

I/O expansion, For use with easyE4, 24 V DC, Inputs expansion (number)
digital: 8, screw terminal



Part no. EASY-E4-DC-16TE1

197220

EL Number

4500553

(Norway)

Product name	Eaton Moeller® series EASY I/O expansion
Part no.	EASY-E4-DC-16TE1
EAN	4015080892816
Product Length/Depth	58 millimetre
Product height	90 millimetre
Product width	72 millimetre
Product weight	0.2 kilogram
Certifications	CSA-C22.2 No. 61010 CULus per UL 61010 IEC/EN 61000-4-2 IEC/EN 61000-6-3 IEC/EN 61131-2 IEC/EN 61000-6-2 IEC 60068-2-30 IEC 60068-2-27 EN 61010 EN 50178 IEC 60068-2-6 CE UL Category Control No.: NRAQ, NRAQ7 UL File No.: E205091 UL Listed DNV GL UL hazardous location group D (propane) UL hazardous location group C (ethylene) UL hazardous location class I UL hazardous location division 2 UL hazardous location group B (hydrogen) UL hazardous location group A (acetylene)
Product Tradename	EASY
Product Type	I/O expansion
Product Sub Type	None
Features	Expansion device Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 1 Q1 to Q4 Expandable Parallel connection of transistor outputs with resistive load, inductive load with external suppressor circuit, combination within a group - Group 2 Q5 to Q8
Functions	Thermal cutout
Indication	LCD-display base unit used as Output status indication of Transistor outputs LCD-display base unit used as status indication of Digital inputs 24 V DC
Degree of protection	IP20
Duty factor	100 % (Inductive load to EN 60947-5-1, With external suppressor circuit) 100 % (Inductive load to EN 60947-5-1, Without external suppressor circuit, DC-13, T0.95 = 72 ms, R = 48 Ω, L = 1.15 H) 100 % (Inductive load to EN 60947-5-1, Without external suppressor circuit, T0.95 = 15 ms, R = 48 Ω, L = 0.24 H)
Insulation resistance	According to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
Mounting method	Top-hat rail fixing (according to IEC/EN 60715, 35 mm) Rail mounting possible Screw fixing using fixing brackets ZB4-101-GF1 (accessories) Front build in possible Wall mounting/direct mounting
Operating frequency	Dependent on the cycle- and transmission-time of the expansion devices Depending on the suppressor circuit (Inductive load to EN 60947-5-1, With external suppressor circuit, Max. switching frequency, max. duty factor) Dependent on the cycle time of the basic device
Overvoltage category	III
Pollution degree	2
Product category	Control relays easyE4

Protocol		TCP/IP MODBUS
Residual current		0.1 mA (on signal "1" per channel)
Residual ripple		5 % (transistor outputs) ≤ 5 %
Software		EASYSOFT-SWLIC/easySoft7
Type		easyE4 extension
Voltage type		DC
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		According to IEC/EN 60068-2-6 10 - 57 Hz, 0.15 mm constant amplitude 57 - 150 Hz, 2 g constant acceleration
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		Clearance in air and creepage distances according to EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201 Condensation: prevent with appropriate measures
Relative humidity		5 - 95 % (IEC 60068-2-30, IEC 60068-2-78)
Air discharge		8 kV
Burst impulse		2 kV, Signal cable According to IEC/EN 61000-4-4 2 kV, Supply cable
Contact discharge		6 kV
Electromagnetic fields		1 V/m at 2.0 - 2.7 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3) 10 V/m at 0.8 - 1.0 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, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC 1 kV, Supply cables, asymmetrical, power pulses (Surge), EMC
Voltage dips		20 ms ≤ 10 ms, Bridging voltage dips
Terminal capacity		0.2 - 2.5 mm ² (22 - 12 AWG), flexible with ferrule 0.2 - 4 mm ² (AWG 22 - 12), solid
Screwdriver size		3.5 x 0.8 mm, Terminal screw
Tightening torque		0.6 Nm, Screw terminals
Heat dissipation		3.4 W (at 24 V DC)
Inrush current		12.5 A (for 6 ms)
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 (transistor outputs) 24 V DC (digital inputs) 24 V DC (-15 %/+ 20 % - power supply)
Supply current		18/32 mA, Normally/max., On 0 signal, Transistor outputs 24/44 mA, Normally/max., On 1 signal, Transistor outputs
Supply voltage at AC, 50 Hz - min		0
Supply voltage at AC, 50 Hz - max		0

Supply voltage at DC - min		20.4
Supply voltage at DC - max		28.8
Short-circuit current		13.6 A, Transistor outputs
Short-circuit protection		≥ 1A (T), Fuse, Power supply Yes, electronic (Q1 - Q4, Q5 - Q8), Transistor outputs
Short-circuit tripping current		$0.7 \leq I_e \leq 1.7$ per output, For $R_a \leq 10 \text{ m}\Omega$, Depending on number of active channels and their load, Transistor outputs
Connection type		Screw terminal
Cable length		100 m, unshielded, Digital inputs 24 V DC
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		Condition 1: ≥ 15 V DC (I1 - I8, Digital inputs, 24 V DC) Signal 0: ≤ 5 V DC (I1 - I8, Digital inputs, 24 V DC)
Lamp load		Max. 3 W (without Rv per channel)
Number of inputs (analog)		0
Number of inputs (digital)		8
Number of outputs (analog)		0
Number of outputs (digital)		8
Output		8 Transistor Outputs 4 A, Max. total current, Outputs Parallel connection of max. 8 Transistor outputs Voltage Current
Output voltage		Max. 2.5 V (at status 0 per channel, transistor outputs) $U = U\# - 1 \text{ V}$ (signal 1 at $I\# = 0.5 \text{ A}$, transistor outputs)
Utilization factor		1 (Inductive load to EN 60947-5-1, With external suppressor circuit) 0.25 (Inductive load to EN 60947-5-1, Without external suppressor circuit, $T_{0.95} = 15 \text{ ms}$, $R = 48 \Omega$, $L = 0.24 \text{ H}$) 0.25 (Inductive load to EN 60947-5-1, Without external suppressor circuit, DC-13, $T_{0.95} = 72 \text{ ms}$, $R = 48 \Omega$, $L = 1.15 \text{ H}$)
Explosion safety category for gas		None
Potential isolation		Between Digital inputs 24 V DC and Outputs: no Between Transistor outputs and expansion devices: yes Between Transistor outputs and Inputs: no Between Digital inputs 24 V DC and expansion devices: yes Between Digital inputs 24 V DC: no Between Digital inputs 24 V DC and Power supply: no Between Transistor outputs and Power supply: no
Protection against polarity reversal		Yes, for supply voltage (Siemens MPI optional) For transistor outputs (Caution: A short circuit will result if 0 V/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
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		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 8.0

Programmable logic controllers PLC (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014])		
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 of supply voltage		DC
Switching current	A	0.5
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 TCP/IP		Yes
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 PROFI-safe			No
Supporting protocol for SafetyBUS p			No
Supporting protocol for other bus systems			No
Radio standard Bluetooth			No
Radio standard Wi-Fi 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			Yes
Expansion device			Yes
With time switch clock			No
Rail mounting possible			Yes
Wall mounting/direct mounting			Yes
Front built-in possible			Yes
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
Width		mm	72
Height		mm	90
Depth		mm	58