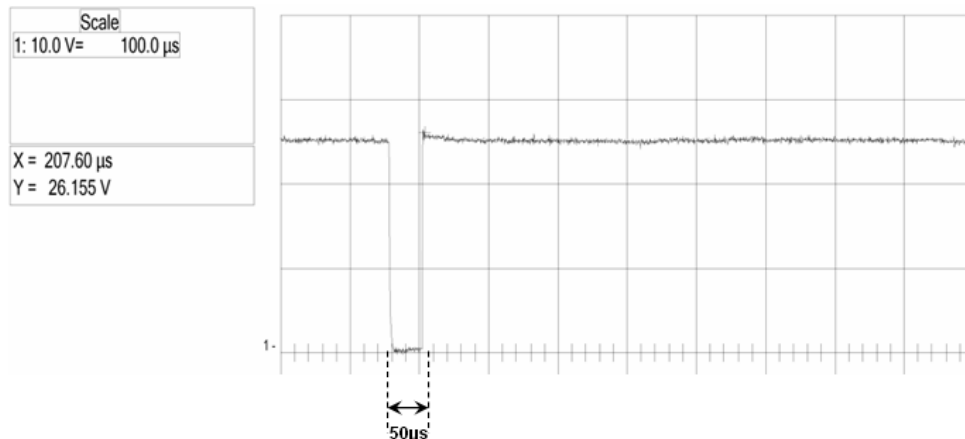


Random stop of ATV320 with safety

The random Stop can be caused by a pulse generated by a safety module.
A lot of safety modules generate and send short impulses on the line to test it.

If this pulse comes in the same time that the ATV320 refreshes the state of its input, we have a quick STO state on the drive and then drive stop and can display NST.

Example of pulse generated by a safety module:



First case: STO function on ATV320 configured on STO only

The LIRT influences only the Logic input. The STO is a safety input, detection time is hardware and so cannot be influenced by the LIRT. In this case the LIRT will not have influence on STO.

The hardware detection time is 20 μs.

It means that if a pulse more than 20 μs comes on STO in the same time that the ATV320 refreshes the state of its input, we have a quick STO state on the drive and then drive stop.

Second case: STO function on ATV320 configured on LI3-STO

The LIRT influences only the Logic input. The STO is a safety input, detection time is hardware and so cannot be influenced by the LIRT. Like LI3 is associated to STO in this case the LIRT will not have influence on STO and also LI3.

The hardware detection time is 20 μs.

It means that if a pulse more than 20 μs comes on STO or LI3 in the same time that the ATV320 refreshes the state of its input, we have a quick STO state on the drive and then drive stop.

Third case: STO function on ATV320 configured on LI3-LI4 or LI5-LI6

There is a drive parameter to delay the safe function activation.

In this case, you need to adjust the drive parameter LIRT, to a time higher than the pulse duration.

L I r t	[LI response time]	0 to 50 ms	0
This parameter is used to filter short impulse on LI. Some application send short impulse on the line to test it. This parameter is used to filter these short impulses. Orders are taken into account only if the duration is greater than L I r t. If duration is smaller drive considers that there is no order: order is filtered.			

In my pulse example before, the pulse duration is 50 μs so a LIRT equal to 1 ms will be enough.

Recommendation

ATV320 safety configured on STO only

- Deactivate the pulse on safety module if it's possible.
- Or Change the wiring : by using STO function configured on LI3-LI4 or LI5-LI6 with LIRT adjustment

ATV320 safety configured on LI3-STO

- Deactivate the pulse on safety module if it's possible.
- Or Change the wiring : by using STO function configured on LI3-LI4 or LI5-LI6 with LIRT adjustment (but you will be SIL 2 (PL d))

ATV320 safety configured on LI3-LI4 or LI5-LI6

- Adjust the LIRT time (but you will be SIL 2 (PL d))