



Intermediate Statement of Verification - EC Type Examination

0941/8.1/SB/2020/RST/EN/RC101762-01/V01

In accordance with Directive (EU) 2016/797 on the interoperability of the rail system within the European Union and with the Technical Document of ERA 000MRA1044 version 1.1 of June 2017.

Applicant: Knick Elektronische Messgeräte GmbH & Co. KG
Beuckestr. 22
14163 Berlin
Germany

Subsystem: Rolling Stock
Sensor for energy measurement system
Transducer for Current Measurement Function (CMF)
Series P51x00K11
Transducer for Voltage Measurement Function (VMF)
Series P52x00K11

This Intermediate Statement of Verification has been issued in respect of compliance with the applicable requirements of the above Directive. The Subsystem was shown to comply, subject to any restrictions listed on the attached annex, which forms part of this Intermediate Statement of Verification.

This Intermediate Statement of Verification - EC Type Examination has been issued under consideration of Module SB of the relevant decision adopted pursuant to the Directive. Details regarding this Intermediate Statement of Verification are described in the annex.

Intermediate Statement of Verification issued by Notified Body: TÜV SÜD Nederland B.V., Wiltonstraat 38A, 3905 KW Veenendaal, The Netherlands, Reg. no. 0941. TÜV SÜD Nederland is accredited by the Dutch Accreditation Council Raad voor Accreditatie with registration number C635 as Certification Body for the certification of products according to the EN ISO/IEC 17065:2012 and to the Technical Document MNB - Assessment Scheme, 000MRA1044 of the European Union Railway Agency.

NoBo file / Documentation: RC101762-AS-SE-201106-01

Signature:

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von Fois Marco
Datum:
2022.03.18
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On behalf of TÜV SÜD Nederland B.V.:
Name: Marco Fois
Title: Certification Manager

Valid from: 17.11.2020
Valid till: 16.11.2027
Date of issue: 18.03.2022

The essential requirements have been assessed as being met through compliance with the technical requirements of the relevant TSI only.

**Annex to Intermediate Statement of Verification - EC Type Examination
No. 0941/8.1/SB/2020/RST/EN/RC101762-01/V01**

Subject of intermediate statement of verification

Subsystem: **Rolling Stock**

Sensor for energy measurement system

Transducer for Current Measurement Function (CMF) Series P51x00K11

The following models were subject of the type examination:

- P51000K11 - E0060ME/11 (CMF for 750 V-DC system)
- P51100K11 - E0060ME/11 (CMF for 1500-3000 V-DC system)

Transducer for Voltage Measurement Function (VMF) Series P52x00K11

The following models were subject of the type examination:

- P52000K11 - E0750VE/11 (VMF for 750 V-DC system)
- P52100K11 - E1500VE/11 (VMF for 1500 V-DC system)
- P52100K11 - E3000VE/11 (VMF for 3000 V-DC system)

Applicant

Knick Elektronische Messgeräte GmbH & Co. KG

Beuckestr. 22

14163 Berlin

Germany

Manufacturer

See Applicant

Report No.

RC101762-AS-SE-201106-01 Rev. 1.1 dated 18.03.2022

Base for certification

TSI LOC&PAS - Regulation (EU) 1302/2014, last amended by regulation (EU) 2020/387

The version of the TSIs applied has been chosen with reference to the date of application.

Language version of applied TSI

English

Scope of / Exemption of the assessment

The EC type examination comprises only the following clauses:

- TSI LOC&PAS 4.2.8.2.8.2 Energy Measurement Function (EMF), paragraph (4)
- TSI LOC&PAS 6.2.3.19a On-board energy measurement system (clause 4.2.8.2.8), paragraph (1) Energy Measurement Function (EMF)

Date of issue: 18.03.2022



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Signature: _____

Name: Marco Fois, Certification Manager

On behalf of TÜV SÜD Nederland B.V.

**Annex to Intermediate Statement of Verification - EC Type Examination
No. 0941/8.1/SB/2020/RST/EN/RC101762-01/V01**

List of applied standards

TSI clause	Characteristic of TSI	Standard with issue date	Relevant clause	Title of the standard
4.2.8.2.8.2 (4)	Energy measurement function (EMF)	DIN EN 50463-2: 2018-03	4.3.3.4, 4.3.4.3 (4.2.3.1 to 4.2.3.4, 4.4.4.2 not applicable for VMF and CMF)	Railway applications – energy measurement on rolling stocks – part 2: energy measurement
6.2.3.19a (1)	Energy measurement function (EMF)	DIN EN 50463-2: 2018-03	5.4.3.4.1, 5.4.3.4.2, Table 3, 5.4.3.4.3.1, 5.4.3.4.3.2 (5.4.4.3.1, 5.4.4.3.2.1, 5.4.4.3.2.2 not applicable for VMF and CMF)	Railway applications – energy measurement on rolling stocks – part 2: energy measurement

Integrated interoperability constituents

None

Conditions and limitation of use

The results of the current measurement function (CMF) for ProLine P51x00K11-E depend on the tolerance of the shunt resistance used in the rolling stock. Shunts for the CMF units with the required accuracy class 0,2 for the current measurement are:

Type	Kind	Nominal current	Nominal voltage drop
M500HS	Maconic Shunt-resistance	500 A	60 mV
M1000HS	Maconic Shunt-resistance	1000 A	60 mV
M1000HS-0062	Maconic Shunt-resistance	1000 A	60 mV
M1500HS	Maconic Shunt-resistance	1500 A	60 mV
M2000HS	Maconic Shunt-resistance	2000 A	60 mV
M2500HS	Maconic Shunt-resistance	2500 A	60 mV
M4000HS	Maconic Shunt-resistance	4000 A	60 mV
M6000HS	Maconic Shunt-resistance	6000 A	60 mV
M8000HS	Maconic Shunt-resistance	8000 A	60 mV
MxxxxHS-9nnn	Maconic Shunt-resistance	≥500 A	60 mV

Legend: xxxx: any value higher or equal 500; -9nnn: any alpha numeric value (optional)

Provisions for operation and maintenance

None

Documents used for the assessment

See NoBo file / Documentation RC101762-AS-SE-201106-01 Rev. 1.1 dated 18.03.2022 – section 9

This ISV amends ISV number 0941/8.1/SB/2020/RST/EN/RC101762-01A dated 17.11.2020 because the list of EN 50463-2 clauses and the list of shunts have been corrected.

Validity

This ISV is valid until the date specified on the front page, for the subject of certification as mentioned above and as long as the subject of certification and the relevant technical documentation are not modified.

Date of issue: 18.03.2022

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von Fois Marco
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Signature: _____

Name: Marco Fois, Certification Manager
On behalf of TÜV SÜD Nederland B.V.