



## Eaton 106406

Eaton EC4P Compact PLC, 24 V DC, 12DI(of 4AI), 6DO(R), 1AO, ethernet, CAN

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<b>PRODUCT NAME</b>	Eaton EC4P Compact PLC
<b>CATALOG NUMBER</b>	106406
<b>PRODUCT LENGTH/DEPTH</b>	72 mm
<b>PRODUCT HEIGHT</b>	90 mm
<b>PRODUCT WIDTH</b>	107.5 mm
<b>PRODUCT WEIGHT</b>	0.358 kg
<b>CERTIFICATIONS</b>	UL508 UL CSA-C22.2 No. 142-M CSA CSA File No.: 012528 CSA-C22.2 No. 0-M UL File No.: E135462 CSA Class No.: 2252-01 IEC/EN 61000-4-2, Level 3 UL Category Control No.: NRAQ CE
<b>CATALOG NOTES</b>	Expandable: Inputs/outputs and bus systems

**FEATURES**

190 received bytes in a block (PRG interface RS232, Master mode)  
Overload and short-circuit protection  
Asynchronous, cyclic, acyclic PDO types (operating modes of the slave)

**AIR DISCHARGE**

8 kV

**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.

**10.13 MECHANICAL FUNCTION**

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

**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**

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**

Meets the product standard's requirements.

CHARACTERISTIC CURVE

[eaton-electrical-timers-easy-control-relays-characteristic-curve.eps](#)

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[IL05003003Z](#)

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[eaton-modular-plc-easy-module-ec4p-compact-plc-dimensions.eps](#)

[eaton-general-approval-easy-control-relays-standards.jpg](#)

<b>ASSEMBLIES</b>	
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>FITTED WITH:</b>	Power supply Function module Other components Ethernet on board easyNet/CANopen® on board Digital input module Engineering software Memory unit Analog input module Analog output module Digital output module Documentation Basic device Communication module Libraries
<b>POLLUTION DEGREE</b>	2
<b>ACCURACY</b>	± 3 %, of actual value, two devices (Analog Inputs) ± 5 s/day (± 0.5 h/year), Real-time clock, normally ± 2, (I7, I8, I11, I12) ± 0.12 V, of actual value, within a single device (Analog Inputs) 2 %, Analog outputs at -25 °C - 55 °C 1 %, Analog outputs at 25 °C
<b>BURST IMPULSE</b>	2 kV, Supply cable According to IEC/EN 61000-4-4, level 3 2 kV, Signal cable

<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	6 kV (contact-coil)
<b>UTILIZATION CATEGORY</b>	R 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes DC B 300 Light Pilot Duty, UL/CSA Control Circuit Rating Codes AC
<b>AIR PRESSURE</b>	1080 hPa (operation)
<b>BUS TERMINATION</b>	EASY-NT-R plug (incl. bus terminating resistor 120 Ω), first and last station, CANopen®
<b>ENVIRONMENTAL CONDITIONS</b>	Clearance in air and creepage distances according to EN 50178, UL 508, CSA C22.2, No. 142 Condensation: prevent with appropriate measures
<b>INDICATION</b>	LCD-display used as status indication of Digital inputs 24 V DC
<b>INPUT</b>	Voltage (DC)
<b>CABLE LENGTH</b>	100 m, unshielded, Digital inputs 24 V DC 30 m, screened, Analog inputs
<b>MOUNTING METHOD</b>	Screw fixing using fixing brackets ZB4-101-GF1 (accessories) Top-hat rail fixing (according to IEC/EN 60715, 35 mm)
<b>NUMBER OF OUTPUTS</b>	Relay outputs in groups of 1 8 Transistor Outputs 6 (relay outputs)
<b>CHARACTER FORMATS</b>	8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1, PRG interface RS232, Master mode
<b>SCREWDRIVER SIZE</b>	3.5 x 0.8 mm, Terminal screw
<b>MOUNTING POSITION</b>	Vertical Horizontal
<b>OUTPUT</b>	Voltage (DC)
<b>CONTACT DISCHARGE</b>	6 kV, Electrostatic discharge (ESD)
<b>OVERVOLTAGE CATEGORY</b>	II
<b>CONNECTION TYPE</b>	RJ45, Ethernet

	2 x RJ45, 8 pole, CANopen® RJ45, PRG Interface RS232
<b>CONSTANT ACCELERATION</b>	2 g, 57 - 150 Hz, according to IEC/EN 60068-2-6, Vibrations
<b>CONSTANT AMPLITUDE</b>	0,15 mm, 10 - 57 Hz, according to IEC/EN 60068-2-6, Vibrations
<b>SURGE RATING</b>	2 kV, Supply cables, symmetrical, EASY...AC, power pulses (Surge), EMC
	0.5 kV, Supply cables, symmetrical, EASY...DC, power pulses (Surge), EMC
	According to IEC/EN 61000-4-5, power pulses (Surge), EMC
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE AWG)</b>	22 - 12
<b>CONVERSIONS</b>	Each CPU cycle, Analog outputs Each CPU cycle, Analog inputs
<b>ELECTROMAGNETIC FIELDS</b>	10 V/m (according to IEC EN 61000-4-3)
<b>TERMINAL CAPACITY (SOLID AWG)</b>	22 - 12
<b>NUMBER OF INPUTS (ANALOG)</b>	4 (I7, I8, I11, I12)
<b>LOAD RESISTANCE</b>	1 kΩ
<b>CYCLE TIME</b>	< 0,3 ms, for 1 k of instructions (Bit, Byte), CPU
<b>NUMBER OF MODULES</b>	Max. 126 (slaves)
<b>DROP AND TOPPLE</b>	50 mm Drop height, Drop to IEC/EN 60068-2-31
<b>IMMUNITY TO LINE-CONDUCTED INTERFERENCE</b>	10 V (according to IEC/EN 61000-4-6)
<b>RADIO INTERFERENCE CLASS</b>	Class B (EN 55022) Class B (EN 55011)
<b>DATA TRANSFER RATE</b>	0.6 kBit/s, PRG interface RS232, Master mode 500 kBit/s at 25 m, CANopen® 0.3 kBit/s, PRG interface RS232, Master mode 250 kBit/s at 60 m, CANopen® 125 kBit/s at 125 m,

	CANopen® 2.4 kBit/s, PRG interface RS232, Master mode 10 kBit/s at 1000 m , CANopen® 10 MBit/s, 100 m, Ethernet
	19.2 kBit/s, PRG interface RS232, Master mode 38.4 kBit/s, PRG interface RS232, Master mode 57.6 kBit/s, PRG interface RS232, Master mode 4.8 kBit/s, PRG interface RS232, Master mode 20 kBit/s at 700 m, CANopen® 1.2 kBit/s, PRG interface RS232, Master mode 50 kBit/s at 300 m, CANopen® 9.6 kBit/s, PRG interface RS232, Master mode
<b>RELATIVE HUMIDITY</b>	5 - 95 % (non-condensing)
<b>DEGREE OF PROTECTION</b>	IP20
<b>SAFE ISOLATION</b>	300 V AC, Between two contacts, According to EN 50178 300 V AC, Between coil and contact, According to EN 50178
<b>DELAY TIME</b>	0.25 ms typ., Digital inputs 24 DC (I5 - I12), Delay time from 0 to 1 0.02 ms typ., Digital inputs 24 DC (I1 - I4), Delay time from 0 to 1
<b>RESIDUAL RIPPLE</b>	≤ 5 %
<b>RAPID COUNTER INPUTS</b>	2 (I1, I2) at 16 Bit or 1 (I1) at 32 Bit 50 kHz, Counter frequency 16/32 Bit (value range) ≤ 20 m (cable length, screened) Square (pulse shape)
<b>RECOVERY TIME</b>	100 μ s
<b>INSULATION RESISTANCE</b>	According to EN 50178
<b>FUNCTIONS</b>	Building blocks
<b>HEAT DISSIPATION</b>	3.4 W
<b>SUPPLY VOLTAGE AT DC - MAX</b>	24 VDC
<b>RESOLUTION</b>	• 0.01 V analog

- (Analog inputs)
- 0.01 V DC analog  
(Analog outputs)
- 0.01 V digital  
(Analog inputs)
- 10 Bit (value 0 - 1023, Analog inputs)
- 10 Bit (value 0 - 1023, digital, Analog outputs)

<b>INCREMENTAL COUNTER</b>	Pulse shape: Square Signal offset: 90° Counter inputs: I1, I2 Value range: 32 Bit Number of counter inputs: 1 (I1, I2, I3, I4) Counter frequency: ≤ 40 kHz Input for reference switch: I4 Reference input: I3
<b>STATION</b>	To DS 301 V4, Control contact rated current, Mode slave, Interfaces
<b>INPUT CURRENT</b>	3.3 mA (I9 - I10, at 24 V DC, at signal 1) 140 mA 3.3 mA (I1 - I6, at 24 V DC, at signal 1) 2.2 mA (I11 - I12, at 24 V DC, at signal 1) 2.2 mA (I7 - I8, at 24 V DC, at signal 1) 1 mA (Analog inputs)
<b>INPUT IMPEDANCE</b>	11.2 kΩ
<b>INPUT VOLTAGE</b>	Signal 0: < 8 V DC (I7 - I8, I11 - I12, Digital inputs, 24 V DC) Signal 0: < 5 V DC (I1 - I6, I9 - I10, Digital inputs, 24 V DC) Signal 1: > 8 V DC (I7 - I8, I11 - I12, Digital inputs, 24 V DC) Signal 1: > 15 V DC (I1 - I6, I9 - I10, Digital inputs, 24 V DC)
<b>PROCESSOR</b>	Infineon XC161
<b>SHOCK RESISTANCE</b>	15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 18 Impacts
<b>INSCRIPTION</b>	Individual inscription

	possible with EC4-COMBINATION-*
<b>RATED BREAKING CAPACITY</b>	300000 Operations at AC-15, 250 V AC, 3 A (600 Ops./h) 200000 Operations at DC-13, 24 V DC, 1 A (500 Ops./h)
<b>LIFESPAN, ELECTRICAL</b>	25,000 Operations (Filament bulb load at 1000 W, 230/240 V AC) 25,000 Operations (Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated) 25,000 Operations (Filament bulb load at 500 W, 115/120 V AC) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, with upstream electrical device) 25,000 Operations (Fluorescent lamp load 10 x 58 W at 230/240 V AC, uncompensated)
<b>SIGNAL RANGE</b>	0 - 10 V DC, Analog inputs
<b>LIFESPAN, MECHANICAL</b>	10,000,000 Operations 10,000,000 Operations (Relay outputs)
<b>MAKING/BREAKING CAPACITY</b>	3600/360 VA (AC, at B 300) 28/28 VA (DC, at R 300)
<b>MEMORY</b>	256 kByte Program memory code 8 kByte Retain Memory 14 segments of 16 kByte Program memory data 4 kByte Output Memory 16 kByte Marker Memory 4 kByte Input Memory
<b>NUMBER OF BYTES</b>	190 transmission bytes (in a block)
<b>NUMBER OF INPUTS (DIGITAL)</b>	4 (I7, I8, I11, I12, can also be used as analog inputs) 12 (24 V DC) 12 4 (can also be used as analog inputs)
<b>PARALLEL SWITCHING</b>	Not permitted
<b>VOLTAGE DIPS</b>	According to EN 61131-2 $\leq 10$ ms
<b>UNINTERRUPTED CURRENT</b>	5 A AC, max. thermal continuous current $\cos \phi$



	= 1 at B 300 (UL/CSA) 10 A AC, at 240 V AC (UL/CSA) 8 A DC, at 24 V DC (UL/CSA) 1 A DC, at R 300 (UL/CSA)
<b>POTENTIAL ISOLATION</b>	Between Relay outputs and Power supply: yes Basic isolation: 600 V AC (Relay outputs) Between Relay outputs and Inputs: yes Between Analog inputs and Interface/memory card: no Safe isolation according to EN 50178: 300 V AC (Relay outputs) Between Digital inputs 24 V DC and Outputs: yes In groups (Relay outputs) Between Digital inputs 24 V DC and network easyNet, easyLink Between Analog inputs and Outputs: yes
<b>PROTECTION OF AN OUTPUT RELAY</b>	Miniature circuit-breaker B16 or fuse 8 A (slow)
<b>RATED OPERATIONAL VOLTAGE</b>	24 V DC (-15 %/+ 20 % - power supply) 20.4 - 28.8 V DC
<b>RELAY OUTPUT</b>	> 500 mA (Recommended for load: 12 V AC/DC)
<b>SHORT-CIRCUIT PROTECTION</b>	16 A, Short-circuit-proof $\cos \phi = 0.5$ to 0.7, characteristic B16 at 900 A, Contacts, Relay outputs 16 A, Short-circuit-proof $\cos \phi = 1$ , characteristic B16 at 600 A, Contacts, Relay outputs
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	0.2/2.5 mm <sup>2</sup>
<b>SWITCHING FREQUENCY</b>	0.5 Hz, Inductive load, Relay outputs 10 Hz, Relay outputs 2 Hz, Resistive load/lamp load, Relay outputs
<b>TERMINAL CAPACITY (SOLID)</b>	0.2/4 mm <sup>2</sup>
<b>TIGHTENING TORQUE</b>	0.6 Nm
<b>WRITE CYCLES OF THE RETENTIVE MEMORY</b>	10,000,000,000 read-write cycles
<b>AMBIENT OPERATING</b>	55 °C

<b>TEMPERATURE - MAX</b>	
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	70 °C
<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	-40 °C
<b>CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)</b>	8 A
<b>DISPLAY TEMPERATURE - MAX</b>	55 °C
<b>DISPLAY TEMPERATURE - MIN</b>	0 °C
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>	0 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	0 W
<b>HEIGHT OF FALL (IEC/EN 60068-2-32) - MAX</b>	1 m
<b>NUMBER OF OUTPUTS (ANALOG)</b>	1
<b>OUTPUT CURRENT (MA) - MAX</b>	100 mA
<b>RATED INSULATION VOLTAGE (UI)</b>	250 V
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	0 A
<b>RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX</b>	300 V
<b>RATED OPERATIONAL VOLTAGE (UE) AT DC - MAX</b>	300 V
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	3.4 W

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:



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