



Trynzc for Utilities

**Use Case: Reverse
Power Detection**

Overview

Utility leaders must recognize the mounting pressures on their business. Electrification, energy transition, distributed energy resources (DER), legislation, supply chain constraints, data silos, changing workforce, and an inflationary economy are putting the spotlight on operational speed and flexibility.

Regardless of size, utilities need a pathway to react to grid conditions with real-time data without high costs, long software cycles, or the technical debt that comes with custom development.

Trynzc's software platform solution, Trynzc for Utilities, can be used to monitor and react to many conditions on your power grid in real time including reverse power events.

This use case document reviews two scenarios where you have reverse power present at a meter. These situations can be indicative of other problems present in your grid, so it's important to have a complete view of all the customers on your grid generating power.

Thanks to Trynzc for Utilities you can actively manage or react to reverse power– both expected and unexpected – to prevent further issues.

Scenario #1: Monitoring Known Generation Customers

In this scenario, Trynzc for Utilities enables you to monitor known generation customers to ensure their equipment is installed correctly and working properly. For the purposes of this guide, we will assume these customers have two meters in place to account for their generation and usage.

Here's how easy it is to monitor and manage known customers that generate power back onto the grid.

Step 1 – Configure the Event

We'll begin by configuring the reverse power rotation event in the Trynzc for Utilities platform.

To start, leverage your list of known generation customers and configure detection of the reverse power condition that's only targeted to those customers. Along with that list of accounts, use the CIM2 event code for reverse rotation power along with the meter program to support that configuration.

Event Definition

[SAVE](#)
[EXIT](#)
[COPY](#)
[DELETE](#)
[ADD IMPLEMENTATION NOTES](#)

Name

Reverse Rotation - Known Generation Accounts

44 / 500

Description

0 / 500

Event Definition Key

4e8ac985-f9bb-4a38-a397-9c4caf057ff2

0 / 500

Detect Events: Off

Trynzc will not detect events using this Event Definition for all Event Group Definitions that reference this definition.

Workflow

Reverse Rotation - Known Generation Accounts

Response Team

Central Response Team

Severity

2 - High

Default Owner (optional)

Limit number of open events: 250

Can be added to an Event Group Definition

Relative Importance Rules

Use relative importance to determine how this event definition creates events in relation to existing open events.

☐ Use Relative Importance Rules

Event Detector

Non-Voltage - Meter

44 / 500

Parameter

Alarms - Count

44 / 500

☐ Exclude events that match this criteria

Setting

IEC Patterns

This setting is required.

Operator

InList

Values (comma separated)

3,12,93,219

Setting

Event Threshold

This setting is required.

Operator

gt=

Value

1

Setting

Maximum Event Age

This setting is required.

Operator

<=

Value

0y : 10d : 0h : 0m : 0s

+ ADD SETTING

+ ADD SETTING GROUP

Parameter

Attributes - Meter Program

44 / 500

Setting

Meter Program

This setting is required.

Operator

InList

Values (comma separated)

107b

☒ Include meters with no meter program available

+ ADD SETTING

+ ADD SETTING GROUP

+ ADD PARAMETER

Step 2 – Prioritize Detected Events

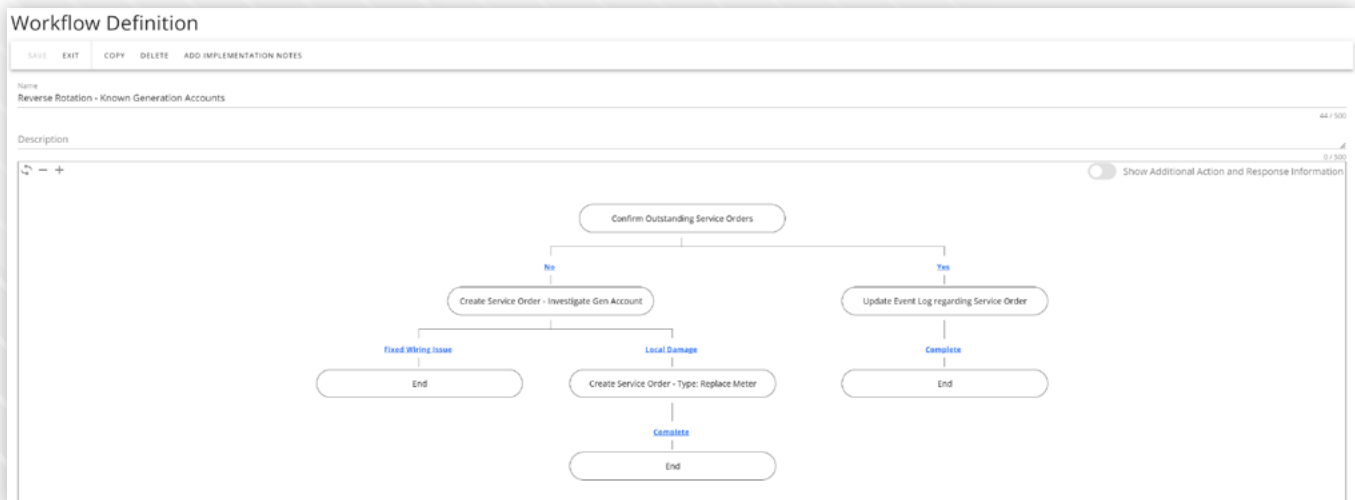
Once you have configured the conditions you want to monitor – Trynzc for Utilities then organizes those proactively detected events into views. Those views the update dynamically based on the latest data.

Reverse Rotation - Known Generation Accounts SAVE AS							
Event ID	Event Type (1)	Created	Event Type	Meter Status	Meter	Transformer	Feeder
X02-814	Reverse Rotation - Known...	Fri, Feb 24, 2023, 2:15 PM	Reverse Rotation - Known Generation Accounts	InService	MTB-66E7507E-C0E7	TBN-9011AA18-B030	CB-0060A04C
W00-900	Reverse Rotation - Known...	Fri, Feb 24, 2023, 2:14 PM	Reverse Rotation - Known Generation Accounts	InService	MTB-C796251-E404	TBN-9050836-2081	CB-02166115

Step 3 – Tailor Business Processes to Deal with these Accounts

Since we know these are known generation accounts, you can tailor your business process to consistently respond to the detected conditions.

In the example below, our first step is to confirm there isn't any active work being done by checking on any active service orders. Confirming that is not the situation, something needs to be reviewed on-site and the next step is to create a Service Order for Investigating Generation Accounts. In this example, we have 2 paths of action - either fixing a wiring issue or discovering some local damage that results in the meter being replaced.



Scenario #2: Identifying Unexpected Reverse Power

The first scenario dealt with known power generating accounts, but maybe more important is how to deal with unexpected reverse power from unknown power generation accounts.

This scenario covers how you can configure Trynzc for Utilities to sense unexpected reverse power, and initiate the communication and workflows needed to register and regulate their power generation.

Step #1 – Configure the Parameters for Detection

Just like in the first scenario, we start by configuring the even detection parameters. The parameters to continually monitor your grid for reverse power conditions based on a wide variety of details. In this case, again using the meter's CIM2 event code for reverse rotation detected and we are going to exclude all the K form meters.

Event Definition

[SAVE](#)
[EXIT](#)
[COPY](#)
[ADD IMPLEMENTATION NOTES](#)
[DELETE](#)

Name
Reverse Rotation - Unexpected excluding 'K' Form Meters

Description

Event Definition Key
4e8ac985-f90b-4a38-a397-9c4caf657ff2

☐ Detect Events: Off
Trynzc will not detect events using this Event Definition for all Event Group Definitions that reference this definition.

Workflow
Reverse Rotation - Unexpected

Response Team
Central Response Team

Severity
2 - High

Default Owner (optional)

☒ Limit number of open events: 250

☒ Can be added to an Event Group Definition

Relative Importance Rules
Use relative importance to determine how this event definition creates events in relation to existing open events.

☐ Use Relative Importance Rules

Event Detector
Non-Voltage - Meter

Parameter
Alarms - Count

☐ Exclude events that match this criteria

Setting
IEC Patterns

Operator
INLIST

Values (comma separated)
3,12,93,219

Setting
Event Threshold

Operator
>=

Value
1

Setting
Maximum Event Age

Operator
<=

Value
0y : 30d : 0h : 0m : 0s

[+ ADD SETTING](#)

[+ ADD SETTING GROUP](#)

Parameter
Attributes - Meter Form

Setting
Meter Form

Operator
NotInList

Values
180719/716

Setting
Include meters with no meter form available


Operator

Value

[+ ADD SETTING](#)

[+ ADD SETTING GROUP](#)

[+ ADD PARAMETER](#)



5

Step 2 – Proactively Assign Unexpected Reverse Power Rotation Cases

Once you have configured the conditions you want to monitor – it's easy to organize those proactively detected events into views that are dynamically updated based on a frequency you control. This allows everyone on your team to understand which work is being done by whom.

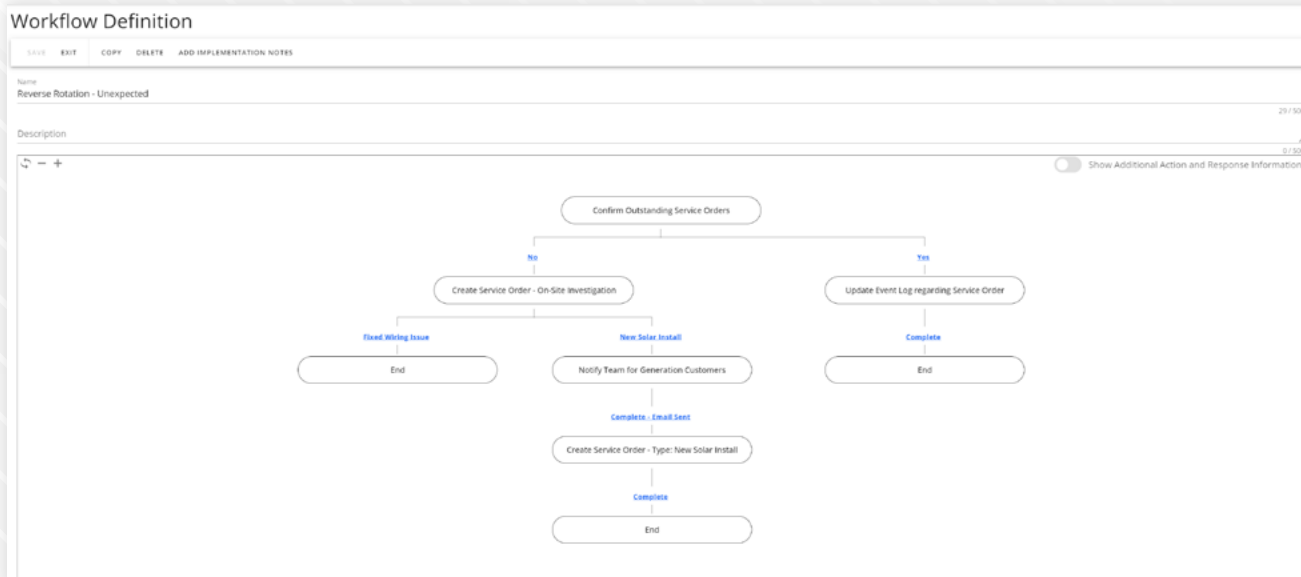
Reverse Rotation - Known Generation Accounts SAVE AS							Export Events	Create Event	ACTIONS
Event ID	Event Type (1)	Created	Event Type	Meter Status	Meter	Transformer	Feeder	Columns	
<input type="checkbox"/> TPS-916	Reverse Rotation - Unex...	Fri, Feb 24, 2023, 2:26 PM	Reverse Rotation - Unexpected excluding 'K' Form Meters	InService	MTR-A7FA370C-8463	TBN-324D39EF-8458	CBR-05GAABE1		
<input type="checkbox"/> SRT-017	Reverse Rotation - Unex...	Fri, Feb 24, 2023, 2:25 PM	Reverse Rotation - Unexpected excluding 'K' Form Meters	InService	MTR-E38B20B2-7075	TBN-3CEB00AA-A0EA	CBR-04ABK13		
<input type="checkbox"/> DPL-019	Reverse Rotation - Unex...	Fri, Feb 24, 2023, 2:25 PM	Reverse Rotation - Unexpected excluding 'K' Form Meters	InService	MTR-D24BFE1F-5210	TBN-04D8E3D9-3E47	CBR-06FA2051		

Step 3 – Configure Business Processes to Handle Unexpected Reverse Power

After the right work is assigned to the right staff, you can configure specific processes in handling an unexpected reverse power situation. This ensures you don't skip any steps and all the right people in your organization are involved.

To do this, first confirm existing work isn't happening by confirming any active Service Orders. If there are, take some notes and the process is done.

If that's not the case, then trigger a Service Order to investigate what's going on at that location. In this scenario, we will assume two courses of action - either a wiring issue is discovered and gets repaired, or the cause of reverse power is the result of a new, unknown solar panel installation and the appropriate processes are triggered.





Conclusion

Configuring the detection and response to reverse power events on your power grid is easy with the Trynzc for Utilities platform. As more customers elect to install generators and solar panels, it's critical that your utility not only have a way to manage these customers but also detect when new reverse power is present in your grid.

If you're interested in learning more about what Trynzc for Utilities can do, please get in touch. We'd be happy to set up a demo and help your utility transition to become a Smart Utility.

Contact Us



info@trynzc.com



Trynzc.com



4160 24th Ave S
Suite 101
Fargo, ND 58104