

C-DIAS Digital Input Module

with 16 inputs and counter function (2 x 8-bit counter)

CDI 162

The CDI 162 is equipped with 16 inputs and one +24V level for reading the signal states "0" and "1". Appropriate input filters are available to suppress noise impulses occurring in the signal leads.



Technical Data

Input specifications

Number	16	
Input voltage	Typically +24V	Maximum +30V
Signal levels	Low: <+8V	High: >+14V
Switching threshold	Typically +11V	
Input current	5mA at +24V	
Input delay	Input 1-4: 10 μ s / Input 5-16: 5 ms	
Status display	Green LEDs	

Electrical requirements

Supply of the C-DIAS bus	+5V	
Current consumption on the C-DIAS bus (+5V supply)	Typically 60mA	Maximum 90mA

Miscellaneous

Article number	12-006-162		
Module identification with EEPROM	\$00	Check sum	xx
	\$01	Identification	123
	\$02	Module group	1
	\$03	Version	4
	\$04	Channels	16
	\$05	HW version	10
	\$10	Serial number	
Hardware version	2.x		

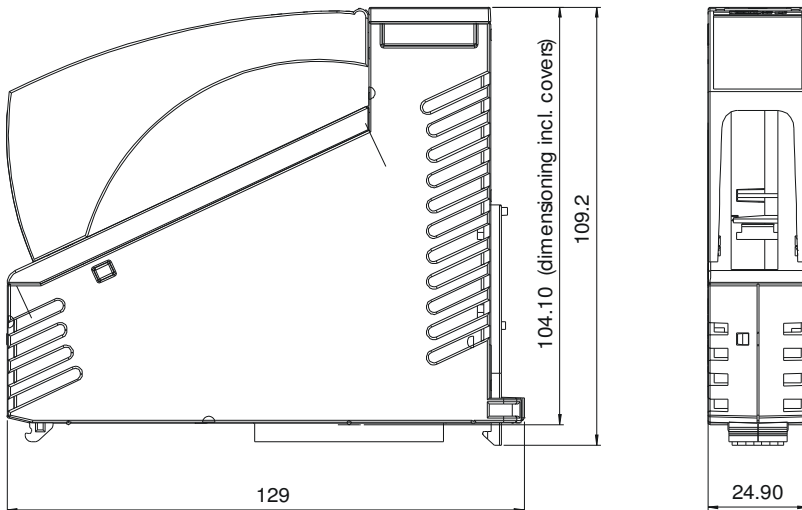
Environmental conditions

Storage temperature	-20 – +85 °C	
Operating temperature	0 – +60 °C	
Humidity	0 – 95%, without condensation	
EMV stability	In accordance with EN 61000-6-2:2001 (industrial)	
Resistance to shocks	EN 60068-2-27	150m/s ²
Protective system	EN 60529	IP 20

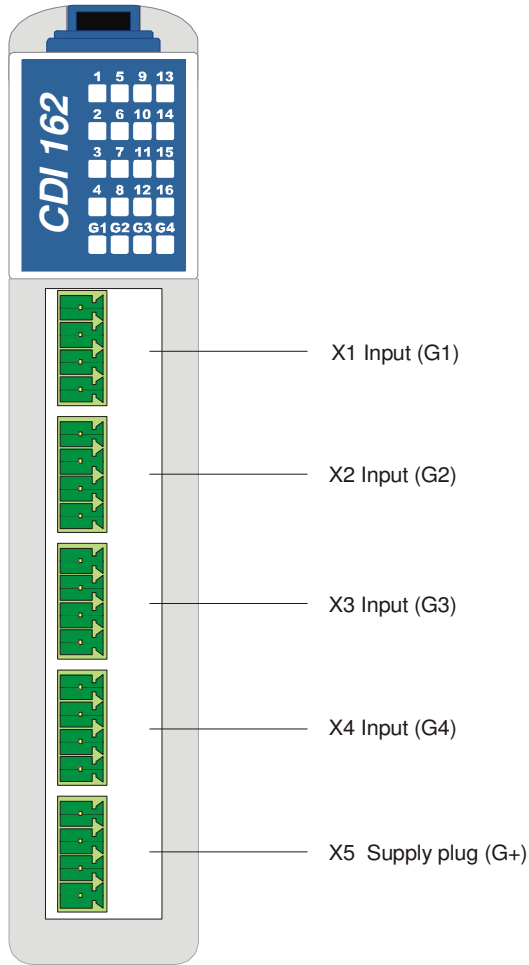
ATTENTION!

At the module carriers CMB 022, CMB 042 and CMB 082 the 32 MHz clock frequency (CLK) is not provided anymore to the modules. This module requires the clock frequency up to HW version 2.0. A module with a HW version less than 2.0 is only functional with the module carriers CMB 021, CMB 041 and CMB 081!

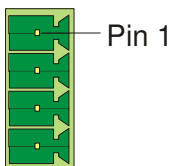
Mechanical dimensions



Connections

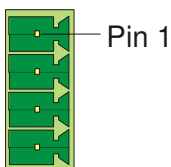


X1: Input plug (G1)



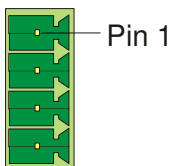
Pin	Function
1	Input 1
2	Input 2
3	Input 3
4	Input 4

X2: Input plug (G2)



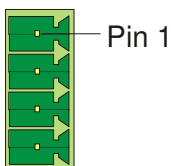
Pin	Function
1	Input 5
2	Input 6
3	Input 7
4	Input 8

X3: Input plug (G3)

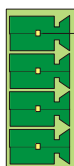


Pin	Function
1	Input 9
2	Input 10
3	Input 11
4	Input 12

X4: Input plug (G4)



Pin	Function
1	Input 13
2	Input 14
3	Input 15
4	Input 16

X5: Supply plug (G+)

Pin 1

Pin	Function
1	+24V
2	+24V
3	+24V
4	+24V

+24V are not used from the electronic.

Useable connectors**Connector with spring clamp:**

Phoenix Contact: FK-MCP 1.5/ 4-ST-3.5

Connector with screw clamp technique:

Phoenix Contact: MC 1.5/ 4-ST-3.5

The complete C-DIAS plug set CKL 031 with spring clamp is available from Sigmatek with the article number 12-600-031.

Wiring instructions

The input filters, which suppress noise impulses, allow deployment in rough environmental conditions. In addition, to guarantee problem free operation, careful wiring is recommended.

Please pay attention to the following guidelines:

- Avoid laying the input cables parallel to the load circuits
- Protective wiring of all safety coils (RC-network or recovery diodes)
- Correct earthing

The GND connection of the inputs and the GND connection of the power supply module must be connected to a common earthing bus bar, and these connection must be kept as short as possible.

If possible, the earthing bus bar is to be connected to the earthing bus bar of the switch cabinet!

Status displays



LED no.	LED color	Meaning
1 – 16	green	Inputs 1 – 16
G1 – G4	---	not used

Addressing

Address	Access		Function
16#00	READ	WORD	Input 1..16
16#08	WRITE	BYTE	Counter mode
16#08	READ	BYTE	Counter 1
16#09	READ	BYTE	Counter 2

Counter function

The module provides the possibility of a counter function. A counter is assigned to each of the inputs 1 and 3. The maximum input frequency is 25 kHz.

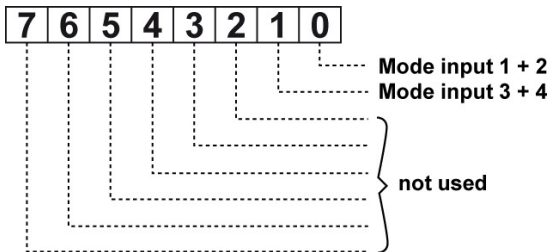
There are two configurable modes: 1. Counter counts on leading edge
2. Incremental transmitter function

Assignment of the inputs to the counters:

Input	Counter
1	Counter 1
3	Counter 2

Counter mode register: With the help of this register it is possible to define the mode for each pair of inputs (counter).

Structure of the mode register:



The following modes are available:

Mode bit = 0: Counter counts on leading edge at the input 1, respectively, input 3.

Mode bit = 1: Incremental transmitter function with 4-fold resolution.
(e.g.: Input 1 = Channel A, Input 2 = Channel B)
Depending on the direction of rotation of the transmitter, the counter counts upwards, respectively, downwards. A resetting of the counters is not possible.