Specifications

Eaton 290446

Catalog Number: 290446

Eaton XC Compact PLC, expandable, 24 V DC, RS232, RS485(RS232), 2xCAN



General specifications

Product Name
Eaton XC Modular PLC

Catalog Number
290446

EAN
4015082904463

Product Length/Depth
100 mm

Product Height
100 mm

Product Width
60 mm

Product Weight
0.195 kg

Certifications
CE
EN 50178
CSA Class No.: 2252-01
UL File No.: E135462
CSA
IEC/EN 61131-2
UL Category Control No.: NRAQ
CSA-C22.2 No. 0-M
UL
CSA File No.: 012528
CSA-C22.2 No. 142-M
UL508
EAC

Catalog Notes
can be locally expandable with I/O module XIO-EXT-121-1

Features & Functions

Features

Asynchronous, cyclic, acyclic PDO types (CAN1/CAN2 interface)

Expandable with XC-CPU121 expansions

Mains overvoltage protection (power supply)

Expandable with XI/OC expansions

Mains filter (power supply)

Functions

Overvoltage protection

Additional program memory possible

Processor

Infineon XC161

General

Connection type

Spring-loaded terminal block, 6-pole, COM2, CAN1, CAN2 interface

Spring-loaded terminal block

RJ45, Ethernet

Degree of protection

IP20

Model

Modular

Mounting method

Rail mounting possible

Wall mounting/direct mounting

Overvoltage category

II

Pollution degree

2

Potential isolation

CAN1/CAN2 interface: no

Power supply of local inputs/outputs (24 V/0 V) against CPU voltage: yes

Rated insulation voltage (Ui)

500 V

Residual ripple

≤ 5 %

Voltage type

DC

Ambient conditions, mechanical

Mounting position

Horizontal

Shock resistance

15 g, Mechanical, Shock duration 11 ms

Vibration resistance

5 - 9 Hz, Amplitude 3.5 mm

9 - 150 Hz, 1 g constant acceleration

Climatic environmental conditions

Air pressure

795 - 1080 hPa (operation)

Ambient operating temperature - min

0 °C

Ambient operating temperature - max

55 °C

Ambient storage temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Relative humidity

10 - 95 % (non-condensing)

Electro magnetic compatibility

Emitted interference

According to IEC/EN 61000-6-4

Interference immunity

According to EN 61000-6-2

Terminal capacities

Terminal capacity

0.14 - 0.5 mm²

AWG 28-20

Terminal capacity (AWG)

28 - 20

Terminal capacity (solid/stranded AWG)

28 - 18

Terminal capacity (solid/stranded)

0.14 - 1 mm²

Power supply

Input voltage

24 V DC (Power supply)

24 V DC (Power supply of local inputs/outputs)

Input current

60 mA

Power consumption

Max 1.44 W

Power loss

6 W

Repetition rate

1 s

Residual ripple

≤ 5 %

Supply voltage

20.4 - 28.8 V DC

Supply voltage at AC, 50 Hz - min

0 VAC

Supply voltage at AC, 50 Hz - max

0 VAC

Supply voltage at DC - min

20.4 VDC

Voltage dips

10 ms

Supply voltage at DC - max

28.8 VDC

Inrush current

No limitation (limited only by upstream 24 V DC power supply unit)

Communication

Bus termination

Selectable for CAN1/CAN2, first and last station

External, for RS485

Character formats

8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1, Serial interface (RS232) without handshake lines, transparent mode

8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1, COM2 (RS232/RS485) without handshake lines, transparent mode, set through function blocks

Connection type

Spring-loaded terminal block, 6-pole, COM2, CAN1, CAN2 interface

Spring-loaded terminal block

RJ45, Ethernet

Cycle time

< 0.3 ms, for 1 k of instructions (Bit, Byte), memory

Data transfer rate

19.2 kBit/s, Serial interface (RS232) without handshake lines, Transparent mode

1.2 kBit/s, Serial interface (RS232) without handshake lines, Transparent mode

0.3 kBit/s, Serial interface (RS232) without handshake lines, Transparent mode

0.6 kBit/s, Serial interface (RS232) without handshake lines, Transparent mode

19.2 kBit/s, Serial interface (RS232) without handshake lines, Programming, Character format: 8 data bits, no parity, 1 stop bit

19.2 kBit/s, COM2 (RS232/RS485) without handshake lines, Transparent mode, Set through function blocks

10 - 500 kBit/s, CAN1/CAN2

1.2 kBit/s, COM2 (RS232/RS485) without handshake lines, Transparent mode, Set through function blocks

0.3 kBit/s, COM2 (RS232/RS485) without handshake lines, Transparent mode, Set through function blocks

0.6 kBit/s, COM2 (RS232/RS485) without handshake lines, Transparent mode, Set through function blocks

Interfaces

RS485/RS232 (built-in)

RS232 (built-in)

2 x CANopen® (built-in)

Memory

244 kByte Program data code, optional extension

Input/Output

Duty factor

100 %, Digital outputs

Input current

60 mA

Number of channels

0

Number of inputs (analog)

0

Number of inputs (digital)

18

Number of outputs (analog)

0

Number of outputs (digital)

8

Number of relay outputs

0

Rapid counter inputs

190 bytes in each block

Rated operational current (Ie)

0 A

Signal range

19.2 - 30 V DC (Power supply of local inputs/outputs, note polarity)

Utilization factor

0 (Inductive load to EN 60947-5-1, Without external suppressor circuit, T0.95 = 1 ms, R = 48 Ω, L = 16 mH)

Safety

Explosion safety category for gas

None

Potential isolation

CAN1/CAN2 interface: no

Power supply of local inputs/outputs (24 V/0 V) against CPU voltage: yes

Protection against polarity reversal

Yes, for AS-Interface

4 kByte Input Memory
4 kByte Output Memory
8 kByte Retain Memory
16 kByte Marker Memory
256 kByte (User memory)
256 kByte Program memory code, optional extension

Number of bytes

190 bytes

Number of modules

126 (CAN1/CAN2 interface)

Protocol

PROFIBUS
SUCONET
MODBUS
CAN
Other bus systems

Yes

Explosion safety category for dust

None

System

Backup time

> 72 hours (time at zero voltage)

Memory

244 kByte Program data code, optional extension
4 kByte Input Memory
4 kByte Output Memory
8 kByte Retain Memory
16 kByte Marker Memory
256 kByte (User memory)
256 kByte Program memory code, optional extension

Memory capacity

256 kByte

Design verification

Equipment heat dissipation, current-dependent Pvid

0 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

0 W

Rated operational current for specified heat dissipation (In)

0 A

Static heat dissipation, non-current-dependent Pvs

6 W

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Resources

Brochures

eaton-xc300-modular-plc-brochure-br050008en-en-us.pdf

Declarations of conformity

DA-DC-00003844.pdf

DA-DC-00003410.pdf

Drawings

eaton-modular-plc-xc-modular-plc-dimensions-002.eps

eaton-modular-plc-module-xioc-i-o-module-dimensions.eps

eaton-modular-plc-xc-modular-plc-dimensions-003.eps

eaton-general-m22-standards.eps

eaton-modular-plc-in-out-module-xc-modular-plc-3d-drawing.eps

eaton-general-approval-easy-control-relays-standards.jpg

eaton-general-approval-m22-symbol.eps

eCAD model

DA-CE-ETN.XC-CPU121-2C256K

Installation instructions

IL05006003Z

Manuals and user guides

MN05003002Z_EN

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Meets the product standard's requirements.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility.

mCAD model

DA-CD-xc_cpu_121

DA-CS-xc_cpu_121

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

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