

Type: **MFD-RA17**  
 Article No.: **265364**

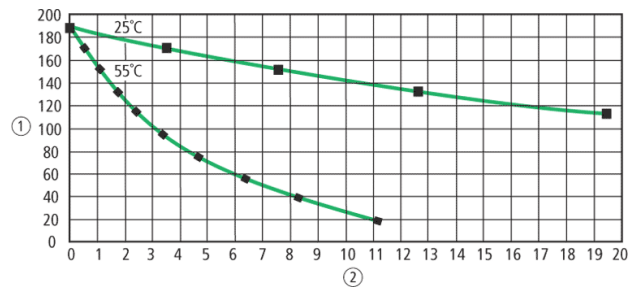


IP20, cage clamp terminals

Ordering information	
Description	12 digital inputs (4 inputs available as analog inputs) 4 relay outputs 1 analog output For MFD-CP8...
Power supply	V DC 24 V DC

**Notes concerning the product group**

Backup of real-time clock (only for appropriate devices)



① Backup time (hours)

② Operating time (years)

<b>General</b>			
Standards			EN 61000-6-1/-2/-3/-4, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27
Weight		kg	0,15
Mounting			Fitted into the power supply unit.
<b>Terminal capacities</b>			
Solid		mm <sup>2</sup>	0.24 (AWG 24 – 12)
Flexible with ferrule		mm <sup>2</sup>	0.22.5 (AWG 24 – 12)
Standard screwdriver		mm	3.5 × 0.6
<b>Climatic environmental conditions</b>			
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
<b>Ambient conditions, mechanical</b>			
Pollution degree			2
Degree of protection (IEC/EN 60529)			IP 20
Vibrations (IEC/EN 60068-2-6)			
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			horizontal, vertical
<b>Electromagnetic compatibility (EMC)</b>			
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)			
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)		V/m	10

Radio interference suppression (EN 55011)			EN 55011 Class B, EN 55022 Class B
Burst pulses (IEC/EN 61000-4-4, level 3)			
Supply cables		kV	2
Signal lines		kV	2
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV	2 (supply cables, symmetrical)
High-energy 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
<b>Insulation resistance</b>			
Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, no. 142
Insulation resistance			EN 50178
<b>Digital inputs 24 V DC</b>			
Number			12
Inputs can be used as analog inputs			4 (I7, I8, I11, I12)
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 operational voltage	$U_e$	V DC	24
On 0 signal	$U_e$	V DC	< 5.0 (I1 – I6, I9 – I10), < 8 (I7, I8, I11, I12)
On 1 signal	$U_e$	V DC	> 15.0 (I1 – I6, I9 – I10), > 8.0 (I7, I8, I11, I12)
Input current on 1 signal			
I1 to I6		mA	3.3 (at 24 V DC)
I7, I8		mA	2.2 (at 24 V DC)
I9, I10		mA	3.3 (at 24 V DC)
I11, I12		mA	2.2 (at 24 V DC)
Delay time from 0 to 1			
Debounce ON		ms	20
Debounce OFF		ms	Normally 0.025 (I1 – I4), normally 0.25 (I5, I6, I9, I10), normally 0.15 (I7, I8, I11, I12)
Delay time from 1 to 0			

Debounce ON		ms	20
Debounce OFF		ms	Normally 0.025 (I1 – I4), normally 0.25 (I5, I6, I9, I10), normally 0.15 (I7, I8, I11, I12)
Cable length (unscreened)		m	100
Frequency counter			
Quantity			4 (I1, I2, I3, I4)
Counter frequency		kHz	< 3
Pulse shape			Square
Pulse pause ratio			1:1
Incremental counter			
Quantity			2 (I1 + I2, I3 + I4)
Counter frequency		kHz	< 3
Pulse shape			Square
Signal offset			90°
Pulse pause ratio			1:1
Rapid counter inputs			
Number			4 (I1, I2, I3, I4)
Counter frequency		kHz	< 3
Pulse shape			Square
Pulse pause ratio			1:1
Cable length, screened		m	< 20
<b>Analog inputs</b>			
Potential isolation			
From power supply			No
From the digital inputs			No
From the outputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes
Input type			DC voltage
Signal range		V DC	0 – 10
Resolution, analog		V	0,01
Resolution, digital		V	0,01
Resolution		Bit	10 (value 0 – 1023)
Input impedance		k	11,2
Accuracy of actual value			
two MFD devices		%	± 3
Within a single device		%	± 2
Conversion time, analog/digital		ms	Every CPU cycle

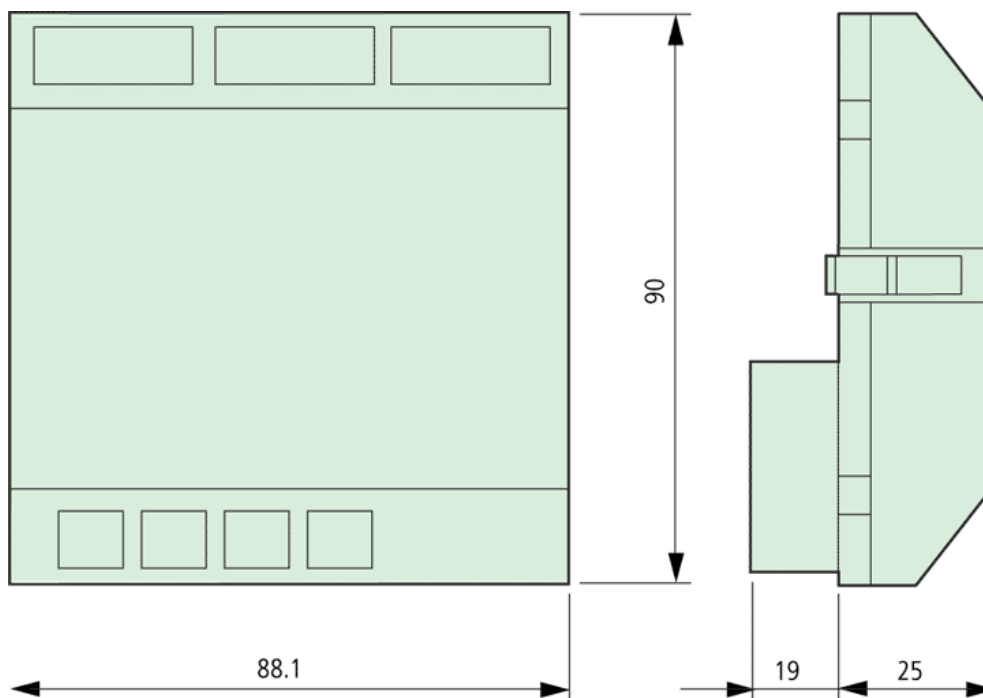
Input current		mA	< 1
Cable length screened		m	< 30
<b>Relay outputs</b>			
Number			4
Parallel switching of outputs for increased output			Not permissible
Protection of an output relay			Miniature circuit-breaker B16 or fuse 8 A (slow)
Potential isolation			
From power supply			Yes
From the inputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes
Safe isolation		V AC	300
Basic insulation		V AC	600
Lifespan, mechanical	Operations	$\times 10^6$	10
Contacts			
Conventional thermal current (10 A UL)		A	8
Recommended for load: 12 V AC/DC		mA	> 500
Short-circuit-proof $\cos \phi = 1$ , characteristic B16 at 600 A		A	16
Short-circuit-proof $\cos \phi = 0.5$ 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, 250 V AC, 3 A (600 Ops./h)	Operations		300000
DC-13 L/R 150 ms 24 V DC, 1 A (500 Ops./h)	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 Ops./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 × 58 W at 230/240 V AC			
With upstream electrical device	Operations		25000
Uncompensated	Operations		25000
Fluorescent lamp load 1 × 58 W at 230/240 V AC, conventional, compensated	Operations		25000
Switching frequency			
Mechanical operations		× 10 <sup>6</sup>	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 uninterrupted current at B 300(RefExtrakt)		A	5
Max. make/break capacity at B 300		VA	3600360
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	2828
<b>Analog outputs</b>			
Number			1
Potential isolation			
From power supply			No
From the digital inputs			No
From the digital outputs			Yes
From the PC interface, memory card NET network, EASY-Link			Yes

Output type			DC voltage
Signal range		V DC	0 – 10
Max. output current		A	0,01
Load resistance			1 k
Overload and short-circuit protection			Yes
Resolution, analog		V DC	0,01
Resolution, digital		Bit	10, (value: 0 – 1023)
Recovery time		µs	100
Accuracy			
-25 °C – 55 °C		%	2
25 °C		%	1
Conversion time			Every CPU cycle

## Dimensions

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