

Quad Load Cell Interface 2 – QLCI2

Data Sheet



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Introduction



The Quad Load Cell Interface 2 (QLCI2) for the hospital and care segment is a scale system accessory with weighing capabilities and Out of Bed functionality.

The housing makes the QLCI2 easy to mount by unique slide-on brackets and has an IPX6 Washable DURA™ ingress protection.

The QLCI2 supports the LINAK OpenBus™ system, offering a high level of customisation.

LINAK A/S delivers the OpenBus system only and is not responsible for any products (i.e. products from 3rd party suppliers) or the compatibility of such products with the LINAK OpenBus system.

Features and options

Housing colour:	Light grey, RAL 7035
Protection class:	IPX6 Washable DURA
Weight:	≈ 400 g
Power consumption:	V-Permanent 40 V = < 50 mA V-Bus 8 V = < 15 mA
Mounting:	Mounting bracket or bed frame
Cable lock:	Integrated in lid
OpenBus interface:	1 port - 10-pin modular plug
Calibration interface:	1 port - 6-pin Micro-Fit
Load cell interface:	4 ports - 6-pin Micro-Fit
Optional relay gateway:	6-pin Mini-Fit with two relays NC-NO
Standby power:	There is no standby consumption if the system is on sleep
Power supply:	Via OpenBus
Operation mode:	On mains or on battery
Weighing precision:	100 g accuracy



Usage

Operation temperature:	+5 °C to + 40 °C
Storage temperature:	-10 °C to + 50 °C
Relative humidity:	20% to 80% - non-condensing
Atmospheric pressure:	700 to 1060 hPa
Height above sea level:	Max. 3000 meters
Approvals:	- IEC60601-1 - ANSI/AAMI ES60601-1 - CAN/CSA-22.2 No 60601-1 - EN 45501/OIML R76 - EU type examination according to 2014/31/U
Compatibility:	All OpenBus™ control boxes
Flammability rating:	UL V0
Latex free:	Yes



Ordering example

	QLCI2	
Not used	00	00 = Not used
Not used	0	0 = Not used
SW option	0	0 = Standard software X = Special software
Not used	0	0 = Not used
Relay option	A	A = 2 relays B = No relays
HW functionality	1	1 = Standard version X = Special functionality
Housing / Colour	2	2 = RAL7035 (light grey)
IP protection class	9	9 = IPX6 Washable DURA™



Approvals and certifications

For approval documentation, LINAK recommends specifying the product type instead of individual item numbers to ensure broader approval coverage and simplify future product changes.

Listed LINAK item for application approval: QLCI2

If this is not possible, we advise being as non-specific as possible when specifying LINAK products in your approval application:

Listed LINAK item for application approval: QLCI2SSS*SS**S

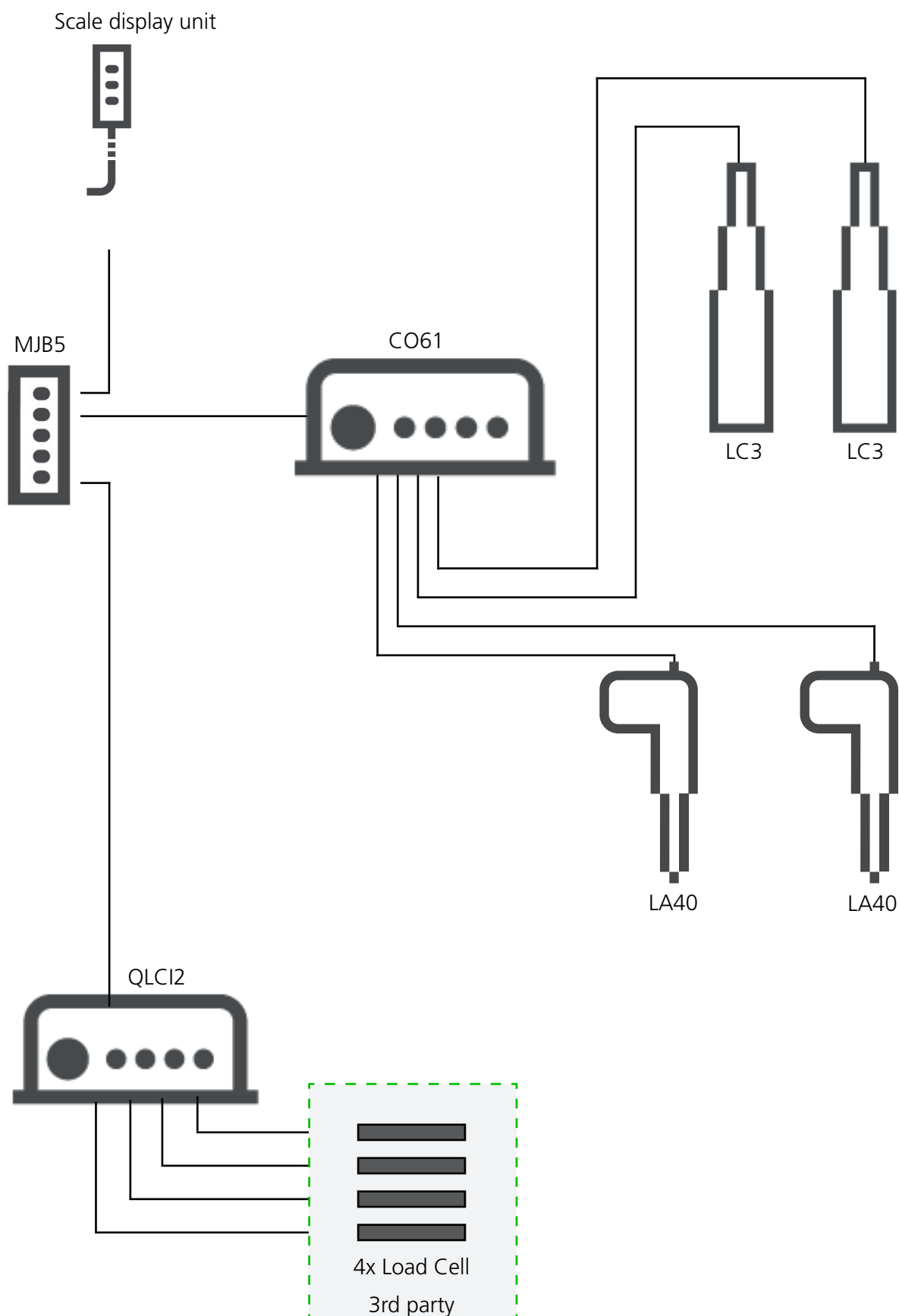
" * " is not safety critical and we recommend including a non-specific signifier such as an asterisk.

" S " is safety critical and represents a listed critical component in the product and cannot be left out.

For more information, please refer to "Approvals and certifications" in LINAK Application Design Recommendations found under User Manual for any given product on LINAK.com



System overview



Gateway

The Gateway port provides an interface from the OpenBus™ to a 3rd party hardware, for instance a nurse call system. The Gateway hardware is not a LINAk product and must be supplied by a 3rd party supplier.

3rd party product specifications must be in accordance with the QLCI2 interface description and isolation requirements.

The Relay Gateway consists of 2 relays for 3rd party feedback.

Relay 1 is used for monitoring mains power and OpenBus error information.

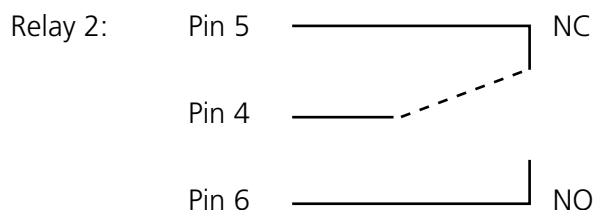
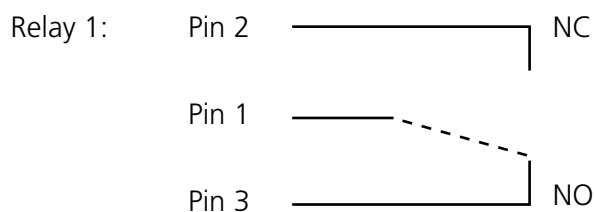
If mains power is interrupted and/or there is a system error, the relay will go to NC state; otherwise it will be in NO state. It is possible to define the GW_RL1_DEFAULT state in the LixEdit file; default state = NO when on mains.

Relay 2 is used for OpenBus notifications, such as the OOB notification.

On notification, the relay will switch from NC to NO state. It is possible to define the GW_RL1_DEFAULT state in the LixEdit file; default state = NC when on mains.

It is possible to enable a timer for Relay 2 (GW_RL2_TIMER). If the timer is enabled, the relay will change state after 2 seconds. If the timer is not enabled, the relay state will follow the notification state. The timer is by default enabled.

Pin 1	Relay 1 common
Pin 2	Relay 1 NC
Pin 3	Relay 1 NO
Pin 4	Relay 2 common
Pin 5	Relay 2 NC
Pin 6	Relay 2 NO



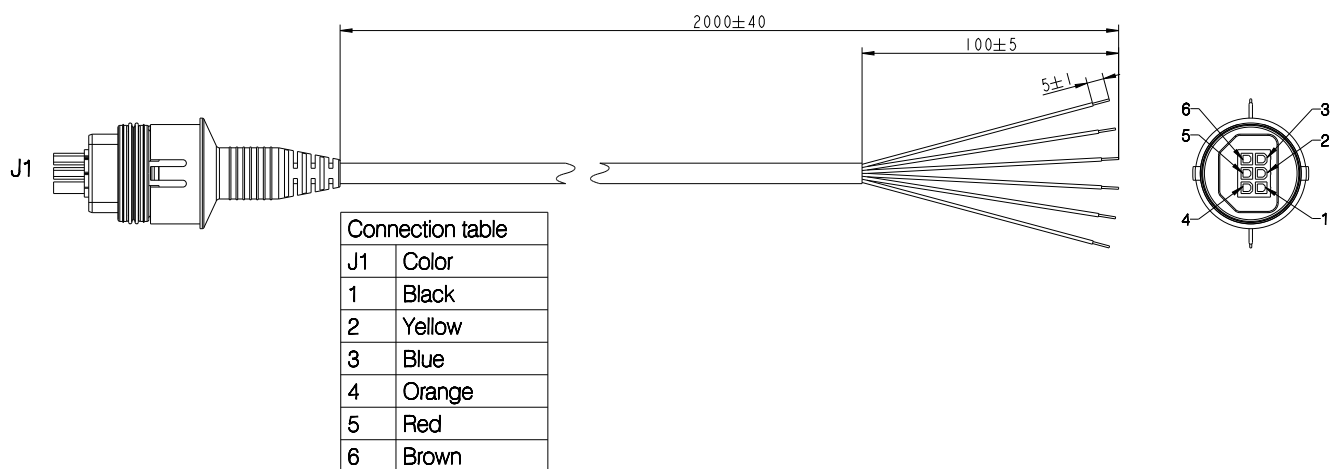
Cables

Gateway cable

Item no.: 1013W7008

Colour: RAL 7035

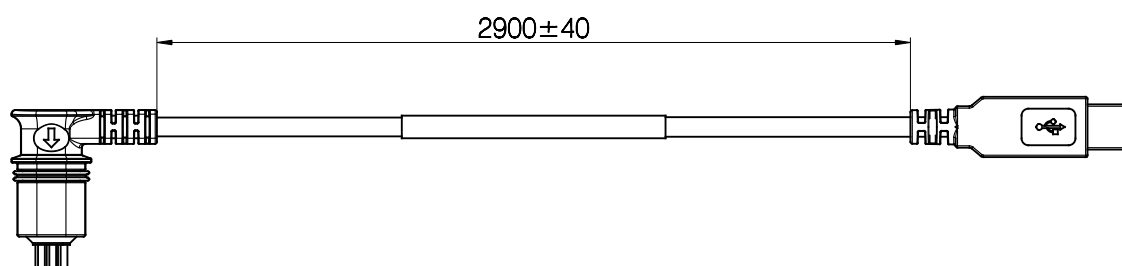
Material: PVC



Drawing No.: 1013W7008

Calibration cable

Item no.: QLCI2CALCABLE-00

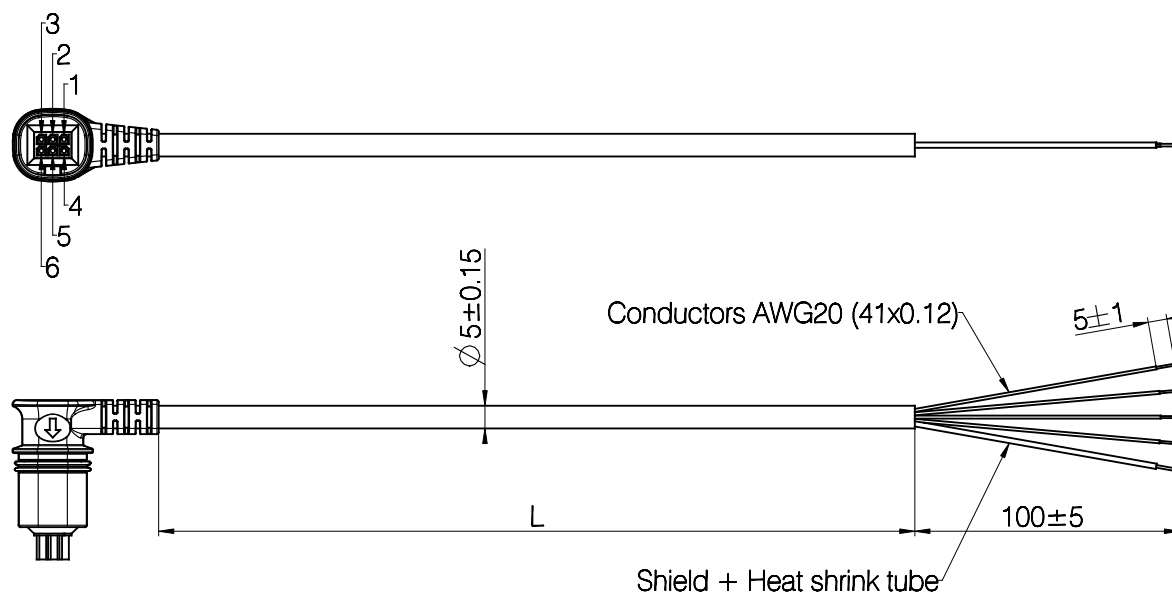


Drawing No.: 1013W7010



Load cell cable

Item no.: 1013Y7003-2000



LINAK P/N	L
1013W7003-0400	L= 400±10
1013W7003-2000	L= 2000±40
1013W7003-2300	L= 2300±40

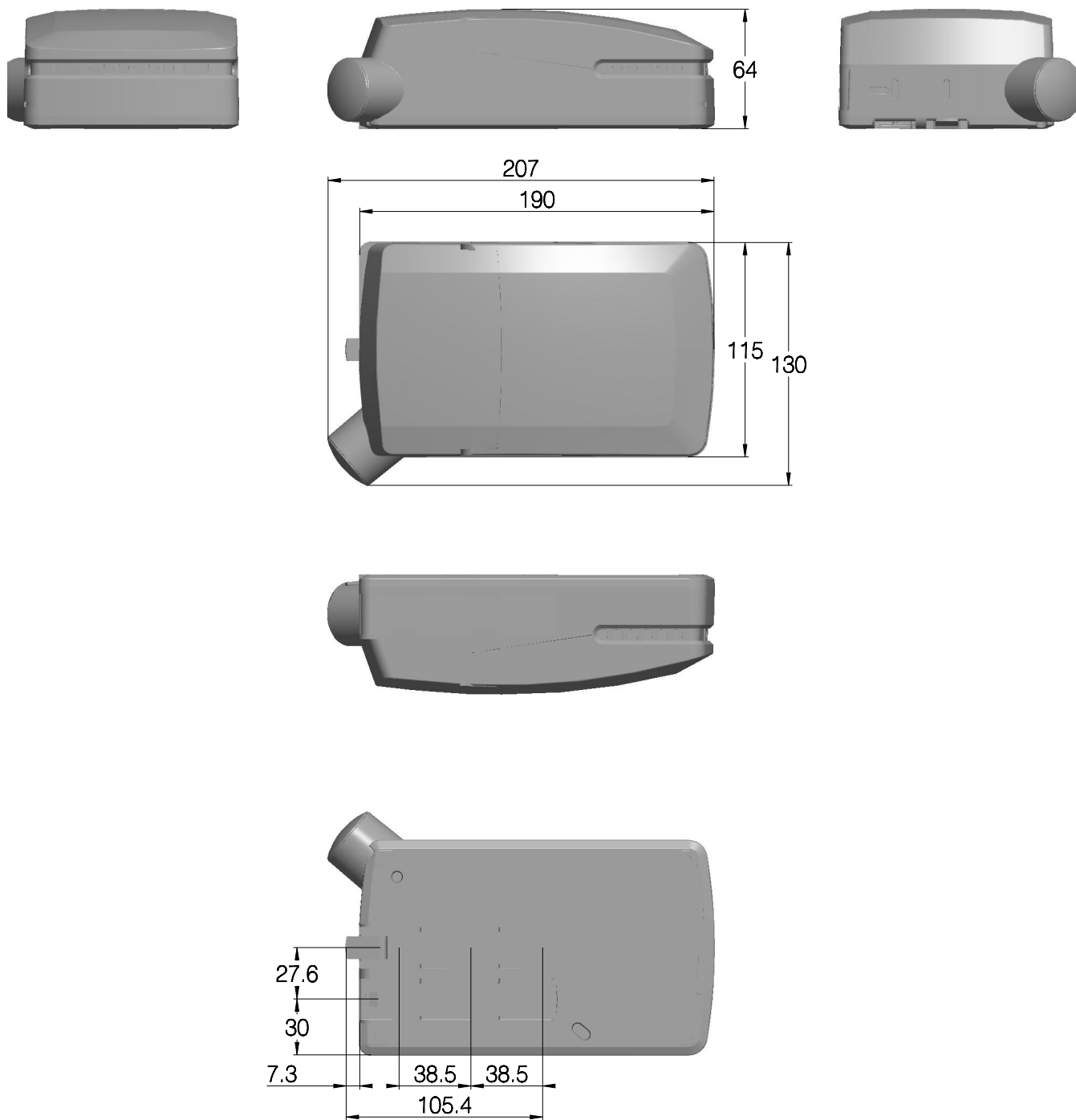
Connection table		
J1	Color	Load Cell
1	Shield	-
2	Red	- Exc
3	Brown	- Sig
4	N/C	-
5	Green	+ Exc
6	Blue	+ Sig

Drawing No.: 1013w4025



Dimension drawings

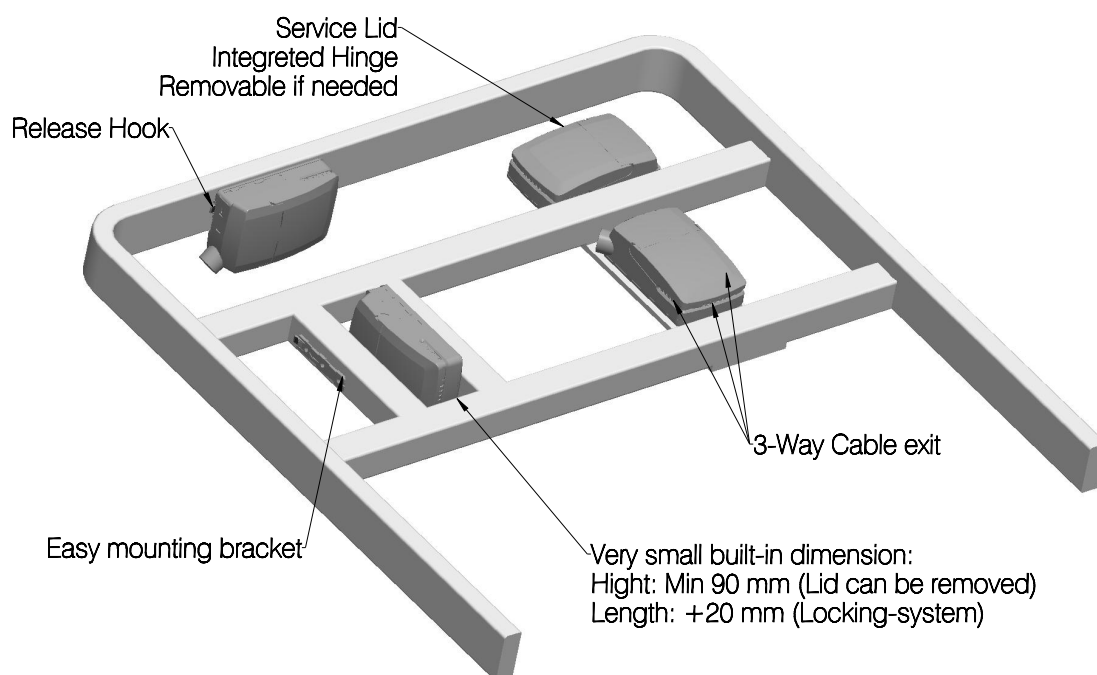
All dimensions are in mm.



Drawing no.: 1013w4020

Mounting

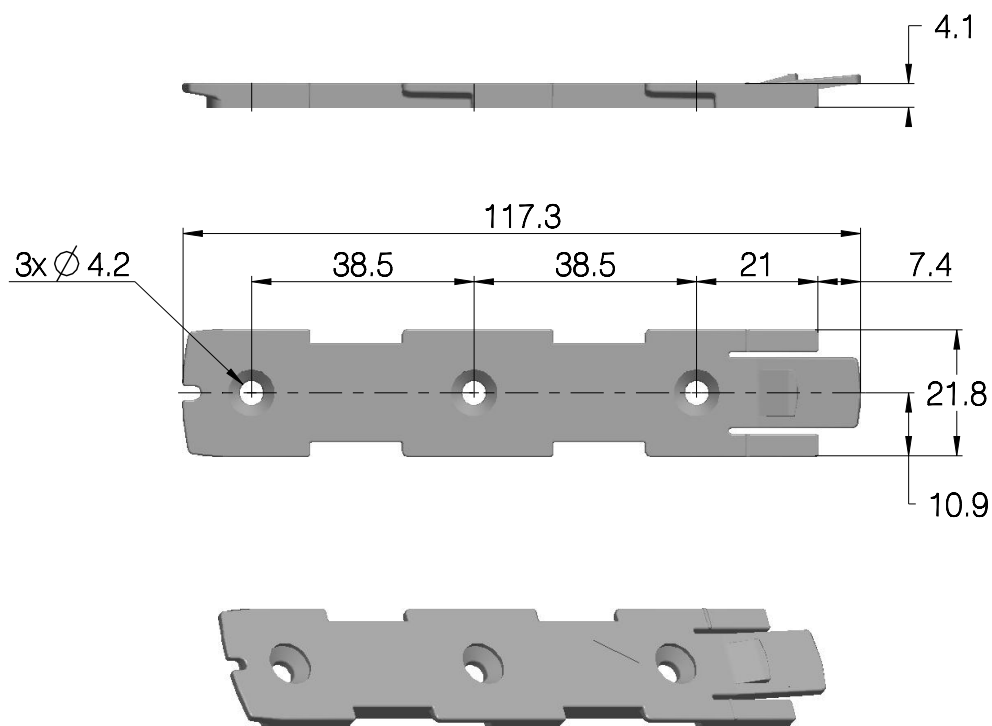
Mounted on frame



Drawing No: 1013W4008

Mounting bracket (frame flat)

Article No. 1015W1001

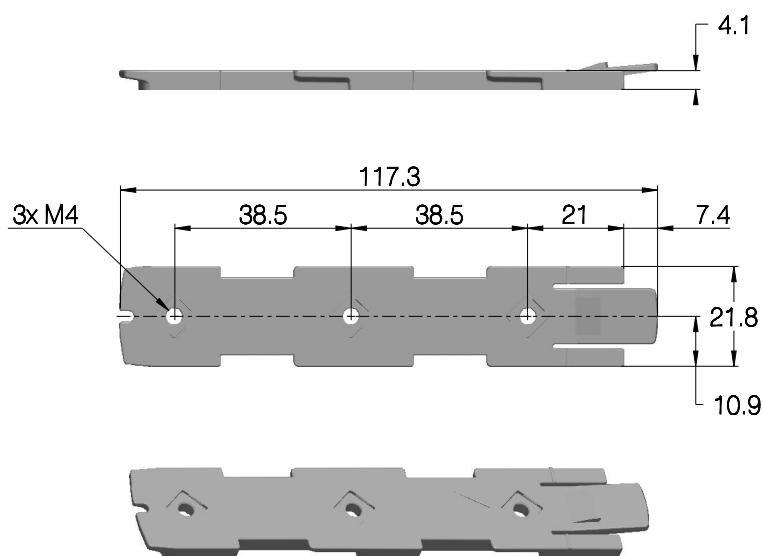


Drawing No.: 1015W4001



Mounting bracket (frame flat) w/M4 nuts

Article No. 1015W1009



Drawing No.: 1015W4009

It is recommended to mount the QLCI2 in a position that allows water to escape.

Recommended torque: 0.6Nm +/-0.1

The bracket can be mounted to the bed frame or any other application by means of one of the following mounting procedures:

- 1) M6 nut to be placed in bracket and fixed with M6 bolt from the rear side.
- 2) M5 machine screw with flat washer to be fixed through bracket with nut on the rear side.
- 3) Self-tapping screw to be placed through bracket and onto the frame.

The load cells should be mounted in the bottom frame to avoid that adjustment of the top frame affects the measurements.

The load cells must be mounted so that the only force applied is the gravitational force of the load to be measured.

Mounting of cables and cable lock

The QLCI2 have a uniquely designed cable lid. The lid also works as an integrated cable lock when closed.

1. Mount load cell cable plugs in QLCI2
2. Calibrate the system
3. Mount blind plug in calibration port
4. Close lid until lock snaps into place
5. Place calibration void label - only one is needed

To allow free access to the cables, the lid has a rest position when completely opened. It is possible to remove the lid by lifting it a few degrees and pull it away from the housing under tight mounting conditions.

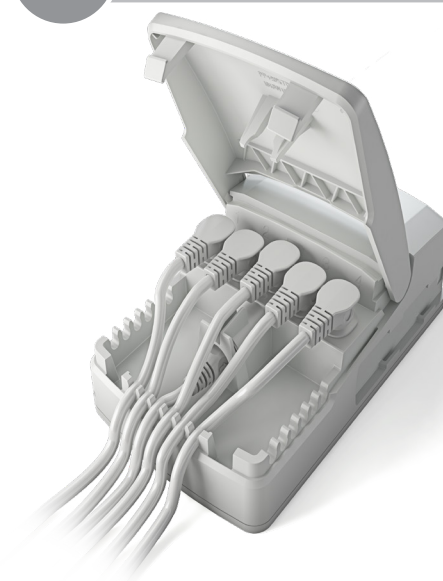
1

Mount load cell cables



2

Calibrate the system



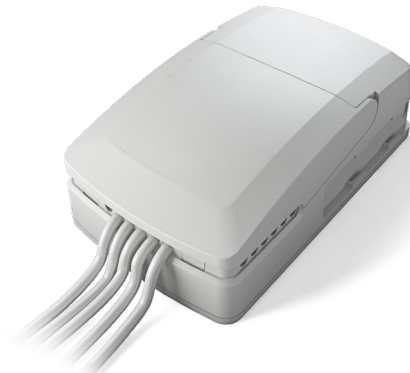
3

Mount blind plug



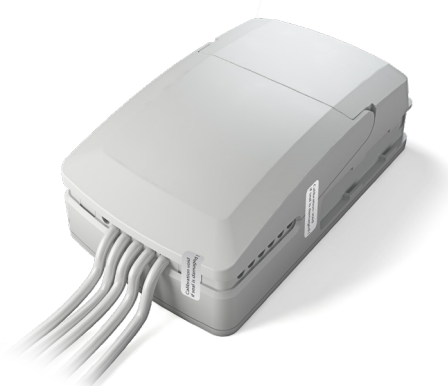
4

Close lid until it snaps



5

Place void label



Only 1 label is required. The label can be placed anywhere along the opening of the lid on the QLCI2 box.

Display option

A scale display unit is a device with the LINAK Weighing Solution, capable of

- displaying the weight of a patient
- setting the Out Of Bed feature
- saving the weight of the patient
- viewing the last 10 saved patient weight entries

Calibration

There are different ways of calibration:

1. Calibration via calibration cable and calibration software
2. Calibration via scale hand control (e.g. HB100)
3. Calibration via console program



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