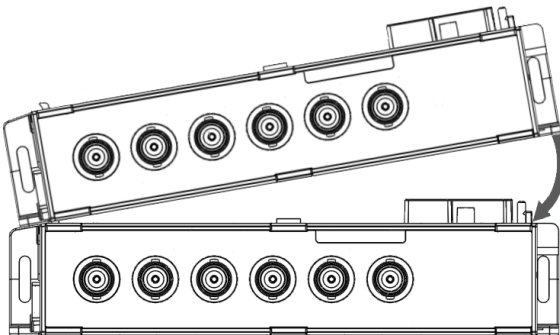


Fig. 4: locking latch

3. To finish mechanical connection, press on the imc Logo (2) on the locking latch. You will hear a click. Now the modules are mechanically locked and electrically connected.

Removing modules from the stack

1. Press the circle on the locking latch, see Fig. 4. You will hear a click.
2. Pull tongues, see Fig. 3 position (1) out of the grooves.

3.3.3 Using CANFT modules

imc ARGUSfit enables the integration of imc CANSASfit modules. These are clicked onto the left side of the ARGUSfit base unit. Additional modules can be connected by cable to the LEMO socket "CANSAS".

The channels of these modules are fully integrated into the imc STUDIO setup page as analogue channels. Further CANSASfit modules connected via a CAN FD module (interface) are integrated via the CAN editor and appear in the channel list as fieldbus channels.

- All CANFT modules clicked onto the ARGFT base unit use a CAN node with 500 kBaud (node 1).
- All CANFT modules connected to the ARGFT base unit via cable use a separate node with 500 kBaud (node 2). Both CAN nodes support imc CANSASfit (CANFT) modules only.
As long as the base unit is connected to a DC supply voltage, the CANFT modules are permanently supplied via the CANSAS socket regardless of the operating state (on/off) of the base unit.
- Blocks of up to 8 CANFT modules can be connected together if the power and the maximum current of the power supply allow this.



Note

First use of CANSASfit modules on the ARGUS

It must be ensured that the CANSASfit modules are operated with [imc CANSAS Software Version 2.3 R1](#) or higher before use on the imc ARGUSfit.

To do this, the module must be updated with the CANSAS software via a USB-CAN interface (e.g. KVASER) or an imc CRONOS/BUSDAQ device.

- This procedure is the minimum requirement for connecting these CANSASfit modules to an ARGUSfit device for the first time. When connected to the ARGUS, the CANSASfit module is updated with the appropriate firmware by imc STUDIO.

3.3.3.1 CAN Termination

CANSASfit modules must be terminated with a terminating resistor: ACC/CANFT-TERMI plug.

- With the CANSASfit modules **clicked on**, the terminator on the **outermost CANSASfit** is plugged into one of the two CAN/Power sockets.
- CANSASfit modules that are connected **by cable** to the CANSAS socket of the ARGUS Base must be terminated at the **first module** of the furthest module block.
- The terminator must be plugged in before the ARGUS system is switched on.

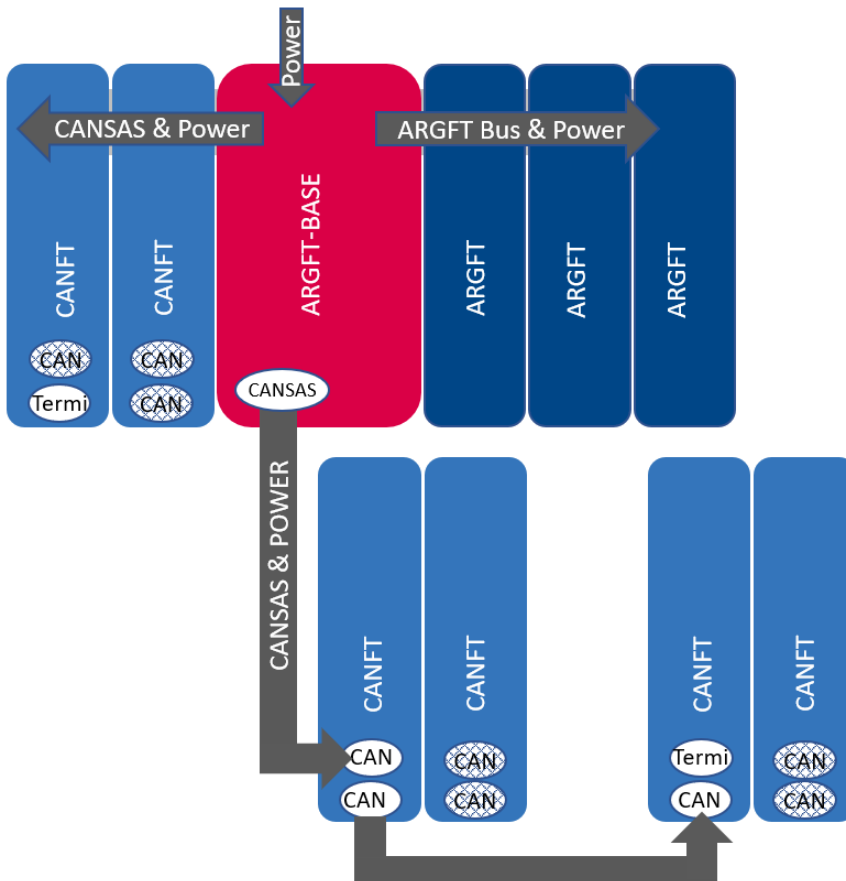


Fig. 5: CAN termination

Reference

[imc CANSAS manual](#)

See also chapter "CAN termination with CANFT" in the imc CANSAS manual.

3.3.4 Power supply

An imc ARGUSfit system is operated with a DC supply voltage that is supplied via an ARGFT module with a socket ("POWER") compatible with LEMO.EGE.0B.302. This can be an ARGFT-BASE or an ARGFT-FIBER-CONVERTER, for example. Power is supplied to the rest of the system via the internal supply network (power backbone) of the electrical click connections between the modules.

With regard to EN 61326-1 and EN 61010-1, the DC supply inputs are not specified for connection to a DC mains supply. This restriction does not apply if the power is supplied via ARGFT/UPS-xx.

The permissible supply voltage range is 10 to 50 V DC (ultra-wide range). For the AC/DC adaptor (power supply) supplied with the base unit, the specified AC voltage range on the input side is 110 V.. 240 V 50/60 Hz.

Note

Note that the operating temperature of the power supply adaptor is designed for 0 °C to 40 °C. This also applies if your unit should be suitable for an extended temperature range.

Direct connection to a DC supply source, such as a vehicle battery, is possible. Please note when connecting:

- Grounding of the imc ARGUSfit system must be provided. If the supply voltage source has a ground reference (ground connection to the -PWR terminal, then the device is automatically grounded via the -PWR terminal. The supplied power adaptor is prepared in this way, by providing a connection between -PWR and ARGUS housing inside the AC/DC adaptors's LEMO power plug (male). Otherwise the -PWR supply input of the device is not galvanically connected to ARGUS housing.
- The supply line must be of low impedance via a cable with a sufficient cross-section. Any EMI filters in the supply circuit should not contain series inductances greater than 1 mH. Otherwise, an additional parallel capacitor is necessary.

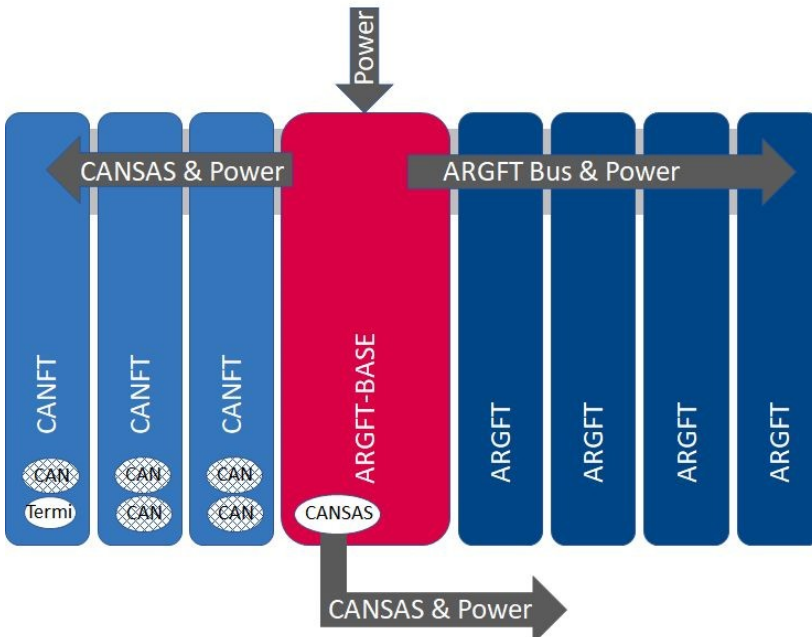


Fig. 6: Power supply via ARGFT base unit



= These CAN sockets cannot be used to connect further modules via cable.

References

Technical details concerning ARGFT power supply, see manual chapter "Technical Specs" and you can find the pin configuration in [chapter "Power"](#) ³⁷

3.3.5 Fiber Converter

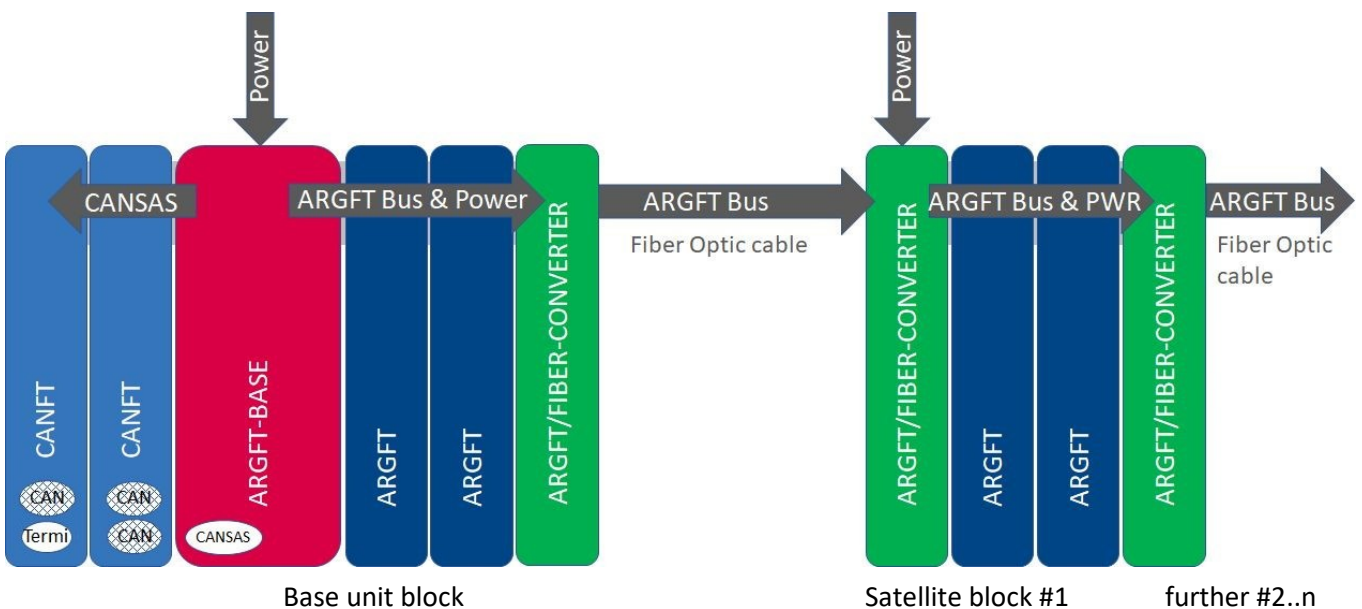
The Fiber Converter is a clickable module for the modular imc ARGUSfit system. It allows decentralized distributed system topologies.

The module converts the internal high-speed ARGUS system bus, which connects the ARGUS measurement amplifiers and interface modules via the click connector, to a fiber-optic data link in the sense of a media converter. Thus, the click connection can be extended to a spatially distributed arrangement of the entire ARGUS system by a pair of converters (base/remote satellite) and a fiber optic cable.

The Satellite block uses a joint power supply that is fed into the remote fiber converter module.

Fiber converter application

One fiber converter each is clicked onto both sides of the remote fiber connection. There must be at least one ARGFT module between two converters. A star-shaped arrangement is not permitted. The converters have a uniform design and recognize their function (in/out) automatically:



The voltage supply of the base block is realized via the supply socket of the base unit. The power supply of the Satellite block (ARGFT Satellite block #1) and possibly further Satellite blocks #2..n is realized via the supply socket of the fiber converters clicked onto these Satellite blocks. For this purpose, a DC supply voltage or an AC/DC adaptor must be connected to the LEMO.0B (2-pin) "POWER" socket.

If the remote fiber converter detects no signal activity via the connected fiber cable, it deactivates the power supply of the clicked modules and enters in sleep mode with reduced power consumption. If signal activity is detected, the power supply for the clicked modules is activated. Thus, switching off the base unit always leads to switching off the Satellite blocks as well, and the slave fiber converters are put into sleep mode.

Reference

Technical specs for the Fiber Converter, see manual chapter "Technical Specs".

LED functionalities of the Fiber Converter, see manual chapter "Technical Specs / Status- and Power LED".

3.3.6 UPS-NiMH

The UPS module is used to bridge short-term voltage failures that typically occur in vehicle electrical systems. The module is equipped with NiMH rechargeable batteries. These have sufficient capacity for multiple such events, each lasting a maximum of 30 seconds. If a single power failure exceeds the duration of 30 seconds, a self-shutdown of the system is triggered.

To supply the base unit or the fiber converter with power, a connecting cable (power cable) must be connected between the "POWER OUT" socket on the UPS module and the "POWER" socket on the base unit or fiber converter.

For switching the base unit on and off by the UPS module, a connection cable (control cable) is required between the "REMOTE OUT" socket and the "REMOTE" socket on the base unit. Once this connection has been made, only the on/off button on the UPS module may be used.

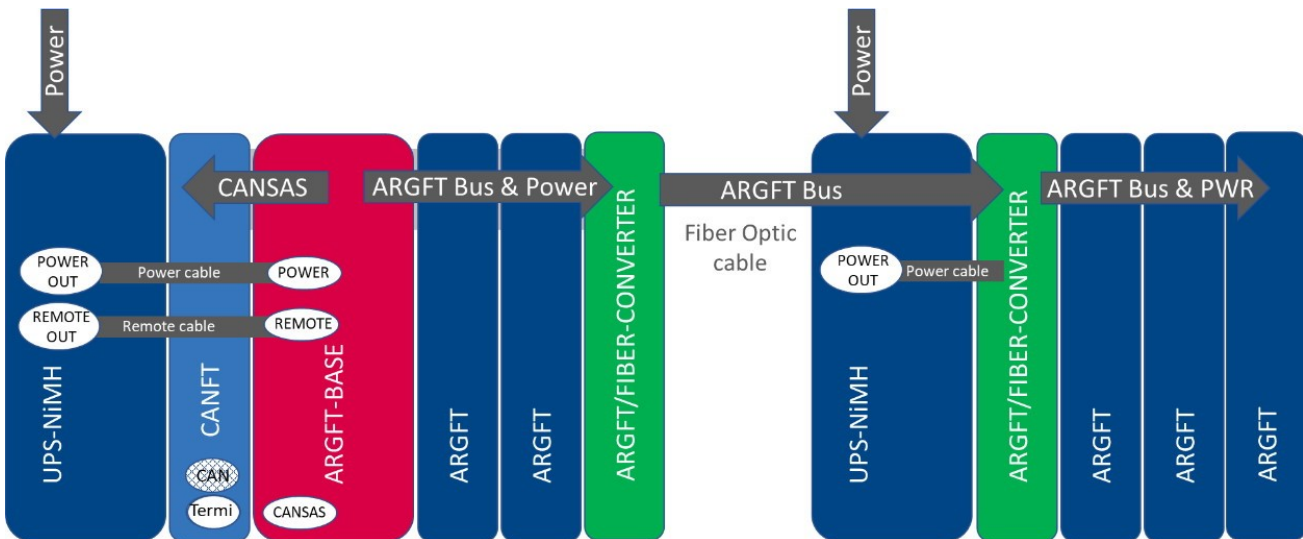


Fig. 7: ARGFT/UPS-NiMH with ARGFT/FIBER-CONVERTER

Powering on/off

The UPS module switches on when an external supply is applied via the "POWER IN" socket and

- the module's pushbutton is pressed.
- a pushbutton connected to the "REMOTE" socket is pressed.
- a switch connected to the "REMOTE" socket is closed.

A base unit connected to the UPS module receives a shutdown command via the plugged "**REMOTE**" **accessory cable** during operation or the UPS module switches off without a base unit connected when

- the UPS module's own button is pressed.
- a button connected to the UPS module's own remote socket is pressed.
- a switch connected to the UPS module's own remote socket is opened.
- *if* an overload case occurs (for details see [section "Output power"](#)^[22] and [section "Output-side overcurrent protection"](#)^[23]).
- *if* the UPS buffer duration has expired or the battery is completely discharged in battery mode.

If the UPS module does not respond to all attempts to switch it off, it can be switched off by pressing the module's button for at least 4 seconds. This prevents damage to the batteries due to deep discharge.

Remote socket

The UPS module has a "REMOTE" socket for switching the UPS module on and off and a "REMOTE OUT" socket for switching a base unit on and off.

The [assignment of the "REMOTE" socket](#)^[37] is identical to the assignment of other imc UPS modules (e.g. imc CRFX/HANDLE-xxx). A static switch (between pin 1 and pin 2) or a push button (between pin 3 and pin 4) can be connected for switching on and off.

A jumper between GND (pin 1/3/5) and **-MUTE (pin 6)** can be used to mute the **internal buzzer** of the UPS module for buffer operation.

In order for the UPS module to switch the base unit on and off, the corresponding **"REMOTE" accessory cable** must be connected between "REMOTE OUT" and the "REMOTE" socket on the base unit.

Output voltage for connecting the base unit and additional measuring modules.

The UPS module passes the external supply voltage directly to the output. In buffer mode, the internal battery voltage is regulated to approx. 12 V and applied to the output. The UPS module provides three "POWER OUT" sockets connected in parallel, to which the output voltage for the connected devices is applied. The available output power of the module is divided between all three connections. The [assignment](#)^[37] is identical with the "POWER IN" socket. In order for the UPS module to supply the base unit, the corresponding **"Power" accessory cable** must be connected between "POWER OUT" and the "POWER" socket on the base unit:

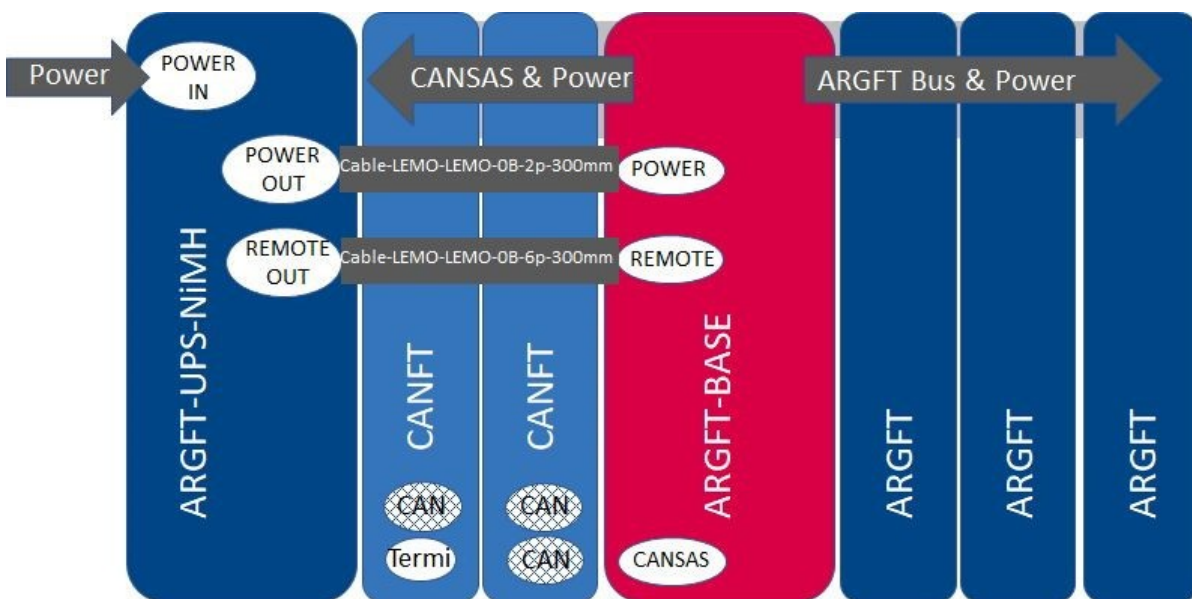


Fig. 8: Power supply via ARGFT/UPS-NiMH

Output power

The UPS module has an extended wide range input of 10..50 VDC. In this range an output power of 50 W is available. Below 10 VDC it is switched to battery operation. At low temperatures, the performance of the accumulators is limited, which means that the full output power may not be available in the buffer case, refer to the data sheet for thermal derating.

Output-side overcurrent protection

In order to protect against excessive output power requirements (too many modules) and error conditions, the UPS module has two independent current limiting circuits to protect the internal circuitry:

1. short-circuit protection (reaction time 10..30 ms)
2. static overload protection (reaction time approx. 1 s)

The **short-circuit protection** limits the output current to a resulting output power of typically approx. 70..85 W, depending on the output voltage. If this limit is exceeded, the output voltage is cut after approx. 10..30 ms and is only enabled again after approx. 4 seconds. If the short circuit condition has not been released, this procedure will repeat. During this "waiting" the "LIMIT" LED of the UPS module flashes red every second.

The **overload protection** measures the output power every second, evaluates it and will shut down the system in case of a static overload. If the permissible static output power of 50 W is exceeded, a shutdown process is initiated after 10 seconds (after 1 second in the buffer case). The "LIMIT" LED lights up yellow at an output power > 80 % and red at an output power > 95 % of the maximum permissible static output power.

UPS operation

The UPS module has a UPS with NiMH batteries. During normal operation with external supply the "POWER" LED is green, during battery operation the "POWER" LED is yellow. A device buzzer is active during UPS operation if pin 1/3/5 are not bridged with pin 6 of the "REMOTE" socket. The maximum buffer duration is fixed at 30 seconds. If the buffer time has expired, the base unit is shut down if it is connected. If only conditioners are connected, the UPS module is switched off immediately after the buffer time has elapsed.

A [4-segment LED display](#)²⁴ with battery symbol provides information about the charging status of the UPS. Whether the NiMH batteries are outside the temperature range for charging/discharging is indicated by the color of these LEDs.

Fuse

The UPS module is protected with a non-resettable 10 A fuse at the input.

If the UPS module only works in battery mode despite the supply voltage being present, this is an indication that an overload has triggered the fuse. Please contact the [imc Service](#)³¹ (E-Mail: service@imc-tm.de) to repair the module.





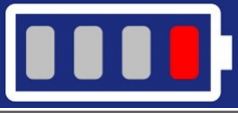
Nominal capacity

The nominal capacity quantifies the charge that can be stored in the battery at room temperature and, together with the battery voltage, gives the storable energy. In practice, this can differ significantly from the usable extractable energy, which depends on many parameters, such as the power (C-rate), the temperature or the previous history (age, number of cycles, lazy battery effect). This should be taken into account, especially for thermally demanding applications and high power requirements.


LED display

The UPS module is equipped with two multicolor LEDs and a 4-segment multicolor LED display, which provide information on various operating states:

Parameter	State
Power-LED green yellow red ("LIMIT" LED and 4 segment display off)	device is supplied via external supply voltage 10..50 VDC device is powered via internal battery an error has occurred. The following causes are possible: <ul style="list-style-type: none"> • Device has shut down, but may not switch off, e.g. due to closed remote switch. • internal error
"LIMIT"-LED green yellow red red flashing red and blue flashing alternately	actual output power at less than 80% of the permissible output power actual output power between 80% ... 95% of the permissible output power actual output power above 95% of the permissible output power; there is a risk of forced shutdown due to overload the short-circuit protection of the device has deactivated the output voltage for 4 seconds; the output voltage is then switched on again. The actual output power is greater than the reduced output power due to thermal derating. A sufficiently long buffer operation may not be available!


4 segment LED display	State
	Each segment represents 25% of the full battery capacity. When the battery is being charged, the rightmost of the illuminated state-of-charge segments flashes green at one-second intervals. In contrast, the warning signal when the battery is deep discharged (<10%) is characterized by the fact that only the left segment is lit and flashes at a faster interval.
	<div style="background-color: #e0e0e0; padding: 5px; display: flex; align-items: center;"> Example </div> The battery capacity is 50..74 % and the battery operates within its allowed temperature range for charging and discharging.
	The battery temperature is too hot and is above the limit. Buffer operation is only possible for 10 seconds, charging is not possible.
	The battery temperature is too cold and is below the limit value. Buffer operation may only be possible for a short time and charging is not possible.
	Internal error of the UPS, buffer operation may not be possible.

3.3.7 Powering on

Press the on/off button  on the base unit for approximately 1 s.

After connecting the [UPS module](#)^[21] to the base unit, only the on/off button on the UPS module needs to be pressed.

3.3.8 Powering off

The system is switched off by pressing the on/off button again (for approx. 1 s). 

The device does not switch off immediately when a measurement is in progress; if necessary, a measurement in progress is stopped and then measurement data on the microSD is completed, if internal storage is in use. This process takes a maximum of about 10 s. It is not necessary to press the power-on button continuously during this time. If no measurement is running, the switch-off process takes approx. 1 s.

Reference

If you use a **Fiber Converter** (ARGFT/FIBER-CONVERTER), please be sure to read [chapter "Fiber Converter"](#)^[20].

3.3.9 Remote control of the base unit

As an alternative to the manual on/off button on the front of the base unit, an electrically remote-controllable contact on the remote socket can be used to switch the base unit and all modules connected to the base unit on and off.

Reference

Pin configuration of the LEMO socket, see [chapter "Remote"](#)^[37]

3.3.10 Storage media in the device

This section describes how to handle the storage media of the imc measurement devices and how to use them with imc STUDIO.

The storage media are exclusively for data acquisition with imc STUDIO.

Storage media with verified performance can be purchased as accessories from imc.



Note

Manufacturer and Age of the storage medium

- imc has no way to affect the quality of the removable storage media provided by the various manufacturers.
- Storage media which come with newly purchased devices have been inspected in the framework of quality assurance and have passed the relevant tests.
- We expressly declare that the use of removable storage media is at the user's own risk.
- imc and its resellers are only liable within the framework of the guarantee and only to the extent of providing a substitute.
- imc expressly declines any liability for any damages resulting from loss of data.

3.3.10.1 For devices of the firmware group B (imc DEVICEcore)

Swapping the storage medium

The microSD card may only be changed when the **device is switched off**.

3.3.10.1.1 Storage media

Storage media	Description
microSD	<ul style="list-style-type: none"> • Only microSD memory cards verified by imc should be used, as these have been specially qualified by us for high data rate of 5 MS/s. • The specified operating temperature range of the media is relevant.

3.3.10.1.2 Data transfer

The storage medium can be accessed **directly via Windows Explorer**. Alternatively, the storage medium can be inserted into a **card reader** on the PC (suitable for large amounts of data due to faster transfer).





Warnung

Do **not use force** to insert or remove the device storage medium.

Access via Windows Explorer

The menu item "*Data (Device)*" () causes the Windows-Explorer to start while indicating the device selected.

Ribbon	View
Extra > Data (Device) ()	Complete
Home > Data (Device) ()	Standard

Using this menu item, a separate Windows-Explorer is opened for each device, providing direct access to the internal memory.

For the purpose of accessing the tool, it is necessary to log in. The factory default settings are:

- User: "imc"
- Password: device serial number

Note

Manual entry

The device is called by reference to either its IP address or its internal name. The device's name is constructed as follows: "imcDev" + SerialNumber; e.g.

\\imcDev4120110

\\10.0.12.70

3.3.10.1.3 Memory cards - File system and formatting

Memory cards (microSD) with the file system FAT32 are supported. It is recommended that a memory card be [formatted](#)²⁷⁾ before use.

Note

Routine formatting protects the memory card

Routine formatting is recommended

Take every opportunity to format the storage medium. **Recommendation:** at least every **six months**.

In this way, any **damaged storage medium** can be detected and repaired if possible. A damaged file system may cause **data loss**. Or the **measurement system may fail to start** correctly.

In order to avoid data loss, any data still needed should first be saved!

Using a data storage medium in different devices

There are no known limitations. But it is recommended to always format the medium whenever transferring it in order to avoid data loss.

Notes

General restrictions applicable to file systems

Please observe the general restrictions regarding the respective file systems.

3.3.10.1.3.1 Formatting

Warning

Please back up the data first

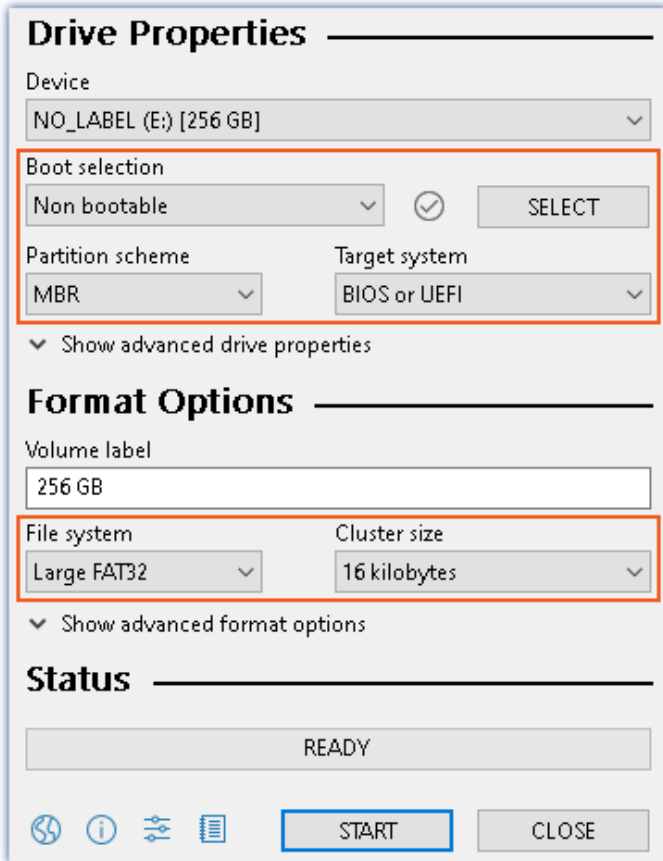
Formatting causes all data on the storage medium to be deleted. Before performing the formatting, ensure that all data have been saved on a different storage medium.

The memory card (microSD) **can not be formatted in the device.**

For this purpose, please use an appropriate tool. Such a tool is provided on the installation medium for imc STUDIO in the folder "*Tools\RemoveableDriveFormatter*":

- "*rufus-4.1p.exe*"

This program can be used for the purpose of formatting the data volume.



Settings required for formatting by means of Rufus 4.1

Make the **following settings** for the memory card:

- Boot selection: "*Not bootable*"
- Partition scheme: "*MBR*"
- File system: "*Large FAT32*"
- Cluster size: "*16 kilobytes*"

Note

Only **one(!)** partition may be created. Multiple partitions may cause the measuring device not to recognize the storage medium.

3.3.10.1.4 Known issues and limitations

Known issues and limitations	Description
File system becoming gradually slower	As the count of folders increases, so does the time required by the system to access the data. In consequence, the data saving procedure becomes slower and data loss becomes possible. For this reason, creating more than 1000 folders is to be avoided.
Errors in accessing the storage medium	<p>Errors can have the following causes, among others:</p> <ul style="list-style-type: none"> • The data rate is too high, the storage medium can't keep up and data overflow results. • The storage medium is full. <p>If the PC is connected to the measuring device, imc STUDIO documents the error with a message in the Logbook.</p>

3.3.11 LED display ARGFT-BASE

- ① STATUS LED for device state
- ② STORAGE LED for storage state of the local microSD



Fig. 9: ARGFT-BASE LEDs

① Status LED for device state

Module state	Status LED	
Power up		
Switch on	white	○
Starting	blue - flashing	⊖
Ready	blue	●
Measure		
Prepare	blue/green - flashing fast	⊙
Ready to measure	green	●
Run Trigger armed	green - flashing	⊖
Measurement completed	green	●
Power off		
Switch off	blue - flashing fast	⊙
Switched off	off	●
Miscellaneous		
Power Fail (stop recording, close files)	red	●
Firmware Update	magenta - flashing	⊖
Firmware required	magenta	●
Error	red - flashing fast	⊙

② STORAGE LED

Module state	STORAGE LED (microSD) - depending on fill level			
	no local storage	0..89%	90..99%	>99%
Power up				
Switch on	●	●	●	●
Starting	●	●	●	●
Ready	●	●	●	●
Measure				
Prepare	●	●	●	●
Ready to measure	●	● green	● yellow	● red
Run Trigger armed	●	⊖ green	⊖ yellow	⊖ red
Measurement completed	●	● green	● yellow	● red
Power off				
Switch off	●	●	●	●
Switched off	●	●	●	●
Miscellaneous				
Power Fail (stop recording, close files)	●	as previous state	as previous state	as previous state
Firmware Update	●	●	●	●
Firmware required	●	●	●	●
Error	●	⊛ rot	⊛ rot	⊛ rot

4 Maintenance and servicing

4.1 Maintenance and servicing

imc recommends performing a service check every 12 months. An imc service check includes system maintenance in accordance with the service interval plan as specified by the manufacturer and a complete function test (maintenance, inspection and revision).

Maintenance (*repair*) work may only be carried out by qualified personnel from imc Test & Measurement GmbH.

For service and maintenance work, please use the [service form](#) that you download from our website and fill out: <https://www.imc-tm.com/service>



Reference

Device certificates and calibration protocols

Detailed information on certificates, the specific contents, underlying standards (e.g. ISO 9001 / ISO 17025) and available media (pdf etc.) can be found on [our website](#), or you can contact us directly.

4.2 Cleaning

Disconnect imc ARGUSfit devices from all circuits before cleaning. Only [qualified personnel](#)¹⁰ are permitted to clean the housing interior.

Do not use abrasive materials or solutions which are harmful to plastics. Use a dry cloth to clean the housing. If the housing is particularly dirty, use a cloth which has been slightly moistened in a cleaning solution and then carefully wrung out. To clean the slits use a small soft dry brush.

Do not allow liquids to enter the housing interior.

4.3 Storage

As a rule, the measurement device must be stored in a temperature range of -40°C to +85°C.

4.4 Transport

When transporting, always use the original packaging or a appropriate packaging which protects the imc ARGUSfit devices against shocks and impacts. If transport damages occur, please be sure to contact our tech support. Damage arising from transporting is not covered in the manufacturer's guarantee. Possible damage due to condensation can be limited by wrapping the device in plastic sheeting.



Reference

imc energy sources (batteries)

imc ARGUSfit devices will have a ["battery label"](#)⁹ on the nameplate for integrated energy sources.

5 Start of operation Software / Firmware

5.1 Installation - Software

The associated measurement engineering software imc STUDIO, the configuration and operating interface for all imc instruments, provides the devices with exceedingly versatile functionality. It achieves comprehensive total solutions for everything from laboratory tests through mobile data logger application all the way to complete industrial test stations.

Use of the software requires a license, subject to the purchase order and configuration (see e.g. imc STUDIO manual product configuration / license).

In order to be able to install or uninstall imc STUDIO products, you must be registered with a user account possessing administrator rights to the PC. This applies to the overwhelming majority of all installations of Windows. However, if you are only logged on to your PC without administrator rights, log off and log back on with an administrator user account. If you do not possess an administrator user account, you will need the support of your system administrator or IT department.

You will find a detailed description to the installation of the software in the adequate manual or getting started.

5.1.1 System requirements

The minimum requirements of the PC, the recommended configuration for the PC, the supported operating system are mentioned in the data sheets and the imc STUDIO manual.

5.2 Connect the device

There are multiple ways to **connect the imc measurement devices with the PC**. In most cases, the **connection via LAN** (local area network, Ethernet) is implemented. See section "[Connecting via LAN in three steps](#)"³³ for the **quickest way to connect** PC and measurement device.

But there are also other connection types:

- WLAN
- LTE, 4G, etc. (via appropriate routers)

These are described in a separate chapter in the software manual: "*Special options for connecting to the device*".

The devices use the **TCP/IP protocol** exclusively. With this protocol, some settings and adaptations for your local network may be necessary. For this purpose, the support of your network administrator may be necessary.

Recommended network configuration

The latest and high-performance network technologies should be used to achieve the maximum transfer bandwidth. This means especially 1000BASE-T (GBit Ethernet). GBit Ethernet network devices (switches) are downward compatible, so that imc devices that only support 100 MBit Fast Ethernet can also be operated on them.

The cable length between the switch and a PC or a device should be less 100 m. Use a shielded cable. If the length of 100 m is exceeded, then you have to insert another switch.

If the system is being integrated into an existing network, you must ensure that the minimum data rate can be guaranteed. Under some circumstances, this may require using switches to subdivide the network into separate segments in order to govern the data traffic in a targeted way and thus optimize the data rate.

In very demanding applications, you might consider grouping multiple GBit Ethernet devices via even higher-performance sections lines of the network (e.g. via 5 GBit Ethernet) and to connect these groups to NAS-components, for instance, via these lines.

When such imc devices are included which use network-based PTP-synchronization (e.g. CRXT or CRFX-2000GP), then it is necessary to use network switches which fully support this protocol on the hardware side. Appropriate network components are also available as imc accessories (e.g. CRFX/NET-SWITCH-5) and are then electrically and mechanically fully compatible with the imc systems.

5.3 Connecting via LAN in three steps

The most common case is described below: the PC and the device are connected via cable or network switch. The device's IP address must be set in the PC's address range. Subsequently, the device can be connected with the PC. If a connection has ever been established previously, the software recognizes the device's hardware configuration. In that case, experiment configurations can be prepared without any connection to the device.


Step 1: Connecting the measurement device

To connect via LAN there are two options:

1. The measurement device is connected to an **existing network**, e.g. via network switch. Only with a switch is it possible to run multiple devices.
2. The measurement device is connected directly to a network adapter on the PC (**point-to-point**).

In a LAN, the first case is typically implemented. Modern PCs and network switches are usually equipped with Auto-MDI(X) automatic crossover recognition, so that it is not necessary to distinguish between crossed and uncrossed connection cables. Thus both cable types can be used.

Step 2: IP-configuration

Start imc STUDIO. Click the "Device interfaces" button () to open the dialog for configuring the IP address of the device.

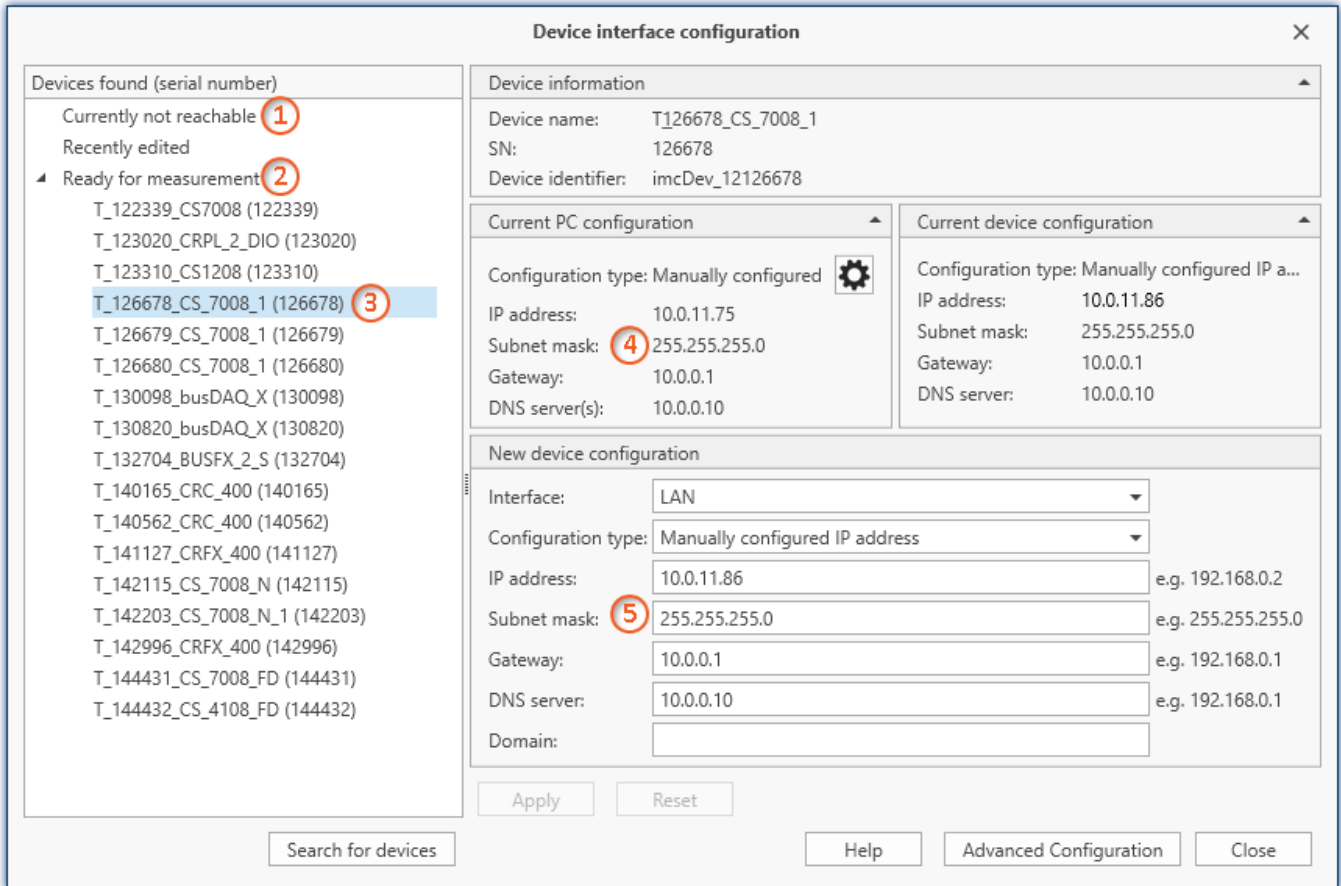
Ribbon	View
Setup-Configuration > Device interfaces ()	Complete

If this **button** is **not present** in the view, it is also possible to open the dialog after a device search if it failed to find any new devices. Subsequently, a prompt appears asking whether to search for devices with an inappropriately configured network interface. Close this message box by clicking "Yes".

Once the dialog starts, the system automatically searches for all devices in the network. In the tree diagram, all available devices are indicated. If the device appears among the group "Currently not reachable" ①, it is necessary to modify the device's LAN-settings. If the device appears among the group "Ready for measurement" ②, you can leave the settings as they are or review them.

Select the device for making modifications ③.

If there is any IP-conflict, devices affected will not be listed.



Display of measurement devices found and of the IP address

Set the **IP address manually** if you are not using DHCP. The device's IP address ⑤ must match with the PC's address ④. To conform to the network mask, only the device portion may be different (see example).

Example

In the example shown, the fixed IP 10.0.11.75 with subnet mask 255.255.255.0 is selected for the PC. For measurement devices, any numbers would be suitable which begin with 10.0.11. and then do not contain 0, 75, or 255. The 0 and the 255 should not be used, if possible, due to their special significance. The 75 is the computer's number.

Example for IP settings	PC	Device
IP address	10 . 0 . 11 . 75	10 . 0 . 11 . 86
Network mask	255 . 255 . 255 . 0	255 . 255 . 255 . 0

If the configuration type: "DHCP" is used, **the IP address is obtained automatically** from the DHCP-server. If it is **impossible to obtain any setting values** via DHCP, the **alternative values are used**. These could lead to errors in the connection (different networks, same IP addresses, etc.).

If there is a **direct connection** between the device and the PC by a cable, then **DHCP should not be used**.

In order to apply the changes, click on the button "Apply". Wait for the device to restart and then close the dialog.

Step 3: Integrating a device into an experiment

Now you are ready to add the device to the imc STUDIO experiment. If your device is unknown to the system, first perform the "device search".

Ribbon	View
Home > Search for devices (🌐)	all
Setup-Control > Search for devices (🌐)	Complete

Select the desired device: Once you click in the checkbox "Selected" for the desired device, it is ready to use in the experiment.

Selected	Device name	SN	Device specification
<input checked="" type="checkbox"/>	T_124835_C1_1_LEMO_ET	124835	imc C1-1 LEMO
<input type="checkbox"/>	T_130039_busDAQ_X	130039	busDAQ-X
<input type="checkbox"/>	T_130311_SPARTAN_U32_CAN	130311	imc SPARTAN

You can also select multiple devices for your experiment.

Now the device is "known". After the next program start it is available for selection. For further information, see the documentation on the component "Setup".

5.4 Firmware update

Every software version comes with matching firmware for the hardware. The software only works with devices having the right firmware.

Once the program connects up with the unit, the device's firmware is checked. If the software version doesn't match the device's firmware version, you are asked if you want to perform a firmware-update.

Note

The firmware update is only required if the software was obtained as an update. If you obtained your hardware equipment together with the software, no firmware update is necessary.



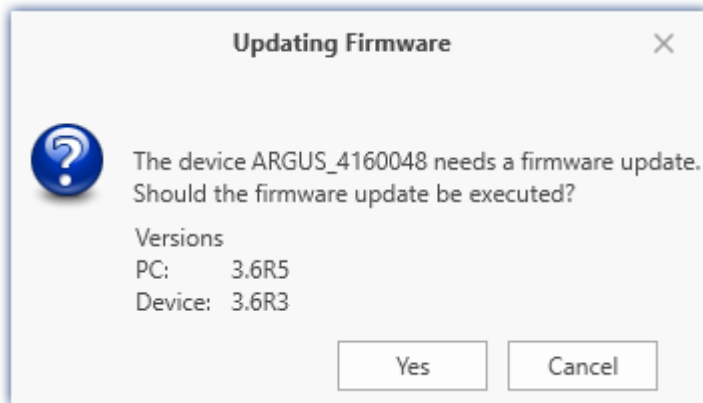
Warning

Do not interrupt the firmware update!

Be absolutely certain to observe the following:

1. Under no circumstances should the device or its power supply be deactivated during the firmware update!
2. The network connection may not be interrupted. Use a cable connection, not WLAN!

Upon the connection/preparation, the versions are compared. If they do not match, the next dialog notifies you about this, and indicates both which version is being used and which version is required.



When you click "Yes", the firmware update starts. The duration of the update depends on the number of amplifiers (can last up to several minutes). You will be informed on the progress.

If the firmware update was successful, the dialog will close automatically after a few seconds. Subsequently the device can be used with the device software.



What to do in case of an error occurring in a firmware update?

Answer: When a firmware update fails to run correctly, the last active firmware is restored. The device remains operational by means of the previous installed firmware. Repeat the procedure, and if the repeat procedure also fails, please contact our tech support.

What is an optional update?

Answer: In some cases, a firmware update is not mandatory. In such cases, the update is available to you as "optional". However, we still recommend performing the update, since every update not only implements improvements, but also fixes any bugs. Nevertheless, with the new version of imc STUDIO, you are able to work with the device running the old firmware edition, if you choose.

6 Pin configuration

6.1 Power

The base unit, the fiber converter and the UPS module are all equipped with a "Power" socket on the front in order to supply the connected module block with power.

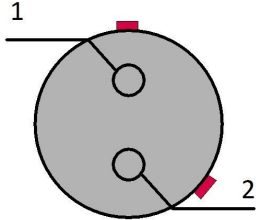


Fig. 10: Socket for the power supply
(view on top of the socket)

PIN	Signal
1	+PWR
2	-PWR

There is a red mark on the side of the positive pole.

6.2 Remote

Both the base unit and the [UPS module](#) ^[21] are equipped with a "remote" socket on the front. Please read the chapter "[UPS-NIMH](#)" ^[21] carefully before using the UPS module.

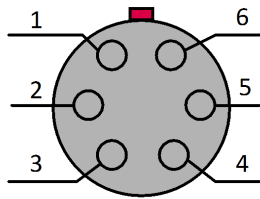


Fig. 11: Remote socket
(view on top of the socket)

PIN	Signal
1	GND
2	remote switch
3	GND
4	remote push button
5	GND *
6	MUTE *

* only in the REMOTE socket of the [UPS module](#) ^[21]

Remote On/Off

Switching on/off the base unit and all [modules connected to the base unit](#) ^[16] can be done via the remote connection in addition to the [on/off button](#) ^[25]. The following functions are available:

! Note

Remote switch (pin 2)

Bridge remote switch (**pin 2**) with GND to switch on/off.

If this connection is **permanently** bridged, the base unit can be switched on or off automatically via the supply voltage. If a self-start configuration has been stored in the unit, it can be used, for example, to automatically start a measurement in the vehicle when the board voltage is switched on.

! Note

Remote push button (pin 4)

Briefly bridge remote push button (**pin 4**) with GND to switch on/off.

6.3 Base Unit

6.3.1 GPS

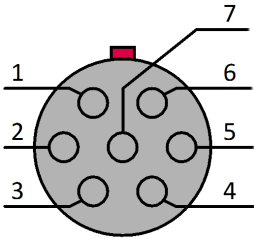


Fig. 12: GPS socket
(base unit)
(view on top of the socket)

PIN	Signal	
1	VCC	4.2 V - 5 V / 300 mA
2	RxD	
3	TxD	
4	CTS	
5	GND	
6	RTS	
7	1 pps	

6.3.2 CANSAS

This LEMO socket "CANSAS" (size 0B) on the front of the ARGFT base unit is intended exclusively for imc CANSASfit (CANFT) modules. The ARGFT supply POWER is passed through to supply the CANFT modules (CAN-SUPPLY, max. 1 A). As long as the base unit is connected to a DC supply voltage, the CANFT modules are permanently supplied via the CANSAS socket regardless of the operating state (on/off) of the base unit.

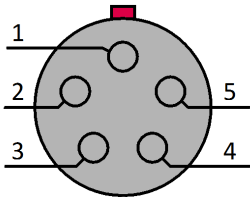


Fig. 13: Socket to connect
CANFT modules
(view on top of the socket)

PIN	Signal
1	+CAN-SUPPLY
2	-CAN-SUPPLY
3	CAN_H
4	CAN_L
5	CAN_GND

Reference

[Description: chapter Assembly and connection](#)  16

6.4 Measurement Modules

6.4.1 B-4

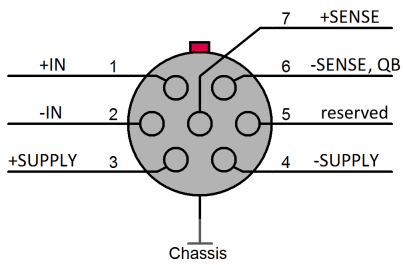


Fig. 14: B-4 socket (pinning)

(View on top of the socket)

6.4.2 UTI-6

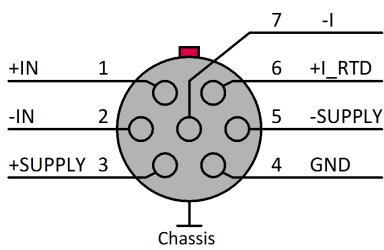


Fig. 15: UTI-6 socket (pinning)

(View on top of the socket)

6.4.3 ICPU-6

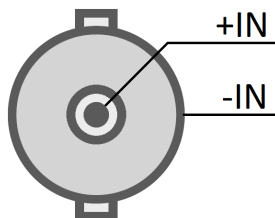


Fig. 16: ICPU-6 socket (pinning)

(view on top of the socket)

6.4.4 CAN FD (DSUB-9)

The CAN FD interface is a clickable module for the modular imc ARGUSfit system. Together with the analog ARGUSfit measurement amplifiers, several of these interfaces [can be clicked](#)^[16] to an imc ARGUSfit base. For the logical decoding of the channels, the module has a local intelligence in the form of a processor. This relieves the ARGUSfit base unit and the overall system is easily scalable in its total performance even with several interfaces.

Power-via-CAN "PvCAN"

The supply voltage of the [base unit](#)^[19], [Fiber Converter](#)^[20] and the [UPS-NiMH module](#)^[21] can be switched on for the first CAN node "CAN 1" of each interface module for the connected imc CANSAS modules. To do this, the "Power-via-CAN switch" is activated in the CAN-Editor on the "Node definitions" page. The maximum current is limited to 1 A and results from the sum of the powers of the connected imc CANSAS modules divided by the supply voltage.

DSUB-PIN	Signal		Description	Use in device	
	CAN 1	CAN 2		CAN 1	CAN 2
1	+CAN_SUPPLY	nc	supply only at CAN 1 , PvCAN, I < 1 A	connected	do not connect
2	CAN_L		dominant low bus line	connected	
3	CAN_GND		CAN Ground	connected	
4	nc		reserved	do not connect	
5	-CAN_SUPPLY	nc	supply only at CAN 1	connected	do not connect
6	CAN_GND		optional CAN Ground	connected	
7	CAN_H		dominant high bus line	connected	
8	nc		reserved	do not connect	
9	nc		reserved	do not connect	

! Notes

- The maximum current of 1 A must not be exceeded at CAN node 1. The CANSAS modules' low power consumption should not be underestimated, since at low supply voltages high power values can accrue from high current. Two UNI8 units with power consumption of approx. 30 W (with connected sensors) already exceed the limit by having a current of 2 A at 15 V. Additional factors are the voltage drop along long wires, and small wire cross-sections. In any case, it is necessary to first calculate the power consumption and the current strengths to be expected.
- The direction of current flow is unidirectional, protected by diodes: the ARGFT CAN FD module supplies CAN bus participants.
- When the ARGFT system is switched off, the power supply "PvCAN" also is switched off.
- The PvCAN supply is equipped with electronic overload and short-circuit protection. This must be reset after a fault (switching the ARGFT/CAN-FD off and on).
- Only one supply may be used at any time. If an external supply is applied to the CAN bus and the ARGFT's power supply unit is additionally connected, Power-via-CAN must be deactivated on the ARGUS device via software.
- Using -CAN_SUPPLY does not replace the CAN_GND connection! CAN_GND must be used independently of the outgoing supply so that the levels of CAN_H and CAN_L are reliably detected (-CAN_SUPPLY is power supply connection, CAN_GND is signal connection).

Figures

Figure 1: parking position of covering caps	15
Figure 2: Order of possible Click connections	16
Figure 3: Locking tongue & locking latch	16
Figure 4: locking latch	16
Figure 5: CAN termination	18
Figure 6: Power supply via ARGFT base unit	19
Figure 7: ARGFT/UPS-NIMH with ARGFT/FIBER-CONVERTER	21
Figure 8: Power supply via ARGFT/UPS-NIMH	22
Figure 9: ARGFT-BASE LEDs	29
Figure 10: Socket for the power supply	37
Figure 11: Remote socket	37
Figure 12: GPS socket (base unit)	38
Figure 13: Socket to connect CANFT modules	38
Figure 14: B-4 socket (pinning)	39
Figure 15: UTI-6 socket (pinning)	39
Figure 16: ICPU-6 socket (pinning)	39

Index

4

4 segment LED display 24

A

Accessing the data carrier 28

Add device 35

adjustment 5

ARGFT

 B-4 pinning 39

 Base 37

 CAN FD 40

 Fiber Converter 20

 ICPU-6 pinning 39

 UPS-NiMH 21

 UTI-6 pinning 39

B

Base

 LED 29

Baud rate 17

C

Cables 7

calibration 5

CAN Termination 18

CAN-Bus

 Pin configuration 40

 Power via CAN 40

CANSAS software 17

CANSASfit (CANFT) 17

CE 7

CE Certification 5

Certificates 5

Change requests 5

Cleaning 31

Click mechanism 16

Cluster size

 FAT32 27

connect device 33

Connecting via LAN 33

Copy data to the PC 26

Customer support

 Tech support 5

D

Data transfer 26

 Password 26

 Storage medium 26

Device

 add 35

 connect 33

Device certificate 31

DIN-EN-ISO-9001 5

E

ElektroG 7

EMC 6

energy sources 9

F

FCC 7

File System

 FAT32 27

Firmware update 35

formatting 27

G

General terms and conditions 5

Grounding 19

Guarantee 5, 6

H

Hard drive 26

Hotline

 Tech support 5

how to connect 16

I

ICPU-6

 Pin configuration 39

imc STUDIO 32

 operating system 32

Industrial safety 11

Industrial safety regulation 11

Installation

 imc STUDIO 32

Internal storage media 26

IP address

 configure 33

 of the devices 33

 of the PCs 33

ISO-9001 5

Issues

 Storage medium 28

L

Leads 7

LED

 Base 29

 Power (UPS) module 24

Liability restrictions 6

- Limitations
 - Storage medium 28
- Limited Warranty 5
- M**
- Maintenance 5, 31
- Memory card 26
- microSD Storage medium 26
- module connector 16
- O**
- Operating personnel 10
- P**
- partition 27
- Password
 - Data transfer 26
- Pin configuration
 - B-4 39
 - CAN FD 40
 - CANSAS 38
 - GPS 38
 - ICPU-6 39
 - Power 37
 - Remote 37
 - UTI-6 39
- Power off 25
- Power on 25
- Power supply 19
- Problems
 - Storage medium 28
- Product improvement 5
- Q**
- Quality Management 5
- R**
- repair 5
- Restriction of Hazardous Substances 7
- RoHS 7
- S**
- Safe operation 15
- Select device with explorer 26
- Service 31
 - Tech support 5
- service and maintenance 5
- service check 5
- Service form 31
- Software installation 32
- Special hazards 11
- Storage 31
 - storage device
 - formatting 27
 - partition 27
 - Storage media 26
 - Storage medium
 - Cluster size 27
 - Data transfer 26
 - FAT32 27
 - File system 27
 - Filesize (maximum) 27
 - Issues 28
 - Limitations 28
 - microSD 26
 - Problems 28
 - Swapping the storage medium 26
 - Symbols 8
 - System requirements 32
- T**
- Tech support 5
- Telephone numbers
 - Tech support 5
- Transport 31
- U**
- USB 26
- W**
- Warranty 5
- Waste on Electric and Electronic Equipment 7
- WEEE
 - Restriction of Hazardous Substances 7



An Axiometrix Solutions Brand

Contact imc

Address

imc Test & Measurement GmbH
Voltastr. 5
13355 Berlin

Phone: (Germany): +49 30 467090-0

E-Mail: info@imc-tm.de

Internet: <https://www.imc-tm.com>

Tech support

If you have problems or questions, please contact our tech support:

Phone: (Germany): +49 30 467090-26

E-Mail: hotline@imc-tm.de

Internet: <https://www.imc-tm.com/service-training/>

imc ACADEMY - Training center

The safe handling of measurement devices requires a good knowledge of the system. At our training center, experienced specialists are here to share their knowledge.

E-Mail: schulung@imc-tm.de

Internet: <https://www.imc-tm.com/service-training/imc-academy>

International partners

You will find the contact person responsible for you in our overview list of imc partners:

Internet: <https://www.imc-tm.com/imc-worldwide/>

imc @ Social Media

<https://www.facebook.com/imcTestMeasurement>

<https://www.youtube.com/c/imcTestMeasurementGmbH>

https://twitter.com/imc_de

<https://www.linkedin.com/company/imc-test-&-measurement-gmbh>