RISHABH

Data Sheet

RISH CON-CA/CV

Dual Output Transducer

RoHS CE

Measure Control Record Analyze Optimize

Application

The transducer **RISH CON - CA/CV** (Fig.1) converts a sinusoidal AC Current or AC Voltage into **load independent** DC Current or a **load independent** DC Voltage proportional to the measured value.

Salient Features

- Arithmetical mean value measurement Calibration to RMS with sine waveform (Average Value)
- Accuracy **class 0.2** as per International Standard **IEC/EN 60 688.**
- Wide range Auxiliary Power Supply 60-300 V AC/DC. or 20-40 VAC/20-60 VDC
- **Dual Isolated DC current or DC voltage outputs**
- Output Response Time < 250 ms
- Fast and easy installation on DIN RAIL or onto a wall or in panel using optional screw hole bracket
- Connection Terminal: Conventional Screw type

Product Features

Measuring Input
AC Current/ Voltage input signal , sine wave.

Analog Output (Dual)
Isolated analog output, which can be Voltage or Current.

Accuracy
Output signal accuracy **class 0.2** as per International Standard **IEC/EN 60 688**

LED Indication
LED indication for power ON

Output Response Time
< 250 ms.

Fig. 1. Transducer RISH CON - CA/ CV

Symbols and their meanings

X = Input AC Voltage / AC Current	H/L = Power supply.
Y = Output DC Voltage / DC Current	Y0 = Start value of output DC
Y2 = End value of output DC	U_N = Nominal input voltage.
F_N = Nominal Frequency	I_N = Nominal input current.
R_N = Rated value of output burden	

Mode of Operation

Input signal X is separated from the mains network by using a transformer. The signal is rectified and filtered in rectifier unit. The transformation properties of the measuring transducer are determined in the succeeding characteristics circuit. The isolated output amplifiers transforms the measuring signal into an impressed output signal Y. The circuit is supplied with Auxiliary supply H or L.

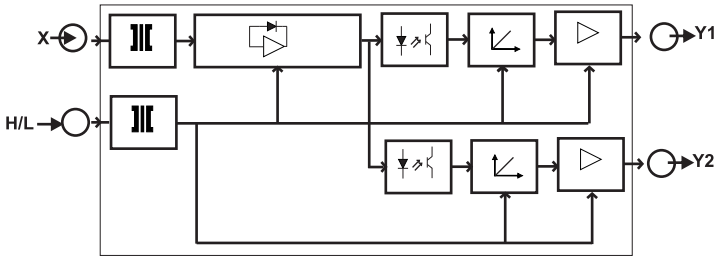


Fig. 2. Block Diagram.

Technical Specifications

Measuring Input X

Voltage Transducer (RISH CON - CV)	
Final value of Nominal input Voltage UN (X2) AC RMS	63.5V ≤ U_N ≤ 500 V.
Nominal Frequency FN	50 or 60 Hz.
Nominal input Voltage burden	< 0.6 VA at U_N.
Overload Capacity	1.2 * U_N continuously, 2 * U_N for 1 second, repeated 10 times at 10 second intervals
Current Transducer (RISH CON - CA)	
Final value of Nominal input Current IN (X2) AC RMS	1 A, 5 A.
Nominal Frequency F_N	50 or 60 Hz.
Nominal input Current burden	< 0.2VA at I_N.
Overload Capacity	1.2 * I_N continuously, 10 * I_N for 3 second, repeated 5 times at 5 minute intervals, 20 * I_N for 1 second, repeated 5 times at 5 minute intervals, 50 * I_N for 1 second.

Measuring Output Y(Dual)

Output type	Load independent DC Voltage/Current.
Load independent DC output (Y)	Calibration to RMS with sine waveform (Average Value) 0...10mA, 0…20mA, 2...10mA, 4…20mA, 0...5V, 0…10V.
Output burden with DC current output Signal	0 ≤ R ≤ 15 V/Y2
Output burden with DC voltage output Signal	Y2/(2 mA) ≤ R ≤ ∞
Current limit under overload R=0	≤ 1.6*Y2 with Current output. ≤ 40 mA with Voltage output.
Voltage limit under R=∞	≤ 1.6*Y2 with Voltage output. ≤ 25 V with Current output.
Residual Ripple in Output signal	≤ 1% pk-pk.
Response Time	< 250 ms.

Auxiliary Supply H/L

Rated operating voltage(for high Aux. supply H)	60...300 V AC/DC
Rated operating range of frequency(for high Aux. supply H)	45...50...60...65 Hz
Power consumption(for high Aux. supply H)	< 5 VA
Rated operating voltage(for low Aux. supply L)	20...40 VAC/20...60 VDC
Rated operating range of frequency(for low Aux. supply L)	45...50...60...65 Hz
Power consumption(for low Aux. supply L)	< 5 VA

Accuracy (Acc. to IEC/EN 60 688)

Accuracy class	0.2

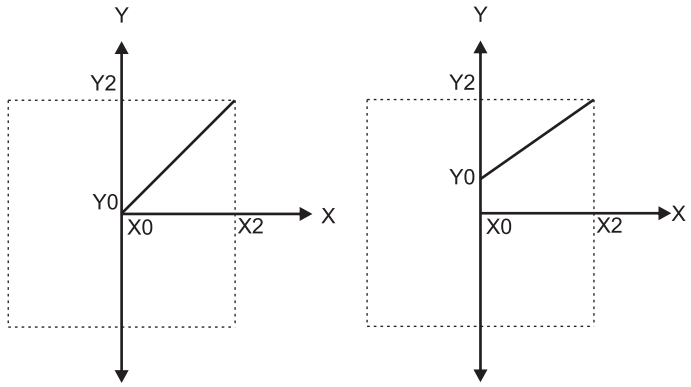
Reference conditions for Accuracy

Ambient temperature	23°C +/- 1°C
Pre-conditioning	30 min acc. to IEC/EN 60 688
Input Variable	Rated Voltage Range / Rated Current Range.
Input waveform	Sinusoidal
Input signal frequency	50....60Hz
Auxiliary supply voltage	230 V AC/DC (for high Aux. supply H) 24 V AC/DC (for low Aux. supply L)
Auxiliary supply frequency	50Hz
Output Load	R_N = 7.5 V / Y2 ± 1%With DC Current output signal. R_N = Y2 / 1 mA ± 1% With DC Voltage output signal.
Miscellaneous	Acc. to IEC/EN 60 688

Additional Error

Temperature influence	± 0.2% /10°C
Influence of Variations	As per IEC/EN 60 688 standard.

Output characteristics



X0 = Start value of input

Y0 = Start value of output

X2 = End value of input=UN/IN

Y2 = End value of output

UN = Nominal input voltage

IN = Nominal input current

Safety

Protection Class	II (Protection Isolated, EN 61 010)
Protection	IP 40, housing according to EN 60 529 IP 20 ,terminal according to EN 60 529
Pollution degree	2
Installation Category	III (At ≤ 300V) II (At > 300V)
Insulation Voltage	7770V DC, Input versus outer surface. 5230V DC, Input versus all other circuits. 5230V DC, Auxiliary supply versus input and output circuits. 690V DC, Output versus output versus each other versus outer surface.

Installation Data

Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. To UL 94, self extinguishing, non dripping, free of halogen.
Mounting position	Rail mounting / wall mounting.
Weight	Approx. 0.2Kg

Connection Terminal

Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	≤ 4.0 mm² single wire or 2 x 2.5 mm² fine wire

Environmental

Nominal range of use	0 °C...23 °C... 45 °C (usage Group II)
Storage temperature	-40 °C to 70 °C
Relative humidity of annual mean	≤ 75%
Altitude	up to 2000 m

Ambient tests

IEC 60 068-2-6	Vibration
Acceleration	± 2 g
Frequency range	10....150...10Hz,
Rate of frequency sweep	1 octave/minute
Number of cycles	10, in each of the three axes
IEC 60 068-2-27	Shock
Acceleration	3 x 50g 3 shocks in each in 6 directions
IEC 61 000-4-2/-3/-4/-5/-6 EN 55 011	Electromagnetic compatibility.

Electrical Connections

Connection	Terminal details	
Measuring input	~ ~	5 6
Auxilliary Power supply	~ , + ~ , -	7 8
Measuring output - 1	+ -	1 2
Measuring output - 2	+ -	3 4

LED Indication

ON LED	Aux.supply healthy condition	Red LED continuous ON

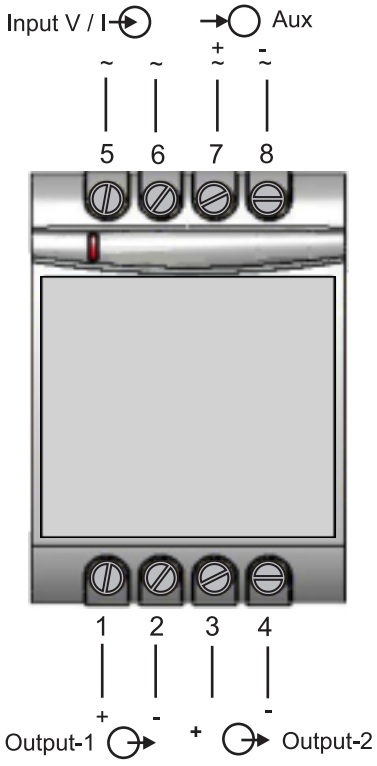
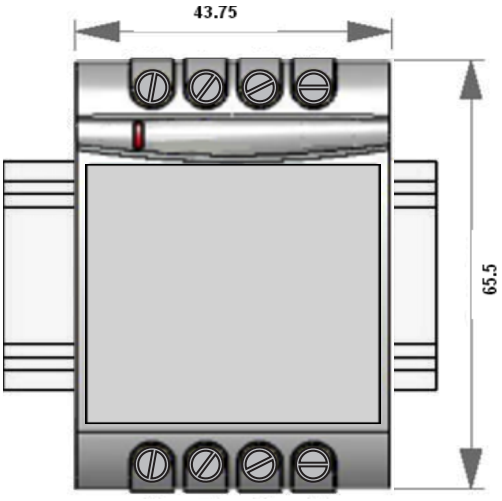
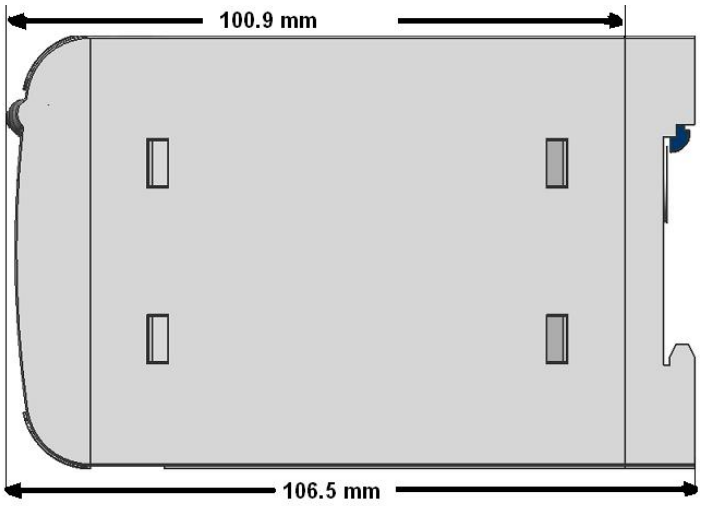


Fig 2.

Fig. 3. RISH CON - CV/CA Connection Diagram.

Dimensions





Note : All Dimensions are in mm.

Fig. 4. RISH CON - CV/CA Dimensions.

Ordering Information

Product Code	CM23-	X	XX	X	XX	XX	00000
Product Type	Rish CON CA	A					
	Rish CON CV	V					
Input Range	1A		62				
	5A		69				
	1.33A*		65				
	0-63.5V		6D				
	0-100V		6J				
	0-110V		6K				
	0-120V		6L				
	0-150V*		6W				
	0-220V*		6Z				
	0-230V		7A				
	0-240V		7B				
	0-250V		7D				
	0-300V		7G				
	0-330V*		7M				
	0-415V		7R				
	0-440V		7S				
	0-450V		7T				
	0-500V		7V				
	0-137.5V*		66				
	0-132.5V*		67				
	0-40V*		6A				
Power Supply	60-300V AC / DC			G			
	20-40V AC/ 20-60V DC			F			
Output Range 1	0-10mA				30		
	0-5mA				31		
	0-20mA				32		
	2-10mA				54		
	4-20mA				55		
	0-5V				5F		
	0-10V				5H		
Output Range 2	0-10mA					30	
	0-5mA					31	
	0-20mA					32	
	2-10mA					54	
	4-20mA					55	
	0-5V					5F	
	0-10V					5H	

*Non standard input range

Ordering Example
CM23-A69G555500000 - Rish CON CA, Input: 5A, Aux 60-300 VAC/DC, Output 1 : 4-20mA, Output 2 : 4-20mA

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