



Main characteristics:

- Digital I/O module with 36 channels: 16 inputs + 20 outputs
- Inputs 1, 2 and 3 can also be configured as universal counters
- Output voltage: 24 VDC
- Powered by rack back-plane
- Double slot module
- Status, power supply, alarm LEDs
- Integrated technology functions: high frequency counters, PWM outputs.

Code	F057165
Model Number	e410
Description	36 channel digital I/O module 16 inputs + 20 outputs
Position rack	Free from slot 1 to slot 7, 2 slots employment

PROFILE

The e410 module manages 16 digital inputs and 20 digital outputs (24 VDC) with which you can:

- acquire various data from controlled devices and the environment by means of signals and sensors;
- control and adjust devices by means of different types of signals and commands.

Inputs 1, 2 and 3 can be configured as universal counters.

The module installs in the rack and is powered by the back-plane, which connects it to the eCPU400 module.

The module, with 20 A of current suppliable simultaneously to the outputs, occupies 2 slots on the rack.

The front of the module has 2 24-pin connectors for external connections and LEDs for diagnostics of individual channels.

TECHNICAL DATA

POWER SUPPLY	Internal	via back-plane
	Power Dissipation	16,7 W max
CONNECTIONS	Rack	Card-edge
	I/O Ports	2 polarized plug-in connectors, male, 24-pin (2 rows of 12 pins) *
DISPLAY ELEMENTS	Diagnostics	16 green input status LEDs (ON/OFF) 20 green output status LEDs (ON/OFF) 1 red alarm LED 4 yellow power supply LEDs
DIGITAL INPUT	Number	16 inputs 1, 2, 3 can also be configured as fast digital inputs
	Type	Current-draw, conforming to types 1, 2, 3 of standard IEC61131-2
	Rated voltage	24 VDC
	Max input voltage	32 VDC
	Max input current	6,5 mA
	Switching threshold	Low level: ≤ 8 VDC High level: ≥ 9 VDC
	Hardware filter	Inputs 1, 2, 3: 50 kHz Inputs 4...16: 100 Hz
	Switching delay	0 \rightarrow 1: 100 μ s 1 \rightarrow 0: 85 μ s
	Protections	Polarity inversion Over-voltage: max 1 kV per 1 ms
	Electrical isolation	Channel - channel: no Channel - CPU bus: 2 kV
	FAST DIGITAL INPUT	Max number
Type		Current-draw, conforming to types 1, 2, 3 of standard IEC61131-2
Rated voltage		24 VDC
Max input voltage		32 VDC
Max input current		6,5 mA
Switching threshold		Low level: ≤ 8 VDC High level: ≥ 9 VDC
Hardware filter		50 kHz
Switching delay		0 \rightarrow 1: 100 μ s 1 \rightarrow 0: 85 μ s
Protections		Polarity inversion Over-voltage: max 1 kV per 1 ms
Electrical isolation		Channel - channel: no Channel - bus CPU : 2 kV
Output format position / counter		Type: DINT Resolution: 32 bit (-2 147 483 648 ... 2 147 483 647)
Output format speed		Type: DINT Resolution: 32 bit (-2 147 483 648 ... 2 147 483 647) LSB: 0,1 impulse/s
Output format period meter / pulse length meter		Type: DINT Resolution: 32 bit (0 ... 21,4 s) LSB: 10 ns
Output format frequency meter		Type: DINT Resolution: 32 bit (0 ... 500 kHz) LSB: 0,1 Hz
Main functions		3 monodirectional incremental encoders [A]; 1 monodirectional incremental encoder + zero notch [A+Z]; 1 bidirectional incremental encoder [AB]; 1 bidirectional incremental encoder + zero notch [AB+Z]; 3 forward count [Counter]

FAST DIGITAL INPUT	Auxiliary functions	Period meter Frequency meter Duty cycle meter Positive/negative pulse meter
DIGITAL OUTPUT	Number	20 Outputs 1 and 2 configurable as ON/OFF (default), PWM or frequency generator
	Composition	One power wire for every 5 outputs
	Type	Current-emission
	Rated voltage	24 VDC \pm 25%
	Max output current	Outputs 1...2: 1 A Outputs 3...20: 2 A Group of 20 outputs: 20 A per module on double slot
	Max switching frequency	100 Hz
	Switching delay	0 \rightarrow 1: 20 μ s 1 \rightarrow 0: 50 μ s
	Protections	Short circuit Overload: $I \geq 2,2$ A (as per IEC 61131), trip time: 500 ms min Overtemperature
Electrical isolation	Channel - channel: no Channel - bus CPU : 2 kV	
PWM / FREQUENCY GENERATOR OUTPUT	Max number	2 (first 2 digital outputs)
	Max output current	Single output: 1 A
	PWM output	Duty cycle: resolution 0,01% Frequency: resolution 0,01 Hz Frequency max: 5 kHz Type: UINT (0...10 000)
	Frequency output	Duty cycle: 50% Frequency: resolution 0,01 Hz Frequency max: 50 kHz Type: DINT (0...5 000 000)
AMBIENT CONDITIONS	Operating temperature	0 ... +50 °C (as per IEC 68-2-14)
	Storage temperature	-20 ... +70 °C (as per IEC 68-2-14)
	Relative humidity	max 95% RH non-condensing (as per IEC 68-2-3)
ASSEMBLY		On rack, with snap hooks
PROTECTION LEVEL		IP20
WEIGHT		0,22 kg
NORME CE	EMC (electromagnetic compatibility)	Conforms to Directive 2004/108/CE EMC Emission: EN 61000-6-4 EMC Immunity: EN 61131-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
	LV (low voltage)	Conforms to Directive 2006/95/CE Safety LVD: EN 61010-1

* Female connectors not supplied. See accessories for order Model Number.

ORDER CODES

The following codes refer to single digital I/O modules. See the system documentation for the complete system.

Code	Model Number	Description
F057165	e410	Double slot module with 16 digital inputs and 20 digital outputs. Module diagnostics LED. 24 VDC positive logic inputs, complete with status LED. 24 VDC 2A outputs, complete with status LED, maximum current deliverable simultaneously: 20 A. Two 24-pin connectors (to be ordered separately).

ACCESSORIES

Code	Model Number	Description
F057774	eCON24	24-pin female connector, complete with extractors