

As Built Note 3 – ON OFF Control Module Modification

(Refer to p10 Design report)

Remote Control of the power circuits

There is a requirement to be able to turn various circuits “on” or “off” by remote control. To facilitate this interfacing modules have been designed that need an “on-pulse” from the SCADA to activate a circuit and an “off-pulse” to de-activate.

The modules that are controlled in this manner are:

24 V to 230 Vac Inverter 1

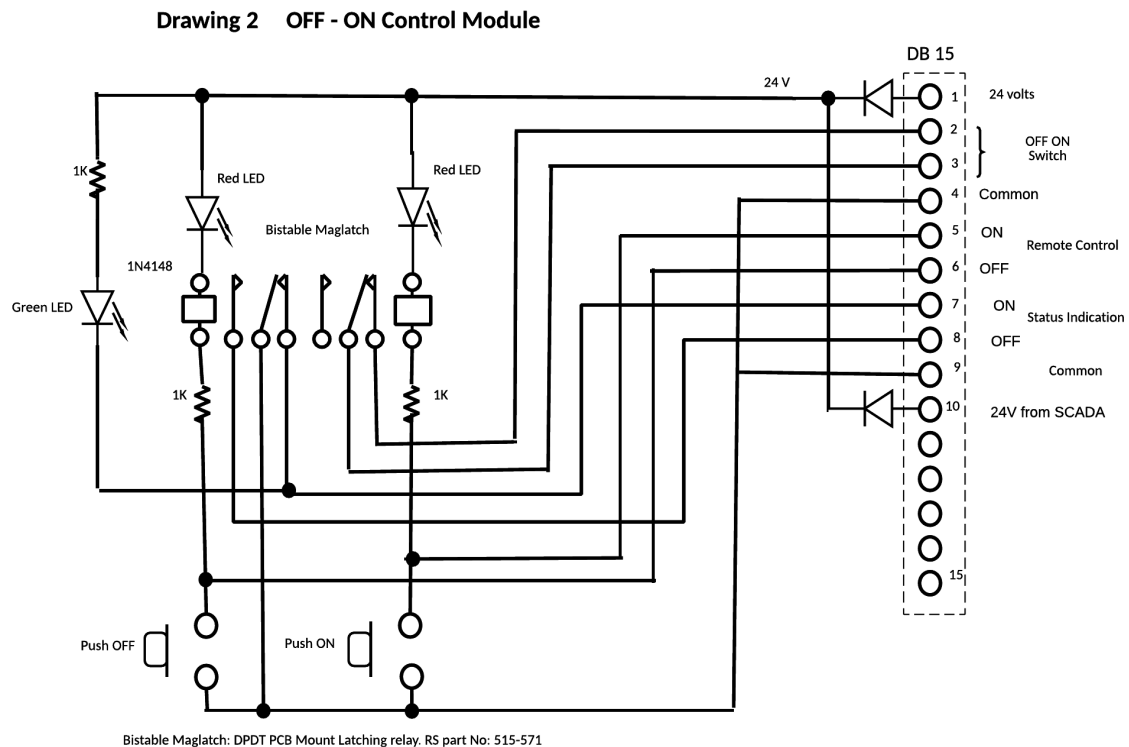
24 V to 230 Vac Inverter 2

24 V to 12 V buck 1

24 V to 12 V buck 2

A similar pulse concept is also used for remote control of the antenna selector and antenna directivity switching.

The modification from the original Design Report includes adding a wire from pin 10 to the 24V + supply via a blocking diode and adding a second blocking diode between pin 1 and the + supply for the module. This is shown below:



Circuit Description

The purpose of this module is to allow the controlled equipment to which it is connected to be locally or remotely operated. There are four identical modules for the station.

The off-on functions are controlled by a bi-stable magnetic latch relay. In one position the relay is in the “off” position and in the other position: “on”. The bi-stable (maglatch) relay “remembers” the most recent command received.

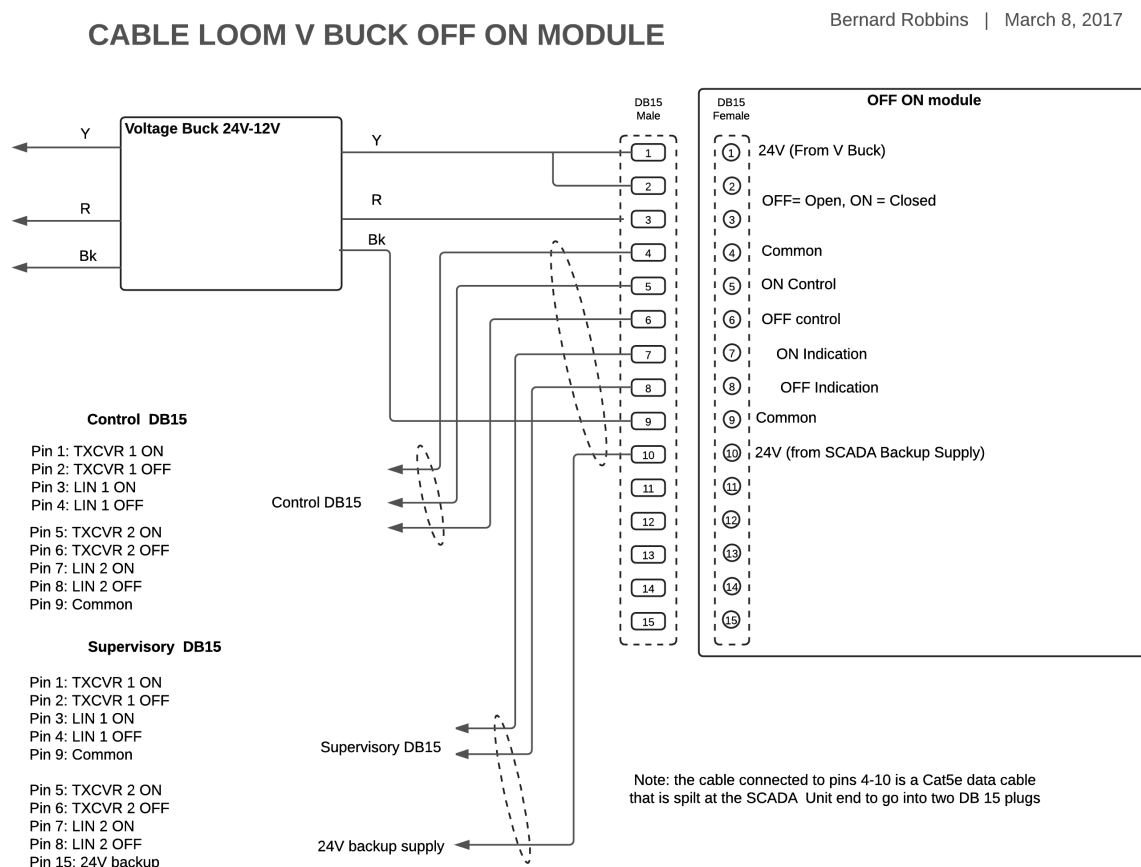
Commands are a short pulse, (momentary ground) that comes from either the local push button switched on the unit or from the station's SCADA.

The actual control outputs are on pins 2 and 3 and can be configured using the closed contacts as the “on” condition and open for “off”. These relay contacts are rated at 5 Amps.

The modules derive their power for operation from two sources. The primary source is 24Volts on pin 1 of the DB15 that comes from the unit they are controlling. This means the OFF ON Control Module can operate independently of the SCADA control unit which may be useful for testing and for local control.

A secondary power source is 24Volts on pin 10 of the DB15 that comes from the SCADA Units Backup power supply. This is provided as a precaution to cover the event of the primary battery fuse blowing. If this fuse blows while any equipment controlled by these modules is turned on, the resulting loss of 24V supply will prevent the turning off of the load until the battery fuse is replaced. Replacing the battery fuse while the loads remain connected should be avoided. The secondary supply on pin 10 allows the units to be turned off, there by removing the load before the battery fuse is replaced. The isolating diodes D1 and D2 are to prevent the SCADA backup supply feeding back into the primary supply and vise versa.

The following Cable loom drawings show the wiring for the voltage bucks and 230V Inverters.



CABLE LOOM INVERTER OFF ON 20170209

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