CAN FD Interface for imc ARGUSfit

The CAN FD interface is a clickable module for the modular imc ARGUS*fit* system. Together with the analog imc ARGUS*fit* measurement amplifiers, several of these interfaces can be docked to an imc ARGUS*fit* base. The ability to acquire CAN-based measurement data and log channels can thus be flexibly added to such a measurement system.

Two CAN nodes are provided at DSUB-9 sockets with standardized pinout. For the logical decoding of the channels, the module has a local intelligence in the form of a processor. This relieves the imc ARGUS*fit* base unit and the overall system is easily scalable in its total performance even with several interfaces.

Highlights

- Two individually galvanically isolated CAN nodes
- CAN FD (max. 8 MBaud), CAN High Speed (max. 1 MBaud), CAN Low Speed (max. 125 KBaud)
- CAN termination can be activated by software
- Decoding of physically and numerically scaled parameters or measuring channels. Such channels can also be used as trigger source, in live analysis (OFA) and in PC-less stand-alone mode
- Logging of the raw, undecoded send and receive data as log channel in imc TSA format (Time Stamped ASCII)
- Log channel can also be decoded outside the interface via imc STUDIO BusDecoder (live) or via imc FAMOS (post-processing), thanks to embedded dbc information.
- Configurable with CAN assistant in imc STUDIO, including dbc interface (file import/export)
- Support of imc CANSAS modules (CANFX, CANFT) with configuration via dbc file exchange
- Power-via-CAN for supply of imc CANSAS modules by the imc ARGUS*fit* system: Can be activated by software and with electronic overload protection.
- Automated cyclic output of protocol sequences for initialization or activation of sensors and subsystems

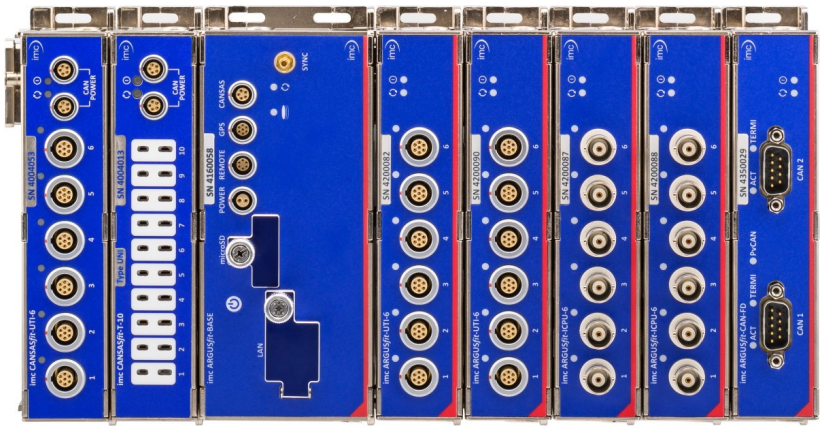
Typical applications

- Measurements on vehicle buses and automotive components, ECUs etc.
- Road test and test bench applications in the automotive field
- Measurements with intelligent sensors and subsystems with CAN output
- Integration of CAN-based test bench infrastructure
- In preparation: output and exchange of real-time measurement channels of the imc ARGUS system with higher-level automation and application systems, CAN-based displays, etc.

CAN FD Interface for imc ARGUSfit

Technical Data Sheet

imc ARGUS*fit*: Flexible modular platform for fast measurement systems

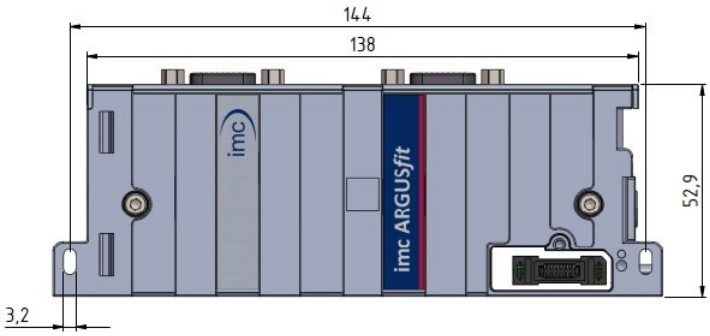


Based on an imc ARGUS*fit* base unit, imc ARGUS*fit* measurement amplifier and interface modules can be combined to form complete systems by means of a robust click mechanism, which can even integrate imc CANSAS*fit* modules. The click connectors provide the electrical connection to the power supply and system bus.

For expansion to decentralized distributed topologies, the fast internal ARGFT system bus can be converted to fiber optic cables by means of a clickable fiber converter module.

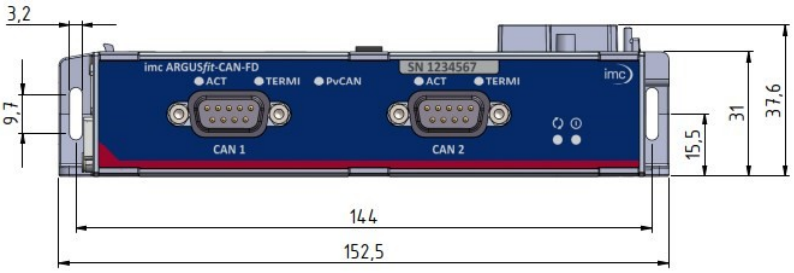
The entire system can be controlled via a common Ethernet connection (LAN/WLAN) with a PC (imc STUDIO software) and can be networked and operated synchronously and uniformly with all other imc data acquisition instrument series. Furthermore, it can also be operated autonomously and stand-alone without PC with data storage on microSD.

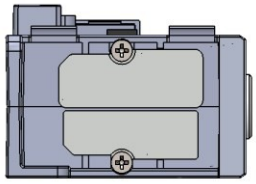
Dimensions



imc ARGUSfit CAN FD

Module shown in standard operating position (terminal connections upwards)





left module panel with parking position for the covers of the module connectors

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Overview of the available variants

Order Code	Properties	article no.
ARGFT/CAN-FD	CAN FD interface module (-40°C... +85°C for modules as of revision 6) 2 nodes (CAN FD and classical CAN bus), incl. DBC interface	11400217
ARGFT/CAN-FD-EC	variant for extended condensation	11410205

Included accessories

Documents
Getting started with imc ARGUS*fit* (one copy per delivery)
Device certificate

Optional accessories

Fiber-Converter Set		
ARGFT/FIBER-CONVERTER-SET	Media converter for the ARGUS system bus Includes: 2 converter modules, 2x SFP+ transceiver, 5 m fiber optic cable, AC/DC power adaptor and a power plug	11400225

Mounting accessories		
CANFT/BRACKET-DIN	Mounting on DIN-Rail (top hat rail) for imc ARGUS*fit* and imc CANSAS*fit*	12100029
CANFT/BRACKET-MAG	Mounting with magnet system for imc ARGUS*fit* and imc CANSAS*fit*	12100030

Technical Specs - ARGFT/CAN FD

Parameter	Value	Remarks
Number of CAN-nodes	2	one galvanically isolated node per connector
Terminal connection	2x DSUB-9	
Topology	bus	
Transfer protocol	configurable per software: CAN FD (ISO Standard) (max. 8 MBaud) non-ISO CAN FD (Draft) (max. 8 MBaud) CAN High Speed (max. 1 MBaud) CAN Low Speed (max. 125 KBaud)	individually for each node current standard according ISO 11898-1:2015 former draft (Bosch) according ISO 11898 according ISO 11519
Operating principle	Multi Master principle	
Direction of data flow	sending and receiving	
Operating mode	decoding channels logging of raw data silent mode / listen only cyclic sequence output	physically and numerically scaled channels log channels in imc TSA format ("Dump") passive, without acknowledge initialization of sensors
Baud rate	5 kbit/s to 8 Mbit/s	configurable via software; maximum is depending on selected protocol (FD/High/Low Speed)
Termination	120 Ω	switchable by software for each node
Direct parameterizing of imc CANSAS modules	via dbc file import	dbc file import to be created with imc CANSAS software. e.g. via USB-CAN interface

Isolation		
Parameter	**Value**	**Remarks**
Isolation	galvanically isolated	
CAN-to-case (CHASSIS)	±60 V	test voltage: ±300 V (10 s)
CAN-to-power supply	±60 V	test voltage: ±300 V (10 s)
CAN-to-channel	±60 V	test voltage: ±300 V (10 s)

Status-LED		
Parameter	**Value**	**Remarks**
Power-LED		
green	power active	
red	reverse polarity fault	
Status-LED	multicolor	global status of module
green	operating, run	
blue	init, etc.	
magenta	firmware update	
yellow	prepare configuration	
red	error	

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Status-LED		
Parameter	**Value**	**Remarks**
ACT LED	LED flashing at 200 ms rate when messages are received or sent.	
TERMI LED green off	 CAN termination active CAN termination not active	
PvCAN LED green red off	 PvCAN active error e.g. short-circuit PvCAN not active	Power via CAN LED is green when PvCAN voltage has been activated and turns red upon power error or overload.

Power via CAN		
Parameter	**Value**	**Remarks**
Output voltage	power supply of CAN FD module which is the supply of the entire ARGUS system	available at node 1, can be switched on via software
Output current	1 A	to supply imc CANSAS modules accuracy of the current limit: ±3%
Short circuit protection	unlimited duration	

Power supply of the module			
Parameter	**Value typ.**	**min. / max.**	**Remarks**
Input supply voltage		7 V to 50 V DC 9.5 V to 50 V DC	operating upon power up power supply via base unit, fiber converter or UPS module
Power consumption	3.8 W 4.5 W 6 W		passive (idle) active (data acquisition configuration) power-up phase (with buffer charging)
Power supply options	via adjacent module		module connector (click mechanism)
Isolation	±60 V		to case (CHASSIS), isolation impedance ≥1 MΩ

Pass through power limits for directly connected modules (click-mechanism)		
Parameter	**Value**	**Remarks**
Max. current	5 A	at 85 °C current rating of click connector to ARGFT modules
	60 W at 12 V DC 120 W at 24 V DC	typ. DC vehicle voltage AC/DC power adaptor and installations

Operating conditions

Operating conditions		
Parameter	**Value**	**Remarks**
Operating environment	dry, non corrosive environment within specified operating temperature range	
Ingress protection class	IP50	with correctly mounted covers over both module connectors
Pollution degree	2	
Operating temperature range	-40 °C to +85 °C	for modules as of revision 6 standard version: without condensation "-EC" version: temporary condensation allowed
Shock- and vibration resistance	IEC 60068-2-27, IEC 61373 IEC 60068-2-64 category 1, class A and B MIL-STD-810 Rail Cargo Vibration Exposure U.S. Highway Truck Vibration Exposure	
Extended shock- and vibration resistance	upon request	specific tests or certification upon request
Dimensions (L x W x H)	approx. 153 x 40 x 54 mm	including mounting flanges and click mechanism, see mechanical drawings
Weight	0.33 kg	