

SmartLink (quad, relay output Low Power Radio Link)

This link is suitable for the wireless relay of up to 4 on/off functions over distances to 5 km, depending on aerial size & terrain. The status of the volt free inputs at the transmitter (Tx) are relayed to the receiver (Rx) relay each time the input changes state. The link has repeat transmission redundancy in that the Tx sends every 4 minutes to the Rx and the Rx relays drop out if more than 2 transmissions are missed (10 minutes worst case) & on interruption to Rx supply. Power up state for all relays is off.

Wiring; ON/OFF control. Wire the C/NO contacts of relays 1-4 in series with the load, if the link fails or the Tx sends an OFF code (Tx input open cct) the load will switch off.

ALARM applications. For alarm on open circuit wire the normally closed loop to the Tx input & connect the Rx relay C/NO contacts to the alarm panel for an alarm on Tx input open circuit or link fail. For an alarm on closed circuit wire the normally closed loop to the Tx input & use the Rx C/NC contacts for an alarm on Tx input open circuit or link fail.

Bench testing. It is a good idea to bench test the system before deployment in the field. Bench testing proves the integrity of the link as shipped and provides familiarity with link behaviour that may prove invaluable later. To bench test power up the Rx then the Tx next to each other (aerials are not required). Now short Tx input 1 & check Rx relay1 pulls in too. Disconnect the Tx & relay1 should drop out after 10 minutes.

Deployment. Mount the modules with the aerial socket pointing down in a weatherproof enclosure away from sources of heat or strong magnetic fields. Do not alter any of the printed circuit board dip switches. Mount antennas as high as possible & clear of metal obstructions, it is not necessary to have line-of-sight between antennas but it helps.

Trouble shooting. Check that the Tx beeps when you alter the volt free input, if its not beeping then its not sending. Never connect a voltage to the volt free inputs, if the signal you wish to use is not volt free then use an isolating relay. The Rx should beep every 4 minutes in normal operation, occasional missed beeps indicates marginal signal conditions (a range test & trouble shooting kit is available for hire at \$50/wk) while 2 Hz pulsing indicates link loss.

Interference. All radio based systems can be subject to interference. While the digital FM secure signalling used on SmartLink will prevent the receiver actuating on a bogus signal it cannot prevent strong interference sources blotting out the transmitter signal. Interference usually manifests itself as intermittent actuation of the link loss alarm. Interference can be treated but the best cure is prevention, do not locate the link next to other high powered radio sources and avoid electrically noisy loads like large brush motors or arc lamps. External devices such as alarm panels, PLCs or VSDs connected to the receiver must satisfy the Group1 Class A requirements of AS/NZS 2064, the Australian standard for conducted & radiated emissions, for reliable link performance.