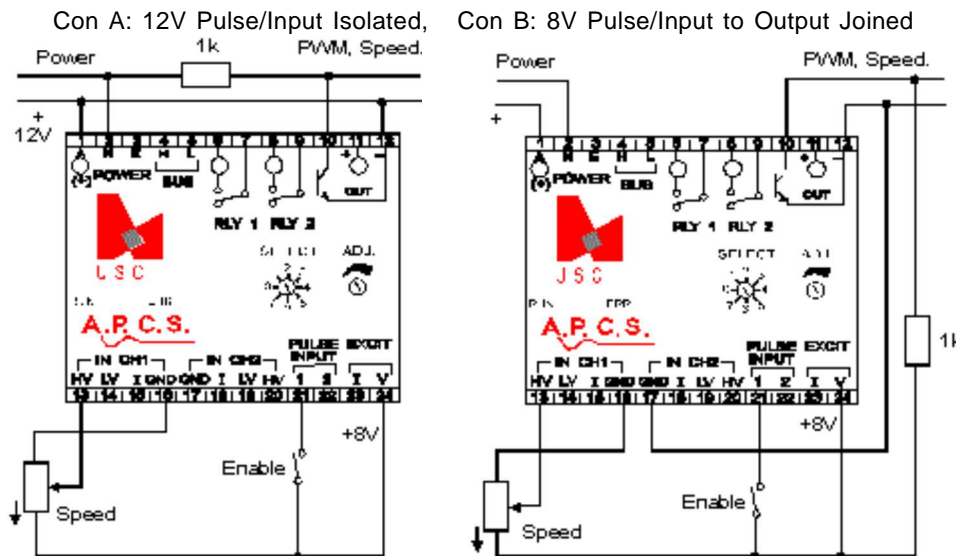


Cat Engine PWM Throttle Control with Limits

Operating Description

1. The USC701 will produce a PWM 500Hz output to suit Caterpillar electronic engines. The PWM duty cycle is limited by the standard wizard signal limiting controls to 5% minimum (minimum speed) and 95% maximum (maximum speed).
 2. The PWM output will follow the value stores in memory 4 of the USC701.
 3. The speed is controlled via a 10K potentiometer connected into channel 1 where 0Vdc represents minimum and 8Vdc represents maximum speed.
 4. An enable contact input (Pulse 1) is used to ensure minimum throttle when the motor is started.
- When the enable contact is open the PWM output is at minimum regardless of the speed control input.
 - After the enable contact has closed the PWM output will remain at minimum until the speed control input drops to or below 5% of range.
 - After the speed control input drops to or below 5% and the enable contact remains closed the PWM output will follow the input.
 - If the enable contact opens at any time the PWM output will drop to 5% until the speed control once again drops.



Declarations


Variables required For Equation

Description	Name	Label	Value
Saved in M4 to set minimum output	Con_a	MinSpeed	5
Equation constant for below zero	Con_b	Flag	-1
Signal to PWM output	Mem4	Speed	0 to 100
If -1 wait for speed <= 5%	Mem5	Wait	-1 to 5
If 5 then save CH1 in Mem4			
Enable contact input	P1	Enable	True/False

Output Pulse Amplitude

The output is a fully isolated open collector output. Using ConB the size of the pulse amplitude can be set by programming the auxiliary to the value required and adjusting the gain of channel 1 to match the auxiliary output.

USC Programs

File	Comment
 Help	If unexpected results occur when loading the .usc file press back and click on help for instructions.



UAP00301.usc

First Issue.



UAP00302.usc

Correct connections to open collector output.

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