

Train Controller With Inertial Brake

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D2-5 full wave rectifies the AC and C1 smooths the output. RV1 acts as a regulator controlling train speed. Switch S1 switches in the inertia simulator (comprising D1, RV1, R2 and C2). S2 switches in the brake, the action of which is altered by RV3. RV2 controls the amount of inertia, so that the train can take as long as ten seconds before even moving. Q1,2 act as a Darlington pair, supplying current to the output. Q3 monitors the output and provides short-circuit protection. When a short occurs, D2 lights up and the current into Q1 is reduced. Hence, the output is reduced. Two 1W resistors are used for R3,4 rather than a wirewound ½W resistor, which would cost more. S3 simply reverses the polarity and hence the train.

