

Panel Mounted / Three Phase / CT Operated – SMART X96-5-F/G/H/I/J

Datasheet

- Multi-parameter Measurements
- Up to 63rd THD and IHD
- RS485 Modbus RTU
- Ethernet TCP Gateway
- Lora Wireless option
- Multi-tariffs
- Digital Input/Output
- Accuracy Class 0.5s
- Bar Graph for Power Indication
- Backlit LCD Display for Full Viewing Angles
- Push-in Installation and Plug-in Connection



Smart X96-5F



Smart X96-5G



Smart X96-5H



Smart X96-5 I/J

The multifunction energy analyzer SMART X96 series is a high end new-generation intelligent panel meter, used not only in electricity transmission and power distribution systems, but also for power consumption measurements and to analyze high voltage intelligent power grids. The unit measures and displays the characteristics of 1p2w, 3p4w and 3p3w supplies, including voltage, frequency, current, power and active and reactive energy, imported or exported, Harmonic, Power factor, Max. Demand etc. Energy is measured in terms of kWh, kVAh and kVAh. Maximum demand current can be measured over preset periods of up to 60minutes.

In order to measure energy, the unit requires voltage and current inputs in addition to the supply required to power the product. The requisite current input(s) are obtained via current transformers. The SMART X96 can be configured to work with a wide range of CTs, giving the unit a wide range of operation. Built-in interfaces provides RS485 Modbus RTU and Ethernet TCP/IP communication. Digital input and outputs are provided for external signal counting and external device control. 30 types of parameters can be set for alarm. The unit uses plug-in terminals for easy wiring and push-in mechanism for quick installation.

Specification table

Input Voltage	
VT Primary	100~500000V ac
UN	230 V L-N
Measured voltage with over-range and crest factor	100 to 480Vac L-L 100 to 276Vac L-N
Permanent overload	490V L-L 280V L-N
Impedance	1M Ω
Frequency range	45~66Hz

Input Current	
CT Ratings	Primary - 1~9999A Secondary - 1A / 5A
Measured current with over-range and crest factor	5mA~6A
Withstand	Continuous 8A 120A for 0.5 Seconds
Impedance	<1 mΩ
Frequency range	45~66Hz
Burden	<0.036VA at 6A

Auxiliary Power Supply	
Operating range	65~480V AC / 80~660V DC
Power consumption	< 7VA/3.5W.
Frequency	45 to 65 Hz

Accuracy	
Power	IEC 61557-12 Class 0.5
Active energy	IEC 62053-22 Class 0.5S, IEC 61557-12 Class 0.5
Reactive energy	IEC62053-23 Class 2, IEC 61557-12 Class 2
Frequency	±0.1%
Current	±0.2%
Voltage	±0.2%
Power factor	±0.01%
HArmonic distortion	2

Enviromental	
Operating temperature	-25 to 55°C
Storage temperature	-40 to 70°C
Humidity rating	<95% RH at 50 °C (non-condensing)
Pollution degree	2
Altitude	2000m
Vibration	10Hz to 50Hz, IEC 60068-2-6

Digital Outputs	
Number/type	2 - electromagnetic relay
Output frequency	1 Hz maximum
Switching current	250 Vac at 3.0 Amps, 100k cycles)
Isolation	2.5 KVac for 1min

Digital Inputs	
Number	100~500000V ac
Input resistance	230 V L-N
Maximum frequency	490V L-L 280V L-N
Response time	1M Ω
ISOLATION	45~66Hz

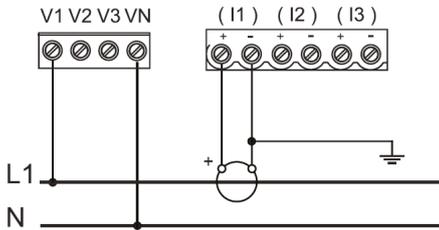
Communications	
Interface standard and protocol	RS485 and MODBUS RTU
Communication address	1~247
Transmission mode	Half duplex
Data type	Floating point
Transmission distance	1000m Maximum
Transmission speed	2400bps~38400bp
Parity	None (default), Odd, Even
Stop bits	1 or 2
Response time	<100 mS

Enclosure	
Weight	250g
IP Degree of protection (IEC 60529)	IP51 front display
Dimensions (WxHxD)	96x96x70.3
Mounting position	Vertical
panel thickness	1~5mm
Material of meter case	Self-extinguishing UL 94 V-0
Mechanical environment	M1

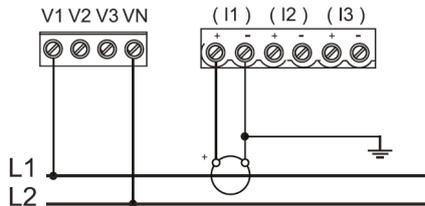
Safety	
Measurement category	Per IEC61010-1 CAT III
Current inputs	Require external Current Transformer for Insulation
Over voltage category	CAT III
Dielectric withstand	As per IEC 61010-1 Double Insulated front panel display
Protective class	II

Electromagnetic Compatibility	
Electrostatic discharge	IEC 61000-4-2
Immunity to radiated fields	IEC 61000-4-3
Immunity to fast transients	IEC 61000-4-4
Immunity to impulse waves	IEC 61000-4-5
Conducted immunity	IEC 61000-4-6
Immunity to magnetic fields	IEC 61000-4-8
Immunity to voltage dips	IEC 61000-4-11
Radiated emissions	EN55011 Class A
Conducted emissions	EN55011 Class A
Harmonics	IEC 61000-3-2

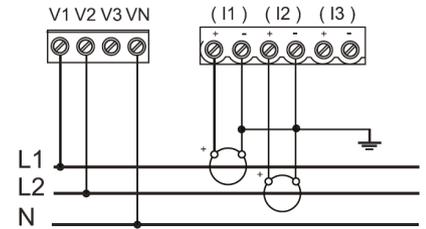
Wiring Configuration



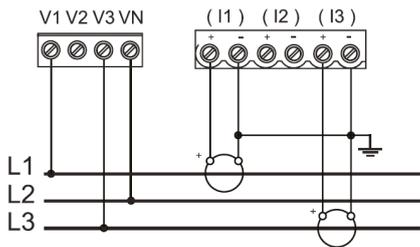
1P2W (L+N) 1CT



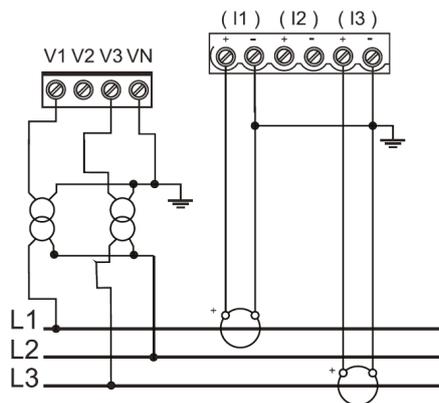
1P2W (L+L) 1CT



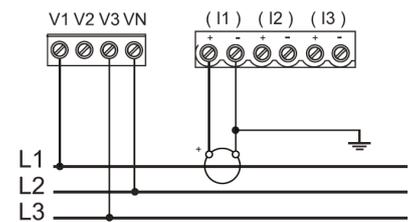
1P3W (L+L+N) 2 CTS



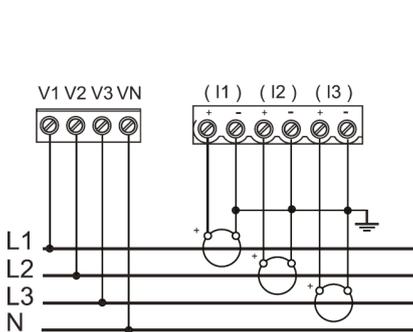
3P3W 2 CTS



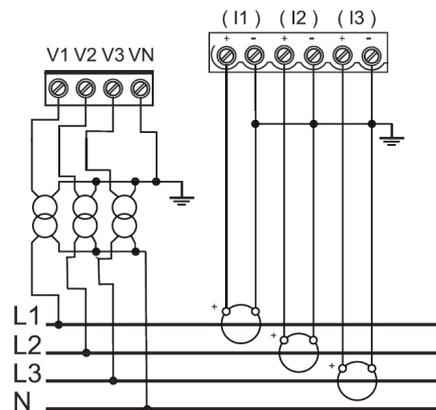
3P3W 2PT & 2CTS



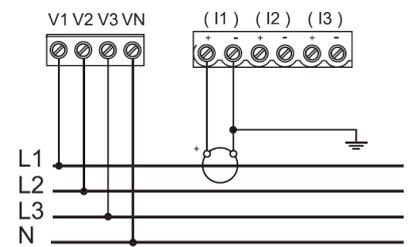
3P3W 1CT BALANCED LOAD



3P4W 3CT'S

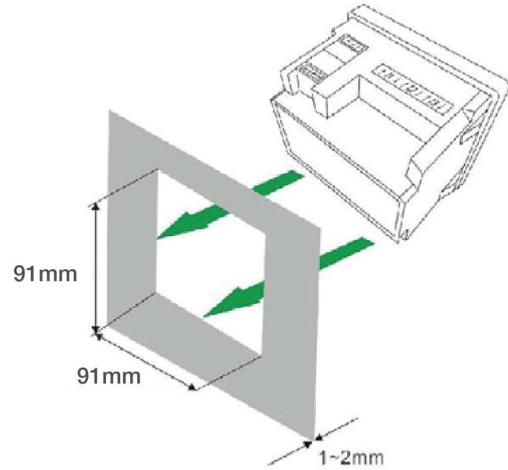
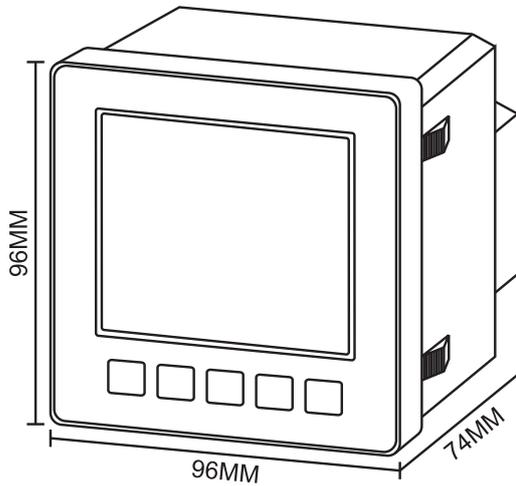


3P3W 3PT 3CTS



3P4W 1CT BALANCED LOAD

Dimension Drawing



Conformity References

Electromagnetic Compatibility: IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2,-3-4-5-6-8-11 IEC/EN50470-1/3

Accuracy: IEC/EN50470-1/3, IEC/EN62053-21, IEC/EN62053-23, DIRECTIVE 2014/32/EU

Safety: EC/EN61010, IEC/EN50470-1