

CATAN C1 EN - Controller

1371432

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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.

Product 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.

Your advantages

- Space and cost savings thanks to highly flexible I/O configurability
- High-performance extension bus also enables distributed installation
- Startup and maintenance with plug-in display for local operation
- Support for all key building automation protocols
- Software security with secure boot, signed software, and TPM-protected device identity
- Effective engineering and visualization with Emalytics and the Niagara Framework
- Digital twin as the basis for smart buildings

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Commercial data

Item number	1371432
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR18
Product key	DRHAFA
GTIN	4063151729899
Weight per piece (including packing)	264.3 g
Weight per piece (excluding packing)	243 g
Customs tariff number	85371091
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use
Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Product properties

Product type	Controller
Product family	Catan
Installation location	indoor use
Installation location	Subdistribution
	Control cabinet
Special properties	Development process certified in accordance with IEC 62443-4-1
	The product is being prepared for compliance with the Cyber Resilience Act (CRA)

Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

System properties

Trusted Platform Module	TPM 2.0
Retentive data storage	5 GByte (eMMC)
	512 kByte (MRAM, additional memory)
RAM	1024 Mbyte (LPDDR4-RAM)

Functionality

Programming tool	Emalytics
Programming languages supported	Niagara Framework®

Electrical properties

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

Supply

Supply voltage (DC)	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Max. current consumption	max. 3.6 A

Typical current consumption	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

Real-time clock

Realtime clock	integrated (capacitive buffering)
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Input data

Universal: Universal input (UI)

Input name	Universal inputs (UI)
Description of the input	Single-ended
Number of inputs	8
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)

Analog: Universal input

Input name	Analog current inputs
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
Tolerance, absolute (mA)	max. 0.05 mA (The measurement requires an external parallel resistor of 68 Ω .)
Resolution (current)	0.01 mA
Protective circuit	Surge protection

Analog: Universal input

Input name	Analog voltage inputs
Voltage input signal	0 V ... 10 V
Input resistance of voltage input	> 5 M Ω
Tolerance, absolute (V)	max. 3 mV
Resolution (voltage)	1 mV
Protective circuit	Surge protection

Analog: Universal input

Input name	Analog temperature inputs
Usable sensor type (RTD)	Pt 1000
Temperature range	-100 °C ... 500 °C
Tolerance, absolute	max. 0.5 K
Temperature resolution	0.1 K

Analog: Universal input

Input name	Analog temperature inputs
Usable sensor type (RTD)	Ni 1000
	LG-Ni 1000
Temperature range	-50 °C ... 250 °C

Tolerance, absolute	max. 0.5 K
Temperature resolution	0.1 K

Analog: Universal input

Input name	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))
Temperature resolution	0.1 K

Analog: Universal input

Input name	Analog resistance inputs
Tolerance, relative	max. 0.1 % (for resistances >200 Ω)
Resistance range	0 Ω ... 10 kΩ
Resolution (resistance)	0.01 Ω

Analog: Universal input

Input name	Analog resistance inputs
Tolerance, relative	max. 1 % (for resistances >200 Ω)
Resistance range	0 Ω ... 180 kΩ
Resolution (resistance)	0.1 Ω

Digital: Universal input

Input name	Digital inputs
Description of the input	EN 61131-2 type 2 and 3
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
Nominal input voltage U _{IN}	24 V DC

Digital: Universal input

Input name	Floating contacts
Input information	Connect the contact to ground.
Description of the input	Open/closed contact
Input current (Contact)	2 mA
Input resistance range ("0" signal)	> 27 kΩ
Input resistance range ("1" signal)	< 1 kΩ

Digital: Digital input (DOI)

Input name	"Digital input" function
Input information	Connect the contact to ground.
	Recommendation: If you use sensitive contacts such as reed contacts, connect a series resistor of at least 100 Ω in series.
Connection method	Push-in connection

Connection technology	2-conductor
Input current (Contact)	1 mA
Input resistance range ("0" signal)	> 27 kΩ
Input resistance range ("1" signal)	< 1 kΩ

Digital: Universal output

Input name	Digital inputs
Input information	You can parameterize each universal output as a digital input. See "Digital input" function" table.

Counter: Universal input

Input name	Counter inputs
Input frequency	max. 20 Hz (Signal is debounced)
Resolution	1 Impulse

Counter: Digital input (DOI)

Input name	Counter inputs
Input frequency	max. 100 Hz (UOI-C13/14: 80 Hz)
Resolution	1 Impulse

Output data

Universal: Digital input (UOI)

Output name	Universal outputs with "Digital input" function (UOI)
Note on output	You can use each universal output for one of the listed functions.
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)
Number of outputs	2

Analog: Universal output

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

Digital: Digital output (DOI)

Output name	Digital outputs with "Digital input" function (DOI)
Note on output	To obtain a valid voltage level for a logical "0" signal at the output, use a load resistor < 3 kΩ. You can parameterize each digital output for the "Digital input" function.
Connection method	Push-in connection
Connection technology	2-conductor
Number of outputs	4
Protective circuit	Short-circuit protection Overload protection

	Protection against incorrect DC connection (max. 30 V)
Output current	max. 500 mA
Nominal output voltage	24 V DC
Output current when switched off	max. 1.4 mA
Nominal load, ohmic	12 W (48 Ω)
Permissible cable length	max. 30 m (For compliance with the requirements in accordance with CE and to ensure compliance with the EMC Directive)
Reverse voltage resistance to short pulses	Reverse voltage proof
Behavior with overload	Auto restart
Behavior at voltage switch-off	The output follows the power supply without delay

Digital: Universal output

Output name	Digital outputs
Note on output	The technical data is identical to the data of the digital outputs with "Digital input" function (DOI).

Connection data

Connections 1 ... 2 (KNX-TP bus connection)

Connection method	Push-in connection
Note on the connection method	4-conductor, 2-position
Conductor cross-section, rigid	0.34 mm² ... 0.75 mm²
Conductor cross-section AWG	22 ... 18

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

Connection method	Push-in connection
Conductor cross-section, rigid	0.2 mm² ... 1.5 mm² (Conductor connection with open terminal point) 0.34 mm² ... 1.5 mm² (Push-in connection)
Conductor cross-section, flexible	0.5 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.25 mm² ... 1.5 mm² 0.25 mm² ... 1.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 1.5 mm²
Nominal cross section	1.5 mm²
Stripping length	10 mm

Interfaces

Supported protocols	KNX TP
	KNX IP
	BACnet/IP
	BACnet MS/TP
	Modbus/TCP
	Modbus/RTU
	DALI

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	DALI-2
	LON IP
	EnOcean
	SMI
	SNMP
	MQTT
	OPC UA
	Simple OpenADR
	LDAP
	SMS
	CSV
	oBIX
	DMX

KNX TP bus

Number of interfaces	1
Connection method	Push-in connection
Note on the connection method	KNX bus connection terminal
Transmission speed	9600 bps

Ethernet

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

RS-485

Number of interfaces	2
Connection method	Push-in connection

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
Transmission speed	10 Mbps
Transmission length	max. 350 m (between two devices)

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

Dimensions

Dimensions without display connected

Width	89.7 mm
Height	60.7 mm

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

Dimensions with display connected

Width	89.7 mm
Height	68 mm
Length	107.6 mm

Material specifications

Color (Lower housing part)	gray (RAL 7042)
Color (Upper housing part)	light gray (RAL 7035)
Material	Polycarbonate (Housing)
Flammability rating according to UL 94	V0

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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
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)

EMC data

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

Mounting

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.

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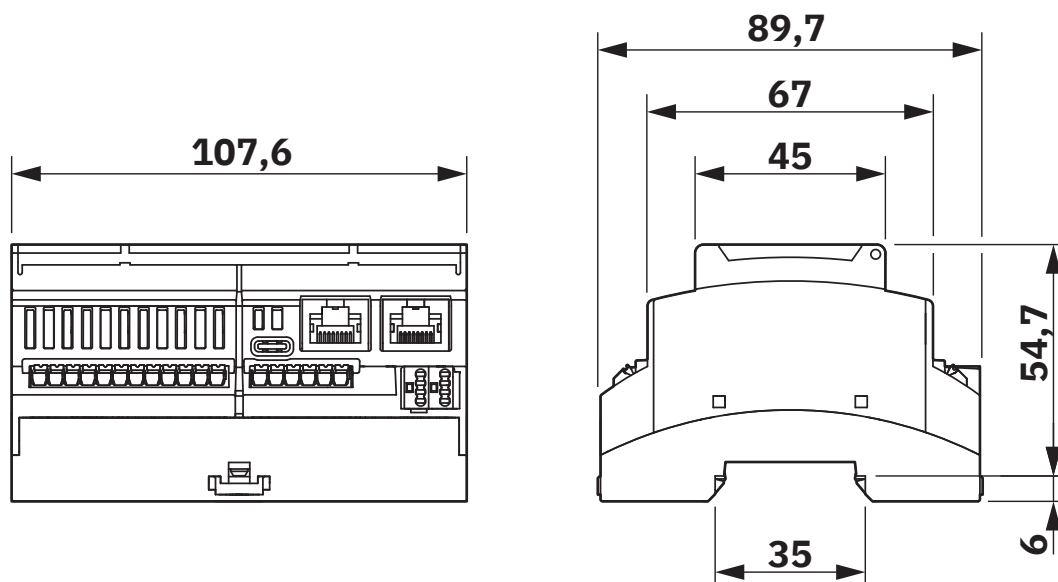
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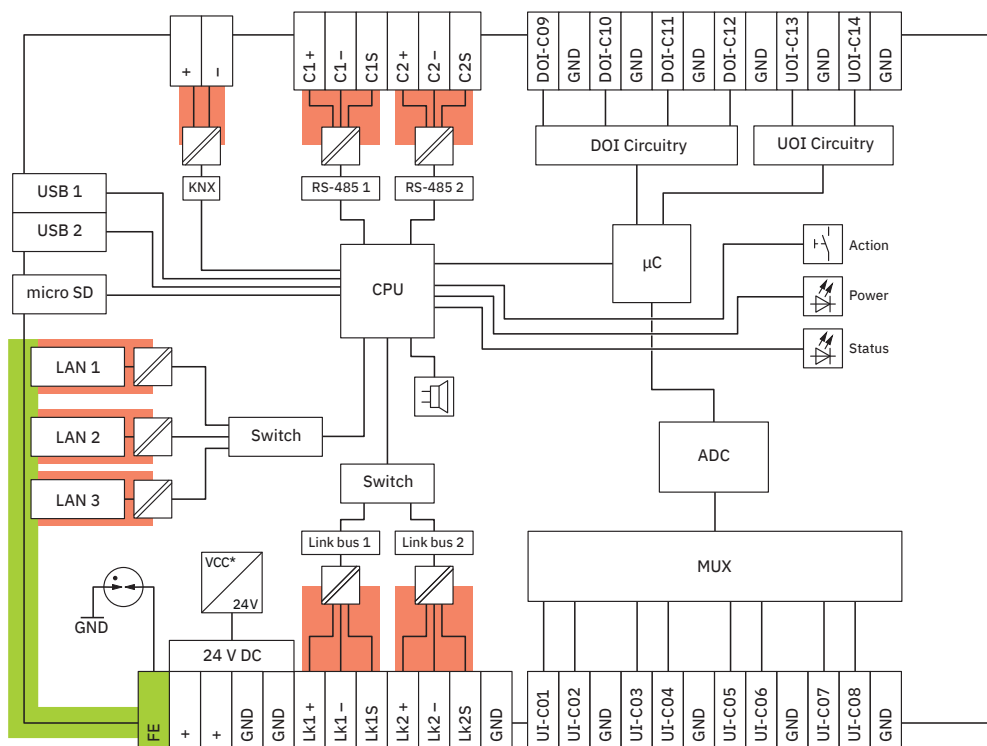
Drawings

Dimensional drawing



Dimensions

Block diagram



Internal wiring of the terminal points

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Approvals

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cULus Listed

Approval ID: E238705

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Classifications

ECLASS

ECLASS-13.0	27242207
ECLASS-15.0	27242207

ETIM

ETIM 10.0	EC000236
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Diboron trioxide(CAS: 1303-86-2)
	Lead titanium zirconium oxide(CAS: 12626-81-2)
	Lead(CAS: 7439-92-1)

EF3.1 Climate Change

CO2e kg	43.44 kg CO2e
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