Eaton EP-401064

Eaton ESR5 OSSD Safety Monitoring Relay, 3 Enabling + 1 Signaling Path, 24V DC

PRODUCT NAME	Eaton ESR5 Safety relay
CATALOG NUMBER	EP-401064
PRODUCT LENGTH/DEPTH	114.5 mm
PRODUCT HEIGHT	112.2 mm
PRODUCT WIDTH	22.5 mm
PRODUCT WEIGHT	0.165 kg
COMPLIANCES	EMC Directive: 2004/108/EC
CERTIFICATIONS	EN ISO 13849-1 EN 62061 IEC 61508, Parts 1-7 EN 60664-1 Machines 2006/42/EG UL File No.: E29184 UL Category Control No.: NKCR; NKCR7 UL report applies to both US and Canada CSA Class No.: 3211-83; 3211-03 North America (UL listed, certified by UL for use in Canada)

Powering Business Worldwide

MOUNTING METHOD	Rail mounting possible Top-hat rail fixing (according to IEC/EN 60715, 35 mm)
OPERATING TEMPERATURE - MAX	55 °C
OPERATING TEMPERATURE - MIN	-20 °C
FEATURES	Basic insulation Safe insulation Reinforced insulation 6 kV between A1-A2 / logic / enable and signal current paths
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. The specifications for the switchgear must be observed.
10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
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	Meets the product

ULTRA-VIOLET (UV) RADIATION	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	Does not apply, since the entire switchgear needs to be evaluated.
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.
ELECTRIC CONNECTION TYPE	Screw connection
FITTED WITH:	Detachable clamps Feedback circuit Approval according to UL Approval for TÜV Start input
POLLUTION DEGREE	2
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4000 V AC
AIR PRESSURE	795 - 1080 hPa (operation)
ALTITUDE	Max. 2000 m
DEGREE OF PROTECTION	IP20 Installation location: ≥ IP54

	Terminals: IP20 Enclosure: IP20
ENVIRONMENTAL CONDITIONS	Clearance in air and creepage distances according to EN 50178 Condensation: Non-condensing
NUMBER OF INPUTS	One- and two-channel
SAFETY PERFORMANCE LEVEL (EN ISO 13849-1)	Level e
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT OPERATING TEMPERATURE - MIN	-20 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
NUMBER OF OUTPUTS (SAFETY RELATED, DELAYED) WITH CONTACT	0
NUMBER OF OUTPUTS (SAFETY RELATED, DELAYED, SEMICONDUCTORS)	0
NUMBER OF OUTPUTS (SAFETY RELATED, UNDELAYED) WITH CONTACT	3
NUMBER OF OUTPUTS (SAFETY RELATED, UNDELAYED, SEMICONDUCTORS)	0
NUMBER OF OUTPUTS (SIGNALING FUNCTION, DELAYED) WITH CONTACT	0
NUMBER OF OUTPUTS (SIGNALING FUNCTION, DELAYED, SEMICONDUCTORS)	0
NUMBER OF OUTPUTS (SIGNALING FUNCTION, UNDELAYED) WITH CONTACT	1
NUMBER OF OUTPUTS (SIGNALING FUNCTION, UNDELAYED,	0

SEMICONDUCTORS)	
SCREWDRIVER SIZE	2, Terminal screw, Pozidriv screwdriver 0.6 x 3.5 mm, Terminal screws
CONNECTION TYPE	M3 screw terminals
MOUNTING POSITION	As required
BREAKING POWER	144 W max., resistive load (τ = 0 ms), at 24 V DC 288 W max., resistive load (τ = 0 ms), at 48 V DC 110 W max., resistive load (τ = 0 ms), at 110 V DC 88 W max., resistive load (τ = 0 ms), at 220 V DC 1500 VA, max., resistive load (τ = 0 ms), at 250 V AC 48 W max., inductive load (τ = 40 ms), at 24 V DC 40 W max., inductive load (τ = 40 ms), at 48 V DC 35 W max., inductive load (τ = 40 ms), at 110 V DC 33 W max., inductive load (τ = 40 ms), at 220 V DC
OVERVOLTAGE CATEGORY	III
EMITTED INTERFERENCE	According to EN 61000-6-4
CURRENT CONSUMPTION	70 mA, DC
INTERFERENCE IMMUNITY	According to EN 61000-6-2
TIGHTENING TORQUE	0.6 Nm, Screw terminals
MOUNTING WIDTH	22.5 mm
SUITABLE FOR	Monitoring of position switches Monitoring of emergency-stop circuits monitoring of proximity switches Monitoring of magnetic switches Monitoring of optoelectronic protection equipment
RELATIVE HUMIDITY	< 75 %
INPUT	∞ ms, Simultaneity for inputs 1/2
INRUSH CURRENT	0.01 - 20 (Δt 100 ms)

MODEL	Basic device
SAFETY TYPE (IEC 61496-1)	None
VIBRATION RESISTANCE	10 - 150 Hz, Amplitude: 0.15 mm, Acceleration: 2 g, (IEC/EN 60068-2-6)
SAFETY PARAMETER (EN ISO 13849-1)	300,000 switching cycles, B10d Cat. 4, Category PL e, Performance level
TERMINAL CAPACITY	1 x (0.2 – 2.5) mm^2, solid 2 x (0.2 – 1) mm^2, solid 1 x (0.25 – 2.5) mm^2, flexible with ferrule 2 x (0.25 – 1) mm^2, flexible with ferrule 24 - 12 AWG, solid or stranded
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	26.4 VDC
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	20.4 VDC
RELEASE-DELAY - MAX	0 s
RELEASE-DELAY - MIN	0 s
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	16.44 W
STRIPPING LENGTH (MAIN CABLE)	7 mm
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
SIL (IEC 61508)	3
POWER LOSS	Normally 5.16 W
PROOFTEST	75 Months (Low Demand) 240 Months (High Demand)
QUADRATIC SUMMATION CURRENT	72 A^2 ($ITH^2 = I1^2 + I2^2 + I3^2$)
RATED OPERATIONAL VOLTAGE	24 V DC (power supply)
RESET TIME	< 10 ms
SAFETY PARAMETER (IEC 62061)	SIL 3, Safety integrity level, In accordance with IEC

	61508 5.56 x 10-10, PFHd, Probability of failure per hour
UNINTERRUPTED CURRENT	6 A N/O, Limiting continuous current 6 A N/C, Limiting continuous current
STOP CATEGORY (IEC 60204)	0
SWITCHING CAPACITY	In accordance with IEC 60947-5-1, Outputs 5 A at 360 O/h, AC-15 at 230 V, Outputs 3 A at 3600 O/h, AC-15 at 230 V, Outputs 6 A at 360 O/h, DC-13 at 24 V, Outputs 2.5 A at 3600 O/h, DC-13 at 24 V, Outputs
POWER CONSUMPTION	16.44 W
CONTROL VOLTAGE 1 - MIN	24 VDC
CONTROL VOLTAGE 1 - MAX	26.4 VDC
CONTROL VOLTAGE 1 TYPE	DC
VOLTAGE TYPE OF SUPPLY VOLTAGE	DC
VOLTAGE TYPE OF OPERATING VOLTAGE	DC
RATED SWITCH CURRENT	6 A
SUPPLY VOLTAGE AT AC, 50 HZ - MIN	0 V
SUPPLY VOLTAGE AT AC, 50 HZ - MAX	0 V
SUPPLY VOLTAGE AT AC, 60 HZ - MIN	0 V
SUPPLY VOLTAGE AT AC, 60 HZ - MAX	0 V
SUPPLY VOLTAGE AT DC - MIN	0 V
SUPPLY VOLTAGE AT DC - MAX	24 V
OPERATING VOLTAGE AT DC - MIN	24 V
OPERATING VOLTAGE AT DC - MAX	26.4 V

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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