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AC24/R, AC24/SR

TRANSDUCER OF AC CURRENT OR VOLTAGE FOR RAILWAY APPLICATIONS

AC24/R - true RMS value **AC24/SR - average value of sinus waveform**

- **4..20mA loop-powered**
- **signal processing with crest factor of 10**
- **frequency range 40 to 1000Hz**
- **isolation input – output – power supply 4000Vef**
- **measuring range 0-120% of rated input**
- **conversion accuracy < 0,5%**
- **small size**
- **mounting on DIN rail 35**

Converters AC24/R and AC24/SR convert the true RMS or average value of AC signal into a unified current signal 4..20mA. The input signal to current converter separates the measuring transformer. After full-wave rectification, the calculation of RMS value and filtering signal converter create output DC signal. To isolate the voltage input is used transformer. The RMS value is calculated in a monolithic converter made by Analog Devices. Input and output circuit is protected against overload.

The converter is suitable for handling the highly distorted waveform input signáls. It can be used if there are frequency converters or other non-linear control elements in the regulation. When we use average value measuring transducers for the distorted waveforms, error can reach several tens of percent. The fallowing table show a comparison between the average and RMS value for various distorted waveforms.

Waveform	Crest Factor (Vpeak / V RMS)	True RMS Value	Average Value calibrated to RMS of Sine Wave	Error in % of reading
Sine Wave	1,414	0,707	0,707	0%
Symmetrical Square Wave	1,00	1,00	1,11	+11,0%
Triangle Wave	1,73	0,577	0,555	-3,8%
Gaussian Noise	3	0,333	0,295	-11,4%
Rectangular Pulse Train	2 10	0,5 0,1	0,278 0,011	-44% -89%

Converters **AC24/SR** measure the average value of full-wave rectified input signal. They are calibrated in the effective value of the **sinusoidal input signal**.

Electrical specifications:

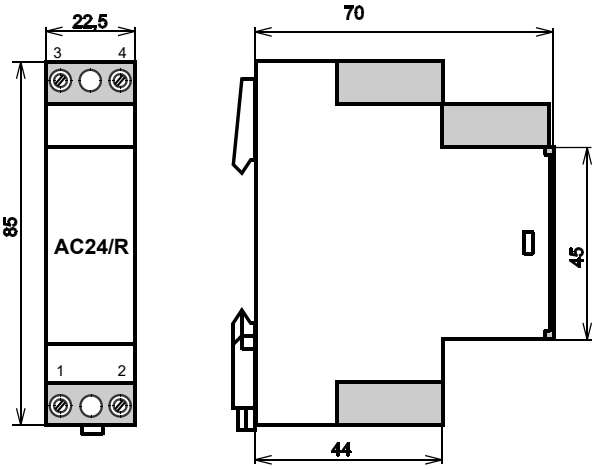
- operating temperature range:		OT4 (-40...+ 70°C)
- storage temperature range:		-40...+ 80°C
- auxiliary power supply:		12..30V DC
- supply without interruption:		class S1 art. 5.2.4
- rated inputs:		1A, 2,5A, 5A AC
		57,7V,100V,110V,230V,380V,400V,500V AC
		65V,115V,127V,265V,440V,460V,600V AC, other to ask
- voltage input current:		max. 0,5mA
- current input consumption:		<0,015VA
- input overload	voltage:	2 Ujm – 1s
	current:	2 Ijm - 1min, 20 Ijm - 1s
- standard measuring range:		0…1Ijm (Ujm), another on order
- maximum measuring range:		0…1,2Ijm (Ujm)
- output signal:		4-20mA Loop-powered
- output current limit:		typ. 28mA (electronic cut-out)
- transfer function maximum error:		0,5% for crest factor< 10:
- temperature error:		< 0,02%/°C
- rated impuls voltage Uni:		8kV
- test voltage:		4000Vef
- time response:		300ms
- weight:		120g
- enclosure	casing:	IP40
	terminals:	IP20
- environment:		pollution level PD1,PD2

- max.working voltage across isolation overvoltage category instalation	isolation level: basic	reinforced
OVI	up $1000V_{RMS}$	up $1000V_{RMS}$
OVII	up $1000V_{RMS}$	up $600V_{RMS}$
OVIII	up $1000V_{RMS}$	up $300V_{RMS}$

Terminal connection:

AC24/R,AC24/SR
1,2…input
3,4…output 4-20mA (plus is 4)

Dimension:



Type test:

ČSN EN 60688 ed.2	Electrical measuring transducers for converting A.C. and D.C. electrical quantities to analogue or digital signals
ČSN EN 61326-1 ed.3	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
ČSN EN 61010-1 ed.2	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
ČSN EN 50155 ed.5	Railway applications - Electronic equipment used on rolling stock
ČSN EN 50124-1 ed.2	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
ČSN EN 61373 ed.2	Railway applications - Rolling stock equipment - Shock and vibration tests
ČSN EN 45545-2+A1	Railway applications - Fire protection on railway vehicles - meets the set of requirements for monitored products according to Table 2 - PCB complies with a set of requirements R24, R25 - the box meets the set of requirements R26 - meets the requirements of HL1, HL2, HL3

Connections:

The terminals accept wires with 2,5mm^2. We recommend using a cable with a minimal cross 0,5mm^2. In the interfering environments use shielded or twisted cable.

Ordering instructions:

Your order should include:
- converter type
- rated input
- unstandard requirements (other power supply, measuring range, frequency for setting …)
- quantity

Likvidaci po ukončení životnosti provést odděleným sběrem.
Rawet s.r.o. je členem sdružení RETELA www.retela.cz

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