

Use of Woodward Notch Filter

Use of Woodward Notch Filter

- Reference Part Number: 5437-845
- Reference Drawing Number: 9933-651
- 2 Channel Actuator Controller Modules 5501-428, -429, -430, -431, -432

IMPORTANT

This is a re-documentation of an old problem that was resolved in 1997.

Problem

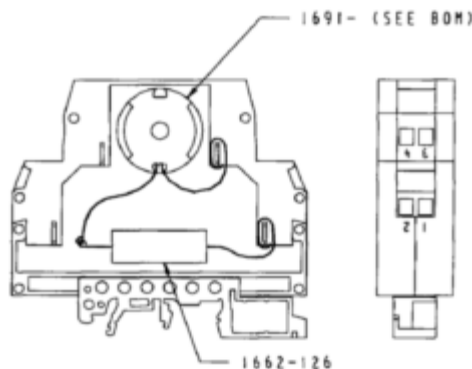
In NetCon[®], MicroNet[™], and MicroNet Plus control systems with multiple 2 CH Actuator modules (part numbers 5501-428, -429, -430, -431, -432), a potential exists for a 'beat' frequency to be created around 3000 Hz. This signal can be seen as noise within the chassis itself and has been known to cause fluctuations in low amplitude signals such as RTDs and thermocouples. It may cause increased noise on other analog signals as well.

The source of the problem is that each actuator module produces a feedback (either LVDT or RVDT) excitation signal that is independent and asynchronous to the other actuator modules generating this same output. Since these signals are likely to be slightly offset in frequency and amplitude, it is possible that a corresponding beat frequency can develop on the chassis backplane and develop on the analog common line.

Solution

In 1997, Woodward created a small DIN-rail-mountable filter that is specifically designed to eliminate noise created by the actuator excitation within a tight frequency band (notch) around 3000 Hz. The unit requires about 1 inch (25 mm) of DIN rail space under the actuator FTM, and has two wire connections. One wire is connected from TB 1 to the actuator excitation (-), which on Woodward FTM 5437-672 is terminal TB 6. The second wire is connected from TB 4 to ground.

Woodward's engineering services group recommends the use of one Notch Filter per chassis for all chassis that utilize two or more actuator modules. In the case of a redundant system, two filters can be installed to ensure that this protection is available during all running conditions. If a control system has multiple chassis, then each chassis meeting this criterion should have a filter.



Notch Filter (part number 5437-845)

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 51304.



PO Box 1519, Fort Collins CO 80522-1519, USA
1000 East Drake Road, Fort Collins CO 80525, USA
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—www.woodward.com

**Woodward has company-owned plants, subsidiaries, and branches,
as well as authorized distributors and other authorized service and sales facilities throughout the world.**

Complete address / phone / fax / email information for all locations is available on our website.