



Data Sheet

RISH CON CA / CV (Dual Output)



Measure



Control



Record



Analyze



Optimize

Overview

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

Product Features

Accuracy

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

Arithmetical mean value measurement

Calibration to RMS with sine waveform (Average Value)

Wide range Auxiliary Power Supply

- 1) 60-300 V AC/DC or
- 2) 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

Measuring Input

AC Current / Voltage input signal, sine wave

Analog Output (Dual)

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 isolated output amplifiers transforms the measuring signal into an impressed output signal Y.

The circuit is supplied with Auxiliary supply H or L.

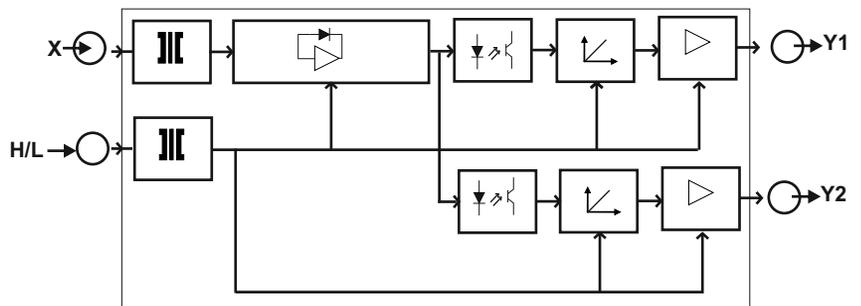


Fig. 1. Block Diagram

Symbols and their meanings:

| | |
|---|--|
| X = Input AC Voltage / AC Current | 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 | |



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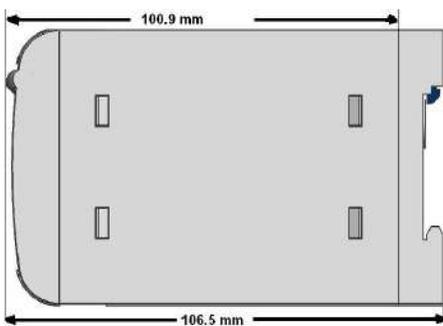
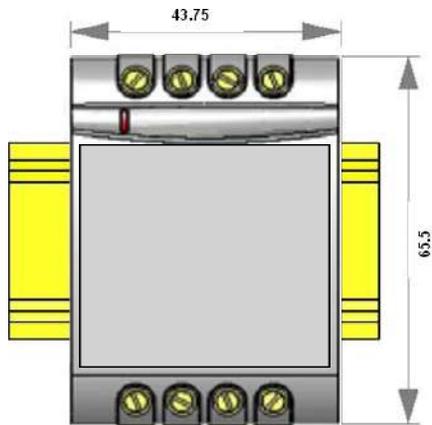


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Dimensions Details:



Note : All Dimensions are in mm

Fig. 2. RISH CON - CA/CV Dimensions

Technical Specifications:

Measuring Input X \rightarrow

Voltage Transducer (RISH CON - CV)

| | |
|---|--|
| Final value of Nominal input Voltage U_N (X2) AC RMS | $63.5V \leq U_N \leq 500 V$ |
| 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 (Dual) \rightarrow

| | |
|---|--|
| 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 | $0 \leq R \leq 15 V/Y2$ |
| Output burden with DC voltage output Signal | $Y2/(2 mA) \leq R \leq \infty$ |
| Current limit under overload $R=0$ | $\leq 1.6*Y2$ with Current output $\leq 40 mA$ with Voltage output |
| Voltage limit under $R=\infty$ | $\leq 1.6*Y2$ with Voltage output $\leq 25 V$ with Current output |
| Residual Ripple in Output signal | $\leq 1\%$ 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) | $< 5 VA$ |



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Electrical Connections:

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

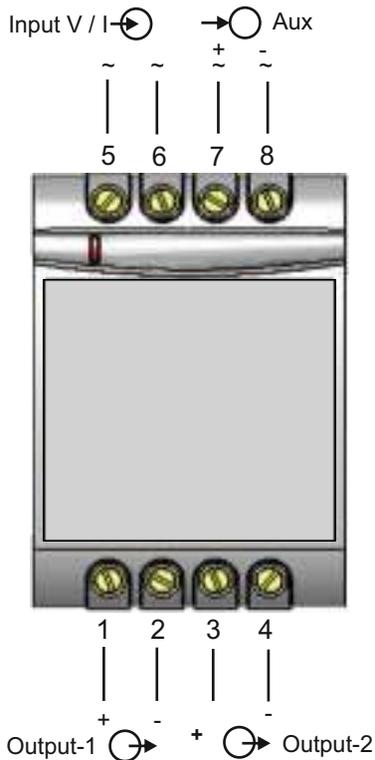


Fig. 3. RISH CON - CA/CV Connection Diagram

LED Indication

| | | |
|--------|-------------------------------|-----------------------|
| ON LED | Aux. supply healthy condition | Red LED continuous ON |
|--------|-------------------------------|-----------------------|

Technical Specifications:

Auxiliary Supply H/L

Rated operating range of frequency (for low Aux. supply L)

20...40 VAC/20...60 VDC

Power consumption (for low Aux. supply L)

45...50...60...65 Hz

Power consumption (for low Aux. supply L)

< 5 VA

Accuracy

Accuracy class (Acc. to IEC / EN 60688)

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

230 V AC/DC (for high Aux. supply H)

24 V AC/DC (for low Aux. supply L)

Auxiliary supply frequency

50Hz

Output Load

$R_N = 7.5 \text{ V} / Y2 \pm 1\%$ With DC Current output signal.

$R_N = Y2 / 1 \text{ mA} \pm 1\%$ With DC Voltage output signal

Miscellaneous

Acc. to IEC/EN 60688

Additional Error

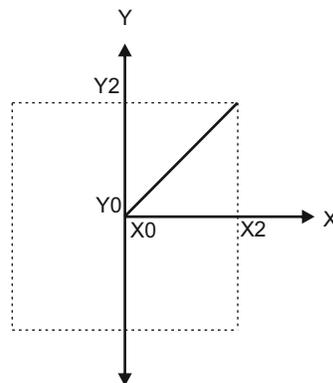
Temperature influence

$\pm 0.2\% / 10^\circ\text{C}$

Influence of Variations

As per IEC/EN 60688 standard

Output characteristics

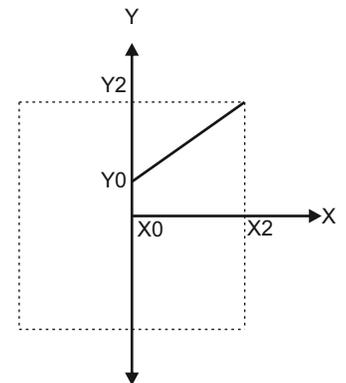


X_0 = Start value of input

X_2 = End value of input = U_N / I_N

U_N = Nominal input voltage

Output characteristics



Y_0 = Start value of output

Y_2 = End value of output

I_N = Nominal input current



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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 (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 mm ² single wire or 2 x 2.5 mm ² 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 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 55011 | Electromagnetic compatibility |



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Ordering Information

| | | | | | | | |
|----------------------|---------------------------------|----|----|---|----|----|-------|
| Ordering Information | CM23- | X | XX | X | XX | XX | 00000 |
| Product Type | Rish CON CA AVG DUAL O/P | A | | | | | |
| | Rish CON CV AVG DUAL O/P | V | | | | | |
| Input Range | 0-1A (Only for Rish CON CA) | | 62 | | | | |
| | 0-5A (Only for Rish CON CA) | | 69 | | | | |
| | 0-1.33A* (Only for Rish CON CA) | | 65 | | | | |
| | 0-40V* | | 6A | | | | |
| | 0-50V* | | 8E | | | | |
| | 0-63.5V | | 6D | | | | |
| | 0-100V | | 6J | | | | |
| | 0-110V | | 6K | | | | |
| | 0-119.56V | | 8F | | | | |
| | 0-120V | | 6L | | | | |
| | 0-125V | | 7U | | | | |
| | 0-130.4V | | 7Y | | | | |
| | 0-132V | | 8C | | | | |
| | 0-132.5V | | 67 | | | | |
| | 0-133.33V | | 7Z | | | | |
| | 0-133V | | 8A | | | | |
| | 0-137.5V | | 66 | | | | |
| | 0-140V | | 6C | | | | |
| | 0-143.5V | | 6B | | | | |
| | 0-150V | | 6W | | | | |
| | 0-159.03V | | 7X | | | | |
| | 0-165V | | 8D | | | | |
| | 0-166.66V | | 8G | | | | |
| | 0-220V | | 6Z | | | | |
| | 0-230V | | 7A | | | | |
| | 0-240V | | 7B | | | | |
| | 0-250V | | 7D | | | | |
| | 0-260V | | 8B | | | | |
| | 0-300V | | 7G | | | | |
| | 0-330V | | 7M | | | | |
| | 0-415V | | 7R | | | | |
| | 0-440V | | 7S | | | | |
| 0-450V | | 7T | | | | | |
| 0-500V | | 7V | | | | | |
| Auxiliary Supply | 20-40VAC/20-60VDC | | | F | | | |
| | 60-300 AC/DC | | | G | | | |
| Output - 1 Range | 0-10mA | | | | 30 | | |
| | 0-5mA* | | | | 31 | | |
| | 0-20mA | | | | 32 | | |
| | 2-10mA | | | | 54 | | |
| | 4-20mA | | | | 55 | | |
| | 0-5V | | | | 5F | | |
| | 0-10V | | | | 5H | | |
| Output - 2 Range | 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

Order Code Example : CM23-V7GF555500000 :

Rish CON CV AVG, Input 0-300V, Aux 20-60U, Output 4-20mA, 4-20mA



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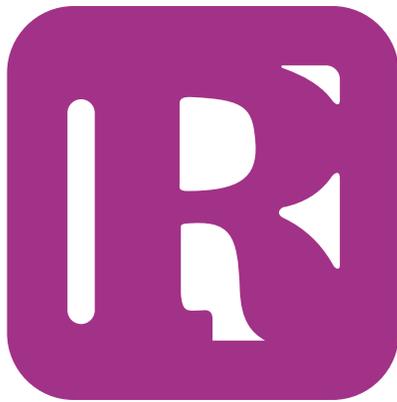
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Specifications may change without prior notice



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RISHABH INSTRUMENTS LIMITED

Domestic (India): +91 253 2202099 | marketing@rishabh.co.in
International: +91 253 2202004/06/08/99 | global@rishabh.co.in
www.rishabh.co.in