

Series 2000 : Power Line Transducers

2010 AC Current Transducer

2020 AC Voltage Transducer

2030 Line Frequency Transducer

Measuring your Electrical Parameters



2010 AC Current Transducer



2020 AC Voltage Transducer



2030 Line Frequency Transducer

Introduction

Adept offers Series 2000 Power Line Transducers for measuring parameters like AC Current, AC Voltage and Line Frequency. These Transducers provide galvanically isolated load independent output proportional to the input parameter range. Standardisation of output assures complete compatibility with the most recording, indicating, telemetering and control equipments. It also reduces maintenance and inventory problems. Use of latest circuit techniques and quality components ensures reliable operation over long periods.

Adept Transducers are widely used in application areas where accurate and reliable monitoring of AC electrical parameters is essential such as Power Utilities, State Electricity Boards, Steel, Cement, Chemicals, Fertilizers, and Petrochemicals.

Salient Features

- Fully solid state compact design
- State of Art circuit techniques
- Rugged to withstand harsh environments
- Wide selection of input voltage and current
- Choice of standardised load independent output
- Complete galvanic isolation between Input, Output, Auxiliary Supply
- DIN Rail, Panel Wall mounting
- High long term stability and reliability

Applications

- Electrical Utilities
- Motor and Power Control Circuits
- Process Monitoring and Control Energy Management
- Feedback Control Elements
- Panel Monitoring, Recording and Supervisory Control and Data Acquisition
- Telemetering
- Power Generation, Transmission and Distribution
- Captive Power Plants

Specifications

Transducer Types	AC Current	AC Voltage	Line Frequency
Measuring Range	0 - I _{in} 0 - I _{in} - 6 x I _{in}	0 - V _{in}	45 - 55 Hz 40 - 60 Hz 350 - 450 Hz
Nominal Input Current (I _{in})	1, 5 A AC	—	—
Input Current Range	0 - 100% of I _{in}	—	—
Nominal Input Voltage (V _{in})	—	63.5, 110, 240, 415 V AC	63.5, 110, 240, 415 V AC
Input Voltage Range	—	0 - 100% of V _{in}	80 - 100% of V _{in}
Input Frequency	50, 60 and 400 Hz ± 10%		
Input Current Burden	0.5 VA	—	—
Input Voltage Burden - For Aux. Powered Transducers - For Self Powered Transducers	—	0.5 VA	0.5 VA 4 VA
Continuous Overload Capacity	2 x I _{in}	1.2 x V _{in}	1.2 x V _{in}
Momentary Overload Capacity	40 x I _{in} for 1 Second	2 x V _{in} for 1 Second	2 x V _{in} for 1 Second
Output Load Resistance (R _{out}) - For Current Output - For Voltage Output	Max. 10V / I _{out} (Optional Max.15 V / I _{out}) 10 KOhm (min)		
Output Ripple	Less than 0.5% of Span (Peak to Peak)		
Response Time	Less than 500 mSec. (Standard) or 200mSec. (On request)		
Accuracy Class under Ref. Conditions	± 0.2% and ± 0.5% of Span		
Auxiliary Supply Burden	Less than 4 VA		
Operating Temperature	0 - 55°C, 95% RH Non-Condensing		
Effect of Ambient Temperature	Less than 0.03% of Span per °C		
Isolation Test Voltage between Input / Output / Aux. Supply	2 KV AC , 50 Hz for 1 min. (Optional 4KV AC, 50 Hz for 1 min)		Isolation between Outputs on request
Insulation Resistance	More than 100 MOhms at 500 V DC		
Impulse Voltage Test	5 KV AC having waveform of 1.2 / 50µSeconds		
Zero, Span Adjustment Potentiometers	Optionally Provided, Externally Accessible		
Terminals	Suitable for 2.5 sq. mm Wires		
Mounting	Suitable for 35 mm DIN Rail, Panel Wall		
Enclosure Type	ABS Plastic Enclosure, Ingress Protection Rating IP 40		

Reference Conditions

Ambient Temperature	28°C ± 1°C
Input Waveform	Sinusoidal (Distortion factor less than 0.5%)
Input Frequency	50 / 60 / 400 ± 0.5 Hz
Output Load - For Current Output - For Voltage Output	50% of Max. R _{out} Open Circuit
Auxiliary Supply	Rated Voltage ± 5%, 50 / 60 / 400 Hz ± 1 Hz

Series 2010 : AC Current Transducer

Operations :

The input current signal is scaled down through interposing current transformer. The scaled down signal is fed to a precision rectifier stage, its output is processed to provide DC Voltage / Current output proportional to input AC Current. The output signal is calibrated for RMS value. A combined 3 Phase Input Transducer with 3 Isolated Outputs is also available. An average Output for the 3 Phase Input can be provided.

Specify CT Ratio if required for tagging purpose.

Specifications :

Input Range	:	0 - 1 A, 0 - 5 A AC, 0 - 1 - 6 A AC, 0 - 5 - 30 A AC, (-)1 - 0 - (+)1 A AC, (-)5 - 0 - (+)5 A AC
No. of Inputs	:	Single, Dual, 3 Phase
Measurement Type	:	Average, True RMS
Output Range	:	0 - 1 mA DC, 0 - 20 mA DC, 0 - 5 V DC, 0 - 10 mA DC, 4 - 20 mA DC, 0 - 10 V DC Non Linear 4 - 16 - 20 mA DC Bi-directional 4 - 12 - 20 mA DC
No. of Outputs	:	One No., Two Nos., Three Nos., Four Nos.
Auxiliary Supply	:	110, 240, 415 V AC \pm 20%, 12, 24, 48, 110, 220 V DC \pm 20% 18 - 60 V DC, 80 - 300 V AC / DC, Self Powered, 24 V DC, 2 Wire Type

Series 2020 : AC Voltage Transducer

Operations :

The input voltage signal is scaled down through interposing potential transformer. The scaled down signal is fed to a precision rectifier stage, its output is processed to provide DC Voltage / Current output proportional to input AC voltage. The output signal is calibrated for RMS value.

For HT application, Specify PT Ratio and Primary Side Range to derive corresponding Input Range.

Specifications :

Input Range	:	0 - 75 V AC, 0 - 300 V AC, 85 - 135 V AC, 0 - 125 V AC, 0 - 500 V AC, 175 - 275 V AC, 0 - 150 V AC, 50 - 75 V AC, 150 - 300 V AC, 0 - 250 V AC, 50 - 150 V AC, 300 - 500 V AC.
No. of Inputs	:	Single, Dual, 3 Phase
Measurement Type	:	Average, True RMS
Output Range	:	0 - 1 mA DC, 0 - 20 mA DC, 0 - 5 V DC, 0 - 10 mA DC, 4 - 20 mA DC, 0 - 10 V DC
No. of Outputs	:	One No., Two Nos., Three Nos., Four Nos.
Auxiliary Supply	:	110, 240, 415 V AC \pm 20%, 12, 24, 48, 110, 220 V DC \pm 20% 18 - 60 V DC, 80 - 300 V AC / DC, Self Powered, 24 V DC, 2 Wire Type

Series 2030 : Line Frequency Transducer

Operations :

The input voltage signal is scaled down through interposing potential transformer. The scaled down signal is fed to a precision frequency to voltage Converter stage, its output is processed to provide DC Voltage / Current output proportional to Line Frequency.

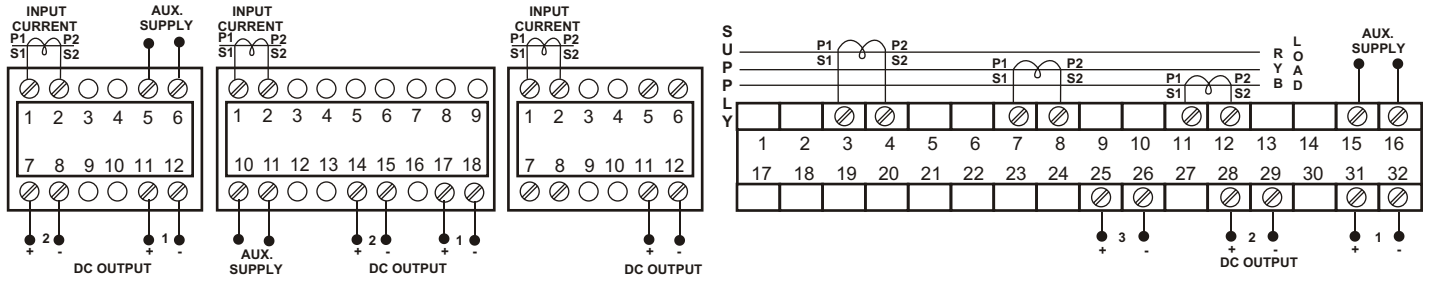
Specify PT Ratio if required for tagging purpose.

Specifications :

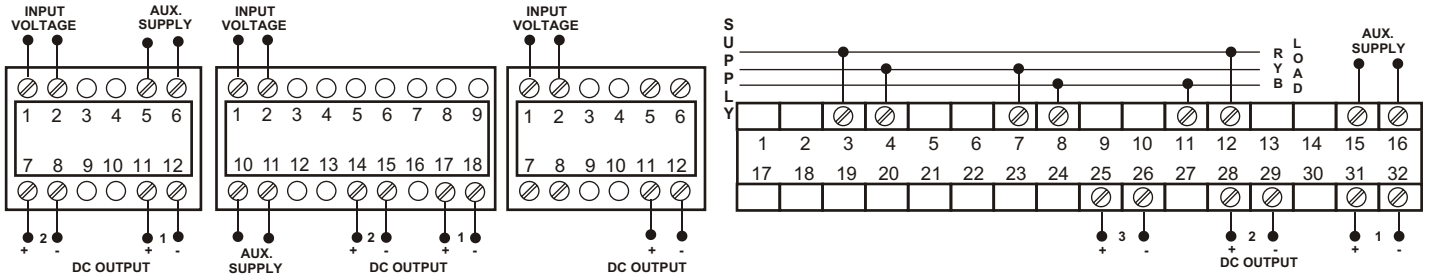
Nominal Input Voltage	:	63.5, 110, 240, 415 V AC \pm 20%
Frequency Range	:	45 - 55 Hz, 40 - 60 Hz and 350 - 450 Hz
No. of Outputs	:	Single, Dual
Output Range	:	0 - 1 mA DC, 0 - 20 mA DC, 0 - 5 V DC, 0 - 10 mA DC, 4 - 20 mA DC, 0 - 10 V DC
Auxiliary Supply	:	110, 240 V AC \pm 20%, 80 - 300 V AC / DC 24, 48, 110, 220 V DC \pm 20%, Self Powered or 18 - 60 V DC

Wiring Details

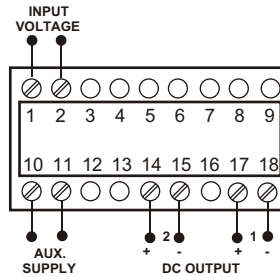
Series 2010 : AC Current Transducer



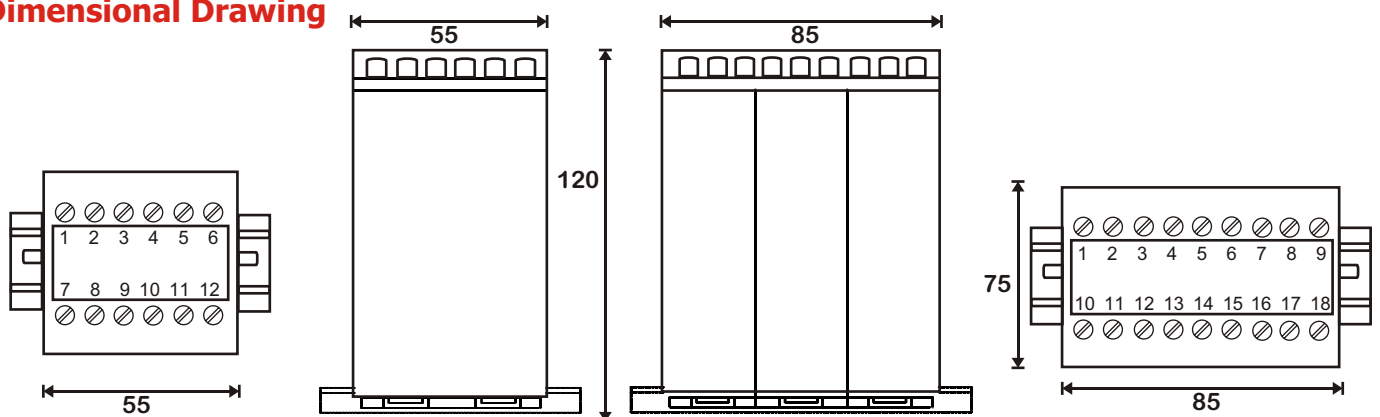
Series 2020 : AC Voltage Transducer



Series 2030 : Line Frequency Transducer



Dimensional Drawing



For more information visit us at
www.adeptfluidyne.com



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