



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


Part no. **EASY-E4-DC-4PE1P**  
 Catalog No. **197517**

### Delivery program

Product range		Control relays easyE4
Subrange		easyE4 Input/Output expansions with temperature detection
Basic function		easyE4 extensions
Description		Input/output extension for easyE4 control relay Analog inputs: 4 with temperature sensors PT100, PT1000 or Ni1000 Push in terminals
<b>Inputs</b>		
Inputs expansion (number)		Analog: 4
Pt100, Pt1000, Ni1000		4
<b>Additional features</b>		
Display		with diagnostic LED
Software		EASYSOFT-SWLIC/easySoft 7
Supply voltage		24 V DC
For use with		easyE4

### Technical data

#### General

Standards		EN 61000-6-2 EN 61000-6-3 IEC 60068-2-6 IEC 60068-2-27 IEC 60068-2-30 IEC/EN 61131-2 EN 61010 EN 50178
Approvals		
Approvals certificate		cULus CE
shipping classification		DNV GL
		
Dimensions (W x H x D)	mm	35.5 x 90 x 58
Weight	kg	0.079
Mounting		Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)
Connection type		Push-in terminals

#### Terminal capacities

Push-in terminals		
Solid	mm <sup>2</sup>	0.2 - 2.5
flexible	mm <sup>2</sup>	0.2 - 2.5
Solid or flexible conductor, with ferrule	mm <sup>2</sup>	0,25 - 1,5
Solid or stranded	AWG	24 - 14
Standard screwdriver	mm	0.4 x 2.5
Stripping length	mm	8

#### Climatic environmental conditions

Operating ambient temperature		°C	-25 to 55, cold as per IEC 60068-2-1, heat as per IEC 60068-2-2
Condensation			Take appropriate measures to prevent condensation
Storage	9	°C	-40 - +70
relative humidity		%	in accordance with IEC 60068-2-30, IEC 60068-2-78

Air pressure (operation)		hPa	5 - 95 795 - 1080
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### Ambient conditions, mechanical

Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20
Vibrations		Hz	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3
Mounting position			Vertical or horizontal

### Electromagnetic compatibility (EMC)

Overvoltage category/pollution degree			III/2
Electrostatic discharge (ESD)			
applied standard			nach IEC/EN 61000-4-2
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3		V/m	0.08 - 1.0 GHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1
Radio interference suppression			EN 61000-6-3 Class B
Burst		kV	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2
power pulses (Surge)			according to IEC/EN 61000-4-5 0.5 kV (supply cables, symmetrical) 1 kV (supply cables, asymmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10

### Insulation resistance

Clearance in air and creepage distances			nach EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201
Insulation resistance			in accordance with EN 50178, EN 61010-2-201, UL61010-2-201, CSA-C22.2 NO. 61010-2-201

### Power supply

Rated operational voltage	$U_e$	V	24 DC (-15/+20%)
Permissible range	$U_e$		20.4 - 28.8 V DC
Residual ripple		%	≤ 5
Protection against polarity reversal			yes
Input current			max. 40 mA at $U_e$
Voltage dips		ms	≤ 10
Fuse		A	≥ 1A (T)
Power loss	P	W	Normally 1
Heat dissipation at 24 V DC		W	1

### Analog inputs temperature resistance Pt100 or Ni1000 sensors

Number			4
Input type resistance sensor			Platinum sensor Pt100, platinum sensor Pt1000, nickel sensor Ni1000
Temperature range		°C, (°F)	Pt100, Pt1000: -100 - +200 (-148 - +392) Pt100, Pt1000: -100 - +400 (-148 - +752) Pt100, Pt1000: -100 - +800 (-148 - +1472) Ni1000: -50 - +100 (-58..+212) Ni1000: -50 - +250 (-58..+482)
Potential isolation			from power supply: no to the inputs: no to the expansion units: yes
Resolution digital, scaling per sensor			12 Bit (0- 4095)
Measuring principle			Two or three wire per sensor, selectable by connection of sensor
Accuracy (without electromagnetic compatibility interference)		%	1
Conversion time, analog/digital		ms	250, 1000, 2500, 10000
Diagnostics			Card diagnostic: yes below lower measurement range: yes Upper sensor measuring range exceeded: yes
Cable length		m	≤ 30, unshielded

## Design verification as per IEC/EN 61439

Technical data for design verification			
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	1
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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 7.0

PLC's (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			4
Number of analogue outputs			0
Number of digital inputs			0
Number of digital outputs			0
With relay output			Yes
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			2

With optical interface		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		No
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		Yes
Expansion device		Yes
With timer		No
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front build in possible		Yes
Rack-assembly possible		No
Suitable for safety functions		No
Category according to EN 954-1		None
SIL according to IEC 61508		None
Performance level acc. 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	35.5
Height	mm	90
Depth	mm	58

## Approvals

UL File No.		E205091
UL Category Control No.		NRAQ/7

### Dimensions

