

Precautions

■ Correct Use

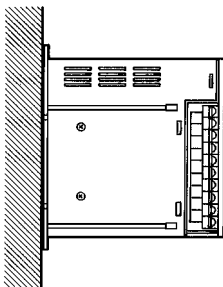
Load

Only resistive loads can be connected to the G3PX. Contact your OMRON representatives if it is necessary to connect inductive or transformer loads.

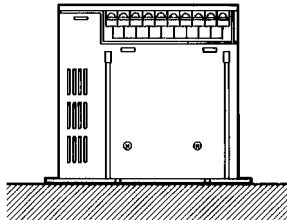
Mounting

The three-phase, 60-A G3PX weighs approximately 5 kg. Pay utmost attention when mounting the G3PX so that the G3PX will not fall thus resulting in injury.

Vertical Mounting

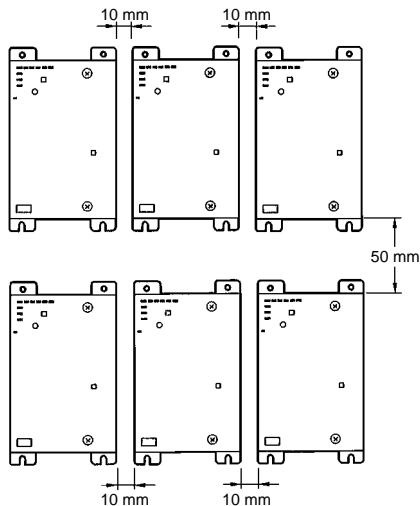


Flat Mounting



Note: In the case of flat mounting, the 30% derating of the load current is required.

Close Mounting Example (Single-phase Models)



Note: Make sure that there is a space of at least 50 mm vertically and at least 10 mm horizontally between adjacent single-phase models.

Wiring

Make sure that the lead wires are thick enough according to the current.

Be sure to turn off power to the G3PX when wiring. The G3PX has current leakage although the G3PX is turned off if the power supply is connected to the G3PX, which may give an electric shock.

Do not wire power lines or high-tension lines along with the lines of the G3PX in the same conduit, otherwise the G3PX may be damaged or malfunction due to induction. Be sure to wire the lines of the G3PX separated from power lines or high-tension lines or laid in an exclusive, shielded conduit.

Tightening Torque

Apply the following tightening torque.

Output terminal:

20-A model: 1.47 N • m

40-A model: 2.45 N • m

60-A model: 4.12 N • m

Terminal block:

Single-phase model: 0.98 N • m

Be sure to protect the terminals with the protective cover after wiring.

Wiring for Error Detection

If a contactor is employed and operated with the relay output signal of the G3PX for error detection, make sure that the G3PX is closer to the power supply than the contactor.

Instruments

Instrument	Remarks
Thermal type	Available
Digital type displaying root-mean-square values	
Moving-iron type	
Rectifier type	Not available (not precise enough)
Multimeter	
Digital multimeter	

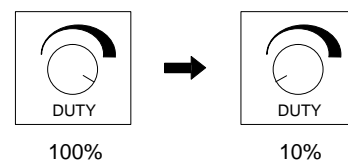
The instruments are used for displaying room-mean-square voltage and current values of the AC circuitry.

Operation Monitoring

The level indicator just indicates the phase of the load and it is not highly precise.

Ramp Setting

There is a decrease in ramp if the internal DUTY adjuster is turned counterclockwise.



If the External DUTY Adjuster is used, set the Internal DUTY Adjuster to 100%.

CT Unit

The CT Unit varies with the G3PX-series model. Use the following CT Units in combination with the G3PX models.

G3PX-2□0EH Series: G32X-CT□□

G3PX-2□0EHN Series: G32X-CT□□HN

G3PX-2□0EC Series: G32X-CT□□C

If any of the following models is used and the actual load current is 50% of the maximum rated load current or lower, increase the number of turns of the wire around the CT Unit.

G3PX-20EHN Series (multi-heater burnout detective models)
G3PX-20EC Series (constant current)

For example, make two turns if the actual load current is 50% of the maximum rated load current and four turns if the actual load current is 25% of the maximum rated load current.

If the G3PX is a constant current model, do not increase the number of turns of the wire around the CT Unit excessively, otherwise the overcurrent detective function may operate by mistake.

External DUTY Adjuster

Use the External DUTY Adjuster with a resistance of 2 kΩ or that with a resistance of 3 kΩ according to the G3PX-series model in use. Refer to the following combinations.

G3PX-2□EH Series: G32X-V3K (3 kΩ)
G3PX-2□0EUN Series
G3PX-2□0EC Series

Base-up Function

If the model in use has the model number suffix "EUN," the base-up function is available.

The base-up output of the G3PX with a temperature controller output of 0 mA (i.e., the temperature controller is turned off) and that of the G3PX with a temperature controller output of 4 mA are different from each other.

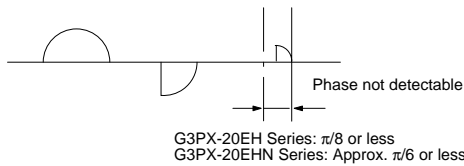
Power Device Cartridge

Do not apply power to the G3PX with the Power Device Cartridge dismounted.

Heater Burnout Detection

EH and EHN Models

The heater burnout detective function is not available for detecting the phase less than the following.



Power Supply

Single-phase Models Only

Do not apply 200 V to the 100-V terminals, otherwise the thermal fuse of the built-in transformer will be blown and the G3PX will not operate.

Others

It is not possible to use three single-phase models for three-phase load control.

If three-phase power supply is used for single-phase models operating in parallel, make sure that the two phases supplied to all the single-phase models are the same.

Troubleshooting

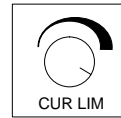
Check the following if the G3PX does not operate or has difficulty in temperature control.

- The load does not turn on with 100% input.
Check the default internal ramp setting.

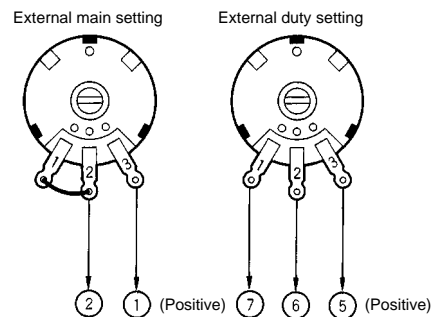


Make sure that the adjuster is set to the farthest clockwise position.

Also check the current limit adjuster if the G3PX is a constant DC model.



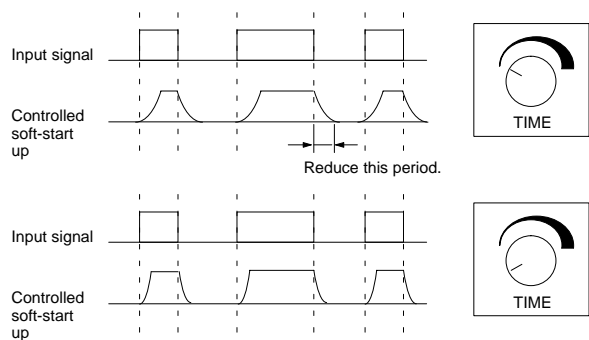
- The G3PX does not operate or is in abnormal operation.
Make sure that all input terminals are connected properly with no mistakes in polarity.
Make sure that the internal DUTY adjuster is not set to the farthest clockwise position.
Make sure that the frequency used by the G3PX (i.e., 50 or 60 Hz) is set properly. (This applies to the EC, and EHN models.)
- The G3PX malfunctions if the external adjusters are turned.
Make sure that the numbers on the external adjusters coincide with the corresponding terminal numbers on the G3PX.
Make sure that the 2-kΩ and 3-kΩ DUTY adjusters are connected correctly.



Note: 1, 2, 3, 5, 6, and 7 are terminal numbers of the G3PX.

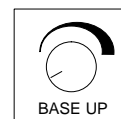
- Temperature control with a Voltage-output Temperature Controller is not smooth.

Make sure that the controlled soft-start up/down time has been adjusted properly. If not, turn the TIME adjuster counterclockwise to the minimum setting to reduce the controlled start-up/down time.



- The Level indicator is not OFF with a 0% input signal (G3PX-2□0EUN Series).

Make sure that the BASE UP adjuster has been turned counterclockwise to the minimum setting.



Make sure that the adjuster is turned counterclockwise to the minimum setting.

- The OPEN indicator of a multiple heater burnout detection model is lit at the initial stage (G3PX-2□0EHN Series).

Make sure that the initial settings are OK. If not, readjust the G3PX.

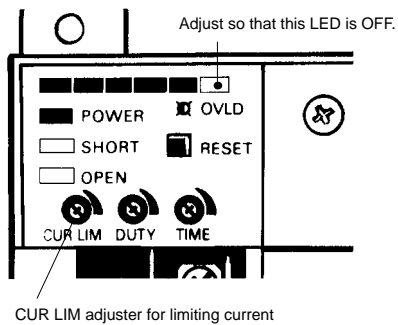
Make sure that terminals 18 and 19 are open if the supply frequency is 50 Hz. These terminals must be short-circuited if the supply frequency is 60 Hz.

Make sure that the load current is large enough.

- The Level indicator LEDs of a constant-current model are all lit and no power control operation is possible.

Make sure that the load current is large enough.

Countermeasure 1: Adjust the CUR LIM adjuster so that the LED on the farthest right of the Level indicator is OFF.



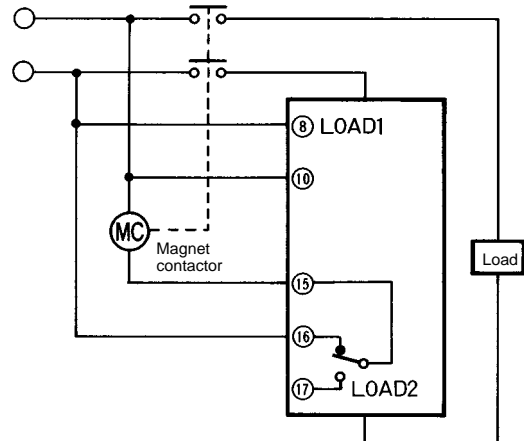
Countermeasure 2: When the supply current is less than 50%, increase the number of turns. When the supply current is 50% of the rated current, the wires must be coiled twice on the CT Unit.

When the supply current is 25% of the rated current, the wires must be coiled three to four times on the CT Unit.

- No reset will be performed even if the RESET button is pressed. Check whether the RESET button is pressed while there is nothing input into power supply terminals 8 and 10 or 9 and 10 of the G3PX.

Be sure to press the RESET button with power supplied to the G3PX.

The following wiring will be required if the breaker or contactor connected between the power supply and the G3PX is operated by the relay output of the G3PX.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.