

Certificate of Acceptance

PA05/04211

Manufacturer:
Westermo

Issue : 4
Valid From : 17/07/2024

Isolator and Protocol Converters

Product Description

- MD-45 LV and MD-45 HV: RS232 to RS422/ 485 Converter.
- MDW-45 LV and MDW-45 HV: RS232 to RS422/ 485 Converter
- MD-52: RS232 isolator
- MD-54: CTS Generator

Product Image



Scope of Acceptance

Full Acceptance

Equipment shall only be deployed at locations which meet its' EMC compliance, as specified in "Product Configuration" section.

Change made in issue 4:

Included MDW-45LV and MDW-45HV, RS232 to RS422/ 485 converters successfully assessed under PA reference PA05/07880 which has now been closed.

Items which have been declared EoS have been updated to show status.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Reviewed by:

Authorised by:

Aamir Malik
Product Acceptance Coordinator

Fraser Allan
Network Technical Head of Telecoms

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Specific Conditions

The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section.

Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.

Manufacturer

- 1) A label shall be attached to the equipment and the packaging to indicate the equipment has been product approved by Network Rail. The label shall include;
 - a) 'Network Rail Approved'
 - b) Network Rail's product approval certificate number. In this case it is 'PA05/04211'
 - c) Art no (this is Westermo's hardware and build number).
- 2) Contact the Network Rail Product Acceptance Team via prodacc@networkrail.co.uk regarding any firmware and hardware changes. The emails shall include the certificate of acceptance number, the product involve and the changes.

User

1)	Install in accordance with the equipment's instructions
2)	It is project's responsibility to make sure the equipment can support the intended applications at the intended EMC environment. If the equipment is deployed in EMC environment outside of its' compliant, an EMC expert shall be consulted to understand the possible impacts to the equipment and services being supported.
3)	Network Rail approved power supplies shall be used with this range of equipment.
4)	Equipment shall be installed in environmentally controlled locations
5)	<p>MD-45 LV and MD-45 HV: RS232 to RS422/ 485 Converter.</p> <ol style="list-style-type: none"> a) Compliant with generic heavy industry EMC levels (EN 61000-6-2). Shall not be used within 3m from the centre of the nearest track in AC or DC electrified traction areas. b) Not to be used with trackside copper cable longer than 1km. c) The RS422/ 485's legs are polarity conscience and crossing the A-leg with B-leg prevents the link from being established. This is not made clear in the equipment's manual.
6)	<p>MDW-45 LV and MDW-45 HV: RS232 to RS422/ 485 Converter</p> <ol style="list-style-type: none"> a) Compliant with generic heavy industry EMC levels (EN 61000-6-2). Shall not be used within 3m from the centre of the nearest track in AC or DC electrified traction areas. b) Not to be used with trackside copper cable longer than 1km.
7)	<p>MD-52: RS232 isolator</p> <ol style="list-style-type: none"> a) To provide RS232 isolation. b) Compliant with generic heavy industry EMC levels (EN 61000-6-2). Shall not be used within 3m from the centre of the nearest track in AC or DC electrified traction areas.
8)	<p>MD-54: CTS Generator</p> <ol style="list-style-type: none"> a) To provide/ convert asynchronous data handshaking. b) Compliant with generic residential industry EMC levels (EN 61000-6-1). Shall not be used within 10m from the centre of the nearest track in AC or DC electrified traction areas.

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Product Configuration

Hardware (Maintenance Spares and Line Replaceable Units)

Part No.	Description	Comments	Catalogue No.
3157-0001	MD-45 LV RS232 to RS422/ 485 converter	Power: 12 - 30 VAC or 12 - 48 VDC End-of-Sale. MDW-45 LV is a possible replacement.	087/026858
3157-1101	MD-45 HV RS232 to RS422/ 485 converter	Power: 95 – 240 VAC or 110 – 250 VDC End-of-Sale. MDW-45 LV is a possible replacement.	087/026859
3601-0001	MD-52 DC (Isolator)	Power: 12 - 36 VDC	087/026853
3601-0003	MD-52 36-55 DC (Isolator)	Power: 36 - 55 VDC End-of-Sale. No identified replacement.	087/026868
3601-0101	MD-52 AC (Isolator)	Power: 207 - 264 VAC End-of-Sale. No identified replacement.	087/026869
3605-0001	MD-54 DC (CTS Generator)	Power: 12-36 VDC End-of-Sale. No identified replacement.	087/026898
3605-0101	MD-54 AC (CTS Generator)	Power: 207-264 VAC End-of-Sale. No identified replacement.	087/026899
3617-0001	MDW-45 LV RS232 to RS422/ 485 converter	Power: 9.6–57.6 VDC	087/027045
3617-0101	MDW-45 HV RS232 to RS422/ 485 converter	Power: 85.5 - 264 VAC or 88 - 300 VDC	087/027046

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
--	Westermo Installation Manual	--	--	1
--	Westermo Performance Test Report: MD-45 LV RS-232/ RS-485 Converter	--	18/08/09	1
--	In House Performance Stability Report- Westermo MD 45 LV. Issue 1	--	--	1
--	NR/L2/TEL Testing on Westermo MD 45 LV. Issue 1	--	--	1
PA05/04488	Tak Lam Engineering recommendation	--	15/06/10	2
--	Westermo test report in response to 'Network Rail Definition of product Acceptance required for Critical Products	--	--	2
--	MD 54 data sheet	--	--	3
--	MD 54 installation manual	--	--	3

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Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
--	MD 54 declaration of conformity	--	--	3
--	DfR zip file	--	--	4
--	mcw-211-f1g-t1g datasheet	--	--	4
--	mdw-45 datasheet	--	--	4
--	Westermo Ethernet and protocol stability testing iss 2	--	--	4

Certificate History

Issue	Date	Issue History
1	13/01/2010	First accepted for use.
2	25/06/2010	Second acceptance in order to add converters to the accepted range.
3	05/08/2010	Third acceptance in order to clarify part numbers and descriptions.
4	17/07/2024	Updated to include MDW-45 variants and updated the statuses for MD-45 variants, MD-52 36-55 DC, MD-52 AC and MD-54 variants to "End-of-Sale".

Contact Details

Manufacturer

Ashleigh James
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Sponsor

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General Terms & Conditions

1) General

- 1) This certificate can only be amended by Network Rail Product Acceptance, the relevant Network Technical Head or nominated delegate. Any alterations made by a other persons will invalidate the entire certificate.
- 2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
- 3) If this is a Trial Certificate which includes a Trial Monitoring Period or Trial Expiry date, evidence should be submitted to meet the included trial criteria before the date has passed for the Lead Reviewing Engineer to assess if the product can be given Full Acceptance. If this cannot be achieved, the Product Acceptance team should be contacted via prodacc@networkrail.co.uk to seek guidance. If this is a Full Certificate and includes a review date, the Product Acceptance team should be contacted via prodacc@networkrail.co.uk to seek guidance.

2) Manufacturer

The Manufacturer shall:

- 1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Network Rail Design for Reliability Standard (DFR) NR-L2-RSE-0005 and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Product Acceptance in writing (email prodacc@networkrail.co.uk):
 - a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
 - b. Of any intended change to the accepted product; changes include:
 - i. a change to the product configuration (to the actual product or its application);
 - ii. a variation to or addition of manufacturing locations or processes;
 - iii. a change in the name or ownership of the manufacturing company;
 - iv. any changes to the ability or intention to support with technical services, spares or repairs.
- 3) The Manufacturer shall provide Network Rail Product Acceptance or National Supply Chain (NSC) at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to Network Rail Product Acceptance.
- 4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
- 5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
- 6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
- 7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
- 8) In accordance with Network Rail's Quality Assurance Policy Statement, where the specification and/or Product Acceptance Certificates specify quality assurance classifications for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
- 9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

3) Conditions of Use

Specifiers, installers, operators, maintainers, etc. using the product shall:

- 1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Product Acceptance.
- 2) Check that the application of use complies with the relevant certificate's scope of acceptance.
- 3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Product Acceptance.
- 4) Inform Network Rail Product Acceptance in writing of a change to the product configuration (or to the actual product or its application).
- 5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
- 6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
- 7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
- 8) Users are to be aware that Product Acceptance is not a substitute for design approval.

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4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

- 1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsoring applicant shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations
- 2) As required in Railway Group Standard RIS-8270-RST, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:
 - a. All rail vehicle types that have access rights over the area affected by the change
 - b. Infrastructure managed by others
 - c. Neighbours.

Railway Interoperability Regulations

- 3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.
- 4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail and Road) is required before the equipment is to be used in revenue earning service.

5) Supply Chain Arrangements

- 1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.
- 2) Products may be purchased by Network Rail or its agents, suppliers or contractors.
- 3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers.