

# Installation and Operation Manual for MURPHYMATIC® Engine Throttle Controller Model AT03069

AT-04060N  
Effective 04-04  
Section 40  
00-02-0568



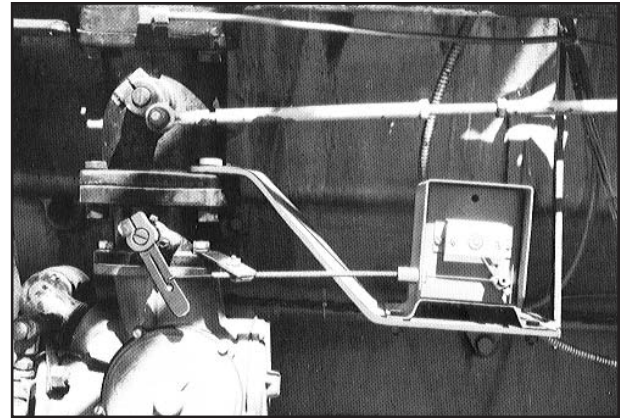
Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before mounting. It is your responsibility to have a qualified person install this unit and make sure it conforms to NEC and local codes.

## GENERAL INFORMATION

WARNING

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT

- ✓ Disconnect all electrical power to the machine.
- ✓ Make sure the machine cannot operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.
- ✓ Read and follow all installation instructions.



### Description

The AT03069 is a heavy duty device developed specifically to automatically control engine speed to meet system demand. It is typically applied to the throttle butterfly on a natural gas engine, but may also be applied to various diesel or gasoline engines. Low current, high torque, solid state switching and electronic clutch make it ideal for all automatic and semiautomatic engine systems.

### Specifications

**Voltage:** 11-28 VDC negative ground.

**Maximum Current:** 200 mA @ 25 in-lb.

**Standby Current:** Approx. 7 mA.

**Increase and Decrease:** Inputs float at approx. 8.4 VDC. Grounding inputs causes 8 to 18 mA of current to flow from either depending upon force.

**Torque:** 25 inch pounds.

**Sealed limit switches:** Factory adjusted, controls maximum travel.

**Linkage adjustment on lever arm:** Adjusts travel: 1-3/16 in. (30 mm); 1-11/16 in. (43 mm); 2 in. (51 mm); 2-1/4 in. (57 mm) approximately.

**Travel Time:** 11 to 20 seconds depending on the force required.

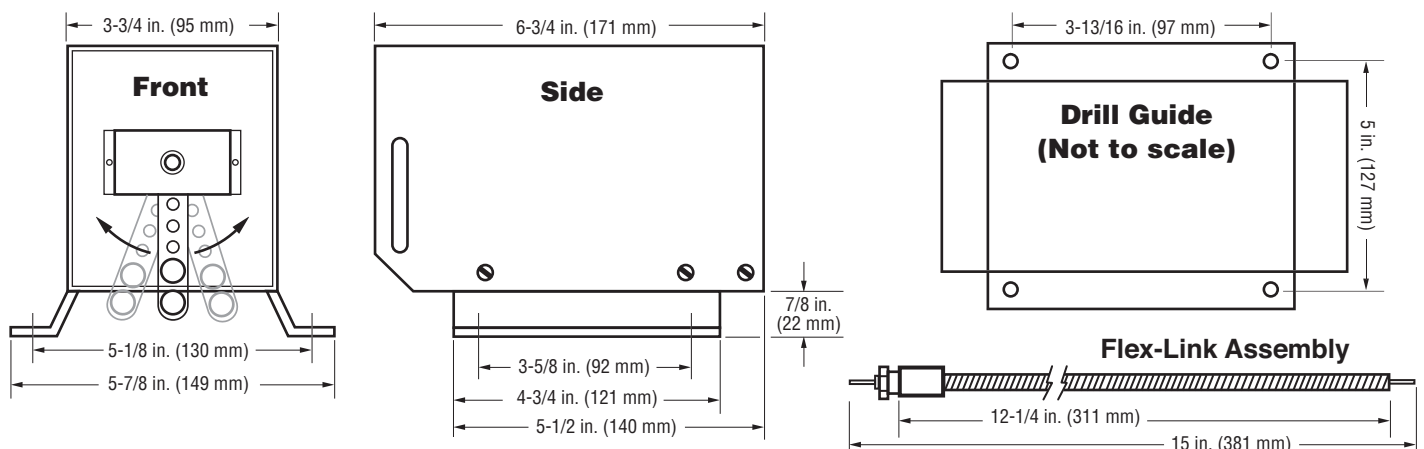
**Net Weight:** 5 lb. (2.27 kg)

### Operation

A Murphy SWICHGAGE® constantly monitors pressure, level, temperature or load. Adjustable high and low contacts on SWICHGAGE® are set slightly above and below desired operating point. When demand changes, pointer touches appropriate high or low contact and signals speed change. AT03069 controller responds only so long as contact is made. The controller stops immediately when contacts separate. Slow, smooth action prevents “hunting” or “surging” on normal applications.

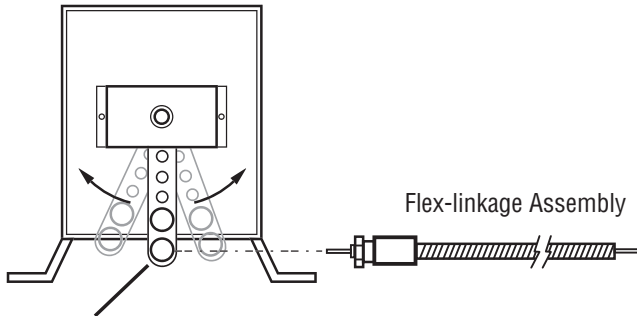
\*Mercury tube or snap-action switches are not suitable for this type control. For more information, recommendations and quotations contact our engineering department.

## Dimensions



## INSTALLATION and WIRING

### AT03069 Front View



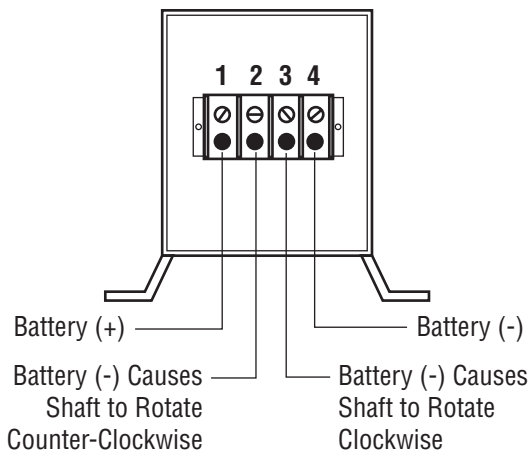
A second swivel is provided for use on the butterfly valve lever arm.

When applying the AT03069, please consider the operating environment. The case is designed to shed water from the top, but will collect water if mounted upside down. The control linkage has been specially designed to isolate vibration from the gear motor on the throttle actuator directly to the outer case. This control linkage must be used or vibration may seriously damage the internal gear motor. The flex linkage assembly has been removed for shipping and must be installed before use. The flex linkage assembly may be installed in the right or left hand slots on the sides of the throttle actuator. The AT03069 must be mounted close to, and in line with, the throttle block for straight line pull between the lever arm and the butterfly lever arm.

**NOTE:** The throttle actuator should be mounted in a manner that minimizes the effects of excessive shock and vibration on the unit.

A separate throttle block must be used if the engine is equipped with a governor or a manual control wire. The AT03069 is not designed to override other controls. The butterfly valve must work freely.

### AT03069 Back View



### Typical Wiring

1. Connect terminal #1 to battery (+).
2. Connect terminal #4 to battery (-).
3. Advance the lever arm to the full idle RPM position (fully clockwise or counter-clockwise by grounding #2 or #3 -- See above at left.)
4. Connect the flex linkage wire to the butterfly lever arm. Alternately ground terminal #2 and #3 to determine the direction of travel. Select the proper mounting hole in the lever arm of the AT03069 and on the throttle block butterfly arm to provide proper travel. The proper throttle travel is from the mechanical set idle point, to just slightly above the point where the mechanical governor limits the engine RPM.
5. Visually inspect the linkage assembly to insure that there are no sharp bends or kinks. If the linkage wire bows during operation, a center support should be added.
6. After correct travel is established, tighten the set screws and linkage assembly.

**NOTE:** The lever arm must be allowed to travel its full arc. This allows the unit to disconnect itself with internal limit switches. If the lever is unable to reach limit switches, Damage to the unit can occur.



**IMPORTANT:** The AT03069 works on both 12 and 24 VDC systems. System voltage should be between 11 and 28 VDC. Exceeding 28VDC can cause damage. The automatic throttle controller is used by alternately grounding terminals 2 and 3 to maintain the desired engine RPM. The AT03069 is typically used to automatically adjust the engine speed to maintain a desired discharge pressure on an engine-driven pump.

### Warranty

A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)

# MURPHY

**FW Murphy**  
P.O. Box 470248  
Tulsa, Oklahoma 74147 USA  
+1 918 317 4100  
fax +1 918 317 4266  
e-mail [sales@fwmurphy.com](mailto:sales@fwmurphy.com)  
[www.fwmurphy.com](http://www.fwmurphy.com)

**CONTROL SYSTEMS & SERVICES DIVISION**  
P.O. Box 1819; Rosenberg, Texas 77471; USA  
+1 281 633 4500 fax +1 281 633 4588  
e-mail [sales@fwmurphy.com](mailto:sales@fwmurphy.com)

**MURPHY DE MEXICO, S.A. DE C.V.**  
Blvd. Antonio Rocha Cordero 300, Fracción del Aguaje  
San Luis Potosí, S.L.P.; México 78384  
+52 444 8206264 fax +52 444 8206336  
Villahermosa Office +52 993 3162117  
e-mail [ventas@murphymex.com.mx](mailto:ventas@murphymex.com.mx)  
[www.murphymex.com.mx](http://www.murphymex.com.mx)

**FRANK W. MURPHY, LTD.**  
Church Rd.; Laverstock, Salisbury SP1 1QZ; U.K.  
+44 1722 410055 fax +44 1722 410088  
e-mail [sales@fwmurphy.co.uk](mailto:sales@fwmurphy.co.uk)  
[www.fwmurphy.co.uk](http://www.fwmurphy.co.uk)

**MURPHY SWITCH OF CALIFORNIA**  
41343 12th Street West  
Palmdale, California 93551-1442; USA  
+1 661 272 4700 fax +1 661 947 7570  
e-mail [sales@murphyswitch.com](mailto:sales@murphyswitch.com)  
[www.murphyswitch.com](http://www.murphyswitch.com)

**MACQUARRIE CORPORATION**  
1620 Hume Highway  
Campbellfield, Vic 3061; Australia  
+61 3 9358 5555 fax +61 3 9358 5558  
e-mail [murphy@macquarrie.com.au](mailto:murphy@macquarrie.com.au)



In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.

Printed in U.S.A.