

**Certificate No. TAC-02-1807-232FR**

**Approval date:** 16<sup>th</sup> January 2019

**Approved by:** GM Technical Standards

**Report no:** TAS-02-1807-232FR

**Report date:** 2<sup>nd</sup> November 2018

*This certificate is issued to*

**Supplier**

Frauscher Sensortechnik GmbH | Gewerbestraße 1 | 4774 St. Marienkirchen | AUSTRIA

*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

**Item identification**

FAdC R2

**Application**

Rail Vehicle Detection System

**Relevant Standards**

ESD-07-03, ESM-07-04, ESD-05-14

### Conditions of Approval

- a. Only items listed in section 9.1 'Hardware Items for Type Approval' and 9.2 'Software Items for Type Approval' shall be utilized.
- b. For use in accordance with ARTC signals construction standards and axle counter standards (new standards to be developed)
- c. For use in accordance with approved axle counter reset procedures only (reset procedures to be developed).
- d. Maintenance activities to be undertaken in accordance with the approved TMP (to be developed) and Service Schedules (refer support folder 20 – Service Schedule) and manufacturer supplied manuals.
- e. All FAdC R2 system data shall be treated as signal design data and shall not be subject to field changes.
- f. FAdC R2 vital signal control function shall only be used with closed data communications networks to category 1 of EN50129.
- g. Direct reset capabilities are **not** permitted via AEB board toggle switches, this functionality shall be disabled within the configuration file.
- h. Direct axle count stepping is permitted via AEB board toggle switches, this functionality shall be enabled within the configuration file.
- i. Interface to Microlok II shall be via parallel interface boards (IO-EXB) and associated relays.
- j. The FAdC R2 may be interfaced directly with the HIMA Plc system via Ethernet cat 6 cable provided the COM-FSE board is utilised.
- k. 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.
- l. Projects shall complete the generic questionnaires with their specific project details and submit to Frauscher for configuration as part of any new works:
  - i. Configuration questionnaire FAdC R2 and FAdCi R2 (D4736 V1) shall be used for the configuration of all new projects.
  - ii. Questionnaire for project FAdC and ACS2000 (D3668-4)
- m. A no break power supply shall be installed with any FAdC R2 system providing a minimum of 48-hour operation.
- n. Only RSR180 wheel sensors are permitted for use with the FAdC R2.
- o. Signalling designers shall have completed the manufacturers design training course and have the correct competency skill rating for the FAdC R2 system.
- p. Signalling Testers and Maintainers shall have completed the manufacturers installation training course and have the competency skill rating for the FAdC R2 system.
- q. Wheel sensor identification name to be provided above the associated AEB board at the front and rear of the 19" rack.
- r. Manufacturer's guidance on installation and maintenance shall be observed.
- s. Pre-assembled and tested 96-way wire change plug coupler shall be installed with any IO-EXB board.
- t. Earthing wiring from the earth bar to the BSI0004 surge arrestor shall be on the external side of the arrestor.
- u. Wheel sensor names shall be shown above their respective surge arrestor within the location/relay room.
- v. 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.
- w. 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.
- x. The supplier or manufacturer must advise ARTC of any changes made to the product

## NEW EQUIPMENT AND SYSTEM APPROVAL CERTIFICATE

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.

- y. All documentation and manuals from the supplier shall be in English. The Supplier shall advise of any updates to the documents.
- z. The unit must be fitted with a readily visible label stating the Equipment Serial Number, Version Number, manufacturer's identification and date of manufacture.

### **Works to complete after type approval**

The below listing provides clarification as to any additional work required to ensure the equipment can be readily installed and maintained within the ARTC network.





- a. Axle counter reset procedures to be updated (produced) including inclusion of any supervisory configuration requirements.
- b. Design guideline ESI-06-03 'Frauscher Axle Counter Design' work instruction shall be revised to include any On-railing and Off-railing requirements associated with the FAdC R2 system.
- c. Update to SDS17 'Track Circuit' or creation of new standard (Axle Counter design guideline) to define axle counter positionings, identification, naming conventions etc.
- d. TMP review and revision (if required)
- e. Service Schedule review and revision (if required)
- f. Signal Standards to upload equipment manuals to the ARTC Engineering Intranet page 'Manufacturer/Supplier Manuals' section.
- g. Standard typical circuit(s) to be uploaded to the ARTC Signals Engineering 'Standard Drawings' tab after completion of the first installation of the equipment.
- h. Procurement to advised of new product range (refer section 9.1 and 9.2.)

*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.*

### Approved Item List

#### 9. Equipment Evaluated for Type Approval

##### 9.1. Hardware Items for Type Approval

Item Number	Hardware	Supplier	Indoor or Outdoor?	Part Number / Software Version	Components of a SIL4 system	Image
FAc 1	Backplane BP-PWR101-0 6TE G501	Frauscher	Indoor	10052	Yes	
FAc 2	Backplane BP-PWR101-4 24TE G501			10053	Yes	
FAc 3	Backplane BP-PWR101-8 40TE G501			10054	Yes	
FAc 4	Backplane BP-EXB101-1 10TE G501	Frauscher	Indoor	10056	Yes	
FAc 5	Backplane BP-EXB101-2 10TE G501			10057	Yes	
FAc 6	Backplane BP-EXB101-4 28TE G501			10058	Yes	
FAc 7	Backplane BP-EXB101-8 52TE G501			10059	Yes	
FAc 8	Backplane connection BP-EXB (Crimp)	Frauscher	Indoor	21441	NA	
FAc 9	Backplane connection BP-EXB (Solder)			18150	NA	
FAc 10	Board rack BGT07 64TE	Frauscher	Indoor	17390	Yes	
FAc 11	Board rack BGT08 42TE			17391	Yes	

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FAdC 12	Evaluation Board AEB101 GS04	Frauscher	Indoor	24050	Yes	
FAdC 13	Supply Board PSC101 GS01	Frauscher	Indoor	19949	Yes	
FAdC 14	Communication Board COM-AdC101 GS01	Frauscher	Indoor	19950	Yes	
FAdC 15	Communication Board COM-FSE101 GS02			22867	Yes	
FAdC 16	Communication Board COM-WNC101 GS01			22503	Yes	
FAdC 17	Communication Board COM-FSFB101 GS02			22443	Yes	
FAdC 18	Communication Board COM-RP101 GS01			21626	Yes	
FAdC 19	In/output Board IO-EXB101 GS01	Frauscher	Indoor	20884	Yes	
FAdC 20	Diagnostic System FDS 101 GS01 for FAdC	Frauscher	Indoor	21117	NA (Not Vital Diagnostics)	
FAdC 21	Patch Cable UTP Cat.5e 1.0m yellow	Frauscher	Indoor	18709	NA	N/A
FAdC 22	Patch Cable S/STP Cat.6 Crossover 0.5m grey for hotlink	Frauscher	Indoor	21058	NA	N/A
FAdC 23	Patch Cable S/FTP Cat.6 0.5m green	Frauscher	Indoor	18056	NA	N/A
FAdC 24	Patch Cable S/FTP Cat.6 1.0m green	Frauscher	Indoor	18059	NA	N/A



FAdC 25	Advanced Service Display ASD101 GS01 (R2)	Frauscher	Indoor	20865	NA	
FAdC 26	Tool set for mounting and maintenance	Frauscher	Outdoor	17707	NA	N/A
FAdC 27	Testing plate (Dummy wheel) PB200 GS03	Frauscher	Outdoor	21512	NA	

Table 2 FAdC R2 Hardware required for Type Approval

### 9.2. Software Items for Type Approval

Item Number	Software	Supplier	Part Number / Software Version	SIL
FAdC S01	FAdC FdS Firmware	Frauscher	-	4
FAdC S02	FAdC FdS Software	Frauscher	-	4
FAdC S03	COM-XXX R2 Firmware	Frauscher	-	4
FAdC S04	COM-XXX R2 Configuration file	Frauscher	Site specific	0

Figure 3 Software required for Type Approval

Note: The RSR180 wheel sensor, mounting clamps and GAK (disconnection point) hardware are currently type approved under type approval numbers #9-02-1212-138 and #08-08-10-009 and shall not be reassessed for type approval. Although, the review of the FAdC R2 shall ensure compatibility with the use of the RSR180, mounting clamps and GAK.

Issue date

16/01/2019

Expiry date

N/A

Issued by

*John Furness*

John Furness

ARTC Manager Standards