

Certificate No. NESA-S081

Version No. 1.3

Certificate type	Full
Approval date	23/05/2025
Approved by	Manager Engineering Services
ARTC Inventory Product No.	N/A

This certificate is issued to

Supplier	Frauscher Sensor Technologies Pty Ltd. Level 19, 31 Queen Street Melbourne Vic 3000
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In respect of

Manufacturer	Frauscher Sensortechnik GmbH Gewerbestraße 1 4774 St. Marienkirchen AUSTRIA
Product description	FAdC R2 Axle counter system components, configuration software and system tools
Supplier product no.	See the approved items list
Application	Rail Vehicle Detection System
Relevant standards	ESD-05-14, ESD-05-15 & ESS-05-01
Conditions of Approval	<p>Supplier:</p> <ol style="list-style-type: none"> 1. Only approved items shall be used on ARTC network. 2. For use in accordance with ARTC standards. 3. For use in accordance with approved axle counter reset procedures only 4. Maintenance activities to be undertaken in accordance with the approved TMP and Service Schedules and manufacturer supplied manuals. 5. All FAdC R2 system data shall be treated as signal design data and shall not be subject to field changes. 6. FAdC R2 vital signal control function shall only be used with closed data communications networks to category 1 of EN50129. 7. Direct reset capabilities are not permitted via AEB board toggle switches, this functionality shall be disabled within the configuration file. 8. Direct axle count stepping is permitted via AEB board toggle switches, this functionality shall be enabled within the configuration file. 9. Interface to Microlok II shall be via parallel interface boards (IO-EXB) and associated relays.

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10. The FAdC R2 may be interfaced directly with the HIMA Plc system via Ethernet cat 6 cable provided the COM-FSE board is utilised.
11. The FAdC R2 may be interfaced directly with a Siemens Westrace MkII system via Ethernet cat 6 cable provided the COM-WNC board is utilised.
12. COM board redundancy shall be provided in such a way that failure of a card does not result in loss of communications to the axle counter system or affect the operations of the Axle Counter System.
13. Projects shall complete the generic questionnaires with their specific project details and submit to Frauscher for configuration as part of any new works:
 - i. Frauscher document Configuration questionnaire FAdC R2 (D4736 V2) shall be used for the configuration of all new projects.
14. Only RSR180 wheel sensors are permitted for use with the FAdC R2.
15. Latest version of Frauscher document "Vehicle Type 20 type – RSR180 - D5686 " shall be used on all ARTC installations of the FAdC-R2.
16. Signalling designers shall have completed the manufacturer's design training course and have the correct competency skill rating for the FAdC R2 system.
17. Signalling Testers and Maintainers shall have completed the manufacturer's installation training course and have the competency skill rating for the FAdC R2 system.
18. Wheel sensor identification name to be provided above the associated AEB board at the front and rear of the 19" rack.
19. Manufacturer's guidance on installation and maintenance shall be observed.
20. Pre-assembled and tested 96-way wire change plug coupler should be installed with any IO-EXB board.
21. Earthing wiring from the earth bar to the BSI0004 surge arrestor shall be on the external side of the arrestor.
22. Wheel sensor names shall be shown above their respective surge arrestor within the location/relay room.
23. Cables run from the BSI0004 surge arrestor to the rear of the 19" rack shall be securely restrained to ensure no undue force is applied to the plug coupler.
24. A general condition of approval is that the supplier remains accredited to ISO 9001 specifically for these products and ARTC is advised on a 12 monthly basis that accreditation is current. ARTC reserves the right to conduct its own audit of the manufacture and supply of these components to AS19011.
25. The supplier or manufacturer must advise ARTC of any changes made to the product or system which may alter its identification, performance characteristics, form, fit, function or processes required for correct usage so that this approval can be revised or reviewed.
26. All documentation and manuals from the supplier shall be in English. The Supplier shall advise of any updates to the documents.

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27. The unit must be fitted with a readily visible label stating the Equipment Serial Number, Version Number, manufacturer's identification and date of manufacture.
28. Any subsequent change to the design, materials or manufacturing process is not covered by this approval. The manufacturer should notify ARTC of any modification or changes in order to obtain a valid certificate.

ARTC:

29. Asset team to report ongoing performance issues to the Manager Engineering Services.

Issue date 23/05/2025

Expiry date N/A

Issued by

ARTC Manager Engineering Services

Attachments / Approved item list (if applicable):

Part Number/Software Version	Description	Indoor/Outdoor	Component of SIL4 system
Hardware Items			
19952	Backplane BP-PWR101-0 8TE GS01	Indoor	Yes
19953	Backplane BP-PWR101-4 24TE GS01	Indoor	Yes
19954	Backplane BP-PWR101-8 40TE GS01	Indoor	Yes
19956	Backplane BP-EXB101-1 10TE GS01	Indoor	Yes
19957	Backplane BP-EXB101-2 16TE GS01	Indoor	Yes
19958	Backplane BP-EXB101-4 28TE GS01	Indoor	Yes
19959	Backplane BP-EXB101-8 52TE GS01	Indoor	Yes
21441	Backplane connection BP-EXB (Crimp)	Indoor	NA
18159	Backplane connection BP-EXB (Solder)	Indoor	NA
17390	Board rack BGT07 84TE	Indoor	Yes
17391	Board rack BGT08 42TE	Indoor	Yes
24050	Evaluation Board AEB101 GS04	Indoor	Yes
24051	Evaluation board AEB101 GS05	Indoor	Yes
26534	Evaluation board AEB101 GS07	Indoor	Yes
110302	Evaluation board AEB101 GS09	Indoor	Yes

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19949	Supply Board PSC101 GS01	Indoor	Yes
19950	Communication Board COM-AdC101 GS01	Indoor	Yes
23152	Communication Board COM-AdC101 GS02	Indoor	Yes
22867	Communication Board COM-FSE101 GS02	Indoor	Yes
23904	Communication Board COM-FSE101 GS03	Indoor	Yes
110206	Communication Board COM-FSE101 GS04	Indoor	Yes
22503	Communication Board COM-WNC101 GS01	Indoor	Yes
22443	Communication Board COM-FSFB101 GS02	Indoor	Yes
25861	Communication Board COM-FSFB101 GS03	Indoor	Yes
110279	Communication Board COM-FSFB101 GS04	Indoor	Yes
21626	Communication Board COM-RP101 GS01	Indoor	Yes
24436	Communication Board COM-RP101 GS02	Indoor	Yes
110338	Communication Board COM-RP101 GS03	Indoor	Yes
110323	In/output Board IO-EXB101 GS02	Indoor	Yes
21117	Diagnostic System FDS 101 GS01 for FAdC	Indoor	NA (Non Vital Diagnostics)
21058	Patch Cable S/STP Cat.6 Crossover 0.5m grey for hotlink	Indoor	NA
21059	Patch Cable S/STP Cat.6 Crossover 1.0m grey for hotlink	Indoor	NA
21060	Patch Cable S/STP Cat.6 Crossover 2.0m grey for hotlink	Indoor	NA
18058	Patch Cable S/FTP Cat.6 0.5m green	Indoor	NA
18059	Patch Cable S/FTP Cat.6 1.0m green	Indoor	NA

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18060	Patch Cable S/FTP Cat.6 2.0m green	Indoor	NA
20865	Advanced Service Display ASD101 GS01 (R2)	Indoor	NA
110236	Advanced Service Display ASD102 GS01 (R2)	Indoor	NA
17707	Tool set for mounting and maintenance	Outdoor	NA
21512	Testing plate (Dummy wheel) PB200 GS03	Outdoor	NA
10021	Rail Claw SK140	Outdoor	No
22288	Rail Claw SK150 GS04	Outdoor	No
10022	Clamping Bolt BBK5	Outdoor	No
10023	Clamping Bolt BBK11	Outdoor	No
10024	Clamping Bolt BBK17.5	Outdoor	No
10025	Clamping Bolt BBK22	Outdoor	No
10034	GAK Cable Box SKV20	Outdoor	No
110645	Torque Wrench Set (60..300Nm)	NA	NA
25186	TCB001 - Trackside Connection Box - 1 Wheel Sensor	Outdoor	No
26403	TCB001 - Trackside Connection Box - 2 Wheel Sensor	Outdoor	No
25187	TCB001 - Trackside Connection Box - 3 Wheel Sensor	Outdoor	No
23320	Wheel Sensor RSR180-001 GS05 (5M Tail Cable)	Outdoor	Yes
23529	Wheel Sensor RSR180-001 GS05 (10M Tail Cable)	Outdoor	Yes
23531	Wheel Sensor RSR180-001 GS05 (15M Tail Cable)	Outdoor	Yes
26786	Wheel Sensor RSR180-001 GS05 (25M Tail Cable)	Outdoor	Yes
12205	Protection Tube 4.8 m	Outdoor	No
14475	Protection Tube 9.8 m	Outdoor	No
17443	Protection Tube 14.8 m	Outdoor	No
16906	Protection Tube 24.8 m	Outdoor	No

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13753	Voltage protection BSI004	Indoor	Yes
26547	Protection Tube 29.6m	Outdoor	No
Software Items			
-	FAdC FdS Firmware	NA	NA
-	FAdC FdS Software	NA	NA
-	COM-XXX R2 Firmware	NA	Yes
-	AEB101 GSxx Firmware	NA	Yes
Site specific	COM-XXX R2 Configuration file	NA	Yes
Site Specific	AEB101 GSxx Configuration File	NA	Yes