

Contact expansion module, 24VDC/AC, 4 enabling paths off-delayed

Powering Business Worldwide™

ESR5-VE3-42 Part no. Article no. 118706

Delivery program			
Product range			Electronic safety relays
Basic function			Time function Contact expansions
Features			
Mounting width		mm	22.5
			Feedback current path
Operation			Single-channel Single-channel
Supply voltage	U_s		24 V DC
Approval			TÜV TOV Rhainland Group Type Approved
Safety related characteristics			Cat. 3 PL d according to EN ISO 13849-1 SILCL 2 according to IEC 62061 SIL 2 according to IEC 61508
Number of enabling paths to EN 60204-1 Stop functions category			
Enable current paths to IEC/EN 60204-1 Stop category 1			4
Signal current paths			2
Instructions			The base unit determines the maximum stop category according to IEC 61508 and IEC 60204.

Technical data

General			
Intended use			Sicherheitsrelais als Kontakterweiterungsblock nach DIN EN60204-1/VDE 0113 Teil 1 zur Kontaktvervielfachung. Das Erweiterungsgerät kann zur Kontaktvervielfachung für Not-Halt-Relais und Zweihand-Steuerungen eingesetzt werden.
Policies List			EMV 2004/108/EG, Maschinen 2006/42/EG
Standards			EN ISO 13849-1:2008, EN 62061:2005+AC:2010, EN 61508, Parts 1-7:2001, EN 50178:1997, EN 60204-1:2006+A1:2009
Dimensions (W x H x D)		mm	22.5 x 114.5 x 99
Mounting width		mm	22.5
Weight		kg	0,23
Mounting position			As required
Mounting			Top-hat rail IEC/EN 60715, 35 mm
Connection type			M3 screw terminals
Lifespan, mechanical	Operations	x 10 ⁶	10
Terminal capacity			
Solid		mm ²	1x (0.2 – 2.5) 2x (0.2 – 1)
Flexible with ferrule		mm ²	1x (0.25 – 2.5) 2x (0.25 – 1)
Solid or stranded		AWG	24 - 12
Terminal screw		Nm	
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.6 x 3.5
Max. tightening torque		Nm	0.6
Stripping length		mm	7
Material			Housing: polyamide PA not reinforced

			Contacts: Material: silver tin oxide, gold plated (AgSnO2, 0.2 µm Au)
Duty factor		% DF	100
Operating conditions			
Climatic environmental conditions			
Climatic proofing			Dry heat to IEC 60068-2-2 Damp heat as per EN 60068-2-3
Ambient temperature			
Operation	9	°C	-20 - +55
Storage	9	°C	-40 - +70
Condensation			Non-condensing
Atmospheric conditions			
relative humidity		%	Max. 75
Air pressure (operation)		hPa	795 - 1080
Altitude	Above sea level	m	2000
Power loss	P	W	4.52
Ambient conditions, mechanical			
Degree of protection to VDE 0470-1			1999
Enclosures			IP20
Terminals			IP20
Degree of Protection			Installation location: ≥ IP54
B10d [switching cycles]			300000
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof 10 - 150 Hz
Vibrations (IEC/EN 60068-2-6)			Amplitude: 0.15 mm Acceleration: 2 g
Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 14-95
Rated impulse withstand voltage	U_{imp}	V AC	4000
Insulation			Basic isolation Safe isolation, reinforced isolation, and 6 kV between input circuit / NC contacts, and enable current paths.
Overvoltage category/pollution degree			III/2
Stop category	according to EN60204-1		13,5
Technical safety parameters:			
Values according to EN ISO 13849-1			
Performance level	according to EN ISO 13849-1		PL d
Category	according to EN ISO 13849-1		Kat. 3
Safety integrity level claim limit	in accordance with 62061		SILCL 3
Safety integrity level	In accordance with IEC 61508		SIL 3
Probability of failure per hour	PFH_d	x 10 ⁻¹⁰	13.5
Prooftest High Demand		Months	240
Prooftest Low Demand		Months	67
Rated operational voltage	U _e	V AC	230
Rated operational voltage	U _e	V	24 V DC
Permissible range			0.85 - 1.1 x Ue
Rated insulation voltage	Ui	V AC	250
Quadratic summation current		A^2	$50 \text{ A}^2 (I_{TH}^2 = I_1^2 + I_2^2 + I_3^2 + I_4^2)$
Notes			Observe derating curve → Engineering
Inrush current		Α	min - max 0.025 - 6 (N/O) 0.025 - 3 (N/C)
Minimum switching capacity		W	0.4
Control circuit			
Power supply circuit			

DC operated		W	2
Input data			
Rated current		mA	A1, A2:84, K1/K2:5
Current consumption		mA	AC: 94 DC: 94
Pick-up time (K1, K2) for UN automatic mode, typical	t _A	ms	20
Pick-up time (K1, K2) for UN manual operation, typical	t _A	ms	20
Pick-up time		ms	at Ue in automatic mode: normally 20 at Ue in manual mode: normally 20
OFF-delay	trz	s	0.3 - 3 +50%
Recovery time	t _W	ms	Approx. 1000
Simultaneity for inputs 1/2	t _{sync}	ms	00
Maximum switching frequency		Hz	0.5
Status indication		LED	Green
Output data			
Contact type			
Delayed enable current paths			4
Delayed signal current path			1
Delayed feedback current path			1
Switching voltage			min – max 15 - 250 V AC 15 - 250 V DC
Limiting continuous current		Α	per N/0: 6 N/C: 3
Short-circuit protection for output circuits, external			Fuse 10 A gL/gG (Enable current paths) Fuse 4 A gL/gG (Signal current paths)
Output fuse			
NEOZED (N/O)		gL/gG	10
NEOZED (N/C)		gL/gG	4
Maximum breaking power			
Resistive load ($\tau = 0 \text{ ms}$)			
24 V DC		W	144
Notes			for N/C contacts 65 - 66
48 V DC		W	288
Notes			for N/C contacts 65 - 66
110 V DC		W	77
220 V DC		W	88
250 V AC		VA	1500
Notes			for N/C contacts 65 - 66
Inductive load ($\tau = 40 \text{ ms}$)			
24 V DC		W	48
48 V DC		W	40
110 V DC		W	35
220 V DC		W	33
Switching capacity			In accordance with IEC 60947-5-1
AC-15			
230 V		Α	3 A bei 3600S/h
DC-13			
24 V		Α	3 A bei 3600S/h
Further information (flip catalog)			description
Electromagnetic compatibility (EMC)			
Emitted interference			In accordance with EN 61000-6-4
Interference immunity			according to EN 61000-6-2
Design verification of new ICC/CN C4/20			
Design verification as per IEC/EN 61439			
Technical data for design verification			

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	0

Equipment heat dissipation, current-dependent Poid W 0.5 tatic heat dissipation, non-current-dependent Pois W 4.52 Heat dissipation capacity Operating ambient temperature min. 10.23 design verification 10.25 trength of materials and parts 10.22 Corrosion resistance 10.23.1 Verification of thermal stability of enclosures 10.23.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects 10.24 Resistance to ultra-violat (UV) radiation 10.25 Lifting 10.26 Mechanical impact 10.27 Inscriptions 10.26 Protection of ASSEMBLIES 10.27 Inscriptions 10.30 agree of protection of ASSEMBLIES 10.4 Clearances and creepage distances 10.5 Protection against electric shock 10.5 Protection against electric shock 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9 Insulation properties 10.9 Power-frequency electric strongth 10.9 Insulation properties 10.9 Power-frequency electric strongth 10.9 Internal electrical circuits and connections 10.10 Temperature rise 10.11 Short-circuit rating 10.10 Temperature rise 10.11 Short-circuit rating 10.11 Temperature rise 10.11 Short-circuit rating		-	141	
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	10.10 Temperature rise			
	10.11 Short-circuit rating			Is the panel builder's responsibility.
10.12 Electromagnetic compatibility 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.	10.13 Mechanical function			

Technical data ETIM 6.0

Relays (EG000019) / Device for monitoring of safety-related circuits (EC001449)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Device for monitoring of safety-related circuits (ecl@ss8.1-27-37-18-19 [AC0304008])

		F
Model		Expansion device
Suitable for monitoring of position switches		Yes
Suitable for monitoring of emergency-stop circuits		Yes
Suitable for monitoring of valves		No
Suitable for monitoring of optoelectronic protection equipment		No
Suitable for monitoring of tactile sensors		No
Suitable for monitoring of magnetic switches		No
Suitable for monitoring of proximity switches		No
Type of electric connection		Screw connection
Rail mounting possible		Yes
Rated control supply voltage Us at AC 50HZ	V	0 - 26.4
Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		DC
With detachable clamps		Yes
Evaluation inputs		1-channel
With start input		No
With muting function		No

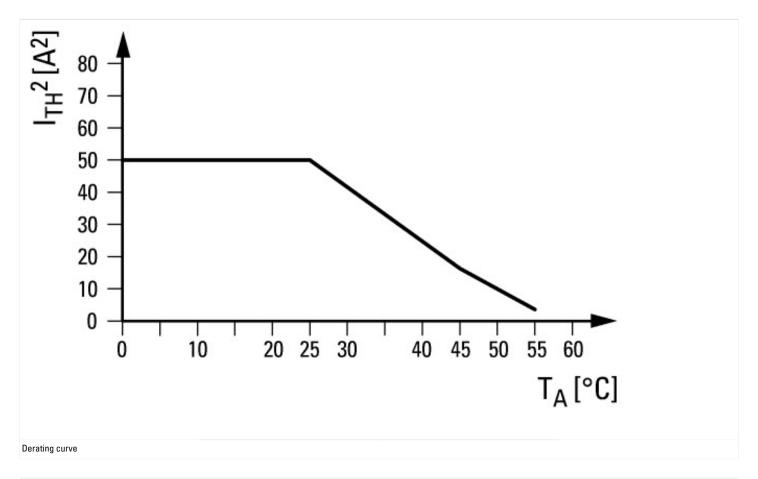
With feedback circuit		Yes
Release-delay	s	0 - 0
Number of outputs, safety related, undelayed, with contact		0
Number of outputs, safety related, delayed, with contact		4
Number of outputs, safety related, undelayed, semiconductors		0
Number of outputs, safety related, delayed, semiconductors		0
Number of outputs, signalling function, undelayed, with contact		0
Number of outputs, signalling function, delayed, with contact		1
Number of outputs, signalling function, undelayed, semiconductors		0
Number of outputs, signalling function, delayed, semiconductors		0
Category according to EN 954-1		3
Type of safety acc. IEC 61496-1		-
Stop category acc. to IEC 60204		1
Performance level acc. to EN ISO 13849-1		Level d
SIL according to IEC 61508		3
With approval for TÜV		Yes
With approval for BG BIA		No
With approval according to UL		Yes
Width	mm	22.5
Height	mm	99
Depth	mm	114.5

Approvals

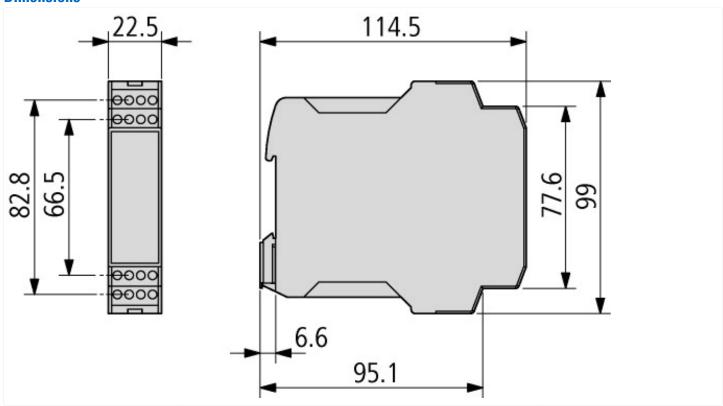
Product Standards	IEC/EN see Technical Data; UL 508; CSA-C22.2 No. 14-95; CE marking
UL File No.	E29184
UL Category Control No.	NKCR; NKCR7
CSA File No.	UL report applies to both US and Canada
CSA Class No.	3211-83; 3211-03
North America Certification	UL listed, certified by UL for use in Canada
Degree of Protection	IEC: IP20, UL/CSA Type: -

Characteristics

PU05907001Z safety manual		
Characteristic curves		



Dimensions



Additional product information (links)

IL05013034Z operator manual for electricians	
IL05013034Z operator manual for electricians	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL05013034Z2014_04.pdf
description	http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=13.15