

G5 Using Safety Quick Start Guide

This guide discusses how to connect and program the G5 servo drive to NX safety.

Description

- 1. Items needed:
 - a. Users Manual, found at <u>www.omron247.com</u>.
 - b. Safety Control Units User's Manual Z930, found in help section of Sysmac Studio.
- 2. There are no force guided relays to turn all safety devices on since the Omron G5 servo drive is rated for direct safety connection.

Remove Jumpers

1. Locate jumper, labelled CN8Safe. Remove this on all G5 servo drives.



2. Removing jumpers by hand can cause the latch to break. Recommended practice is to use a screw driver. The latch is on the left side.



Document: QSG-G5-TO-NX-SAFETY - Version 1.0 Feb 14, 2014

Page 1 of 4



3. Plug in R88A cable(s) – one per servo drive.



4. Up to 4 G5 servos drives can be daisy chained. Add EtherCAT cable to connect.





Document: QSG-G5-TO-NX-SAFETY - Version 1.0 Feb. 14, 2014

Page 2 of 4



Parameter / Node

Multiview explorer -> Select Safety CPU -> Configuration and setup -> Communications -> Safety -> Safety I/O -> Select a node -> double click on parameters -> click on the white X next to the filter to see all of the nodes -> use toolbox to select a safety device (might need to drag right side window to see the toolbox) -> drag and drop parameter to knob -> complete for all nodes. Note: The fields in the nodes are not used in the program. Could be used to enter part name/type/number.

(Input) Mechanical contact for single channel

Mechanical Contact For Single Channel					
Source T0	On-≻Off ▼ 0ms	Off->On ▼ 0ms		⇒	
Discrepancy: Oms 🔻					
Test Pulse: Test Output (mechanical contact)					

(Output) Dual output with test pulse

	Dual Output with Test Pulse
>	

I/O Map

Multiview Explorer -> select Safety CPU -> Configurations and Setup -> double click on I/O Map -> make sure arrown buttons are all pointing down -> use variable template to paste (Note: It will not paste if there is an empty field. Can only do groups when no empty fields.) OR manually enter with right click OR scroll down to highlight all variables -> right click -> select variable. (Note: Do not enter a variable name for the second input or output of dual channel devices.)

🔧 Configurations and Setup							
Parameters I/O Map ×							
Pos	Port	R/W	Data Type	Variable			
Eti	Master						
Nc	VX-SID800						
▼ Safety Inputs							
	Si00 Logical Value	R	SAFEBOOL 🤇	G5In			
	Si01 Logical Value	R	SAFEBOOL				
	Si02 Logical Value	R	SAFEBOOL	Light_curtain_1			
	Si03 Logical Value	R	SAFEBOOL				
	Si04 Logical Value	R	SAFEBOOL	Light_curtain_2			
	Si05 Logical Value	R	SAFEBOOL				
	Si06 Logical Value	R	SAFEBOOL	Estop			
	Si07 Logical Value	R	SAFEBOOL				
▼ Status							
	Safety Connection Status	R	SAFEBOOL	N2_Safety_Connection_Status			
	Safety Input Terminal Status	R	SAFEBOOL	N2_Safety_Input_Terminal_Status			
Nc 🔻 NX-SOD400							
▼ Status							
	Safety Connection Status	R	SAFEBOOL	N3_Safety_Connection_Status			
	Safety Output Terminal Status	R	SAFEBOOL	N3_Safety_Output_Terminal_Status			
▼ Safety Outputs							
So00 Output Value		W	SAFEBOOL 🌈	G5OUT			
	So01 Output Value	W	SAFEBOOL				
	So02 Output Value	W	SAFEBOOL				

Document: QSG-G5-TO-NX-SAFETY - Version 1.0 Feb. 14, 2014

Page 3 of 4



Program

Use the EDM safety function block.



Multiview Explorer -> select new_safetyCPU -> Programming -> POU -> Programs -> Program0

Power Supply Best Practice

Servo brake and I/O should be on separate power supplies. Sharing can cause noise on the I/O lines when the brake is applied.

Use separate power supplies for the coupler and the I/O devices.

Document: QSG-G5-TO-NX-SAFETY - Version 1.0 Feb. 14, 2014

Page 4 of 4