



I/O expansion, For use with easyE4, 24 V DC, Inputs/Outputs expansion (number) digital: 8, Push-In



Part no. **EASY-E4-DC-16TE1P**
197513

General specifications	
Product name	Eaton Moeller® series EASY I/O expansion
Part no.	EASY-E4-DC-16TE1P
EAN	4015081940912
Product Length/Depth	58 millimetre
Product height	90 millimetre
Product width	72 millimetre
Product weight	0.2 kilogram
Compliances	CE
Certifications	UL Category Control No.: NRAQ, NRAQ7 CE EN 50178 UL File No.: E205091 IEC 60068-2-27 IEC/EN 61000-4-2 IEC/EN 61000-6-3 DNV GL IEC 60068-2-6 IEC 60068-2-30 UL Listed IEC/EN 61131-2 IEC/EN 61000-6-2 EN 61010 UL hazardous location division 2 UL hazardous location group B (hydrogen) UL hazardous location group C (ethylene) UL hazardous location group A (acetylene) UL hazardous location class I UL hazardous location group D (propane)
Product Tradename	EASY
Product Type	I/O expansion
Product Sub Type	None
Features & Functions	
Features	Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 2 Q5 to Q8 Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 1 Q1 to Q4
Functions	Thermal cutout
General information	
Degree of protection	IP20
Insulation resistance	According to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
Mounting method	Rail mounting possible
Operating frequency	Dependent on the cycle time of the basic device
Overvoltage category	III
Pollution degree	2
Product category	Control relays easyE4
Protocol	MODBUS
Residual current	0.1 mA (on signal "1" per channel)
Residual ripple	5 % (transistor outputs) ≤ 5 %
Software	EASYSOFT-SWLIC/easySoft7
Type	easyE4 extension
Used with	easyE4
Voltage type	DC
Ambient conditions, mechanical	
Drop and topple	50 mm Drop height, Drop to IEC/EN 60068-2-31
Height of fall (IEC/EN 60068-2-32) - max	0.3 m

Mounting position		Horizontal Vertical
Shock resistance		15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 18 Impacts
Vibration resistance		57 - 150 Hz, 2 g constant acceleration 10 - 57 Hz, 0.15 mm constant amplitude According to IEC/EN 60068-2-6
Climatic environmental conditions		
Air pressure		795 - 1080 hPa (operation)
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		55 °C
Ambient storage temperature - min		-40 °C
Ambient storage temperature - max		70 °C
Environmental conditions		Condensation: prevent with appropriate measures Clearance in air and creepage distances according to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
Relative humidity		5 - 95 % (IEC 60068-2-30, IEC 60068-2-78)
Electro magnetic compatibility		
Air discharge		8 kV
Burst impulse		2 kV, Signal cable 2 kV, Supply cable According to IEC/EN 61000-4-4
Contact discharge		6 kV
Electromagnetic fields		1 V/m at 2 - 2.7 GHz (according to IEC EN 61000-4-3) 10 V/m at 0.08 - 1.0 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3)
Immunity to line-conducted interference		10 V (according to IEC/EN 61000-4-6)
Radio interference class		Class B (EN 61000-6-3)
Surge rating		0.5 kV, Supply cables, symmetrical, EASY...DC, power pulses (Surge), EMC 1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5 Level 4
Voltage dips		≤ 10 ms, Bridging voltage dips
Terminal capacities		
Terminal capacity		0.2 - 2.5 mm ² (22 - 12 AWG), flexible with ferrule
Electrical rating		
Conventional thermal current I _{th} of auxiliary contacts (1-pole, open)		0.5 A
Power consumption		1 W
Power loss		1 W
Rated operational current (I _e)		Max. 0.5 A at signal „1“ DC per channel
Rated operational voltage		20.4 - 28.8 V DC 20.4 - 28.8 V DC (Transistor outputs) 24 V DC (-15 %/+ 20 % - power supply) 24 V DC (transistor outputs) 24 V DC (digital inputs)
Supply voltage at AC, 50 Hz - min		0 V AC
Supply voltage at AC, 50 Hz - max		0 V AC
Supply voltage at DC - min		20.4 V DC
Supply voltage at DC - max		28.8 V DC
Short-circuit rating		
Short-circuit current		13.6 A, Transistor outputs
Short-circuit protection		Yes, electronic (Q1 - Q4, Q5 - Q8), Transistor outputs
Short-circuit tripping current		0.7 ≤ I _e ≤ 1.7 per output, For R _a ≤ 10 mΩ, Depending on number of active channels and their load, Transistor outputs
Communication		
Connection type		Push in terminals
Cable		
Cable length		100 m, unshielded, Digital inputs 12 V DC 100 m, unshielded, Digital inputs 24 V AC
Input/Output		
Delay time		0.2 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 1 to 0, Debounce OFF 20 ms, Digital Inputs 12 V DC, Delay time from 1 to 0, Debounce ON 0.1 ms typ., Digital inputs 24 V DC (I1 - I8), Delay time from 0 to 1, Debounce OFF 20 ms, Digital Inputs 12 V DC, Delay time from 0 to 1, Debounce ON

Input current		40 mA
Input voltage		Signal 0: ≤ 5 V DC (I1 - I8, Digital inputs, 24 V DC)
Number of inputs (analog)		0
Number of inputs (digital)		8
Number of outputs (analog)		0
Number of outputs (digital)		8
Output		Voltage Current 8 Transistor Outputs
Output voltage		Max. 2.5 V (at status 0 per channel, transistor outputs) U = U# - 1 V (signal 1 at I# = 0.5 A, transistor outputs)
Safety		
Explosion safety category for gas		None
Potential isolation		Between Analog inputs and Digital inputs: no
Protection against polarity reversal		Yes (Caution: A short circuit will result if 0 V or earth is applied to the outputs in the event that the supply voltage is connected to the wrong poles.)
Explosion safety category for dust		None
Design verification		
Equipment heat dissipation, current-dependent Pvid		0 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Static heat dissipation, non-current-dependent Pvs		1 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		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.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 9.0

Programmable logic controllers PLC (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Programmable logic control (SPS) / Logic module (ecl@ss13-27-24-22-16 [AKE539019])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	20.4 - 28.8
Voltage type (supply voltage)		DC
Switching current	A	0.5
Power consumption	W	1
Number of analogue inputs		0
Number of analogue outputs		0

Number of digital inputs		8
Number of digital outputs		8
With relay output		No
Number of HW-interfaces industrial Ethernet		0
Number of interfaces PROFINET		0
Number of HW-interfaces RS-232		0
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		0
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		0
Number of HW-interfaces parallel		0
Number of HW-interfaces wireless		0
Number of HW-interfaces other		0
With optical interface		No
Supporting protocol for EtherCAT		No
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		No
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for Modbus		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		No
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard GSM		No
Radio standard UMTS		No
IO link master		No
Redundancy		No
With display		No
Degree of protection (IP)		IP20
Basic device		No
Expandable		No
Expansion device		No
With time switch clock		No
Rail mounting possible		Yes
Wall mounting/direct mounting		No
Front built-in possible		No
Rack-assembly possible		No
Suitable for safety functions		No

SIL according to IEC 61508			None
Performance level according to EN ISO 13849-1			None
Appendant operation agent (Ex ia)			No
Appendant operation agent (Ex ib)			No
Explosion safety category for gas			None
Explosion safety category for dust			None
Certified for UL hazardous location class I			Yes
Certified for UL hazardous location class II			No
Certified for UL hazardous location class III			No
Certified for UL hazardous location division 1			No
Certified for UL hazardous location division 2			Yes
Certified for UL hazardous location group A (acetylene)			Yes
Certified for UL hazardous location group B (hydrogen)			No
Certified for UL hazardous location group C (ethylene)			Yes
Certified for UL hazardous location group D (propane)			Yes
Certified for UL hazardous location group E (metal dusts)			No
Certified for UL hazardous location group F (carbonaceous dusts)			No
Certified for UL hazardous location group G (non-conductive dusts)			No
Width		mm	72
Height		mm	90
Depth		mm	58