

Product Details and Certifications

Cross Reference RA Part Number: PN-190632



Product: 193-EXP-PS-AC

Description: E300 Overload Relay (193/592 IEC/NEMA)
120/240V AC Expansion Power Supply



Representative Photo Only (actual product may vary based on configuration sections)

OVERLOAD DATA

Bulletin Number	193- IEC Overload Relay
Module Type	Expansion Module
Function Type	Expansion Bus Power Supply
Supply Voltage	110-240V AC, 50/60Hz

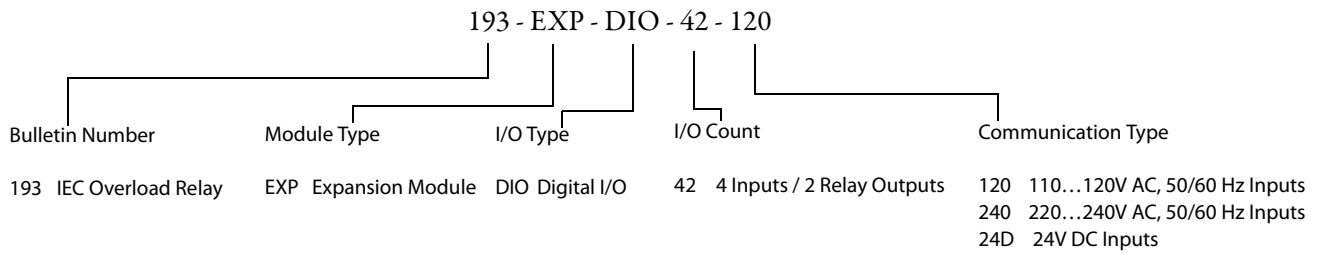
CERTIFICATIONS AND APPROVALS

UL
CSA
CE
CCC
KCC

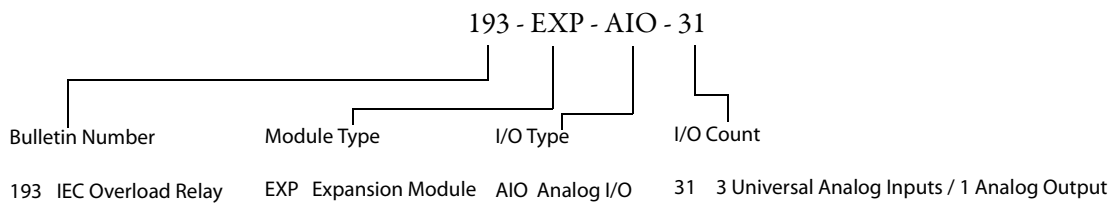
MANUFACTURING

Assembly	Factory Assembled
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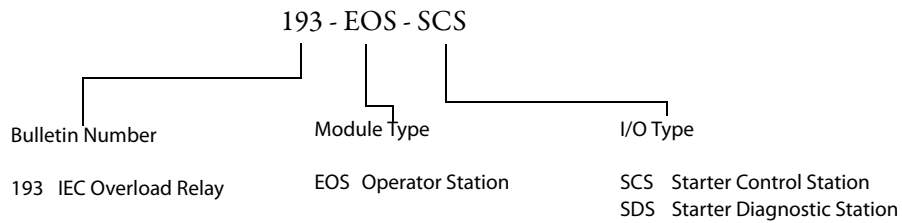
Digital Expansion Module



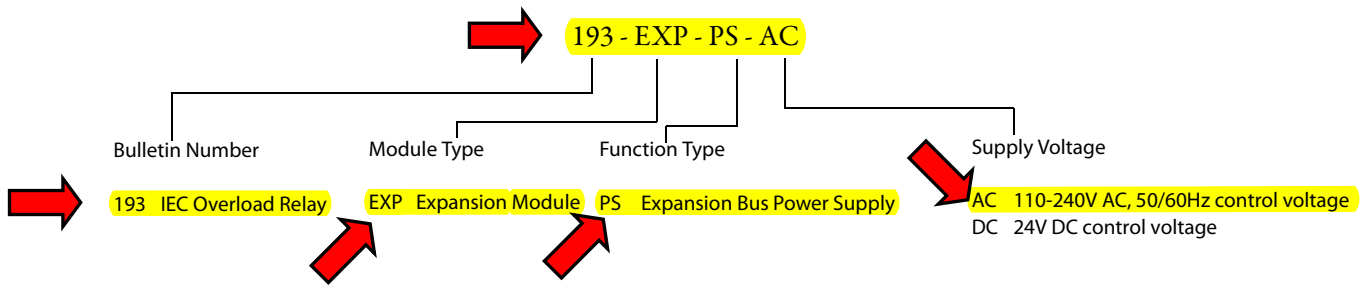
Analog Expansion Module



Operator Station



Power Supply



Description	Mounting Options	Current Range [A]	For Use With	Cat. No.	
Voltage/Current/Ground Fault	IEC Contactors	0.5...30	100-C09...C23	193-ESM-VIG-30A-C23	
			100-C30...C55	193-ESM-VIG-30A-C55	
		6...60	100-C30...C55	193-ESM-VIG-60A-C55	
			100-C60...100-C97	193-ESM-VIG-100A-C97	
	DIN Rail / Panel Mount Power Terminals	20...200	100-D115...100-D180	193-ESM-VIG-200A-D180	
				0.5...30	193-ESM-VIG-30A-T
				6...60	193-ESM-VIG-60A-T
				10...100	193-ESM-VIG-100A-T
	DIN Rail / Panel Mount Power Terminals. Directly replaces 193-ECPM_	20...200	All contactors	193-ESM-VIG-200A-T	
				0.5...30	193-ESM-VIG-30A-E3T
				6...60	193-ESM-VIG-60A-E3T
	DIN Rail / Panel Mount Pass-thru	10...100	External current and potential transformers	193-ESM-VIG-100A-E3T	
				0.5...30	193-ESM-VIG-30A-CT
	NEMA Contactors	20...200	NEMA Size 0...2	592-ESM-VIG-30A-S2	
				592-ESM-VIG-60A-S2	
			NEMA Size 3	592-ESM-VIG-100A-S3	
NEMA Size 4			592-ESM-VIG-200A-S4		

Control Modules

Description	No. of Inputs/Outputs	Rated Control Voltage [V]	Cat. No.
I/O Module	6 in/3 out	24V DC	193-EIO-63-24D
	4 in/3 out	110...120V AC, 50/60 Hz	193-EIO-43-120
	4 in/3 out	220...240V AC, 50/60 Hz	193-EIO-43-240
I/O and Protection Module. Thermistor (PTC) and External Ground Fault Current ⁽¹⁾	4 in/2 out	24V DC	193-EIOGP-42-24D
	2 in/2 out	110...120V AC, 50/60 Hz	193-EIOGP-22-120
	2 in/2 out	220...240V AC, 50/60 Hz	193-EIOGP-22-240

(1) Requires Core Balanced Ground Fault Sensor Cat. No. 193-CBCT_.

Communication Modules

Description	Cat. No.
EtherNet/IP	193-ECM-ETR

Expansion Modules

Description	No. of Inputs/Outputs	Rated Control Voltage [V]	Cat. No.
Digital Expansion Module, 24V DC	4 in/2 out	24V DC	193-EXP-DIO-42-24D
Digital Expansion Module, 120V AC	4 in/2 out	110...120V AC, 50/60 Hz	193-EXP-DIO-42-120
Digital Expansion Module, 240V AC	4 in/2 out	220...240V AC, 50/60 Hz	193-EXP-DIO-42-240
Analog Expansion Module: mA, V, RTD, and Resistance	3 universal in/1 out	—	193-EXP-AIO-31 ⁽¹⁾
Expansion Power Supply	—	24V DC	193-EXP-PS-DC
		110...240V AC, 50/60 Hz	193-EXP-PS-AC
Starter Control Station with 3-Meter Cable	—	—	193-EOS-SCS
Starter Diagnostic Station with 3-Meter Cable	—	—	193-EOS-SDS ⁽¹⁾

(1) Module requires control module firmware v3.000 or higher.

Thermistor/PTC Input Ratings (PTC only)

Terminals	IT1, IT2
Type of Control Unit	Mark A
Maximum Number of Sensors	6
Maximum Cold Resistance of PTC Sensor Chain	1500 Ω
Trip Resistance	3400 $\Omega \pm 150 \Omega$
Reset Resistance	1600 $\Omega \pm 100 \Omega$
Short-circuit Trip Resistance	25 $\Omega \pm 10 \Omega$
Maximum Voltage @ PTC Terminals ($R_{PTC} = 4 \text{ k}\Omega$)	7.5V DC
Maximum Voltage @ PTC Terminals ($R_{PTC} = \text{open}$)	30V DC
Response Time	800 ms

Low Voltage Directive

The E300 Electronic Overload Relay expansion digital modules are tested to comply with EN60947-5-1 Low-voltage switchgear and controlgear Part 5-1: Control circuit devices and switching elements.

Expansion Digital I/O Modules

Expansion Digital I/O Modules	193-EXP-DIO-42- 24D	193-EXP-DIO-42- 120	193-EXP-DIO-42- 240
Digital Output Rated Operational Voltage (U_o)	250V AC	250V AC	250V AC
Digital Output Rated Insulation Voltage (U_i)	2000V _{rms} for 1 s	2000V _{rms} for 1 s	2000V _{rms} for 1 s
Rated Impulse Withstand Voltage (U_{imp})	NA	NA	NA
Conditional Short-Circuit Current	1000 A	1000 A	1000 A
Recommended Control Circuit Fuse	KTK-R (6 A, 600V)	KTK-R (6 A, 600V)	KTK-R (6 A, 600V)
Utilization Category	AC15, DC13	AC15, DC13	AC15, DC13
Pollution Degree	3	3	3

Expansion Power Supply Modules

Expansion Digital I/O Modules	193-EXP-PS-AC	193-EXP-PS-DC
Rated Operational Voltage (U_o)	100...250V AC	21.6...26.4V DC
Rated Insulation Voltage (U_i)	2640V _{rms} for 1 s	500V for 60s
Rated Impulse Withstand Voltage (U_{imp})	4 kV	0.5 kV
Conditional Short-Circuit Current	NA	NA
Protection against Short Circuits	NA	NA
Utilization Category	NA	NA
Pollution Degree	3	3



Environmental Specifications

Note: The E300 Electronic Overload Relay expansion power supplies (Cat. Nos. 193-EXP-PS-AC and 193-EXP-PS-DC) surrounding air temperature must not exceed 55 °C (131 °F).

Ambient Temperature	
Storage	-40...+85 °C (-40...+185 °F)
Operating (open)	-20...+55 °C (-4...+131 °F)
Operating (enclosed)	-20...+40 °C (-4...+104 °F)
Humidity	
Operating	5...95% Non-condensing
Damp Heat – Steady State (per IEC 68-2-3)	92% r.h., 40 °C (104 °F), 56 days
Damp Heat – Cyclic (per IEC 68-2-30)	93% r.h., 25 °C/40 °C (77 °F/104 °F), 21 Cycles
Cooling Method	Natural convection
Vibration (per IEC 68-2-6)	2.5 G operating, 5 G non-operating
Shock (per IEC 68-2-27)	30 G
Maximum Altitude	2000 m ⁽¹⁾
Pollution Environment	Pollution Degree 3
Terminal Marking	EN 50012
Degree of Protection	IP20

(1) Exception: Any E300 Overload Relay that uses an external ground fault sensor is limited to 50/60 Hz detection.

Electromagnetic Compatibility Specifications

Electrostatic Discharge Immunity	
Test Level	8kV Air Discharge, 6kV Contact Discharge
Performance Criteria	1 ⁽¹⁾⁽²⁾
Radio Frequency Immunity	
Test Level	10V/m
Performance Criteria	1 ⁽¹⁾⁽²⁾
Electrical Fast Transient/Burst Immunity	
Test Level	4kV (Power), 2kV (Control & Comm)
Performance Criteria	1 ⁽¹⁾⁽²⁾
Surge Immunity	
Test Level	2kV (L-E), 1kV (L-L)
Performance Criteria	1 ⁽¹⁾⁽²⁾
Radiated Emissions	Class A
Conducted Emissions	Class A

(1) Performance Criteria 1 requires the DUT to experience no degradation or loss of performance

(2) Environment 2