# GRAPHIC OPERATION TERMINAL

# GOT1000

## START-UP GUIDE

## GT1020/GT1030 to FX Connection

Note: This document is for reference only. For detailed settings and safety information refer to the respective product manual.

# GOT1000 Startup Guide
## GT1020/GT1030-to-FX Connection

## Overview:

This document provides a simple guide and reference for setting up the GT1020 or GT1030 Graphic Operation Terminal (GOT) hardware and firmware for use with an FX Series PLC.

## Hardware Introduction:

The GT1020 and GT1030 are monochrome, 3-color backlight, two communication channel GOT1000 Series touch panel interfaces, and consist of the following models:

| Model | Size | Extension | Backlight Colors | Comm. IF | Power |
|-------|------|-----------|------------------|----------|-------|
| GT1020 | 3.7" 160 x 64 dot | LBD | Green/Orange/Red | RS-422 | 24V DC |
| | | LBD2 | | RS-232C | |
| | | LBDW | White/Pink/Red | RS-422 | |
| | | LBDW2 | | RS-232C | |
| | | LBL | Green/Orange/Red | RS-422 | 5V DC |
| | | LBLW | White/Pink/Red | | |
| GT1030 | 4.5" 288 x 96 dot | LBD | Green/Orange/Red | RS-422 | 24V DC |
| | | LBD2 | | RS-232C | |
| | | LBDW | White/Pink/Red | RS-422 | |
| | | LBDW2 | | RS-232C | |

For new GT1020 and GT1030 units, included in the box should be the GT1020/GT1030 (A), 1 PLC Communication Connector (B), 1 rubber Panel Mounting Packing (C), and 4 Panel Mounting Brackets (D).
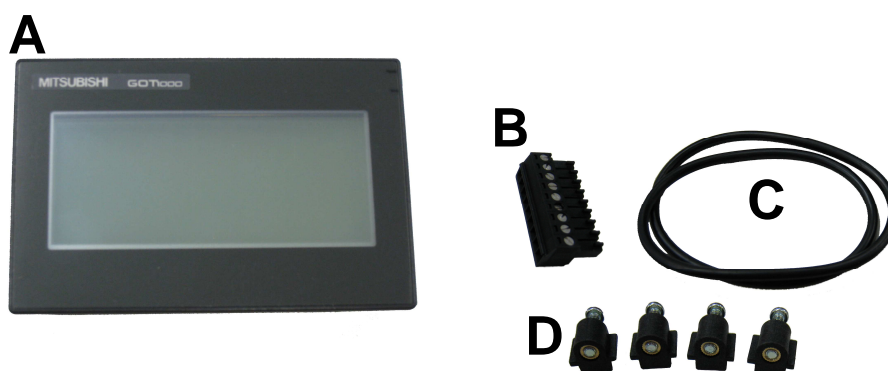


## Cabling:

### Power

All GT1020/GT1030 GOTs except for the GT1020-LBL and GT1020-LBLW (5V DC versions) require an external 24V DC power supply to be connected to the Power Terminal on the back of the GOT.  The 5V DC versions are powered



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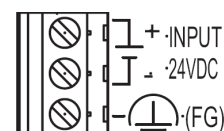
through the communication cables, described below.

**5V DC version GT1020 GOTs**
      The GT1020-LBL and GT1020-LBLW are the only two 5V DC GOTs in the GOT1000 lineup. They are powered directly from the communication cable, and can only be connected with an FX Series PLC.  Other PLCs and connectable products will not provide the necessary 5V DC power.  The power terminals have been removed from the 5V DC versions.

**Communication**
      For the GT1020/GT1030 to communicate with an FX Series PLC, a dedicated communication cable is required to connect the provided PLC Communication Connector with the Programming Port (RS-422 8-pin Mini-DIN) or other communication channel of the FX (RS-422 8-pin Mini-DIN or RS-232C 9-pin D-sub). The cable names and length and specific wiring for each case are illustrated below:

**Connection to an RS-422 FX communication channel**

| Cable Name | Length | Applicable GOTs | FX Comm. Equipment |
|---|---|---|---|
| GT10-C10R4-8P* | 1m | GT1020-LBD<br>GT1020-LBDW<br>GT1030-LBD<br>GT1030-LBDW | Programming Port<br>FX3U-422-BD<br>FX2N-422-BD<br>FX1N-422-BD |
| GT10-C30R4-8P* | 3m | | |
| GT10-C100R4-8P | 10m | | |
| GT10-C200R4-8P | 20m | | |
| GT10-C300R4-8P | 30m | | |

* - Only the GT10-C10R4-8P and GT10-C30R4-8P apply to the GT1020-LBL and GT1020-LBLW GOTs (5V DC versions).



**Connection to an RS-232C FX communication channel**

| Cables | Applicable GOTs | FX Comm. Equipment |
|---|---|---|
| All RS-232C GT1020/GT1030-to-FX connection cables must be made by the user as described below. | GT1020-LBD2<br>GT1020-LBDW2<br>GT1030-LBD2<br>GT1030-LBDW2 | FX3U-232-BD<br>FX3U-232ADP(-MB)*<br>FX2N-232-BD<br>FX2NC-232ADP*<br>FX1N-422-BD |

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\* - Special Adapters require an additional FX\*\*-CNV-BD or, for the FX3U only, a Communication Expansion Board.

| GOT Side (terminal block) | Cable connection | FX PLC side (Dsub 9 pin) | |
|---|---|---|---|
| Signal name | | PIN No. | Pin layout[1] |
| SD | | 1 | |
| RD | | 2 | |
| ER | | 3 | |
| DR | | 4 | 5   1 |
| SG | | 5 | 9   6 |
| RS | | 6 | D-SUB 9 pins:female |
| CS | | 7 | |
| NC | | 8 | |
| NC | | 9 | |

[1] The pin layput shows the engagement face.

For all screw terminals on the GT1020/GT1030, use a small flathead screwdriver to secure the wires within the PLC Communication Connector (recommended blade size and tightening torque: 0.4 x 2.5 mm and 0.22 to 0.25 N•m).

Select a screwdriver with a straight tip.

SDA
SDB
RDA
RDB
SG
RSA
RSB
CSA
CSB
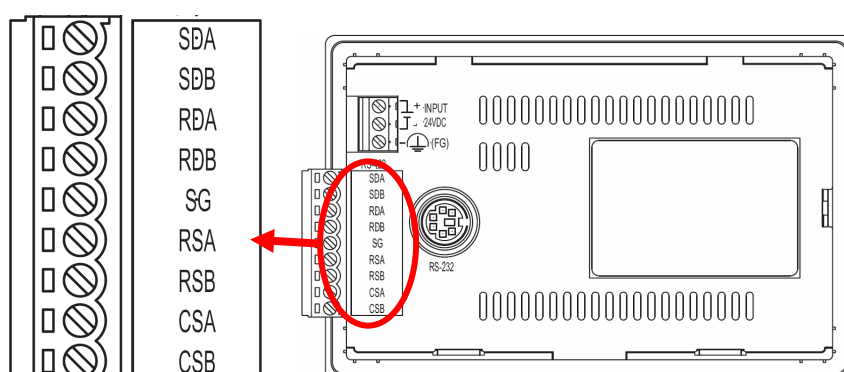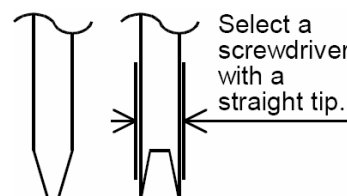
### Programming Cables:

The GT1020 and GT1030 come pre-installed with an OS and FX communication driver, but without any project data. To download a project from a PC running GT Designer2 to the GOT, a programming cable is required that connects to the RS-232C 6-pin Mini-DIN port on the back of the GOT.  It is recommended to use a shielded USB A-type to Mini-B type cable with a ferrite core paired with the GT10-RS2TUSB-5S, but any RS-232C programming cable for the Q-Series will also work fine.  A diagram of both is shown below.
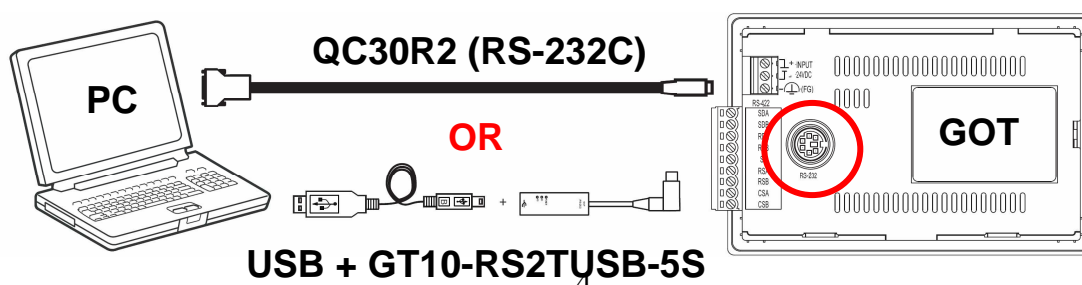
RS-232

**QC30R2 (RS-232C)**

PC

**OR**

GOT

**USB + GT10-RS2TUSB-5S**

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Note that using the GT10-RS2TUSB-5S will require a virtual USB COM port driver to be installed on the PC.  The COM port number can be automatically or manually assigned so that it does not overlap with the existing COM port numbers assigned on that PC.  When using a Q-Series programming cable, the COM port number already assigned to the RS-232C interface of the PC will have to be checked.

## Example Connection Diagram:

The following is an example of an FX-to-GOT-to-PC connection, where the blue lines indicate data communication and the red line indicates power from the FX3U 24V DC service power supply.
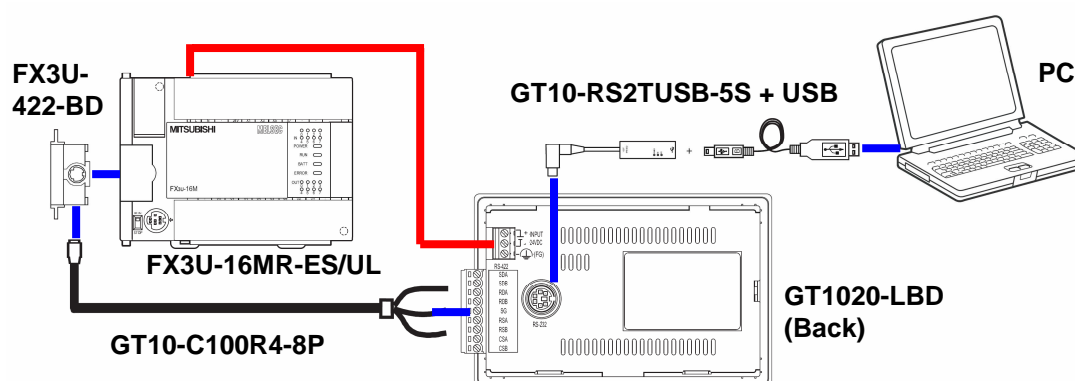


## Firmware Updates:

To make sure the GT1020/GT1030 GOT is able to use the latest functions and features, it is the responsibility of the user to check and update the firmware (Standard monitor OS) of the GOT.



Launch the latest copy of GT Designer2 and start a new project for the corresponding GOT model (GT1020 or GT1030) with the "MELSEC-FX" Controller Type.  Select "Yes" to set the Communication Setting and make sure the Standard I/F-1 CH No. is set to 1 before selecting "OK".  The "Screen Property" window that pops up for making a new screen can be either canceled or accepted for the following steps.
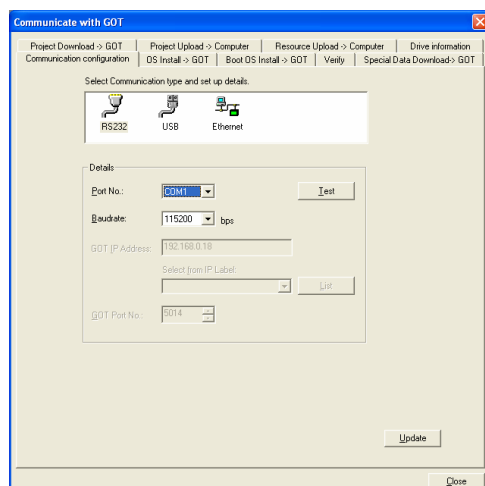


Go to the "Communication" menu and select "To/From GOT" to bring up the "Communicate with GOT" window.  Go to the "Communication configuration" tab and select "RS232" and the corresponding "Port No." that connects the PC to the GOT.  With the GOT power ON, use the "Test" button to verify that the PC and GOT can communicate properly then turn the GOT power OFF.

To access the OS installation mode of the GT1020/GT1030, switch the GOT power from OFF to ON, while holding the bottom right corner of the touch screen (in Horizontal layout), illustrated to the right.


Power ON


OSをインストールしてください。
Please install the OS.
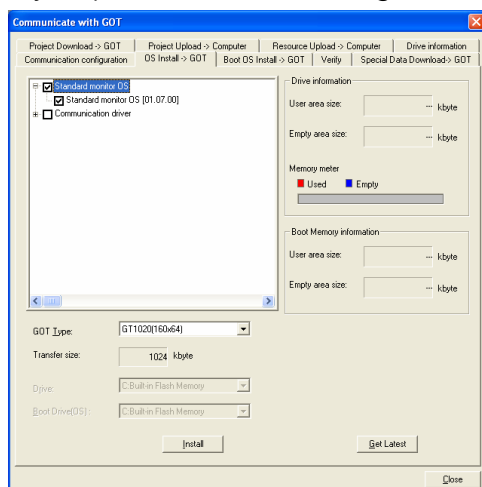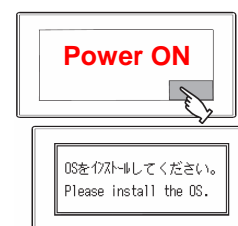


While the "Please install the OS" screen is displayed, go to the "OS Install -> GOT" tab in the "Communicate with GOT" window of GT Designer2 and select "Standard monitor OS" from the data selection tree. Use the "Install" button to initiate the data transfer and update the firmware. Once the firmware update has been completed the GOT will automatically reboot and all features will be up to date. Note that new project data will need to be downloaded to the GOT.

**Confirm Communication**

Before downloading project data to the GOT, the Comm. Monitor function can be used to verify that the GOT is communicating properly with the PLC. If no error is shown, communication has been set up correctly.
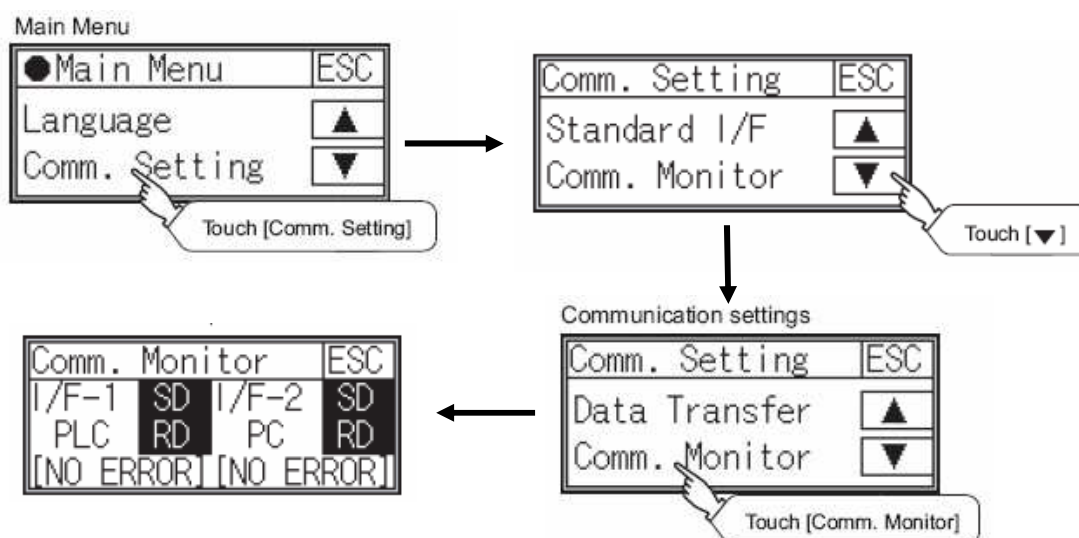


**Manual References:**

Refer to the following manuals for more detailed explanations. For any further questions, please contact your local Mitsubishi Product Provider.

GT10 User's Manual (JY997D24701)
GT10 General Description (JY997D22901)
RS-232 / USB Conversion Adapter User's Manual (JY997D23401)
GOT1000 Series Connection Manual 1/3 (SH(NA)-080532ENG)
- Sections 3.1.5, 3.1.6, 3.1.7, 3.2.1, 3.2.2