Ramp Function v5 RAF185

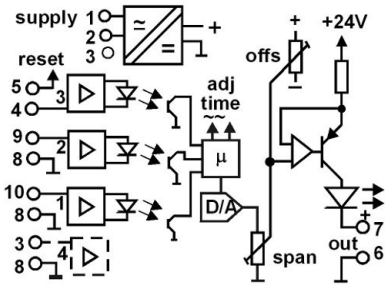
DESCRIPTION

The RAF185 is uniquely designed for applications requiring process signal ramping and pulse accumulation. Such applications include motor start-up and speed control or many applications requiring time base manipulation. Ramping options include up, down or up/down and stair case control of process signal outputs over an adjustable time base. Pulse accumulation options include up, down or up/down step control of process signal outputs. All timing and accumulation tasks are performed by a microprocessor. Inputs available included voltage free contacts or external source pulses. Inputs are indicated by 3mm green LED to verify proper input wiring. Time base (Period) adjustments are adjustable via front accessible 15-turn trim potentiometers that can be externally mounted on request. External mounted potentiometers also allow for non-standard logarithmic requirements. Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. Output signal is indicated by the 5mm green LED on front, which gives a clear indication of module function, presence of signal, and output loop closed (current outputs only). Various power supply choices are available varying from 415Vac down to 8Vdc all provide power isolation.

General Specifications

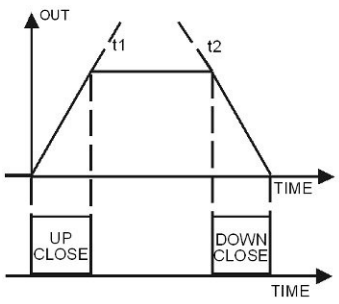
Size:	52 W x 70 H x 110 D (mm).
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Weight:	0.300 kg.
Housing material:	ABS.
Protection class:	IP40.
Calibration accuracy:	<0.2% of range.
Front 'OFFS' adjust:	±5% typical
Front 'SPAN' adjust:	±5% typical
Combined linearity/drift error:	<0.2% of span.
Temperature effect:	<0.02% per °C.
Ambient operating range:	-10...+60°C.
Storage temperature range:	-20...+70°C.
Output loop drive:	20mA into 0 - 900 □.
Minimum pulse width	1.5mS
Output load change effect:	less than 0.2% up to max load.
Power requirements:	3W.
Power supply isolation:	2kVrms.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



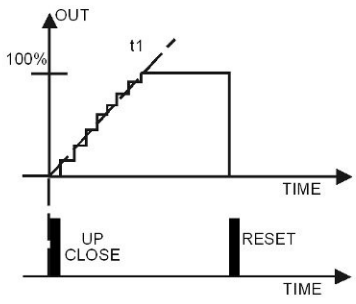
Operating Modes

Standard Ramp (Opt 0)



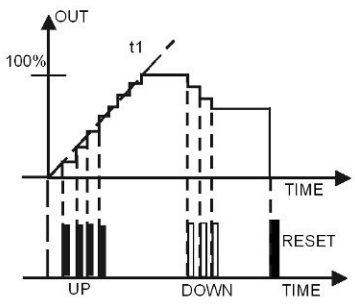
Both closed = No change

Stair Case Generator (Op 2)



Output goes low if reset detected regardless of other input

Up/Down Counter (Opt 3)



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

A.P.C.S.

RAF185 - X X X X X X X

TYPE NO. DESIGNATION

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc).
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
*) 9 = Other specify.
*) 4 = 415V, 50/60Hz ±10%.
*) 6 = 8 - 60Vdc.

Input 1 (Up):

0 = None.
1 = 24Vdc pulse external source (0.2 – 50Vdc)
2 = Contact.
3 = NPN open collector
4 = PNP open collector
*) 9 = Other specify.

Input 2 (Down):

0 = None.
1 = 24Vdc pulse external source (0.2 – 50Vdc)
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).
5 = 0 - 50mA (360Ω max).
6 = 10 - 50mA (360Ω max).
7 = 0 - 10mA (1.8kΩ max).
8 = 1 - 5V (50kΩ min).
*) 9 = Other specify.

Period (Up):

0 = None
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 = Other specify (max 110 sec).

Period (Down):

0 = None
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 = Other specify (max 110 sec).

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:- 2,4,8,16,32,64,128 or 256 maximum, 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).

*) = Price Extra.

Ramp Connection