DATASHEET - MFD-AC-R16

I/O module, 100-240VAC, for MFD-AC-CP8, 12DI, 4DO relays

Part no.	**MFD-AC-R16**
Catalog No.	**274093**
EL-Nummer (Norway)	**0004519712**

Powering Business Worldwide™

Delivery program

Supply voltage			100 - 240 V AC
Inputs			
Digital			12
Outputs			
Relay 10 A (UL)			4
Temperature range			
Temperature detector			-
For use with			MFD-AC-CP8…

Technical data

General

Standards			EN 61000-6-1/-2/-3/-4, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27
Dimensions (W x H x D)		mm	89 x 90 x 44
Weight		kg	0.153
Mounting			Fitted into the power supply unit.

Terminal capacities

Solid		mm^2	0.2/4 (AWG 24 - 12)
Flexible with ferrule		mm^2	0.2/2.5 (AWG 24 - 12)
Standard screwdriver		mm	3.5 x 0.6

Climatic environmental conditions

Operating ambient temperature		°C	-25 to 55, cold as per IEC 60068-2-1, heat as per IEC 60068-2-2
Condensation			Take appropriate measures to prevent condensation
Storage		°C	- 40 - 70
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	5 - 95
Air pressure (operation)		hPa	795 - 1080

Ambient conditions, mechanical

Pollution degree			2
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20
Vibrations (IEC/EN 60068-2-6)		Hz	
Constant amplitude 0.15 mm		Hz	10 - 57
Constant acceleration 2 g		Hz	57 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50
Free fall, packaged (IEC/EN 60068-2-32)		m	1
Mounting position			Vertical or horizontal

Electromagnetic compatibility (EMC)

Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)		kV	
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3		V/m	10
Radio interference suppression			EN 55011 Class B, EN 55022 Class B
Burst Impulse (IEC/EN 61000-4-4, Level 3)			
Supply cable		kV	2
Signal lines		kV	2
Power pulses (surge) (IEC/EN 61000-4-5)		kV	2 (supply cables, symmetrical)
power pulses (surge) (IEC/EN 61000-4-5, level 2)		kV	0.5 (symmetrical power lines)

Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10

Insulation resistance

Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance			EN 50178

Power supply

Heat dissipation		W	17

Digital inputs 115/230 V AC

Number			12
Status indication			LCD-display (if present)
Potential isolation			
From power supply			No
Between digital inputs			No
From the outputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes
Rated voltage L (sinusoidal)		V AC	
On 0 signal		V AC	0 - 40
On 1 signal		V AC	79 - 264
Rated frequency		Hz	50 - 60
Input current on 1 signal			
I1 - I12		mA	12 x 0.2 (at 115 V AC, 60 Hz), 12 x 0.5 (at 230 V AC, 50 Hz)
Delay time			
Delay time (0 - 1⁄1 - 0) I1 - I12, 50⁄60 Hz		ms	10⁄100
Max. admissible cable length (per input)		m	
I1 - I12		m	Normally 60

Relay outputs

Number			4
Parallel switching of outputs for increased output			Not permissible
Protection of an output relay			Miniature circuit-breaker B16 or fuse 8 A (slow)
Potential isolation			
From power supply			Yes
From the inputs			No
From the PC interface, memory card NET network, EASY-Link			Yes
Safe isolation according to EN 50178		V AC	300
Basic insulation		V AC	600
Lifespan, mechanical	Operations	x 10^6	10
Contacts			
Conventional thermal current (10 A UL)		A	8
Recommended for load: 12 V AC/DC		mA	> 500
Short-circuit-proof cos φ = 1, characteristic B16 at 600 A		A	16
Short-circuit-proof cos φ = 0.5 to 0.7, characteristic B16 at 900 A		A	16
Rated impulse withstand voltage U_{imp} of contact coil		kV	6
Rated operational voltage	U_e	V AC	250
Rated insulation voltage	U_i	V AC	250
Safe isolation to EN 50178 between coil and contact		V AC	300
Safe isolation to EN 50178 between 2 contacts		V AC	300
Making capacity			
AC-15, 230 V AC, 3 A	Operations		300000
DC-13, 24 V DC, 5 A, 0.1 Hz	Operations		200000
Breaking capacity			
AC-15, 250 V AC, 3 A (600 Ops./h)	Operations		300000
DC-13, L/R ≦ 150 ms, 24 V DC, 1 A (500 S/h)	Operations		200000
Filament bulb load			
1000 W at 230/240 V AC	Operations		25000
500 W at 115/120 V AC	Operations		25000
Fluorescent lamp load			
Fluorescent lamp load 10 x 58 W at 230/240 V AC			

With upstream electrical device	Operations		25000
Uncompensated	Operations		25000
Fluorescent lamp load 1 x 58 W at 230/240 V AC, conventional, compensated	Operations		25000
Switching frequency			
Mechanical operations		x 10^6	10
Switching frequency		Hz	10
Resistive load/lamp load		Hz	2
Inductive load		Hz	0.5
UL/CSA			
Uninterrupted current at 240 V AC		A	10
Uninterrupted current at 24 V DC		A	8
AC			
Control Circuit Rating Codes (utilization category)			B 300 Light Pilot Duty
Max. rated operational voltage		V AC	300
max. thermal continuous current cos φ = 1 at B 300		A	5
max. make/break cos φ ≠ capacity 1 at B 300		VA	3600/360
DC			
Control Circuit Rating Codes (utilization category)			R 300 Light Pilot Duty
Max. rated operational voltage		V DC	300
Max. thermal uninterrupted current at R 300		A	1
Max. make/break capacity at R 300		VA	28/28

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	17
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
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			Meets the product standard's requirements.
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.

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.

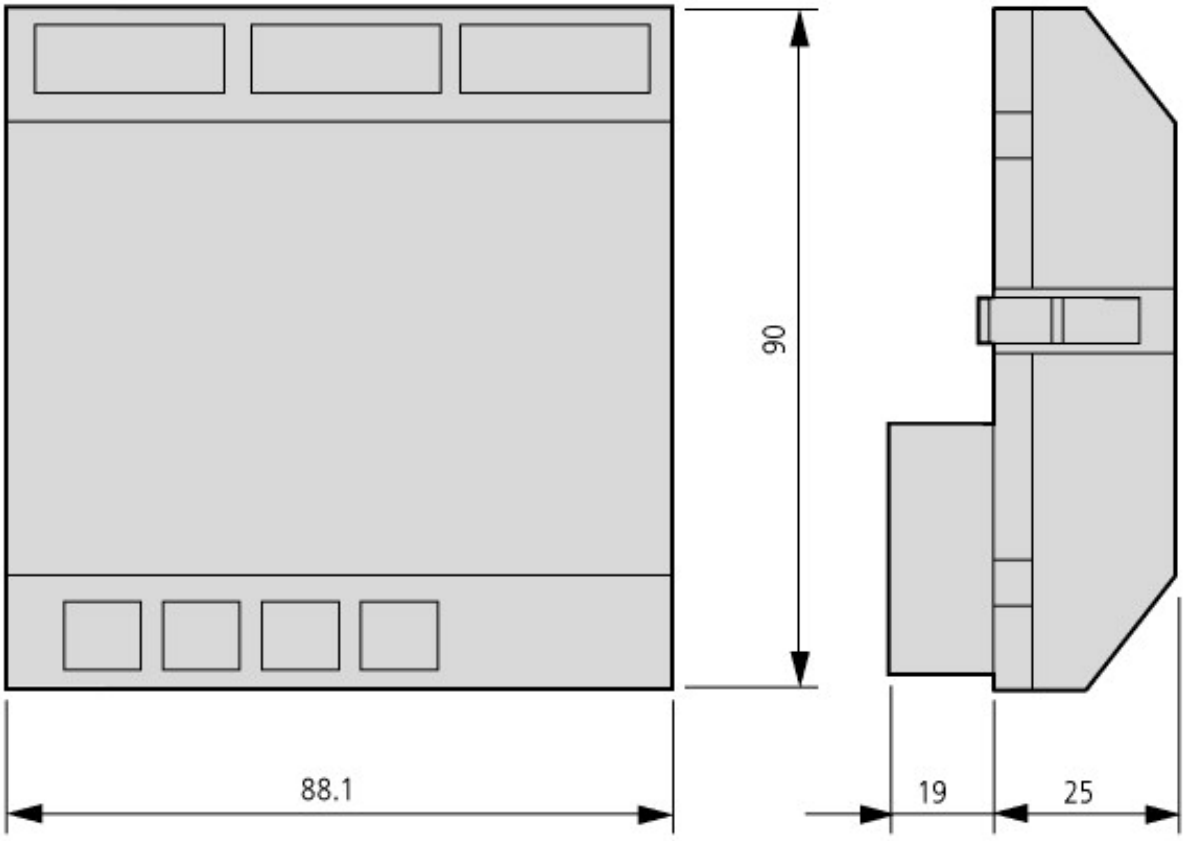
Technical data ETIM 7.0

PLC's (EG000024) / PLC digital I/O-module (EC001419)			
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / SPS digital input/output module (ecl@ss10.0.1-27-24-22-04 [AKE527014])			
Supply voltage AC 50 Hz		V	85 - 264
Supply voltage AC 60 Hz		V	85 - 264
Supply voltage DC		V	0 - 0
Voltage type of supply voltage			AC
Number of digital inputs			12
Number of digital outputs			4
Digital inputs configurable			No
Digital outputs configurable			No
Input current at signal 1		mA	0.5
Permitted voltage at input		V	0 - 0
Type of voltage (input voltage)			AC
Type of digital output			Relay
Output current		A	8
Permitted voltage at output		V	0 - 0
Type of output voltage			AC/DC
Short-circuit protection, outputs available			No
Redundancy			No
Type of electric connection			Spring clamp connection
Time delay at signal exchange		ms	10 - 100
Suitable for safety functions			No
Category according to EN 954-1			
SIL according to IEC 61508			None
Performance level acc. EN ISO 13849-1			None
Appendant operation agent (Ex ia)			No
Appendant operation agent (Ex ib)			No
Explosion safety category for gas			None
Explosion safety category for dust			None
Width		mm	90
Height		mm	44
Depth		mm	89

Approvals

Product Standards			IEC/EN see Technical Data; UL 508; CSA C22.2 No. 142-M1987; CSA C22.2 No. 213-M1987; CE marking
UL File No.			E135462
UL Category Control No.			NRAQ
CSA File No.			012528
CSA Class No.			2252-01 + 2258-02
North America Certification			UL listed, CSA certified
Degree of Protection			IEC: IP20, UL/CSA Type: -

Dimensions



Additional product information (links)

Instruction leaflet "Multi-function display, easy control relays" IL05013014Z (AWA2528-2019)	
Instruction leaflet "Multi-function display, easy control relays" IL05013014Z (AWA2528-2019)	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL05013014Z2018_02.pdf
Manual "MFD-Titan multi-function display" MN05002001Z (AWB2528-1480)	
Handbuch „Multifunktions-Display MFD-Titan“ MN05002001Z (AWB2528-1480) - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002001Z_DE.pdf
Manual "MFD-Titan multi-function display" MN05002001Z (AWB2528-1480) - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN05002001Z_EN.pdf
f1=1454&f2=1179;Labeleditor	http://applications.eaton.eu/sdlc?LX=11&amp