

Input Coil Power	24Vdc, 1W per coil
Max Switching Current	5A per point
Max Switching Voltage	120Vac
Independent Contacts	Normally Open
Status Indicators	None
Enclosure Knock-Outs	Yes
Enclosure Rating	IP40
Relay Ratings	1,000,000 cycles



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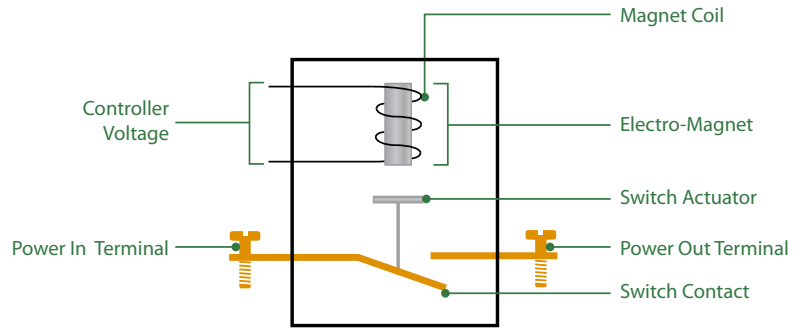
# Introduction

GrowControl RD series dry-contact relays interface Agrowtek’s intelligent controllers to devices in your growing environment to control lighting, ventilation, irrigation, HVAC and much more. Dry-contacts allow many different types of equipment to be controlled.

## How “Dry-Contact” Relays Work

A relay consists of a mechanical switch and an electro-magnet to turn-on (close) a switch contact. A spring opens the switch when the electromagnet is no longer powered.

The microprocessor controls power to the magnet coil to open or close the switch contact as required by the controller program.



Dry-contact relays can be thought of like a wall-switch:

- Each relay “contact” has a pair of screw terminals just like a wall-switch does.
- A wall-switch (or relay contact) does not supply power, it only allows it through.
- Each switch is independent and can operate different circuits or voltages.



A dry-contact relay is exactly the same as a wall switch, however, instead of operating the switch manually with your finger, an electromagnet operates the switch.



## What Relays Control

Many types of devices can be operated with a dry-contact switch. A dry-contact interface allows Agrowtek controls to integrate with building controls, high amperage loads and other custom devices such as:



High-Amp  
Relays & Contactors



HVAC Control



Irrigation / Gas  
Solenoids



120V Receptacles  
& Equipment

# Wiring Examples

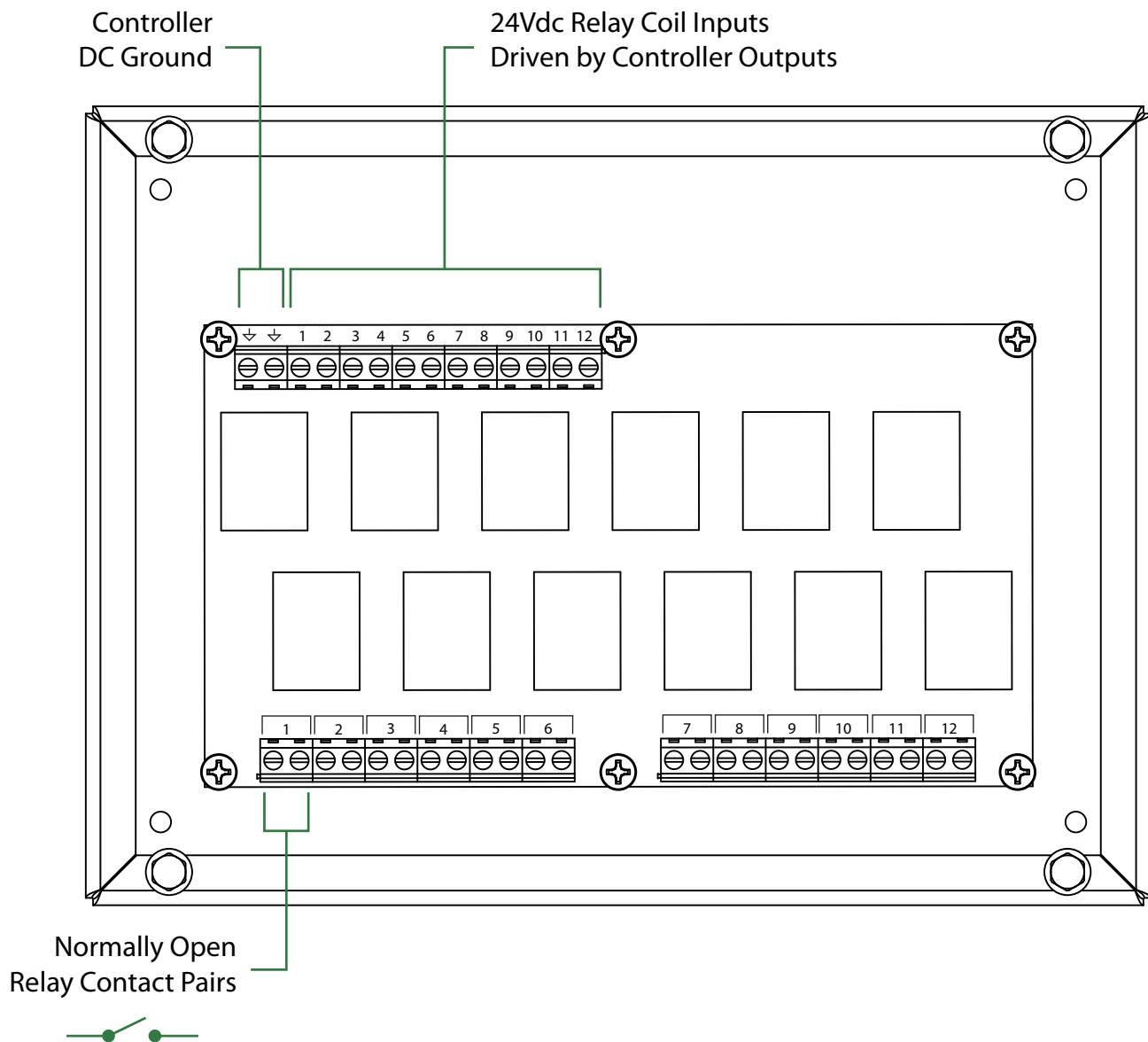


Read operation manual and warnings prior to installing this equipment.

## RD Relay Overview

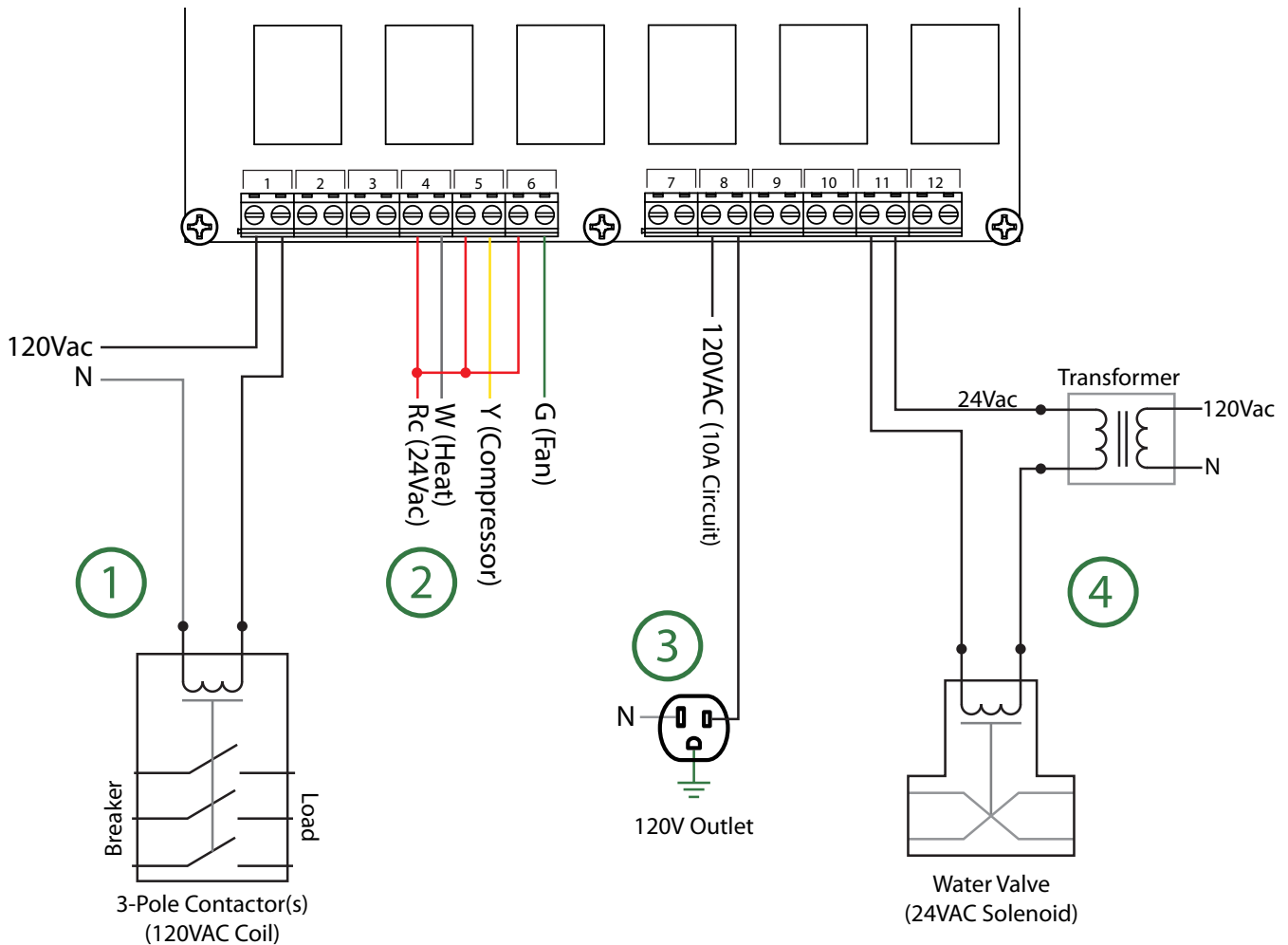
RD dry contact relays interface Agrowtek's GC-Pro series controllers to HVAC, line voltage equipment, irrigation valves and more. Independent normally open dry contacts can switch low voltage control signals or line voltage contactor coils.

A set of terminal blocks at the top of the circuit board is where the RD relay is connected to the GC-Pro series controller's 24Vdc output terminals in any order convenient for the installer. The terminal blocks at the bottom of the circuit board are where load connections are made to the relay contacts.



# Typical Examples

Typical loads controlled with an RD relay include high-amp contactors, HVAC units, irrigation valves and even 120V outlets (5A.)



## 1. High-Amp Contactors

High amp contactors and relays are operated by controlling the power to the magnet coil. When the magnet is energized, high current/voltage is switched on from a breaker panel to load receptacles.

## 2. HVAC Control Signals

24VAC HVAC control signals may be operated by dry contact. Use jumper wires for relays with a common source connection.

## 3. 120V Outlets

Contacts can switch up to 10A to directly feed receptacles or other 120V equipment.

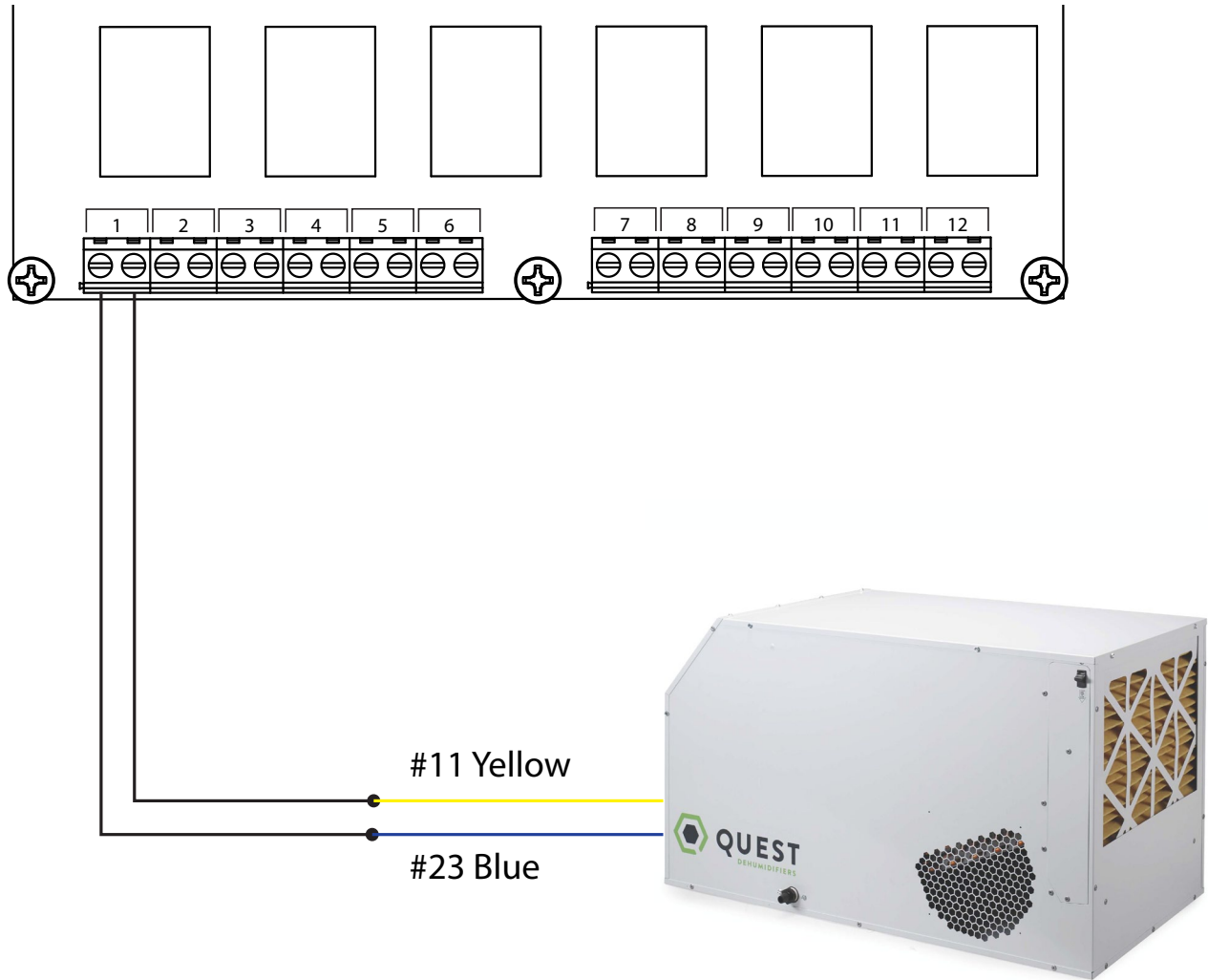
## 4. Solenoid Valves

24VAC irrigation and gas valves can be controlled by switching power supplied by a step-down transformer. *24VAC is safer and more common than line-voltage for water/irrigation solenoids.*

# Quest Dehumidifiers

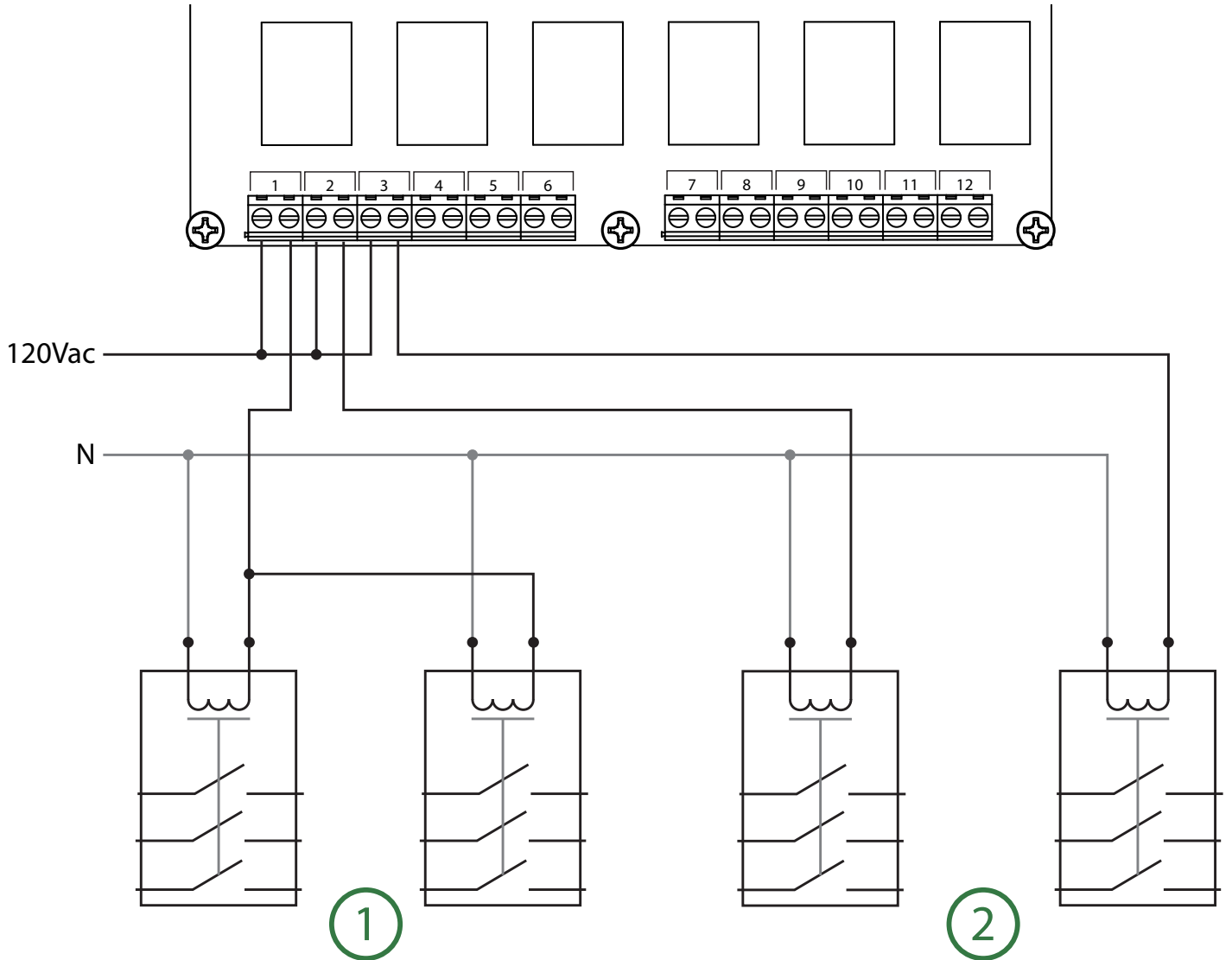
Quest dehumidifiers provide a low-voltage control signal connection which allows proper on/off control of the dehumidifier without turning the main power off to the dehumidifier.

Locate the low voltage control connections behind the appropriate access panel on your Quest model.



# Multiple Contactors

Multiple contactors may be connected to a single relay contact to increase the load switching capacity, or contactors may be connected to separate relay contacts to be controlled independently.



## 1. Contactors on Same Relay

Typical in lighting applications where multiple contactors are required to be controlled as a group.

## 2. Contactors on Separate Relays

Typical for smaller loads such as fans or independent lighting banks.

# Multiple Irrigation Valves

Multiple irrigation valves must be installed in a sequential order with no other devices in between. The irrigation control functions require valves be on sequential outputs.

