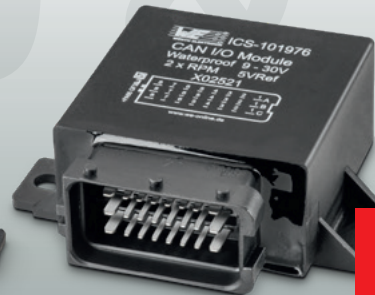


ICCS – Intelligent Control and Command Systems



CAN I/O & 22P

ICCS CAN I/O-Series – Graphically programmable mini control systems for mobile applications or as an extension to existing CAN systems.

With three different designs the ICCS CAN I/O has flexible connection and mounting options.

- **ICCS CAN I/O** – the stable base of CAN I/O series and the forerunner of all other versions. It can be both connected to the circuit board and used as a standalone module.
- **ICCS CAN I/O 22P** has been specially developed for easy connection to the circuit board.
- **ICCS CAN I/O Waterproof** has the ingress protection class IP68 and is suitable for use under harsh environmental conditions.

Digital information, analogue voltages, currents and signal frequencies can be detected and processed. Optional variants with 5 V reference voltage or RS232 / RS485 communication interfaces are available.

Applications

- Input and output extensions for CAN bus systems
- Graphically programmable control unit for mobile applications
- Connection of digital and analogue sensors via the CAN bus

Technical data

General information	
Connector	Molex Mini Fit 22 Ways
Dimensions	95 x 66 x 33 mm (CAN I/O)
	95 x 77 x 35 mm (CAN I/O waterproof)
	85 x 62 x 21.5 mm (22P)
Weight	75 g (CAN I/O), 95 g (22P), 170 g (CAN I/O waterproof)
Operating temperature	-40 °C to 85 °C (no full load at 85 °C)
Storage temperature	-40 °C to 85 °C
Ingress protection	IP53 (CAN I/O and 22P)
	IP68 (CAN I/O WP)
EMC	E1
Operating voltage Vsupply	9 V to 30 V DC
Pre-fusing	10 A / block
Current consumption	30 mA
Sleep mode consumption	500 µA
Processor type	Freescale HCS08
Clock frequency	40 MHz
Flash memory	60 kB
RAM	4 kB
EEPROM	1 kB available for graphical programming

CANBus

acc. ISO 11898-2	High speed
acc. CAN 2.0 B	29 Bits extended address identifier
acc. CAN 2.0 A	11 Bits address identifier
Baud rate	20 kBit/s to 1000 kBit/s (125kBit/s default value)

Inputs/outputs overview

6	Analogue inputs	5 x 0-11.4 V DC 12 Bit 1 x 0-33.67 V DC 12 Bit
1	Activation pin	KL15 Wake-up Input
6	Analogue inputs or Digital outputs	0-11.4 V DC 12 Bit High side outputs max 2 A
2	Digital inputs or Digital outputs	Switch on/switch off level: 7 V / 4 V DC High side outputs max 2 A

Inputs/outputs details

Analogue inputs

Input voltage max	Vsupply
Measuring range	0-11.4 V DC / 0-33.67 V DC
Resolution	12 Bit
Input resistance	22.6 kΩ for 0 – 11.4 V and 66.6 kΩ for 0 – 33.67 V
Input frequency	60 Hz for 0 – 10 V, 40 Hz for 0 – 30 V

Digital inputs

Input voltage	0 V to Vsupply
Switch-on level	7 V DC
Switch-off level	4 V DC
Input resistance	22.6 kΩ (66.6 kΩ for KL15)
Input frequency	max 100 Hz

Digital outputs

Load current	max 2 A Diagnostic current sense
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PWM outputs

PWM frequency	max 1 kHz
Duty cycle	0 to 100 %
Resolution	0.1 %
Load current	max 1 A

* Every analogue input is also usable as a digital input in the programming software.

ICCS CAN I/O & 22P

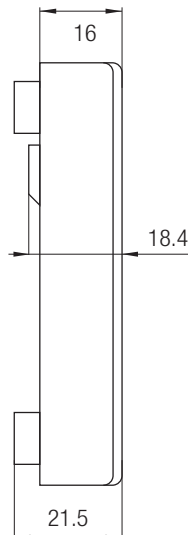


Pin assignment

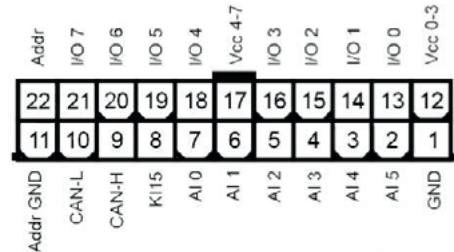
Connector ICS-103511, ICS-103507, ICS-103504, ICS-103505, ICS-104096

Pin	Description	Function
1	GND	Ground
2	ANA5	Analogue input 0-30 V
3	ANA4	Analogue input 0-10 V
4	ANA3	Analogue input 0-10 V
5	ANA2	Analogue input 0-10 V
6	ANA1	Analogue input 0-10 V
7	ANA0	Analogue input 0-10 V (BL) *1
8	KL15	Activation Pin
9	CAN H	CAN Bus High
10	CAN L	CAN Bus Low
11	Addr GND	Address GND
12	VCC for 00-3	Power Supply HSD output 0-3
13	ANA_I00	Analogue input 0-10 V
	OUT_HSD0	Digital output
14	ANA_I01	Analogue input 0-10 V
	OUT_HSD1	Digital output
15	ANA_I02	Analogue input 0-10 V
	OUT_HSD2	Digital output
16	ANA_I03	Analogue input 0-10 V
	OUT_HSD3	Digital output
17	VCC for 04-7	Power Supply HSD output 4-7
18	ANA_I04	Analogue input 0-10 V
	OUT_HSD4	Digital output
19	ANA_I05	Analogue input 0-10 V
	OUT_HSD5	Digital output
20	D_IN6	Digital input
	OUT_HSD6	Digital output
21	D_IN7	Digital input
	OUT_HSD7	Digital output
22	Addr	Single wire address

*1) Activationpin for Bootloader, version ICS-103511 only

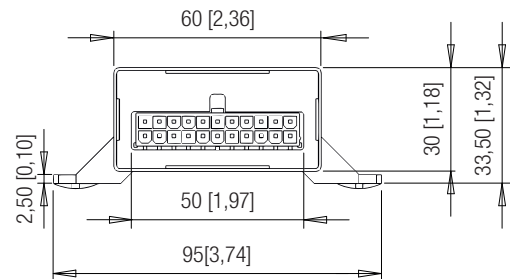
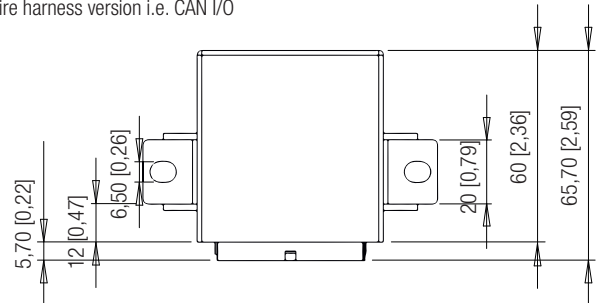


Connector module

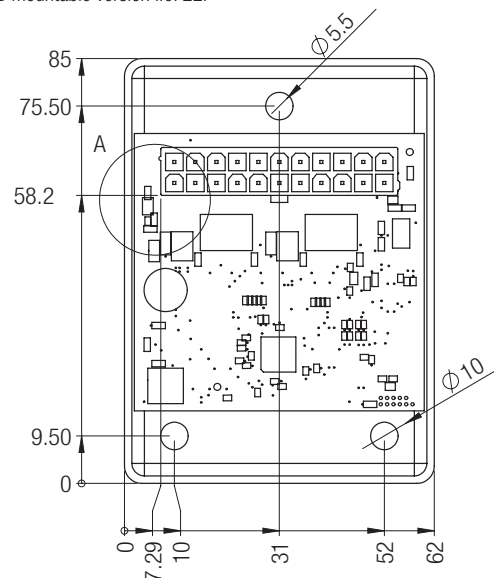


Dimensions in mm [in inch]

Wire harness version i.e. CAN I/O



PCB mountable version i.e. 22P



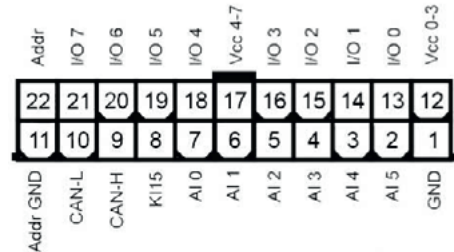
ICCS CAN I/O & 22P



Pin assignment

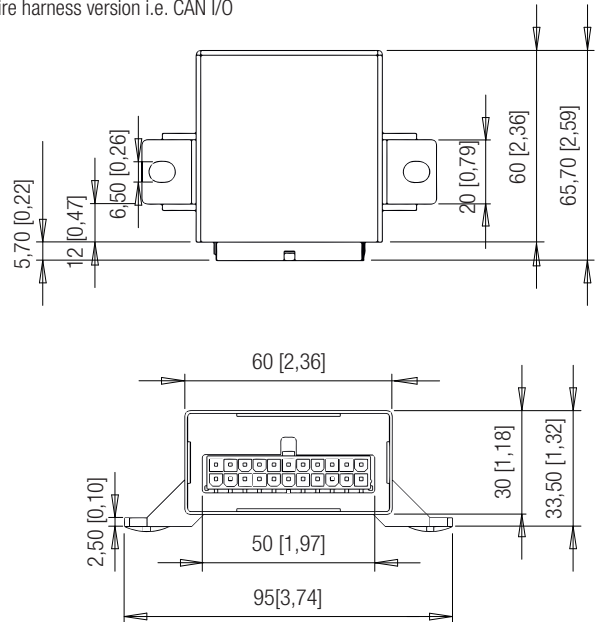
Connector ICS-103508, ICS-103506		
Pin	Description	Function
1	GND	Ground
2	ANA5	Analogue input 0-10 V max 5 kHz
3	ANA4	Analogue input 0-10 V
4	ANA3	Analogue input 0-10 V max 5 kHz
5	ANA2	Analogue input 0-10 V
6	ANA1	Analogue input 0-10 V
7	ANA0	Analogue input 0-10 V
8	KL15	Activation Pin
9	CAN H	CAN Bus High
10	CAN L	CAN Bus Low
11	Addr GND	Address GND
12	VCC for 00-3	Power Supply HSD output 0-3
13	ANA_I00	Analogue input 0-10 V
	OUT_HSD0	Digital output and Status output
14	ANA_I01	Analogue input 0-10 V
	OUT_HSD1	Digital output and Status output
15	ANA_I02	Analogue input 0-10 V
	OUT_HSD2	PWM output and Status output
16	ANA_I03	Analogue input 0-10 V
	OUT_HSD3	PWM output and Status output
17	VCC for 04-7	Power Supply HSD output 4-7
18	ANA_I04	Analogue input 0-10 V
	OUT_HSD4	PWM output and Status output
19	ANA_I05	Analogue input 0-10 V
	OUT_HSD5	PWM output and Status output
20	D_IN6	Digital input
	OUT_HSD6	PWM output and Status output
21	D_IN7	Digital input
	OUT_HSD7	PWM output and Status output
22	Addr	Single wire Address

Connector module



Dimensions in mm [in inch]

Wire harness version i.e. CAN I/O

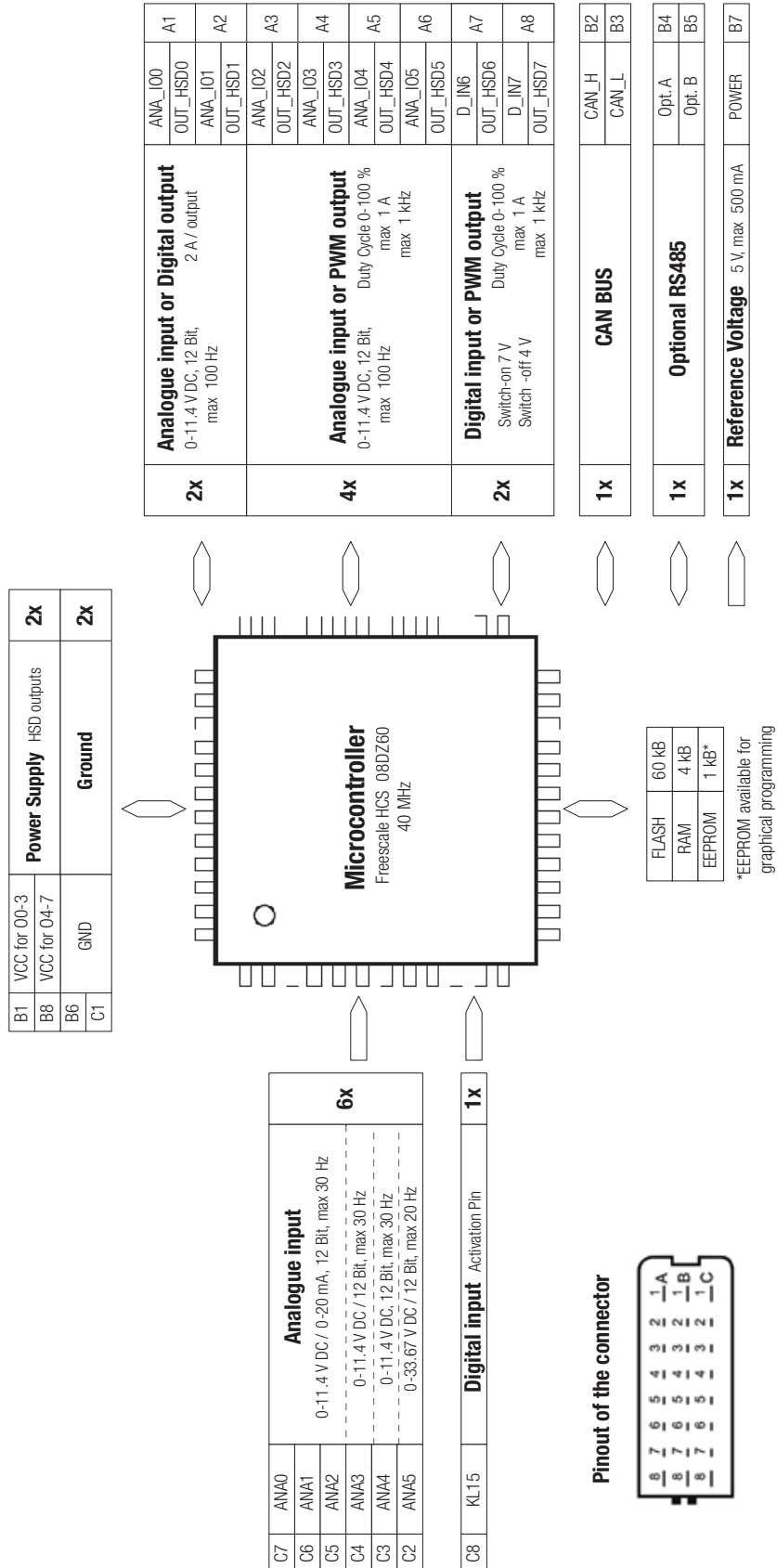


ICCS CAN I/O & 22P



Hardware Map

■ **ICS-101976:** ICCS CAN I/O Waterproof



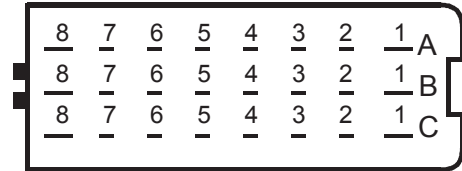
ICCS CAN I/O & 22P



Pin assignment

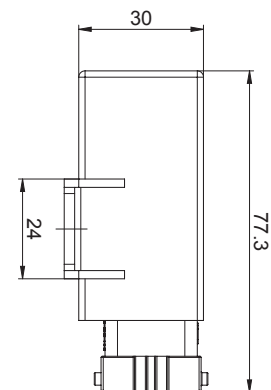
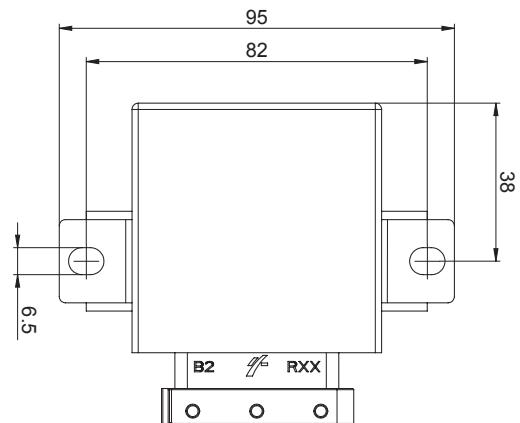
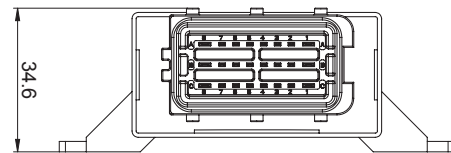
Connector ICS-101976		
Pin	Description	Function
A1	ANA_I00	Analogue input 0-10 V
	OUT_HSD0	Digital output
A2	ANA_I01	Analogue input 0-10 V
	OUT_HSD1	Digital output
A3	ANA_I02	Analogue input 0-10 V
	OUT_HSD2	Digital / PWM output
A4	ANA_I03	Analogue input 0-10 V
	OUT_HSD3	Digital / PWM output
A5	ANA_I04	Analogue input 0-10 V
	OUT_HSD4	Digital / PWM output
A6	ANA_I05	Analogue input 0-10 V
	OUT_HSD5	Digital / PWM output
A7	D_IN6	Digital input
	OUT_HSD6	Digital / PWM output
A8	D_IN7	Digital input
	OUT_HSD7	Digital / PWM output
B1	VCC for 00-3	Power Supply HSD output 0-3
B2	CAN H	CAN Bus High
B3	CAN L	CAN Bus Low
B4	Opt. A	Optional RS485-A
B5	Opt. B	Optional RS485-B
B6	GND	Ground
B7	VREF_OUT	5 V Reference
B8	VCC for 04-7	Power Supply HSD output 4-7
C1	Addr GND	Address GND
C2	ANA5 / D_ANA5	Analogue input 0-30 V
C3	ANA4 / D_ANA4	Analogue input 0-10 V
C4	ANA3 / D_ANA3	Analogue input 0-10 V
C5	ANA2 / D_ANA2	Analogue input 0-10 V / 0-20 mA
C6	ANA1 / D_ANA1	Analogue input 0-10 V / 0-20 mA
C7	ANA0 / D_ANA0	Analogue input 0-10 V / 0-20 mA
C8	KL15	Activation Pin

Connector module



Dimensions

Wire harness version i.e. Waterproof CAN I/O



ICCS CAN I/O & 22P

Order information

Available references	Part number WE ICS
ICCS CAN I/O Hardware Bootloader	ICS-103511
ICCS CAN I/O Software Bootloader	ICS-103504
ICCS CAN I/O Software Bootloader Diode on PWM output	ICS-103506
ICCS CAN I/O 2 x RPM 6 x PWM Software Bootloader	ICS-103508
ICCS CAN I/O + 5 V REF Software Bootloader	ICS-103507
ICCS CAN I/O Waterproof	ICS-101976
ICCS CAN I/O 22P	ICS-103505
ICCS CAN I/O 22P freqIN	ICS-104096

Mating connector (CAN I/O and 22P)	Part number WE eiSos
Housing: Female Dual Row Plug WR-MPC4	649 022 113 322
Crimp contact: WR-MPC4, AWG 16	649 005 137 22
Crimp contact: WR-MPC4, AWG 24-18	649 006 137 22
Crimp contact: WR-MPC4, AWG 28-22	649 007 137 22

For 100 pieces packages, please add „DEC“ at the end of the reference.

Mating connector (CAN I/O WP)	Part number FCI
Housing: FCI SICMA: 24 Pins (18 x 1.5 mm + 6 x 2.8 mm), female	211 PC249S0033
FCI Locking cam	211 A247 001
Terminals: SICMA-3 1.5 terminal female, 0.34...0.75 mm ²	211 CC2S1160
Terminals: SICMA-3 1.5 terminal female, 1.00...2.00 mm ²	211 CC2S2160
Terminals: SICMA-3 2.8 terminal female, 0.35...0.75 mm ²	211 CC3S1160
Terminals: SICMA-3 2.8 terminal female, 1.0...2.5 mm ²	211 CC3S2160
Plug seals for unused contact chambers	210 A015019



For more information visit us
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This item is a standard product, please consider the relevant datasheet notes.
The user is responsible for the product's functionality in its purposed system environment.