

OPTD7 voltage measurement option board



Description

OPTD7 is an AC sinusoidal voltage measurement board used with Eaton's SPX9000 drives. Using this board, the Eaton SPX9000 drive measures the line voltage, frequency, and voltage angle information. The SPX9000 can compare this information with its output voltage angle when it is running. This feature can be used to develop applications for different purposes using the NC61131-3 application programming tool.

The OPTD7 board is delivered with a transformer that is suitable for a 380V–690V voltage range. Please note that the transformer cannot be used with the pulse-width modulation (PWM) voltage input.

It is possible to use a custom-built transformer when the input voltage to be measured is not within the above-voltage range. The transformation ratio parameter then can be adjusted per the transformer primary to secondary ratio. Please refer to the Specifications section for further engineering.

The measurement signal connected into the OPTD7 option board cannot exceed 14.26V rms.

The board can only be used in slot C of an SPX9000 drive.

EATON

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OPTD7 layout

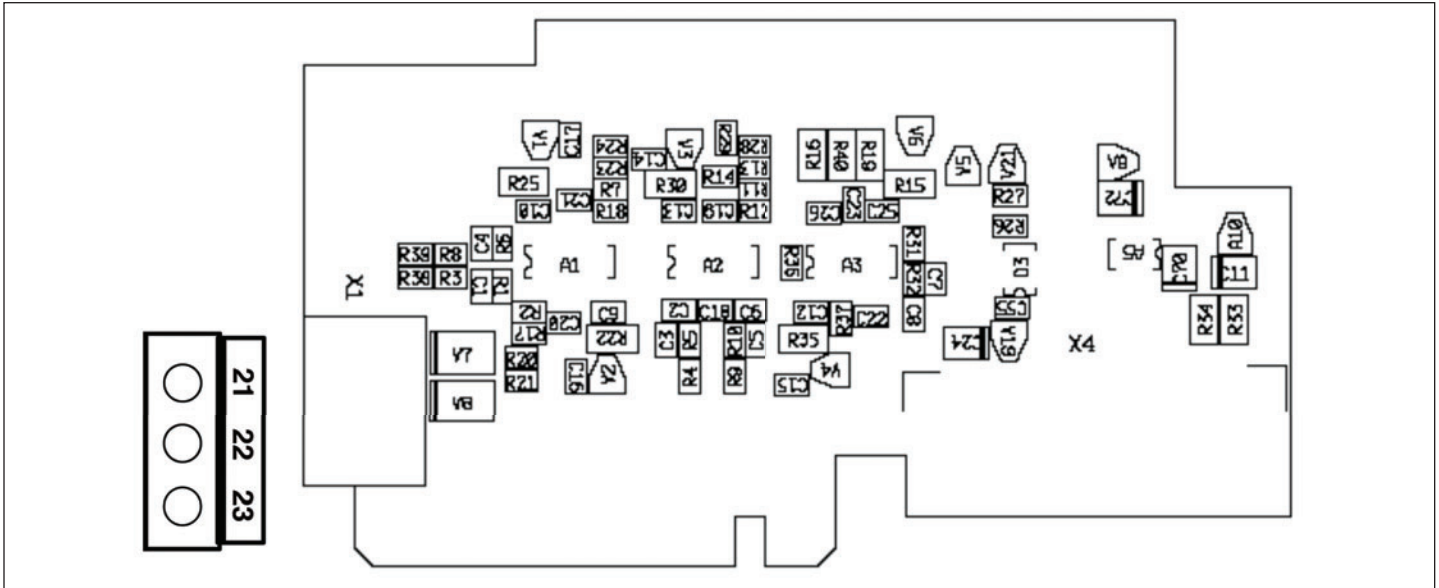


Figure 1. OPTD7 Communications Option Board

Specifications

Table 1. OPTD7 Board

Transformer primary/input voltage range	Min. 380 Vac -15% Max. 690 Vac +15%	
Transformer ratio Primary: secondary	60:1	
Transformer secondary/ output voltage range	14V rms	Between the terminals L1/L2/L3
Input impedance	L1/L2 = 50k ohm L1/L3 = 25k ohm L2/L3 = 25k ohm	L3 is internal virtual common
Cable recommendation	Max. 16 AWG, shielded	From transformer output to OPTD7
Measurement resolution	10 bits	
Voltage measurement accuracy	0.2%	



D7 Transformer

Expander board menu

Parameters

- Transformer ratio: transfer ratio of the measurement transformer
- The default value is 60.00 690V/11.5V. When using other measurement transformers other than the one supplied with the board, the voltage measurement shows the correct numbers if the transformer ratio is set correctly

Monitoring

- Line voltage: main voltage
- Line frequency: main frequency (including sign)

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