



Kawasaki Supplemental Safety Guide



The documentation, best practices, and recommendations provided by READY Robotics do NOT constitute safety advice. Products sold through READY Robotics are not by themselves a fully integrated workcell. As required in ISO 10218-2, READY Robotics strongly recommends performing a complete risk assessment of the integrated workcell per ISO 12100. You may wish to use the methodology found in the ANSI/RIA TR R15.306 Task-based Risk Assessment Methodology.

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KEYENCE GC-1000

In these steps, you will configure the GC-1000 safety controller (PLC) for use with a Kawasaki robot controller. Always refer to PLC documentation for clarifying information.



Note: These steps apply for the **READY pendant** safety features and a two-channel safety fence input. If you include additional safety devices, you may need to do more steps. Make sure the PLC is wired as shown in the wiring diagram for your application.

1 Install GC Configurator on a Windows PC:

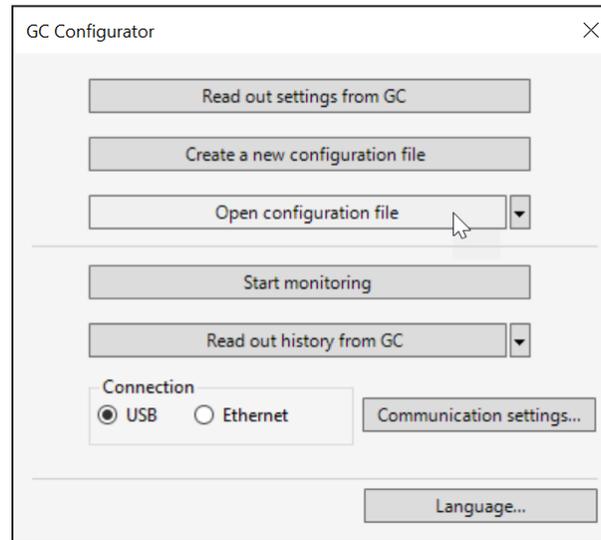
a Go to the [KEYENCE Downloads portal](#).

b Create an account.

c Search for "GC-Configurator".

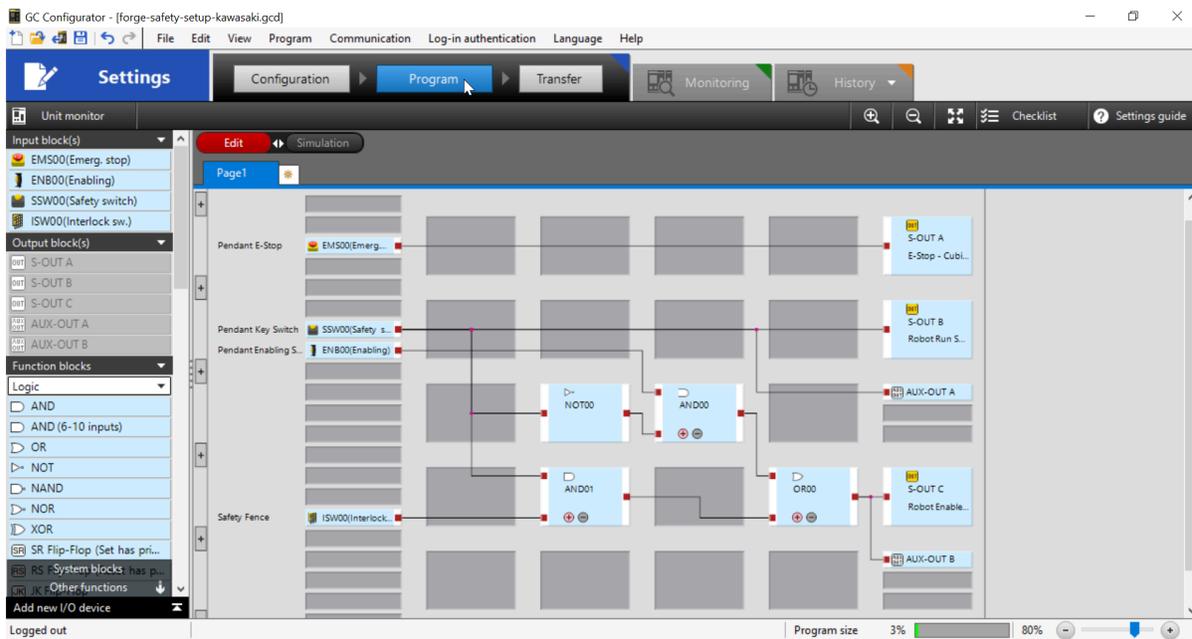
d Download and install the software.

- 2 Open GC Configurator on your PC. Select **Open configuration file**.



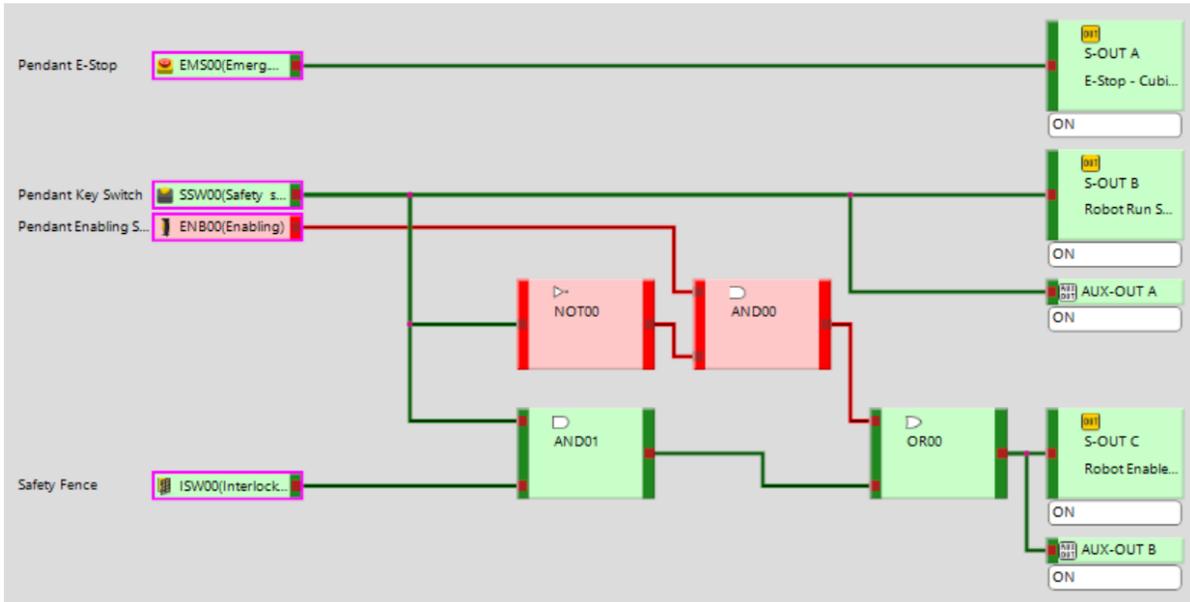
- 3 Select the GCD file you downloaded with this guide. Then click **Open**.

- 4 At the top of the screen, click **Program** to open the programming panel. The safety logic appears.

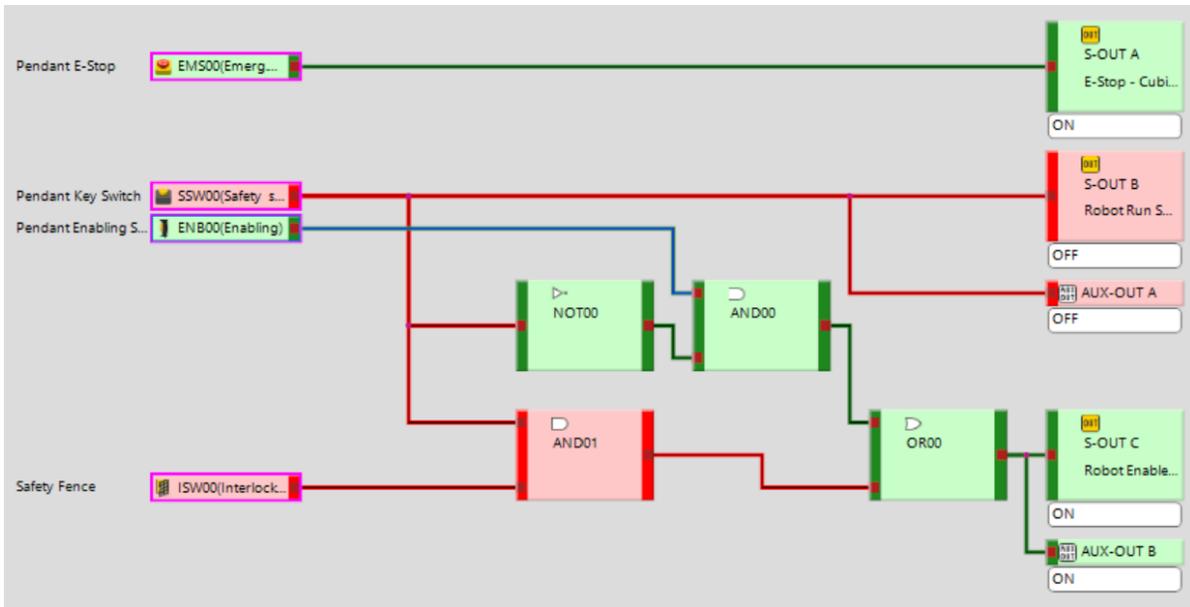


- 5 To understand how the program works, click the **Simulation** button above the program window.

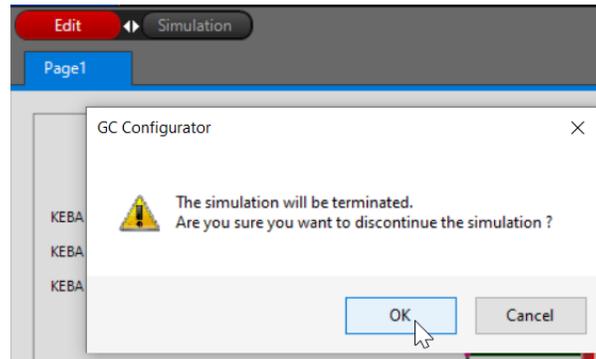
- 6 In simulation mode, click on an input device block (left) to change its state. It switches between green (high signal) and red (low signal). When the E-Stop, Key Switch, and Fence are green, all of the output signals are green and the robot can move at **Run speed**.



- 7 When only the E-Stop and Enabling Switch are green (closed circuits), the robot can be jogged at the reduced **Teach speed**.



- 8 Click the **Edit** button above the simulation window to stop the simulation. When asked if you want to discontinue the simulation, click **OK**.

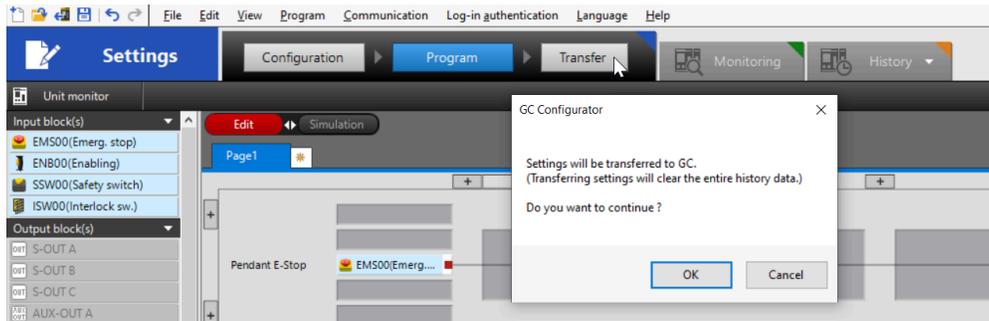


- 9 Power on the 24V power supply to the KEYENCE safety PLC. The safety controller must be on to transfer the program onto it.

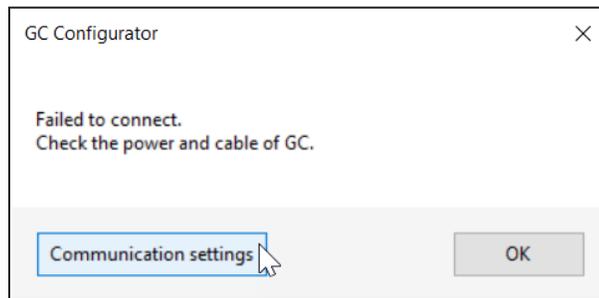
- 10 Connect your PC to the KEYENCE GC-1000 using a USB cable (type A to mini-B).



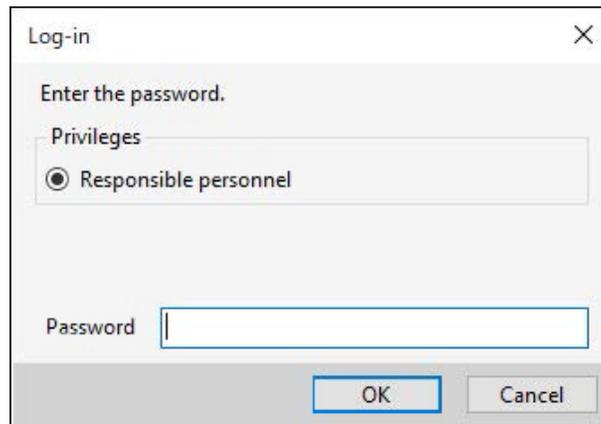
- 11 Click the **Transfer** button to transfer your safety program onto the safety controller. Click **OK** to continue. The log-in dialog box appears.



- a If the safety controller fails to connect, make sure it is powered on and check the USB cable to your PC. Then click **Communication settings** on the GC Configurator pop-up and select the **USB** connection method. Click **OK**, then retry the transfer.

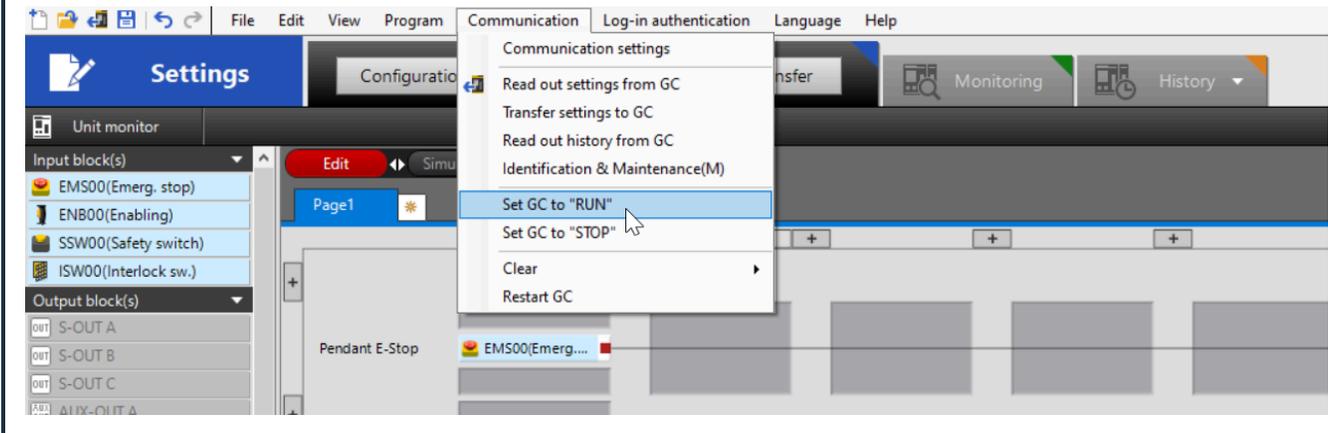


- 12 On the **Log-in** dialog box, select **Responsible personnel**, enter the default password "1111" then click **OK**.



- 13 The settings review window appears. Scroll to the bottom and click **Approve**. GC Configurator transfers the settings.

- 14 Set the GC-1000 to "Run" mode. A dialog may pop up asking if you want to set the GC-1000 to Run. If not, click the Communication tab at the top of the window, then select **Set GC to "RUN"**. The safety controller runs the settings and program you added.



- 15 Disconnect the USB A to mini-B cable from your PC and the KEYENCE GC-1000.

The GC-1000 runs the safety program continuously while it's on. You can continue setting up your robot with Forge/OS.

RESOURCES

Want to learn more about how Forge/OS can empower you?

Visit **READY.academy** (ready.academy) for *FREE* hands-on courses to help you deploy a robotic system.

Visit **READY.market** (market.ready-robotics.com) for products and services offered by READY and our partners.

Visit our **Support** site (support.ready-robotics.com) for robot startup guides, FAQs, and more.

Visit our **Resources** page (ready-robotics.com/resources) for articles, whitepapers, and other resources.

If you encounter a problem and need to talk to someone, reach out to us.

- Email READY Robotics: support@ready-robotics.com
- Call READY Robotics: +1-833-732-3977

