![ARTC logo](AR/TC)

**AUSTRALIAN RAIL TRACK CORPORATION**

Certificate No.:  **S-01-10-096**

# NEW EQUIPMENT & SYSTEM APPROVAL CERTIFICATE

**Approval date:** 13 September 2010

**Approved by:** ARTC Risk & Safety Committee

**Report no.:** TAS 01-0710-WE105

**Report date:** 30 July 2010

This certificate is issued to:

**Supplier:**  **Invensys Rail Pty Ltd**

In respect of:

**Manufacturer:**  Invensys Rail Pty Ltd
179-185 Normanby Rd
South Melbourne
Victoria 3205

**Product description:**  **WESTRACE – COMPUTER BASED INTERLOCKING SYSTEM**

**Item identification:**  See approved item list for certificate S-01-10-096

**Application:**  Signal Interlocking System on ARTC network

**Relevant Standards:**  SCP 17 Computer-Based Interlocking Requirements

**Conditions of Approval:**

1. For use in accordance with ARTC specification SDS 25 and standard typical circuits only.
2. All vital parallel output circuits must be capable of being returned to a safe state by the de-energising of a vital relay (OPCR). The OPCR relay shall be to Network Rail specification BRB 930, 50v DC neutral, plug board pin codes 003 or 004.
3. All serial communications links shall be over a closed communication path reserved specifically for signalling purposes.
4. Where LED type signal lamp aspects are fed directly from a VLOM then an additional sensor (external to the VLOM) is required to provide vital lamp proving detection except where a suitable dummy load can be provided in parallel with the signal aspect(s). The dummy load shall itself be sufficient to neither initially operate nor hold operated the VLOM lamp proving function.
5. Only the latest approved version of the card frames, backplanes and functional modules together with any integrated software and the associated development system software, may be used in new works installations.
6. At high traffic density sites on the ARTC network, WESTRACE housings used to implement vital interlocking logic shall be configured in hot standby.
7. WESTRACE housings used only as Signalling Object Controllers or for non-vital communications may be standalone (not hot standby) configuration.
8. Only components from the list in Attachment A may be utilised.
9. All WESTRACE housings at a site (included in the same circuit book) shall use card frames, functional modules and executive software referenced on the same ARTC acceptance certificate.
10. The updated WESTRACE Certified Module List showing the latest changes shall be provided.

*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 AS 19011.*

*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.*

**Note/Comments:**  This certificate includes updates to the WESTRACE System previously approved under certificate 08-08-10-037 and Type Approval Report TAR 01-0605-026.

**Issue date:**  16/11/2010

**Issued by:**

John Furness, ARTC Manager Standards

# NEW EQUIPMENT & SYSTEM APPROVAL - APPROVED ITEM LIST

| | |
|---|---|
| **Reference no.:** | TAS 01-0710-WE105 |
| **Date:** | 13 September 2010 |
| **Product description:** | **WESTRACE – COMPUTER BASED INTERLOCKING** |
| **Certificate no.:** | **S-01-10-096** |

The following lists the individual items (by catalogue number) are approved for use on ARTC infrastructure under the above referenced New Equipment & System Approval Certificate number, subject to any conditions shown on that Certificate and the Conditions of Use shown against individual items.

| Catalogue No. | Item Type | Description | Conditions of Use |
|---|---|---|---|
| Housings for 19" rack mounting. | | | |
| 1690 1067 01 | Cardframe | 1 shelf housing. | |
| 1690 1068 01 | Cardframe | 2 shelf housing for 1 x PSU24. | |
| 1690 1068 02 | Cardframe | 2 shelf housing for 2 x PSU24. | |
| 1690 1069 01 | Cardframe | 3 shelf housing for 1 x PSU24. | |
| 1690 1069 02 | Cardframe | 3 shelf housing for 2 x PSU24. | |
| 1690 1069 03 | Cardframe | 3 shelf housing for 3 x PSU24. | |
| 1690 1070 01 | Cardframe | 4 shelf housing for 1 x PSU24. | |
| 1690 1070 02 | Cardframe | 4 shelf housing for 2 x PSU24. | |
| 1690 1070 03 | Cardframe | 4 shelf housing for 3 x PSU24. | |
| 1690 1070 04 | Cardframe | 4 shelf housing for 4 x PSU24. | |
| 2650 1126 01 | Backplane | VLE System backplane. | |
| Interlocking Modules | | | |
| 3650 1141 12 | VLM6 | VLC6, OPC50 and UHBC in one item | To be configured with a Hot Standby for Interlocking Units on High Traffic lines. |
| 1690 1023 01 | VROM50 | Vital Relay Output | (existing installations) Version Number 4.0 (for new installations) Version Number 4.4 |
| 1690 1020 01 | VLOMFT110 | Vital Lamp Output | Version Number 3.5 |
| 1690 1007 01 | VPIM50 | Vital Parallel Input | Version Number 3.5 |
| 3650 1131 01 | PSU24 | Power Supply | |
| 4650 1057 01 | Blanker | n/a | |
| Communications Modules | | | Communications link must be a closed system to carry vital data. |
| 4663/270 | NCDM | Communications Interface | (for existing installations) p/n B47000/137AA Mod state D rev 6 (for new installations) p/n B47000/137AA Mod state E rev 8 |
| 3650 1141 13 | WNCM | VLC6 and NCDM in one item. | To be configured with a Hot Standby for Interlocking Units on High Traffic lines. |
| 3650 1129 13 | EVTC232 | Vital Telemetry | Version Number 2.1 |

| Catalogue No. | Item Type | Description | Conditions of Use |
|---|---|---|---|
| Filter Modules | | | |
| 4663/271 | NCD PFM | For NCDM card | (for existing installations) p/n B47000/138DA Mod state A rev 4<br><br>(for new installations) B47000/138DA Mod state C rev 8 |
| 3650 1123 01 | SIO232PFM | For SIO232 card | |
| 3650 1137 04 | VROM50PFM | For VROM50 card | |
| 3650 1135 04 | VLOM110PFM | For VLOM110 card | Two items are always required to protect all 12 outputs on each VLOM110. |
| 3650 1112 01 | VPIM50PFM | For VPIM50 card | |
| 3650 1136 04 | OPC50PFM | For OPC50 card | |
| 2650 1140 01 | HOPC PFM | | |
| 3650 1104 01 | PSU24PFM | For PSU24 card | |
| Software | | | |
| n/a | GCS | Graphical Configuration System | Version 7.0.0 (for Windows XP).<br>and<br>Version 7.1.3 (for Windows XP). |
| n/a | ICS | Installation Checking | Version 7.0.0 (for Windows XP).<br>and<br>Version 7.1.3 (for Windows XP). |
| n/a | MoviolaW | Maintenance & Diagnostic | Version 3.0.0.4 (for Windows XP). |
| n/a | PCGE | Graphical Display Editor | Version 3.63 (for Windows XP). |
| n/a | GCSS | Graphical Configuration Sub System | Version 7.0.0 (for Windows XP).<br>and<br>Version 7.1.3 (for Windows XP). |
| n/a | GSIM | Graphical Simulator | Version 5.0.0 (for Windows XP). |
| n/a | ISIM | Interlocking Test Simulator | Version 1.0 |
| Ancillary Equipment | | | |
| | | | All below for spares use only. |
| 2680 0004 35 | VLC6 | Vital Logic Controller | p/n B47000/134AA Mod state C rev 5 |
| 3650 1102 04 | OPC50 | Output Power Controller | |
| 4663/268 | UHBC | Vital Control Unit Backplane | p/n B47000/135AA Mod state A |
| 3650 1147 01 | EXP1 | PSU 2 shelf expansion cable. | |
| 3650 1148 01 | EXP2 | PSU 3 shelf expansion cable. | |
| 3650 1149 01 | EXP3 | PSU 4 shelf expansion cable. | |
| 3650 1144 01 | EC1 | Bus expansion cable 1 shelf local. | |
| 3650 1145 01 | EC2 | Bus expansion cable 2 adjacent shelves. | |
| 3650 1146 01 | EC3 | Bus expansion cable spans 3 shelves. | |
| Not manufactured by WRSA | | | |
| n/a | 29F010 | 70nS Flash EPROM | |
| n/a | Dataman S4 | PROM Programmer | Available from RS Components Pty. Ltd. |