



Warning Light and Pressure Gage

Power Supply:	120 VAC, 60 HZ, 1 Phase	Light:	5899T29 McMaster Carr
Power Consumption:	9 W	Lens:	5899T89 McMaster Carr
Bulb:	5899T91 McMaster Carr	Gage:	Dwyer Photohelic A3003

Application

The warning light provides a visible warning when the suction pressure is outside the operating parameters. If it is below the lower limit the flow is insufficient. If it is above the operating upper limit there is a blockage in the ductwork, a component is missing in the mist collector or the mist collector has been changed.

The Photohelic gage measures the suction pressure at the inlet of the mist collector. The suction pressure is essentially the pressure drop in the ductwork. The pressure drop in the ductwork varies with the square of the flow rate. For example when the pressure drops to $\frac{1}{2}$ of its initial value the flow rate has decreases by the square root of $\frac{1}{2}$ or a factor of 0.707.

Installation

Mount the warning light assembly at a convenient location where it will be visible and not exposed to severe dirt or mist. The gage must be mounted horizontal i.e. the faceplate of the gage is perpendicular to the floor.

Power

Ideally the light should be powered when the mist collector is on and the power off when the mist collector is off. If this is not possible or it is preferable to have the warning system always on, the unit can be wired into 120 VAC, 60 HZ, 1 Phase.

All connections are made in the electrical box. Connect the live wire to the black and red and red with black stripe wires going to the Photohelic gage. Connect the neutral wire to the white wire that is connected with the black wire coming from the light. Connect the ground to the ground screw and ensure that the wire already connected to the ground screw remains connected. The white wire with black stripe is not used.

Pressure Connections

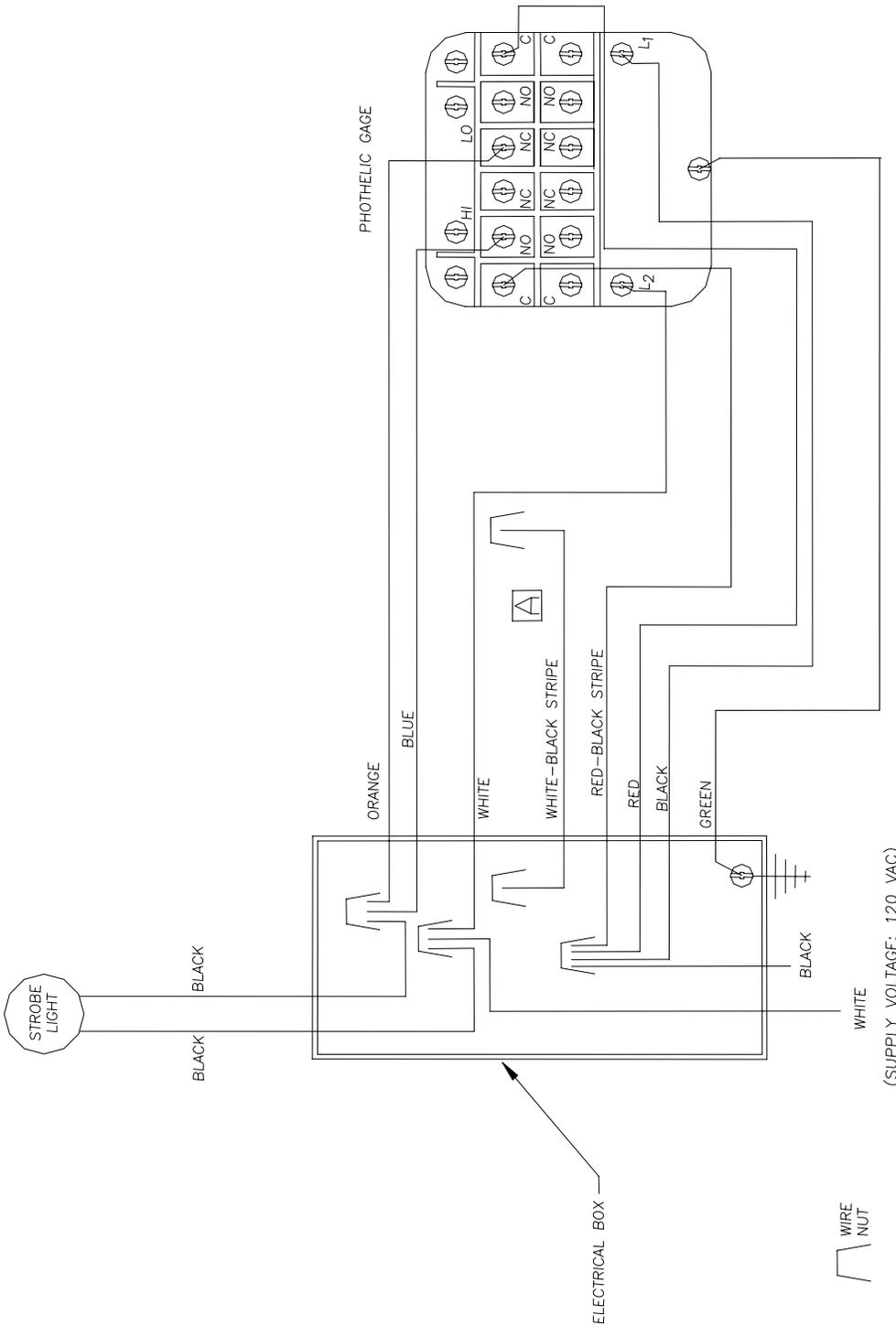
Connect the low side pressure connection to the pressure tap in the mist collector with airtight flexible hose. Leave the high-pressure side exposed to atmosphere.

Set-Up

There are several ways to set up the lower pressure limit on Photohelic Gage. Simply set the right hand needle to the desired reading.

1. Turn on the mist collector and Photohelic gage. Block off the outlet grill until there is insufficient suction at the machine that the mist collector is working on. Set this as the lower set point.
2. Turn on the mist collector and Photohelic gage. Read the gage. Use the relationship that the flow rate varies with the square root of the pressure drop to compute the desire flow rate at which at which the warning light should come on.
3. Set the lower limit according to the pressure drop at the minimum allowed flow rate.

It should be set approximately 0.2 "W.C. above the initial value. It may have to be set higher if the machine is typically run with the enclosure doors open.



AIRIA BRANDS INC.
 511 McCormick Blvd
 London, ON Canada N5W 4C8

PHOTOHELIC WIRING DIAGRAM

TITLE		DRAWN BY		DATE		SCALE		MATERIAL	
		WK		15 MAY 02		1/2		DO NOT SCALE DRAWING	
CHECKED		DATE		DATE		APP'D		DRAWING NO.	
								10820	
NEXT ASSY									

TOLERANCES
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 *FRACTIONAL ± .0625
 .XX ± .025
 *DECIMAL .XXX ± .005
 *ANGLES ± .1

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REVISIONS		REV. BY	DATE	APP'D
A	CHANGES			
*	ADD UNUSED WHITE BLACK STRIPE WIRE AND BLACK STRIPE TO RED WIRE			
*				
*				
*				