



**Contactor monitoring device, 24 V DC**

**Part no.** CMD(24VDC)  
**Catalog No.** 106170  
**Alternate Catalog No.** CMDTD

**Technical data**

**General**

Standards			IEC/EN 60947-5-1 UL CSA
Lifespan, mechanical			
DC operated	Operations	x 10 <sup>6</sup>	3
Maximum operating frequency		Ops./h	
Motor rating AC-1 500 V	Operations	x 10 <sup>6</sup>	9000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-5 - +50
Storage		°C	-40 - 80
Mounting position			As required
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
N/O contact		g	4
N/C contact		g	4
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Weight		kg	0.13
Terminal capacities		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x (0.5...2.5) 2 x (0.5...1.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5...2.5) 2 x (0.5...1.5)
Solid or stranded		AWG	Single 20 - 14/Double 20 - 16
Stripping length		mm	6
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 <sub>imp</sub>	V AC	800
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U <sub>i</sub>	V AC	100
Rated operational voltage	U <sub>e</sub>	V	24 DC
Short-circuit rating without welding			
Short-circuit protection maximum fuse			
500 V		A gG/gL	2

**Magnet systems**

Voltage tolerance			
Pick-up voltage		x U <sub>s</sub>	
AC operated		V AC	
	Pick-up	x U <sub>c</sub>	0.85 - 1.1
DC operated	Pick-up	x U <sub>c</sub>	

	Pick-up	$x U_c$	0.85 - 1.1
Power consumption			
AC	Sealing	W	4
DC operated	Pull-in = sealing	W	4
duty factor		% DF	100
contact changeover time			
CMD	$t_u$	ms	< 100 ± 20 %

## 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.

## 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	2.29
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°C	-5
Operating ambient temperature max.		°C	50
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 7.0

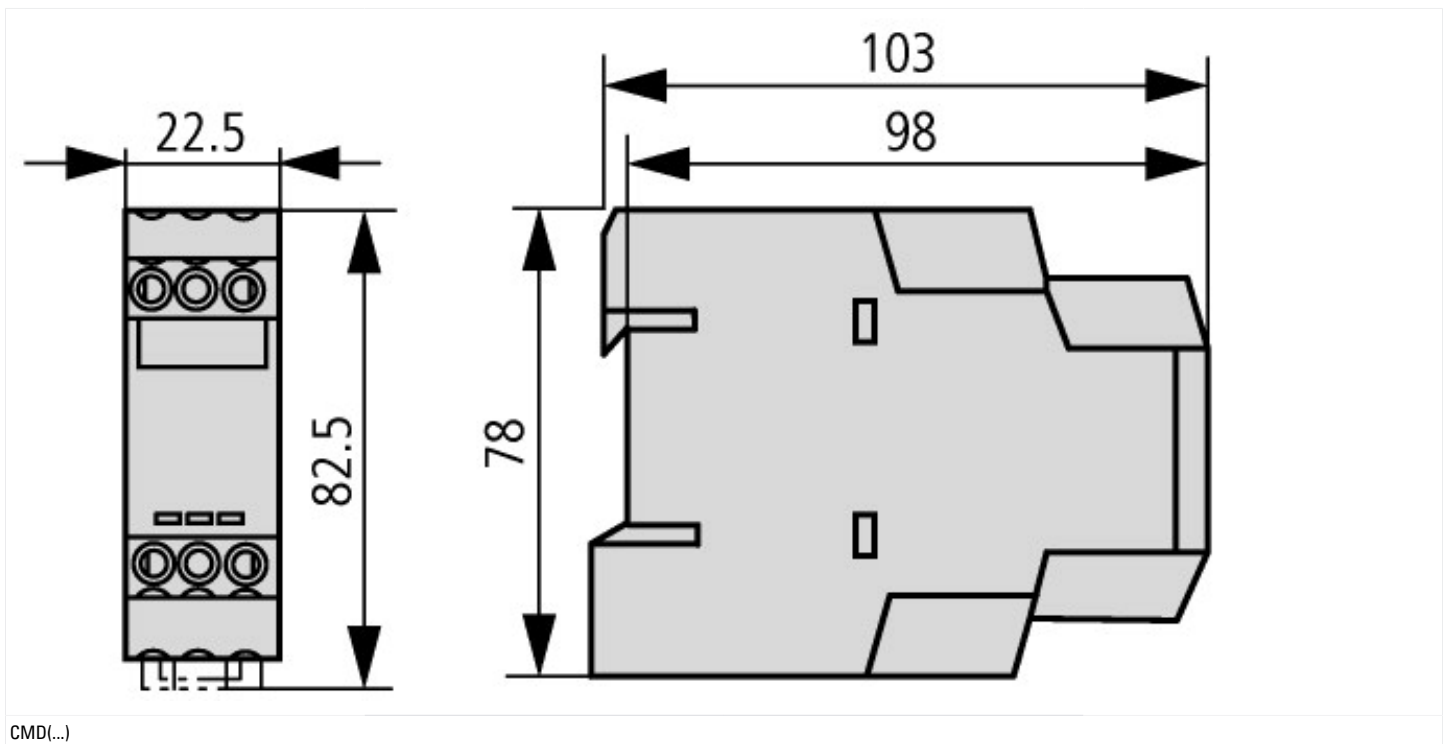
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ec @ss10.0.1-27-37-10-01 [AAB716014])			
Rated control supply voltage $U_s$ at AC 50HZ		V	0 - 0
Rated control supply voltage $U_s$ at AC 60HZ		V	0 - 0
Rated control supply voltage $U_s$ at DC		V	24 - 24

Voltage type for actuating		DC
Rated operation current I <sub>e</sub> , 400 V	A	0
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
With LED indication		Yes
Number of auxiliary contacts as change-over contact		0
Manual operation possible		No

## Approvals

Product Standards		IEC/EN 60947-4-1; CSA-C22.2 No. 14-10; ANSI/UL 508; CE marking
CSA File No.		012528
CSA Class No.		3211-04, 3211-84 (Certified to US Standards)
North America Certification		CSA certified

## Dimensions



## Assets (links)

### Declaration of CE Conformity

00003037

### Instruction Leaflets

IL04913001Z2018\_05

### Manuals

MN121001ZU\_DE\_EN (English)

## Additional product information (links)

<b>IL04913001Z (AWA2441-2321) Contactor monitoring device</b>	
IL04913001Z (AWA2441-2321) Contactor monitoring device	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04913001Z2018_04.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04913001Z2018_04.pdf</a>
<b>MN121001ZU-DE/EN Contactor monitoring device CMD(24VDC)</b>	
MN121001ZU-DE/EN Contactor monitoring device CMD(24VDC) - Deutsch / English	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN121001ZU_DE_EN.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN121001ZU_DE_EN.pdf</a>
circuit diagrams: DOL starters, reversing starters	<a href="http://ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=5.69">http://ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=5.69</a>

