

# CF Card Front Maintenance Unit Installation Guide

Thank you for purchasing Digital's CF Card Front Maintenance Unit (GP077-CFFM10), hereafter referred to as "this unit". This unit is connected to a GP/GLC2000 Series operator interface (hereafter referred to as the "GP") or to the optional "Multi-Unit", which is attached to the rear of a GP77R Series operator interface. This unit is designed to make the insertion and removal of a CF Card easier.

This unit is compatible with the following units:

GP Series	Multi Unit Series
GP-377R Series	GP377-MLTE11, GP377-MLTE41
GP-477R/577R Series	GP077-MLTE41, GP077-MLTS11
GP-2500 Series	Not necessary
GP-2600 Series	
GLC2600 Series	



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## Safety Precautions

### WARNING

- When connecting this unit to the GP or to a Multi-Unit that is attached to a GP, make sure that the GP's power cord is not plugged in to the main power (constant), in order to prevent electric shocks.
- Avoid using this unit in areas where sudden, large changes in temperature may occur. These changes can cause condensation form inside the unit, possibly causing an accident.
- Avoid installing this unit in an environment where it will be exposed to direct sunlight, high temperatures or excessive amounts of dust.
- Since this unit is a precision instrument, do not install it where strong impacts or vibration will occur.
- Avoid installing this unit in an environment where it may be exposed to chemical vapors.

# UL/c-UL(CSA) Application Notes

The GP077-CFFM10 is a UL/c-UL(CSA) listed product. (UL file No.E182139)

This unit conforms as a product to the following standards:

■ **UL508**

Industrial Control Equipment

■ **UL1604**

Electrical Equipment for use in Class 1 & 2 - Division 2, or Class 3 Hazardous Locations.

■ **CAN/CSA-C22.2, Nos. 142, and 213-M1987**

Standard for Safety of Information Technology Equipment, including Electrical Business Equipment

**GP077-CFFM10 (UL Registration Model: 2880015-02)**

**UL1604 Compliance Conditions and Handling Cautions:**

1. Power, input and output (I/O) wiring must be in accordance with Class I, Division 2 wiring methods - Article 501- 4(b) of the National Electrical Code, NFPA 70 within the United States, and in accordance with Section 18-152 of the Canadian Electrical Code for units installed within Canada and in accordance with the authority having jurisdiction.
2. Suitable for use in Class I, Division 2, Groups A, B, C and D hazardous or nonhazardous locations only.
3. WARNING: Explosion hazard - substitution of components may impair suitability for Class I, Division 2.
4. WARNING: Explosion hazard - when in hazardous locations, turn power OFF before replacing or wiring modules.
5. WARNING: Explosion hazard - do not disconnect equipment unless power has been switched OFF, or the area is known to be non-hazardous.

## CE Marking

The GP077-CFFM10 is a CE marked product that conforms to EMC directives EN55011 class A and EN61000-6-2.



For detailed CE marking information, please contact the Digital Electronics Corporation.

# Package Contents

Please check that the following items are included in your package.

- **CF Card Front Maintenance Unit** (Installation Gasket and O-Ring are pre-attached)
- **Installation Guide** (this guide)
- **Installation Fasteners** (4/set)

## ■ Optional Maintenance Items

Product Name	Model No.
Installation gasket / O-ring (2/set) *1 	CFFM-WP00-MS
Installation fastener (4/set) 	GP070-AT01

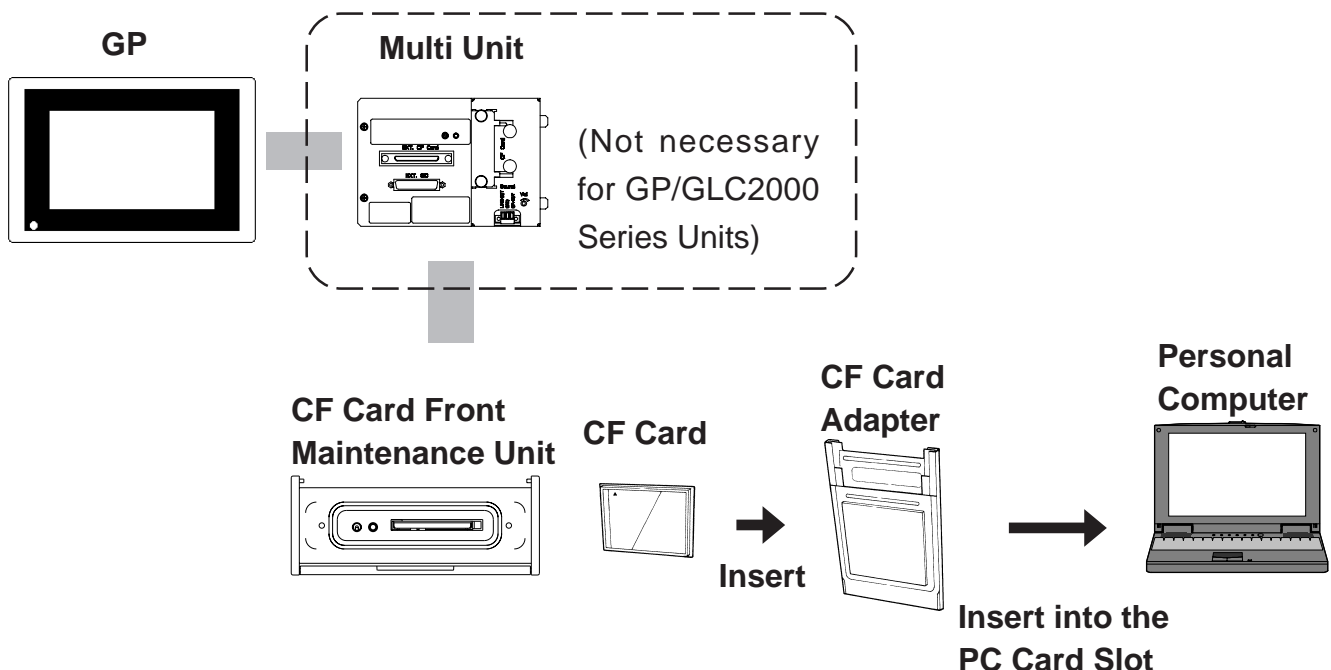
\*1 The Installation gasket is attached to this unit on the panel face, the O-ring is attached to this unit on the CF-Card Interface.

## 1.1 Overview

This Unit allows you to insert and remove the CF Card from the front of the GP's display panel.

## 1.2 GP System Design

The following is an example of a GP system configuration when using the CF Card Front Maintenance Unit.



## 2.1 Specifications

### 2.1.1 General Specifications

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Item	Description
Rated Voltage	5V(supplied from the GP)
Power Consumption	2.0W or less

### 2.1.2 External Specifications

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Item	Description
Cooling Method	Natural air circulation
Weight	530g or less
External Dimensions	Refer to <b>2.2 Component Names and Functions</b>
Panel Cut-out	Refer to <b>2.2 Component Names and Functions</b>

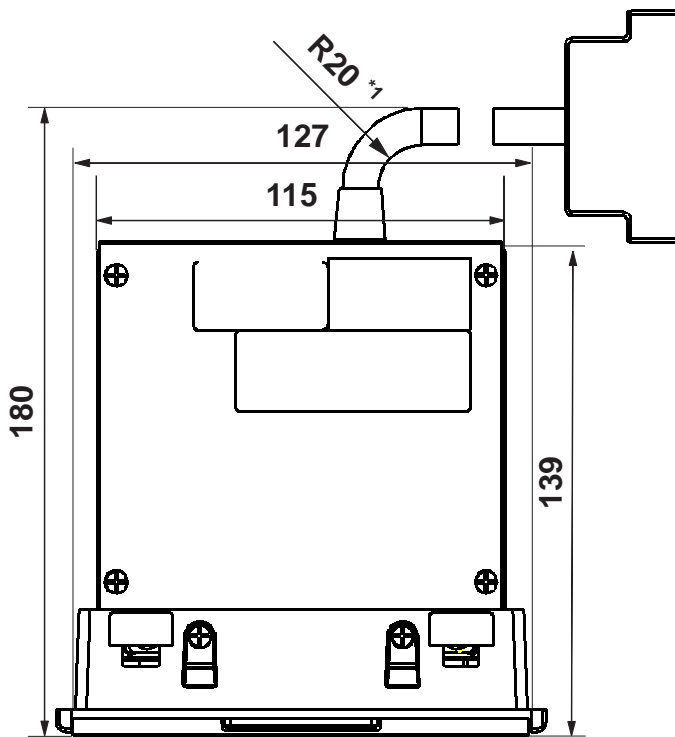
### 2.1.3 Environment Specifications

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Item	Description
Ambient Operating Temperature	0°C to 50°C
Ambient Humidity	20%RH to 85%RH (no condensation)
Storage Temperature	-10°C to +60 °C
Vibration Resistance	10 to 25Hz in X, Y, Z directions for 30 minutes at 19.6m/s <sup>2</sup>
Rating	Equivalent to IP65f

## 2.2 Unit Dimensions

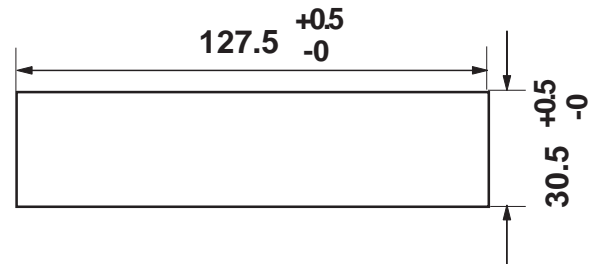
(Unit:mm) Top View



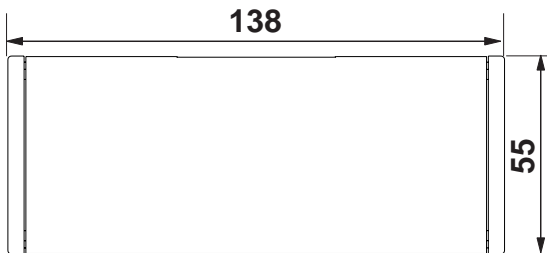
Maximum cable length is 380mm.

\*1 Indicates the cable's sharpest angle.

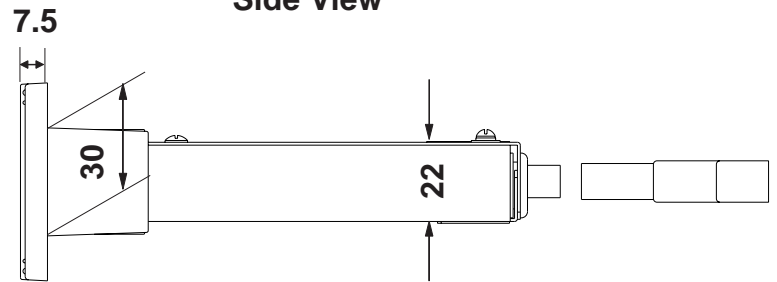
Panel Cut-Out



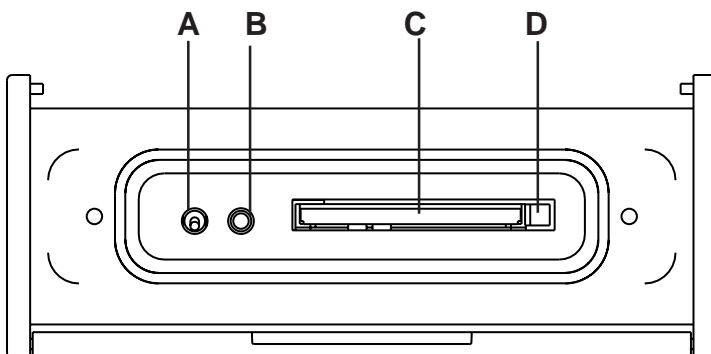
Front View



Side View



## 2.3 Component Names and Functions



**A: CF Card ACCESS Switch**

When this switch is turned ON, access to the CF Card is possible.

**B: CF Card ACCESS LED**

When the CF Card ACCESS switch is turned ON, this LED lights.

**C: CF Card Interface**

CF Card's insertion slot.

**D: Eject Button**

Press the Eject button to remove the CF Card.

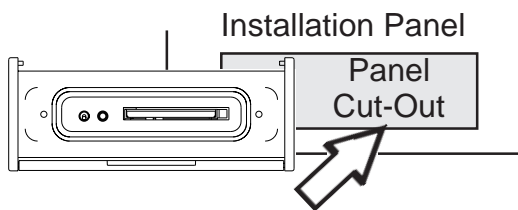
## 2.4 Installation

### 2.4.1 Installation

#### ■ Installation Procedures

Create the correct sized opening for the CF Card Front Maintenance Unit, using the installation dimensions given in 2.2 “Unit Dimensions”.

Secure the unit in place with the Installation Fasteners and attachment screws included in this package. (4 screws)



Install the unit into the front of the installation panel.

**Reference** For bracket and attachment screw installation information, refer to your *GP User Manual 3.1 Installation*.

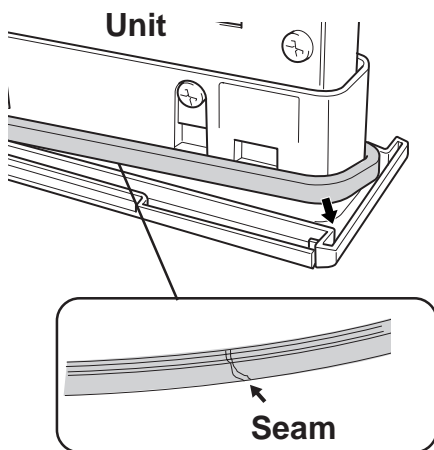


- The Installation Panel's thickness should be from 1.6mm to 10.0mm.
- A torque of only 0.5 -0.6 N•m is required to tighten the attachment screws.

### 2.4.2 Installation Gasket/O-Ring Installation

The installation gasket and the O-Ring are both pre-installed. Refer to the following explanation when they need to be replaced.

#### ■ Gasket Installation



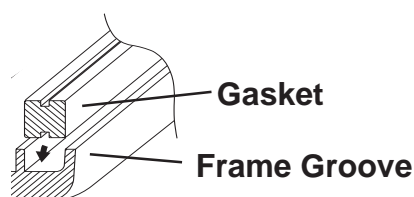
- 1) Insert the gasket as shown in the figure here, so that it fits securely into the unit's frame groove.



- The gasket is flexible, but not elastic, and may tear if stretched too far. Do not stretch the gasket around the ribs, only push.
- Be sure the gasket's seam is not inserted into any of the unit's corners, only in the straight sections of the groove. Inserting it into a corner may lead to its eventually tearing.



**Note:** The gasket's middle grooves should be vertical when inserting it into the Frame Groove.



- 2) Use the same procedure to insert the gasket in the other corners.

#### ■ O-Ring Installation

Since the O-Ring does not have a groove, be careful not to twist it when installing it.

## 3.1 CF Card Insertion and Removal



### CAUTIONS

When using the CF Card Front Maintenance Unit and CF Card, be sure to observe the following cautions:

- Prior to attachment or removal of the CF Card, be sure to turn the Front Maintenance Unit's CF Card access switch OFF and confirm that the LED is not lit. Otherwise, the CF Card's internal data may be destroyed.
- While accessing the CF Card, NEVER turn OFF or reset the GP, and attach or remove the CF Card. If you wish to perform these operations, create an application screen that controls access to the CF Card.

**Reference** *GP-PRO/PB III for Windows Tag Reference Manual (included with screen editor software)*

- When attaching the CF Card, be sure to confirm the back and the front of the CF Card Unit are correctly oriented, as well as the CF Card connector position. If the CF Card is attached with its orientation incorrect, the CF Card, its internal data, and Front Maintenance Unit may be damaged.
- Be sure to use a CF Card made by the Digital Electronics Corporation. If another manufacturer's CF Card is used, the CF Card Front Maintenance Unit's specifications will not be satisfied and performance cannot be guaranteed.
- Be sure to backup the CF Card's internal data.

Be sure to familiarize yourself with the differences between the top and bottom surfaces of the CF Card.

Be sure to hold the CF Card by the end opposite the connector, and slowly insert it into the CF Card slot.

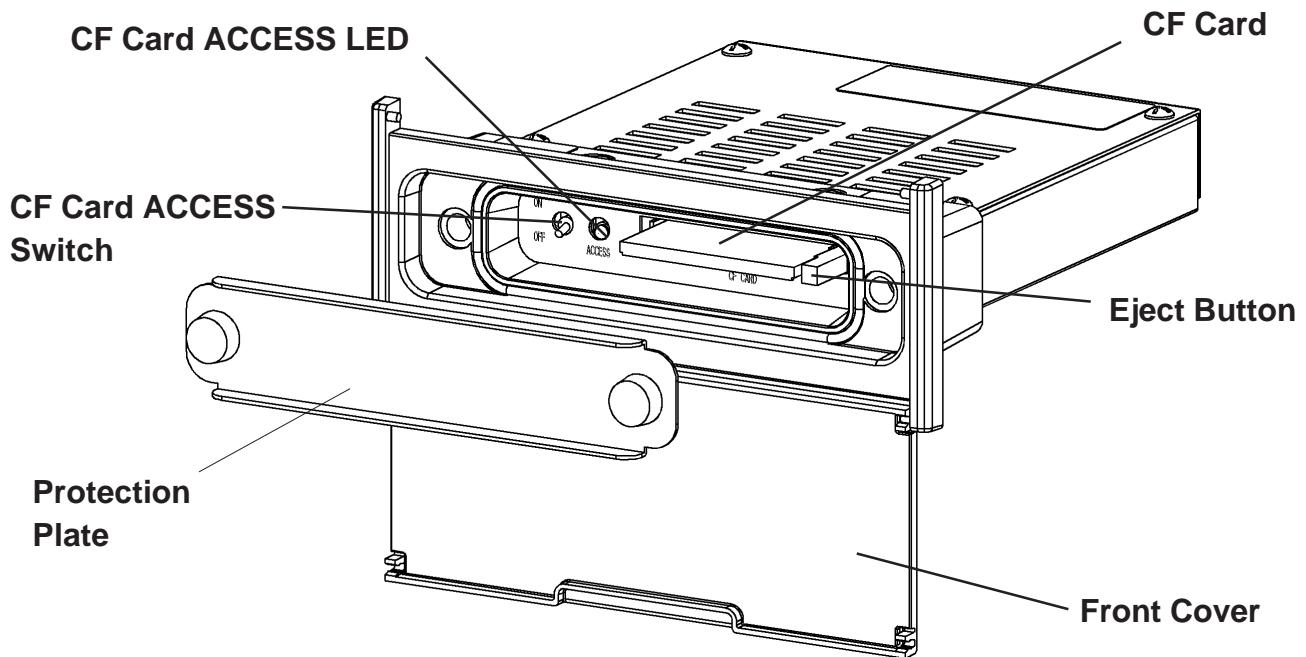
If the card seems to jam or is too tight, remove the CF Card. Confirm that the card is properly oriented and that there are no obstructions in the sides of the card insertion slots. (For details, refer to the manual)

Also, when removing the CF Card, push in the eject button, hold the edge of the CF Card with your fingers, and slowly pull the CF Card out.

When the protection plate is not used, be aware that IP65f's specifications will not be satisfied.

Next, connect the CF Card Front Maintenance Unit's data transfer cable connector to the GP unit's CF Card Expansion Interface or to the Multi Unit's EXT.CF Card interface.

The GP unit's CF Card interface or the Multi Unit's CF Card interface cannot be used when the CF Card Front Maintenance Unit is connected.



## ■ Inserting the CF Card

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- 1) Open the front cover, unscrew the two (2) attachment screws and remove the protection plate.
- 2) Turn the CF Card Access Switch OFF and confirm that the LED is not lit.
- 3) Insert the CF Card.
- 4) Push the card in until the ejector button is pushed out.
- 5) Turn the unit's Access Switch ON.
- 6) Replace the protection plate and tighten the attachment screws.
- 7) Close the front cover.

## ■ Removing the CF Card

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- 1) Open the front cover, unscrew the two (2) attachment screws and remove the protection plate.
- 2) Turn the Access Switch OFF and confirm that the LED is not lit.
- 3) Push the ejector button in until the CF Card is pushed out.
- 4) Pull the CF Card out from the CF Card Front Maintenance Unit.
- 5) Replace the protection plate and tighten the attachment screws.
- 6) Close the front cover.



## 4.1 CF Card Handling

This section describes the precautions required when handling the CF Card, as well as the CF Card functions available when using the GP.



### CAUTIONS

- **Be sure to use only CF Cards manufactured by the Digital Electronics Corporation. CF Card Front Maintenance Unit performance cannot be guaranteed when using another manufacturer's CF Card.**
- **Be sure to follow the instructions given below to prevent the CF Card's internal data from being destroyed or a CF Card malfunction from occurring:**
  - **DO NOT bend the CF Card.**
  - **DO NOT drop or strike the CF Card against another object.**
  - **Keep the CF Card dry.**
  - **DO NOT touch the CF Card or Multi Unit E connectors.**
  - **DO NOT disassemble or modify the CF Card.**

The CF Card has a data overwrite limit of approximately 100,000 times. Therefore, be sure to back up all CF Card data regularly to another storage media. (100,000 times assumes the overwriting of 500KB of data in DOS format)

To view CF Card data on a personal computer, first, insert the CF Card into a CF Card Adapter. Then, insert the adapter into your personal computer's PC card slot. Depending on your model personal computer, the CF Card's data may not be able to be read correctly. Please contact your local GP distributor for a list of the latest CF Card and personal computer operation test results.

If your personal computer is not equipped with a PC card slot, please use a standard type PC Card or CF Card reader. All of Digital's CF Card operation testing has been performed using the following equipment.

<b>Manufacturer Name</b>	<b>Model</b>	<b>Connection Type</b>
I-O DATA DEVICE, INC.	CardDock-CF/P	Parallel port

The connection between a personal computer and the CF Card reader has been tested using Windows® compatible machine. This does not mean, however, that all Windows® machines can be used. Please contact your PC or CF Card reader manufacturer directly for details.

## 5.1 Troubleshooting

This section describes possible CF Card Front Maintenance Unit problems and countermeasures.



### WARNING

Prior to attaching or wiring the Multi Unit E, confirm that its power cords is disconnected from the main power supply. Otherwise, an electric shock may occur.

#### ■ CF Card Front Maintenance Unit Problems and Countermeasures

Problem	Countermeasures
Cannot access the CF Card	Check if the CF Card has been inserted into the CF Card Front Maintenance Unit.
	Check if the CF Card Front Maintenance Unit has been connected to the GP or the Multi Unit correctly.
	Check if the Multi Unit has been attached to the GP correctly.
	Check if the power is ON.
	Check if the CF Card ACCESS switch has been turned ON.



- If the CF Card becomes damaged, do not use it, since it may cause a malfunction.
- In no event will the Digital Electronics Corporation be held responsible for any accidental data loss, damages or losses caused by a CF Card malfunction or incorrect operation.
- Do not insert the CF Card if any of the CF Card's connectors is contaminated by dust or dirt. Doing so may cause the CF Card to malfunction.

Please be aware that Digital Electronics Corporation shall not be held liable by the user for any damages, losses, or third party claims arising from the uses of this product.