

Software v2.2.0 release notes

for HAMILTON-T1

Introduction

The latest software version 2.2.0 is now available for your HAMILTON-T1. It provides enhancements in safety, ease of use, and performance. Together with the new software, we have also created an addendum to your Operator's Manual. Read this information before using the updated HAMILTON-T1.

High flow oxygen therapy²⁾

The HAMILTON-T1 optionally provides an integrated high flow oxygen therapy mode. With this enhancement, the HAMILTON-T1 offers a variety of therapy options, including invasive and noninvasive ventilation, and high flow oxygen therapy. In just a few steps, you can change the patient interface and use the same device and breathing circuit to accommodate your patient's needs.

Patient window and Vt/IBW (Vt/Weight)¹⁾

It is well established that you must closely monitor the tidal volume per weight, especially for ARDS patients. The HAMILTON-T1 now offers direct monitoring of the tidal volume per IBW (adult/pediatric) or tidal volume per weight (neonatal). To follow growing patients, you can change the patient height (or weight for neonatal) during ventilation using the new Patient window.

Pulse oximetry (SpO₂)³⁾

With the updated SpO₂ option, the HAMILTON-T1 provides support for Nihon Kohden sensors in addition to the Masimo SET sensors. A new *Pulse oximetry Instructions for use* is provided, which describes the use of the SpO₂ option with both Masimo and Nihon Kohden sensors.

Software changes

	SW 2.1.7	SW 2.2.0
HiFlowO2 ²⁾	-	High flow oxygen therapy mode
ASV 1.1 ¹⁾	-	ASV 1.1 seeks to minimize both the work and force of breathing, in addition to other improvements
ASV improvement	-	New formula for calculation of target/safety limit
Speaking valve compatibility ²⁾		Mode addition providing compatibility for the use of a speaking valve with PCV+, PSIMV+, and SPONT modes
Patient window ¹⁾	-	Provides access to patient settings during active ventilation; also includes ventilation timer
Vt/IBW; Vt/weight ¹⁾	-	Monitoring parameters for tidal volume per IBW (adult/pediatric) and tidal volume per kg (neonatal)
Adjustable timescale	Fixed timescale	User can adjust timescale for all waveforms
Sensors window	Sensors ON/OFF	Sensors window redesigned
End tidal CO ₂ value in graphic window ³⁾	CO ₂ waveform	PetCO ₂ and FetCO ₂ values are shown next to the CO ₂ waveform
SpO ₂ measurement ³⁾	Support for Masimo sensors	SpO ₂ measurement with Masimo or Nihon Kohden sensors Integration of X-Cal technology with Masimo sensors
Trends SpO ₂ /Oxygen trend ³⁾	-	SpO ₂ /Oxygen trend added
Flow sensor calibration	-	Now possible to calibrate adult/pediatric flow sensor with neonatal/pediatric breathing circuit
Wrong flow sensor alarm	False positive "Wrong flow sensor" alarms during neonatal ventilation	Rules for "Wrong flow sensor" alarm adjusted to avoid false positive alarms
Tightness test	-	Improved test routine
Apnea alarm setting	Control below alarm bar	Control moved above the alarm bar
Default apnea time in neonatal ventilation	15 s	5 s
Low Vt alarm min = OFF ¹⁾	Low Vt alarm min = 10 (adult/pediatric) Low Vt alarm min = OFF (neonatal)	Low Vt alarm min = OFF (adult/pediatric and neonatal)
Behavior when switching from modes where alarm can be turned "OFF" to one without	The alarm limit for high and low alarms is set to the minimum	The alarm limit is set based on IBW (adult/pediatric) or weight (neonatal)
New handling of graphic display during ventilation	Mode change and/or layout change can lead to unintended changes in the graphics displayed	When changing modes or the graphic layout, the device refreshes the display with graphics that were last used for the selected mode, or the default layout for the selected Quick Setup (Configuration). Settings that were OFF remain OFF.
Configuration window redesign	-	Can scroll through all options, including serial-number-independent options
Changed label "Utilities" to "Tools"	Utilities	Tools The Tools window provides access to gas source and data export settings.
Changed axis for volume-flow loop	Flow on x-axis, volume on y-axis	Volume on x-axis, flow on y-axis

	SW 2.1.7	SW 2.2.0
Changed label "Intellisync" to "PSync"	Intellisync	PSync ^{d)}
New position for Reset button in Alarms > Buffer window	Reset button is within the same frame as the inactive alarms	Reset button is in the blue frame of the Alarms > Buffer window
New position for Auto button in Alarms window	Auto button is within the same frame as the alarm settings	Auto button is in the blue frame of the Alarms window
New message when changing protocol for external monitoring (Configuration)	-	New message: Please wait 10 s and restart the device after changing the protocol
Pplat	Always displayed	Only displayed if end inspiratory flow is close to zero
Battery management	-	Updated battery management, including state of health calculation
Manually adjustable O ₂ alarm settings in HPO ¹⁾	-	Option to manually adjust O ₂ alarm limits when using HPO
HPO/LPO selection	Startup is always in HPO	Device starts with the last used setting
O ₂ cell calibration ¹⁾	No message	Informational message regarding O ₂ cell calibration now displayed
Language change	In Configuration, possible during ventilation	In Configuration, only in Standby
Changed Russian labels that were too long	Some Russian labels are too long	Labels corrected to fit the available space
New parameter for external monitoring: Ventilation time	-	HAM-RS232: Breathing time HAM-Block: Patient breathing time
Updates to Block protocol	-	Vt/IBW (adult/pediatric) Vt/weight (neonatal)

Changes in Philips VueLink Open protocol

	SW 2.1.7	SW 2.2.0
Changed SpO ₂ label due to conflict with other SpO ₂ monitoring sources	SpO ₂ from ventilator is first priority, SpO ₂ from Philips monitor is second priority	SpO ₂ from Philips monitor is first priority, SpO ₂ from ventilator is second priority
AWRR (respiratory rate) changed to default SPI	AWRR is not default SPI	AWRR is default SPI
Changed custom labels to Philips default labels	InspTi sPlow sETS PIP AuPEEP	InspTi sPlow sSenEx AWPin (due to Ppeak conflict) iPEEP
New parameters added	-	sFlow (setting flow)
Remapped alarm	Gas Supply ASV – Target IRV	General alarm Operator Operator

- 1) Serial-number-independent option, not available in all markets
- 2) Software option, not available in all markets
- 3) Option not available in all markets
- 4) No label change for Japanese market