

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.

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

Commercial data

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

Technical data

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

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 |

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 languages supported | Niagara Framework® |
|---------------------------------|--------------------|

System requirements

| | |
|------------------|-----------|
| Engineering tool | Emalytics |
|------------------|-----------|

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

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|----------------|-----------------------------------|
| Realtime clock | integrated (capacitive buffering) |
|----------------|-----------------------------------|

Input data

Analog: Universal input

| | |
|----------------------|-----------------------|
| Input name | Analog current inputs |
| Current input signal | 0 mA ... 20 mA |
| | 4 mA ... 20 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 MΩ |
| Protective circuit | Surge protection |

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 |

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 |

Digital: Universal output

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

Analog

| | |
|------------|---------------------------|
| Input name | Analog temperature inputs |
| (RTD) | Pt 1000 |

Analog

| | |
|------------|---------------------------|
| Input name | Analog temperature inputs |
|------------|---------------------------|

Analog

| | |
|------------|---------------------------|
| Input name | Analog temperature inputs |
|------------|---------------------------|

Analog

| | |
|------------|--------------------------|
| Input name | Analog resistance inputs |
|------------|--------------------------|

Analog

| | |
|------------|--------------------------|
| Input name | Analog resistance inputs |
|------------|--------------------------|

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. 20 Hz (Signal is debounced) |
| Resolution | 1 Impulse |

Output data

Analog: Universal output

| | |
|-----------------------|------------------------|
| Output name | Analog voltage outputs |
| Voltage output signal | 0 V ... 10 V |

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 <1 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 (TP bus connection)

| | |
|--------------------------------|---|
| Connection method | Bus connection terminal |
| Note on the connection method | 4-conductor, 2-position |
| Conductor cross-section, rigid | 0.34 mm ² ... 0.75 mm ² |
| Conductor cross-section AWG | 22 ... 18 |

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

| | |
|---|---|
| Connection method | 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 |
| Stripping length | 10 mm |
| 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) |
| Nominal cross section | 1.5 mm ² |

Interfaces

Bus for room automation

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|----------------------|-------------------------|
| Number of interfaces | 1 |
| Connection method | Bus connection terminal |
| Transmission speed | 9600 bps |

Ethernet

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

RS-485

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|----------------------|--------------------|
| Number of interfaces | 2 |
| Connection method | Push-in connection |

Extension bus (link bus)

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|-------------------------------|---|
| 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

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|----------------------|---|
| 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

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|------------------|--|
| 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

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|--|-------------------------|
| 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

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|--|--|
| 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

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|---------------------------------|---|
| 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

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|-------------------|--|
| 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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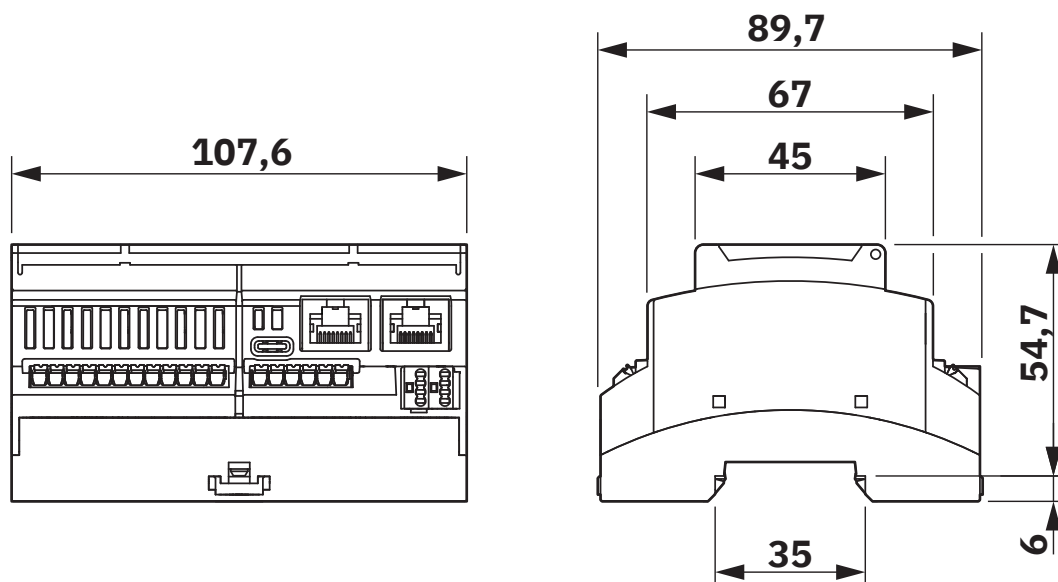
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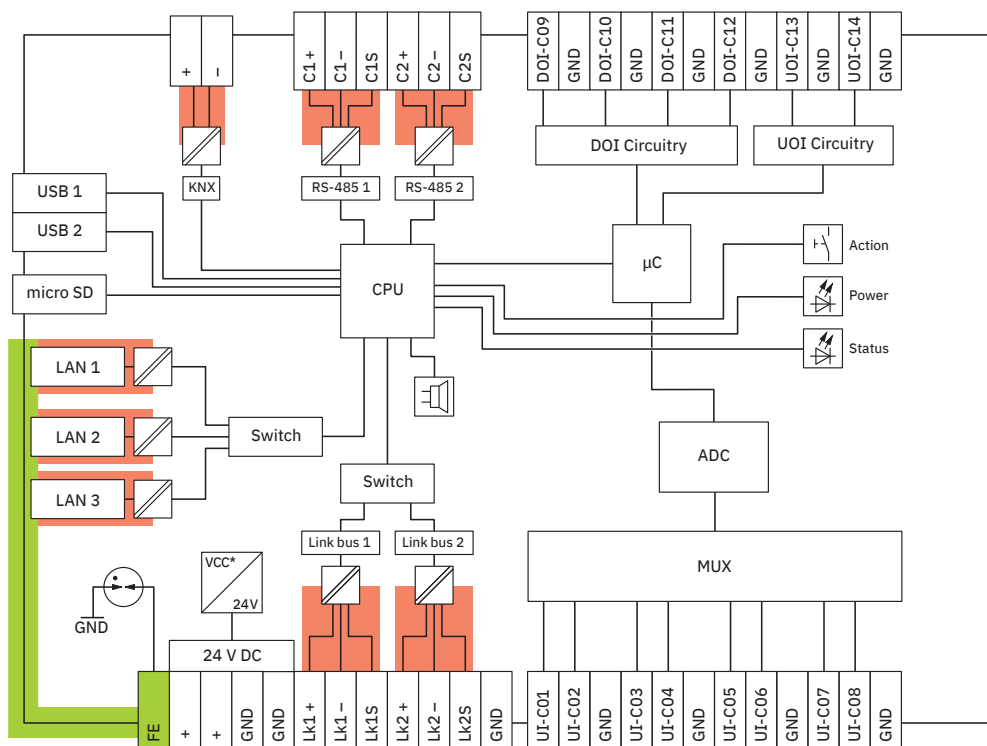
Drawings

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

Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242207 |
| ECLASS-15.0 | 27242207 |

ETIM

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|----------|----------|
| ETIM 9.0 | EC000236 |
|----------|----------|

Environmental product compliance

EU RoHS

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

China RoHS

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|--|---|
| 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

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