NMO	OIML Certification System
OIML Member State United Kingdom of Great Britain and Northern Ireland	**OIML Certificate No.** **R134/2006-B-GB1-19.01** **Revision 1**

OIML CERTIFICATE ISSUED UNDER SCHEME B

OIML Issuing Authority	**NMO** **Stanton Avenue** **Teddington** **TW11 0JZ** **United Kingdom**
Person responsible:	**Mannie Panesar – Head of Technical Services**
Applicant	**Motus Weighing AB** **Viktoriagatan 22** **SE-411 25 Göteborg** **Sweden**
Manufacturer	**The applicant**
Identification of the certified type	**MHS** *(the detailed characteristics are defined in the Descriptive Annex)*

This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 134, Edition: 2006

For accuracy class: 0.2 (vehicle mass), 1 D (single axles), 0.2 B (axle groups)

Issue date: 11 December 2019

The OIML Issuing Authority

Marek Bokota
Technical Manager
For and on behalf of the Head of Technical Services

This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated OIML type evaluation report:

No. P02462 Revision 1, dated 11 December 2019, that includes 12 pages

The technical documentation relating to the identified type is contained in documentation file:

No. P02462-D dated 31 May 2019

OIML Certificate History

Revision No.	Date	Description of the modification
0	31 May 2019	OIML Certificate first issued.
1	11 December 2019	Font page: Accuracy classes for single axle weights and axle groups weights added. Characteristics of the instrument: Single axle weights and axle groups weights added. “A lateral guide is not mandatory provided the relevant installation requirements are complied with“ added. Compatible static weighbridge: “Platform length 5 to 7 m” changed to “minimum length 5 m”. Multiple cuboid platform added. Rated operating conditions: Vmax changed to 13 km/h for vehicle mass, accuracy classes for single axle and axle groups added. Temperature range dependent on NAWI specifications. Devices: “not for legal purposes“ deleted for axle weights and axle groups weights. Printing section added.

This revision replaces previous versions of the certificate.

Important note:
Apart from the mention of the Certificate’s reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

DESCRIPTIVE ANNEX

Characteristics of the instrument:

The Motus Weighing AB MHS comprises the MHS electronics box with integral display and printer connected to a compatible static weighbridge to form an automatic instrument for weighing road vehicles in motion and measuring axle loads.

The instrument shall only be used for legal purposes for the determination of gross vehicle weight, single axle weights and axle groups weights.

An interlock prevents weights being stored or transmitted if the maximum operating speed is exceeded; if Max is exceeded; or if partial weighing is below Min.

The data storage device shall not be used for legal purposes. Automatic printing of the measurement data when the weighing operation is complete may be required depending on national legislation.

The weighing system shall be permanently installed according to manufacturer's guidelines in a controlled weighing area, and shall adhere to the installation requirements of OIML R134:2006(E). A lateral guide is not mandatory provided the relevant installation requirements are complied with.

The system is not suitable for determining the mass of vehicles carrying liquid products.

Construction:

The MHS electronics box comprises a 2 x 16 dot matrix display, 12 x buttons, (optional) printer, and internal electronics. Measurement data may be stored on the internal PCB. The MHS electronics box must be connected to a compatible static weighbridge via its junction box and indicator. Adequate surge/lightning protection must be part of the installation.

Compatible static weighbridge:

The MHS electronics box may be connected to any compatible static weighbridge with an OIML R76:2006(E) Certificate that meets the following requirements.

- Weighing platform minmum length 5 metres.
- Weighing platform is a single or multiple rigid cuboid supported by a load cell at each of the corners of the cuboids. Multiple cuboids must be linked to form a single rigid platform.
- The indicator can export live weighing data via an approved interface listed in this certificate, at a refresh rate ≥ 20 Hz.
- e ≤ d of complete MHS system
- n ≥ number of scale intervals of complete MHS system.
- Max ≥ Max of complete MHS system.

Note: For the purposes of this certificate covering dynamic weighing only, the attached static weighbridge need not be initially verified.

The complete MHS system may exceed the specifications (lower scale interval, higher number of scale intervals, higher maximum capacity) of the static weighbridge OIML R76 Certificate provided that:

- the R76:2006(E)-certified indicator + R60:2017(E)-certified digital or analogue load cells, or
- the R76:2006(E)-certified indicator + R60:2000(E)-certified analogue load cells

meet the compatibility of modules in R76:2006(E) for the specifications of the complete MHS system.

Devices:

- Determination of total vehicle mass
- Determination of single-axle loads
- Determination of axle-group loads
- Determination of average vehicle speed
- Determination of average acceleration
- Single or bi-directional direction of travel
- Vehicle recognition device (automatic capture, no operator required)
- Integral data storage device (not for legal purposes)
- Printing
- Secure data transmission to external devices

Rated operating conditions:

Accuracy class – Vehicle mass	≥ 0.2	≥ 1	≥ 0.2
Accuracy class – Single axle	-	≥ D	-
Accuracy class – Axle groups	-	-	≥ B
Maximum operating speed v_{max} =	≤ 13 km/h	≤ 8 km/h	≤ 8 km/h
Minimum operating speed v_{min} =	≥ 3 km/h		
Maximum capacity Max =	dependent on configuration		
Minimum capacity Min =	dependent on configuration		
Scale interval d =	≥ 5 kg		
Maximum number of axles per vehicle A_{max} =	120		
Maximum transit speed	30 km/h		
Direction of weighing	Either, or both directions		
Power supply	110 – 240 VAC, 50/60 Hz		
Temperature range	dependent on NAWI specifications		

Max, Min, Vmax, Vmin, and direction of weighing achieved at initial verification must be protected parameters.

Software:

The MHS software is provided as compiled executable code and runs on the motherboard within the MHS electronics box. The software cannot be modified via the user interface.

Any changes to the software will cause the software identification to change. The software identification is shown below for verification purposes:

Software identification: Motus HS 1.0.XY

Where X and Y may be any alphanumeric value and denote legally non-relevant changes.

The current software identification is inscribed on the MHS electronics box near to the rating plate and are displayed at boot-up.

Any changes to legally relevant parameters require password access and will cause a non-resettable event counter to increment. The current value of the event counter is shown by pressing “M” (menu) repeatedly until “Event Counter” is displayed, then pressing “OK”.

Interfaces

- RS232/485
- Ethernet
- USB

If other devices are required by national regulations to be connected to the interfaces listed above, the instrument shall be secured to automatically inhibit the operation for reasons of the non-presence or improper functioning of the required device.

Sealing:

The static weighbridge load cells, junction box and indicator must be physically sealed to the MHS electronics via tamper evident stickers or lead and wire type seals. The motherboard within the MHS electronics box must be physically secured within the box via tamper evident stickers or lead and wire type seals.

The value of the event counter described under Software must be written on a tamper evident label on or near the rating plate at verification.

Printing:

The instrument shall produce a printout automatically without operator intervention. the printout shall include at least the following information:

- Total vehicle mass with unit
- Single axle and axle groups weights with unit
- Date and time
- Operating speed or warning message if applicable
- Direction of weighing

Printing of single axle weights is only permitted when not part of axle groups, axle group weights must also be printed when applicable. Printing of single axle weights part of axle groups is only permitted if the weights are clearly designated as “Not verified” or similar.

Alternatives:

There are currently no authorised alternatives.