

MicroNet TMR High Density Discrete I/O Module Using 5009 F/T Relay and External Relay Power

Issue

Systems using a new MicroNet HDDIO (High Density Discrete I/O) Smart-Plus module with the F/T Relay module configured with external relay power may experience the relays becoming energized, staying energized, or chattering in the event of the control losing power or being put in I/O lock.

Description

When using external relay power on the 5009 F/T Relay module, if the external power is not shut off when the MicroNet control is powered down, there is a leakage current path through the Discrete Outputs on the HDDIO module that can keep relays energized, energize relays that were previously de-energized, or cause chatter on the relays. There is no way to determine which relays will act in a given way, and random behavior of the relays may occur.

Affected Units

Any system using the newer MicroNet HDDIO Smart-Plus module with an F/T Relay module configured for external relay power is at risk. Below are the item numbers for these modules:

MicroNet HDDIO Smart-Plus Modules	
5466-1051 Rev. A or Earlier	MicroNet TMR 48/24 HDDIO Smart-Plus
5466-1156 Rev. NEW	MicroNet TMR 48/24 HDDIO Smart-Plus (Backward Compatible w/ 5466-256 Module)
5009 F/T Discrete I/O Module	
5453-276	Relay – 5009 F/T Discrete In

Corrective Action

Woodward validated and completed an Engineering Change on the SMT level assembly of the two affected upper-levels that resolves the relay issue when using external voltage. Using one of the following modules at the given revision will ensure that you do not have the externally powered relay issue as explained above:

- 5466-1051 Revision B or Later.
- 5466-1156 Revision A or Later.

Customer Action

If you have a system that contains one of these MicroNet TMR HDDIO modules and the 5009 F/T Relay module configured for external relay power and are currently running then please continue to run your system as there should be no issues in this state.

If you are currently in a non-running state and are able to reconfigure your system, the ideal work around to this issue is to use the internal +24Vdc provided by the MicroNet HDDIO module. This can be handled simply by removing the external power being supplied to the 5009 F/T module, removing the cover of the 5009 F/T module, and moving a jumper inside the 5009 F/T module as indicated in the MicroNet TMR Digital Control manual (26167V1) section 7.2.4.5.

For the systems that are unable to run off the MicroNet HDDIO internal power due to overloading the MicroNet TMR control as a whole or for systems currently running, please follow the correct power cycle

sequence as stated in Section 7.2.4.5, paragraph 2, of the MicroNet TMR Digital Control manual (26167V1). For quick reference, the correct power cycle sequence has been noted below:

- **Boot-up:** External power to the relays should be applied after the MicroNet control has been powered on.
- **Shutdown:** External power to the relays should be removed prior to removing power from the MicroNet control.
- **I/O Lock:** If the control is put in I/O Lock for a “safe state” then the power should be removed from the external relay power until the control is brought out of I/O lock again.

Using the correct sequence will eliminate the chances of the relays energizing, staying energized, or chattering because power will be removed from them completely or applied after the module has taken control of the relays ensuring they are in the correct state.

If you have a system that contains one of these MicroNet TMR HDDIO modules and is using the external relay power as explained above and you wish to replace this module with a module that contains the permanent corrective action as explained in the “Corrective Action” section above, please contact your local CSR (Customer Account Representative) and ask about the options of upgrading to one of the following modules:

- 5466-1051 Rev. B or Later
- 5466-1156 Rev. A or Later

Reference “WPJ #04-1563 / SB01639” as part of the Sales Order Warranty.



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