DANAK
PROD Reg. nr 7026

FORCE Certification

EU Type Examination Certificate

No. 0200-NAWI-03847

GH3+

NON-AUTOMATIC WEIGHING INSTRUMENT

Issued by **FORCE Certification**
EU - Notified Body No. 0200

In accordance with the requirements in Directive 2014/31/EU of the European Parliament and Council.

Issued to **V. Guldmann A/S**
Graham Bells Vej 21-23A,
8200 Aarhus N
DENMARK

In respect of Non-automatic weighing instrument designated GH3+ with variants of modules of load receptors and load cells.
Accuracy class III, single-interval or multi range (dual)
Maximum capacity, Max: From 200 kg to 700 kg
Verification scale interval: $e_i = Max_i / n_i$
Maximum number of verification scale intervals: $n \leq 2000$.
Variants of models are set out in the annex.

The conformity with the essential requirements in annex 1 of the Directive is met by the application of EN 45501:2015 and of OIML R76:2006.

The principal characteristics and approval conditions are set out in the descriptive annex to this certificate.

The annex comprises 8 pages.

Issued on **2018-07-05**
Valid until **2028-07-05**

Signatory: J. Hovgård

FORCE Certification references:
Task no.: 118-23277 and ID no.: 0200-NAWI-03847

Descriptive annex

Contents

1. Name and type of instrument

The non-automatic weighing instruments designated GH3+ is a class III scale intended for weighing patients for medical purpose. The scale is built into a patient hoist intended for hanging in a rail system in the ceiling.
The scale as single-interval/multi-range (dual) and is powered from an internal rechargeable battery which powers the complete hoist. The battery is charged via the rails from an external AC/DC adapter.

The scale consists of analogue to digital conversion, microprocessor control, battery charging circuitry and non-volatile memory for storage of calibration and weight data. The hoist is operated from an external handle which has an LCD display which also serves as keyboard and primary display for weighing indication.

2. Description of the construction and function

2.1 Construction

Enclosure

The scale is housed in a plastic enclosure. The enclosure contains the electronics for the weighing unit and the hoist, the load cells and the complete lifting mechanism.

Keyboard

The keyboard is placed in the handle for the hoist. The handle has two keys for operating the hoist and two keys for selecting menu's and weighing function.

Display

The scale has a small LCD display in the handle that serves as primary display, when the weighing function is selected.

Electronics

The scale has one mainboard containing the weighing electronics and a board for the lifting mechanism that also includes charging circuitry for the batteries and is part of the internal communication between weighing module and display.

Models

<table>
<tr><th>Model</th><th>Max</th><th>e</th><th>Min</th><th>Mode</th><th>No of load cells</th><th>Load cell type</th><th>E_{max}</th></tr>
<tr><td>GH3+ 200</td><td>200 kg</td><td>0.1 kg</td><td>2 kg</td><td>Single interval</td><td rowspan="7">2</td><td rowspan="13">ZEMIC H3G C3</td><td rowspan="13">250 kg</td></tr>
<tr><td>GH3+ 250</td><td>200 / 250 kg</td><td rowspan="6">0.1/0.2 kg</td><td rowspan="6">2 / 4 kg</td><td rowspan="12">Multi range</td></tr>
<tr><td>GH3+ 275</td><td>200 / 275 kg</td></tr>
<tr><td>GH3+ 300</td><td>200 / 300 kg</td></tr>
<tr><td>GH3+ 350</td><td>200 / 350 kg</td></tr>
<tr><td>GH3+ 375</td><td>200 / 375 kg</td></tr>
<tr><td>GH3+ 400</td><td>200 / 400 kg</td></tr>
<tr><td>GH3+ TWIN 250</td><td>200 / 250 kg</td><td rowspan="3">0.2/0.5 kg</td><td rowspan="3">4 / 10 kg</td><td rowspan="3">2×2</td></tr>
<tr><td>GH3+ TWIN 500</td><td>200 / 500 kg</td></tr>
<tr><td>GH3+ TWIN 700</td><td>200 / 700 kg</td></tr>
</table>

2.2 Function

The weight indicating instrument is a microcontroller-based weighing scale. The instrument is powered by an internal 24 VDC battery charged by an external AC/DC adapter intended for 230VAC.

The primary functions provided are detailed below.

2.2.1 Power-up

On power-up, the scale enters the start menu.

2.2.2 Display range

The scales will display weight from -Max (tare function) to Max +9e (gross weight).

2.2.3 Zero-setting

The scale has only initial zero-setting
Initial zero-setting range: ≤ ±10 % of Max.

2.2.4 Tare

The instrument models are provided with a semi-automatic subtractive tare.

2.2.4.1 Semi-automatic tare

The instrument models are provided with a semi-automatic subtractive tare.
Pressing the "TARE" key will enter the current weight value as the new tare weight value, if the tare function is not already active. The weight display will automatically change to the net weight display mode and turn on the NET annunciator. This tare value can be cleared by pressing the TARE key, when there is no load on the load receptor. This tare entry cannot take place, if the load receptor is in motion.

2.2.5 Operator information messages

The weight display can show a number of general and diagnostic messages, which are described in detail in the User's Manual.

2.2.6 Software version

The format of the software is X.YY, where X is the revision of the legally relevant functionality of the software and YY is the sub-revision number for software changes not related to the legal functionality of the software.

The approved version is 1.YY.

2.2.7 Event counter

The scale has an event counter which is incremented each time the configuration has been changed or the scale has been calibrated.
The event counter can be found in the INFO menu which is accessed via the display in the hand control.
The value of the counter is written on the type approval label.

2.2.8 Battery operation

The scale is supplied from an internal 24 VDC battery. The battery is charged from an external AC/DC adapter intended for 230 VAC. The scale contains the circuitry necessary to recharge the battery when the scale is connected to the mains power.

2.2.9 Gravity compensation

If the scale is to be used a different place than the one of verification, then the g-value for the place of verification shall be entered into the 'Gra' parameter, before the calibration and verification is performed. After the verification the parameter shall be set to the g-value for the place of use.
This adjustment is sealed.

3. Technical data

3.1 Scales

The GH3+ scales have the following characteristics:

Accuracy class:	III
Weighing range:	Single-interval or multi-range (dual)
Maximum number of Verification Scale Intervals:	2000
Maximum capacity (Max):	200 kg to 700 kg
Verification Scale Interval(e_i):	≥ 0.1 kg
Minimum capacity (Min):	20 e
Maximum tare effect:	≤ -Max
Mains power supply:	24 VDC from internal battery. Battery charged from 230 VAC, 50 Hz using external AC/DC adapter
Operational temperature:	-10 °C to +40 °C
Peripheral interface:	Set out in Section 4

3.2 Load cells

Zemic load cells type H3G C3 according to the table in Section 2.1.

3.3 Documents

The documents filed at FORCE (reference No. 118-23277) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interfaces

The interfaces are characterised "Protective interfaces" according to paragraph 8.4 in the Directive.

4.1.1 RS-232 interface

The scale is equipped with a RS-232 interface used for communication with the hand control.
The hand control has a further RS232 connection for a service PC.

5. Approval conditions

5.1 Measurement functions other than non-automatic functions

Measurement functions that will enable the use of the instrument as an automatic weighing instrument are not covered by this type approval.

6. Special conditions for verification

None.

7. Securing and location of seals and verification marks

7.1 Securing and sealing

Seals shall bear the verification mark of a notified body or alternative mark of the manufacturer according to ANNEX II, module F or D of Directive 2014/31/EU.

7.1.1 Scale

Access to the configuration and calibration facility is done by the use of a service PC connected to the hand control. The scale has a non-resettable event counter, which increment each time the configuration is changed or calibration performed.
The event counter is noted on the type approval label and can be found in the weighing function menu

The weighing module and the connections to the load cell are covered by a metal enclosure. Sealing of the access to the inside of the enclosure is accomplished by a sticker covering one of the assembling screws of the enclosure.

8. Location of CE mark of conformity and inscriptions

8.1 Scale

8.1.1 CE mark

CE mark and supplementary metrological marking shall be applied to the scale according to article 16 of Directive 2014/31/EU.

8.1.2 Inscriptions

Max_i, Min_i, and e_i shall be located near the display(s).

On a label located on the side of the scale enclosure:

- Manufacturer's name or trademark and postal address
- Type designation
- Model No.
- Serial No.
- Accuracy class
- Max, min, e =
- Tare (if T ≠ -Max)
- EU type examination certificate number

Electrical data and other inscriptions

9. Pictures

Figure 1 Scale in single hoist version

Figure 2 Scale in twin hoist version

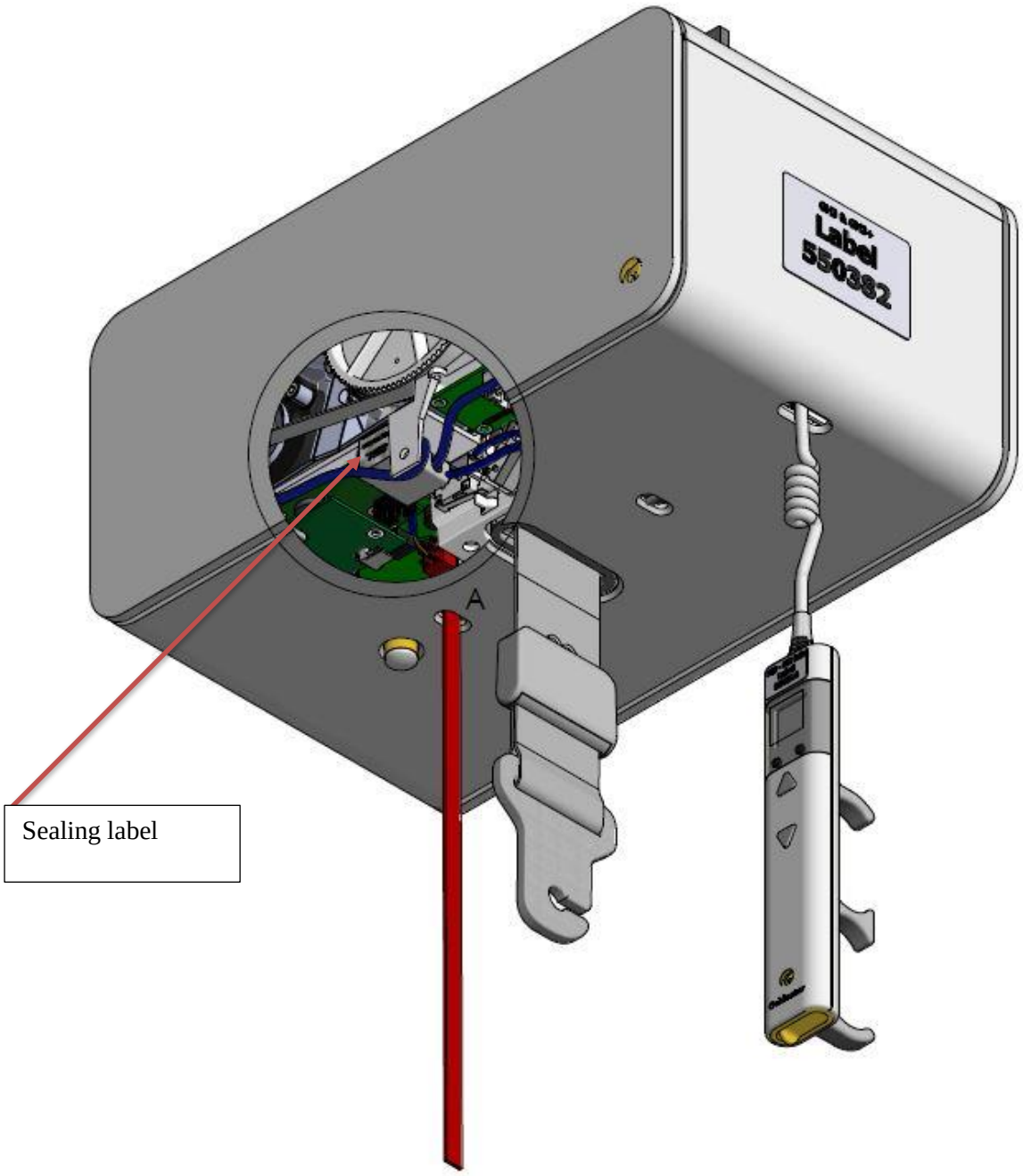

Figure 3 Sealing of weighing module and load cell connections