

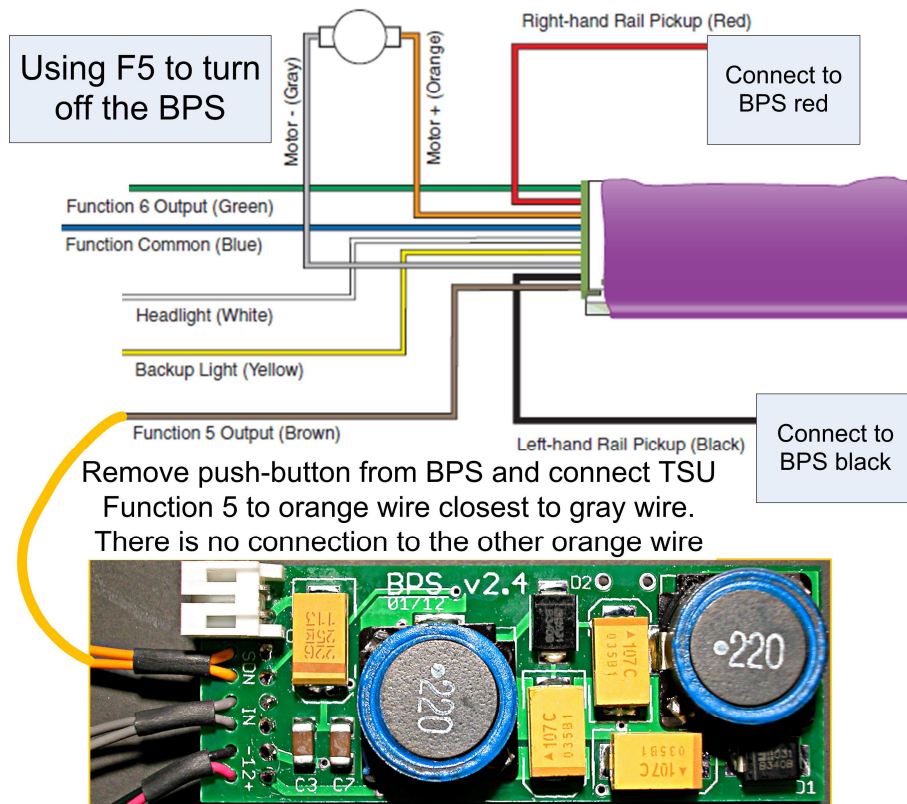
Using a DCC Command to turn off BPS Battery Power

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With some decoders, a DCC command can be used to turn off the BPS battery and prevent slow discharge when a loco is not in use. This allows a battery to hold its charge for a month, or so, should you want to take an extended vacation. This note explains how this is done with a SoundTraxx TSU-1000 decoder.

Wiring

The TSU-1000 provides 4 function outputs and either function output 5 or 6 can be used to turn off BPS battery power. Function output 5 is used in the following diagram illustrating the connection required between decoder and BPS.



By default, the BPS orange colored wires labeled "SDN" are connected to a momentary contact push-button switch for manually initiated turn-off. Removing the push-button switch and connecting one of the orange wires (**the one furthest from the battery socket**) to decoder function output 5 (or 6) allows a DCC function command to perform battery shutdown. The remaining wire (closest the battery socket) is not required and should be removed or insulated to prevent possible short-circuits.

Warning: Be very careful to connect the correct orange wire to Tsunami function output.

Operation

S-CAB Control of Tsunami Decoder Functions

Function Group	S-CAB Button	Tsunami Function	Diesel Function	Steam Function
FG1	0	F0	Headlight (and dynamo) on/off	
	1	F1	Bell	
	2	F2	Horn	Whistle
	3	F3	Short horn	Short whistle
	4	F4	Dynamic brake	Steam release
	5	F5	Function output control	
	6	F6	Function output control	
	7	F7	Dimmer	
	8	F8	Audio mute	
	9	F9	Radiator fans	Water stop
FG2	0	F10	Air compressor	Injectors
	1	F11	Brake squeal/release	
	2	F12	Coupler clank	

Referring to above table, 'FG1', '5' toggles TSU function output 5 on and off. If track power is off and function output 5 is used for shutdown, this command will turn off battery power. Had function output 6 been used, the command would be 'FG1', '6'. Once this command is transmitted, battery turn-off will occur as soon as track power is removed. Once turned off, the battery is isolated, no electronics in the loco has power and the battery will hold its charge for a month or more.

Battery power turns on whenever track power is detected. When track power is not available, the battery must be turned on manually with a momentary contact closure and BPS includes a magnetic sensor for this purpose. TSU-1000 does not "remember" the state of its function outputs when powered off and back on. This facilitates manual start-up because the function output used for turn-off is no longer in its "shutdown" state and therefore does not continue to turn the battery *off* when we are trying to turn it *on*.

A number of decoders save the state of their function outputs when shut down and this complicates manual startup. Consequently, using a function output to turn off the battery is not recommended for these decoders.