Megger

PI Predictor ™ introduction

New Polarization Index test that saves time!

- Integrated into the S1 range of DC insulation testers
- S1-568, S1-1068 and S1-1568
- Integrated into the MIT range of DC insulation testers
- MIT515, MIT525, MIT1025 and MIT1525
- CertSuite Asset mobile application
- Supports previous / current instruments without Pip

Target users:

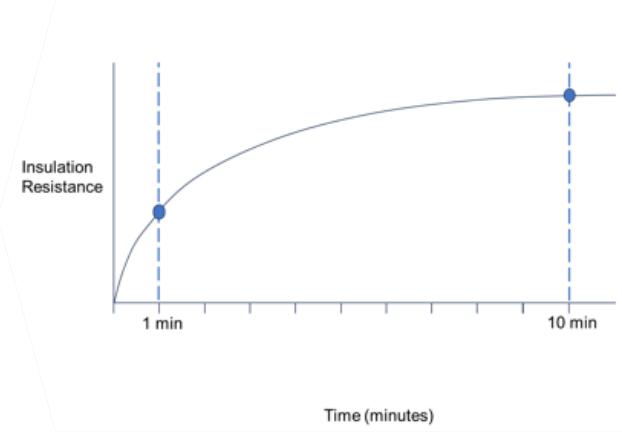
- Anyone using Polarization Index (PI) to test: Motors, Generators, Cables, Bushings and insulators, Dry transformers

The PI Predictor can represent a huge time and cost saving to users

- Testing is time consuming!
  - 10 minute per test = 30 minutes on 3 phase applications
  - Multicore cable can take a long time
  - 5 cores = 50 minutes of testing
    - E.g., businesses such as paper mills with huge numbers of motors
      - 500 3 phase motors = 500 X 6 PI tests (Ph to Ph and Ph to ground)
      - Assuming tested annually
        - 3000 tests = 30,000 minutes, or 500 hours of testing
        - Potential time saving 250 hours!

What does it do?

- PI Predictor uses the first part of the IR curve to predict what the whole curve would be at the full 10 minutes test
- The algorithm can start to predict as early as 3 minutes into the test
- As soon the PI Predictor is confident in the prediction the test stops and the predicted PI value displayed



Polarization Index (PI) testing background

- The most common diagnostic DC insulation test
- Called for in IEEE 43
- Standard test is ten minutes in duration
- PI is calculated by taking the insulation resistance measurement taken at 10 minutes and divide by the IR value taken at 1 minute.
  - PI = 10m IR / 1m IR
- PI test can provide indication of moisture ingress and contamination
- Often performed on motors, generators and cables

PI Predictor in Operation

1. Select PI test
2. Press OK key to change to PI predictor
3. Press OK to toggle PI predictor on and off

4. Press TEST to start test in the usual way
5. The scale does not flash until the prediction can start
6. Once the prediction has started the PI scale starts to flash
7. Prediction starts after 3 minutes

8. As confidence in the prediction grows the scale becomes narrower
9. When the PI Predictor is 100% confident in the prediction the test is automatically stopped, and the final result shown:

- Here the predicted PI value is 2.3
- The prediction can take between 3 and 7 minutes depending on conditions