

Coin Vending Timer

HRV Accu-Vend

Vending Control



US Patent 6708135



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- Accumulates 1 ... 256 Coins
- Switch Selectable 1 ... 7 Coins to Start
- Vend Time from 1 s ... 31.75 m
- Coin Switch Can Be Connected to a Counter
- Up to 30 A, 1 Hp at 125 V AC N.O. Contacts
- Encapsulated Circuitry

Approvals:

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.

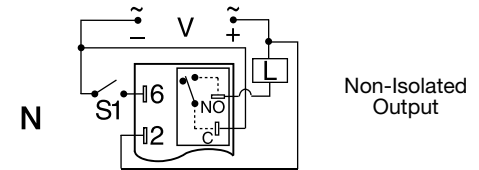
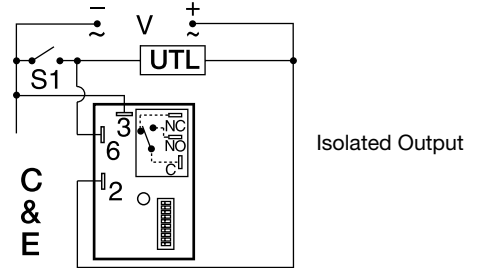
Accumulating Vending Timer ("A" Version):

Input voltage must be applied prior to & 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.

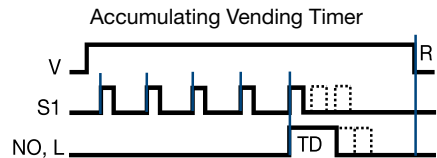
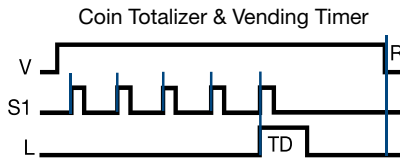
Reset: Removing input voltage resets the vend time delay, the S1 closure counter, and de-energizes the output relay.

Connection

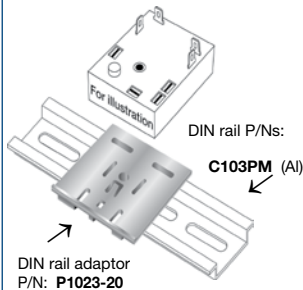
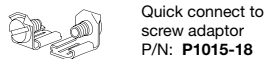
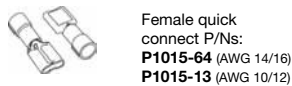


V = Voltage S1 = Initiate Switch L = Load
UTL = Optional Untimed Load

Function



Accessories



See accessory pages for specifications.

Available Models-

- HRV11SC
- HRV41AE
- HRV42SE
- HRV43AN

- HRV24AC
- HRV41SC
- HRV42SN
- HRV43SE

- HRV31SC
- HRV41SE
- HRV43AE

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Ordering Table

HRV Series	X Input	X Vend Time	X Mode of Operation	X Output Form & Rating
	-1 - 12 V DC	-1 - 1 ... 127 s	-S - Coin Totalizer Vending Timer	-C - 30 A SPDT-N.O. (Isolated)
	-2 - 24 V AC	-2 - 5 ... 635 s		-E - 30 A SPDT-N.O. (Isolated)
	-3 - 24 V DC	-3 - 0.1 .. 12.7 m	-A - Accumulating Vending Timer	-N - 30 A SPDT-N.O. (Non-Isolated)
	-4 - 120 V AC	-4 - 0.25 .. 31.75 m		
	-6 - 230 V AC			

Example P/N: HRV43SC, HRV62AN

Coin Vending Timer

HRV Accu-Vend

Vending Control

Dedicated
timers

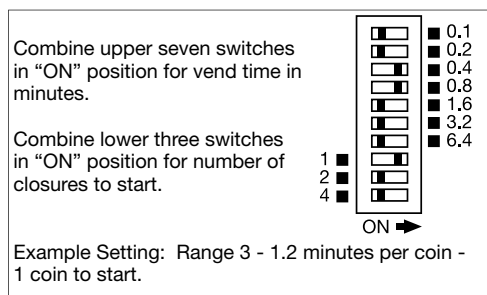
Technical Data

Count Functions/Switch Type		Mechanical (counts on switch closure)	
Minimum Switch Closure Time		≥ 20 ms	
Minimum Switch Open (between closures) Time		≥ 20 ms	
Count Range to start		1 ... 7 counts	
Maximum Counts ("A" Version)		250	
Time Delay/Range ***		Adjustable 1 s ... 31.75 m in 4 ranges	
Adjustment		7 of a 10 position DIP switch	
Setting Accuracy		- 0 to +2% or 50 ms, whichever is greater	
Repeat Accuracy		+/-0.1% or 20 ms, whichever is greater	
Reset Time		≤ 150 ms	
Time vs. Input Voltage & Temperature		≤ +/-2%	
Input			
Voltage/Frequency		12 or 24 V DC; 24, 120, or 230 V AC/50 ... 60 Hz	
Tolerance		12 V DC & 24 V DC/AC -15% ... +20%	
		120 & 230 V AC -20% ... +10%	
DC Ripple		≤ 10%	
Power Consumption		AC: ≤ 4 VA; DC: ≤ 2 W	
Output			
Type		Electromechanical relay	
Form		Isolated SPDT or Non-isolated SPDT	
Ratings:		SPDT-N.O. SPDT-N.C.	
General Purpose	125/240 V AC	30 A	15 A
Resistive	125/240 V AC	30 A	15 A
	28 V DC	20 A	10 A
Motor Load	125 V AC	1 hp*	1/4 hp**
	240 V AC	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		≥ 1500 V RMS input to output on isolated units	
Insulation Resistance		≥ 100 MΩ	
Mechanical			
Mounting		Surface mount with one #10 (M5 x 0.8) screw	
Package		3 x 2 x 1.5 in (76.7 x 51.3 x 38.1 mm)	
Termination		0.25 in. (6.35 mm) male quick connect terminals	
Environmental			
Humidity		95% relative, non-condensing	
Operating/Storage Temperature		-40°C ... +70°C / -40°C ... +85°C	
Weight		≈ 3.9 oz (111 g)	

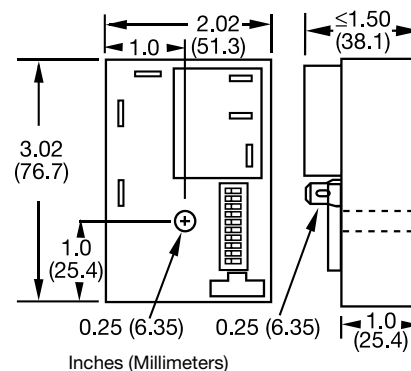
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***For CE approved applications, voltage must be removed when a switch position is changed.

Switch Adjustment



Mechanical View



09.10

08.16.04