63230-304-207A1
12/2002

Instruction Bulletin

POWERLOGIC® Web Pages

Retain for future use.

USING THE WEB PAGES

These instructions contain the information you need to download and use the custom web pages created for use with the ECC.

LOADING THE GRAPHING TOOL

GravityBox Graphs is a freeware graphing tool that you'll need to view the graphs of these web pages. The executable file is available on our download site, along with the web pages.

To install the graphing tool:

1. Run gbgraphs.exe
2. Select <**No Samples**> when prompted in Samples Installation Options page.

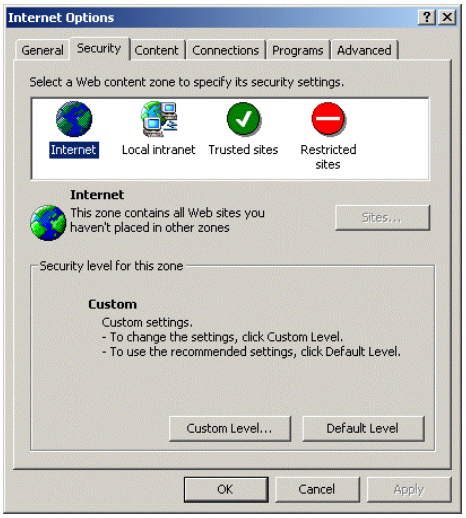
Installation of the graphing tool is complete. Close the GravityBox page.

Setting Up Your Browser

Note: This procedure explains how to change the security settings of your browser to enable ActiveX controls. These settings are required to use the custom web pages and the graphing tool. Enabling ActiveX controls may allow unsafe controls to access your system while you are attached to the internet. Allowing unsafe controls can expose your computer and network to controls that could potentially allow access to your private data, damage your system by changing or destroy information, or consume excessive time or resources in your system.

To set up your browser, follow these steps:

1. Open Internet Explorer.
2. At the top of the browser page, select **Tools** > **Internet Options.**



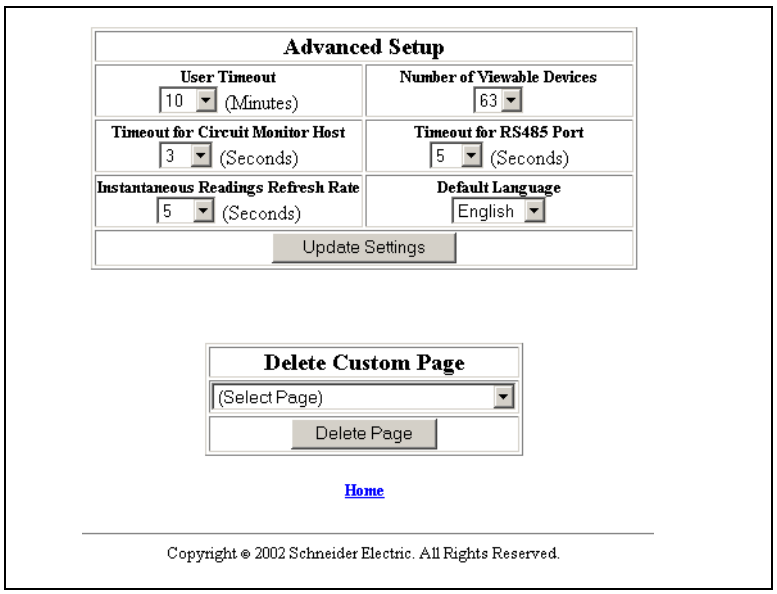
3. Click the **Security** tab.
4. Click **Custom Level**.
5. Set ActiveX controls and plug-ins to **Enable**.
6. Set Download unsigned ActiveX controls to **Prompt**.
7. Set Initialize and script ActiveX controls not marked as safe to **Enable**.
8. Set Run ActiveX controls and plug-ins to **Enable**.
9. Set Script ActiveX controls marked safe for scripting to **Enable**.
10. Click **OK** and then **Yes** to change your security settings.
11. Click **OK** to close the Security Settings window.
12. Click **OK** and close the Internet Options window.

    Your browser is now configured to display the custom web pages available for the ECC.

Deleting and Adding Web Pages on the ECC

The ECC can hold a maximum of five custom web pages. You may have to delete existing web pages to be able to use other web pages. Follow these steps to delete pages from the ECC:

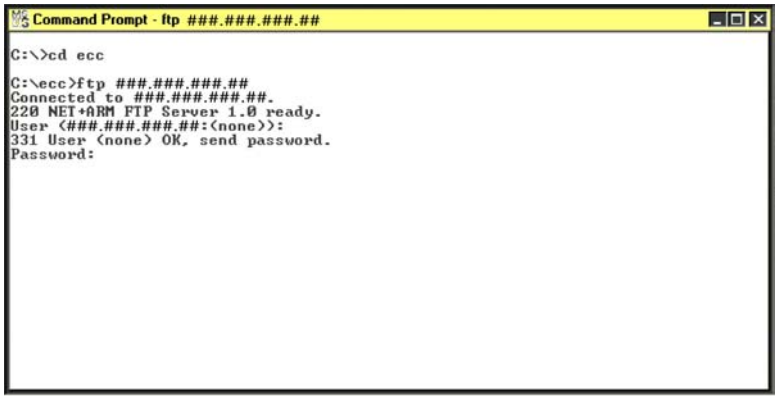
1. Launch your browser and enter the IP address to connect to your ECC.
2. Log in to the ECC home page and select **Advanced Setup**.
3. In the **Delete Custom Page** box, select the page you want to delete and click **Delete Page**. The page is removed.



The ECC acts as a File Transfer Protocol (FTP) server to let you download web pages to the ECC. Using FTP, you can also download ECC firmware updates. To download custom web pages, follow these steps:

1. Create a folder on your computer hard drive in which to save the custom web pages.
2. Access Command Prompt on your computer. (In Windows 2000, select Start > Program > Accessories > Command Prompt.)
3. At the Command Prompt prompt, access the drive where you want to save the web files. For example, type **c:** and press **Enter**.
4. Change the directory to access the folder. For example, type **cd ECC** and press **Enter.**

5. Start the FTP session with the ECC by entering **ftp** and the **IP address** assigned to the ECC. The message displays "Connected to [IP address]" that indicates you are now in an FTP session with the ECC.



6. At the prompt "User (IP address:(none):", press **Enter**.
7. At the Password prompt, enter the administrator password (**admin** is the default password).
8. At the ftp prompt, type **send** [**filename**] and press **Enter.** This sends the file through ftp from your hard drive to the ECC. When the download is complete, the ftp prompt displays again.

9. If you have another web page to download, type **send** [**filename**] and press **Enter**. If you are finished uploading files, at the ftp prompt, type **quit** and press **Enter** to exit the FTP session.

   For more information on customizing web pages for use with the ECC, refer to the POWERLOGIC® Ethernet Communications Card Reference Manual no. 63230-304-201.

Description of the Web Pages

This section briefly describes these web pages available for the ECC:

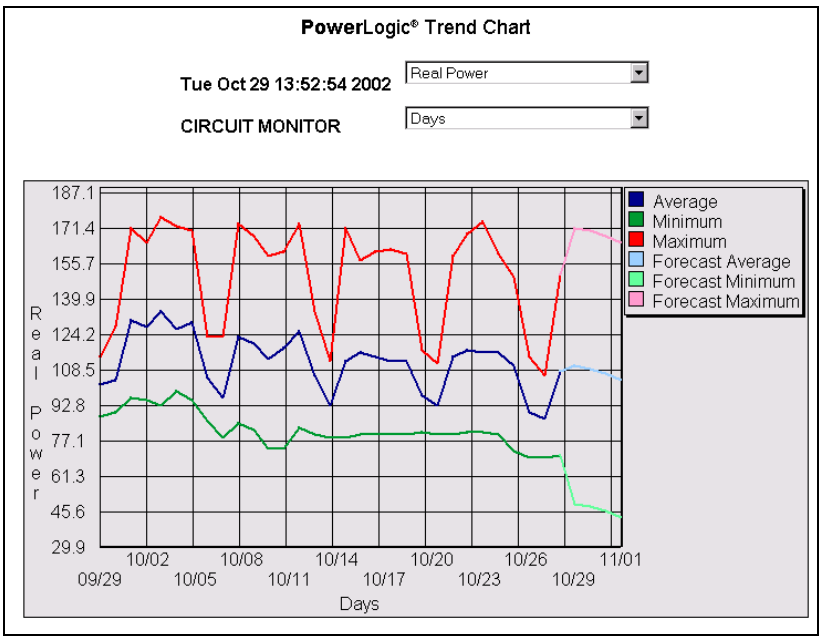
- Trending and Forecasting
- NEMA Motor Derating Curve
- Flicker
- ITIC/SEMI
- EN50160 Evaluations

Trending and Forecasting Web Page

The Trending and Forecasting Web page lets you use Internet Explorer and the ECC to view historical and forecasted data from a Series 3000 or 4000 Circuit Monitor. The Circuit Monitor is pre-configured to display eight quantities:

- Average Current, Iavg
- Average Line Voltage, Vllavg
- Real Power, kW
- Apparent Power, kVA
- Reactive Power, kvar
- True Power Factor, PF
- Frequency, f
- Total Harmonic Distortion, Vab

NOTE: You can change the default quantities to any other register-based value in the Series 3000 or 4000 Circuit Monitors (see "Trending & Forecasting Standard Quantities" on page 14). This page does not support trending of energy values or flicker.



Five time scales are allowed with this page:

- Seconds
- Minutes
- Hours
- Days
- Months

You must select the quantity to trend and the time scale to view the data as a trend line graph. Only hourly and daily data provide a predicted estimation (based on statistical methods) of the next four intervals.

The line graph plots the minimum, maximum, and average values for the register over the given time intervals. For hourly and daily time intervals, the graph shows four intervals of the forecasted minimum, maximum, average values.

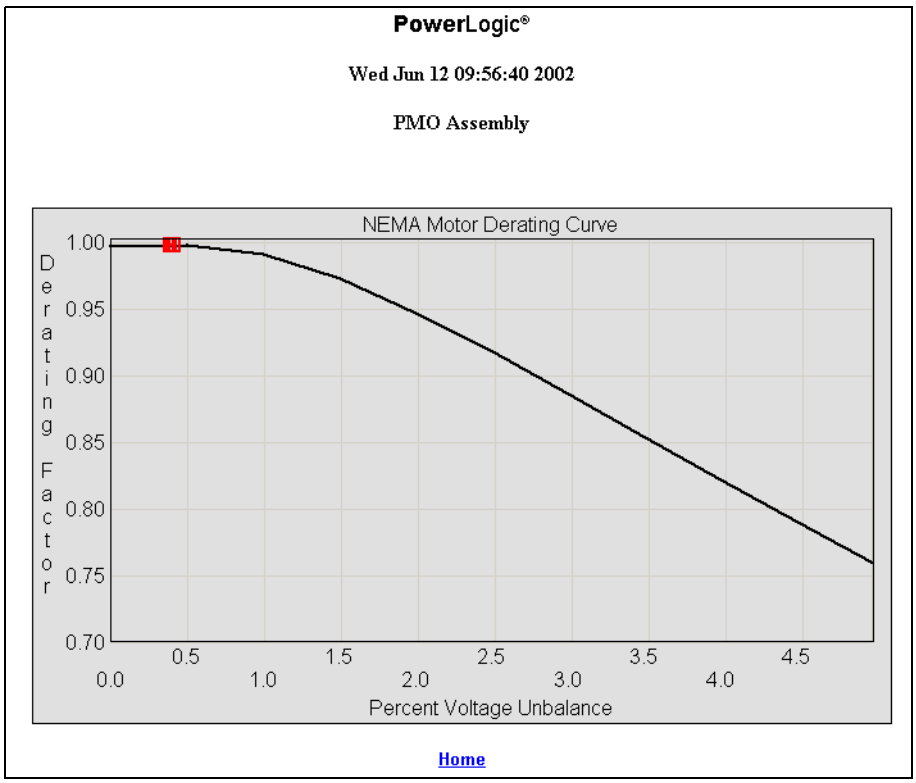
Based on the method used to determine trends and forecasts, the circuit monitor must be collecting data for the appropriate period of time (seconds, minutes, hours, days, and months). The web page graphs will not display information for the specified period of time if the circuit monitor has not accumulated data for at least two time periods.

NEMA Motor Derating Curve Web Page

When line voltages on a polyphase, squirrel-cage induction motor are not equal, the corresponding unbalanced currents cause excessive heating of the stator winding. The percentage of voltage unbalance corresponds to a proportionally larger percentage of current unbalance. Consequently, the temperature rise of a motor operating at a particular load and percent of voltage unbalance will be greater than a motor operating under the same conditions with balanced voltages.

If the voltages are unbalanced, you should derate the motor to reduce the possibility of damage. To calculate this, multiply the rated horsepower of the motor by the derating factor shown on the graph. Operation of the motor with more than 5% voltage unbalance is not recommended. See NEMA Standards Publication Number MG-1-1998, Revision 1 for more information.

The NEMA Motor Derating Curve web page is based on Figure 20-2 of NEMA Standards Publication Number MG-1-1998, Revision 1. The web page displays the worst-case unbalance detected by the circuit monitor as a function of this derating curve given by NEMA. The marker will move down the curve as the percentage unbalance increases. By knowing this information, you can make informed decisions about the effects voltage unbalance may be having on your induction motors.



Flicker Web Page

Using a Series 4000 Circuit Monitor with a transient module (CVMT), you can measure the modulation of electric light (called “flicker”). Under certain conditions, some individual's eyes are sensitive to flicker. Flicker occurs when electric light fluctuates because of the variation of line voltage at certain frequencies. Interaction among varying loads and the impedance of the electrical distribution system contribute to the line voltage variation that produces flicker. Flicker can be a problem in a work environment such as a factory where large, cycling loads are present. It can also be a problem for residential customers of electric utilities, particularly residences located between an electrical substation and large commercial users of electrical power. As the commercial establishments cycle their large loads, the voltage supplied to the residences may vary markedly, causing the lights to flicker in the residences.

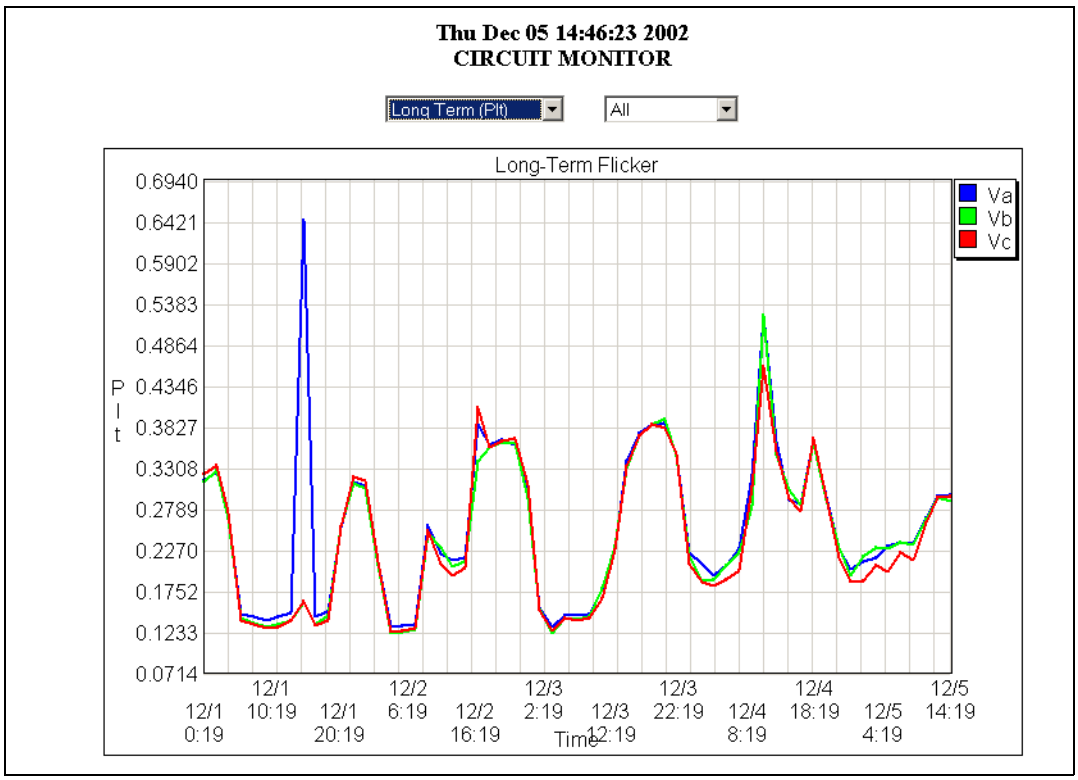
The circuit monitor detects and measures the flicker of an electrical system based on the IEC 61000-4-15 standard.

NOTE: EC 61000-4-15 is based on a 230-Volt, 50 Hz system. Presently, no flicker standard is defined for 120 V, 60 Hz systems).

Three quantities are measured:

- Instantaneous flicker level (IFL)
- Short-term flicker (Pst)
- Long-term flicker (Plt)

This web page displays all three measured quantities: IFL, Pst, and Plt. You can view these quantities for each individual phase or all three phases concurrently. The graphs display the magnitude of the flicker compared to duration of the flicker in a semi-logarithmic format.



ITIC/SEMI Web Page

ITIC Specification

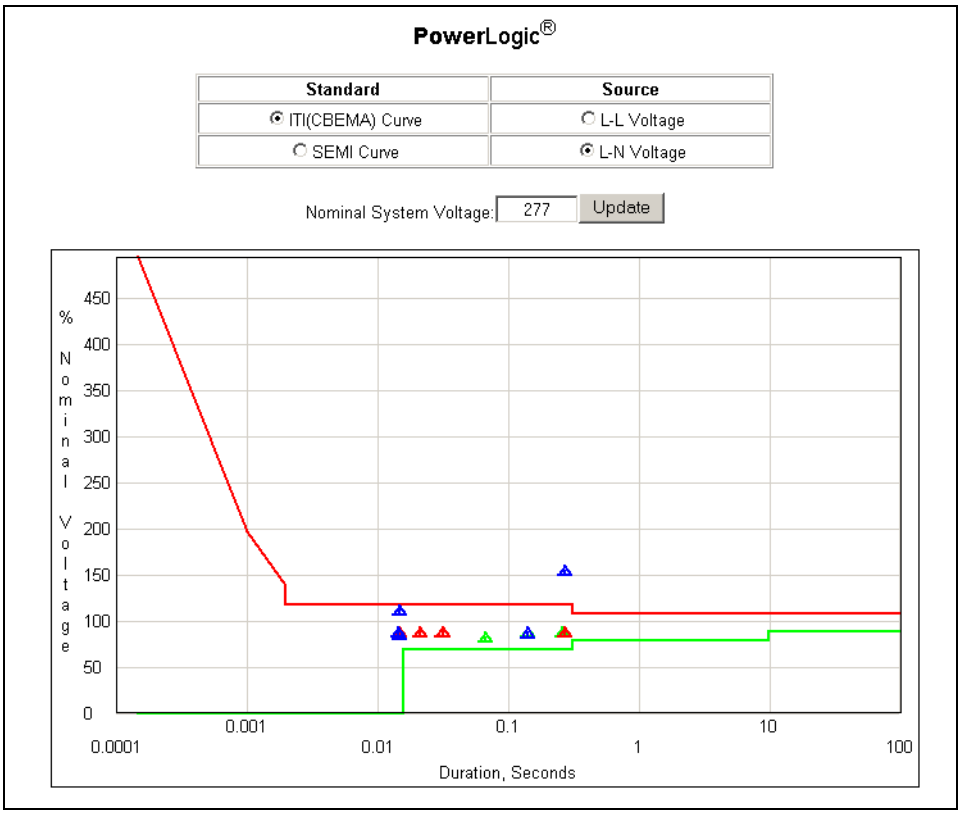
The ITI (CBEMA) curve describes an ac input voltage envelope that typically can be tolerated (no interruption in function) by most information technology equipment (ITE). The curve describes both steady-state and transitory conditions. The curve is applicable to 120 V nominal voltages obtained from 120 V, 208Y/120 V, and 120/240 V in 60 Hz systems. Other nominal voltages and frequencies are not considered. You'll have to determine if the curve is applicable for your application.

This curve is applicable from a duration of 167 microseconds (0.01 cycle) to steady-state (n cycles), and incorporates an upper and lower limit threshold.

Select the ITIC radio button on the ITIC/SEMI web page to plot each disturbance in the disturbance log on the ITIC curve. You can plot line-to-neutral or line-to-line voltage disturbances. Voltage disturbances are color coded:

- Blue—Phase A
- Green—Phase B
- Red—Phase C

Although this curve was developed for nominal voltages of 120 V, you can plot disturbance log data based on other nominal system voltages.



The bottom half of the web page includes a table of all disturbances recorded in the disturbance logs. This table gives specific information on each recorded disturbance including whether or not it passed or failed the ITIC and SEMI criteria.

Additional application information about the ITI (CBEMA) curve is available in PDF form at http://www.itic.org/technical/iticurv.pdf.

SEMI F47-0200 Specification

Semiconductor facilities require high levels of power quality because they use sensitive equipment and process controls. Semiconductor processing equipment is especially vulnerable to voltage sags. This specification defines the voltage sag ride-through capability required for semiconductor processing, metrology, and automated test equipment.

The requirements of this standard are more stringent than ITIC. The intention of this standard is to provide specifications for semiconductor processing equipment that will lead to improved selection criteria for subcomponents and improved equipment systems design.

The primary focus of this specification is semiconductor processing equipment, including but not limited to the following tool types:

- Etch equipment (Dry & Wet)
- Film deposition equipment (CVD & PVD)
- Thermal equipment
- Surface preparation and cleaning
- Photolithography equipment (Stepper & Tracks)
- Chemical Mechanical Polishing equipment
- Ion Implant equipment
- Metrology equipment
- Automated test equipment

This standard does not include over voltage conditions, voltage sag durations of less than 0.05 seconds (50 milliseconds), and voltage sag durations of greater than 1.0 second. The ITIC may be used to specify additional requirements outside the range of the SEMI curve.

Select the SEMI radio button on the ITIC/SEMI web page to plot each disturbance in the disturbance log on the SEMI curve. You can plot line-to-neutral or line-to-line voltage disturbances. Voltage disturbances are color coded:

- Blue—Phase A
- Green—Phase B
- Red—Phase C

You can also plot disturbance log data based on any given nominal system voltage.

The bottom half of the ITIC/SEMI web page includes a table of all disturbances recorded in the disturbance logs. This table gives specific information on each recorded disturbance including whether or not it passed or failed the ITIC and SEMI criteria.

Additional information about the SEMI F47-0200 curve is available at http://www.semi.org/.

EN50160 WEB PAGES

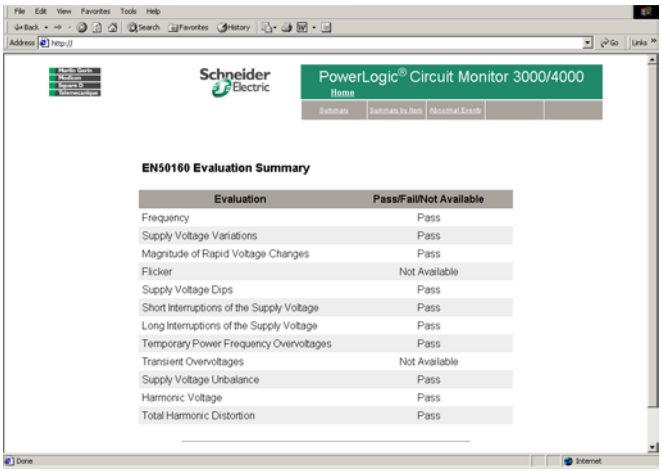
The EN50160 web pages let you use Internet Explorer and the ECC21 to view summaries of evaluations for a Series 3000 or 4000 Circuit Monitor that is enabled for EN50160 Evaluations. Refer to the Addendum for POWERLOGIC® Circuit Monitors Series 3000 and 4000 instruction bulletin for details on the EN50160 standard and circuit monitor operation with the evaluation enabled.

EN50160 Summary Page

When a Series 3000 and 4000 Circuit Monitor has EN50160 Evaluations enabled, it evaluates the following electrical parameters for compliance with the EN50160 standard:

- Frequency
- Supply voltage variations
- Magnitude of rapid voltage changes
- Flicker
- Supply voltage dips
- Short interruptions of the supply voltage
- Long interruptions of the supply voltage
- Temporary power frequency overvoltages
- Transient overvoltages
- Supply voltage unbalance
- Harmonic voltage
- Total harmonic distortion

You can view a summary of these evaluations on the EN50160 Summary web page.

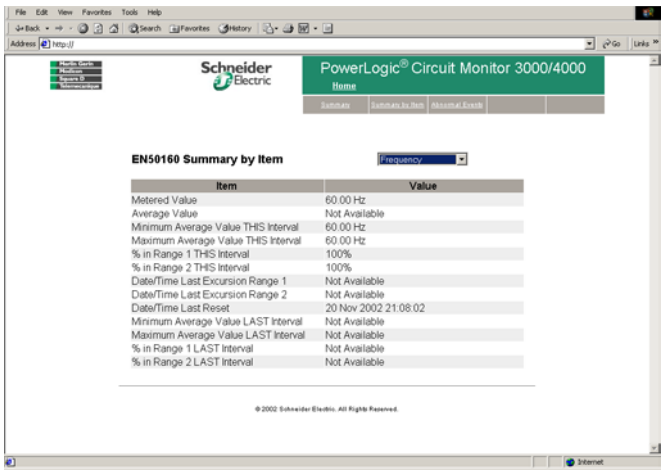


Refer to the following indications to interpret results of the Summary page:

- *Not Available* means the circuit monitor is not evaluating the electrical parameter for EN50160 criteria.
- *Pass* means that the electrical parameter is in compliance with the EN50160 standard (where applicable) or user-defined criteria.
- *FAIL* means that the electrical parameter is not in compliance with the EN50160 standard (where applicable) or user-defined criteria.
- *Not configured* means that the electrical parameter is available, but the circuit monitor is not configured to evaluate this parameter. To configure it, refer to the Addendum for POWERLOGIC® Circuit Monitors Series 3000 and 4000 instruction bulletin.

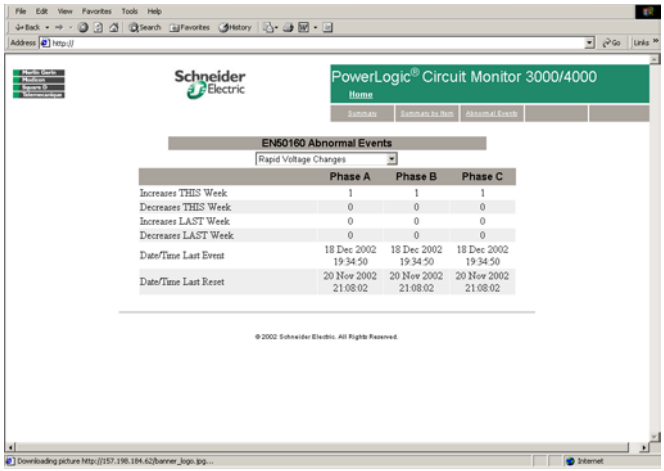
EN50160 Summary by Item Page

The EN50160 Summary by Item page lets you select a quantity from a pull-down menu and view a summary of information for that parameter. Refer to the Addendum for POWERLOGIC® Circuit Monitors Series 3000 and 4000 instruction bulletin for an explanation of the available information.



EN50160 Abnormal Events Page

The EN50160 Abnormal Events page lets you view information on abnormal events based on your circuit monitor configuration. Refer to the Addendum for POWERLOGIC® Circuit Monitors Series 3000 and 4000 instruction bulletin for an explanation of the available information.



TRENDING & FORECASTING CONFIGURATION REGISTERS

Reg	Name	Size	Type	Access	NV	Range	Notes
15500	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 5 (Iavg
15501	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 10 (Vll avg)
15502	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 16 (kW)
15503	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 17 (kVAr)
15504	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 18 (kVA)
15505	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 19 (PF total true alt)
15506	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 21 (Frequency)
15507	User-Defined Item To Post In Registers	1	Integer	R/W	Y	1 – 30	See “Trending & Forecasting Standard Quantities” on page 14. Default = 25 (THD Vab)
15508	Reserved	2			Y		Reserved for future development
15510	Trend Quantity 21 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1180
15511	Trend Quantity 21 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = 0
15512	Trend Quantity 21 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “Frequency”
15520	Trend Quantity 22 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1200
15521	Trend Quantity 22 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1
15522	Trend Quantity 22 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Ia”
15530	Trend Quantity 23 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1201
15531	Trend Quantity 23 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1
15532	Trend Quantity 23 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Ib”
15540	Trend Quantity 24 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1202
15541	Trend Quantity 24 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1

15542	Trend Quantity 24 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Ic
15550	Trend Quantity 25 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1211
15551	Trend Quantity 25 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1
15552	Trend Quantity 25 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Vab”
15560	Trend Quantity 26 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1212
15561	Trend Quantity 26 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1
15562	Trend Quantity 26 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Vbc”
15570	Trend Quantity 27 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 1213
15571	Trend Quantity 27 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = -1
15572	Trend Quantity 27 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “THD Vca”
15580	Trend Quantity 28 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 0
15581	Trend Quantity 28 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = 0
15582	Trend Quantity 28 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “ “
15590	Trend Quantity 29 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 0
15591	Trend Quantity 29 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = 0
15592	Trend Quantity 29 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “ “
15600	Trend Quantity 30 - Register Number	1	Integer	R/CW	Y	0 1000 – 65535	Default = 0
15601	Trend Quantity 30 - Scale Factor	1	Integer	R/CW	Y	-3 – 3	Power of 10 Default = 0
15602	Trend Quantity 30 - Label	8	Character	R/CW	Y	ASCII	16 Characters Default = “ “

ASCII CHARACTERS

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
1	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2	SP	!	"	#	$	%	&	’	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	‘	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	DEL

TRENDING & FORECASTING STANDARD QUANTITIES

Quantity No.	Quantity (Label)	Register
1.	Ia	1100
2.	Ib	1101
3.	Ic	1102
4.	In	1103
5.	Iavg	1105
6.	I unbalance worst	1110
7.	Vab	1120
8.	Vbc	1121
9.	Vca	1122
10.	Vll avg	1123
11.	Van	1124
12.	Vbn	1125
13.	Vcn	1126
14.	Vll unbalance worst	1132
15.	Vln unbalance worst	1136
16.	kW	1143
17.	kVAr	1147
18.	kVA	1151
19.	PF total true alt	1167
20.	PF total disp alt	1175
21.	User-defined (default: Frequency)	(1180)
22.	User-defined (default: THD Ia)	(1200)
23.	User-defined (default: THD Ib)	(1201)
24.	User-defined (default: THD Ic)	(1202)
25.	User-defined (default: THD Vab)	(1211)
26.	User-defined (default: THD Vbc)	(1212)
27.	User-defined (default: THD Vca)	(1213)
28.	(default: not used)	
29.	(default: not used)	
30.	(default: not used)	