

Parkend Exchange Bothway Junction Relay Set

These relay sets are in use at Parkend at present. They are not being used as both way relay sets as it was felt that with the primitive power arrangements at Norchard and Parkend the voltage difference between them could be high under, say, mains fail conditions at one site. This could possibly cause lock ups between the A relays of the two incoming selectors connected to each end of the junction.

This is a very simple junction relay set. It has P wire battery testing, a very simple transmission bridge and two stage drop back.

Two stage drop back is provided by relays C and CA. When the caller dials out to the junction, relay A repeats the impulses to the distant exchange. It also operates relay C and in turn CA, which hold during the pulse train. Contact C1 provides a zero ohm loop whilst the pulses are being repeated to the junction and thereby provides clean pulses to the line.

It is not possible to "drop back" to the I relay 100 ohm loop as soon as C releases as the inductance of I would cause the line current to drop momentarily to a very low level, thereby introducing an extra pulse on the junction. Relay CA has a lag and during this lag the I relay has a 340 ohm resistance placed in parallel with it. This resistance holds the distant A relay whilst allowing current to build back up in the I relay. This technique prevents the introduction of an extra pulse at the end of each dial train.

Should the relay set be used on a bothway circuit then on incoming calls, the earth returned on the P wire from the incoming selector operates relay CC which in turn removes the testing battery from the P wire to the selector level and relaces it with an earth. This will busy the junction during the incoming call.

Parkend exchange was designed with the thought that it would be mains operated. It was intended that a 12 volt battery would be enough to "start" the exchange and that when 50 volts was applied it would be held on during the call. This technique required each piece of apparatus to provide an earth to a "power hold" lead during the call. Contact BA1 fulfilled this requirement. However Parkend has now been provided with a 50 volt battery supply and the power hold arrangements are redundant.

One of the circuits in the can has been converted to a transformer type transmission bridge. This circuit is in use on the first junction outgoing to Norchard. High hum levels on the circuit had been thought to be due to the use of mains earths at Norchard and Parkend. Any ripple had a circuit from one exchange to the other via the capacitors in the original bridges. The transformer eliminates the earth to earth circuit and has removed hum from the junction entirely.

Parkend - Bothway Auto-Auto R/Set Notes		
DFR ex109a		
ISSUE A	22/01/2018	Opening Issue
<i>Dean Forest Railway</i>		