

ECE TYPE-APPROVAL CERTIFICATE

Communication concerning approval extended of a type of electronic sub-assembly with regard to
Regulation No. 10.




Approval No:

E5*10R05/01*0384*05

- | | | | |
|------|--|---|--|
| 1. | Make (trade name of manufacturer) | : | VBG / Ringfeder / Member Of VBG Group |
| 2. | Type and general commercial description(s) | : | Electric infrastructure for coupling system

BCM: 28-106800 or 15990264
CSM: 28-108800 or 28-112500 or 15990309 or 15990265 or 15990699
DSM: 28-116200 or 28-118000
ICM: 15990927 |
| 3. | Means of identification of type, if marked on the separate technical unit | : | Type and part number printed on a sticker |
| 3.1. | Location of that marking | : | Sticker placed on the power supply cable or on the module housing |
| 4. | Category of vehicle | : | Not applicable |
| 5. | Name and address of manufacturer | : | VBG Group Truck Equipment AB
Herman Kreftings Gata 4
462 28 Vänersborg |
| 6. | In the case of components and separate technical units, location and method of affixing of the approval mark | : | Sticker placed on the power supply cable or on the module housing |
| 7. | Address(es) of assembly plant(s) | : | DeltaNordic (BCM and DSM)
Box 4024
SE-891 04 Örnköldsvik
Sweden

Vikan Marketing SIA (CSM and ICM)
83 Maza Krasta Street
Riga, LV-1003
Latvia |

- | | | | |
|-----|---|---|--|
| 8. | Additional information
(where applicable) | : | See appendix below |
| 9. | Technical Service responsible for
carrying out the tests | : | RISE Research Institute of Sweden
Box 857
S-501 15 Borås
Sweden |
| 10. | Date of test report | : | As before (2020-10-06, 2021-04-08,
2022-01-04, 2022-01-05, 2024-09-16) and
2025-03-13 also 2025-03-25 |
| 11. | Number of test report | : | As before (2P04800, P109981rev1.1,
P113099, P112980ArevA, P121846A) and
P121846A Rev2 also P125117 |
| 12. | Remarks (if any) | : | See appendix below |
| 13. | Place | : | Göteborg |
| 14. | Date | : | 14 October 2024 |
| 15. | Signature | : | 
Tommie Augustsson
Type Approval Certification Officer |
| 16. | The index to the information package
lodged with the Approval Authority,
which may be obtained on request, is
attached | : | Information document
Test report |
| 17. | Reasons for extension | : | <ol style="list-style-type: none"> 1). Component end-of-life changes on part numbers 28-106800 and 15990264,
requiring PCB/PCBA updates and new EMC testing. 2). For part number 15990927, an updated EMC report was issued to correct
documentation errors in the previous version. |

Appendix to type approval communication form No. E5*10R05/01*0384*05
concerning the type approval of an electrical/electronic sub-assembly under
UN Regulation No. 10

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|-------|--|---|--|
| 1. | Additional information | : | |
| 1.1. | Electrical system rated voltage | : | 12V / 24V DC. pos/neg ground ¹ |
| 1.2. | This ESA can be used on any vehicle type with the following restrictions | : | |
| 1.2.1 | Installation conditions, if any | : | According to manufacturer's manual |
| 1.3. | This ESA can be used only on the following vehicle types | : | Not applicable |
| 1.3.1 | Installation conditions, if any | : | |
| 1.4. | The specific test method(s) used and the frequency ranges covered to determine immunity were (Please specify precise method used from Annex 9) | : | The DUT was powered with 24V by two automotive batteries in series and thru LISN's. The tests were performed with the DUT in two test modes, unlocked and locked mode. The DUT was monitored with an optical fibre linked video camera during the tests.

ISO 11 452-4, 20-200 MHz
ISO 11 452-2, 200-1000 MHz
ISO 11 452-2, 800-2000 MHz |
| 1.5. | Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests | : | RISE Research Institute of Sweden
Box 857
S-501 15 BORÅS
SWEDEN |
| 2. | Remarks | : | None |

¹ Strike out what does not apply

Information document Electric infrastructure for coupling system, relating to UNECE type approval E5*10R05/01*0384. Format of information document is type approval of an electric/electronic sub-assembly with respect to electromagnetic compatibility, Annex 2B of UNECE R10.

1. Make (trade name of manufacturer):

VBG or RINGFEDER or MEMBER OF VBG GROUP

2. Type:

Electrical infrastructure

- Complete system with BCM (Base Cab Module) and CSM (Coupling Sensing Module)
- Complete system with BCM (Base Cab Module) and CSM (Coupling Sensing Module) and DSM (Drawbar Sensing Module)
- Stand alone with CSM (Coupling Sensing Module)
- Complete system with ICM (Indication Control Module) and CSM (Coupling Sensing Module)

Variants/part numbers:

BCM: 28-106800 or 15990264

CSM: 28-108800 or 28-112500 or 15990309 or 15990265 or 15990699

DSM: 28-116200 or 28-118000

ICM: 15990927

3. Means of identification of type, if marked on the component/separate technical unit:¹

Type and part number printed on a sticker.

3.1. Location of that marking:

Sticker placed on the power supply cable or on the module housings.

4. Name and address of manufacturer:

VBG Group Truck Equipment AB
Herman Kreftings gata 4
462 56 Vänersborg

Contact:

Manfred Huckenbeck
Phone: +49 2151835176
Mobile: +49 16090523038
Fax: +49 215183519262

Name and address of authorized representative, if any:

N/A

5. In the case of components and separate technical units, location and method of affixing of the approval mark:

A sticker on the power supply cable or on the module housings. The actual locations are shown in drawings

¹ If the means of identification of type contains characters not relevant to describe the component or separate technical unit types covered by this information document, such characters shall be represented in the documentation by the symbol "?" (e.g. ABC??123??).

6. Address(es) of assembly plant(s):

BCM and DSM
DeltaNordic
Box 4024
SE-891 01 Örnsköldsvik
Sweden
Phone: +46660299850
email: info@deltanordicgroup.se

CSM and ICM
Vikan Marketing SIA
83 Maza Krasta street
Riga, LV-1003
Latvia

7. This ESA shall be approved as a component/STU²

N/A

8. Any restrictions of use and conditions for fitting:

- Installation according to manufacture manual
- Required interfaces is Data & Electronic power supply 12V/24V

The Electronic system as detailed in this document is delivered under 3 brands VBG, RINGFEDER and MEMBER OF VBG GROUP. The system comes in different set-ups. It can be in an assembled form comprising BCM and CSM and DSM. Another example can be CSM stand-alone. The system has functions to realize the coupling remote indication as well as jack-knifing warning. These functions are controlled and realized through the different modules BCM and CSM and DSM that are communicating through internal CAN link.

Possible assembled forms (Module/part number):

- BCM/28-106800 and CSM/28-108800
- BCM/28-106800 and CSM/28-108800 and DSM/28-116200
- BCM/28-106800 and CSM/28-108800 and DSM/28-118000
- BCM/15990264 and CSM/15990265
- BCM/15990264 and CSM/15990309
- ICM/15990927 and CSM/28-112500

Possible stand alone forms (Module/part number):

- CSM/28-108800
- CSM/28-112500
- CSM/15990265
- CSM/15990699

9. Electrical system rated voltage: 12/24 V

Appendix 1:

See test reports

Appendix 2:

The bill of material and photos of the PCB:s are included in the test report

2P04800, P109981rev1.1, P113099, P112980ArevA, P121846Arev2, P125177

² Delete where not applicable.

Only applicable for charging systems:

10. Charger: on board/external²

N/A

11. Charging current: direct current/alternating current (number of phases/frequency)²

N/A

12. Maximal nominal current (in each mode if necessary)

N/A

13. Nominal charging voltage

N/A

14. Basic ESA interface functions: ex. L1/L2/L3/N/PE/control pilot

N/A

15. Minimum R_{sc} value (see paragraph 7.11. of this Regulation)

N/A