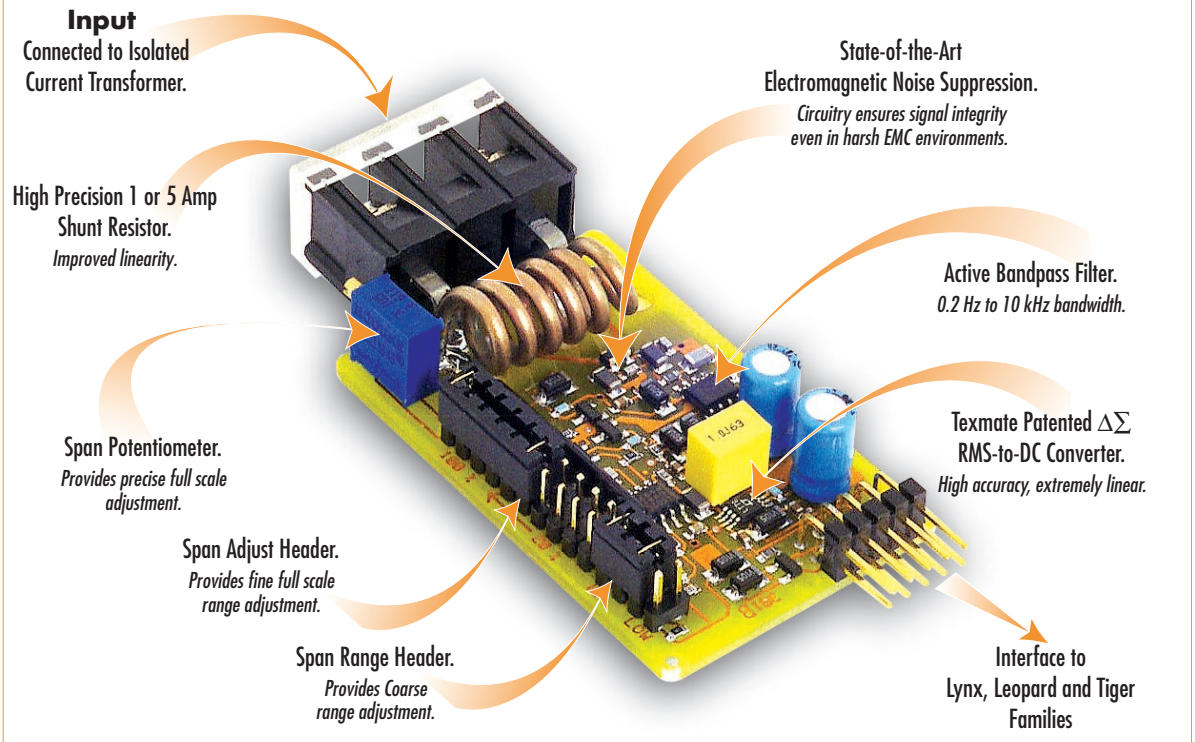
TEXMATE INC

Fits Lynx Leopard & Tiger 320 Series

AC AMPS TRUE RMS 1 OR 5 AMP MODULE



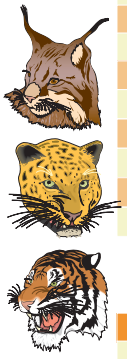
At last, the answer to precise and repeatable RMS current measurements for the AC power industry.

This revolutionary module utilizes the Texmate designed ΔΣ RMS-to-DC convertor circuit block. This circuit block provides true RMS measurements over a wide range of isolated input currents while maintaining excellent linearity up to a 10 kHz waveform frequency.

Input Module Order Code Suffix

IA09 (1 Amp)

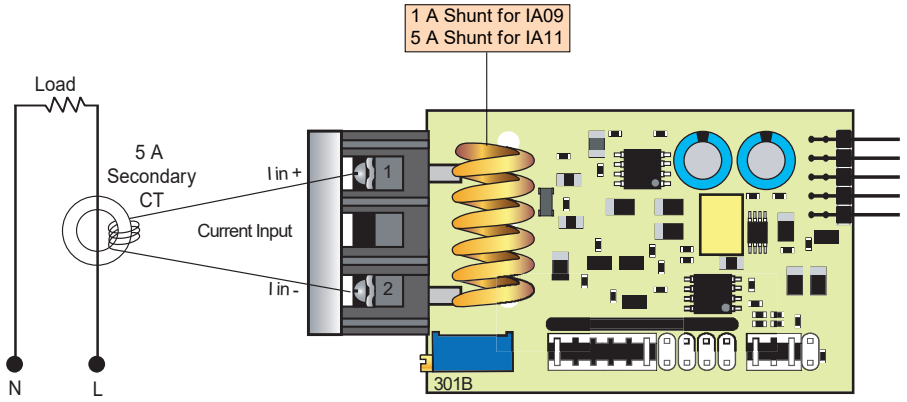
IA11 (5 Amp)



Hardware Module Specifications	
Current Range (Isolated)	IA09: 0-1 A AC, IA11: 0-5 A AC. 0.02 % linearity on both.
Frequency Range	0.2 Hz to 10 KHz (3 dB).
Resolution	1 mA over full scale input.
Accuracy	
Lynx	0.03 % of full scale input ± 2 digit.
Leopard	0.05 % of full scale input ± 2 digit.
Tiger	0.02 % of full scale input ± 1 digit.
Output Signal	Adjustable to 2 V full scale using on-board trimmer and header selections.
Forced Zero	Forces output to 0000 if below 1 % of full scale.
Meter Interface	Can be utilized in the Lynx, Leopard, and Tiger range of indicators, meter relays, and controllers.
Span Drift	± 500 ppm /°C of full scale maximum.

Some Relevant Operating System Features
Direct display of true RMS current.
Setpoint control (Tiger & Leopard).
Full scale calibration accurate for any sized signal.

Connector Pinouts



Note:
The IA09 and IA11 input module has been designed for use with an isolating current transformer (CT).

IA11 wired to monitor RMS amps usage on a resistive load connected to a single phase mains supply

Figure 1 – IA09/IA11 Input Module Component Layout

Introduction

The AC amps true RMS input module is a universal module designed to function with the Lynx, Leopard, and Tiger range of indicators, meter relays, and programmable meter controllers (PMCs).

IA09 has a 1 amp high-precision shunt resistor installed for an isolated current range of 0 to 1 amp, while IA11 has a 5 amp high-precision shunt resistor installed for an isolated current range of 0 to 5 amps. A span potentiometer, span adjust header, and a span range header are used to adjust the input signal full scale. A zero input current produces a 0 V output signal, meaning no zero adjustment is necessary.

Tiger Controllers and Leopard Meter Relays

The Tiger and Leopard range use internal software functions to calibrate the span. However, it may be necessary to adjust the span potentiometer to bring the maximum input signal within the full scale range of the instrument.

When the input signal is beyond the full scale range of a Tiger controller, the display flashes [OVER]. When the input signal is beyond the full scale range of a Leopard meter, the top segment of each digit of the display flashes.

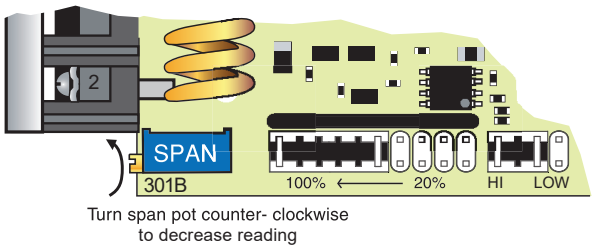


Figure 2 – Span Potentiometer Adjustment

With the span range header set to HI and the span adjust header set to 100%, turn the 15 turn span potentiometer counter-clockwise to decrease the signal until a reading appears on the display (See Figure 2). Now calibrate the instrument using the software calibration method for your instrument.

Lynx Indicators

Calibration settings on all Lynx indicators are carried out using the built-in headers and span potentiometer. The 15 turn span potentiometer has an approximate span adjustment of 20% of the full scale signal. Together, the span range header and the span adjust header expand the range of the span potentiometer into 10 equal adjustable portions, each portion being 10% of the full scale range.

When the input signal is beyond the full scale range of a Lynx indicator, a 1 is displayed in the most significant digit with all other digits blank.

Span Potentiometer (Pot)

The 15 tur n span potentiometer is located on the r ight-hand side of the input module (when vie wed from the rear of the meter). Typical adjustment is 20% of the input signal r ange (See Figure 3).

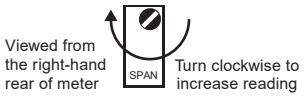


Figure 3 – Span Pot

Span Adjust Header

This unique fiv e-position header e xpands the adjustment r ange of the span potentiometer into fiv e equal 20% sectors, across 100% of the input signal span. Any input signal span can then be precisely scaled do wn to provide any required displa y span from full scale to the smallest viewable unit (See Figures 4 and 5).

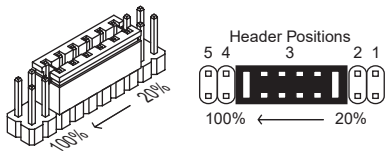


Figure 4 – Span Adjust Header

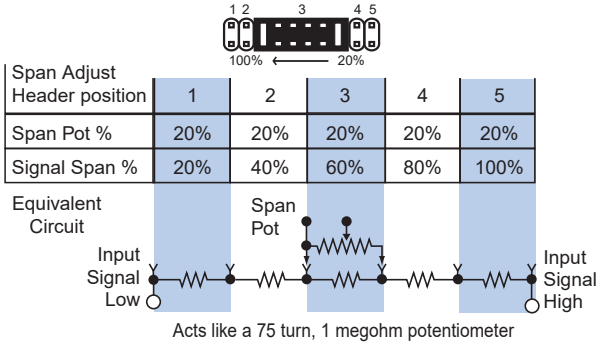


Figure 5 – Span Adjust Header Operation

Span Range Header

The span r ange header w orks together with the span adjust header b y splitting its adjustment r ange into a **high** and a **low** range. This has the eff ect of dividing the adjustment r ange of the span potentiometer into ten equal 10% sectors across 100% of the input signal span (See Figures 6 and 7).

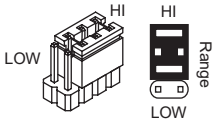


Figure 6 – Span Range Header

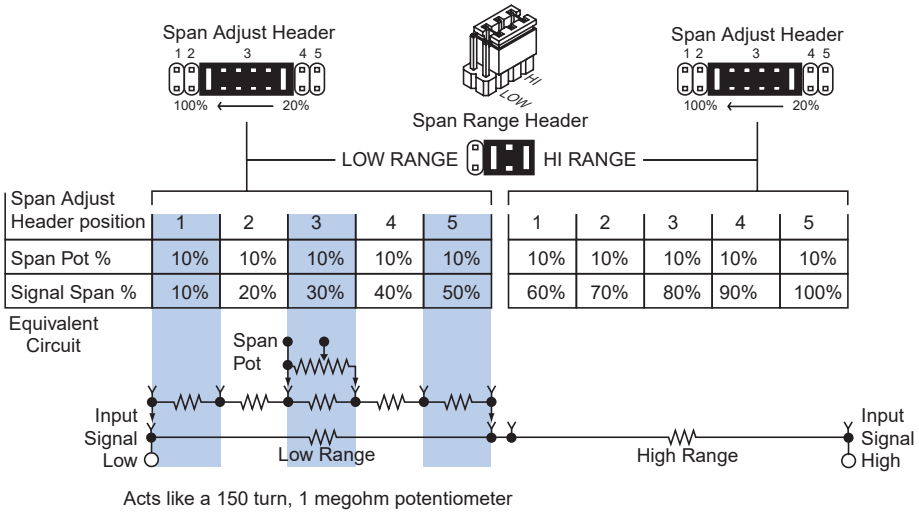


Figure 7 – Span Range Header Operation

Lynx Indicator Calibration Setup

To successfully calibrate a Lynx indicator over the input signal span with an IA09 or IA11 input module installed, the headers must be correctly set and the span pot adjusted to the final displa y setting.

Example

With an IA11 input module installed in a DX-35 L ynx indicator, we want to show a digital representation of a 5 A input signal o n the display. As the DX-35 has a maximum of 1999 counts, 5 A could easily be shown to two decimal places by setting the span setting to 500 counts.

To configure the input module to sho w 500 counts for an isolated input signal of 5 A, proceed as f ollows:

1) The first adjustment to mak e is the coarse r ange setting. Set the span range header to the LO W position (See Figure 8).

   This effectively halves the maximum counts of the DX-35 from 1999 to 1000 (+ or – 20% of 1999. This could be as much as 400 counts).

2) The next adjustment is the fine r ange setting. Set the span adjust header to the 40% position (See Figure 9).

   This position should lea ve you with a display setting lower than 500 counts. By ho w much, depends on the position of the span pot.

3) The final adjustment can no w be made using the span pot (See Figure 10).

   As the display reading is below the required setting of 500 counts , tur n the span pot clockwise to increase the counts until the display shows a reading of 500 counts.

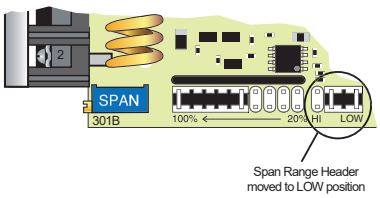


Figure 8 – Span Rang e Header Adjustment

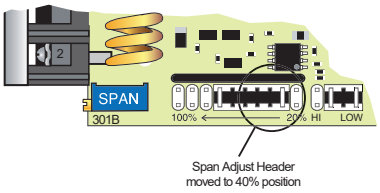


Figure 9 – Span Adjust Header Adjustment

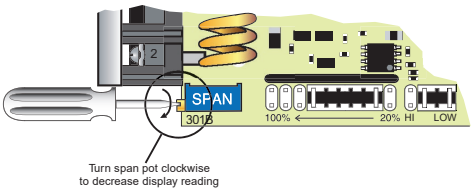


Figure 10 – Span Pot Adjustment

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