

Gravity Return Limit Switches

Catalog Number 802G-GP

IMPORTANT Save these instructions for future use.

Introduction

A gravity return limit switch is a device that has a low operating torque. This switch is intended to be used in order for the gravity to act on the actuator lever. Gravity returns the switch (once it has been operated to the nonoperating position) when the lever is rotated in either direction continuously. The device provides 180° of switch-on time and 180° of switch-off time.

The operating head and the switch unit that are used on this type of device are unique and can only be used with one another. Operating heads or switches from other styles of devices cannot be interchanged with these devices.



ATTENTION: This device is a gravity return limit switch, which must be correctly installed to provide proper operation. Once the switch operates, only the gravity acting on the lever arm to rotate the operating shaft back to the nonoperating state supplies the return torque. There is no internal return mechanism. Carefully adjust the lever arm length and position so that the unit has adequate return force, but be sure that the returning lever arm does not oscillate and operate the switch unintentionally. If unintentional switch operation can create a hazard, the free swinging mode of operation of the lever arm must be avoided. You must provide a means to help prevent the lever arm oscillation such as an external stop. Verify that this stop effectively damps any bounce of the lever arm, which can also cause unintentional switch operation.

Mounting

Position the conduit that enters the switch such that any fluid inside the conduit does not drain into the switch enclosure. Apply sealing compound to conduit threads to help prevent against entrance of fluids through the threads.

The base can be mounted by using one of these two methods:

- Two #10-32 tapped holes are provided for rear mounting.



ATTENTION: Make sure that the screws that are used for rear mounting are not so long as to interfere with the screws that are used to secure the front to the base.

- Two clearance holes for #10 screws are provided for front mounting.

Wiring



ATTENTION: The contacts in each switching element must have the same polarity. The circuit diagram is shown on the nameplate.

The pressure type connector terminals in the base accept 3.31 mm² (12 AWG) and smaller solid or stranded wire. For proper tightening, we suggest not using anything smaller than 0.823 mm² (18 AWG) wire. Before you insert the wire under the pressure plates, strip the insulation approximately 9.52 mm (3/8 in.). To avoid interference with the switch cover, tighten all pressure plate terminal screws whether used or not.

A grounding screw is in the terminal base enclosure near the conduit opening. The grounding screw has a self-lifting pressure plate and a wire barrier. The proper installed position of the ground wire is between the pressure plate and the wire barrier in a direction that is parallel to the edge of the casting. Be sure that the ground wire does not interfere with the gasket or with the switch portion of the device.

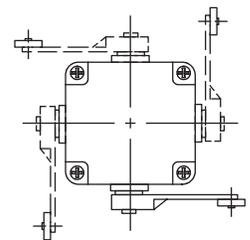
After wiring is complete, verify that all wires are in the wiring cavity of the terminal block so they do not interfere with the switch when it is plugged into the terminal block. Recheck all wiring terminal screws for tightness.

IMPORTANT For switches that have been wired at the factory, check the wire color and their position in the terminal block for proper circuit connection.

When the switch has been plugged into the terminal block, securely tighten the two cover screws to compress the body gasket.

Actuator Head Positioning

The actuator head can be placed in any of four positions on the switch body. Loosen the four captive head screws. Place the head in the desired position and securely tighten the four screws.



Lever Arm Positioning

Screwdriver slots are provided on each end of the operating shaft, which can be used to keep the shaft from rotating while adjusting the position of the lever arm. Loosen the screw, which secures the lever-arm clamp assembly, to the operating shaft. Position the shaft so that in the nonoperating state the circuit between terminals one and two are open and between three and four are closed. If the shaft is positioned with the circuit functions reversed (in the nonoperating state), the circuit between terminals one and two are closed and the terminals between three and four are open. The switch cannot function as a gravity return device in this configuration.

Select the operating point of the switch so that the weight of the lever arm returns the unit to the stopped state. Be sure that the maximum travel position of the lever is below the level at which the lever arm oscillates in a pendulum manner. This oscillating action of the lever can result in unintentional operation of the switch after gravity returns it to its stopped position. After installation and adjustment of this device, always check for this swinging action before energizing the circuit.



ATTENTION: See [Introduction on page 1](#) for restrictions on the free swinging mode of operation.

Lever Arm Rod Length Adjustment

The effective lever arm length can be varied by loosening the screw, which secures the rod in the clamping block.

IMPORTANT As the rod length that extends below the clamping assembly is shortened, the operating torque and the return torque decrease while the allowable angular overtravel increases.

Waste Electrical and Electronic Equipment (WEEE)



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