

Online Power Quality and Diagnostic Reporting Software

Event Monitoring Software

Landis+Gyr's Event Monitoring Software (EVM) when paired with the MAXsys 2510 or MAXsys 2410 provides multiple notification capabilities on a variety of events. Such events include: power quality, status input, relay output events, power outage, power restoration, voltage and current events, over voltage and under voltage events and differentials, end of interval events and user defined events such as transformer overloads. This sophisticated software package can be customized by utility personnel to meet their needs, regardless of the size of their customer base.

When an event occurs the MAXsys meter dials out via the internal modem to the computer running the EVM software. The Event Monitoring software immediately confirms the unit identification number and time and date stamps the call in. The EVM software then transmits the event to a user-defined recipient via computer (email), cellular telephone, or alphanumeric and numeric pagers. Both the MAXsys 2510 and 2410 use logic and timers to define and/or delay when calls are to be made. Both meters can report on any history buffer event through EVM. Early notification of power quality and diagnostic events allows your utility to proactively evaluate, qualify and address the situation resulting, in higher efficiency and improved customer service.

EVM Power Quality Reporting

EVM can be programmed to send power quality reports to the responsible utility personnel. For example, power quality events go to the power quality group, over voltage and under voltage events go the substation group and demand threshold reports go directly to the customer. The MAXsys 2510 and 2410 can be programmed for power quality events by setting the parameter listed below.

- Report events with 1/2 cycle resolution
- Set threshold values for a 1, 2 or 3 cycle average
- User-defined event length in cycles



- Reports coincident current
- Per-phase reporting
- Up to 10 user-defined information fields

Sample EVM Power Quality Report

FILE: Drive: \ reports \ serial number .PRN

UNIT IDENTIFICATION: Serial Number

(C01) Customer Name and Meter ID

(C02) Customer Address/Meter Location

(C03-C10) Customer Defined Fields

Power Quality Settings: VALUES ARE AS FOLLOWS

Sample Interval Cycles: 1

Event Length in Cycles: 120

Low Threshold in Volts: 250

High Threshold in Volts: 305

Dial Out Delay in Seconds: 1

Event number, Date and Time of Call, Date and Time of Event, Phase A, B or C high/low, Cycles, Voltage, Coincident Current

1, 09/20/00, 14:09:43, 09/20/00, 14:13:36, Phase C Low, 120.5, 163.768129, 0.000000

EVM Reporting Diagnostics

In addition to all other reporting, the MAXsys 2410 and MAXsys 2510 support the Landis+Gyr Diagnostics, and when used with EVM, can report the pass and fail status of the diagnostics to the contact defined in EVM. Computer (email), cellular telephone, and alphanumeric or numeric pager deliver the diagnostics to the correct utility personnel, just like the Power Quality Reports.

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The MAXsys 2510 and 2410 meter samples the conditions every 10 seconds. For a diagnostic to fail, the condition must have failed for six consecutive samples (one minute). Conditions are not tested during power fail. After power recovery, each condition must persist for one minute before the state of the diagnostic (PASSED or FAILED) can change. This prevents spurious failures on short-time load fluctuations.

Sample EVM Diagnostic Report

FILE: Diagnostic.log
TIME: Wed Sep 13 22:44:24 2000
Call Date & Time: 9/20/2000 22:42:30
An Installation Diagnostic Event has Occurred for UID:
123456789
(C01) Customer Name and Meter ID Number
(C02) Customer Address/Meter Location
(C03) Report Type
(C04-C10) Customer Defined Fields
Auto-Sense: 120 Volts 4 Wire WYE (CBA)
1 1 1 1 1 1 1
Diagnostic 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
Enabled y y y y n y y n n n n n n n n n n
Fail for Diagnostic 6 (00011 fails total)

Note: Diagnostics 5 and 8 through 16 are reserved for future use

The following diagnostics are reported by EVM:

Diagnostic 1 (Polarity and Cross Phase)

Checks for the proper phase relationships of each of the enabled voltages with respect to phase A.

Diagnostic 2 (Phase Voltage Deviation Check)

Checks the relative amplitude of the enable phase voltages.

Diagnostic 3 (Inactive Phase Current Check)

Checks each enabled current amplitude against a specified value in the diagnostic control table.

Diagnostic 4 (Phase Angle Displacement Check)

Verifies that the power factor is within limit on each enabled phase.

Diagnostic 5 (Reserved for future use.)

Diagnostic 6 (Current Magnitude Imbalance Check)

Checks the relative amplitude of the enabled phase currents.

Diagnostic 7 (Energy Direction Check)

Diagnostic will fail if any enable phase energy flow is negative (reactive energy).



...beyond Measure

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