

# Model 4481 - Anti-Tiedown Control with Adjustable Timed Output

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**ANTI-TIEDOWN** The 4481 control requires a machine operator to have both hands on start switches in order to start machine operation. This will minimize the possibility of the operator starting the machine while his hand is in the work area. Both start switches must be released and reactivated in order to start another cycle. If one or both start switches are "tied down", the control will not operate.

**REDUNDANT OUTPUT CONTACTS** The 4480 series uses double "positive guided" output relays. Each relay is checked for proper status prior to beginning a machine cycle.

**CONTROL RELIABILITY** The 4480 series is designed to meet the OSHA classification of "control reliability" as defined in section 1910.217(13).

**ADJUSTABLE OUTPUT TIME** The knob on the front of the control is used to adjust the output time cycle. The time cycle determines how long the output will remain energized.

**HAND SWITCH INPUTS** Model 4481 is designed to interface with dry contact single pole hand switches and electronic hand sensing devices with a relay output. Each hand switch must remain closed for a time of .075 seconds before the control will respond. A current of 60-80 milliamps will then flow through the hand switch. In the open position, approx 30 VDC will be across the hand switch contacts.

**LOW VOLTAGE DETECTOR** The 4481 contains a low voltage detector that will inhibit operation and cause the control to reset if the supply power line voltage drops below 90 VAC. The 4480 will reset on short duration dips of the supply voltage, which may result from switching power to a load with a light gauge supply wire.

**NOTE:** Some electronic hand sensing devices will operate erratically under low voltage conditions. Therefore, these devices must be connected to the same power source as the 4480 to allow monitoring of these conditions.

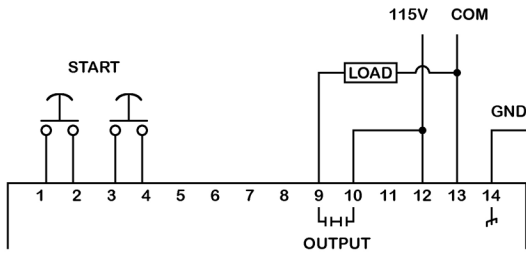
**SYSTEM CHECK CYCLE** When power is turned on, the 4481 will begin a system check cycle. This cycle will take approximately 5 seconds to complete. During this time, the output is disabled and a machine cycle can not be initiated. If hands are on the start switches during this cycle, the output will not be energized until both hands are removed and reapplied.

**INDICATOR LIGHTS** Each hand switch is represented by an indicator light that illuminates when the switch is closed. These lights indicate the true status of the start switches and are not delayed. The output is represented by an indicator light that illuminates when the output relay is energized.

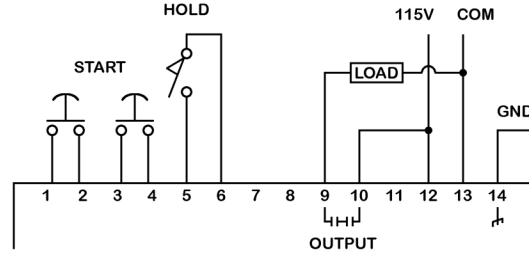
**DETACHABLE TERMINAL STRIP** The 4481 is wired using a detachable terminal strip, which is included with the control. **If there is no terminal strip included with your control, please contact Nolatron for a replacement.**

**WARNING:** These anti-tiedown controls are not intended for use without adequate point of operation safety guards. It is the user's responsibility to assess all potential hazards when installing safety equipment. The user must see that these controls are properly installed, cared for and operated to meet all applicable local, national and OSHA codes and requirements. The user must also determine the compatibility and safety of switching devices used with this control. **A safety check should be performed at the beginning of each shift, or when there is a change to the machine setup.** Failure to comply could result in serious bodily injury and/or property damage.

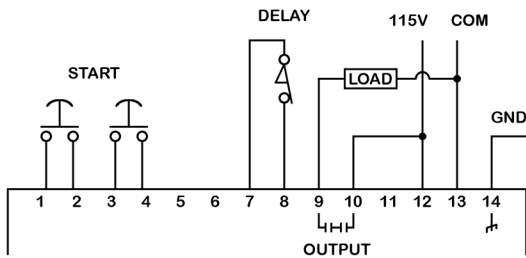
## 115VAC WIRING OPTIONS



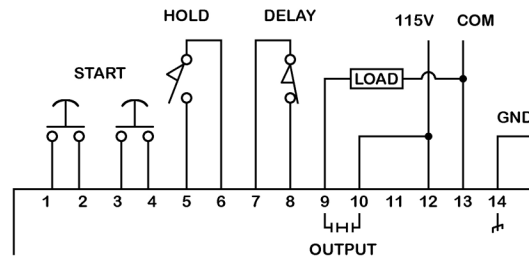
**TIMED OUTPUT:** Both start switches must be pressed within .5 seconds\* to energize the load. The load will remain energized until the time cycle is completed or one or both start switches are released.



**MAINTAINED TIMED OUTPUT:** Both start switches must be pressed within .5 seconds\* to energize the load. When the Hold switch is closed, the load will remain energized for the remainder of the time cycle, even if the start switches are released.



**DELAYED TIMED OUTPUT:** Both start switches must be pressed within .5 seconds\* to energize the load. The load will remain energized until the time cycle is completed or one or both start switches are released. The time cycle will not begin until the Delay switch is opened.



**MAINTAINED and DELAYED TIMED OUTPUT:** Both start switches must be pressed within .5 seconds\* to energize the load. When the Hold switch is closed, the load will remain energized for the remainder of the time cycle, even if the start switches are released. The time cycle will not begin until the Delay switch opens.

**Note: The above wiring diagrams are for 115V usage. Wire 230V between terminals 11 & 13.**

\* This time was factory set and is adjustable (potentiometer marked "TIEDOWN").

A load suppressor (Part No: 30165) is recommended for each inductive load.

### Specifications:

Physical	12cm x 10cm x 5cm (4.7" x 3.7" x 2.0")
Power Requirements	115 VAC, 50/60 Hz. @ .1 Amp -OR- 230 VAC, 50/60 Hz. @ .05 Amp
Power Line Monitor	115V - Reset if supply drops below 90 volts (rms) for more than 15ms 230V - Reset if supply drops below 180 volts (rms) for more than 15ms
Output Load Rating	8 Amps @ 115/230 VAC (switching), 6 Amps @ 115/230 VAC(continuous)
Output Timer	4481-5: 0.5 to 5.0 seconds, 4481-10: 1.0 to 10.0 seconds, ± 1% repeatability
Start Switch Delay	.05 to .15 seconds, factory set at .075 seconds
Time Between Switches	0 to 0.7 seconds, factory set at 0.5 seconds
Delay on Power-up	5 seconds (approx)
Temp Range	Up to 60°C (140°F)