

imc CANSAS-DO8R, DO16R

CAN module for 8 or 16-bit digital outputs as relay



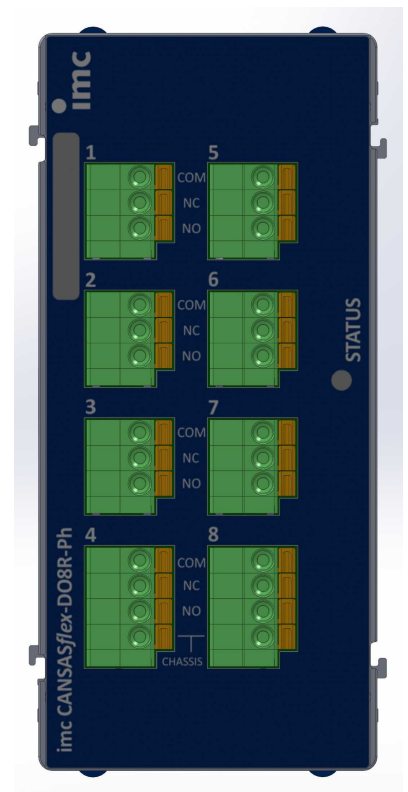
*imc CANSASflex-DO8R
(Fig. similar)*

The CAN bus modules in the CANSASflex DO8R and DO16R provide 8 and 16 relays, respectively, independent relays with changeover contacts.

Depending on the logical signal state, the contact "IN" is connected with "ON" or "OFF". This signal path is potential-free and can be operated with signals in any direction and with contact powers of up to 0.3 A at 125 V AC or 1 A at 30 V DC.

Highlights

- Potential-free relay contacts for switching low and medium power signals and loads
- Free interconnection of circuits with any current direction
- Can be used as signal multiplexer or circuit breaker
- Safe startup with fixed initial state ("ON")
- DSUB-15 connection technology with practical DSUB screw terminal plugs ("ACC/DSUBM-xx")



CANFX/L-DO8R-Ph

As a CAN-bus-based measurement engineering tool, the imc CANSAS*flex* series offers a wide selection of measurement modules which process and digitize sensor signals and output these as CAN-messages.

The modules of the imc CANSAS*flex* series (CANFX) can be joined together mechanically and electrically by means of a latching ("click") mechanism, without the use of any tools nor the need for any extra cables, and also allows the CAN-logger imc BUSDAQ*flex* (BUSFX) to dock on directly. Depending on the module type, they are available in either long (L-), short, or both housing versions.

Besides fixed installations or operation on a laboratory bench, the modules are also designed to fit in a special 19" subrack to provide a convenient solution in test station settings.

Fields of application

- For test rigs, vehicle testing, road trials and all-purpose measurement applications
- Deployable both in decentralized, distributed and in centralized measurement setups
- Operable with CAN-interfaces and CAN-data loggers from either imc or 3rd-party manufacturers

Properties and capabilities

Operating conditions:

- Operating temperature: -40°C to +85°C, condensation allowed
- Shock resistance: 50 g (pk over 5 ms)
- Ingress Protection: IP40 (only with optional protective cover on top of the locking slider, otherwise IP20)

CAN-Bus:

- Configurable Baud rate (max. 1 Mbit/s)
- Default configuration ex-factory: Baud rate=125 kbit/s and IDs: Master=2, Slave=3
- Galvanically isolated
- Built-in terminator resistance, manually switchable

Sampling rates and synchronization:

- Configurable CAN data rate
- Simultaneous sampling of all module's channels, as well as across multiple modules
- Synchronization of multiple modules as well as to a global CAN-logger: based on CAN messages (no Sync-signal required)

Power supply:

- Galvanically isolated power supply input
- DC 10 V to 50 V
- LEMO.0B connector (2-pin); alternative power supply via CAN connector (DSUB-9)

On-board signal processing:

- "Virtual channels": integrated signal processor (DSP) for online processing. Data reduction, filtering, scaling, calculations, threshold monitoring, etc.
- Programmable multi-functional status-LED, supporting linkage to virtual channels

Heartbeat-message:

- Configurable with cyclical "life-sign", e.g. for integrity check purposes in test rigs
- Contains checksum for configuration and serial number, e.g. for consistency monitoring (checking of whether the correct module is still being used, for instance in installations undergoing maintenance)

FindMe:

- Identification of a module by means of selective LED flashing (via configuration software; does not occupy any additional CAN messages)

flex-Series: flexible granulation, topology and block assemblies**Click-mechanism:**

- Modules joinable to module-blocks: mechanically and electrically connected (CAN and power supply)
- No tools or additional cabling required
- With guide grooves, magnetic catches and locking slider
- Both short and long housing versions joinable: with electrical connection: align on rear side; mechanically only: align on front side
- Direct connection of compatible CAN-logger: imc BUSDAQflex

19" rack solution (subrack):

- Modules designed for insertion into special 19" frames ("boom-box") for installation in test stations
- Rack backplane accommodates the power supply, CAN and slot information (automatically read out configuration information for use in automation software)

Mounting:

- Mountable by means of recessed threaded holes (M3), either individually or jointly as a block
- Rubber bumper rails providing secure placement in laboratory settings
- Various brackets and handles, and DIN top-hat rail mounting kit available as accessories



imc CANSASflex modules connected (Click-mechanism) in a block with imc BUSDAQflex Logger (left)



rear view of this block: CAN, Power supply, Terminator, Locking slider

Software**Configuration:**

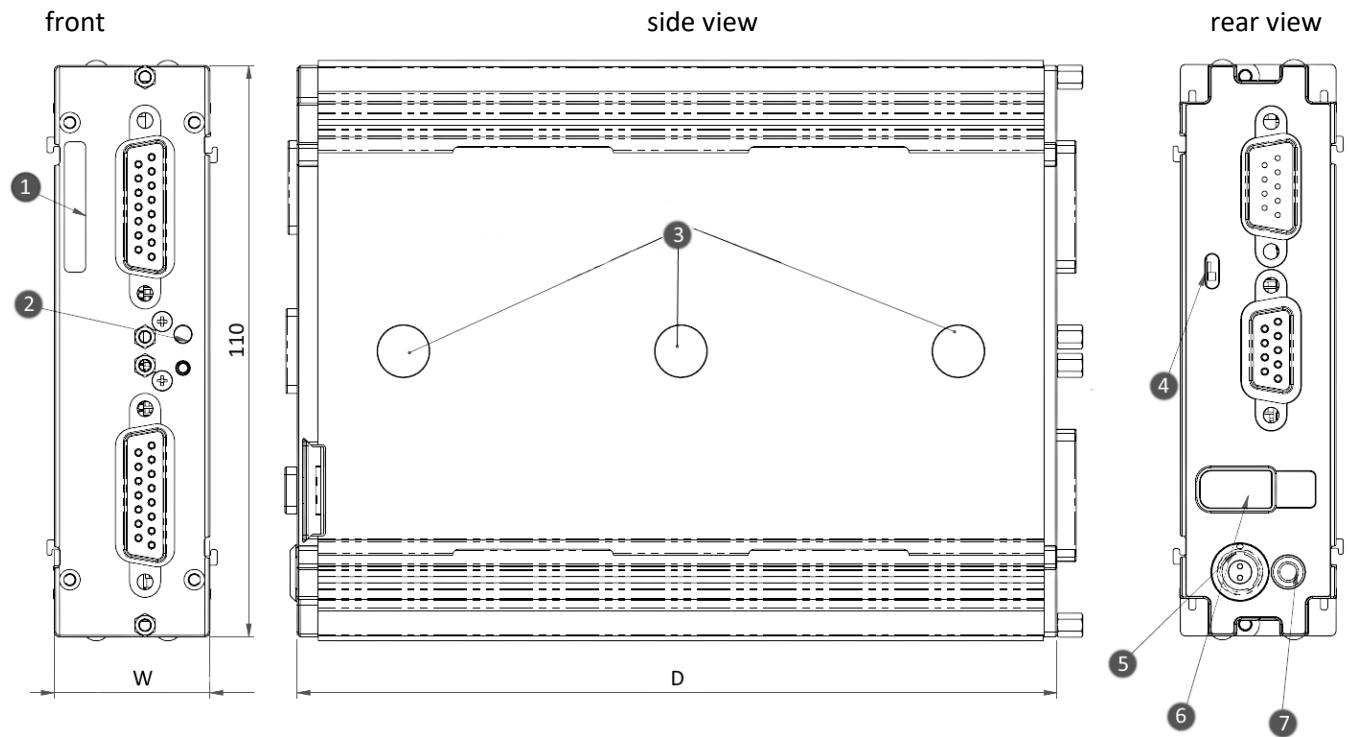
- Using imc CANSAS software (free of charge), including dbc-export
- Autostart with saved configuration; also pre-configurable at factory
- The module's current configuration can be read out and exported by the software; For transfer of configuration via physical transport of the module; for back tracing and recovery.
- Supports the CANopen® protocol according "CiA® DS 301 V4.0.2" and "CiA® DS 404V1.2"; 4 TPDOs (Transmit Process Data Objects) in INT16, INT32 and FLOAT. See "CANSAS CANopen®" for a detailed description of the supported features and settings.

Measurement operation:

- Data logger operation:
 - Software: imc STUDIO
 - Hardware: imc measurement system with CAN-Interface, e.g. imc BUSDAQ, imc C-SERIES, imc SPARTAN and imc CRONOS device family (CRFX, CRXT, CRC, CRSL)
- With any desired CAN-interfaces and CAN-loggers from 3rd-party manufacturers

Overview of available variants

Order Code	signal connection	option/extra	housing	article number
CANFX/DO8R	DSUB-15		<%S0_TYP%>	12500032
CANFX/L-DO8R-Ph	Phoenix		<%L1_TYP%>	12500126
CANFX/L-DO16R	DSUB-15		<%L1_TYP%>	12500033



Shown in standard operating orientation: housing type L0; width (W) = 30 mm.

Housing type	S0	S1	S2	L0	L1	L2
W: Width	30 mm	50.3 mm	70.6 mm	30 mm	50.3 mm	70.6 mm
D: Depth	93 mm, with two magnets			146.5 mm, with three magnets		

Legend:

- | | | |
|----------------------------|-----------------------------------|------------------------------|
| 1: Serial number label | 3: magnet
(depending on model) | 5: supply socket (LEMO) |
| 2: Status LED (blue / red) | 4: adjustable CAN terminator | 6: locking slider CAN/supply |
| | | 7: ground connection M3 |

Included accessories

Documents	
Getting started with imc CANSAS (one copy per delivery)	
Device certificate	
Miscellaneous	
Grounding set consisting of: a spring washer S3 (stainless steel), a flat washer (A3.2 DIN 433 A2) and a pan-head screw M3x8 (mounted on the rear panel).	

Optional accessories

AC/DC power adaptor 110-230V AC (with appropriate LEMO plug)		
ACC/AC-ADAP-24-60-0B	24 V DC, 60 W, LEMO.0B.302	13500246
Power plug		
ACC/POWER-PLUG3	Power connector for DC supply LEMO FGG.0B.302, solder contact, max. 0.34 mm ²	13500033
ACC/CABLE-LEMO-0B-BAN-2 M5	Power supply cable LEMO/banana 2.5 m	13500276
DSUB-9 plug (CAN)		
CAN/RESET	Reset-plug (DSUB-9 female)	10500025
CAN/KABEL-TYP2	CAN-Bus connection cable 2x DSUB-9 1:1, 2 m length	10500027
DSUB-15 plug		
ACC/DSUBM-REL4	Stecker für Relaisausgänge	13500176
Handle		
CANFX/HANDLE-S	CANFX handle kit (left and right) - short (S)	12500027
CANFX/HANDLE-L	CANFX handle kit (left and right) - long (L)	12500028
Mounting brackets for fixed installations		
CANFX/BRACKET-CON-S	CANFX connection bracket short	12500019
CANFX/BRACKET-CON-L	CANFX connection bracket long	12500020
CANFX/RACK	19" Rack	12500094
CANFX/RACK-BLOCK	19" Rack frame for entire block CANFX/BUSFX	12500103
Mounting brackets for DIN Rail		
CANFX/BRACKET-DIN-S0	CANFX DIN Rail mounting bracket - Type S0	12500021
CANFX/BRACKET-DIN-L1	CANFX DIN Rail mounting bracket - Type L1	12500025
Miscellaneous		
CANFX/RUBBER-1M	silicone strip blue 1 m	12500029
CANFX/COVER-IP40	protective cover on top of the locking slider in compliance with IP40 ingress protection class	12500069
CANFX/USB-P	USB-CAN interface (CAN: DSUB-9, USB 2.0); AC/DC power adaptor, 24 V DC, 60 W, with LEMO.0B plug; CAN cable, DSUB-9 (F, terminated) - DSUB-9 (M, terminated); CAN reset plug; imc CANSAS configuration software (download)	12500043

Technical Specs - DO8R, DO16R

Parameter	Value	Remarks
Relais	8 16	DO8R DO16R
Contact-Configuration	toggle	"IN" = "ON" (logical signal 1) "IN" = "OFF" (logical signal 0)
Power-Up Default	OFF	defined state at module startup: logical 0
Relay specs		
Switching voltage	max. 125 V (AC) max. 110 V (DC)	
Switching current	max. 1 A at 30 V (DC) max. 0.3 A at 125 V (AC) min. 10 μ A at 10 mV (DC)	min. current flow required to maintain low contact resistance
Switching power	max. 30 W at 30 V (DC) max. 37.5 W at 125 V (AC)	
Switching time	<30 ms	

General	Value	Remarks
Isolation:		to CHASSIS
CAN-Bus	\pm 60 V	nominal; testing: 300 V(10 s)
Power supply input	\pm 60 V	nominal; testing: 300 V(10 s)
CAN-Bus	defined by ISO 11898	
CANopen [®] mode	"CiA [®] DS 301 V4.0.2" and "CiA [®] DS 404V1.2" supports 1 RPDO in INT16, INT32, and FLOAT	

Parameter	Value	Remarks
Supply voltage	<%SUPPLY_VOLT%>	
Power consumption	4 W (typ.)	12 V supply, 23°C
Operating temperature	<%TEMPERATURE_M40%>	

Terminal connections		
Parameter	Value	Remarks
Supply input	type: LEMO.0B (2-pin)	compatible with LEMO.EGE.0B.302 multicoded 2 notches for optional individually power supply compatible with connectors FGG.0B.302 (Standard) or FGE.0B.302 (E-coded, 48 V) pin configuration: (1)+SUPPLY, (2)-SUPPLY
Module connector	via locking slider	for power supply and networking (CAN) of directly connected modules (Click-mechanism) without further cables
CAN bus	2x DSUB-9	CAN and power supply CAN_IN (male) bzw. CAN_OUT (female) all signals on both DSUB-9 directly 1:1 connected

Operating conditions		
Parameter	Value	Remarks
Ingress protection class	IP40	only with optional protective cover (CANFX/COVER-IP40) on top of the locking slider, otherwise IP20
Operating temperature range	<%TEMPERATURE_UNI8%>	internal condensation temporarily allowed

Power supply			
Parameter	Value typ.	min. / max.	Remarks
Input supply voltage	<%SUPPLY_VOLT%>		
Power consumption	4 W		
Module power supply options	power socket (LEMO) CAN socket (DSUB-9) adjacent module		direct connection imc CANSAS <i>flex</i> or imc BUSDAQ <i>flex</i>

Pass through power limits for directly connected modules (Click-mechanism)		
Parameter	Value	Remarks
Max. current	8 A	at 25°C current rating of the click connector
	$-50 \text{ mA/K} \cdot \Delta T_a$	Derating with higher operating temperatures T_a , $\Delta T_a = T_a - 25^\circ\text{C}$
Max. power	96 W at 12 V DC	Equivalent pass through power at 25°C typ. DC vehicle voltage
	192 W at 24V DC	AC/DC power adaptor or cabinets
	60 W at 12 V DC 120 W at 24V DC	at +85°C

Available power for supply of additional modules via CAN-cable (DSUB-9, "down stream")		
Parameter	Value	Remarks
Max. current	6 A	at 25°C current rating of DSUB-9 connection (CAN-IN, CAN-OUT); assuming adequate wire cross section!
	$-30 \text{ mA/K} \cdot \Delta T_a$	Derating with higher operating temperatures T_a , $\Delta T_a = T_a - 25^\circ\text{C}$
Max. power	72 W at 12 V DC	Equivalent pass through power at 25°C typ. DC vehicle voltage
	144 W at 24 V DC	AC/DC power adaptor or cabinets
	50 W at 12 V DC 100 W at 24 V DC	at +85°C