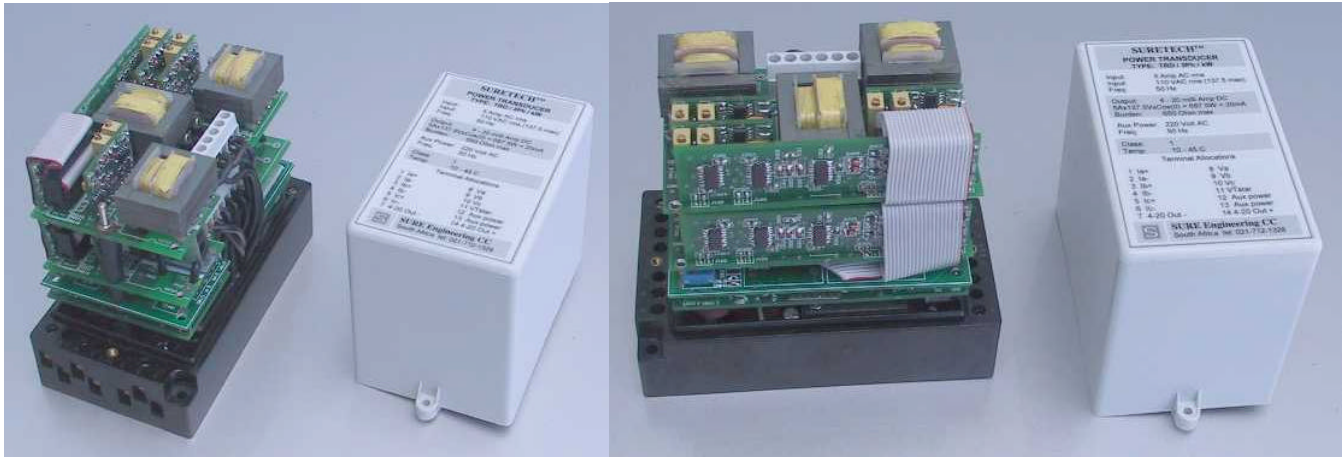


*Everyone needs instruments for measuring electrical parameters.*

# SURETECH

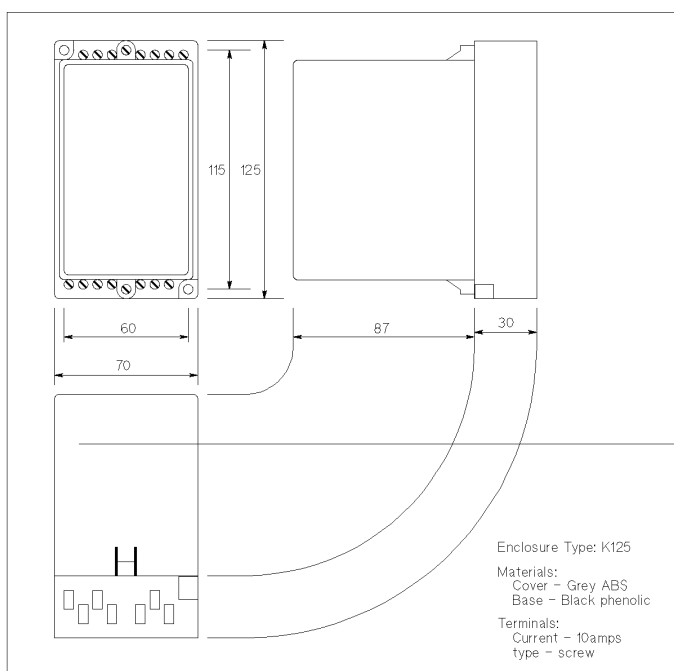
## Smart Load Transducer for 3 phase



The SURETECH Smart Load Transducer (SLT) for three phase, measures ALL electrical parameters in one instrument. The SLT outputs: Voltage, Current, kW, kVA, kVARs, Power Factor, Phase angle, Frequency, and kWh if required. All of these parameters are downloaded to your computer directly into the RS232 port. Any of these parameters can also be sent to an analog output that feeds 4-20mA, or 0-5mA etc. The SURETECH SLT is THE most cost-effective method to measure ALL electrical parameters at the same time.

### General Features:

- ✓ Voltage input can be taken from 110Vac, 220Vac, or directly from our SURETECH Voltage Sensors to measure 1kVac to hundreds of kVac
- ✓ Separate SURETECH 1kV Sensor is available to measure 0 - 1kV AC for LV applications
- ✓ Current input can be sensed with SURETECH Rogowski sensors (air-cored technology)
- ✓ RS-232 output is isolated from measuring circuits, and feeds directly into a PC (Personal Computer), OR analog outputs



- ✓ Standard transducer enclosure for simple mounting can handle most user needs on terminal block (others also available)
- ✓ LCD Displays with key scroll menu
- ✓ Transient suppression on inputs and outputs
- ✓ Wide range of auxiliary Power Supply options available, including 90V to 260V is standard
- ✓ Higher voltage and lower voltage auxiliary supplies also available
- ✓ Inputs, outputs, and auxiliary power supply are galvanically isolated
- ✓ Backup to provide support for design, application, installation, and maintenance information

## Smart Load Transducer Performance Specifications:

| Measurand                         | Determined By                                                                                                                                                                                                                                                                                                                                                                                | Analog Accuracy                                                                                                | Digital Accuracy                                                                                                                                                                                                                                                                    | Class |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Current                           | <ul style="list-style-type: none"> <li>Signal is conditioned, precision rectified, integrated with 200mS time constant (other TCs are available)</li> <li>Signal is A to D converted using successive approximation</li> <li>Further digital filtering is available</li> </ul>                                                                                                               | <ul style="list-style-type: none"> <li>Calibrated to 0.1%</li> </ul>                                           | <ul style="list-style-type: none"> <li>12 Bit ADC</li> <li>Max Error <math>\pm 2\text{LSBFS}</math></li> <li>ADC tempco <math>\pm 0.02\text{LSB per } ^\circ\text{C}</math></li> <li>Voltage ref tempco <math>100\text{ppm per } ^\circ\text{C}</math></li> </ul>                   | 0.5   |
| Voltage                           | <ul style="list-style-type: none"> <li>Signal is conditioned, precision rectified, integrated with 200mS time constant (other TCs are available)</li> <li>Signal is A to D converted using successive approximation</li> <li>Further digital filtering is available</li> </ul>                                                                                                               | <ul style="list-style-type: none"> <li>Calibrated to 0.1%</li> </ul>                                           | <ul style="list-style-type: none"> <li>12 Bit ADC</li> <li>Max Error <math>\pm 2\text{LSBFS}</math></li> <li>ADC tempco <math>\pm 0.02\text{LSB per } ^\circ\text{C}</math></li> <li>Voltage ref tempco <math>100\text{ppm per } ^\circ\text{C}</math></li> </ul>                   | 0.5   |
| Phase Angle                       | <ul style="list-style-type: none"> <li>V &amp; I are derived from VT and CT and signal conditioned</li> <li>Signals are fed to <math>\mu\text{Processor}</math>, phase &amp; period are measured to res of <math>1\mu\text{S}</math></li> <li>Out of range phase and period checking eliminates noise</li> <li>Phase error compensation is done during calibration of VT &amp; CT</li> </ul> | <ul style="list-style-type: none"> <li>CT &amp; VT Calibration error <math>\pm 10\mu\text{S}</math></li> </ul> | <ul style="list-style-type: none"> <li><math>\mu\text{Processor}</math> crystal accuracy <math>\pm 20\text{ppm}</math></li> <li><math>\pm 20\text{ppm per } ^\circ\text{C}</math> (others are available)</li> <li>Measurement uncertainty <math>\pm 10\mu\text{S}</math></li> </ul> | 0.5   |
| kW<br>kVAR<br>kVA<br>Power Factor | <ul style="list-style-type: none"> <li>V &amp; I samples are multiplied in <math>\mu\text{Processor}</math> with ZERO error</li> <li>Sine(angle) and Cosine(angle) are calculated with maximum error contribution from software of 0.01%</li> </ul>                                                                                                                                          | <ul style="list-style-type: none"> <li>No additional error</li> </ul>                                          | <ul style="list-style-type: none"> <li>No additional error for kVA</li> <li>Software error contribution <math>&lt; 0.01\%</math> for kW, kVAR, and PF</li> </ul>                                                                                                                    |       |
| Frequency                         | <ul style="list-style-type: none"> <li>Voltage periods are measured to measure power system frequency</li> <li>Errors are due to <math>\mu\text{Processor}</math> crystal</li> </ul>                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>No additional error</li> </ul>                                          | <ul style="list-style-type: none"> <li>Crystal: 2 parts in <math>10^5</math></li> <li>Measurement uncertainty <math>\pm 10\mu\text{S}</math></li> </ul>                                                                                                                             |       |

## Smart Load Transducer Configuration options (US=User Specified):

| Feature             | Range                                                                                                                                         | Description                                                                                                                                                                     | Price (Rand estim) (+Incremental) |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Standard SLT (3 ph) | <ul style="list-style-type: none"> <li>US ratios for CT and VT</li> </ul>                                                                     | <ul style="list-style-type: none"> <li>K125 enclosure</li> </ul>                                                                                                                | Please Enquire                    |
| Current Inputs      | <ul style="list-style-type: none"> <li>0-1 Amp AC</li> <li>0-5 Amp AC</li> </ul>                                                              | <ul style="list-style-type: none"> <li>Integral magnetic CT</li> <li>Integral magnetic CT</li> </ul>                                                                            | Please Enquire                    |
| Voltage Inputs      | <ul style="list-style-type: none"> <li>0-150 V ac</li> <li>0-260 V ac</li> <li>0-1kV ac</li> <li>0-13kV ac</li> </ul>                         | <ul style="list-style-type: none"> <li>Integral magnetic VT</li> <li>Integral magnetic VT</li> <li>Dielectric voltage sensor</li> <li>Smart insulator - fluted resin</li> </ul> | Please Enquire                    |
| Outputs             | <ul style="list-style-type: none"> <li>RS 232</li> <li>RS485 multi-drop</li> <li>IR window</li> <li>4-20mA / US</li> <li>0-5V / US</li> </ul> | <ul style="list-style-type: none"> <li>9600 / US, Excel compatible</li> <li>US interface</li> <li>US interface</li> <li>US current output</li> <li>US voltage output</li> </ul> | Please Enquire                    |
| Aux PSU             | <ul style="list-style-type: none"> <li>10-30V</li> <li>30-90V</li> <li>90V-270V ac/dc</li> </ul>                                              | <ul style="list-style-type: none"> <li>US battery / mains voltage</li> <li>US battery / mains voltage</li> <li>AC / DC supply</li> </ul>                                        | Please Enquire                    |



**SURE Engineering CC**

PO Box 63, Steenberg, Cape Town 7947  
South Africa  
Reg CK 87/11172/23

Website: <http://www.suretech.co.za>

email: [info@suretech.co.za](mailto:info@suretech.co.za)

Tel:+27-21-701-8529 Fax:+27-21-701-9183

Cell: +27-83-555-0149