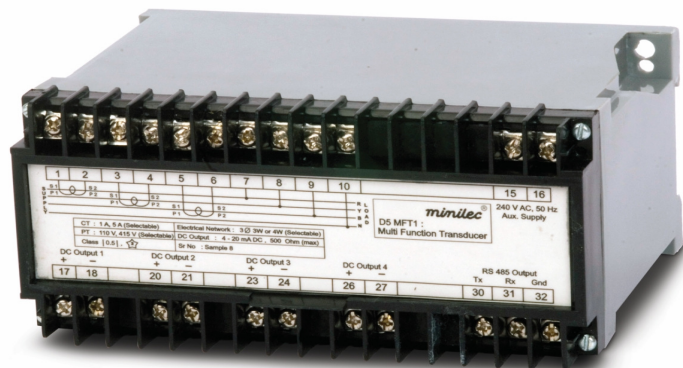


Multifunction Power Line Transducer (Analog Outputs)



Salient Features

- Monitoring of various electrical parameters from a Single Transducer Replaces Multiple Analog Transducers
- Programmable CT and PT Ratio
- Modbus RTU Communication Protocol
- Complete galvanic isolation between Input, Output, Auxiliary Supply
- High long term stability
- DIN Rail, Panel Wall Mounting

Applications

- Electrical Utility
- Motor and Power Control Circuits
- Process Monitoring and Control
- Energy Management
- Substation Monitoring
- Building Management Systems
- Standalone Or SCADA, RTU Integration
- Telemetry
- Power Generation, Transmission and Distribution
- Captive Power Plants

Introduction

Multifunction Power Line Transducer for simultaneous measurement of various electrical parameters of 3 Phase 3 Wire or 4 Wire electric power systems. The information is available through an galvanically isolated Analog Outputs and RS 485, Half Duplex Serial Communication Port over MODBUS RTU Protocol.

Use of latest circuit techniques and quality components ensures reliable operation over long periods. The Transducer are widely used in application areas where accurate and reliable monitoring of powerline parameters is essential.

Operation

The input voltage and current signals are scaled down through interposing potential and current transformers. The scaled down signals are fed to precision sigma delta ADCs with built in programmable gain amplifiers.

The digitized samples are further processed by DSP to derive various electrical parameters. The Transducer is suitable for 4 quadrant operation for balanced as well as unbalanced load conditions.

The Transducer output is in the form of Analog Output (4 Nos.) and MODBUS RTU Protocol. It is implemented over RS485 serial communication port in Half Duplex type.

Specifications :	
Measuring Ranges :	Communication Protocol : Modbus RTU
AC Current (Iin) : 0 to 120% of Iin	Number of devices on RS485 Bus : 32
AC Voltage (Vin) : 20 to 120% of Vin	Parameters Measured :
Line Frequency : 45 to 55 Hz	
Power Factor : (Lag) 0.5 – 1 – 0.5 (Lead)	
Active, Reactive, Apparent Power : 0 to $\sqrt{3} \times 1.5 \times I_{in} \times V_{in}$	
Electrical Network : 3 Phase 3 Wire or 3 Phase 4 Wire (Selectable)	
Nominal Input Current (Iin) : 1A, 5A (User Selectable)	Phase to Phase Voltages
Nominal Input Voltage (Vin) : 110 V, 415 V (Selectable)	Phase to Neutral Voltages
Input Current Burden : 0.5 VA	Phase / Line Currents
Input Voltage Burden : 0.5 VA	Line Frequency
Continuous Overload Capacity : 2 times Iin , 1.2 times Vin	Phasewise and Total Power Factor
Momentary Overload Capacity : 40 times Iin for 1 Sec, 2 times Vin for 1 Sec.	Phasewise and Total Active Power
Auxiliary Power Supply : 80 – 300 V AC/DC	Phasewise and Total Reactive Power
Auxiliary Power Supply Burden : Less than 8 VA	Phasewise and Total Apparent Power
Outputs : 4 Nos. of Galvanically Isolated 4 – 20 mA DC, 750 Ohm	Status LED : Communication and Auxiliary Power Supply Status
Communication Port : RS 485 Half Duplex	Response Time : Less than 500 mSec
User Selectable Communication Port Setting :	Accuracy Class : $\pm 0.5\%$ of Span
Baud Rate : 2.4, 4.8, 9.6, 19.2 Kbps	Operating Temperature : 0 – 55 Deg C, 95% RH Non – Condensing
Parity : Odd, Even, None	Effect of Ambient Temperature : Less than 0.03% of Span per Deg C
Stop Bits : 1	Isolation Test Voltage between : 2 KV AC, 50 Hz for 1 min. Input, Output, Aux. Supply
	Insulation Resistance : More than 100 Mohms at 500 V DC
	Impulse Voltage Test : 5 KV AC having waveform of 1.2 / 50 Sec.
	Terminals : Suitable for 2.5 sq.mm Wires
	Mounting : Suitable for 35 mm DIN Rail, Panel Wall
	Enclosure Type : ABS Plastic Enclosure, Ingress Protection IP40

Continuous efforts for product development may necessitate changes in these details without notice