RISHABH

Data Sheet

RISH CON CA/CV

Current / Voltage Transducer

RoHS CE

Measure Control Record Analyze Optimize

Application

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

Product Features

Arithmetical mean value measurement
Calibration to RMS with sine waveform
(Average Value)

Accuracy
Output signal accuracy class 0.2 as per International Standard IEC/EN 60688

Auxiliary Power Supply
1) 40 V-300 V AC/DC or
2) 24 V-60 V AC/DC

Output Response Time < 250 ms

Fast and easy installation on DIN RAIL or onto a wall or in panel using optional screw hole bracket

Measuring Input
AC Current/ Voltage input signal, sine wave

Analog Output
Isolated analog output, which can be Voltage or Current

LED Indication
LED indication for power ON

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 output amplifiers transforms the measuring signal into an impressed output signal Y.
The circuit is supplied with Auxiliary supply H or L.

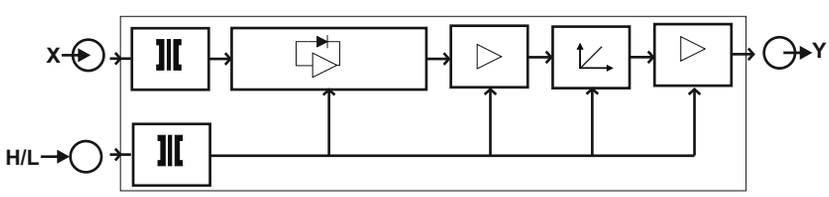
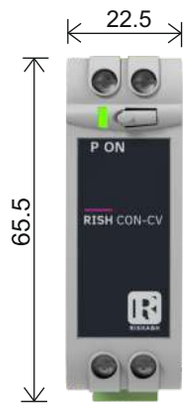


Fig. 1. Block Diagram

Symbols and their meanings:

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

Dimensions Details:



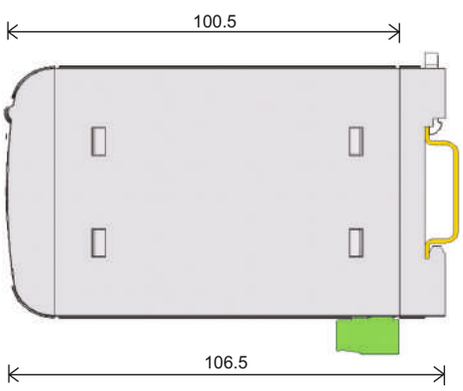


Fig. 2. RISH CON - CV/CA Dimensions

Note : All Dimensions are in mm

Technical Specifications:

Measuring Input X

Voltage Transducer (RISH CON - CV)

Final value of Nominal input Voltage U_N (X2 AC RMS)	63.5V ≤ U_N ≤ 500 V
Nominal Frequency F_N	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 I_N (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

Output type	Load independent DC Voltage/Current
Load independent DC output (Y2)	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 ≤ 25 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)	40...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)	< 4 VA

Electrical Connections:

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

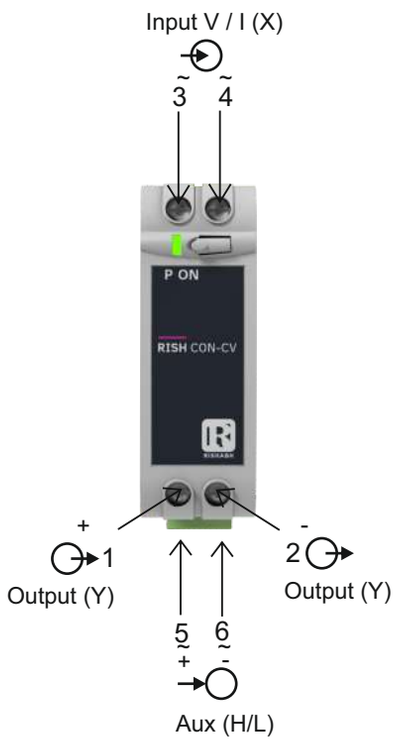


Fig. 3. RISH *CON* - CV/CA Connection Diagram.

LED Indication

ON LED	Aux. supply healthy condition	Red LED continuous ON

Technical Specifications:

Auxiliary Supply H/L

Rated operating voltage (for low Aux supply L)	24...60 V AC/DC ±10%
Rated operating range of frequency (for low Aux. supply L)	40...50...60...400Hz
Power consumption (for low Aux. supply L)	< 3 VA

Accuracy (Acc. to IEC / EN 60688)

Reference Value	Output End Value Y2 (Voltage or Current)
Accuracy class	0.2

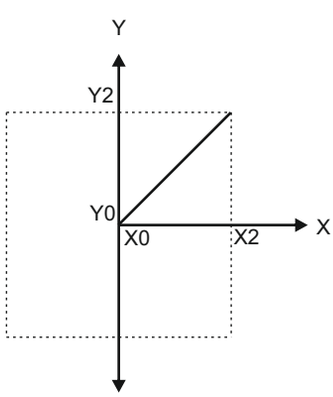
Reference conditions for Accuracy

Ambient temperature	23°C +/- 1°C
Pre-conditioning	30 min acc. to IEC/EN 60688
Input Variable	Rated Voltage Range / Rated Current Range
Input waveform	Sinusoidal
Input signal frequency	50....60Hz
Auxiliary supply voltage	Rated Value ±1%
Auxiliary supply frequency	Rated Value ±1%
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 60688

Additional Error

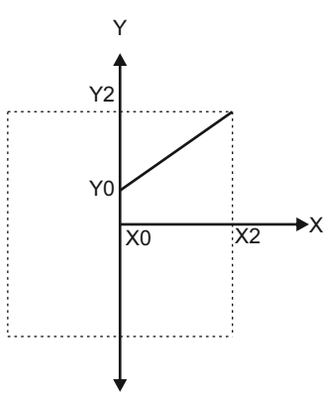
Temperature influence	± 0.2% /10°C
Influence of Variations	As per IEC/EN 60688 standard

Output characteristics



X0 = Start value of input
X2 = End value of input=U_N/I_N
U_N = Nominal input voltage

Output characteristics



Y0 = Start value of output
Y2 = End value of output
I_N = Nominal input current

Technical Specifications:

Safety

Protection Class	II (Protection Isolated, EN 61010)
Protection	IP 40, housing according to EN 60529
	IP 20, terminal according to EN 60529
Pollution degree	2
Installation Category	III
Insulation Voltage	50Hz,1min. (EN 61010-1)
	5500V, Input versus outer surface.
	3700V, Input versus all other circuits.
	3700V, Auxiliary supply versus input and output circuits.

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. 0.12Kg

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 60068-2-6	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 60068-2-27	Shock
Acceleration	3 x 50g, 3 shocks in each in 6 directions
EN 60068-2-1/-2/-3	Cold, Dry heat, Damp heat
IEC 61000-4-2/-3/-4/-5/-6, EN 55 011	Electromagnetic compatibility

Ordering Information

Ordering Information	CM22-	X	XX	X	XX	0000000
Product Type	Rish CON CA AVG	A				
	Rish CON CV AVG	V				
Input Range	0-1A (Only for Rish CON CA)		62			
	0-2A*(Only for Rish CON CA)		65			
	0-5A (Only for Rish CON CA)		69			
	0-8A* (Only for Rish CON CA)		6S			
	0-10A* (Only for Rish CON CA)		8F			
	0-24V*		8G			
	0-30V*		6T			
	0-45V*		6M			
	0-60V*		8E			
	0-63.5V		6D			
	0-75V		6O			
	0-100V		6J			
	0-110V		6K			
	0-115V		6N			
	0-120V		8A			
	0-125V		6L			
	0-130V		6R			
	0-132V		6Q			
	0-132.53V		8C			
	0-133.33V		6P			
	0-135V		8H			
	0-150V		6W			
	0-165V		7Z			
	0-200V		8B			
	0-220V		6Z			
	0-230V		7A			
	0-240V		7B			
	0-250V		7D			
	0-276V		8D			
	0-300V		7G			
	0-330V		7M			
	0-380V		7P			
	0-400V		7Q			
	0-415V		7R			
	0-440V		7S			
	0-450V		7T			
	0-500V		7V			
Auxiliary Supply	24-60VAC/DC			F		
	40-300 AC/DC			G		
Output Range	0-10mA				30	
	0-20mA				32	
	2-10mA				54	
	4-20mA				55	
	0-5V				5F	
	0-10V				5H	

* Non standard input range

Order Code Example : CM22-V7GG320000000 : Rish CON CV AVG, Input 0-300V, Aux 40-300U, Output 0-20mA

Specifications may change without prior notice

Measure Control Record Analyze Optimize

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