WP2P – Star-Blast System

Rev 01

Overview

Wireless Point to Point (WP2P) modules can be specially configured by QTech to provide a WP2P star system but with additional functionality to send the status of inputs to multiple slave devices. One application scenario is the use of WP2P star blast systems in traffic control lighting .
The WP2P star system comprises up to four WP2P modules. One module is configured as a *master,* and the other three as *slaves* numbered 1, 2 and 3.

The inputs are mapped to the outputs as shown in the table below:

Inputs		Outputs	
Master	INP1	Slave #1,2,3	RLY1
Master	INP2	Slave #1,2,3	RLY2
Master	INP3	Slave #1,2,3	RLY3
Slave #1	INP1	Master	RLY1
Slave #2	INP1	Master	RLY2
Slave #3	INP1	Master	RLY3

Operation

WP2P Star systems operate slightly differently to regular WP2P systems.

If the master detects that any of its inputs have changed state, it will immediately send a message to each of the slaves informing it of the change.

If none of the inputs on the inputs on the master have changed state then the master will poll each slave periodically, with a 10 second gap between polling each slave.

© 2021 QTech Data System Ltd

Similarly, if any slaves detect that their input (e.g. INP1) has changed state, they will immediately send a message to the master informing it of the change.

Slaves also poll the master if there is no change of state on its inputs, every 30s.

Link Led Behaviour

If the master sends a message to a slave and gets a response then the link is active and the link led will be predominantly ON but will flicker briefly when a transmission occurs. If any one slave responds to a message the link led will appear normal (ON).

If NONE of the slaves respond to a message from the master the master will indicate a link failure whereby the link led will be predominantly OFF but may flash on for a short time, periodically every 10s, to indicate that it is trying to poll one or more slaves.

Normally a master will try up to 5 times to retransmit a message to a given slave before it moves on to sending a message to the next slave.

When viewing the Link led at the slave end, if the slave is communicating with the master then the link led will appear normal (link active), led predominantly ON but flickering when a transmission occurs.

When viewing the Link led at the slave end, if the slave is not communicating with the master then the link led will appear to be in link failure, led predominantly OFF but may flash on periodically every 30s if trying to contact the master.

Device Addressing and Message Ordering

The master device address is always 0. Each slave is addressed 1,2, or 3
The master sends messages to slaves in numerical sequence order 1,2, 3, even if there are less than three slaves connected. If fewer than three slaves are connected then there can be a slight delay as the master polls the “unconnected” slave address before resuming to poll the connected slaves.

Slaves always send messages to the master at address 0 in response to a message from the master.

Output Hold and Repeater Operation

WP2P modules have two options that can be selected from DIP switches: “Output Hold” and “Talk via Repeater”. See the *WP2P System User Guide* for details.

WP2P star systems support the Output Hold functionality, but the behaviour is slightly different to regular WP2P systems. The master will only consider the communications link to be down (begin blinking its comms link status indicator LED) if the comms to ALL three slaves has failed. Slaves operate similarly to regular WP2P devices, in that if they do not hear an answer back from the master (after 5 attempts) they will go into link down state. To provide link status detection, slaves poll the master every 30s even when there is no change of state on their inputs.

 © 2021 QTech Data System Ltd

WP2P star systems also support the WP2P Repeater functionality, but the master and all slaves must be configured to use it. All slaves must be able to see the repeater as all communications will be via the repeater, even if a slave is close to the master module.

© 2021 QTech Data System Ltd