

## AC Line Transducer



- DA Current Transducer
- DV Voltage Transducer
- DW/DVA/DVAR Power Transducer
- DH Frequency Transducer
- DPF Power Factor Transducer



Avg/ True RMS



Aux. Supply



Long Term Stability



Galvanic Isolation



Mounting

Available In 0.25% Accuracy

Masibus manufactures high quality AC Line Transducers of various types to help you manage and conserve electricity. All electrical parameters such as Current, Voltage, Active Power, Reactive Power, Frequency and Power factor can be accurately measured. A corresponding linearized signal is then transmitted for various applications such as SCADA, S/S automation, remote indication etc. Output proportional to measured electrical parameter can be connected further to Controllers, Data-Loggers, PLC's, Analog / Digital Indicators, Recorders for display, analysis or control

AC Line transducer series offers an economical and accurate means of current & voltage measurement on systems where the waveform is a pure sine wave. Transducers are calibrated to true RMS value of the sine wave. They can also be used with distorted waveforms where high accuracy is not required.

AC line transducers are having its application to interface with RTUs. Masibus make transducers are also available with dual output option. It provides accuracy up to 0.25% FS with up to 2 KV isolation. Hardware calibration is done through trim-pot.

All transducers performs with exceptional accuracy, repeatability and reliability. In addition to being most accurate, our transducers are equally preferred by OEMs/ end users to other makes for their excellent stability over a long period of operation. This world class technology now comes to you at a very competitive price.

AC line transducers are available as current, voltage in 1 $\emptyset$  configuration whereas power, frequency & power factor in 1 $\emptyset$  / 3 $\emptyset$  configuration.

### Features

- High accuracy class 0.25%
- Confirms to IEC 60688
- AC Line transducers for all requirements
- Excellent long term stability
- Low burden
- Transient protected
- Good isolation & impulse resistance
- Minimum ripple at the output
- Fast response
- Full power factor range operation
- ABS DIN rail mounting
- Range Available : V / I / W / VAR / PF / F
- mA/mV/V output available
- Average / True RMS

### Applications

- Generating/Transmission Distribution stations
- Building management
- Load Dispatch center
- Power Equipment's OEMs
- HT/LT Panels
- Substation Automation
- SCADA
- Local and Central monitoring systems

# TECHNICAL SPECIFICATIONS: CURRENT/ VOLTAGE TRANSDUCER

AC Current Transducers Specifications		AC Voltage Transducers Specifications	
Input Signal	0-5A, 0-1A, 0-2A	Input Signal	0-150V, 0-90V, 0-300V, 0-450V
Configuration	Single phase	Configuration	Single phase
Output Signal	As per output table-1	Output Signal	As per output table-1
Calibration	Zero & Span of output can be adjusted by Trim pots at the front	Calibration	Zero & Span of output can be adjusted by Trim pots at the front
Load	Refer Output Table-1	Load	Refer Output Table-1
Output Accuracy	±0.25% of full scale	Output Accuracy	±0.25% of full scale
Output Ripple	<0.5% (< 75mV peak)	Output Ripple	<0.5% (< 75mV peak)
Response Time	Up to 90%: <250ms max , Up to 99%: <400ms max	Response Time	Up to 90%: <250ms max , Up to 99%: <400ms max
Temp. Effect	Less than ±0.01% per °C	Temp. Effect	Less than ±0.01% per °C
Isolation	2.5KV AC for one minute	Isolation	2.5KV AC for one minute
	Input/Output1/Output2/Power/case		Input/Output1/Output2/Power/case
Impulse voltage tests	5 kV, 1.2/50 uS as per IEC60688	Impulse voltage tests	5 kV, 1.2/50 uS as per IEC60688
Insulation Resistance	Greater than 200MOhms	Insulation Resistance	Greater than 200MOhms
	Input/Output1/Output2/Power/Case.		Input/Output1/Output2/Power/Case.
Input Burden	Input burden is 0.2 VA at full scale regardless of option	Input Burden	Input burden is 0.6 VA at full scale regardless of option
Weight	400 gms	Weight	400 gms

General specification		Output Table-1	
Operating Temperature	0 to 55°C	<b>Range full Scale</b>	<b>Output load</b>
Humidity	40-90% RH (non condensing)	0 to 1mA	0-10,000 Ohms
Terminations	Metal Screw can accept up to 2.5 mm <sup>2</sup> wire	0 to 3mA	0-3,300 Ohms
Mounting	DIN rail mounting	0 to 5mA	0-2,000 Ohms
Case material	ABS, with fireproofing finish	0 to 10mA	0-1,000 Ohms
Dimension (in mm)	70H x 60W x 112D	4 to 20mA**	0-750 Ohms
Circuit boards	Copper clad laminate FR-4 Grade epoxy glass	0 to 1V	>180 Ohms
Connection	Power/ Input/ Output 1/ Output 2	0 to 5V	>500 Ohms
Class index	0.5	0 to 10V	>1000 Ohms
Usage Group	III (-10°C .....0°C .....45°C .....+55°C)	1 to 5V	>500 Ohms
Pollution Degree	II		
Over voltage Category	CAT I	** For Dual Output load is 0-550Ohms for 4-20mA output.	
Compliance Voltage	18V Max		
Aux. Power Supply	Universal : 90-270VAC,50/60Hz or 110-370VDC DC: 24V DC, 48V DC [±10%]		
Aux. Power Consumption	< 5.0VA For Dual Output / < 4.0VA For Single Output		

## ORDERING CODE (CURRENT TRANSDUCER)

Model	Input	Output	Auxiliary Power Supply	No. of output
<b>DA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
0	0-5A	0 0-1mA	K1 24VDC	S Single
1	0-1A	1 0-3mA	K2 48VDC	D Dual
2	0-2A	2 0-5mA	KU 90-270VAC / 110-370VDC	
		3 0-10mA		
		4 4-20mA		
		6 0-1V		
		7 0-5V		
		8 0-10V		
		9 1-5V		
		S Special		

## ORDERING CODE (VOLTAGE TRANSDUCER)

Model	Input	Output	Auxiliary Power Supply	No. of output
<b>DV</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
0	0-150V	0 0-1mA	K1 24VDC	S Single
1	0-90V	1 0-3mA	K2 48VDC	D Dual
2	0-300V	2 0-5mA	KU 90-270VAC / 110-370VDC	
3	0-450V	3 0-10mA		
		4 4-20mA		
		6 0-1V		
		7 0-5V		
		8 0-10V		
		9 1-5V		
		S Special		

# TECHNICAL SPECIFICATIONS: POWER TRANSDUCER

Technical Specifications		Potential Table				
Type	Watt, VA, VAR	<b>Nominal input</b>	<b>100-120V</b>	<b>63-69V</b>	<b>208-240V</b>	<b>415-480V</b>
Configuration	Three phase, 3 wire, 2 element 3 phase, 4 wire, 3 element	Potential range with accuracy	10-150V	10-90 V	20-300V	30-575 V
Input Voltage	208 to 240 V, 63 to 69 V 100 to 120 V, 415 to 480 V	Maximum burden at nominal input	0.1 VA	0.1 VA	0.1 VA	0.1 VA
Input Current	0 to 5 Amp 0 to 1 Amp	Potential overload continuous	180V	100V	350V	700V
Accuracy	Watt:0.19% of Rdg/Cosφ ±0.01% of FS VAR:0.19% of Rdg/sinφ ±0.01% of FS VA:0.19% of Rdg ±0.01% of FS	<b>Current Table</b>				
Output	Refer Output Table	<b>Input (0-5A)</b>		<b>Input (0-1A)</b>		
Calibration	Hardware - through Trim Pot	Over range with accuracy	10A	2A		
Stability	0.2% per year	Maximum burden	0.5 VA	0.5 VA		
Temperature Co-efficient	± 0.005% per °C	Overload continuous	15A	3A		
Operating frequency	50Hz/60Hz	Overload 10 s/h	30A	6A		
Isolation	2 KV AC for one minute Input/Output1/Output2/Power/case	Overload 1 s/h	200A	100A		
Surge Withstand	EN61000-4-5	<b>Output Table</b>				
Insulation Resistance	Greater than 200MOhms Input/Output1/Output2/Power/Case.	<b>Range full Scale</b>	<b>Output load</b>			
Response Time	Up to 90%: <250ms max , Up to 99%: <400ms max	0 to ±1 mA	0-10000 Ohms			
Calibration	Zero & Span of output can be adjusted by Trim pots at the front	0 to ±3 mA	0-3000 Ohms			
Operating frequency	Nominal ± 10%	0 to ±5 mA	0- 2000 Ohms			
		0 to ±10 mA	0- 1000 Ohms			
		4 to 20 mA Unidirectional	0- 750 Ohms**			
		0 to ±100 mV	>20 Ohms			
		0 to ±1 V	>200 Ohms			
		0 to ±5 V	>1000 Ohms			
		0 to ±10 V	>2000 Ohms			
		1 to 5 V	>1000 Ohms			
		<b>Standard Calibration of watts.VAR,VA per element</b>				
		A\V	100-120V	208-240V		
		0-5A	500	1000		
		0-1A	100	200		
		**For Dual Output Load is 0-550 Ohms for 4-20mA output				
<b>General specification</b>						
Operating Temperature	0 to 55°C					
Humidity	30-95% RH (non condensing)					
Terminations	Metal Screw can accept up to 2.5 mm <sup>2</sup> wire					
Mounting	DIN rail mounting					
Case material	ABS, with fireproofing finish					
Dimension (in mm)	70H x 100W x 112D					
Circuit boards	Copper cladded laminate FR-4 Grade epoxy glass					
Connection	Power/ Input/ Output 1/ Output 2					
Class index	0,5					
Usage Group	III (-10°C .....0°C .....45°C .....+55°C)					
Pollution Degree	I					
Over voltage Category	CAT I					
Compliance Voltage	18V Max					
Aux. Power Supply	Universal : 90-270VAC,50/60Hz or 110-370VDC DC: 24V DC, 48V DC [±10%]					
Aux. Power Consumption	< 6.0VA For Dual Output / < 5.0VA For Single Output					

## Ordering code

Model	Configuration	Input nominal Voltage	Input Current	Output	Auxiliary Power Supply	No. of output							
<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>							
<b>DW</b>	Watt	30	3-element (3-ph, 4 wire)	0	100 to 120 V	0	0 to 5 A	0	0 to ±1 mA	K1	24VDC	S	Single
<b>DVA</b>	VA	20	2 element (3ph, 3 wire)	1	63 to 69 V	1	0 to 1 A	1	0 to ±3 mA	K2	48VDC	D	Dual
<b>DR</b>	VAR			2	208 to 240 V			2	0 to ±5 mA	KU	90-270VAC / 110-370VDC		
				3	415 to 480 V			3	0 to ±10 mA				
				4				4	4 to 20 mA				
				5				5	0 to ±100 mV				
				6				6	0 to ±1 V				
				7				7	0 to ±5 V				
				8				8	0 to ±10 V				
				9				9	1 to 5 V				
				X				X	Special				

**Note:** Configuration 30 - 3-element(3-ph, 4 wire) will have Input nominal Voltage 1- 63 to 69 or 2-208 to 240 V only  
Configuration 20 - 2-element(3-ph, 3 wire) will have Input nominal Voltage 0- 100 to 120 or 3-415 to 480 V only

## SPECIAL CALIBRATION INSTRUCTIONS

Please specify: 1. CT Ratio 2. PT Ratio 3. Desired Full Scale Calibration in kW, kVAR, kVA

# TECHNICAL SPECIFICATIONS: FREQUENCY & POWER FACTOR TRANSDUCER

Frequency Transducer		Power Factor Transducer	
Accuracy	0.05% of Center Frequency	Accuracy	0.25% of FS ( @25°C + 2 °C)
Temp. Co-efficient	200ppm typical	Temp. Co-efficient	200ppm typical
Power factor range	Any	Power factor range	Any,PF as selected by part no.
Operating Voltage Range	-30% +25% of Nominal	Output ripple peak	<0.5% of full scale
Burden	1.5 VA(most options)	Burden	Current :0.5 VA(most options) Voltage:3.5 VA nominal
Isolation	2 KV AC for one minute Input/Output1/Output2/Power/case	Isolation	2 KV AC for one minute Input/Output1/Output2/Power/case
Insulation Resistance	Greater than 200MOhms Input/Output1/Output2/Power/Case.	Insulation Resistance	Greater than 200MOhms Input/Output1/Output2/Power/Case.
Response Time	Up to 90%: <250ms max , Up to 99%: <400ms max	Overload	Current:3x F.S cont.,250 A for 1 s/hr. Voltage:1.2 x F.S cont
Calibration	Zero & Span of output can be adjusted by Trim pots at the front	Response Time	Up to 90%: <250ms max , Up to 99%: <400ms max
General specification		Output Table	
Operating Temperature	0 to 55°C	<b>Range full Scale</b>	<b>Output load</b>
Humidity	30-95% RH (non condensing)	0 to 1 mA	0-10000 Ohms
Terminations	Metal Screw can accept up to 2.5 mm <sup>2</sup> wire	0 to ±1 mA	0-10000 Ohms
Mounting	DIN rail mounting	0 to ±0.5 mA	0-20000 Ohms
Case material	ABS, with fireproofing finish	0 to ±50 mV	>10 Ohms
Dimension (in mm)	70H x 100W x 112D	0 to ±100 mV	>20 Ohms
Circuit boards	Copper clad laminate FR-4 Grade epoxy glass	0 to ±1 V	>200 Ohms
Connection	Power/ Input/ Output 1/ Output 2	0 to ±10 V	>2000 Ohms
Class index	[0.5]	1 to 5 V	>1000 Ohms
Usage Group	III (-10°C .....0°C .....45°C .....+55°C)	4 to 20 mA**	0-750 Ohms
Pollution Degree	I	0 to ±10 mA	0-1000 Ohms
Over voltage Category	CAT I		
Compliance Voltage	18V Max		
Aux. Power Supply	Universal : 90-270VAC,50/60Hz or 110-370VDC DC: 24V DC, 48V DC [±10%]		
Aux. Power Consumption	< 10.0 VA		
		**For Dual Output Load is 0-550 Ohms for 4-20mA output	

## ORDERING CODE (FREQUENCY TRANSDUCER)

Model	Center frequency	Frequency Span		Nominal Input Voltage	Output	Auxiliary Power Supply	No of output						
		(50/60Hz)	(400 Hz)										
DH	X	X		X	X	X	X						
	4	400 Hz	1	± 1 Hz	± 10 Hz	0	120 VAC	0	0 to 1 mA	K1	24VDC	S	Single
	5	50 Hz	2	± 2 Hz	± 20 Hz	1	69 VAC	1	0 to ±1 mA	K2	48VDC	D	Dual
	6	60 Hz	3	± 3 Hz	± 30 Hz	2	240 VAC	2	0 to ±0.5 mA	KU	90-270VAC / 110-370VDC		
	X	Special	4	± 4 Hz	± 40 Hz	X	Special	3	0 to ±50 mV				
			5	± 5 Hz	± 50 Hz			4	0 to ±100 mV				
			6	± 6 Hz	± 60 Hz			5	0 to ±1 V				
			7	± 7 Hz	± 70 Hz			6	0 to ±10 V				
			8	± 8 Hz	± 80 Hz			7	1 to 5 V				
			9	± 9 Hz	± 90 Hz			8	4 to 20 mA				
			0	± 10 Hz	± 100 Hz			9	0 to ±10 mA				
			X	Special	Special			X	Special				

## ORDERING CODE (POWER FACTOR TRANSDUCER)

Model	Nominal Input Voltage		Nominal Input Current		Power factor code		Output	Auxiliary Power Supply	No of output			
	X		X		X							
DPF	X		X		X		X	X	X			
	0	120V	0	1-5A	0	± 1.0	0	0 to 1 mA	K1	24VDC	S	Single
	2	240V	1	0.2-1A	1	± 0.7	1	0 to ±1 mA	K2	48VDC	D	Dual
	X	Special	X	Special	2	± 0.5	2	0 to ±0.5 mA	KU	90-270VAC / 110-370VDC		
					3	± 0.3	3	0 to ±50 mV				
					4	± 0.2	4	0 to ±100 mV				
					X	Special	5	0 to ±1 V				
							6	0 to ±10 V				
							7	1 to 5 V				
							8	4 to 20 mA				
							9	0 to ±10 mA				
						X	Special					

**Note:** When you select PF +0.3,output 4 mA comes at PF -0.7,12mA comes at PF 1 & 20 mA comes at PF +0.7  
When you select PF +0.7,output 4 mA comes at PF -0.3,12mA comes at PF 1 & 20 mA comes at PF +0.3