APPLICATION NOTE	PRODUCT: ULTIMATE ACTUATOR DRIVEBOX 48W,30A
AN7005	APPLICATION: Possible External Causes of USB Communication Dropouts
1.1.2017	TYPE: risk assessment SERIAL NUMBERS: all serial numbers NOTE:

POSSIBLE EXTERNAL CAUSES OF USB COMMUNICATION DROPOUTS:

In order to properly advise what to avoid, it would be helpful to know the exact conditions under which the dropout occurred:

- Type of connected actuator
- Version of the PC software
- Version of the drivers used
- Type of USB cable used
- Type of power supply used

We suspect several possible causes:

USB cable

- Inappropriate USB cable (too long – more than 3 m, or use of an extension cable; it is always better to extend the actuator cable rather than use a very long USB cable)
- Conductors too thin
- Poorly shielded cable in an electromagnetically noisy environment

Actuator cable – possibly damaged?

(A short circuit in the DC motor wiring could also cause an immediate USB communication dropout)

Unusually strong electromagnetic interference

(Try to avoid the presence of strong EMI sources near the USB cable such as powerful fans, pumps, power relays, ignition systems, transformers, fluorescent lamps, alternators, dynamos, motors, compressors, etc.)

Inappropriate power supply used:

- Power supply too “soft” (causing transient voltage drops under varying actuator load)
- Power supply sensitive to back EMF generated by the actuator

Possible presence of a ground loop
(Use an isolated power supply – the ground pin of the mains plug must not be galvanically connected to the negative pole of the supply; alternatively use the power supply delivered with the UAD)

Error on the PC software side
(Older versions of Honeywell UAD PC Utility were not fully stable – please use the latest version. We currently use stable version 1.1 for testing.)

For Windows 8.1 or 10, it is necessary to install the UAD PC Utility for Win10. The original version is only compatible up to Windows 7.
Alternatively, installing the latest Runtime Engine may help:
Download and install the latest NI VISA Runtime Engine for your Windows version from http://ni.com (this engine assigns virtual COM ports for all LabVIEW applications).

NI VISA Runtime link:
http://search.ni.com/nisearch/app/main/p/bot/no/ap/tech/lang/cs/pg/1/sn/catnav:du,n8:3.1637,ssnav:sup/

If the above issues are avoided, USB communication is generally stable within technological limits.
However, for tests lasting more than several days, we recommend considering the use of the **Ext In input as a demand signal instead of USB**. This solution is fully robust.