EnergyIP 8

Metering & Device Events

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HONEYWELL/ELSTER METER EVENTS

This document provides commonly reported Honeywell/Elster meter events, a description of the event, and recommendations for clearing/fixing the event.

Event	Description & Action to Resolve
Clock Error Meter Clock Unknown *OR* Clock Failed Alarm Set	The internal clock of the meter has failed. This is usually a fatal meter problem. Request that a time sync be performed from the AMI system. If this does not resolve the issue, replace meter. *Special Note for REX-U Meters:* The first 12-72 hours of communications with the meters may be spotty and may produce a number of Clock Error messages. This is common behavior in the first 72 hours. Factors that can complicate the initial syncing of information with the gatekeeper can include distance of the meter to the next nearest hopping point and location of the meter (is it in a bad spot, is there some type of interference, etc.). If communications issues persist and/or meter/sync events continue after the first 3 days of initial installation, open a helpdesk ticket to have support staff review.
Demand Reset	A demand reset event indicates that the demand reset button was pushed on the meter. This is a latching event, and once it is pushed, it must be cleared in the field using the MeterCat software.
Clear Event Log	Performing this task with the MeterCat software will clear events that are stored in the device's event log. When the function is completed, MeterCat will generate a completion report indicating the status of the task (whether it succeeded or failed) as well as which values were cleared.
Clear Status Flags	This task will clear the events that are displayed in the Conditions tab of the Status view. When the function is completed, MeterCat will generate a completion report indicating the status of the task (whether it succeeded or failed). *Note:* To clear both status flags and the event log, create a function that includes the Clear Status Flags task as well as this task.

Device Access for Read	A TABLE_ACCESS_WARNING flag is set if the number of optical/serial port attempts with the wrong password or the number of radio attempts with the wrong encryption key reaches (or is an integer multiple of) the threshold. A threshold of zero disables the TABLE_ACCESS_WARNING flag. This can also happen with an Encrypted LAN/WAN if the communication is poor and the meter does not recognize the request is valid due to many bad packets. Unless there is a pattern of potential tamper events associated with these meters then they can be monitored for a while with no further action required. The WPPI Device Event report filters out this event due to frequent erroneous events when communication levels are poor.
GmOverLimitDetected	Indicates interval period flow has exceeded a programmed maximum. The event is persistent until cleared by the handheld device. When triggered the module multiplier should be reviewed and modified if the flow levels that caused the over limit are expected to continue. Only applicable to water modules connected to an absolute encoder.
Meter Diagnostic Error	This is triggered for several general Honeywell/Elster meter alarms. For water, this often is a "BPD Two Way Communication Unavailable" event.
Meter Measurement Error	A meter measurement error can indicate a stuck water meter or a water meter that is not transmitting the read correctly to the AMI water module. This indicates the last scheduled read failed. A single occurrence of this alarm may be an intermittent read problem, but receiving this alarm each day may indicate a problem that should be reviewed in the field. This status can occur when the dial is in-between digits and does not necessarily indicate a problem. If it occurs repeatedly, the tamper flag will be set indicating a possible tamper or hardware problem.

Meter Measurement Check Failed	Meters perform a self-check daily if programmed to do so. These checks include checking for valid voltage and current readings on each phase, and proper meter socket wiring. A single failed self-check failure may not indicate a problem, but repeated failures should be reviewed in the field to determine the cause.
Meter Reverse Rotation	**Electric Meters:** Indicates power flow on the received channel. **Water Meters:** A possible reverse installation or transient backflow condition might exist. This issue could be due to a read error interpreted as a backflow, such as a wheel between digits. In Firmware 3.2 the event is persistent until cleared by the handheld device. Otherwise, the condition clears after 48 intervals.
Power Failure Log Error Detected	The Power Failure Log Error Detected event comes from an ILN Error event on a meter and means there was an outage at the meter and it failed (or it believes if failed) to save memory data to the EEPROM. When it restores it attempts to recover 'Power Failed Saved Data,' which can cause corruption in registers and other data if it really didn't save it correctly. When this happens, the registers and interval data since the event should be reviewed. If the values look normal and the meter appears to be operating normally, then there is nothing to worry about. If the registers or interval data collected since then appear incorrect or the collected data does not appear to follow the known usage prior to the event AND/OR other errors continue to come in from the meter, pull the meter from the field. A long diagnostic should be taken for further review and the meter likely RMA'd.
Read Error: No Reading from Register	**Absolute Encoders Only** Indicates that the last scheduled read failed. The value reported is the last successful read, and the LP for this interval will be 254 (no value recorded). The consumption for this interval will get added into the interval ended by the next successful read. This status can occur when the dial is in-between digits, and does not necessarily indicate a problem. If it occurs repeatedly, the tamper flag will be set indicating a possible tamper or hardware problem.

Sag Phase x	Indicates voltage has dropped below the meter's configured threshold. For REX2 meters, this is set based on the factory programming sheet. For most WPPI members 10% above or below the normal voltage.
Tilt Warning	**Electric Meters:** The Device saw a Tilt in conjunction with a Power Failure. May be a Tamper. **Water Meters:** This is a tamper and indicates no communications between the register and the module. It indicates a possible cut cable condition. **Pulse Water Meters:** It indicates that the tamper loop is open and is persistent until cleared by the handheld device. **Absolute Encoders:** It means that we have not been able to read the register for the last three attempts, and clears then the condition no longer exists.
Meter Tamper	Indicates no communication between the register and the module. The cause could be a cut cable or other hardware issue. The event is persistent until cleared by the handheld device.

SENSUS METER EVENTS

This document provides commonly reported Sensus meter events, a description of the event, and recommendations for clearing/fixing the event.

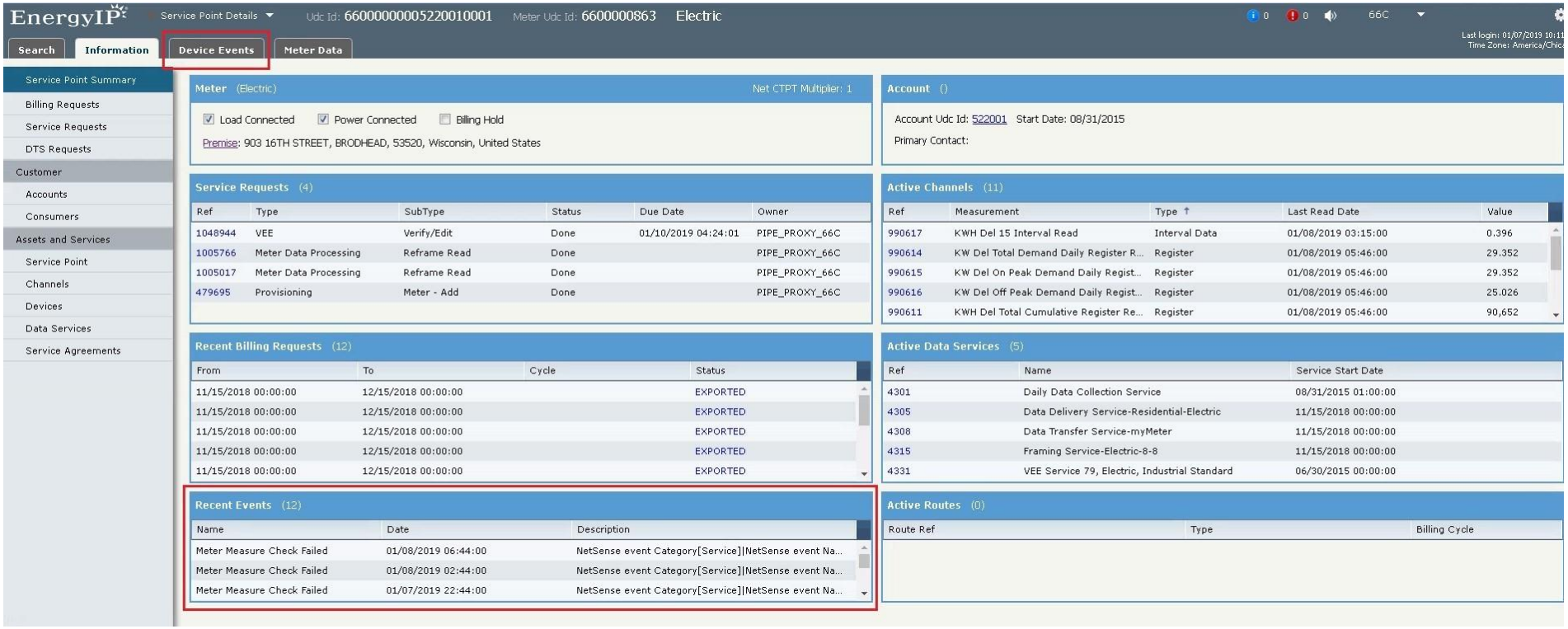
Event	Description	Action to Resolve Alert
Brownout	The voltage for the meter has dropped below the brownout threshold for length of time.	Change the voltage threshold for the brownout alarm, or change the voltage source to one with more reliable and consistent voltage.
Click Count	The meter is currently undergoing transformer breaker operation.	Change the voltage source to reduce transformer breaker operations.
Clock Error	The meter is currently undergoing transformer breaker operations.	Change the voltage source to reduce transformer breaker operations.
Configuration Error	The checksum of the configuration data table cannot be verified	The checksum of the configuration data table cannot be verified.
Demand Overload	The demand value is higher than the programmed value.	Self-correcting. On-site visit may be necessary.
Hot Socket	The meter's internal temperature exceeded the temperature threshold.	On-site visit is required to investigate the meter socket.
Low Battery	The meter's battery has a low voltage. This will also appear if the battery is missing.	Self-correcting. An on-site visit may be necessary.

Meter Read Failure	The meter could not be read due to no response, bad CRC/Checksum/Parity, or invalid data.	Re-read the meter. Replace the meter if the alarm continues.
Over Class Amps	The current flow exceeds the rated class amps.	The alarm will reset when the voltage average window resets. Depending on the length of the window, this could take some time to resolve itself.
Over Voltage	The average RMS Voltage has exceeded the threshold.	The alarm will reset when the voltage average window resets. Depending on the length of the window, this could take some time to resolve itself.
Power Fail	The meter does not have any AC power.	The alarm will auto-resolve when the AC power is restored. If the power has been restored, but the alarm persists, then an on-site visit is required to investigate the status of the meter.
RAM Failure	The RAM checksum test failed during boot-up.	Automatically clears when a static setup is performed.
Reverse Energy	Reverse power flow has been detected continuously.	On-site visit is required to investigate the reason for the alarm.
ROM Failure	The meter cannot access the EEPROM.	On-site visit is required.
Self-Check	The meter failed the self-check during reboot.	Self-correcting. Contact Support if this persists.
Tamper	The meter's orientation has been moved or the cover has been opened.	On-site visit is required to investigate the status of the meter.

Device Events

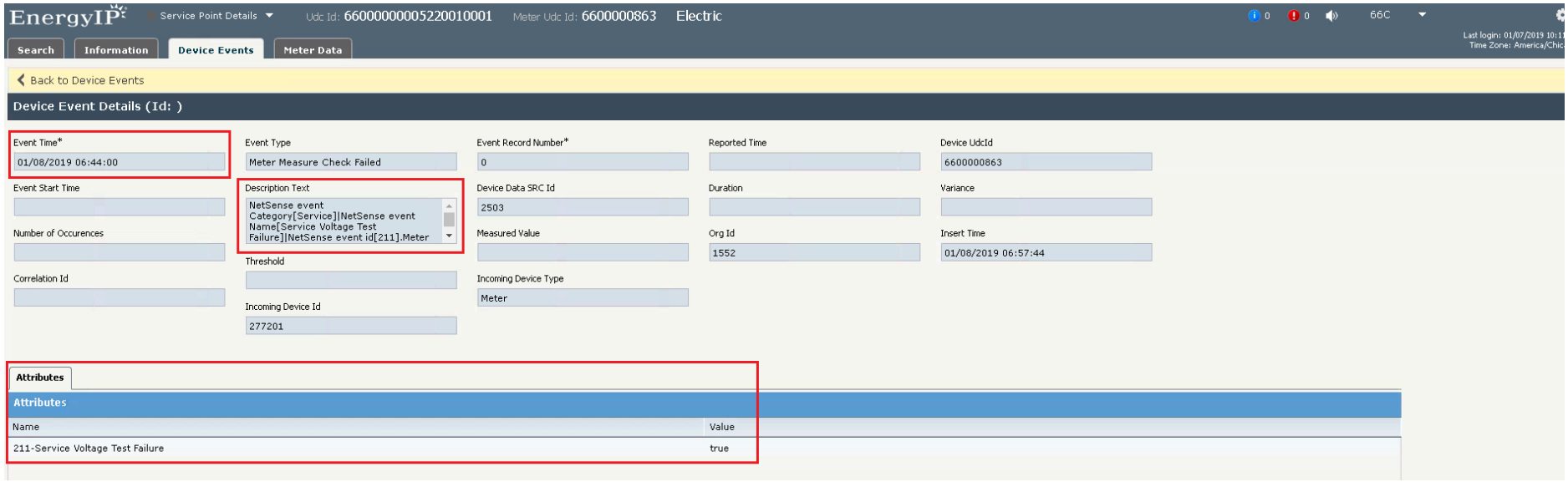
Viewing Device Events in energyIP8

Any meter event listed on the daily Device Events report may be found in energyIP8. When you access the Service Point, you can get a list of events by scrolling through the Recent Events section on the Service Point Summary page. To get a full listing of events and to drill down for more details, click on the Device Events tab at the top of the screen:



To view a history of device events, click on the Device Events tab Search button and a full list of events collected by energyIP8 will be presented. To view details of a particular event, click on the Event Time link on the particular record:

The Device Event Details page presents a couple points of interest, including the Event Time, a more complete event Description as provided by the AMI system and a summary Attribute of the event. Note that the value of the Attribute (True/False) indicates the present state of the event at the time it was reported. True indicatesthat the state of the event is active at the time of the event being reported. False would indicate that a particular event has been cleared by the meter and is no longer active at the time the event was reported to energyIP8:



Honeywell/Elster Events

Commonly Reported Honeywell/Elster Events

Event	Description	Action to Resolve Alert
Current Imbalance Test Failed	The meter sensed a current imbalance between the phases. This can indicate a failed current or potential metering transformer, resulting in incorrect meter reads. This can be triggered when there is no issue if all three phases have very low loads.	If a meter routinely has this error, and it is due to very low loads, the check can be disabled using the Metercat software. If you participate in the WPPI shared meter technician service, contact your WPPI meter technician for assistance.
Demand Reset	A demand reset event indicates that the demand reset button was pushed on the meter.	This is a latching event, and once it is pushed must be cleared in the field using the Metercat software.
Device Access for Read	A TABLE_ACCESS_WARNING flag is set if the number of optical/serial port attempts with the wrong password or the number of radio attempts with the wrong encryption key reaches (or is an integer multiple of) the threshold. A threshold of zero disables the TABLE_ACCESS_WARNING flag. This can also happen with an Encrypted LAN/WAN is the communication is poor and the meter doesn't recognize the request is valid due to many bad packets.	Unless there is a pattern of potential tamper events associated with these meters then they can be monitored for a while with no further action required. The WPPI device event report filters out this event due to frequent erroneous events when communication levels are poor.
GmOverLimitDetected	Indicates interval period flow has exceeded a programmed maximum.	The event is persistent until cleared by the handheld device. When triggered the module multiplier should be reviewed and modified if the flow levels that caused the over limit are expected to continue. Only applicable to water modules connected to an absolute encoder.
Meter Diagnostic Error	This is triggered for several general Honeywell/Elster meter alarms.	For water, this often is a "BPD Two Way Communication Unavailable" event.

Meter Measurement Error	Meters perform a self-check daily if programmed to do so. These checks include checking for valid voltage and current readings on each phase, and proper meter socket wiring.	A single failed self-check failure may not indicate a problem, but repeated failures should be reviewed in the field to determine the cause.
Meter Measurement Check Failed	The meter's battery has a low voltage. This will also appear if the battery is missing	Self-correcting. On-site visit may be necessary.
Meter Reverse Rotation	For electric, this indicates power flow on the received channel. For water, a possible reverse installation or transient backflow condition might exist. This issue could be due to a read error interpreted as a backflow, such as a wheel between digits.	In Firmware 3.2 the event is persistent until cleared by the handheld device. Otherwise, the condition clears after 48 intervals.
Power Failure Log Error Detected	The Power Failure Log Error Detected event comes from an ILN Error event on a meter and means there was an outage at the meter and it failed (or it believes if failed) to save memory data to the EEPROM. When it restores it attempts to recover 'Power Failed Saved Data' which can cause corruption in registers and other data if it really didn't save it correctly.	When this happens, the registers and interval data since the event should be reviewed. If the values look normal and the meter appears to be operating normally, then there is nothing to worry about. If the registers or interval data collected since then appear incorrect or the collected data does not appear to follow the known usage prior to the event AND/OR other errors continue to come in from the meter, then the meter should be pulled from the field. A long diagnostic should be taken for further review and the meter likely RMA'd.
Sag Phase x	Indicates voltage has dropped below the meter configured threshold. For REX2 meters this is set based on the factory programming sheet. For most WPPI members 10% above or below the normal voltage.	Should be reviewed if reported continuously - site visit may be necessary to troubleshoot.

Tilt Warning	For Water, this is tamper and indicates no communications between the register and the module. It indicates a possible cut cable condition. For Pulse Water, it indicates that the tamper loop is open and is persistent until cleared by the handheld device. For Absolute encoders, it means that we have not been able to read the register for the last three attempts, and clears when the condition no longer exists. For Electric, The Device saw a Tilt in conjunction with a Power Failure.	Should be reviewed regularly and site visit may be necessary if event is regular and repeated.
Meter Tamper	Indicates no communication between the register and the module. The cause could be a cut cable or other hardware issue.	The event is persistent until cleared by the handheld device.
Clock Error (Meter clock unknown OR Clock Failed Alarm Set)	The internal clock of the meter has failed. This is usually a fatal meter problem.	Request that a time sync be performed from the AMI system. If this does not resolve the issue, replace meter.

CLEAR EVENT LOG

Performing this task with the MeterCat software will clear events that are stored in the device's event log. When the function is completed, Metercat will generate acompletion report indicating the status of the task (whether it succeeded or failed) as well as which values were cleared.

CLEAR STATUS FLAGS

This task will clear the events that are displayed in the Conditions tab of the Status view. When the function is completed, Metercat will generate a completion report indicating the status of the task (whether it succeeded or failed).

Sensus Events

The Sensus system uses a point to point tower based system. Because of this method, there are some important things to note when looking at events.

Power Outage / Restore

A Power restore alarm without a power fail alarm can be an actual power outage or can be a meter processor reset. A processor reset can occur because of a voltage dip or other power quality issues where in most cases the customer would not notice. The only sure way to know the customer has had an outage is by seeing the power fail alarm. During significant outages, the outage alarm will not be present for all of the customers experiencing an outage. This is due to a large number of alarms coming in at one time, and the towers (TGBs) not handling the volume of these messages.

Outage and Restoration Events

Outage and Restoration events indicate that a meter has lost power or power has been restored to the meter. These events are sent at the time of occurrence to the gatekeeper, and the gatekeeper forwards these to WPPI. The ability for WPPI to receive the events is dependant on the gatekeeper being powered up.
NorthStar outage integration is available, and when enabled, causes an outage service request to be created in NorthStar for any outage event that is received, and the closing of that service order when a restoration message is received. Part of the outage integration is a public facing map that shows any open outage service orders that are in NorthStar.

Commonly Reported Sensus Events

Event	Description	Action to Resolve Alert
Brownout	The voltage for the meter has dropped below the brownout threshold for length of time	Change the voltage threshold for the brownout alarm or change the voltage source to one with more reliable and consistentvoltage
Click Count	The meter is currently undergoing transformer breakeroperations	Change the voltage source to reduce transformer breakeroperations
Clock Error	The meter's clock failed	Self-correcting. Contact Support if this persists
Configuration Error	The checksum of the configuration data table cannot beverified	Reconfigure the meter. The reconfiguration can be done on-air
Demand Overload	The demand value is higher than the programmed value	Self-correcting. On-site visit may be necessary
Hot Socket	The meter's internal temperature has exceed the temperature threshold	On-site visit is required to investigate the meter socket
Low Battery	The meter's battery has a low voltage. This will also appear if the battery is missing	Self-correcting. On-site visit may be necessary.
Meter Read Failure	The meter could not be read due to no response,bad CRC/Checksum/Parityor invalid data	Re-read the meter. Replace the meter if the alarm continues
Over Class Amps	The current flow exceeds the rated class amps	The alarm will reset when the voltage average window reset. Depending on the length of the window, this could take some time to resolve itself.
Over Voltage	The average RMS Voltage has exceeded the threshold	The alarm will reset when the voltage average window reset. Depending on the length of the window, this could take some time to resolve itself.

Power Fail	The meter does not have any AC power	The alarm will auto resolve when the AC power is restored. If the power has been restored but the alarm persists then an on-site visit is required to investigate the status of the meter
RAM Failure	The RAM checksum test failed during boot-up	Automatically cleared when a static setup is performed
Reverse Energy	Reverse power flow has been detected continuously	on-site visit is required to investigate the reason for the alarm
ROM Failure	The meter cannot access the EEPROM	On-site visit is required
Self-Check	The meter failed the self-check during reboot	Self-correcting. Contact Support if this persists
Tamper	The meter's orientation has been moved or the cover has been opened	On-site visit is required to investigate the status of the meter