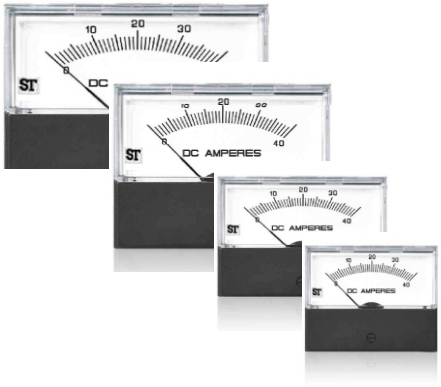
INSTALLATION INSTRUCTIONS : Contender Series



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Installation

The product should be panel mounted using the mounting kit provided. Consideration should be given to the space required behind the unit to allow for bends in the connecting cables. Additional protection(IP55/NEMA 4) to the panel may be obtained by the use of an optional panel gasket. Refer order code SPAR-SA00-2329 for 112,SPAR-SA00-2330 for 212, SPAR-SA00-2331 for 312 and SPAR-SA00-2332 for 412 models. The terminals at the rear of the case should be protected from liquids. Units should be mounted in a stable ambient temperature to make sure unit is operated within the operating temperature range mentioned in the datasheet.

The unit should not be mounted where it can be subjected to prolonged direct sunlight and vibration should be kept to a minimum. Connection wires should be sized to comply with local regulations and M5 ring type lug shall be used. The products do not have internal fuses therefore external fuses shall be used. Refer Table 1 for selection.

Electromagnetic Compatibility (EMC) Installation Requirements

This product range has been designed to meet the certification requirements of the EU Directives when installed to a good code of practice for EMC in industrial environments. e.g

1. Screen all leads. In the event of RF fields causing problems where screened leads can not be used, provision for fitting RF suppression components, such as ferrite absorbers, line filters etc., must be made. It is good practice to install sensitive electronic instruments that are performing critical functions, in EMC enclosures that protect against electrical interference causing a disturbance in function.
2. Avoid routing leads alongside cables and products that are, or could be, a source of interference.
3. To protect the product against permanent damage, surge transients must be limited to 2kV pk
4. Electro Static Discharge (ESD) precautions must be taken at all times when handling this product.

Low Voltage Directive: This product compiles with BSEN61010-1.

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Contender Series

Where, models have different inputs & electrical connections all options are illustrated on page 3/3.
The products do not have internal fuses therefore external fuses shall be used. Refer Table 1 for selection.
When practical, Instrument circuits should be earthed at one point. CTs must not be open circuited when in energized condition. Tighten terminal nuts to 1.5Nm (13lb-in). Mounting nuts to 0.4Nm (4lb-in).

Note : Total lead resistance of 0.035 Ohm is considered for mV ranges while calibration.

Indoor Use

Altitude up to 2000m.
Operating Temperature 0 to 40°C & Storage Temperature -20°C to 55°C.
Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative Humidity at 40°C;
Mains supply voltage fluctuations not to exceed 10% of the nominal voltage;
Other supply voltage fluctuations as stated by the manufacturer;
Transient over voltage according to INSTALLATION CATEGORIES (OVER VOLTAGE CATEGORIES) I, II and III. For mains supply the minimum and normal category is II;
POLLUTION DEGREE 1 or 2 in accordance with IEC 664

Considerations during UL test :

1) The terminals & connectors have not been evaluated for field wiring.
2) The equipment has been evaluated for use in a pollution degree 2 environment.
3) The suitability of the conductor size & Terminal connector used should be determined in the end use application.
4) A suitable electrical, Fire & Mechanical enclosure shall be provided.
5) The component was tested for a maximum manufacturer's recommended ambient of 40°C. If used in an ambient above 40°C, the factory wiring must be rated minimum 90°C for ambient of 40°C & below 75°C wiring insulation should be used.

Table 1 : Selection of Fuses, Connection Cable and Ring Lugs

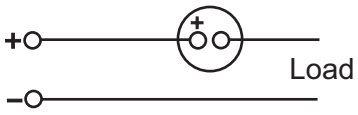
Circuit	Fuse Rating	Connection wire rating	Ring lug rating
Voltage and auxiliary lines	UL/CSA approved 1A type F with breaking capacity of 35A or greater, voltage no less than highest circuit voltage connected to meter.	1A, voltage rating no less than highest circuit voltage connected to meter	1A, voltage rating no less than highest circuit voltage connected to meter.
Current circuit measuring whole current	Current rating as meter rated current. voltage rating no less than voltage of circuit being measured	Current rating as meter rated current, voltage rating no less than voltage of circuit being measured. For DC current circuits rated at greater than 50mA, a wire with a temperature rating of greater than 75 deg C must be used.	Current rating as meter rated current. voltage rating no less than voltage of circuit being measured
CT secondary	CT circuits should not be fused	Current rating* as meter rated current voltage rating no less than voltage of circuit being measured.	Current rating as, meter rated current, voltage rating no less than voltage of circuit being measured

Choose UL approved fuses, connection wires and ring lugs if the installation is to be UL requirements or CSA approved items of the installation is to be to CSA requirements.

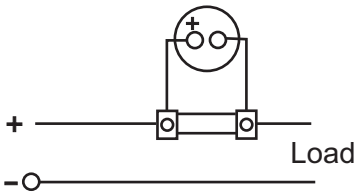
*Note that minimum wire current ratings for CT circuits ensure that the wire is capable of carrying the current safely, however it is often desirable to use larger gauge wiring, particularly for long cable runs to ensure that the CT VA rating is not exceeded and it's accuracy impaired.

Connections

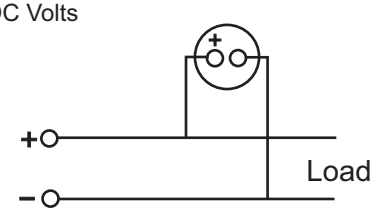
DC Amps - Self Contained



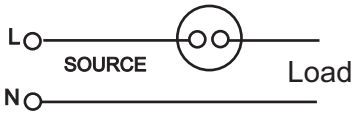
DC Amps - For use with external shunt



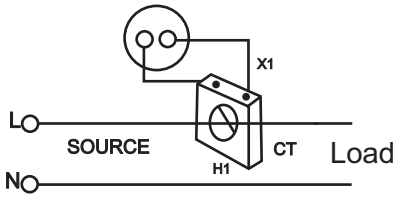
DC Volts



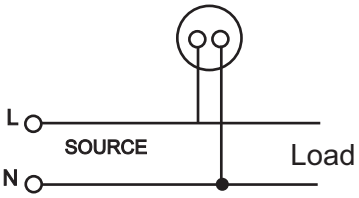
AC Amps - Self contained



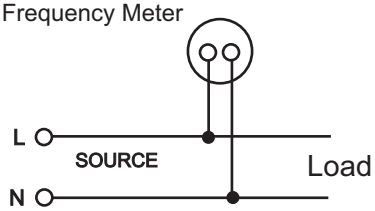
AC Amps - For use with current transformer



AC Volts



Frequency Meter



The information contained in these installation instructions is for use only by installers trained to make electrical power installations and is intended to describe the correct method of installation for this product. However, the company has no control over the field conditions. Which influence product installation. It is the user's responsibility to determine the suitability of the installation method in the user's field condition. The company only obligations are those in company's standard Conditions of Sale for this product and in no case will company be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products.

Note: The meters to be used in a panel or setup which is grounded

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