How to Map and Test Phase Peak Demand and Load Current Alarms for Single Phase Tripping

Phase Peak Demand Alarm (PDA) limits can be mapped in order to protect the VR-3S and Power System from excessive Peak Demand current. In this case, if Phase Peak Demand exceeds 560 A on any phase for the specified Demand Time Constant, all phases will trip and lockout.

Load Alarm (LOADA) limits can be mapped in order to mitigate excessive neutral current that can occur during Single Phase tripping. In this case, if one phase is locked out and current exceeds 200 A on any phase, all three phases will trip and lockout.

Relevant Programmable I/O Names and Description:

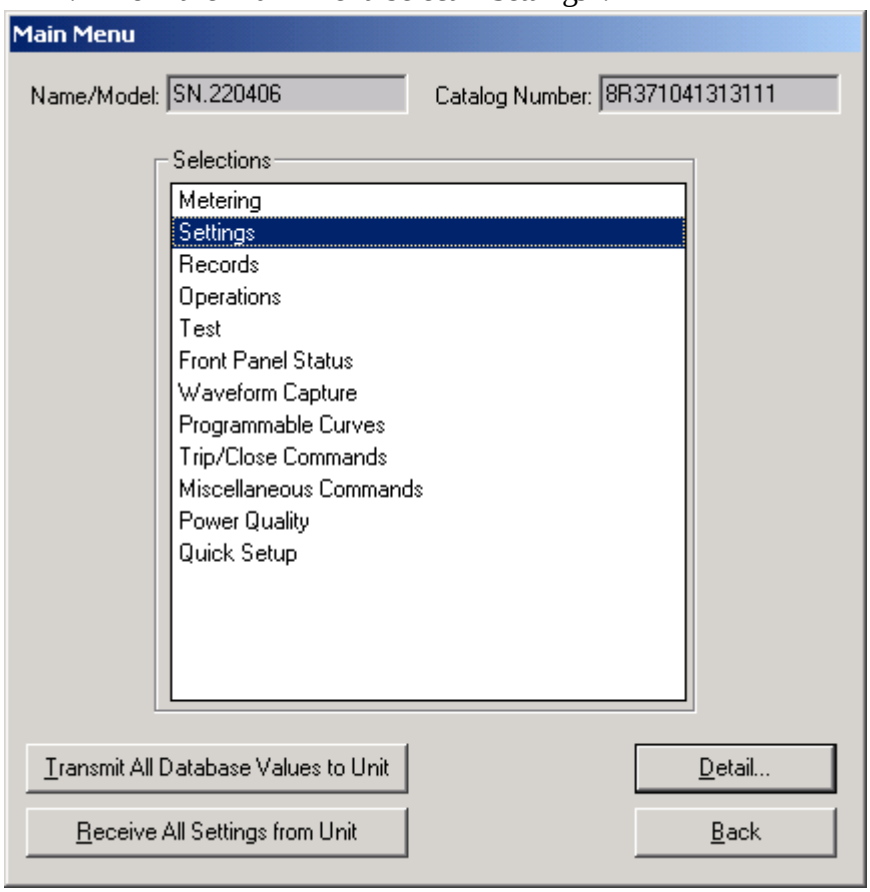
LOCKA LOCKB LOCKC	Lockout A Lockout B Lockout C Each output goes HIGH if the corresponding pole is in lockout. (Applies only to units with single phase tripping option.)
LOADA	Load Current Goes HIGH 60 seconds after any single phase of load current rises above the Load Alarm setting. If the measured value drops below the Alarm setting before the 60-second timer expires, the timer will reset.
PDA	Phase Peak Demand Goes HIGH 60 seconds after the demand current for any phase has exceeded the Phase Demand Alarm setting. This alarm is based on the incremental demand values and not the instantaneous values as in the load alarms. If the measured value drops below the Alarm setting before the 60-second timer expires, the timer will reset.

Precautions

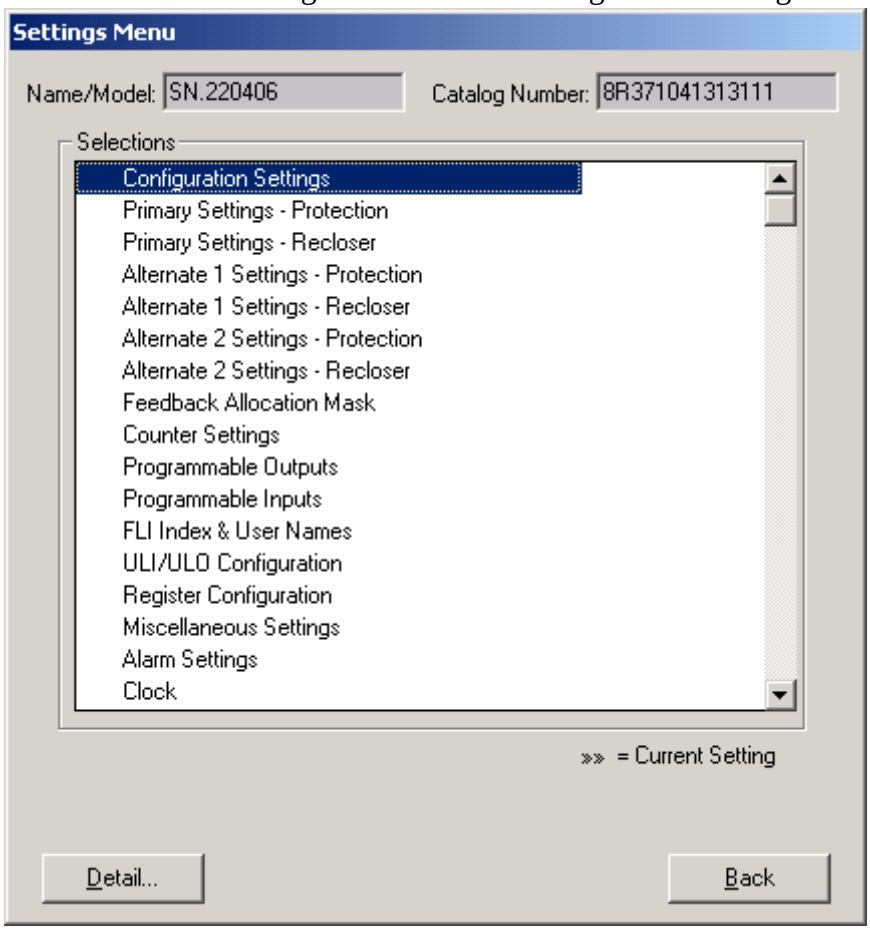
1. The settings in the attached example are for reference only and may not be suitable for your application.

Instructions

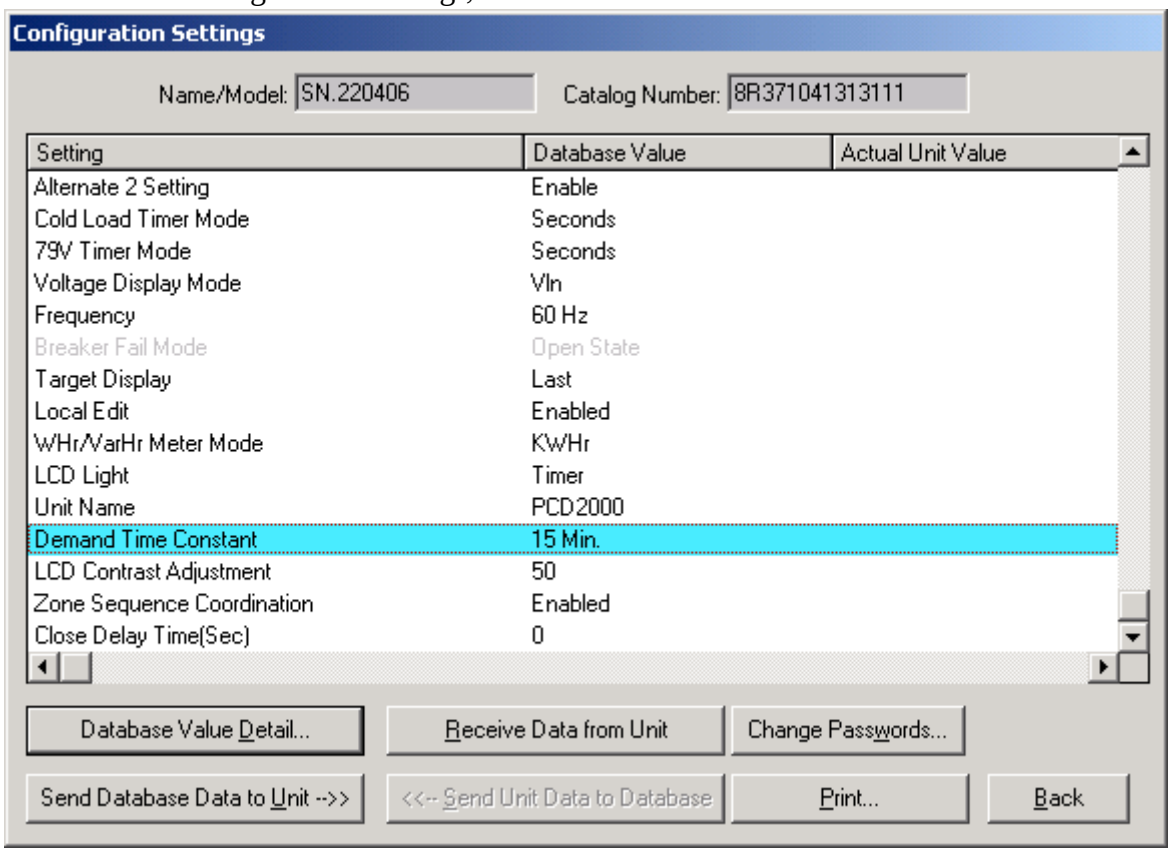
1. From the Main Menu select "Settings".



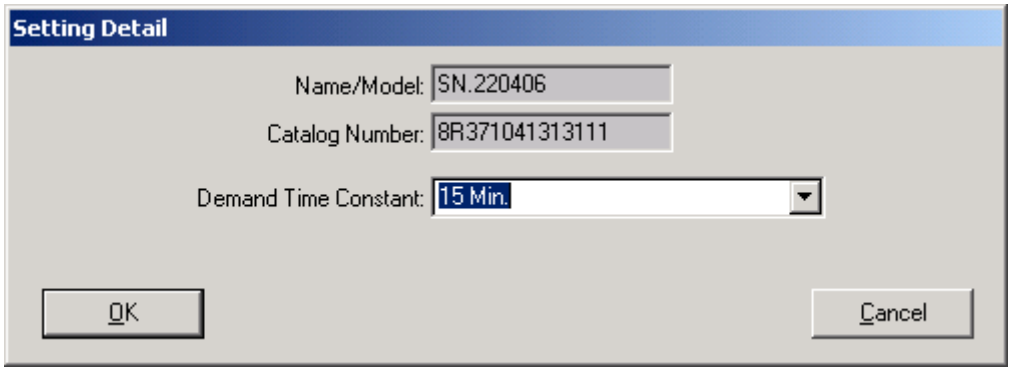
2. From the Settings Menu select “Configuration Settings”.



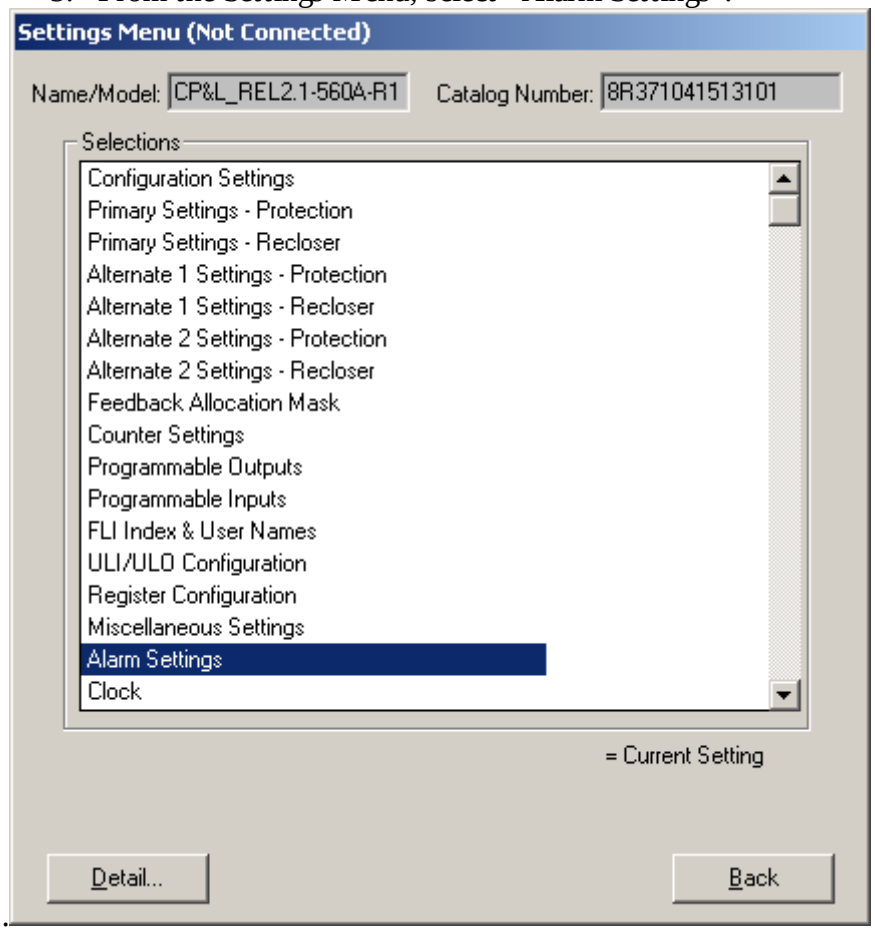
3. From Configuration Settings, select "Demand Time Constant".



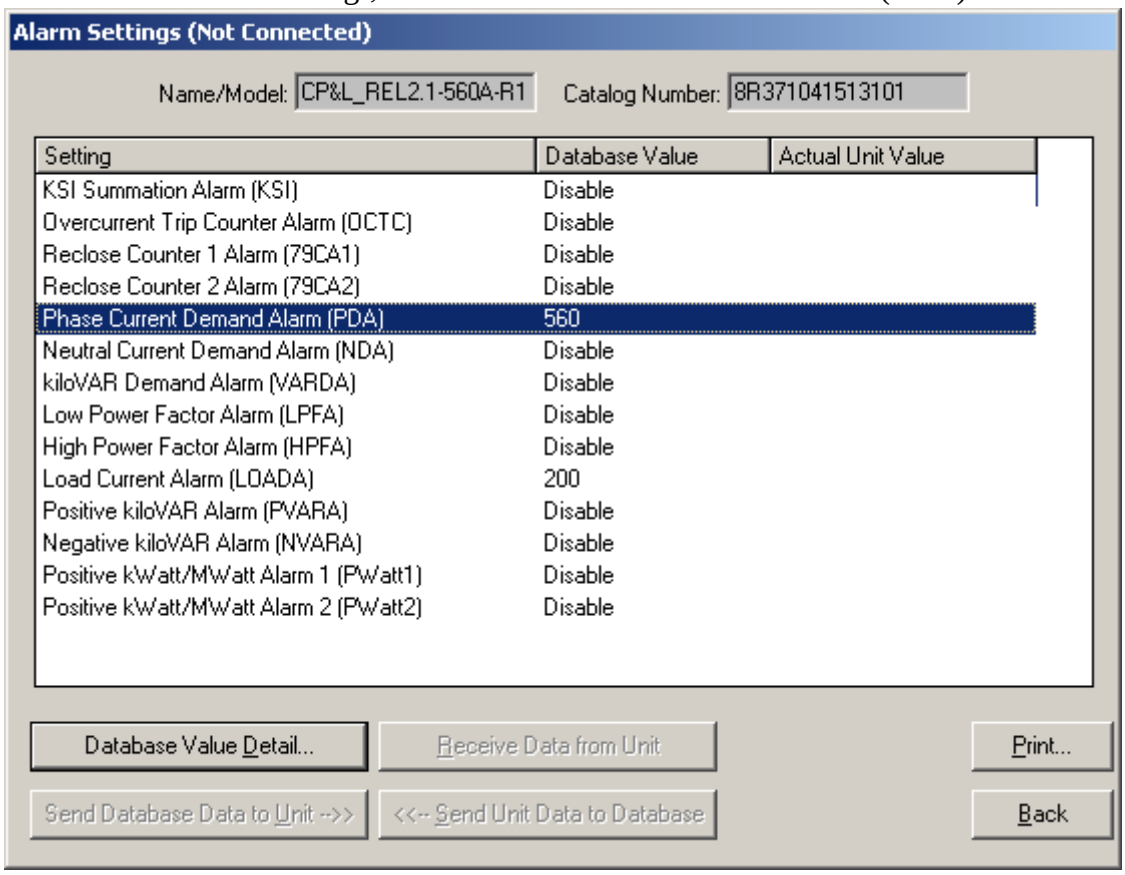
4. Select a Demand Time Constant of 5, 15, 30 or 60 minutes per your application requirement.



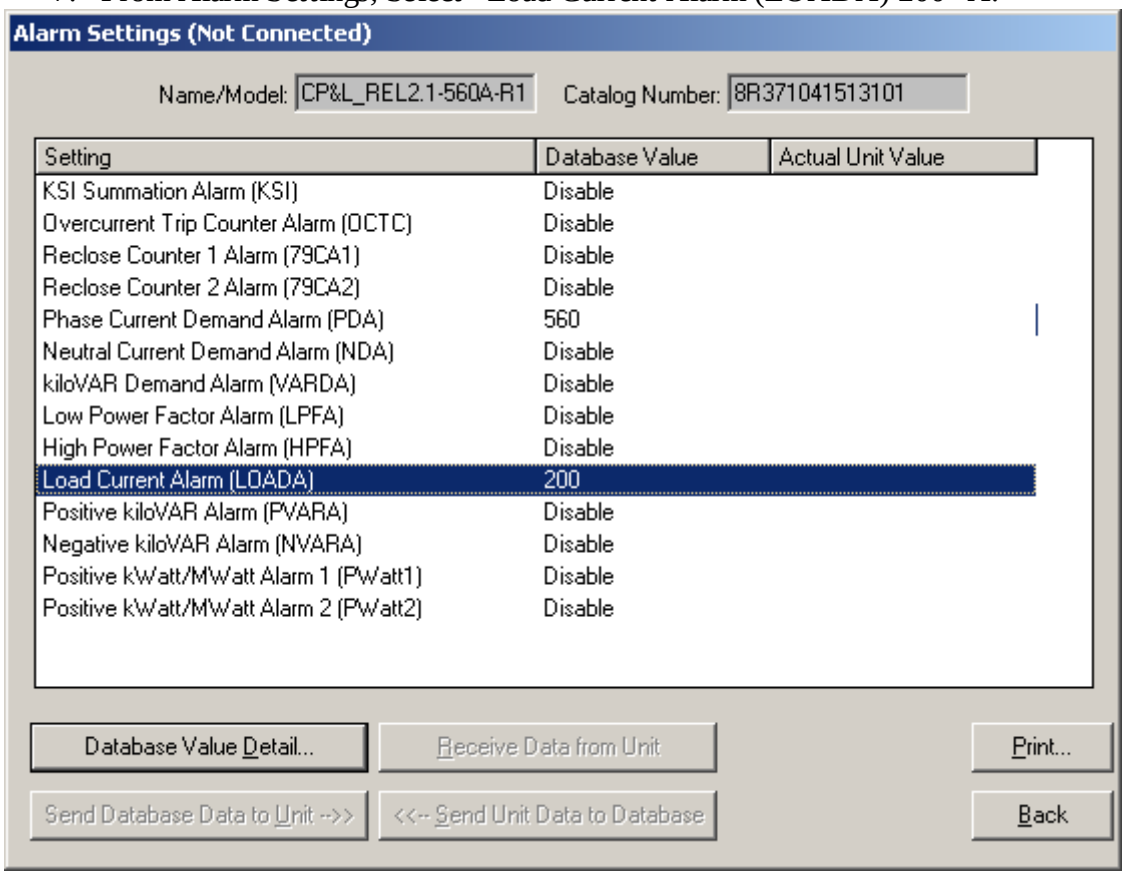
5. From the Settings Menu, select “Alarm Settings”.



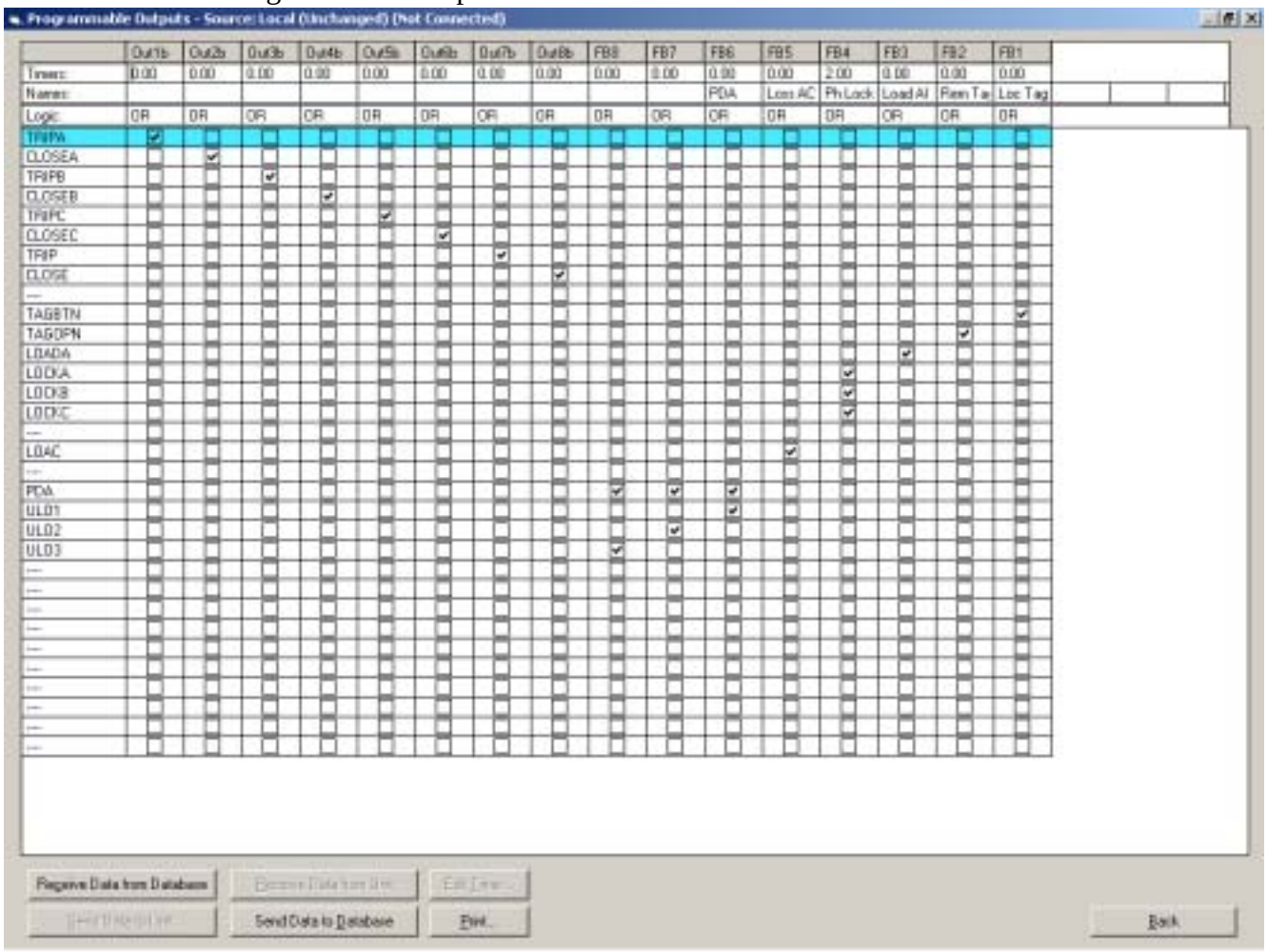
6. From Alarm Settings, Select “Phase Current Demand Alarm (PDA) 560” A.



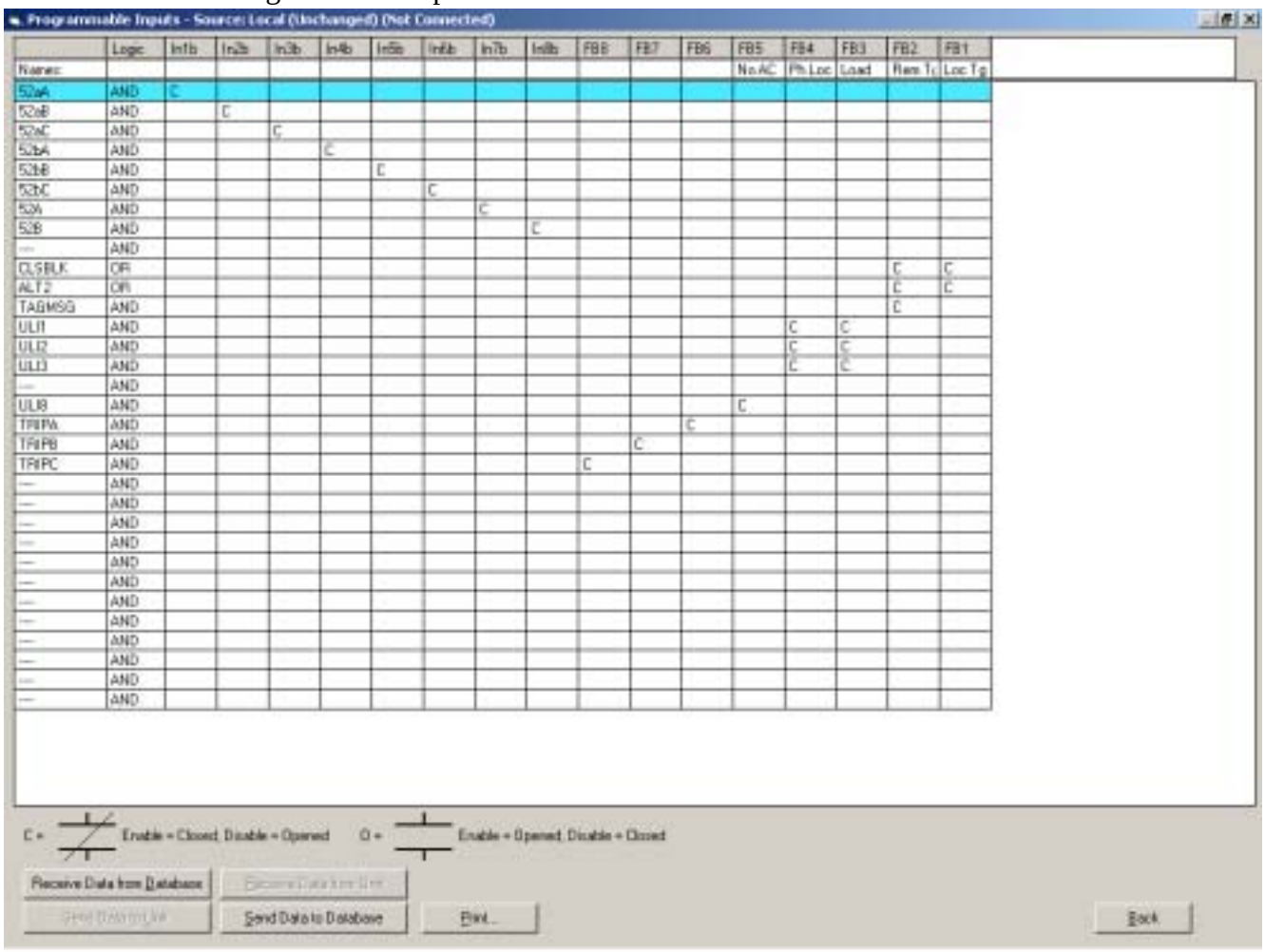
7. From Alarm Settings, Select “Load Current Alarm (LOADA) 200” A.



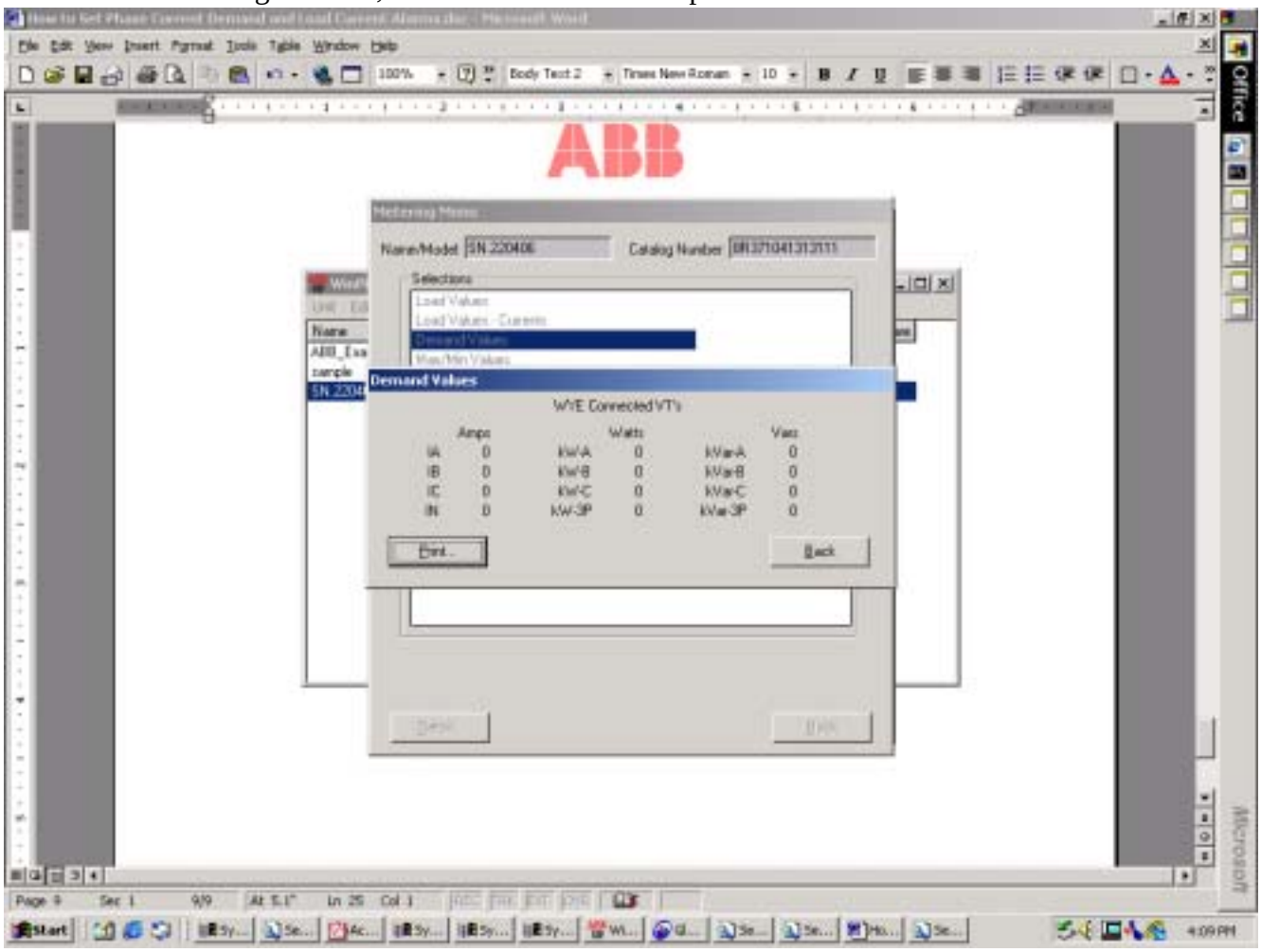
8. Select the Programmable Outputs as shown:



9. Select the Programmable Inputs as shown:



10. Phase Current Demand Alarm (PDA) testing can be performed by applying single phase or three phase secondary current injection of 1 A (600:1 CT ratio) into the PCD PT/CT module. The PCD will trip in the selected Demand time plus 60 seconds. The Demand Metering can be viewed during the Test; reference the attached depiction:



11. Load Current Alarm (LOADA) testing can be performed by tripping A or B or C phase to Lockout and applying current greater than 200 A (.33 A secondary current injection) to the remaining closed-in phases. The PCD will trip and lockout all phases in approximately 60 seconds.

Call 1-800-929-7947 x 5 or +1-407-732-2000 x 2510 for any other questions you may have.

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Lake Mary, FL 32746	407-732-2000	407-732-2161		1VAL2602-HT Rev. B March 6, 2003