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| **Signalling Like for Like Renewal Work Instruction** | | | | | | **WO No.** | |
| **Page 1 of 2** | |
| **Scope:** | |  | | | | **Date:** | |
| **Team Leader:** | | | |  | **Axle Counter Type:** |  | |
| **Activity:** | | | | **SIEMENS ACM250 TRACKSIDE CONNECTION BOX LIKE FOR LIKE RENEWAL** | | | |
| **Reference:** PR S 4009, PR S 40051, MN S 41588 | | | | | | | |
| **Activity No.** | **Task No.** | | **WORK DESCRIPTION** | | | | **Completed**  **Name/Sign** |
|  |  | | **APPARATUS INSPECTION & PREPARATION** | | | |  |
| **1** | **1A** | | Ensure the new Trackside Connection Box are of correct type and version. | | | |  |
|  | **1B** | | Ensure the existing DEK sensors and cables are free from damage. | | | |  |
| **2** | **2A** | | Confirm which track section has failed by observing ‘TVDS1’ and/or ‘TVDS2’ Red LED is flashing on the associated Evaluator module. | | | |  |
| **NOTE** | | | A red flashing TVDS LED indicates the associated track section is faulty. A red steady TVDS LED indicates the track section is indicated occupied and requires a reset. Refer to Maintenance Instructions for LED indication meanings. | | | | |
|  | **2B** | | Alternatively, connect a laptop to view diagnostics via the web portal. | | | |  |
|  | **2C** | | Document the failed Trackside Connection Box on the circuit diagram. | | | |  |
|  |  | | **SAFEWORKING & DISCONNECTION FROM INTERLOCKING** | | | |  |
| **3** | **3A** | | Determine if the Siemens ACM250 equipment and any associated signalling are required to be booked out of use. | | | |  |
|  | **3B** | | If required, disconnect the affected Siemens ACM250 equipment and associated signalling, in accordance with *PR S 40009 Disconnection of Signalling Apparatus.* | | | |  |
|  |  | | **DISCONNECTION, REMOVAL AND INSTALLATION** | | | |  |
| **4** | **4A** | | Disconnect the DEK tail cables from the transmitter and receiver terminal blocks. | | | |  |
|  | **4B** | | Remove the DEK sensors from the rail clamp via removal of fixing bolts. | | | |  |
| **NOTE** | | | If the wheel sensor clamp is damaged then replace the clamp with the wheel sensor. | | | | |
|  | **4C** | | Install the new DEK wheel sensors to the clamp, tighten fixing bolts to 40 Nm. | | | |  |
|  | **4D** | | Ensure the clamp castings are fitted to the foot of the rail correctly. | | | |  |
|  | **4E** | | Tighten clamp to rail, tighten fixing bolts to 250 Nm. | | | |  |
| **5** | **5A** | | Confirm the voltage range at the Trackside Connection Box is 30 – 72 V D.C. | | | |  |
|  | **5B** | | Ensure the Switch S1 within the Trackside Connection Box is set to “FR”. | | | |  |
|  | **5C** | | Calibrate new DEK wheel sensor at the Trackside Connection Box:   1. Push both KAL buttons simultaneously until both L4 LEDs show a steady green light. 2. Release the KAL buttons and check indications. 3. Confirm if both L4 LEDs are off 4. Confirm if both L3 LEDs are flashing green. | | | |  |

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| **Siemens ACM250 TRACK CONNECTION BOX LIKE FOR LIKE RENEWAL** | | | **Page 2 of 2** |
| **6** | **6A** | Confirm transmitter frequency on terminals 6 & 7 are between 41.5 – 44.5 kHz |  |
|  | **6B** | Confirm transmitter frequency on terminals 8 & 9 are between 41.5 – 44.5 kHz |  |
|  | **6C** | Confirm receiver voltage 1 on terminals 3 & 4 are between 60 – 150 mV A.C. |  |
|  | **6D** | Confirm receiver voltage 2 on terminals 1 & 2 are between 60 – 150 mV A.C. |  |
|  | **6E** | Confirm the difference between receiver voltages is less than 10 mV A.C. |  |
| **7** | **7A** | Calibrate the ACM250 evaluator:   1. Press the “CL” button on the ACM for approx.. 3 seconds. The “CAL” LED should show a steady yellow light. 2. To calibrate the ACM for wheel detector DS1, press “DIR1” for approx.. 3 seconds, alternatively 3. To calibrate the ACM for wheel detector DS2, press “DIR2” for approx.. 3 seconds.   As soon as the “DIR1” or “DIR2” LED shows a steady yellow light, release the “DIR1” or “DIR2” button.  After calibration has been completed, the result is indicated for 5 s:   1. “DIR1/DIR2” LED briefly shows a steady green light: calibration successful. 2. “DIR1/DIR2” LED shows a steady red light: calibration not successful. |  |
| **NOTE** | | It may be the case that the ACM cannot save the calibration data immediately. Wait 90s until the “CAL” LED no longer shows a flashing green light. If the “CAL” LED continues to show a flashing green light after 90s, restart the ACM and recalibrate it. | |
| **8** | **8A** | Perform occupancy detection test   1. Place the Axle Counter Test Tool on the left edge of the wheel sensor and slide towards the track section slowly. 2. Confirm the corresponding DS# LEDs of the associated evaluator illuminate in turn. 3. Confirm the associated TVDS track section illuminates (track occupied). |  |
|  | **8B** | Perform occupancy detection test   1. Place the Axle Counter Test Tool on the right edge of the wheel sensor and slide away from the track section slowly. 2. Confirm the corresponding DS# LEDs of the associated evaluator illuminate in turn. 3. Confirm the associated TVDS track section LED extinguishes (track not occupied). |  |
| **9** | **9A** | Request the signaller to initiate a preparatory reset or to enable an unconditional reset. |  |
|  |  | **CERTIFICATION** |  |
| **10** | **10A** | Verify that the new Track Connection Box has been installed in the correct position. |  |
| **11** | **11A** | If applicable, book the ACM250 axle counter back into use. |  |

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| **I certify \_\_\_\_\_\_ Track Connection Box at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ location has been inspected and tested and is fit for service.**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Print Name Position**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_**  **Signature Date** |