Ramp Function v6 RAF185

DESCRIPTION

The RAF185 is for applications requiring process signal ramping and pulse accumulation. Such applications include motor start-up and speed control or applications requiring time base manipulation.

Ramping options include up, down or up/down stair case control of process signal outputs over an adjustable time base. All timing and accumulation tasks are performed by a microprocessor.

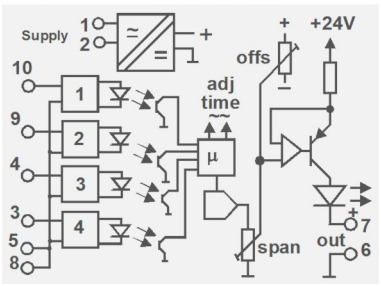
When using voltage free contacts the inputs are internally pulled up to 15V. When using external source pulses the Inputs are pulled down by a 10kΩ load. The UP, DOWN LED's indicate when the input is below the trigger voltage of 8V.

Time base (Period) adjustments are adjustable via front accessible 15-turn trim pots. Final calibration is trimmed using the front accessible 'offs' and 'span' adjustments.

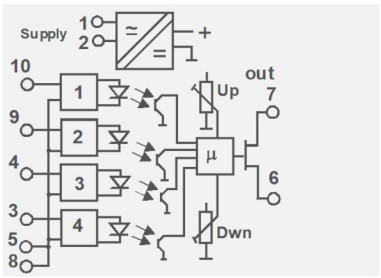
General Specifications

Size:	52 W x 70 H x 110 D (mm).
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Weight:	0.300 kg.
Housing material:	ABS.
Protection class:	IP40.
Calibration accuracy:	<0.2% of range.
Temperature effect:	<0.02% per °C.
Ambient operating range:	-10...+60°C.
Storage temperature range:	-20...+70°C.
Combined linearity/drift error:	<0.2% of span.
Power requirements:	3W.
Power supply isolation:	2kVrms.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)
Ramp time minimum:	0.2 seconds.
Ramp time maximum:	400 seconds.

Process Output Version



PWM Output Version



Process Signal Output Version

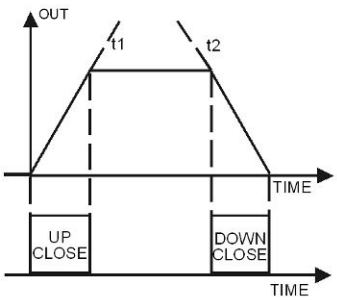
Output loop drive:	20mA into 0 – 900Ω.
Output load change effect:	less than 0.2% up to max load.
Front 'OFFS' adjust:	±5% typical
Front 'SPAN' adjust:	±5% typical

PWM Output Version

Voltage free contact output:	50V/100mA max (FET).
PWM current /voltage pulse:	5mA constant current drive (20V unloaded, use a load resistor to set voltage).
PWM frequency range	20Hz (50mS) to 1kHz (1mS)

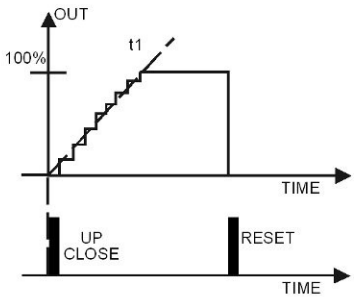
Operating Modes

Standard Ramp (Opt 0)

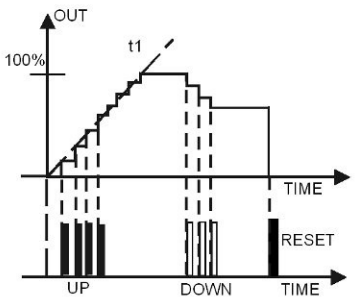


Both closed = No change

Stair Case Generator (Op 2)



Up/Down Counter (Opt 3)



Output goes low if reset detected regardless of other input

A.P.C.S.

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TYPE NO. DESIGNATION

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc).
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
6 = 8 - 60Vdc.

Input 1 (Up):

0 = None.
1 = 24Vdc pulse external source (8V trigger)
2 = Contact.
3 = NPN open collector
4 = PNP open collector
*) 9 = Other specify.

Input 2 (Down):

0 = None.
1 = 24Vdc pulse external source (8V trigger)
2 = Contact.
3 = NPN open collector
4 = PNP open collector
*) 9 = Other specify.

Output:

1 = 0 - 5V (50kΩ min).
2 = 0 - 10V (100kΩ min).
3 = 0 - 20mA (900Ω max).
4 = 4 - 20mA (900Ω max).
7 = 0 - 10mA (1.8kΩ max).
8 = 1 - 5V (50kΩ min).
*) 9 = Other process signal specify.

A = PWM voltage free contact
B = PWM 5mA CC drive pulse.

Specify PWM frequency and %min/max duty scycle.

Period (Up):

Period (Down):

1 = 0.2 - 5 sec adjustable.
2 = 0.2 - 10 sec adjustable.
3 = 0.2 - 30 sec adjustable.
4 = 0.2 - 60 sec adjustable.
*) 9 = Specify specify 400 seconds max

Options:

0 = Standard ramp function.
On "Input 1" output will rise at the period up rate. On "Input 2", output will fall at the period down rate. Output steady for no input.

*) 1 = External adjustments.
Same functional description as standard except one or both "Period Up" and "Period Down" controls (pots) are wired via 1.5m cable for external mounting.

*) 2 = Stair case generator.
Specify number of steps. Input 1 = start.

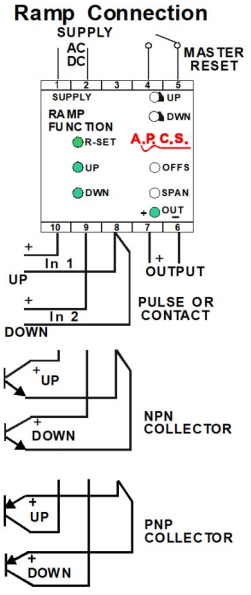
*) 3 = Up down counter.
Specify number of steps for full scale between 16 and 1024.
Each "Input 1" pulse will increment the output by 1/(steps) of full scale. Each "Input 2" pulse will decrement the output by 1/(steps) of full scale.

*) 4 = Quad input pulse accumulator.
Pulses on inputs 1 to 4 are reproduced at the output. The internal circuits will compensate for overlapping inputs.

*) 5 = Position, quadrature input with analogue output. Specify number of steps for full scale between 128 and 1152. The phase difference between "Input 1" and input 2 will determine if the output should increment of decrement the output by 1/(steps) of full scale.

*) 9 = Other (Specify).

Ramp Connection



*) = Price Extra.