minilec

Instruction Manual

Power Factor Transducer (D5PTA1)

Introduction:

It is a precision grade transducer used for measurement of Power Factor of a 3 Phase 3 Wire or 3 Phase 4 Wire Electrical Network System. The Transducer is fully solid state. Use of latest circuit techniques and quality components ensure reliable operation over long period. The Transducer measures both Capacitive (Lead) and Inductive (Lag) Power Factor conditions. It is suitable for balanced load conditions only.
The Transducer is suitable for Panel Wall Mounting Or 35 mm DIN Rail mounting.

Operation:

The three phase input AC Current and Voltages are scaled down through interposing CT's and PT's to provide galvanic isolation. The scaled down voltage signal is chopped by the current signal to get a signal proportional to VCOS∅. This signal is divided by the voltage signal to a DC Voltage which is proportional to Power Factor. This output is further processed to provide DC voltage or DC current output signal. The Auxiliary Power Supply provides necessary power to operate the electronic circuits. In case of self powered transducer, the power supply is derived from input voltage.

Specifications:

Auxiliary Power Supply	110, 240 V AC ± 15%, 50 Hz Or 24,48,110,220 V DC ± 10% Or Self Powered
Nominal Input Current	1 Or 5 A AC
Nominal Input Voltage (P-P)	110 V AC (HT Supply) 415 V AC (LT Supply)
Electrical Network	3 Phase 3 Wire Or 3 Phase 4 Wire
Power Factor Range	Lead 0.5-1-0.5 Lag
No. of Outputs	One Or Two
Output Range	4-20 mA DC, 0-1,0-5,0-10,0-20 mA DC 0 – (±) 5, 0 – (±)10, 0 – (±)20 mA DC 0-5,0-10 V DC
Output Load Resistance	Max 10 V / I out For Current Output 10 K Ohm (Min) For Voltage Output
Accuracy	± 0.5% of Span.
Conformity	General Conformity to IEC 688.1, BIS 12784-Part I-1989

Operating Instructions:

The Transducer is to be mounted either on Panel Wall or on a 35 mm DIN Rail as ordered.
The electrical connections are to be done as per the wiring diagram provided on the specification sticker located on side of the enclosure. For Current Input follow proper CT polarities considering supply and load side as shown. For Voltage Input follow proper Phase sequence. For Auxiliary Power Supply ensure that proper rated supply voltage is connected. Also ensure proper polarity incase of DC Power Supply. While wiring DC output signal, ensure proper polarities.