HRV SERIES
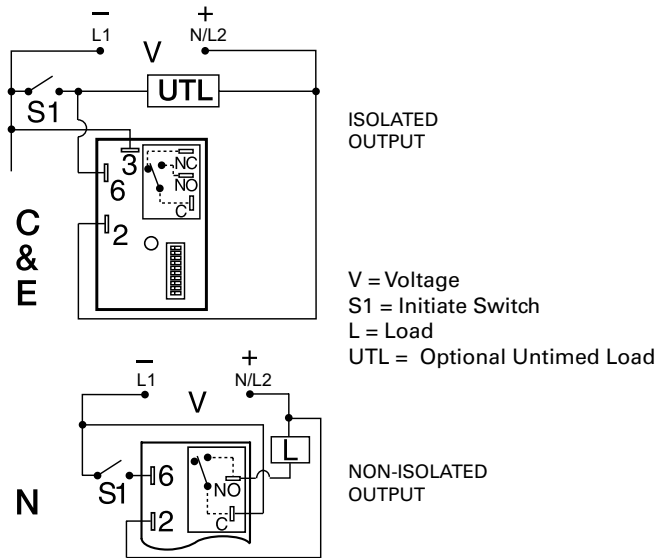
Coin Counter

Description

The HRV combines the accuracy of microcontroller based circuitry with an electromechanical relay output. The HRV's switching capacity allows direct control of loads like compressors, pumps, motors, heaters, and lighting. The HRV "S" version provides a vend time after the selected number of initiate switch closures to start is reached. The HRV "A" version includes all of the "S" features and allows the total vend time to be extended for each additional initiate switch closure. The HRV is ideal for cost sensitive single coin or token vending machines. The electronic circuitry is encapsulated to protect against humidity and vibration.

Operation

Coin Totalizer & Vending Timer ("S" Version):
Input voltage must be applied prior to & during operation. When the total number of S1 initiate switch closures equals the number to start set on the lower 3 DIP switches, the load energizes and the vending time set on the upper 7 DIP switches begins. At the end of the vending time, the load de-energizes and the vending time is reset. Closing the initiate switch during vend timing will have no affect on vend time delay.

Accumulating Vending Timer ("A" Version):
Input voltage must be applied prior to and during operation. When the total number of S1 initiate switch closures equals the number to start set on the lower 3 DIP switches, the load energizes and the vending time starts. For every initiate switch closure, the HRV unit adds one time per coin period, as set on the upper 7 DIP switches, to the total vending time.

Operation Note: If S1 is closed when input voltage is applied, the output remains de-energized and the S1 counter remains at zero closures. At least one "vend time" and one "closures to start" DIP switch must be in the "ON" position for proper operation.

Reset: Removing input voltage resets the vend time delay, the S1 closure counter, and de-energizes the output relay.

Wiring Diagram

ISOLATED OUTPUT

V = Voltage
S1 = Initiate Switch
L = Load
UTL = Optional Untimed Load

NON-ISOLATED OUTPUT

Features & Benefits

FEATURES	BENEFITS
Microcontroller based	Repeat accuracy + / - 0.1%, Setting accuracy 0 - 2%, or 50ms
Encapsulated	Protects against shock, vibration, and humidity
30A , 1Hp at 125VAC, normally open contacts	Allows direct control of loads like compressors, pumps, motors, and heaters without a contactor
Switch selectable coin start	Allows user flexibility to select the number of coins to start vending cycle
Coin switch can be connected to a counter	Provides user with accurate count of total number of coins collected

Ordering Information

MODEL	INPUT VOLTAGE	VEND TIME	MODE OF OPERATION	OUTPUT FORM & RATING
HRV11SC	12VDC	1 - 127s	Coin totalizer	30A SPDT, NO (isolated)
HRV24AC	24VAC	0.25 - 31.75m	Accumulating	30A SPDT, NO (isolated)
HRV41AE	120VAC	1 - 127s	Accumulating	30A SPDT, NO (isolated)
HRV41SE	120VAC	1 - 127s	Coin totalizer	30A SPDT, NO (isolated)
HRV42SE	120VAC	5 - 635s	Coin totalizer	30A SPDT, NO (isolated)
HRV43AE	120VAC	0.1 - 12.7m	Accumulating	30A SPDT, NO (isolated)
HRV43AN	120VAC	0.1 - 12.7m	Accumulating	30A SPDT, NO (non-isolated)
HRV43SE	120VAC	0.1 - 12.7m	Coin totalizer	30A SPDT, NO (isolated)

If you don't find the part you need, call us for a custom product 800-843-8848

HRV SERIES

Accessories

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P1015-13 (AWG 10/12), **P1015-64** (AWG 14/16) **Female Quick Connect**
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.
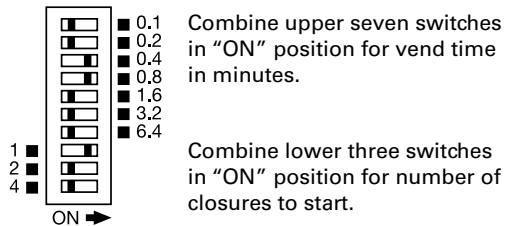
C103PM (AL) DIN Rail
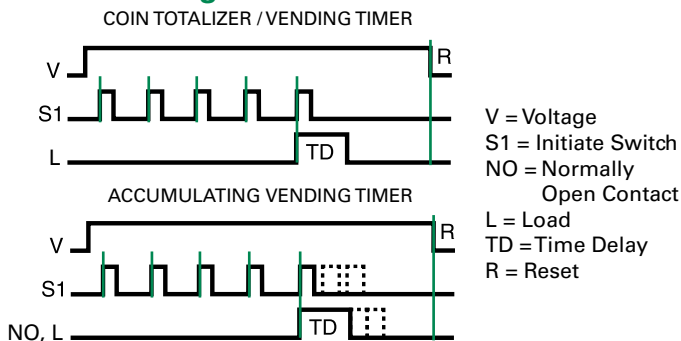35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

P1023-20 DIN Rail Adapter
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

Switch Adjustment

0.1
0.2
0.4
0.8
1.6
3.2
6.4

1
2
4

ON ➤

Combine upper seven switches in "ON" position for vend time in minutes.

Combine lower three switches in "ON" position for number of closures to start.

Function Diagram

COIN TOTALIZER / VENDING TIMER

V
S1
L
TD
R

ACCUMULATING VENDING TIMER

V
S1
NO, L
TD
R

V = Voltage
S1 = Initiate Switch
NO = Normally Open Contact
L = Load
TD = Time Delay
R = Reset

Specifications

Count Functions/ Switch Type	Mechanical (counts on switch closure)
Minimum Switch Closure Time	≥ 20ms
Minimum Switch Open (between closures) Time	≥ 20ms
Count Range to Start	1 - 7 counts
Maximum Counts ("A" Version)	250
Time Delay/Range ***	Adjustable 1s - 31.75m in 4 ranges
Adjustment	7 of a 10 position DIP switch
Setting Accuracy	0% to +2% or 50ms, whichever is greater
Repeat Accuracy	±0.1% or 20ms, whichever is greater
Reset Time	≤ 150ms
Time Delay vs Temp. & Voltage	≤ ±2%
Input	
Voltage	12 or 24VDC; 24, 120, or 230VAC
Tolerance	
12VDC & 24VDC/AC	-15% - 20%
120 & 230 VAC	-20% - 10%
AC Line Frequency/DC Ripple	50/60 Hz / ≤ 10%
Power Consumption	AC ≤ 4VA; DC ≤ 2W
Output	
Type	Electromechanical relay
Form	Isolated, SPDT or non-isolated, SPDT

Ratings	SPDT-NO	SPDT-NC
General Purpose		
125/240VAC	30A	15A
Resistive		
125/240VAC	30A	15A
28VDC	20A	10A
Motor Load		
125VAC	1 hp*	1/4 hp**
240VAC	2 hp**	1 hp**

Life Mechanical - 1 x 10^6;
Electrical - 1 x 10^5, *3 x 10^4, ** 6,000

Protection

Surge	IEEE C62.41-1991 Level A
Circuitry	Encapsulated
Dielectric Breakdown	≥ 1500V RMS input to output on isolated units
Insulation Resistance	≥ 100 MΩ
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 76.7 mm (3"); **W** 50.8 mm (2"); **D** 38.1 mm (1.5")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Environmental	
Operating/Storage Temperature	-40° to 70°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 3.9 oz (111 g)

***For CE approved applications, voltage must be removed when a switch position is changed.