

# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage



Fig. 1. RISH Ducer V21 in housing E8 clipped onto a top-hat rail.



Fig. 2 RISH Ducer V21 in housing E8 screw hole mounting brackets pulled out.

## Application

The RISH Ducer IXX / VXX measuring transducer is used to convert a sine - wave or distorted AC current and AC Voltage into an impressed output signal. The output signal is proportional to the root - meansquare value of the input current and Voltage.

## AC Current & AC Voltage Transducers series Rish Ducer IXX / VXX

Very wide range of product to meet the needs of varied applications.

Current : I11 - Average type, Self Powered. (Class 0.5)  
I12 - Average type, Self Powered with dual range input (Class 0.5)  
I21 - True RMS. (Class 0.5)  
I22 - True RMS, (Class 0.2)

Voltage : V11 - Average type, Self Powered. (Class 0.5)  
V21 - True RMS. (Class 0.5)  
V22 - True RMS, (Class 0.2)

## Unique Features

- State of the art products with SMT : Compact & reliable.
- Well proven technology from Gossen Metrawatt Camille Bauer, Germany / Switzerland.
- Meets requirements of International Standard IEC688 for accuracy
- Insulation level of 3.7kV/4kV.
- Impulse withstand voltage 5 kV.
- Higher load capacity : 750 Ohms at 20 mA.
- True RMS models (I21/V21).
- Self Powered models (I1X/V1X)
- Mounting : DIN rail or Panel mounting. Easy "onsite" conversion.
- Response time < 300 mS standard, < 50mS optional.
- Mounting position : Any
- Electrical isolation between all transducer connections.
- Terminal connection : Electricians delight. Even suitable for multistrand or solid wire connection. Large space for lopping of wires.
- Housing : Polycarbonate, Flammability class V-0 acc to UL94, conforming to V0 grade of UL 94. (Self extinguishing, non drip)
- Accuracy class 0.5 as per IEC 688, (I22 & V22 class 0.2.)
- Output short circuit & open circuit proof.
- Option of SMPS supply for wide range of AC / DC supply available.
- Option of SMPS supply for wide range of AC / DC supply available.
- Operating temperature - 10 to +55° C.
- Storage temperature - 40 to +70° C.

## Symbols and their meaning

Symbols	Meaning
X	Measuring input / Input variable
X0	Start value of input voltage
X1	Elbow of input voltage, see Fig. 6 and 7
X2	Final value of input voltage
Y	Measuring output / Output variable
Y0	Start value of output variable
Y1	Elbow of output variable, see Fig. 6 and 7

Symbols	Meaning
Y2	Start value of output variable
H	Power supply
Hn	Rated value of power supply
T	Setting time
Tn	Rated value of setting time
R <sub>ext</sub>	Max. output burden
Rn	Rated value of output burden

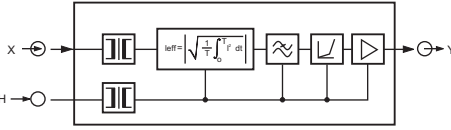
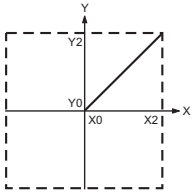
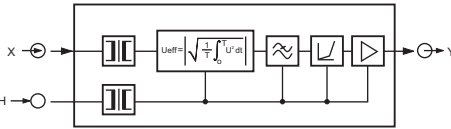
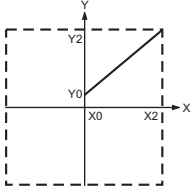
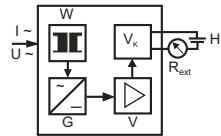
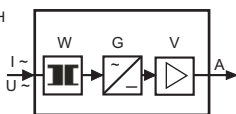
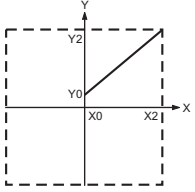
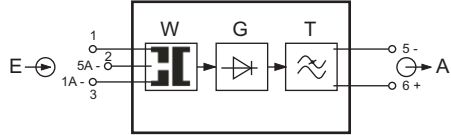
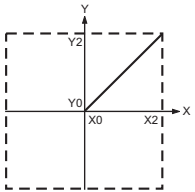


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# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## Mode of Operation

Layout and mode of Operation	Block Diagram	Standard Transformation Characteristics
<p>I21 I22</p> <p>Input signal X is galvanically separated from the mains network using a transformer. The following mathematical expression is then formed using a RMS value Computer</p> $I_{eff} = \sqrt{\frac{1}{T} \int_0^T i^2 dt}$ <p>Following filtration by means of an active filter, the transformation properties of the measuring transducer are determined in the characteristics circuit. The o/p amplifier transforms the measuring signal into an impressed o/p signal Y. The electronic components are supplied with voltage H from the mains supply unit.</p>	 <p><b>Fig. 1.</b> Block Diagram</p>	 <p><b>Fig. 6.</b> Block Diagram Linear curve, characteristics (X0 = 0; Y0 = 0)</p>
<p>V21 V22</p> <p>Input signal X is galvanically separated from the mains network using a voltage transformer. The following mathematical expression is then formed using a RMS value computer.</p> $V_{eff} = \sqrt{\frac{1}{T} \int_0^T u^2 dt}$ <p>Following filtration by means of an active filter, the transformation properties of the measuring transducer are determined in the characteristics circuit. The o/p amplifier transforms the measuring signal into an impressed o/p signal Y. The electronic components are supplied with voltage H from the mains supply unit.</p>	 <p><b>Fig. 2.</b> Block Diagram</p>	 <p><b>Fig. 7.</b> Block Diagram Linear curve, characteristics (X0 = 0; Y0 = 0.2 Y2 )</p>
<p>I11 &amp; V11</p> <p>The Transducer comprises a transformer W, a rectifier unit G and the amplifier V. The measured variable I/U AC is isolated from the electronics by the transformer W, and is rectified and a smoothed in the rectifier unit G. The o/p amplifier V amplifies the resultant signal and converts it into the load-independent DC o/p signal A. The version with live-zero o/p has a 4mA constant current source to provide the zero setting. In the case of 2-wire connection the o/p increases from the zero setting of 4mA with an increase in measured value. The constant current source needs a supply voltage H between 12 and 30 V DC, which may be supply typically from the main installation, the receiving equipments or a separate power pack.</p>	 <p><b>Fig. 3.</b> Block Diagram for transducer with live-zero output &amp; 2-wire connection.</p>  <p><b>Fig. 4.</b> Block Diagram for transducer with unipolar output.</p>	 <p><b>Fig. 7.</b> Block Diagram Linear curve, characteristics (X0 = 0; Y0 = 0.2 Y2 )</p>
<p>I12</p> <p>The Transducer comprises a transformer W, a rectifier unit G and a low-pass filter T. The measured variable is isolated from the electronics by the transformer W, and is rectified and a smoothed in the rectifier unit G.</p>	 <p><b>Fig. 5.</b> Block Diagram</p>	 <p><b>Fig. 8.</b> Block Diagram Linear curve, characteristics (X0 = 0; Y0 = 0)</p>



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## Regulations

Sr. No.	Parameter	I21	I22	V21	V22	I12	I11 & V11
1	Safety Standards	Acc. To IEC 1010					
2	Housing Protection	IP 40 acc. To EN 60 529 Terminals IP 20					
3	Rated Insulation Voltage	Measuring input AC 300 V, Power supply AC 300 V, DC 230V Measuring output DC 40 V				---	---
4	Contamination Level	2				---	---
5	Over voltage Category	III				---	---
6	Protection Class	II				---	---
7	Safe Isolation	Acc. to IEC 1010 and DIN/VDE 106, part 101				---	---
8	Impluse withstand Voltage Acc to IEC 255-4 CI,III:	5 KV 1.2/ 50 sec, 0.5 Ws Common - mode and differential mode between any terminals				---	5 KV 1.2/50 sec, 0.5 Ws Common-mode and differential mode between any terminals
9	Test Voltage	3.7 KV 50 Hz/1 min. between electrically isolated circuits. Measuring output versus housing 0.5 kV/50 Hz/1 min.				Measuring input versus measuring output 3.7 kV, 50Hz, 1 min. Measuring input versus housing 3.7 Kv,50Hz,1 min measuring output versus housing 740V, 50 Hz, 1 min	4 kV/50 Hz/1 min
10	Product Performance	IEC 688,IS 12784					



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# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## General and Measuring Input (Specification available on request)

Parameters		RISH Ducer I21		RISH Ducer I22		RISH Ducer V21		RISH Ducer V22		RISH Ducer I12		RISH Ducer I11 & V11			
General		AC Current Sine or distorted waveforms True RMS value measurement				AC Voltage Sine or distorted waveforms True RMS value measurement				AC current or AC Voltage Sinusoidal arithmetical mean measured, calibration to rms with sine wave form (Average value)					
1 Measured Quantity															
2	Measured Principle	Logarithmic								Rectifier method					
Measuring Input		Current				Voltage				Current		Current and Voltage			
1	Nominal Frequency F <sub>N</sub>	50, 60 or 400 Hz		50, 60 Hz		50, 60 or 400 Hz		50, 60 Hz		50, 60 Hz					
2	Nominal Input *	Current X2 : 1A X2 7.5 A				Voltage X2 : 100 V X2 7.5 A				Current : 1A & 5 A Site configurable		Current I <sub>N</sub> 1A or 5A Voltage V <sub>N</sub> 100 √3 / 110 / 150 / 240 / 415 / 440 V *			
3	Re-calibration of X2	Final value permanently set of final value can be adjusted in range. 0.5.X2 X2				---				---		Range adjustment 0.9...1.1. I <sub>N</sub> resp. U <sub>N</sub> (±10%) (Admissible alternation of full scale output, variable sensitivity, adjustable with potentionmeter)			
4	Own Consumption	< 1 VA at X2								1 VA		At nominal freq. Hz :			
Full o/p Value [mA]												I11 [VA]		V11 [VA]	
1												0.8		0.8	
5												1.8		1.2	
10												2.2		1.5	
20		2.5		1.8											
5	Overload Capacity	Measured Quantity	No. of Appl.	Duration of 1 Appln	Interval between 2 successive appln.	Measured Quantity	No. of Appl.	Duration of 1 Appln	Interval between 2 successive appln.	1.2 X I <sub>N</sub> continuously	Measured Quantity	No. of Appl.	Duration of 1 Appln	Interval between 2 successive appln.	
2 X 2		---	Cont..	---	1.2 X 2	---	Cont..	---	1.5 X I <sub>N</sub>		Cont..	---	---		
10 X 2		5	3s	5 s.	1.5 X 2	10	10s	10 min	2 X I <sub>N</sub>		10	10s	10 s.		
50 X 2®		1	1s	1 h					10 X I <sub>N</sub>		5	3s	5 min		
X2 = Final value, but®max.250 A									40 X I <sub>N</sub>		1	1s	---		
									1.5 X V <sub>N</sub>		Cont..	---	---		
									2 X V <sub>N</sub>		10	10s	10 s		
									4 X V <sub>N</sub>		1	2s	---		

\* Other input available on request



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## Measuring Output

Sr. No.	Parameter	I21	I22	V21	V22	I12	I11 & V11
1	Output Variable Y	Load-independent DC current or DC voltage				DC depends on load	Load - independent DC current I <sub>A</sub> or DC voltage o/p V <sub>A</sub> (not Superimposed)
2	Load independent DC current output range	1 mA    Y2    20 mA				0...5 mA 0...10 mA 0...20mA	0...1/0...5/0...10 or 0...20 mA (4...20mA refer cl. for 2 wire output)
3	O/p burden with DC current o/p signal	0   R   15V/Y2				R <sub>ext</sub> max.[K ] = 15 V/I <sub>AN</sub> [mA] I <sub>AN</sub> = full o/p value	R <sub>ext</sub> max.[K ] = 15 V/I <sub>AN</sub> [mA] I <sub>AN</sub> = full o/p value
4	DC voltage o/p range	1V   Y2   10 V				10 V	O/p V <sub>A</sub> not superimposed : std range of V <sub>A</sub> : 0 ... 10V
5	O/p burden with DC voltage o/p signal	Y2 / 2mA    R <				100 K	Ext resistance   200 k   /v
6	Current limit under overload	1.7 Y2 with current o/p Approx. 20 mA with voltage o/p				3 X I <sub>AN</sub>	1.5 X I <sub>AN</sub> for current o/p Approx. 30 mA for voltage
7	Voltage limit under R <sub>ext</sub> =	40 V with Current o/p 1.7.Y2 with voltage o/p				< 20 V	< 24 V
8	Residual ripple in o/p signal	5% p.p. at setting time 50 ms 0.5% p.p. at setting time 300 ms		5% p.p. at setting time 50 ms and C = 1 5% p.p. + C 0.5% at setting time 50 ms and C > 1 5% p.p. at setting time 300 ms and C > 1		1% p.p at 750 /20 mA	Current ripple   1% p.p.
9	Response time	300 ms standard, 50 ms optional				< 2s	< 300 ms
10	Output Standard Ranges *	Current : 0-1mA/5mA/10mA/20mA/4-20mA Voltage : 0-10V				Current : 0...5 / 0...10 / 0...20 mA Voltage : 0-10V	Current : 0...1/0...5/0...10 or 0...20 mA Voltage : 0-10 V

\* Other input available on request

# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## Accuracy (IEC 688-1 / IS 12784)

Parameter	I21	I22	V21	V22	I12	I11	V11
Reference Value	Output end value Y2					Input end value X2	
Basic Accuracy (for std ranges)	Class 0.5	Class 0.2	Class 0.5	Class 0.2	Class 0.5	Class 0.5	

## Reference Conditions

Parameter	I21	I22	V21	V22	I12	I11	V11
Ambient Temp	23 <sup>0</sup> C, ± 5 k				23 <sup>0</sup> C, ± 1 <sup>0</sup> C	23 <sup>0</sup> C, ± 5 k	
Input Variable	Rated operating range					0 to 100% for current measurement 20 to 100 % for voltage measurement	
Frequency	Fn ± 2%						
Distortion Factor	---				< 0.5%		
External Resistance Current o/p Voltage o/p	Rn = 15 V/Y2 ± 1% Rn = Y2/1 mA ± 1%				Rest. Max - 1% Rest. Min + 1%	O - R ext Max. R ext Max to	
Curve Shape	Sine - Wave						
Shape Factor	1.1107						
Curve Shape	Hn ± 1%				---	± 1% for 24 V DC with 4-20 mA output	
Warm-up Time	5 min.						

## Environmental Condition

Sr. No.	Parameter	I21	I22	V21	V22	I12	I11	V11
1	Climatic Rating	Climate Class 3Z acc. To VDI/VDE 3540						
2	Operating Temperature	-25 to +55 degree C				-10 to +55 degree C	-25 to +55 degree C	
3	Storage Temperature	-40 to +70 degree C						
4	Relative Humidity of Annual Mean	75%					75% Standard Climate Rating 90% Enhanced Climate Rating	
5	Permissible Vibration	2 g acc. To EN 60 068-2-6						
6	Shock	3 x 50 g 3 shocks each in 6 directions						



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I / 04 / I / 1107

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## Influence Effects (maxima) accuracy Included In Basic Error

Sr. No.	Parameter	I21	V21	I22	V22	I12	I11 & V11
1	Linearity Error	< ± 0.1%				< + 0.3%	
2	Frequency	----		----		----	± 0.3% (Fn ± 2%)
3	Dependance on External resistance △ R ext max.	± 0.1%		± 0.1%		± 0.5%	± 0.1%
Additional Error *							
1.	Ambient Temp	Rated Operating Range	Permitted effect factor of precision class	Rated Operating Range	Permitted effect factor of precision class	- 25° c...+ 55° c ± 0.5% 10K	
		+ 10° c...23° c ...40° c	1	Usage group 0...23° c ... 45° c	1		
		+ 0° c...23° c ...55° c	1	+ 10° c...23° c ...55° c	2		
2.	Curve Shape of Input	Rectangle 1:1  Cut-in sine wave 90° (for V21)	1  2	Rectangle 1:1	1	Sine Waveform only	
3.	Frequency of input Variable	40...400 Hz	1	45..65 Hz	1	45...55Hz ± 0.3%	45...200Hz ± 0.5%
		> 400...1000 Hz	2	---	---		
* Other input available on request							



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## Power Supply

Parameter	I21	I22	V21	V22	I12	I11	V11																			
Version with AC Power packs standard voltage :-	<table><tr><td>Rated Value Hn</td><td colspan="3">Rated Operating Voltage</td></tr><tr><td>AC 24 V</td><td colspan="3">22...26V</td></tr><tr><td>AC 110 V</td><td colspan="3">99...121V</td></tr><tr><td>AC 230 V</td><td colspan="3">207...253V</td></tr><tr><td>AC 400 V</td><td colspan="3">360...440V</td></tr></table>				Rated Value Hn	Rated Operating Voltage			AC 24 V	22...26V			AC 110 V	99...121V			AC 230 V	207...253V			AC 400 V	360...440V			---	---
Rated Value Hn	Rated Operating Voltage																									
AC 24 V	22...26V																									
AC 110 V	99...121V																									
AC 230 V	207...253V																									
AC 400 V	360...440V																									
Rated operating range of frequency :	45... <b>50</b> ... <b>60</b> ...65 Hz																									
External Resistance Current o/p Voltage o/p	AC 4 VA at H=Hn DC 4 w	AC 3 VA at H=Hn DC 3 w	AC 4 VA at H=Hn DC 4 w	AC 3 VA at H=Hn DC 3 w																						
Version with AC / DC Power Packs (Dc & 45 -- 400 Hz)	<table><tr><td>Rated Value Un</td><td colspan="3">Permissible Variation</td></tr><tr><td>24...60 V DC/AC</td><td colspan="3" rowspan="2">DC - 15...+33% AC ± 15%</td></tr><tr><td>85...230 V DC/AC</td></tr></table>				Rated Value Un	Permissible Variation			24...60 V DC/AC	DC - 15...+33% AC ± 15%			85...230 V DC/AC	---	---											
Rated Value Un	Permissible Variation																									
24...60 V DC/AC	DC - 15...+33% AC ± 15%																									
85...230 V DC/AC																										
Power consumption	1.4 W resp. 2.7 VA																									
DC Voltage Supply	---				---	12-30 V (only for 2-wire connection with output 4 ...20 mA)																				

## Instillation Data

Sr. No.	Parameter	I21	I22	V21	V22	I12	I11	V11
1	Mechanical Design	Housing 35 mm width (E8)						
2	Material of Housing	Glassfilled polycarbonate, flammability Class V-0 acc. to UL 94, self extinguishing, non-dripping.						
3	Mounting	DIN rail mounting (35 x 15 mm or 35 x 7.5 mm) acc. To EN 50 022 <b>OR</b> Directly onto a wall or panel using to pull-out screw hole brackets (on site conversion possible)						
4	Mounting Position	Any						
5	Electrical Connection	Screw-type terminals with indirect wire pressure, 2 for max. 2 x 2.5 mm <sup>2</sup> or 1 x 6 mm <sup>2</sup>						
6	Weight	Approx. 0.5 Kg					Approx. 0.4 Kg	



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## Special Features (Optional)

### Current & Voltage Transducer

- 2 Wire output with 4-20 mA, for I11 & V11 with 12...30V DC AUX :

#### With 2 wire connection

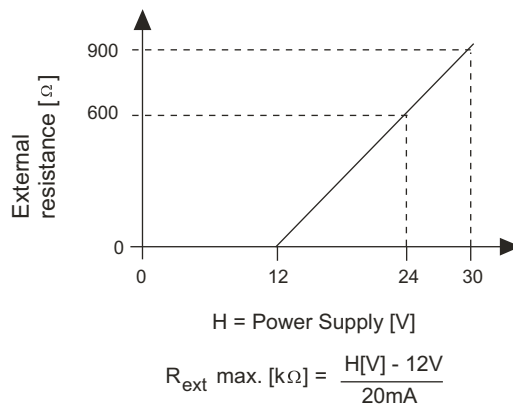


Fig . 9

Standard ranges of  $I_A = 4...20 \text{ mA}$   
 External resistance  $R_{\text{ext}}$  dependent  
 on power supply H (12...30 V DC)

- Response Time <50 ms for I21 / I22 / V21 / V22

- Special Transformation Characteristics :

- Bent Characteristics.  
 Factor c (V21)

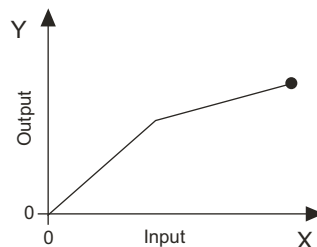


Fig. 10

Linear Curve = 1  
 BENT Curve  
 $c = \frac{1}{1 - \frac{x_1}{x_2}}$  or  $c = \frac{x_2}{x_1}$   
 (the larger value applies)

- Suppressed Initial Range :

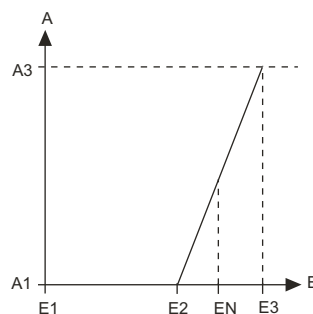


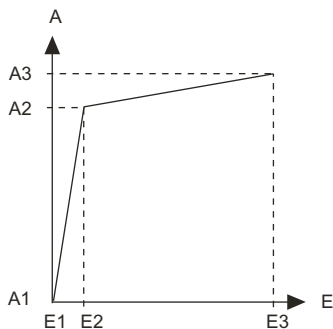
Fig. 11

Characteristic B

"Voltage magnifier in end range".  
 E1...E2 suppressed completely,  
 E2...E3 main measuring range magnified

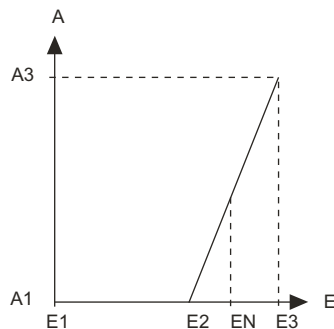
# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## C) Magnified Beginning or End of measuring range :



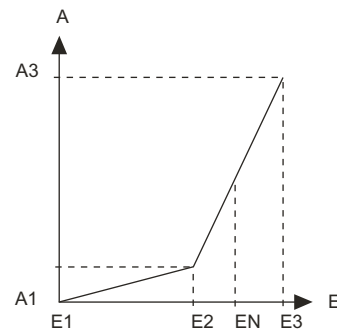
**Fig. 12**

Characteristic D "Main value magnification in initial range".  
E1...E2 (main measuring range) magnified,  
E2...E3 (secondary measuring range) suppressed  
Input Magnification Of Initial range.



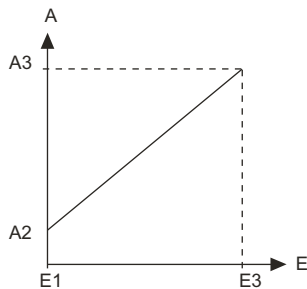
**Fig. 13**

Characteristic B "Current resp. Voltage magnifier in end range".  
E1...E2 suppressed completely,  
E2...E3 (main measuring range) magnified.  
End Value Magnified.



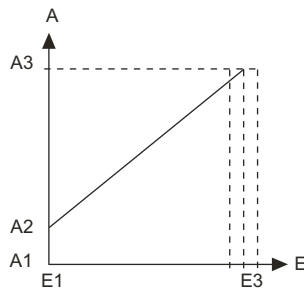
**Fig. 14**

Characteristic C "Main value magnification in end range".  
E1...E2 (secondary measuring range) suppressed,  
E3...E3 (main measuring range) magnified.  
End Value Magnified.



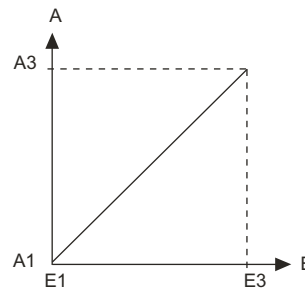
**Fig. 15**

Characteristic A "Standard and live zero."



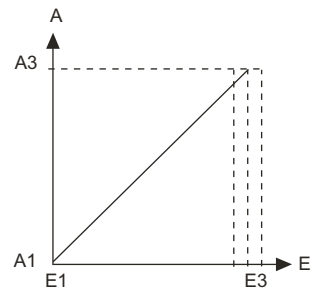
**Fig. 16**

Characteristic A "Standard" Variable sensitivity and live zero.



**Fig. 17**

Characteristic A "Standard"

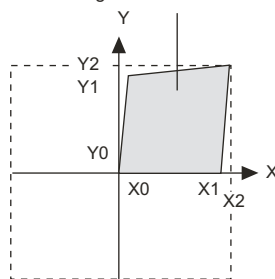


**Fig. 18**

Characteristic A "Standard and variable sensitivity." E3 adjustable by max.  $\pm 5\%$  or  $\pm 10\%$

## 4) Transformation Characteristics (V21) :

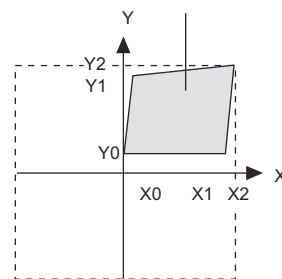
Possible range of elbow X1/Y1



**Fig. 19**

Bent curve, characteristic  
( $X_0 = 0$   $0.05 X_2 \leq X_1 \leq 0.9 X_2$   
 $Y_0 = 0$   $Y_0 \leq Y_1 \leq 0.9 Y_2$ ).

Possible range of elbow X1/Y1



**Fig. 20**

Bent curve, characteristic  
( $X_0 = 0$   $0.05 X_2 \leq X_1 \leq 0.9 X_2$   
 $Y_0 = 0.2 Y_2$   $Y_0 \leq Y_1 \leq 0.9 Y_2$ ).

## 5) Any other input / output / power supply

## 6) Dual Chanel current Transducer

## 7) Dual output current Transducer.

## 8) Input Frequency (if other than 50 Hz)



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# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

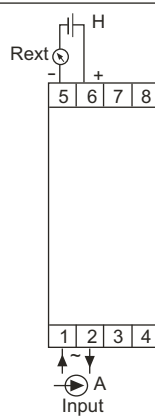
## Electrical Connection



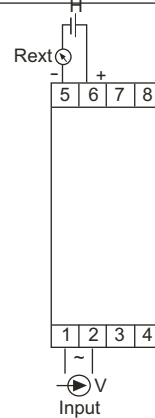
**Fig 21 :** RISHDucer I11 for measuring AC Current



**Fig 22 :** RISHDucer V11 for measuring AC Voltage



**Fig 23 :** RISHDucer I11 as 2-wire converter with 4.. 20 mA output.



**Fig 24 :** RISHDucer V11, as 2-wire converter with 4.. 20 mA output.

I11,V11

Connection	Connecting terminals
Measuring input E $\rightarrow$ 1A~	1 and 3
Measuring input E $\rightarrow$ 5A~	1 and 2
Measuring output A $\rightarrow$	5 - and 6 +

I12

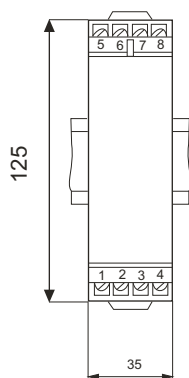
Connection	Terminals
Measuring input $\rightarrow$	~ 1 ~ 3
Measuring Output $\rightarrow$	+ 13 - 14
Power supply $\rightarrow$	~,+ 21 ~,- 22

I21 / I22

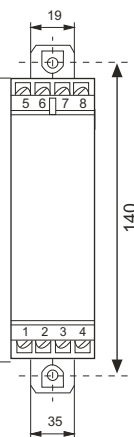
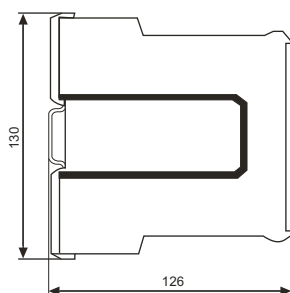
Connection	Terminals
Measuring input $\rightarrow$	~ 2 ~ 5
Measuring Output $\rightarrow$	+ 13 - 14
Power supply $\rightarrow$	~,+ 21 ~,- 22

V21 / V22

## Dimensional Drawing



**Fig 25 :** Transducer in housing E8 clipped onto a top-hat rail (35 x 15 mm or 35 x 7.5 mm acc. to EN 50 022).



**Fig 26 :** Transducer in housing E8 with the screw hole brackets pulled out for wall mounting.



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# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## Specification & Ordering Information for TRMS Model

Sr. No.	Features Selection	Current Transducer	Voltage Transducer
1	Measuring Transducer for AC current/Voltage (RMS value measurement) Accuracy Class 0.5 0.2	I21 <input type="checkbox"/> I22 <input type="checkbox"/>	V21 <input type="checkbox"/> V22 <input type="checkbox"/>
2	Frequency of Input Current Fn = 50 Hz Fn = 60 Hz Fn = 400 Hz	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3	Final Value of Input Current 0...1A ... 7.5 A	<input type="checkbox"/> Specify range	Not applicable
4	Final value of input voltage ** 0...110/ $\sqrt{3}$ ... 500 V * * >300 V; phase-to-phase connection to a 3-phase supply only.	Not applicable	<input type="checkbox"/> Specify range
5	Final value of output signal ** 0...1mA, 5mA, 10mA, 20mA, 4...20mA 0...10V	<input type="checkbox"/> <input type="checkbox"/> Specify range	
6	Linear Characteristics Bent (if applicable) X0 = 0                      0.05.X2 ≤ X1 ≤ 0.9 · X2 Y0 = 0                      Y0 ≤ Y1 ≤ 0.9 · Y2 X0 = 0                      0.05.X2 ≤ X1 ≤ 0.9 · X2 Y0 = 0.2.Y2              Y0 ≤ Y1 ≤ 0.9 · Y2	Not applicable  Not applicable	<input type="checkbox"/> Specify value of X1 & Y1 <input type="checkbox"/> Specify value of X1 & Y1
7	Re-calibration of X2 Final value permanently set Final value can be adjusted in range 0.5 · X2 ≤ X2	<input type="checkbox"/> <input type="checkbox"/> Specify value	Not applicable
8	Response time                      50ms 0.3s (standard)	<input type="checkbox"/> <input type="checkbox"/>	
9	Power Supply AC 22 V...26V AC 99V...121V AC 108V...132V AC 207V...253V AC 360V...440V * DC/AC 24V...60V DC/AC 85V...230V  * > 300V; Phase -to-phase connection to a 3-phase supply only.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

### Note :

Please tick ✓ in appropriate box

Also specify the ranges wherever necessary

\*\* other specifications on request. (Contact to factory)

### I12 model (Class 0.5)

For I12 model 1A/5A input is fixed only specify output signal 0...5 mA, 0...10mA, 0...20mA, 0...10V



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# RISH Ducer IXX / VXX Transducer for AC current / AC Voltage

## Specification & Ordering Information for $V_{11}$ / $I_{11}$ model

Sr. No.	Features Selection	Current Transducer	Voltage Transducer
1)	Measuring Transducer for AC current/Voltage Accuracy class 0.5	$I_{11}$ <input type="checkbox"/>	$V_{11}$ <input type="checkbox"/>
2)	Measuring Range (Measuring Input Current ) ** 0...1A, 0... 5A	<input type="checkbox"/> Specify range	Not applicable
	Measuring Range (Measuring Input Voltage ) ** 0... 110 $\sqrt{2}$ 3 V, 0...500V	Not applicable	<input type="checkbox"/> Specify range
3)	Output Signal (measuring Output A)** 0...1mA, $R_{ext} \leq 15 \text{ k}\Omega$ 0...5 mA, $R_{ext} \leq 3 \text{ k}\Omega$ 0..10mA, $R_{ext} \leq 1.5 \text{ k}\Omega$ 0...20mA, $R_{ext} \leq 750 \Omega$ 4...20mA, 2 wire connection, $R_{ext}$ dependant on power supply (12..30VDC) 0...10V, $R_{ext} \geq 200 \text{ k}\Omega/\text{V}$	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Specify Aux. supply volt DC <input type="checkbox"/>	
4)	Special Feature Without With (Specify separately)	<input type="checkbox"/> <input type="checkbox"/>	

### Note :

Please tick ✓ in appropriate box

Also specify the ranges wherever necessary

\*\* other specifications on request. (Contact to factory)



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