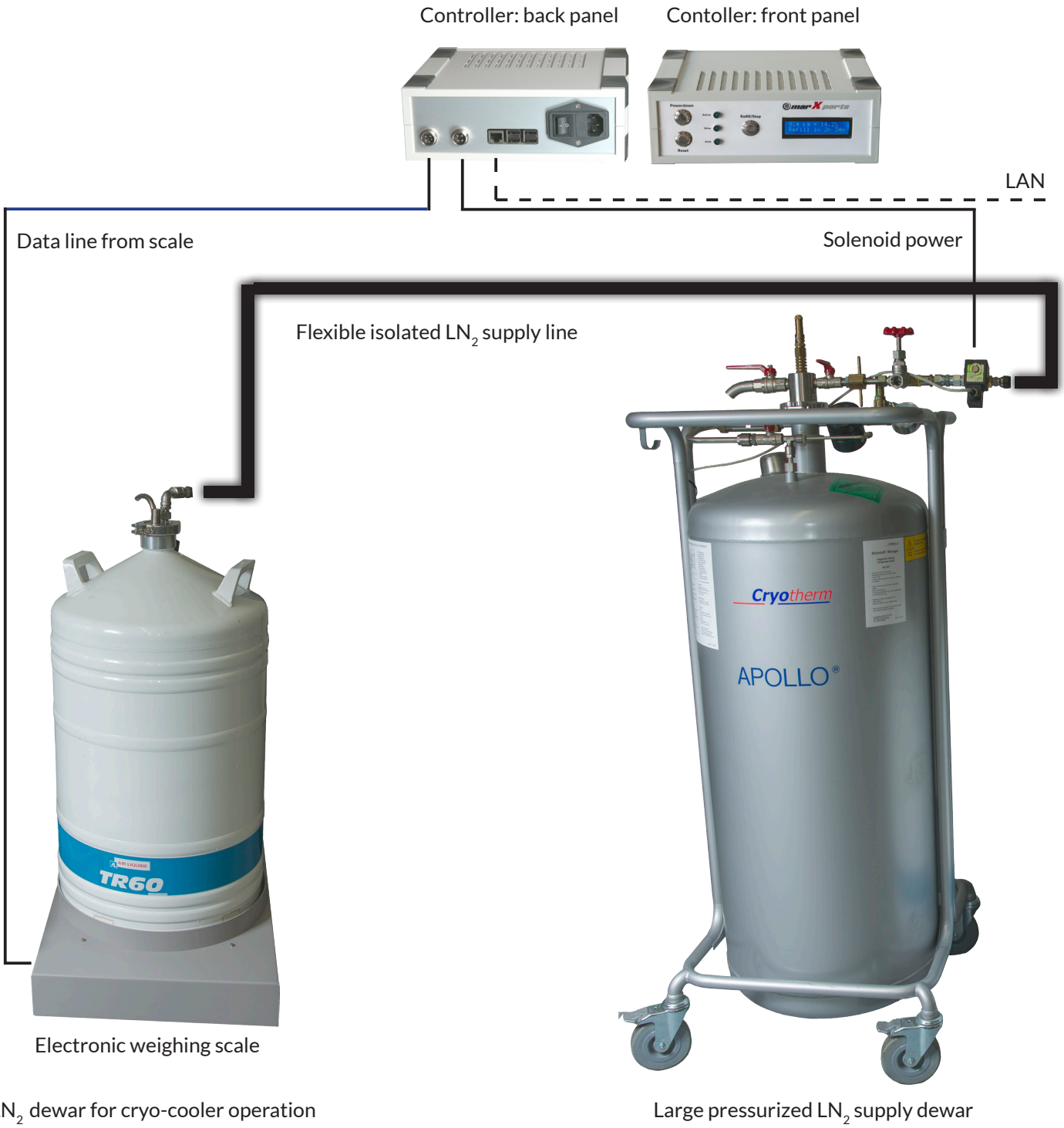
marLiN 2

Electronic Scale & Liquid Nitrogren Refill System

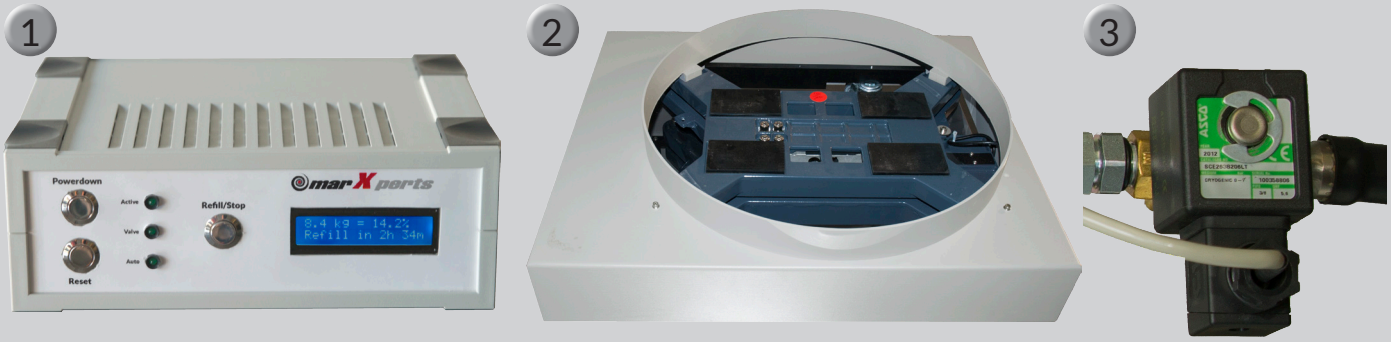
marLiN$_2$ - Electronic Scale & Liquid Nitrogen Refill System



marLiN$_2$ is a fully automatic liquid nitrogen refill system based on an electronic weighing scale. It has been designed for use in cryo-crystallography to cooperate with cryo-coolers like the Oxford Cryosystems 6/7/800 series but it can be used for any application with a need to continuously fill up a liquid container from a larger supply by opening a magnetic valve once a minimum fill level is reached and by closing the valve when reaching an upper threshold.

Even better: **marLiN$_2$** is a general purpose electronic scale that can be used to trigger some action at given weight thresholds and can easily be customized to deal with specific applications. Please ask us for details.

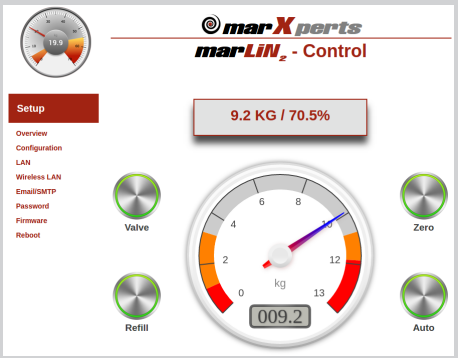
The heart of the instrument is an extremely versatile controller with full network connectivity and non-volatile memory for instrument configuration. The device can easily be controlled and configured remotely via apps for Android, iOS, Windows, Mac OS X and Linux or any web browser.

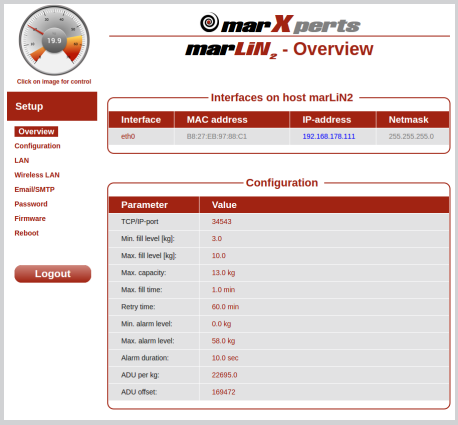


1. The **marLiN$_2$** controller is a stand-alone device that operates at 230 or 110 V with low power consumption. The most relevant information is displayed on the 16x2 character display and 3 status LEDs. Essential actions like starting and stopping a refill cycle can be triggered by a push button. Configuration parameters like minimum and maximum setpoints are easily entered by software. This can be done using a web browser on a desktop PC or a mobile device, by native apps for Windows, Mac & Linux or by an Android apps available for free from the Google Play Store.
2. The electronic scale is a high-precision scale with a default range of 0 to 150 kg. Other ranges are are available upon request. The scale is built into a solid frame with 3 steerable wheels. Moving a filled vessel around is easy even when completely filled with liquid nitrogen. The solid steel rim with a diameter of 465 mm safely accomodates vessels like the Wessington Cryogenics ES-60 or similar containers with typical capacities of 60 liters .
3. The controller sends signals to a solenoid valve optimized for handling liquids at very low temperatures. The solenoid is held warm enough to prevent ice formation. An isolated tube of 3 m length (other lengths available upon request) connects to the vessel sitting on the electronic scale. Instead of operating a solenoid valve, the controller may also operate other devices by using a TTL signal that is provided through an auxilliary connector.

INTERFACES

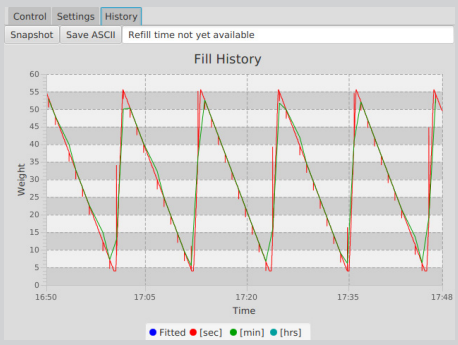
Web





Mobile

Desktop



SPECIFICATIONS

Weighing Scale:	
Dimensions	610 mm x 500 mm x 160 mm (l/w/h)
Space between scale and ground	12 mm
Wheels	3 wheels, 75 mm diameter, securable and steerable
Max. tonnage of dewar	150 kg
Max. diameter of dewar	465 mm
Controller:	
Input power	230 V or 110 V AC
Output power for valve	24 V AC / 2 A max. current (other types upon request)
Other outputs	TTL-signal on additional socket synchronized with output for valve
Measurement range	0 : 150 kg (other ranges upon request)
Display accuracy	0.1 kg
Display type	16-character x 2-line backlit LCD
Alarms	Buzzer, LED, push message to cell phone
Temperature range	0 - 40 °C
Dimensions	240 mm x 200 mm x 85 mm (l/w/h)
Connectivity	RJ-45 fast Ethernet connector & Wifi (optional)
Cryogenic valve and tube:	
Connections	NTC 3/8“ female thread, 12 mm fitting
Type of valve	ASCO SCE263B206LT 24V AC
Insulated tube	3m metal wafe tube with insert Teflon tube, connections 3/8“ male/female

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