DATASHEET - EASY-E4-DC-4PE1P

I/O expansion for easyE4 with temperature detection Pt100, Pt1000 or Ni1000, 24 VDC, analog inputs: 4, push-in

EAT·N
Powering Business Worldwide™

Part no.	EASY-E4-DC-4PE1P
	197517

General specifications

Product name		Eaton Moeller® series EASY I/O expansion
Part no.		EASY-E4-DC-4PE1P
EAN		4015081940950
Product Length/Depth		58 millimetre
Product height		90 millimetre
Product width		36 millimetre
Product weight		0.1 kilogram
Compliances		CE
Certifications		UL File No.: E205091
		UL Category Control No.: NRAQ, NRAQ7
		IEC 60068-2-6
		UL Listed
		DNV GL
		IEC/EN 61131-2
		IEC 60068-2-30
		EN 61010
		IEC 60068-2-27
		IEC/EN 61000-6-2
		EN 50178
		CE
		IEC/EN 61000-4-2
		IEC/EN 61000-6-3
		UL hazardous location group C (ethylene)
		UL hazardous location division 2
		UL hazardous location group B (hydrogen)
		UL hazardous location class I
		UL hazardous location group A (acetylene)
		UL hazardous location group D (propane)
Product Tradename		EASY
Product Type		I/O expansion
Product Sub Type		None

Features & Functions

Functions		Card diagnostic
		Diagnostics below lower measurement range

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
Overvoltage category		III
Pollution degree		2
Product category		Control relays easyE4
Protocol		MODBUS
Residual ripple		5 % (transistor outputs)
		≤ 5 %
Resolution		12 Bit (0- 4095, digital, scaling per sensor)
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 mm² (22 - 12 AWG), flexible with ferrule

Electrical rating

Power consumption	1 W
Power loss	1 W
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 protection	≥ 1A (T), Fuse, Power supply

Communication

Connection type	Push in terminals

Cable

Cable length	≤ 30 m, unscreened, Analog inputs temperature resistance Pt100 or Ni1000 sensors

Input/Output

Input	Input type resistance sensor: Platinum sensor Pt100 (according to DIN EN 60751, IEC 751)
	Input type resistance sensor: Nickel sensor Ni1000 (according to DIN 43760)
Input current	40 mA
Number of inputs (analog)	4
Number of inputs (digital)	0
Number of outputs (analog)	0
Number of outputs (digital)	0

Safety

Explosion safety category for gas	None
Potential isolation	Between Analog inputs PT100 or Ni1000 and Power supply: no
	Between Analog inputs and Power supply: no

Protection against polarity reversal		Yes
Explosion safety category for dust		None

Design verification

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
Power consumption	W	1
Number of analogue inputs		4
Number of analogue outputs		0
Number of digital inputs		0
Number of digital outputs		0
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	36
Height		mm	90
Depth		mm	58