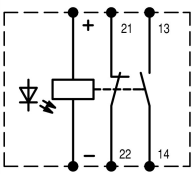




Amplifier module, for separate mounting

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
<b>Instructions</b> 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	$\times 10^6$	30	
Maximum operating frequency			Ops./h	
DC operated	Operations	$\times 10^6$	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		$\text{mm}^2$		
Notes				Only use equal cross-sections.

Solid		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	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 $\leq$ 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	$\lambda$	$<10^{-8}$ , < one failure at 100 million operations
Conventional thermal current	$I_{th}$	A	6
Component lifespan			
AC-15			
230 V, $I_e = 0.1$ A	Operations	$\times 10^6$	7
230 V, $I_e = 1.2$ A	Operations	$\times 10^6$	1
Short-circuit rating without welding			
Short-circuit protection maximum fuse			
500 V		A fast	4

## Magnet systems

Voltage tolerance			
Pick-up voltage		$\times U_s$	
DC operated	Pick-up	$\times U_c$	
	Pick-up	$\times U_c$	0.85 - 1.2
Power consumption			
DC operated	Pull-in = sealing	W	0.6
duty factor		% DF	100

Changeover time at 100 % U <sub>S</sub> (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 <sub>n</sub>	A	0
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0.47
Heat dissipation capacity	P <sub>diss</sub>	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			
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 6.0

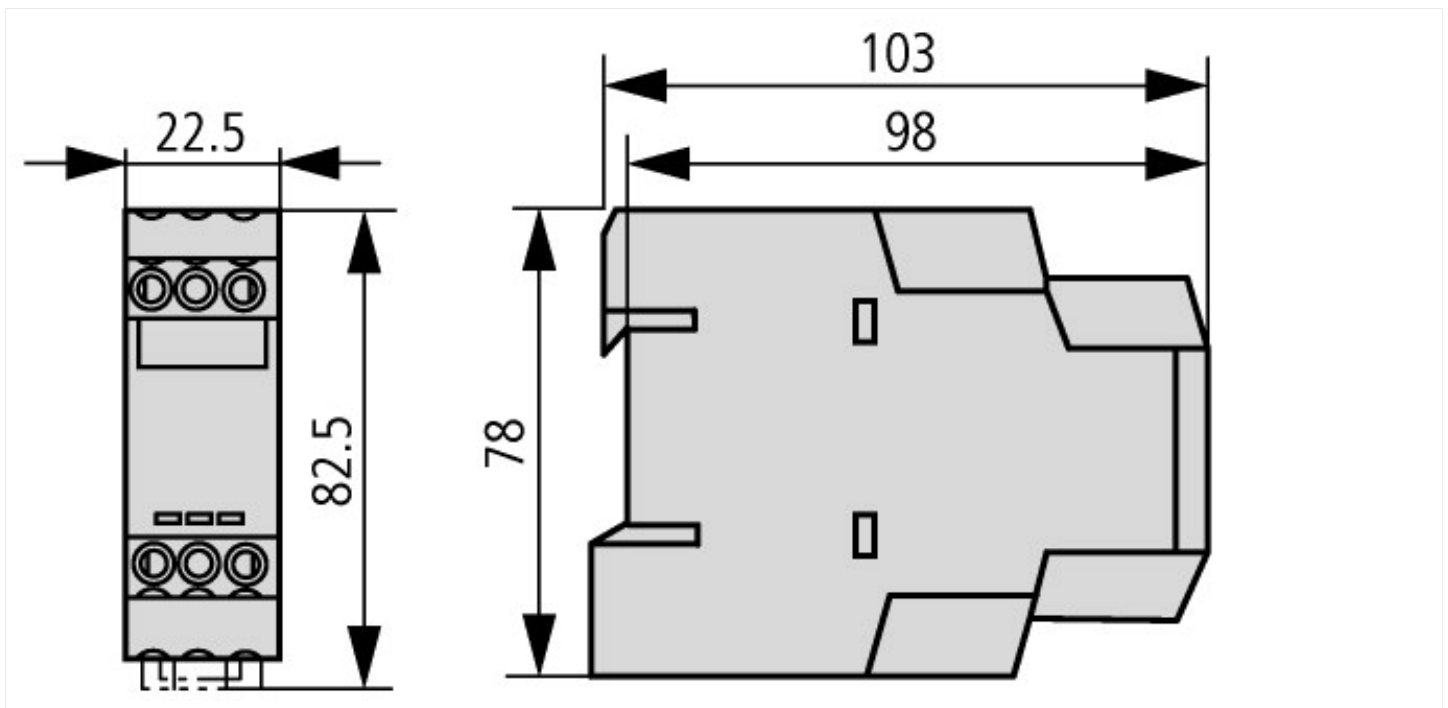
Low-voltage industrial components (EG000017) / Amplifier module for contactor (EC000198)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Amplifier module for contactor (ecl@ss8.1-27-37-10-11 [AKF020010])			
Type of set-up			Separate positioning
With integrated suppressor			Yes

Rated operation current I <sub>e</sub> at DC-13, 230 V	A	0
Rated operation current I <sub>e</sub> at AC-15, 230 V	A	2
Rated control supply voltage U <sub>s</sub> at AC 50HZ	V	0 - 0
Rated control supply voltage U <sub>s</sub> at AC 60HZ	V	0 - 0
Rated control supply voltage U <sub>s</sub> at DC	V	24 - 24
Voltage type for actuating		DC

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