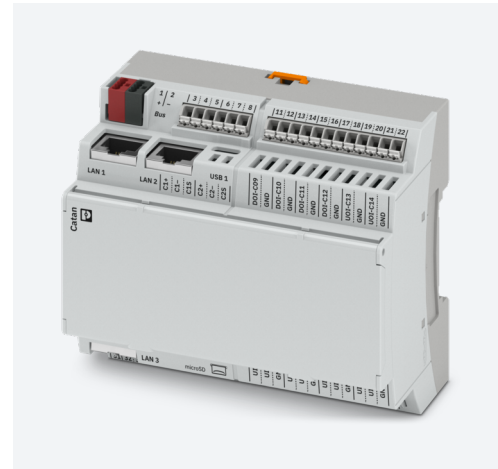


CATAN C1 EN

Controller for building automation

Data sheet
111448_en_03

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1 Description

The CATAN C1 EN controller is the central component of the Catan product family for building and room automation. The compact REG housing with an overall width of just 6 HP fits in all electrical distributors. The highly flexible mix of inputs and outputs leads to further space and cost savings. Each channel can be configured individually: universal inputs are suitable for temperature sensors, 0 V ... 10 V interfaces, or as meters, among other things. Alternatively, outputs can be configured as digital inputs. The controller is equipped with a managed switch (3 x 1 Gbps).

Emalytics and the Niagara Framework are a powerful tool available as the programming environment. This makes it possible to integrate protocols such as BACnet, KNX, Modbus, and much more, and provides functions from room automation to HVAC and visualization. Easy cloud integration is possible as a building IoT controller. The device is Cradle to Cradle Certified® at bronze level. The controller integrates the functionality of a KNX IP router for forwarding KNX telegrams from and to the integrated KNX TP connection. It can therefore be used as part of the KNX IP backbone infrastructure in a KNX installation.

Features

- Managed Ethernet switch with 3 connections for 1 Gbps
- 2 USB-C connections for Catan Control Panel and USB peripheral devices
- 2 interfaces for extension bus (Single Pair Ethernet)
- 2 serial ports RS-485, DMX-capable
- KNX-TP interface with independently usable KNX-IP router function
- 8 configurable universal inputs (UI)
- 2 configurable universal outputs (UOI), alternatively configurable as digital inputs
- 4 digital outputs (DOI), alternatively configurable as digital inputs
- Acoustic signaling

Observe this note



Make sure you always use the latest documentation.

It can be downloaded at: phoenixcontact.com/product/1371432

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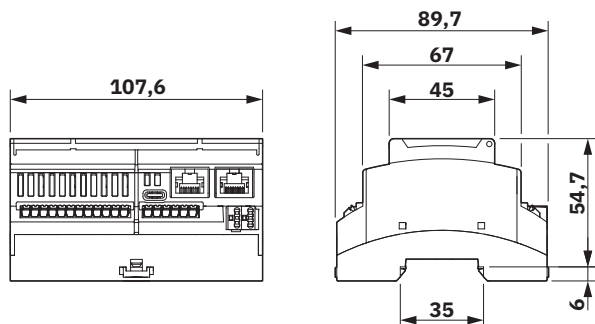
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3 Ordering data

Description	Type	Item no.	Pcs./Pkt.
Controller for building automation. 14 configurable inputs and outputs. Interfaces: 3 x Ethernet, 2 x RS-485, 2 x USB-C, TP for room automation, 2 x SPE for Catan extension modules. Local override operation via Catan Control Panel.	CATAN C1 EN	1371432	1
Accessories	Type	Item no.	Pcs./Pkt.
Extension module for Catan controller. 8 universal inputs and 6 digital outputs with bistable relays for 230 V AC/16 A. Local override operation via Catan Control Panel. Connection to the Catan controller via Single Pair Ethernet.	CATAN DOR6 UI8	1371364	1
Extension module for Catan controller. 8 universal inputs, 8 universal and 8 digital outputs. Local override operation via Catan Control Panel. Connection to the Catan controller via Single Pair Ethernet.	CATAN DOI8 UOI8 UI8	1818583	1
Extension module for Catan controller. 4 DALI lines, DALI-2, multi-master, integrated DALI power supply unit, 8 DOIs. Local override operation via Catan Control Panel. Connection to the Catan controller via Single Pair Ethernet. Currently only used in conjunction with Catan C1 EN and Emalytics/Niagara, use via Symcon app is in preparation.	CATAN DALI MM4 DOI8	1371363	1
Touch display for local override operation and configuration of Catan controllers and Catan extension modules. Display size 2.4". Connection via USB-C connector.	CATAN CONTROL PANEL	1371366	1
Mounting set for remote operation of the Catan display	CATAN DISPLAY MOUNT	1478438	1
Extension cable for display for remote operation, length 2 m	NBC-CATAN-UCML/2.0-PVC/UCFL	1665797	1
Extension cable for display for remote operation, length 5 m	NBC-CATAN-UCML/5.0-PVC/UCFL	1665801	1
Insert label, for marking Siemens ET 200SP controllers, Roll, white, unmarked, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, Number of individual labels: 500, text field height: 12.5 mm, text field width: 31 mm (Marking)	EMT (31X12,5)R	0800008	1

4 Technical data

Dimensions (nominal sizes in mm)



Dimensions without display connected

Length	107.6 mm
Width	89.7 mm
Height	60.7 mm
Horizontal pitch	6 Div. (DIN rail housing in accordance with DIN 43871)

Dimensions with display connected

Length	107.6 mm
Width	89.7 mm
Height	68 mm

General data

Material	Polycarbonate (Housing)
Flammability rating according to UL 94	V0
Color	Lower housing part: traffic gray A (RAL 7042) Upper housing part: light gray (RAL 7035)
Weight	243 g
Mounting type	DIN rail mounting (in accordance with DIN EN 60715)
Mounting position	horizontal Alternative mounting positions are possible, but can lead to a reduction in thermal performance.

Ambient conditions

Installation location	indoor use
Ambient temperature (operation)	-5 °C ... 50 °C (up to 3000 m above mean sea level)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Air pressure (storage/transport)	58 kPa ... 106 kPa (up to 4500 m above mean sea level)
Degree of protection	IP20
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)

Ambient conditions

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)
Flammability rating according to UL 94	V0

Connection data: Connections 1 ... 2 (KNX-TP bus connection)

Connection method	Push-in connection
Conductor cross-section, rigid	0.34 mm ² ... 0.75 mm ²
Conductor cross-section [AWG]	22 ... 18
Note	4-conductor, 2-position

Connection data: Connections 3 ... 62 (power supply, link bus, I/O)

Connection method	Push-in connection
Nominal cross section	1.5 mm ²
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ² (Conductor connection with open terminal point) 0.34 mm ² ... 1.5 mm ² (Push-in connection)
Conductor cross-section, flexible	0.5 mm ² ... 1.5 mm ²
Conductor cross-section [AWG]	24 ... 16
Conductor cross-section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross-section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Two conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm ² ... 0.75 mm ²
Stripping length	10 mm

Supply

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 3.6 A 350 mA (without external load) 400 mA (with display)
Current carrying capacity (Terminal points)	13.5 A
Current carrying capacity (Pass-through between the terminal points)	4 A

Interface: KNX TP bus

Number of interfaces	1
Connection method	KNX bus connection terminal
Transmission speed	9600 bps
Note	The interface supports connection of KNX-TP devices via routing and tunneling protocol.

Interface: Ethernet

Number of interfaces	3
Connection method	RJ45 jack, shielded
Transmission speed	10/100/1000 Mbps

Interface: RS-485

Number of interfaces	2
Connection method	Push-in connection
Transmission speed	300 bps ... 250000 bps

Interface: Extension bus (link bus)

Number of interfaces	2 (for extension modules)
Connection method	Push-in connection
Note on the connection method	Single Pair Ethernet (SPE) 10BASE-T1L, shielded
Number of supported devices	max. 16 (Catan extension modules)
Transmission length	max. 350 m (between two devices)
Transmission speed	10 Mbps
Note	The connections of the extension bus are independent of polarity.

Interface: USB

Number of interfaces	2 (Use as connection for Catan control panel and I/O devices, USB1 can also be used as a USB Ethernet gadget)
Connection method	USB 2.0 full speed, socket type C
Transmission speed	max. 12 Mbps

Controller unit

Processor	Quad Arm® Cortex®-A53 1600 MHz
Retentive data storage	5 GByte (eMMC) 512 kByte (MRAM, additional memory)
RAM	1024 Mbyte (LPDDR4-RAM)
Realtime clock	integrated (capacitive buffering)
Power reserve	2 weeks, minimum
Operating system	Linux with real-time extension
Programming languages supported	Niagara Framework®

Memory card: microSDXC

Number	1
Connection method	microSD slot
Memory size	max. 2 Tbyte

Universal inputs (UI)	
Number of inputs	8
Description of the input	Single-ended
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)
Cable length	max. 30 m (For compliance with the requirements in accordance with CE and to ensure compliance with the EMC Directive)
Note	You can use each universal input for one of the listed functions.
Analog current inputs	
Current input signal	0 mA ... 20 mA, 4 mA ... 20 mA
Resolution	0.01 mA
Tolerance, absolute (mA)	max. 0.05 mA (The measurement requires an external parallel resistor of 68 Ω.)
Analog voltage inputs	
Voltage input signal	0 V ... 10 V
Resolution	1 mV
Tolerance, absolute (V)	max. 3 mV
Input resistance of voltage input	> 5 MΩ
Analog temperature inputs	
Usable sensor type (RTD)	Pt 1000
Temperature range	-100 °C ... 500 °C
Tolerance, absolute	max. 0.5 K
Resolution	0.1 K
Analog temperature inputs	
Usable sensor type (RTD)	Ni 1000 LG-Ni 1000
Temperature range	-50 °C ... 250 °C
Tolerance, absolute	max. 0.5 K
Resolution	0.1 K
Analog temperature inputs	
Usable sensor type (TC)	NTC 10k NTC 20k NTC 10k Pre
Temperature range	-30 °C ... 150 °C (NTC 10k) -15 °C ... 150 °C (NTC 20k)
Tolerance, absolute	max. 0.5 K (Line resistance max. 2 Ω (30 m copper cable with d = 0.8 mm))
Resolution	0.1 K
Analog resistance inputs	
Resistance range	0 Ω ... 10 kΩ
Tolerance, relative	max. 0.1 % (for resistances >200 Ω)
Resolution	0.01 Ω

Universal inputs (UI)**Analog resistance inputs**

Resistance range	0 Ω ... 180 k Ω
Tolerance, relative	max. 1 % (for resistances >200 Ω)
Resolution	0.1 Ω

Digital inputs

Description of the input	EN 61131-2 type 2 and 3
Nominal input voltage	24 V DC
Input voltage range "0" signal	-3 V DC ... 5 V DC (An open input always provides a 0 signal.)
Input voltage range "1" signal	11 V DC ... 30 V DC

Floating contacts

Description of the input	Open/closed contact
Input current (Contact)	2 mA
Input resistance range "0" signal	> 27 k Ω
Input resistance range "1" signal	< 1 k Ω
Note	Connect the contact to ground.

Counter inputs

Resolution	1 Impulse
Input frequency	max. 20 Hz (Signal is debounced)
Note	The counter inputs process all signal types that are specified for digital inputs.

Universal outputs with "Digital input" function (UOI)

Number of outputs	2
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)
Permissible cable length	max. 30 m (For compliance with the requirements in accordance with CE and to ensure compliance with the EMC Directive)
Short-circuit protection	yes
Overload protection	yes
Protection against incorrect DC connection (max. 30 V)	yes
Note	You can use each universal output for one of the listed functions.

Analog voltage outputs

Voltage output signal	0 V ... 10 V
Operating mode	Sink and source
Output current (per channel)	max. 10 mA
Resolution (voltage)	1 mV
Tolerance, absolute (V)	max. 25 mV (typ.)

Universal outputs with “Digital input” function (UOI)**Digital outputs**

Note

The technical data is identical to the data of the digital outputs with “Digital input” function (DOI).

Digital inputs

Note

You can parameterize each universal output as a digital input. See ““Digital input” function” table.

Digital outputs with “Digital input” function (DOI)

Number of outputs	4
Connection method	Push-in connection
Connection technology	2-conductor
Permissible cable length	max. 30 m (For compliance with the requirements in accordance with CE and to ensure compliance with the EMC Directive)
Nominal output voltage	24 V DC
Output current (per channel)	max. 500 mA
Nominal load, ohmic	12 W (48 Ω)
Output current when switched off	max. 1.4 mA
Behavior at voltage switch-off	The output follows the power supply without delay
Short-circuit protection	yes
Overload protection	yes
Protection against incorrect DC connection (max. 30 V)	yes
Behavior with overload	Auto restart
Reverse voltage resistance to short pulses	Reverse voltage proof
Note	To obtain a valid voltage level for a logical "0" signal at the output, use a load resistor $< 1 \text{ k}\Omega$.
Note	You can parameterize each digital output for the “Digital input” function.

“Digital input” function

Connection method	Push-in connection
Connection technology	2-conductor
Floating contact	
Input current (Contact)	1 mA
Input resistance range “0” signal	$> 27 \text{ k}\Omega$
Input resistance range “1” signal	$< 1 \text{ k}\Omega$
Note	Connect the contact to ground. Recommendation: If you use sensitive contacts such as reed contacts, connect a series resistor of at least $100 \text{ }\Omega$ in series.

Counter inputs

Resolution	1 Impulse
Input frequency	max. 100 Hz (UOI-C13/14: 80 Hz)
Note	Use contacts with a bouncing time $< 4 \text{ ms}$.

Electrical isolation/isolation of the voltage areas

Test section	Test voltage
Extension bus/communications	500 V AC, 50 Hz, 1 min
Logic/functional ground	500 V AC, 50 Hz, 1 min
LAN / logic	500 V AC, 50 Hz, 1 min
TP / logic	500 V AC, 50 Hz, 1 min
RS-485 / logic	500 V AC, 50 Hz, 1 min



All areas:

The insulation is used for separation of functions and does not satisfy the safety regulations for protection against hazardous voltages.

Logic/functional ground:

when tested without EMC components

Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	10g

Conformance with EMC directive**Immunity test in accordance with EN IEC 63044-5-2**

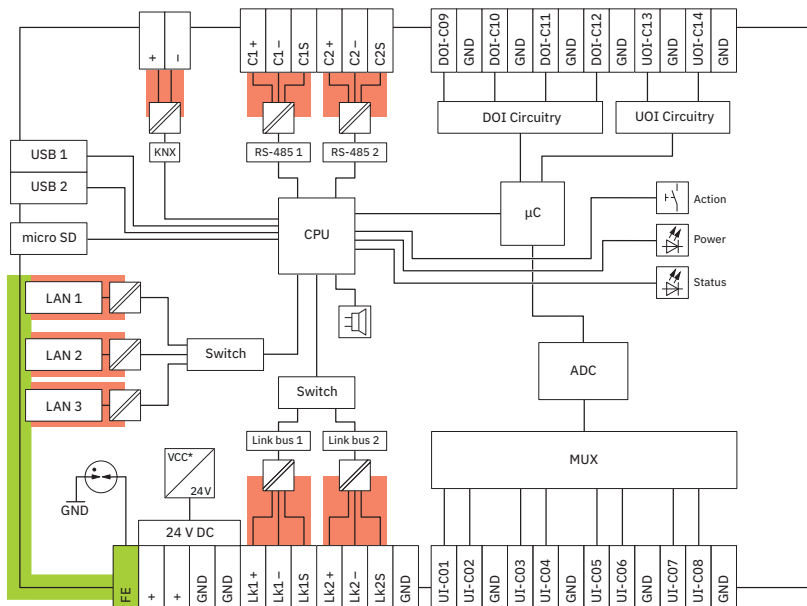
Electrostatic discharge (ESD)	Criterion A, ± 4 kV contact discharge, ± 8 kV air discharge
Electromagnetic fields	Criterion A, Field intensity: 10 V/m
Fast transients (burst)	Criterion A, ± 500 V, Criterion B, ± 1000 V
Transient overvoltage (surge)	Criterion B
Conducted disturbance	Criterion A, Test voltage 10 V
Noise emission test in accordance with EN IEC 63044-5-2	Class B

Approvals and manufacturer's declarations

The latest documents can be found at: www.phoenixcontact.com/product/1371432

5 Internal circuit diagram

Figure 1 Internal wiring of the terminal points



Key:



Transmitter/isocoupler



Digital output with "Digital input" function (DOI)



Universal output with "digital input" function (UOI)



USB interface



KNX TP interface



RS-485 interface



Micro SD card slot



CPU



Microcontroller



Button



LED



Ethernet interface



Acoustic signal generator



Analog/digital converter



Gas discharge tube



Power supply unit without electrical isolation



Extension bus interface (Single Pair Ethernet)



Electrically isolated areas

6 For your safety

6.1 Intended use

Use Catán modules only in accordance with the specifications in this data sheet.

If the equipment is used in a manner not specified, the protection provided by the equipment may be impaired.

6.2 Qualification of users

The use of products described in this data sheet is oriented exclusively to electrically skilled persons or persons instructed by them. The users must be familiar with the relevant safety concepts of automation technology as well as applicable standards and other regulations.

6.3 Electrical safety



WARNING: Loss of electrical safety

If used incorrectly, device safety may be impaired.

Observe the information given in this data sheet during installation, commissioning and operation.



WARNING: Loss of electrical safety when using unsuitable power supplies. Dangerous shock currents.

The controller is designed exclusively for operation with protective extra-low voltage (PELV) in accordance with EN 60204-1.

- Only use power supply units that ensure safe isolation in accordance with EN 61010-2-201. They prevent short circuits between the primary and secondary circuits.



WARNING: Loss of electrical safety

Do not use the temperature sensors (RTD/TC) connected to the device to measure temperatures at hazardous live parts.



NOTE: Damage to the RS-485 interface

To meet the EMC requirements for immunity to transient overvoltages (surge voltages) in accordance with EN IEC 63044-5-2, connect the shield connection of the C1S/C2S bus line to functional ground (FE) on the installation side.

6.4 Installation

The device has the enclosure rating IP20. Install the device in closed control cabinets or control boxes (junction boxes) with IP54 enclosure rating or higher.



NOTE: Fire hazard

- The device must be installed in the final protective housing, which provides sufficient resistance to mechanical strain and protection against the spreading of fire in accordance with the standards UL/IEC/EN 61010-1 and UL/IEC/EN 61010-2-201.
- The supply and external circuits intended to be connected to this device shall be galvanically separated from the mains supply or hazardous live voltage by reinforced or double insulation and meet the requirements of SELV/PELV (Class III) circuits of UL/CSA/IEC/EN 61010-1, UL/CSA/IEC/EN 61010-2-201.



NOTE: Damage to the contacts

Physical overloads can result in damage to the terminal points.

- Relieve strain in the connected cables.



NOTE: Damage to contacts or malfunction

- Before any work on the module, disconnect the peripheral I/O devices and the module from the power supply.



NOTE: Electronics may be damaged when overloaded

If external fuse protection is inadequate, the electronics in the device may be damaged in case of overload.

- Provide fuse protection for the 24 V supply voltage of the modules in accordance with the calculated current consumption.
- Also take into account the current consumption of connected external loads. To avoid damage due to wiring errors, it may be useful to provide separate fuse protection for individual digital outputs (DOI, UOI).
- Ensure that the external fuse triggers reliably in the event of a fault.

To ensure compliance with the EMC Directive, connect the FE (functional ground) connection to PE (protective ground) on the installation side.

Use only products approved by Phoenix Contact at the USB ports.

6.5 Applications with UL approval



Information:

To install the device in accordance with the UL/CSA/EN/IEC standards, the following rules must be observed.

- Minimum temperature rating of the cables to be connected to the field wiring terminals:
80 °C
- Use copper conductors only.

6.6 Security in the network



NOTE: Network security jeopardized by unauthorized access

Connecting devices to a network entails the danger of unauthorized access to the network.

Observe the following safety notes:

- If possible, deactivate unused communication channels.
- Use secure passwords reflecting the complexity and service life recommended in the latest guidelines.
- To ensure IT and OT security, operate the device only in areas that are exclusively accessible to authorized persons.
- Only allow authorized persons to access the device. Limit the number of authorized persons to the necessary minimum.
- Always install the latest firmware version. The firmware can be downloaded via the item (www.phoenixcontact.com/products).
- Observe the IT and OT security requirements and the standards applicable to your application. Take the necessary protective measures. These may include, for example, virtual networks for remote maintenance access or a firewall.
- In security-critical applications, always use the device with an additional security appliance. Phoenix Contact offers security appliances in the mGuard product range. The mGuard routers connect various networks for the remote maintenance and protection of the local network and protect these networks against cyberattacks.
- You must take defense-in-depth strategies into consideration when planning networks.



Additional measures for protection against unauthorized network access can be found in the “INDUSTRIAL SECURITY” application note. The application note can be downloaded via the item (www.phoenixcontact.com/products).

German: AH DE INDUSTRIAL SECURITY, 107913

English: AH EN INDUSTRIAL SECURITY, 107913

If a security vulnerability exists for products, solutions, or services from Phoenix Contact, it will be published on the PSIRT (Product Security Incident Response Team) website:

www.phoenixcontact.com/psirt

6.7 Security at the interfaces

To prevent unauthorized interception and sending of data via the interfaces of the controller, apply the recommended measures.

Ethernet interfaces

- Use secured IP protocols.
- Secure connections and cables against unauthorized physical access, e.g., via a lockable control cabinet.

KNX and SPE extension bus

The data transmitted via KNX and the SPE extension bus is not encrypted.

- Secure connections and cables against unauthorized physical access, e.g., via a lockable control cabinet.

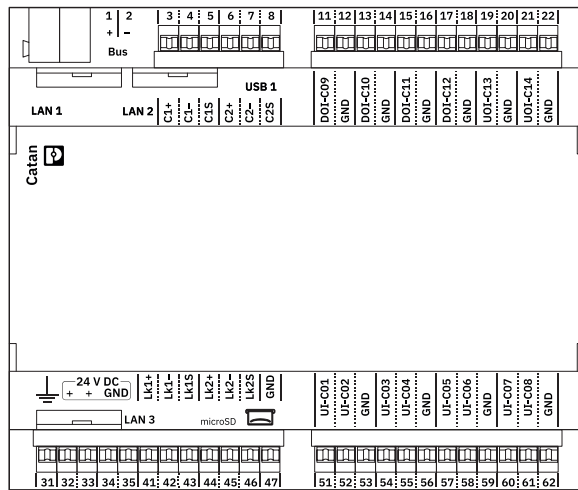
RS-485 connections

The data transmitted via the RS-485 connections is not encrypted with the most common protocols (e.g., Modbus/RTU).

- Secure connections and cables against unauthorized physical access, e.g., via a lockable control cabinet.

7 Terminal point assignment

Figure 2 Terminal point assignment



Terminal point	Designation	Function	
	LAN 1 ... LAN 3	Ethernet ports	
	microSD	MicroSD card slot	
	Status	Status LED	*
	Power	LED for supply voltage	*
	USB 1	USB port	
	USB 2	USB port	*
	Action	Button, operating element	*
*		Below the hinged housing cover	
Bus			
1	+	KNX	Red
2	-		Black
RS-485			
3	C1+	COM 1	+
4	C1-		-
5	C1S		Shield
6	C2+	COM 2	+
7	C2-		-
8	C2S		Shield

Terminal point	Designation	Function	
Digital output with “Digital input” function (DOI)			
11	DOI-C09	Digital output with “Digital input” function	09
12	GND	Ground	
13	DOI-C10	Digital output with “Digital input” function	10
14	GND	Ground	
15	DOI-C11	Digital output with “Digital input” function	11
16	GND	Ground	
17	DOI-C12	Digital output with “Digital input” function	12
18	GND	Ground	
Universal output with “digital input” function (UOI)			
19	UOI-C13	Universal output with “Digital input” function	13
20	GND	Ground	
21	UOI-C14	Universal output with “Digital input” function	14
22	GND	Ground	

Terminal point	Designation	Function	
Power supply			
31	FE (⊥)	Functional ground	
32	+	Positive power supply (24 V DC)	
33	+		
34	GND	Ground (0 V)	
35	GND		
Extension bus (link bus)			
41	Lk1+	Link bus 1	+
42	Lk1-		-
43	Lk1S		Shield
44	Lk2+	Link bus 2	+
45	Lk2-		-
46	Lk2S		Shield
47	GND	Ground	
Universal inputs (UI)			
51	UI-C01	Universal input	01
52	UI-C02	Universal input	02
53	GND	Ground	
54	UI-C03	Universal input	03
55	UI-C04	Universal input	04
56	GND	Ground	
57	UI-C05	Universal input	05
58	UI-C06	Universal input	06
59	GND	Ground	
60	UI-C07	Universal input	07
61	UI-C08	Universal input	08
62	GND	Ground	

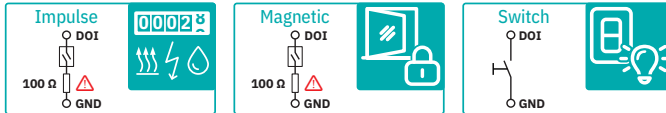
8 Electrical connection of sensors and actuators



Connect the shield of the sensor supply line to a GND connection of the device that is not used as a return line for the sensors.

Figure 3 DOI (C09 ... C12)

Input



Output

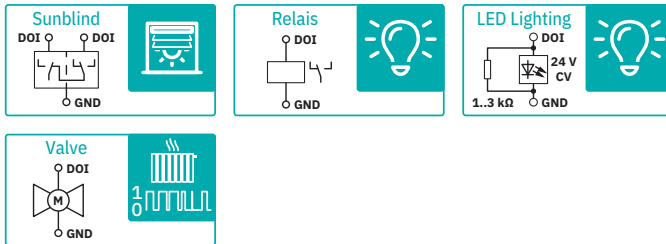
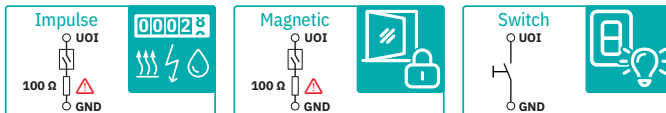


Figure 4 UOI (C13 ... C14)

Input



Output

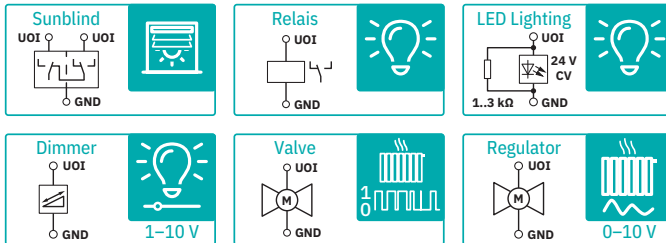
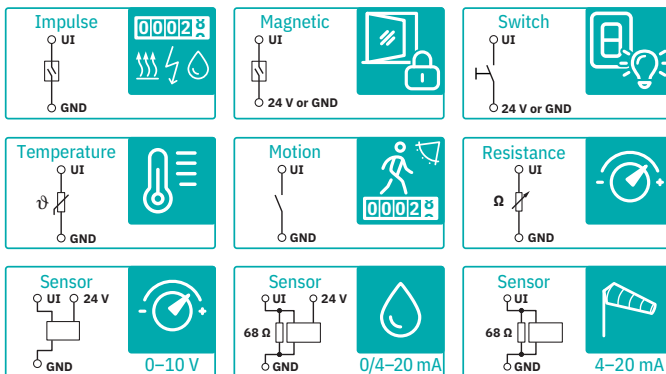


Figure 5 UI (C01 ... C08)



9 Local diagnostic and status indicators

LEDs of the Ethernet connections

Designation	Color	State	Description
Link/Activity	Green	On	Link: Connection established
		Flashing	Activity: Data transmission
		Off	No connection established
Link Speed	Orange	On	Link speed 1 Gbps
		Off	Link speed < 1 Gbps

LEDs for status and supply voltage

Designation				
Power		Status		
Color	State	Color	State	Description
Operating states				
Green	On	Green	Flashing at period 2 s	Normal operation, the Niagara station is running. The duty cycle indicates the CPU load.
			200 ms on	CPU load <10%
			1000 ms on	CPU load 10% ... 50%
			1800 ms on	CPU load 50% ... 100%
	Orange	Flashing at period 2 s	The controller is ready for operation, no active Niagara station. The duty cycle indicates the state of the operating system.	
			200 ms on	The Niagara platform is not ready for operation.
			1000 ms on	The Niagara platform is ready for operation.
	Flashing 1 s on, 1 s off	Green	Flashing 1 s on, 1 s off	Module identification
	On	Off		The operating system is started.
Orange	On	Off		The I/O module is started.
Update signaling				
Green	On	Orange	Flashing at 10 Hz	Operating system is updated.
Orange	On			I/O module is updated.
I/O module error				
Orange	On	Orange	On	The I/O module cannot be activated. The device must be returned for repair.
	Short on followed by off		Short on followed by off	An error occurred when starting the I/O module. Follow the instructions for resetting the firmware.
	On	Red	On	An undervoltage of the supply voltage is present. The module function has been stopped. The module automatically restarts when the supply voltage returns.
Red	On	Red	On	An unknown error has occurred in the I/O module. The I/Os are not ready for operation. Switch the device off for 10 s and then back on.

Acoustic signal generator

Designation	State	Description
Acoustic signal	Output of a sequence of tones	Module identification has been started in the engineering software. Identification must be completed with the engineering software.

Module identification

To identify a device, you can initiate module identification in the engineering software via “Identify”.

In this case, the Status and Power LEDs on the device flash green at a speed of 1 s on, 1 s off. At the same time, the acoustic signal generator outputs a defined sequence of tones and thus enables the device to be located.

You can stop module identification with “Stop Identify”.

10 Creating the Catan station



NOTE: Damage to contacts or malfunction

Before working on the the module, disconnect the module's I/O devices and supply from the power supply.



You can insert and remove the touch display during operation.

A Catan station consists of a Catan controller and up to 16 Catan extension modules.

The I/O periphery can be connected to the controller and the extension modules. The signals that can be connected depend on the module used. Observe the information in the module-specific data sheet.

To create a Catan station, proceed as follows:

- Snap the Catan controller onto the DIN rail.
- Snap the required Catan extension modules onto the DIN rail in any order.
- Connect a link bus connection of each module to a link bus connection of a module to the right or left.
- Wire the power supply for all modules. A second terminal point is available for looping through the power supply.
For the ground connection, use exclusively the GND terminal points of the power supply (34 and 35).
- If necessary, connect the Catan Control Panel to operate the modules directly or remotely via the USB interface.
- Connect the I/O devices.
- Connect the controller to the local network of your PC via the connections LAN 1 or LAN 2.
- Switch on the supply voltage.
- Start up the controller via the Emalytics Niagara Workbench.

The following factory settings apply:

IP address:	192.168.1.1
Subnet:	255.255.255.0
User:	phoenix
Password:	catan

11 Enable local override operation

To enable local override operation, enter the required PIN via the connected Catan Control Panel. The default setting for the PIN is 42.



If you change the PIN, this change only applies to the module to which the display is connected.

12 Open source software

12.1 Licensing information

The controller works with a Linux® operating system.

License information on open source software can be downloaded as an archive via the web-based management of the controller under “System, Licenses”.

The archive contains a list of the open source software packages used, information on the applicable license, and the corresponding license texts.

Notes on LGPL software libraries

Any open source software used in the product is subject to the respective license terms, which are not affected by the Phoenix Contact Software License Terms (SLT) for the product. In particular, the licensee may modify the respective open source software in accordance with the applicable license terms. If the licensee wishes to modify an LGPL software library contained in this product, reverse engineering is permitted for debugging such modifications.

Note on OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit.
(<http://www.openssl.org/>).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

12.2 Requesting the source code

This product contains software components which are licensed by the rights holder as free software or open source software under the GNU General Public License, version 2.

You can request the source code of these software components in the form of a CD or DVD-ROM for a processing fee of 50 euros within three years after delivery of the product.

To do this, please contact the After Sales Service of Phoenix Contact in writing at

Phoenix Contact GmbH & Co. KG

After Sales Service

Flachsmarktstraße 8

32825 Blomberg, Germany

Subject: Source code for CATAN C1 EN