Type 8
Installation Instructions - 4 wire electrical connections
Document 100936 Revision 0

Prepared: GW Date: 14/11/14 Approved: GW Date: 14/11/14 Implemented: 14/11/14
Revision History:
Original

Certifications

1. IECEx 12.0034X

Description of Apparatus

A 4-wire Type 8 node has W4 in its model name e.g. "TYPE 8 NODE MODEL B2 P2 W4".

The 4-wire IS Isolated Pwr/Signal cable originates at a 4-wire LNC (currently Part No. 900121)

Pair#1 is used to supply power to the node.

Pair#2 is used for data communications.

Conditions of Safe Use

1. The Type 8 Node Model B1 modules are to be mounted in a suitable enclosure that protects the encapsulation from damage and offers a degree of protection not less than IP20.
2. The Type 8 Node Model B2 modules external connections to the integral cables are to be installed in a suitable enclosure terminated in a manner that provides a degree of protection of not less than IP55.
3. The Type 8 Node Model B2 may be fitted with an integral cable for external sense and capacitance connections. This cable may be extended provided the cable capacitance and inductance does not exceed 2µF and 10mH respectively.
4. The Type 8 Node Model B2 may be fitted with an integral cable for IS Pwr/Data. This cable may be extended provided the cable capacitance and inductance does not exceed 5nF and 20uH respectively.
5. The Type 8 Node Models B1 and B2 may be fitted with an integral cable for the connection of a remote LED. This cable may be extended provided the cable capacitance and inductance does not exceed 2µF and 10mH respectively.

Prior to connection

At the location where the location is to take place, cut and strip the insulation from the wire pairs. While the LDC is switched on measure the voltage across pair#1 (the I.S. power pair) with a mines approved intrinsically safe voltmeter (e.g. University Mines Approved Multimeter Model CTY-500-MA). This should be at least 5V and less than 12.6V.

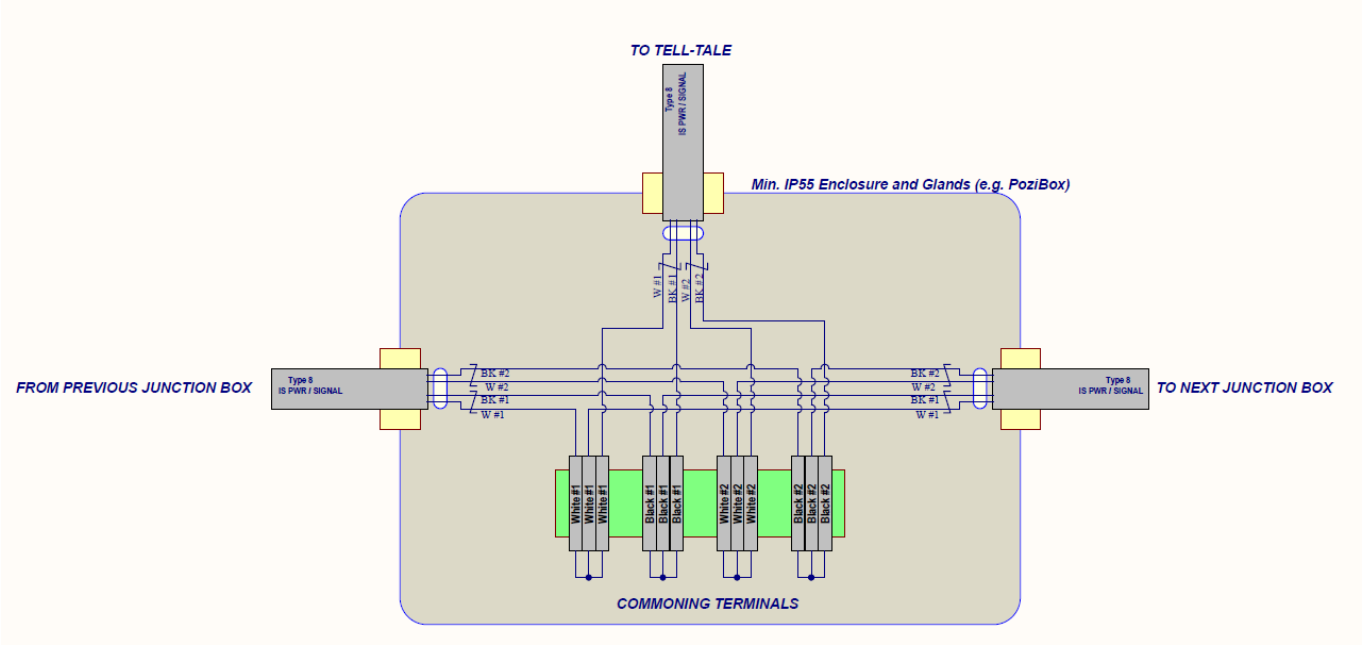
If the LNC is switched on and the voltage is less than 5V then there are too many Type 8 nodes attached to that LNC. Terminate the cable to at least IP55 leaving the individual wires unconnected and insulated with electrical tape.

If the voltage is greater than 5V then test pair#2. This should be pulsing from 0V to greater than 5V as the other Type 8 nodes communicate with the LNC and steady at greater than 5V when not communicating. The scan period could be a significant (e.g. hours) so the Type 8's are unlikely to be seen communicating. If the voltage is always less than 5V then there are too many Type 8 nodes on the LNC so terminate the cable to at least IP55 leaving the individual wires unconnected and insulated with electrical tape.

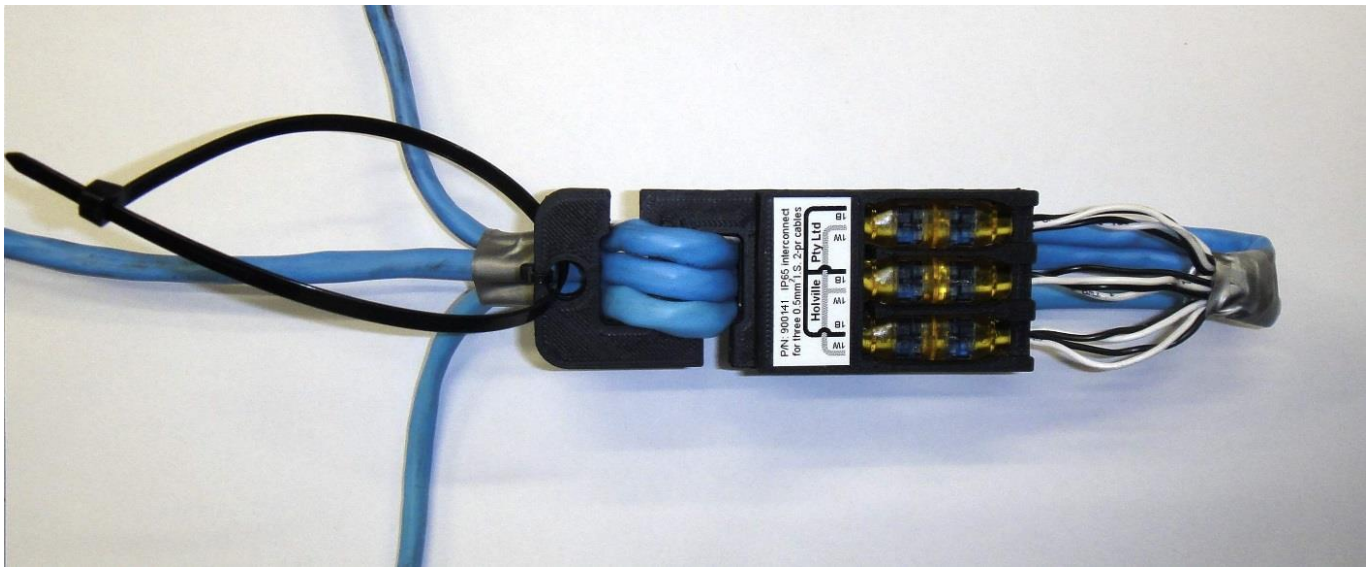
If the voltages on both pairs are within the range of 5V to 12.6V then it is OK to proceed to connecting the new Type 8 node.

Node Connection

The following excerpt from dwg. 100935 shows how a 4-wire Type 8 node is connected in daisy-chain fashion using junction boxes to provide Min. IP55 protection. The drawing shows a branch to a Tell-tale 4-wire Type 8 node but could be any 3-way branch in the cable:



The connections may also be done using the part no. 900141 3-Way 2-pair IS Cable Joiner shown below:



The installation prodedure for part no. 900141 3-Way 2-pair IS Cable Joiner is detailed in document no. 101140R01 (3-Way IS Cable Joiner - Installation Procedure).docx.

Check Connection

After the new Type 8 node is connected measure the voltage on the wire pairs. If the voltages on both pairs are within the range of 5V to 12.6V then it is OK to proceed to the next Type 8 connection.

If using the 900141 3-Way 2-pair IS Cable Joiner you can measure the voltage by inserting the multimeter probes into the unused outgoing CoolSplice™ connectors.

If the voltage on any wire pair is zero then check for shorts – if no external shorts present then the Type 8 node is faulty and should be removed.

If the voltages are greater than zero but less than 5V then this Type 8 node is overloading the system and should be removed.