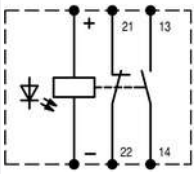
DATASHEET - ETS4-VS3



Amplifier module, for separate mounting

Part no. ETS4-VS3
Catalog No. 083094

Delivery program

Rated operational current			
AC-15			
240 V	I_e	A	2
415 V	I_e	A	2
DC			
Notes			Switch-on and switch-off conditions based on DC-13, time constant as specified.
DC-13 L/R - 300 ms			
220 V			
220 V	I_e	A	0.03
Actuating voltage	U_s	V DC	24
Actuating current	I	mA	25
Contact sequence			
For use with			DILM... DILMP.. DILL... DILK... DILMF… As required
Description			Input with built-in suppressor circuit for overvoltage limitation

Instructions Contactor coils with rated operational current > 2 A must be actuated via the DILER-G mini contactor relay.

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
DC operated	Operations	x 10^6	30
Maximum operating frequency		Ops./h	
DC operated	Operations	x 10^6	72000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	- 25 - 45
Mounting position			As required
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 20 ms		g	
N/O contact		g	10
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Weight		kg	0.09
Terminal capacities		mm^2	
Notes			Only use equal cross-sections.
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Solid or stranded		AWG	16 - 14
Terminal screw			M3.5
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Max. tightening torque		Nm	1.2

Contacts

Rated impulse withstand voltage	U_{imp}	V AC	6000
Overvoltage category/pollution degree			III/2
Rated insulation voltage	U_i	V AC	440
Rated operational voltage	U_e	V	440 AC
Rated operational current	I_e	A	
AC-15			
220 V 230 V 240 V	I_e	A	2
380 V 400 V 415 V	I_e	A	2
DC-13			
DC-13 L/R - 15 ms			
Contacts in series:		A	
1	24 V	A	2.6
1	60 V	A	1
1	110 V	A	0.6
1	220 V	A	0.2
DC L/R ≦ 50 ms			
Contacts in series:		A	
1	24 V	A	2
1	60 V	A	0.6
1	110 V	A	0.08
1	220 V	A	0.08
DC-13 L/R - 300 ms			
Contacts in series:		A	
1	24 V	A	0.6
1	60 V	A	0.2
1	110 V	A	0.08
1	220 V	A	0.03
Control circuit reliability	Failure rate	λ	$<10^{-8}$, < one failure at 100 million operations (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)
Conventional thermal current	I_{th}	A	6
Component lifespan			
AC-15			
230 V, I_e = 0.1 A	Operations	x 10^6	7
230 V, I_e = 1.2 A	Operations	x 10^6	1
Short-circuit rating without welding			
Short-circuit protection maximum fuse			
500 V		A fast	4

Magnet systems

Voltage tolerance			
Pick-up voltage		x U_s	
DC operated	Pick-up	x U_c	
	Pick-up	x U_c	0.85 - 1.2
Power consumption			
DC operated	Pull-in = sealing	W	0.6
duty factor		% DF	100
Changeover time at 100 % U_S (recommended value)			
DC operated closing delay		ms	

Switching times, DC operated, max. closing delay		ms	7
DC operated, opening delay		ms	3

Notes

Notes For rated operational current: Making and breaking conditions to DC-13, L/R constant as stated
Max. fuses for short-circuit protection: Transparent overlay "Fuses" for time/current characteristics (please enquire)
For pick-up voltage, DC operated:Pure DC, AC bridge rectifier or smoothed double-wave rectification.
For connection cross section: only use equal cross-sections

Rating data for approved types

Auxiliary contacts			
Pilot Duty			
AC operated			B300

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	0
Heat dissipation per pole, current-dependent	P_{vid}	W	0
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	0.47
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
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			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 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. 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.

Technical data ETIM 8.0

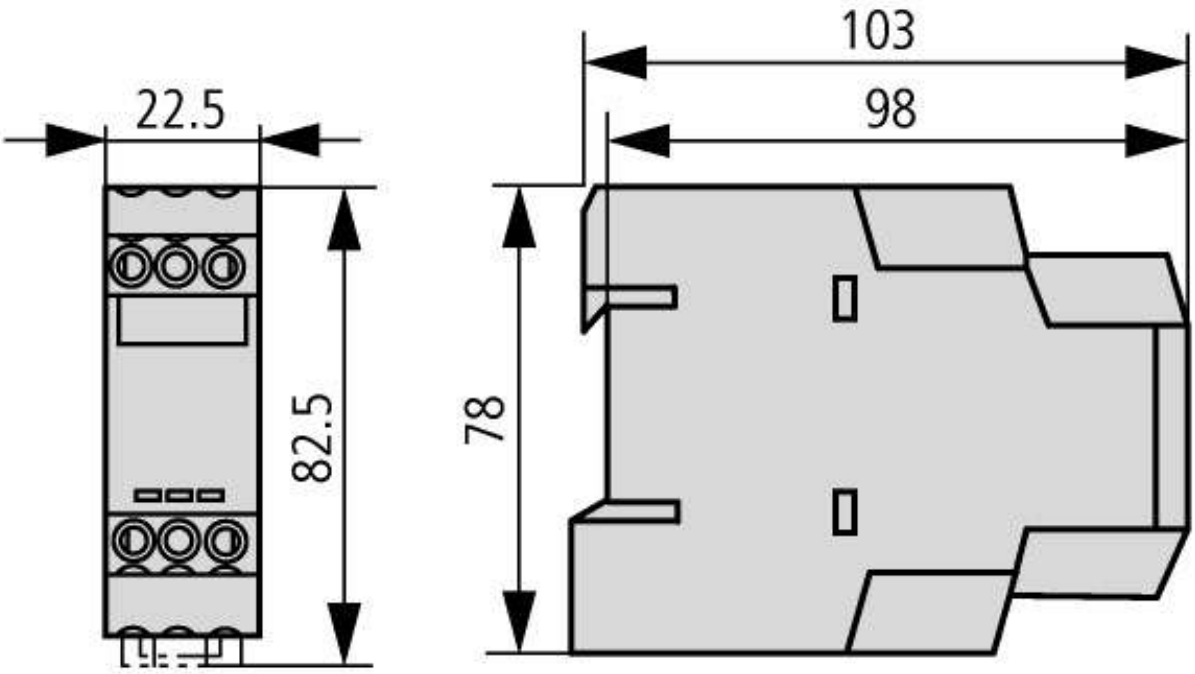
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])			
Rated control supply voltage Us at AC 50HZ		V	0 - 0
Rated control supply voltage Us at AC 60HZ		V	0 - 0
Rated control supply voltage Us at DC		V	24 - 24
Voltage type for actuating			DC
Rated operation current Ie, 400 V		A	2

Connection type auxiliary circuit	Screw connection
Mounting method	DIN rail
Interface	No
Number of auxiliary contacts as normally closed contact	1
Number of auxiliary contacts as normally open contact	1
Number of auxiliary contacts as normally closed contact, delayed switching	0
Number of auxiliary contacts as normally open contact, leading	0
Number of auxiliary contacts as change-over contact	0
With LED indication	Yes
Suitable for manual operation	No

Approvals

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Dimensions



Additional product information (links)

Motor starters and "Special Purpose Ratings" for the North American market	http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf
Switchgear of Power Factor Correction Systems	http://www.moeller.net/binary/ver_techpapers/ver934en.pdf
X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	http://www.moeller.net/binary/ver_techpapers/ver938en.pdf
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	http://www.moeller.net/binary/ver_techpapers/ver944en.pdf
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	http://www.moeller.net/binary/ver_techpapers/ver949en.pdf
Switchgear for Luminaires	http://www.moeller.net/binary/ver_techpapers/ver955en.pdf
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	http://www.moeller.net/binary/ver_techpapers/ver956en.pdf
The Interaction of Contactors with PLCs	http://www.moeller.net/binary/ver_techpapers/ver957en.pdf
Busbar Component Adapters for modern Industrial control panels	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf

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