

## ABB Sace - Technical Questions for behaviour analysis of Trip Units

We would like to inform you that any hypothetical 'generic fault' could be caused by very wide conditions as:

- real fault on the plant
- electrical and/or mechanical accessory problem
- release's problem
- not properly operation
- not properly setting
- not properly external wiring
- not correct choose of the electronic release for the application itself

**The completeness and accuracy of the information given to ABB Assistance Service will facilitate technical analysis of the problem encountered and will allow us to carry out all actions useful for the user rapidly.**

### Section A

**These are a list of important information we need:**

1. Order acknowledge/item
2. Serial number of the release (see on front label, e.g. F1244V01A)
3. Serial number of the circuit breaker(see on left size of CB, e.g. AF03056799)
4. Type of CB (e.g. E2N2000)
5. N. of CB poles (3, 4)
6. 'In' value
7. Could you describe the application?
8. Could we have the plant electrical schemes?
9. Send us as much pictures as possible of CB/Trip Units involved in the analisys.
10. Power plant nominal line voltage. Is it corrected set in the Trip Unit menù?
11. Could we have the external connections to the Trip Units?
12. Which type of load the CB is supplying?
13. Is the Trip Unit self supplied? Or is it Auxiliary Supplied?
14. Is it the first nuisance trip?
15. How many other cases of fault, of similar installation, have you had?
16. How long did the breaker work without any problem, from the first start-up?
17. When did the fault happen? (e.g. start of a motor, normal load, adding an extra load, just after the closing operation...). Always in the same condition/situation?
18. Is the fault easily reproducible? Is it systematic?

19. Has the CB been received from ABB Sace and installed as it was? Or was it modified by the Sales Company/Customer?
20. Setting of the release (L, S, I and G thresholds and timings, freq., voltages, neutral section, etc. ....)
21. Is the power plant frequency corrected set?
22. Measure of the current just before the trip (if yes, how do you measure?)
23. Which protection has tripped (L,S,I,G ....., see front flag/led, last trip page on display or contacts changed on PR120/K, PR010/K, PR020/K, if present)?
24. Status of led during normal trip unit working condition
25. Which trip units modules are present?
26. Have you tried to change CB and/or electronic release jet? With which result?
27. Please consider that our electronic release calculate true rms current, considering fundamental and harmonics also (depending on the electronic release, up to 40<sup>th</sup> one).
28. Ambient temperature
29. Environmental conditions (gas, salt atmosphere, other?)
30. Presence of Electromagnetic Disturbances (radiated or conducted)
31. Did you auto test the unit? Did you test it by means of PR030/B? Which was the result?
32. Have you a PR010/T to test the unit? Have you done it?
33. With a PR010/T and/or SD.TestBus2, can you upload all the info from the Trip Unit and send them to ABB Sace?

## **Section B**

**These are a list of important questions to better understand the unit trip problem.**

1. Have you connected Zone Selectivity wiring?
2. Have you enabled Zone Selectivity protection?
3. In which position is TU reset S51 push button in the front of CB (mechanical indication of over current release trip), if present?
4. Are you sure that Auxiliary Supply (24 Vdc) is isolated from earth as requested?
5. Have you used proper cables for electronic connection (e.g.: serial bus)?
6. Have you connected the shield of proper cables (eg. Serial bus connection) to earth?
7. Using three poles CB, have you considered (if present) Neutral current?
8. Does your application need to connect neutral external toroid?
9. Are you sure that nuisance trip is not due to remote open command?
10. Have you got Undervoltage release installed?
11. Nuisance trip could be due to a voltage dip?
12. Have you performed dielectric test disconnecting the electronic release as described in the front label?

*Thanks a lot for your cooperation.*