



#### FEATURES

- programmable airflow meter, switch, totaliser
- self-calibrating: AIR / O<sub>2</sub> / N<sub>2</sub> / controlled mix
- temperature-compensated readings
- outstanding sensitivity & repeatability
- accurate, high resolution measurements
- high sampling rates up to 2kHz
- detachable / replaceable sensor design
- permanent, autoclavable & disposable sensors
- small dead space (sensor choice): down to 1ml
- 1 device, 4 different sensors supported
- directly human-readable ASCII data output

#### PERFORMANCE

- sampling rates 5Hz to 2kHz
- output rates from 1/day to 2kHz
- high resolution 14 bit sampling
- sensitivity to reliably detect a few ml/min
- flow ranges up to +-250 slm (std l/m)

#### CONFIGURABILITY

- multiple modes incl. for dosing & totaliser
- highly configurable with extensive options
- easy-to-use and flexible command structure
- configurable, pre-programmable, and robust
- retains & loads last saved config at bootup
- full current config can be queried explicitly
- readable, compliant, and consistent commands

#### INTEGRATION

- autonomous operation capability
- simultaneous electronic & digital interfaces
- programmable flow switch
- limit hysteresis setup in both flow directions
- 2 additional USB control solid state relays
- separate, independent, standard RS-232 link
- RS-232 fully functional in autonomous use

#### INTERFACES

- standard USB 2.0 interface (data & power)
- platform-native USB COM port implementation
- Windows / MacOS / Linux: no 3<sup>rd</sup> party driver req'd \*

\* For legacy support, a simple low profile INF driver is also supplied, for Windows 7 only (other supported operating systems require no driver files at all).

### PRODUCT DESCRIPTION

The LexcomSys GFM-3XXXUC<sup>™</sup> is a versatile, highly configurable, high performance USB flow meter specifically designed to suit a wide range of applications in mind including testing, production, research, medical, and scientific. Its unparalleled performance, with a particular reference to very high sampling rates supported with excellent sensitivity, makes it an excellent choice for applications concerning reconstruction of high frequency flow change characteristics in gas propagation.

Examples include air pump / fan performance analysis, failure prediction, flow path optimisation, turbulence reduction, and other, more conventional flow measurement applications where high sampling rates can lead to a massive increase in effective accuracy of readings over a set period.

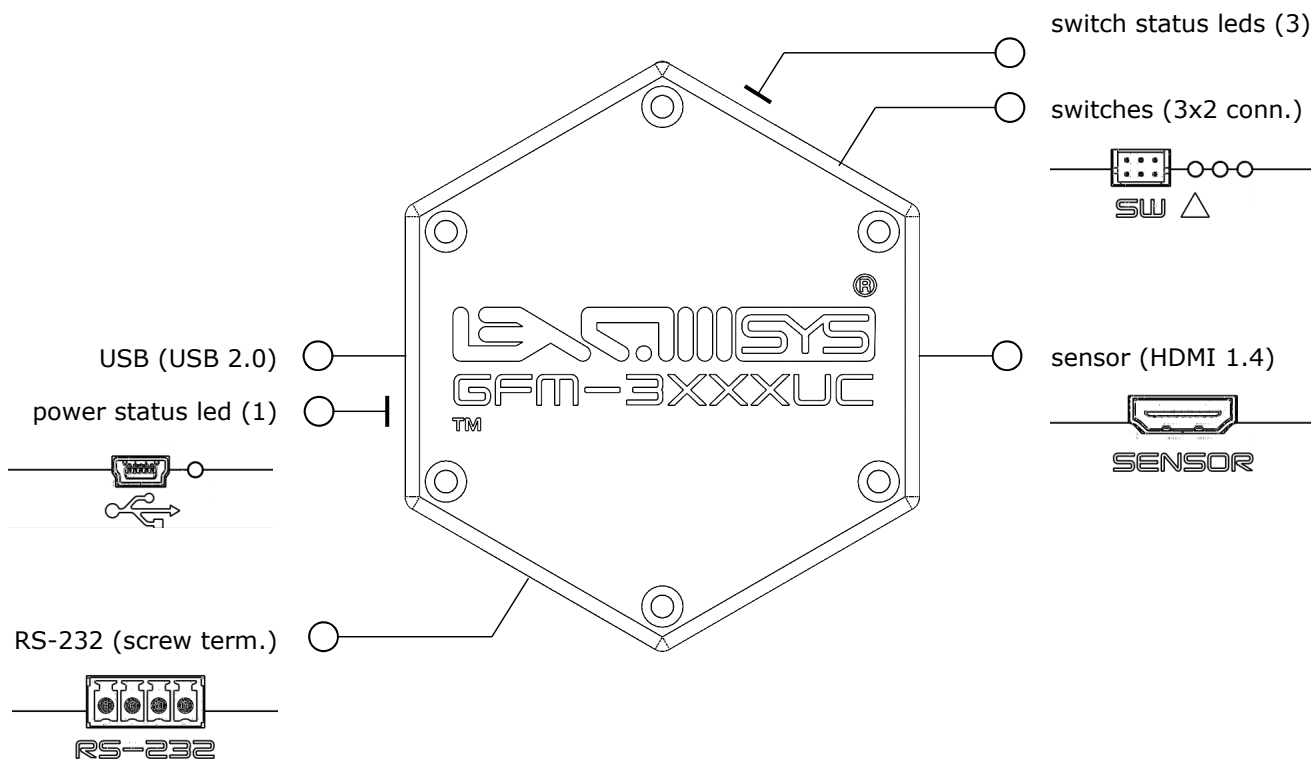
### QUICK SETUP

The LexcomSys GFM-3XXXUC<sup>™</sup> can be quickly set up by connecting it to any computer with a standard USB 2.0 cable (USB-mini-B connector on west sidewall) and a supported external Sensirion<sup>®</sup> SFM-3000<sup>™</sup> / SFM-3200<sup>™</sup> / SFM-3300<sup>™</sup> / SFM-3400<sup>™</sup> flow sensor (autocalvable, single use, or standard options available), equipped with the suitable sensor cap, to the device using a shielded HDMI-A 1.4 cable (HDMI-A connector on east sidewall).

Using the supplied HDMI cable is strongly recommended, and in no cases should the HDMI cable be longer than 1.5 metres.

Other connections such as an RS-232 simultaneous data port (4-port screw terminal connector on the southwest sidewall) or the 3-channel electronic solid state relay switch port (6-pin connector on the northeast sidewall) are also available.

Simply connect the LexcomSys GFM-3XXXUC<sup>™</sup> as follows (electronic switch and RS-232 connections are optional):



## USB OUTPUT FORMAT

The GFM-3XXXUC™ uses its USB link as its primary communication interface. Whilst the device, the measurements, and the operation is highly configurable (frequency of sampling, output, measurement type and modes, etc.), the output over USB always follows the same, readily human readable ASCII format on every single sampled / calculated output, in order to maximise ease of integration.

An output block is always a TAB (“\t” = ASCII 0x09) delimited, human readable, plain ASCII line of data, terminated by a NEWLINE character (“\n” = ASCII 0x0A). Output blocks (lines) also always consist of a fixed set of 5 data items, for full consistency, and to supporting straightforward parsing. For the same reason, all numeric measurements are output in their respective fixed units each, and at 3 digits of precision.

Flow mode tags “o”, “p”, “n” relate to the same mode (offset), but with distinction whether the offset is zero, positive, or negative respectively. Data modes indicate the device data mode, with a few momentary exceptions relating to a trigger quick-command sent in a non-trigger mode (momentary “t”), or a (totaliser / absolutiser related) zero quick-command sent in any mode (momentary “z”).

Switch modes indicate that target measurement to which the switch reacts (note totalised / absolute readings are different to the standard flow reading, and can be held, too). Generic switch mode merely indicates that the flowswitch is not automated, and is responding to external command only. Accu modes update & hold indicate whether the accumulative values (totalised & absolute measurements) are currently held (frozen), or are updating.

measurement	temperature	timestamp	switches	tags/echo/response
[slm] / [I]	[°C]	[ms]	[ ]	[ ]
numeric flow* measurement in slm (standard l/m)	temperature measurement	relative timestamp	4 digits with 0 or 1 each	“fmsa” tags or cmd echo
*litres shown in totaliser & absolutiser modes	always zero above 100Hz sampling rate	ms timestamp wrt. previous reading (in us resolution, at 3 digis of precision)	“0000” tags are flowswitch, relay A, relay B, and heater statuses in this order	“fdsa” tags are flow, data, switch, and accu tags in this order

- (1) flow [slm] or totaliser / absolutiser [I] measurement, 3 digis of precision
- (2) temperature [°C] measurement (in flowpath, note sensors are microthermal), 3 digis of precision
- (3) relative timestamp [ms] wrt. previous reading, 3 digis of precision
- (4) 4 digis in order (0=off, 1=on): flowswitch, relay A, and sensor heater status
- (5) command echo OR 4 alphabetic characters (modetags “fdsa”) in order, with options and meanings in order:

[f]low mode	= [c]ontinuous	[o]ffset	[p]ositive	[n]egative	[t]otalised	[a]bsolute			
[d]ata mode	= [f]eed	[t]rigger	[b]urst	[a]verage	[r]oll	[p]oll	[o]bjective	[z]ero	
[s]witch mode	= [g]eneric	[f]low	[t]otalised	[a]bsolute					
[a]ccu mode	= [u]pdate	[h]old							

## RS-232 OUTPUT FORMAT

The optional RS-232 link has three functional states: sensor copy, device copy, and disabled. If not disabled, and data mode is in a compatible state (feed, trigger, burst, averaging, objective), then the RS-232 normally consists of up to 10 ASCII characters, and are always terminated by a NEWLINE character (“\n” = ASCII 0x0A). This is normally simply a number, either replicating the measurement field of the USB output (device copy mode), or representing the current, actual sensor reading regardless of the device output or even configuration (sensor copy mode).

**-123.456**

An exception to this only ever occurs if an explicit query command **q** is sent via the RS-232 link to request a device response over the RS-232 link only, in which case a single device response consisting of 5 alphabetic characters occurs:

**qfdsa**

Query responses always start with a **q** followed by **fdsa** representing flow, data, switch, accu tags respectively, summarising the current device mode tags as per standard USB link output (see the USB OUTPUT FORMAT section above for reference).

Numeric outputs are signed and fractional, with dynamic decimal places. If possible (outputting less than 10 characters in total), 3 decimal places will be used (millilitres / minute or millilitres if using device copy mode with totaliser / absolutiser).

If using the full 3 decimal places is not possible (this can only ever occur in totaliser or absolutiser device copy modes), the maximum available decimal places will be used in order to be able to maintain full output rate over the RS-232 port, therefore the obtainable accuracy of readings may reduce for very large scale measurements. However, it should be put into perspective that an absolute worst case scenario of a continuous maximum flow of -250 slm (flow in the negative direction) using the highest flow range Sensirion® SFM-3300™ sensor would still take a little over 7.6 years to reach a resolution where fractional litres cannot be measured in the accumulated totaliser / absolutiser reading, with whole litres then also necessarily becoming less than 0.000001% of the total accumulated measurement volume.

## COMMAND SYNTAX (CONFIGURATION)

The GFM-3XXXUC™ accepts a multitude of configuration commands following a standardised syntax (similar to SCPI command formatting and compliance), with only a few simple rules to follow:

```
<scop:opti>
<scopefield:optionchoice>
<scopefield:optionchoice=value>
```

- all config commands must be started and terminated: start & termination characters are < and > respectively
- all commands consist of a scope and an option field at a minimum which are always separated by :
- some commands also have a value field, with values (typically, but not always a numeric value) preceded by =
- scopes & options must always be lowercase alphanumeric (first 4 characters)
- scopes & options are always only interpreted based on their first 4 case-sensitive characters each
- scopes & options can be extended beyond the first 4 characters to improve readability (similar to SCPI)
- these will have no effect on the command functionality itself (shown in grey above), however, please note:
- the maximum command length is 63 bytes, and very long commands may also affect performance momentarily

## COMMAND SYNTAX (SINGLE ACTIONS)

The GFM-3XXXUC™ also accepts a limited set of single action commands all consisting of a single alphabetic character, with no start & termination characters:

x

These commands have no fields, options, or separators: just a single character needs to be sent, minimising serial data read overhead, and hence maximising responsiveness. Accordingly, these commands allow for undisturbed sampling times via USB when sent and actioned, even at the maximum 2kHz sampling rate, and are also accepted without sampling time artefacts or penalty over the independent RS-232 link (when enabled & connected).

## COMMAND REFERENCE

The GFM-3XXXUC™ has 27 configuration items (the last saved configuration set always automatically loads at each power-up). In total, the device accepts 5+60 different commands covering all single actions, configuration items, and queries.

All commands will be echoed in the tags/echo/response output as and when received (in the same sampling cycle). If a response request was received, the device response in the tags/echo/response output field will appear in a separate output line. This allows full compliance with the USB output format specified above, offering easy to read output data blocks (ASCII lines), that are also fully consistent to parse programmatically.

If a valid command with a =value field is received with =value out of permitted range, the command will still be applied, but with =value coerced to the closest permissible number. The permissible value range is listed in the table below. Some commands (hysteresis action boundary values) have further limitations that depend on values of others (e.g. constrained order). In these cases, too, =value will be automatically coerced to the closest permissible number, if coercion is necessary.

command	range = ?	description
t	n/a (single action)	Universal trigger action (sends an immediate trigger). Can be sent both over USB and RS-232 links, if enabled. Does not produce a stand-alone echo when received (causes a momentary data mode tag change to t instead).
z	n/a (single action)	Universal zero action (immediately zeroes / tares accumulatives, totaliser and absolutiser). Can be sent both over USB and RS-232 links, if enabled. Does not produce a stand-alone echo when received (causes a momentary data mode tag change to z instead).
u	n/a (single action)	Universal update accumulatives switch. Can be sent both over USB and RS-232 links, if enabled. Does not produce a standalone echo when received (causes a persistent accumode tag change to u unstead). see functional equivalent <accu:upda>
h	n/a (single action)	Universal hold accumulatives switch. Can be sent both over USB and RS-232 links, if enabled. Does not produce a standalone echo when received (causes a persistent accumode tag change to h unstead). see functional equivalent <accu:hold>
q	n/a (single action)	RS-232 link mode tags query (immediately requests an output over the RS-232 link, responding with 5 characters: qfdsa where q is a fixed query indicator prefix, and fdsa are the flow, data, switch, and accu tags respectively) – see USB OUTPUT FORMAT section. Can be sent over RS-232 link only, if enabled. Does not produce a standalone echo when received (causes a single device response over RS-232 as per above).

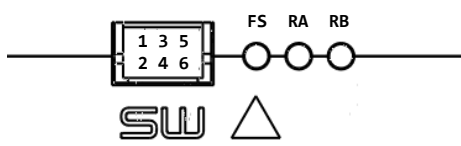
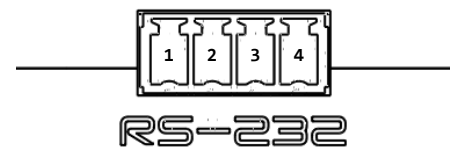
command	range = ?	description
<data:feed>	-	Feed mode: continuously triggered measurements at the specified sampling rate, and also respecting the specified decimation count. see <setv:samp=?> & <setv:deci=?>
<data:trig>	-	Trigger mode: single snapshot measurement taken and output immediately and on trigger only, ignoring sampling rate set. see <b>t</b>
<data:burs>	-	Burst mode: a fixed number of measurements, at the specified sampling rate, (re)started on trigger only. see <setv:burs=?>
<data:aver>	-	Averaging mode: continuously triggered and averaged measurements run at the specified sampling rate, but with output only occurring once a new averaged value based on a fixed number of samples is available). see <setv:aver=?>
<data:roll>	-	Roll mode: continuously free-rolling measurements at the specified roll rate (different from sampling rate). see <setv:roll=?> Note that RS-232 link output will be automatically suspended in roll mode, since the RS-232 link's maximum sampling rate is 1kHz (and is fixed at 115200 BAUD for maximum compatibility)..
<data:poll>	-	Poll mode: fixed number of free-rolling measurements at the specified roll rate (different from sampling rate), on trigger only. see <setv:poll=?> & <setv:roll=?> Note that RS-232 link output will be automatically suspended in poll mode, since the RS-232 link's maximum sampling rate is 1kHz (and is fixed at 115200 BAUD for maximum compatibility).
<data:obje>	-	Objective mode: continuously triggered measurements running until reaching objective value (from any direction). Can be restarted by sending a trigger <b>t</b> . see <setv:obje>
<flow:cont>	-	Continuous flow mode (measurement field shows flow in slm, standard litres per minute).
<flow:offs>	-	Offset flow mode (flow measurement field shows flow in slm, standard litres per minute, but with a configurable offset applied). see <setv:offs=?>
<flow:tota>	-	Totaliser flow mode (flow measurement field shows totalised gas volume, signed, taking direction into account). see <accu:upda> & <accu:hold> & <swit:tota>
<flow:abso>	-	Absolutiser flow mode (flow measurement field shows total gas volume movement regardless of direction). See <accu:upda> & <accu:hold> & <swit:abso>
<accu:upda>	-	Update accumulatives mode (totaliser & absolutiser values are updating continuously, even in background, i.e. even when in continuous or offset flow modes). see relevance of <getv:tota> & <getv:abso>
<accu:hold>	-	Hold accumulatives mode (totaliser & absolutiser values are held at their last value when mode was switched to hold, even in background, i.e. even when in continuous or offset flow modes). see relevance of <getv:tota> & <getv:abso>
<setv:samp=?>	1000 to 200000	Set sampling time in microseconds (feed, trigger, burst, averaging, objective modes).
<setv:roll=?>	500 to 1000	Set rolling time in microseconds (roll, poll modes).
<setv:deci=?>	1 to 432000	Set output decimation (ouput every ?-th of sampled).
<setv:aver=?>	1 to 432000	Set averaging set (output at time of every ?-th of samled, with full set averaged).
<setv:burs=?>	1 to 432000	Set burst count (output a fixed ? number of sampled measurements when triggered).
<setv:poll=?>	1 to 432000	Set poll count (output a fixed ? number of rolled measurements when triggered).
<setv:gasc=?>	0 to 100	Set gas correction as % proportion of oxygen in an O2+N2 mixture. Use 21 for air.

command	range = ?	description
<setv:heat=?>	0 or 1	Set sensor air path heater toggle (0 = off, 1 = on). Please note that when the Sensirion® SFM-3000™ sensor is selected for use, the gas path heater is always disabled, regardless of configuration (this sensor model does not contain a DC heater component). see <sens:3000> as well as <heat:****> commands
<setv:hset=?>	-200000 to 200000	Set heater setpoint above which sensor air path heater is enabled in automatic heater mode (Sensirion® SFM-3200™, SFM-3300™ and SFM-3400™ only). see <heat:auto>
<setv:temp=?>	0 or 1	Set temperature reading toggle (0 = off, 1 = on). Please note that a temperature readings are only available under 100Hz ( $t_{\text{samp}} \geq 10000\mu\text{s}$ ). see <setv:samp=?>
<setv:swit=?>	0 or 1	Set flowswitch state toggle (0 = off, 1 = on). also see <swit:****> commands
<setv:swip=?>	0 or 1	Set flowswitch polarity toggle (0 = on inside, off outside hysteresis-defined band, 1 = off inside, on outside hysteresis-defined band). This is used to switch the polarity of automatic flowswitch action without being required to reconfigure hysteresis boundary values. see <setv:seup=?> & <setv:sddo=?> & <setv:sdup=?> & <swit:sedo>
<setv:rela=?>	0 or 1	Set relay A state toggle (0 = off, 1 = on).
<setv:relb=?>	0 or 1	Set relay B state toggle (0 = off, 1 = on).
<setv:seup=?>	-2000000 to +2000000	Set hysteresis perimeter value in ml(/min): switch enabled on upwards crossing. Of 4 hysteresis values in total, this must be the highest (will be coerced otherwise).
<setv:sddo=?>	-2000000 to +2000000	Set hysteresis perimeter value in ml(/min): switch disabled on downwards crossing. Of 4 hysteresis values in total, this must be the 2 <sup>nd</sup> highest (will be coerced otherwise).
<setv:sdup=?>	-2000000 to +2000000	Set hysteresis perimeter value in ml(/min): switch disabled on upwards crossing. Of 4 hysteresis values in total, this must be the 2 <sup>nd</sup> lowest (will be coerced otherwise).
<setv:sedo=?>	-2000000 to +2000000	Set hysteresis perimeter value in ml(/min): switch enabled on downwards crossing. Of 4 hysteresis values in total, this must be the lowest (will be coerced otherwise).
<setv:obje=?>	-2000000 to +2000000	Set objective value at which the continuous output of measurements is suspended (whenever reached, from any direction), in objective data mode. see <data:obje>
<setv:offs=?>	-2000000 to +2000000	Set offset value applied to measurement, in offset flow mode. see <flow:obje>
<setv:user=?>	20 ASCII characters max.	Set a userID for the device (20 characters max., any printable character can be used). Note that if the userID is empty when this command is sent, no change will be applied. Also note that once saved to config, this parameter will NOT be reset by <conf:rese> .
<getv:tota>	-	Requests a currently updating or held value of the totaliser as a device response, from any flow mode. see relevance of <accu:upda> & <accu:hold>
<getv:abso>	-	Requests a currently updating or held value of the absolutiser as a device response, from any flow mode. see relevance of <accu:upda> & <accu:hold>
<getv:devi>	-	Requests a device ID as a device response. This data cannot be written.
<getv:seri>	-	Requests a device serial number as a device response. This data cannot be written.
<getv:sens>	-	Requests a sensor serial number as a device response. This data cannot be written.
<getv:user>	-	Requests a user ID as a device response. see <setv:user=?>
<getv:conf>	-	Requests full configuration output as a device response (all 27 items). All 27 items will be output over the USB port in rapid succession, in actual command format, and including those that are not reset by requesting a factory preset (2). see <conf:rese>

command	range = ?	description
<conf:save>	-	Saves the currently applied configuration (all 27 items) to device (the last saved configuration is always loaded automatically on each power-up).
<conf:rese>	-	Resets and applies a known factory default configuration. Note that 2 items out of 27 total will NOT be reset, for compliance & usability reasons, these are the userID set for the device, and the sensor model selection. see <setv:user=?> & <sens:****> commands
<swit:gene>	-	Enables generic flowswitch mode (toggled on command only).
<swit:flow>	-	Enables hysteresis-controlled flowswitch mode (toggled based on hysteresis setup). see <setv:seup=?> & <setv:sddo=?> & <setv:sdup=?> & <swit:sedo>
<swit:tota>	-	Enables totaliser-sensitive flowswitch mode (toggled based on hysteresis setup). see <setv:seup=?> & <setv:sddo=?> & <setv:sdup=?> & <swit:sedo>
<swit:abso>	-	Enables absolutiser-sensitive flowswitch mode (toggled based on hysteresis setup). see <setv:seup=?> & <setv:sddo=?> & <setv:sdup=?> & <swit:sedo>
<syst:rebo>	-	Reboots entire device with a 300ms power cut to sensor.
<syst:rese>	-	Stops and restarts sensor only.
<syst:firm>	-	Queries firmware version (also see header of this document, under model name dash).
<heat:manu>	-	Manual sensor gas path heater mode (toggled on command only).
<heat:auto>	-	Automatic sensor gas path heater mode (toggled on heater set point). see <setv:hset>
<heat:disa>	-	Disables sensor gas path heater and access to it (cannot be toggled & ignores setup). Please note that when the Sensirion® SFM-3000™ sensor is selected for use, the gas path heater is always disabled, regardless of configuration (this sensor model does not contain a DC heater component). see <sens:3000>
<port:sens>	-	Enables RS-232 port I/O in sensor copy mode (always reads sensor output, regardless of device output setup or configuration: can be used as an separate, parallel data link for a different measurement).
<port:devi>	-	Enables RS-232 port I/O in device copy mode (always reads device output, tracing device output setup and configuration: can be used as an separate, parallel data link for a different measurement).
<port:disa>	-	Disables RS-232 port I/O. Note that the RS-232 port in disabled mode also does not accept any commands, which includes single action (single character) commands, even if specific to the RS-232 link.
<sens:3000>	-	Selects the Sensirion® SFM-3000™ sensor for use (applies corresponding scaling etc.). When the Sensirion® SFM-3000™ sensor preset is selected, the gas path heater is always disabled, regardless of configuration (no DC heater in sensor). see <heat:disa> Note that once saved to config, this parameter will NOT be reset by <conf:rese> .
<sens:3200>	-	Selects the Sensirion® SFM-3200™ sensor for use (applies corresponding scaling etc.). Note that once saved to config, this parameter will NOT be reset by <conf:rese> .
<sens:3300>	-	Selects the Sensirion® SFM-3300™ sensor for use (applies corresponding scaling etc.). Note that once saved to config, this parameter will NOT be reset by <conf:rese> .
<sens:3400>	-	Selects the Sensirion® SFM-3400™ sensor for use (applies corresponding scaling etc.). Note that once saved to config, this parameter will NOT be reset by <conf:rese> .



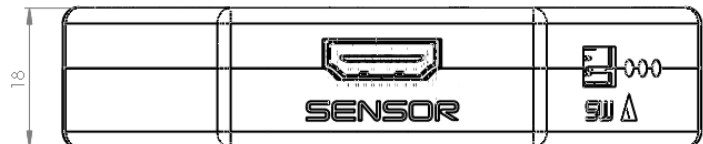
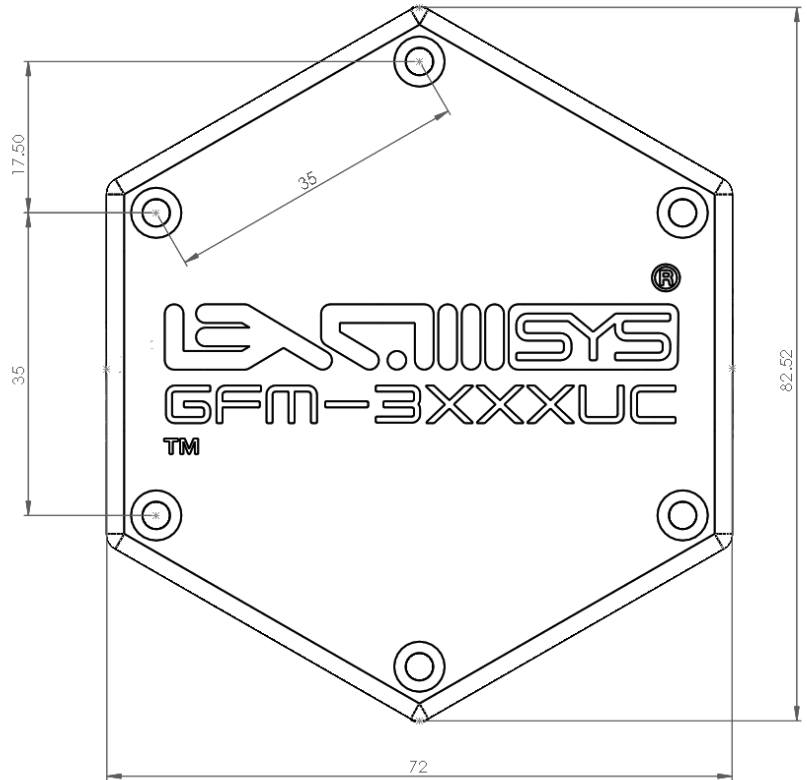
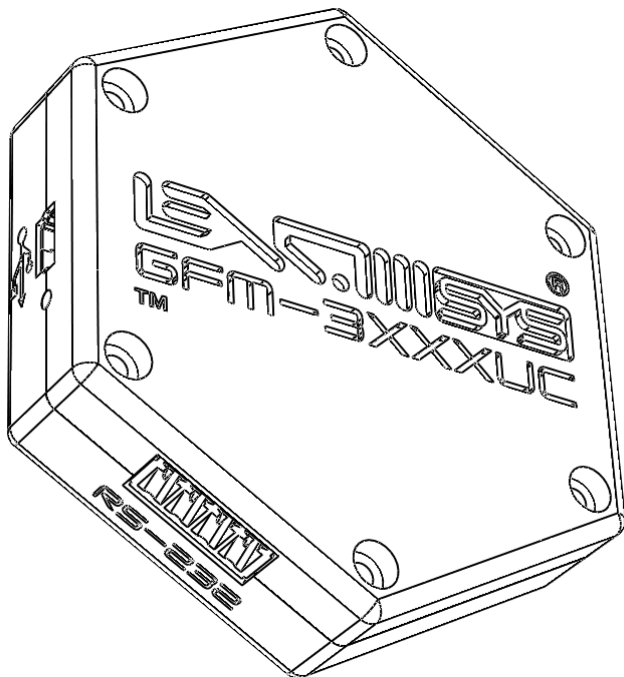
TECHNICAL SPECIFICATIONS

<b>MODEL NAME</b>	GFM-3XXXUC™	<b>OTHER COL</b>	Other specs
<b>MAIN INTERFACE</b>	USB 2.0 2000000 (2M) BAUD serial COM port	<b>USB CABLE</b>	USB 2.0 (5m max.) USB A (male) to mini-B (male)
<b>SENSOR INTERFACE</b>	HDMI-A 1.4 sensor communication & heater power	<b>HDMI CABLE</b>	HDMI-A 1.4 (1.5m max.) Shielded
<b>SWITCH INTERFACE</b>	Single Pole SSR normally open solid state, voltage free DF11 switch socket MFRDF11-3DP 6 conductors, 2.00mm pitch connector supplied	<b>SAMPLING DETAILS</b>	Sampling rate: 5Hz to 2kHz Sampling resolution: 14 bit Serial output rate: 1/day to 1kHz Serial output format: ASCII Termination character: NEWLINE, 0x0A Field separation character: TAB, 0x09
<b>SWITCH WIRING AND LEDS</b>	 <p>Flowswitch      Relay-A      Relay-B 1:blue            3:grey          5:black 2:green          4:purple        6:white</p>	<b>SENSORS SUPPORTED</b>	Sensirion® SFM-3000™ Sensirion® SFM-3200™ Sensirion® SFM-3300™ Sensirion® SFM-3400™
<b>SWITCH RATINGS</b>	1000 mA max. 24V dc max.	<b>SENSOR MEDIUM</b>	Air, N <sup>2</sup> , O <sup>2</sup> , N <sup>2</sup> +O <sup>2</sup> controlled mixtures other non-corrosive gases
<b>SWITCH POLARITY</b>	Bidirectional Not polarity sensitive	<b>CURRENT CONSUMPTION</b>	180 mA (typ.) via USB 2.0 250 mA (max.) via USB 2.0
<b>MAX. SWITCH FREQUENCY</b>	1 kHz Command / Firmware (auto) controlled	<b>COMPLIANCE STANDARDS</b>	CE, WEEE, FCC (pending), UL
<b>RS-232 INTERFACE</b>	RS-232 115200 (115.2k) BAUD serial COM port BC/SC screw term. socket 1795150000 BC/SC screw term. block 1792790000 4 conductors, 3.81mm pitch connector supplied	<b>ENCLOSURE</b>	3D printed nylon SLS Matte black, coarse polished
<b>RS-232 PIN ASSIGNMENT</b>	 <p>1:NC 2:GND 3:TX/output 4:RX/input</p>	<b>MOUNTING SCREW HOLES</b>	M3 cap head (6x) cylindrical cap head 5.5 mm dia. (head) 3.0 mm height (head)
<b>RS-232 DETAILS</b>	TX/output voltage swing: ±5.7V typ. RX/input logic: low<2.0V high>2.1V screw term. wire dia.: 0.2mm <sup>2</sup> -1.5mm <sup>2</sup> screw term. wire strip len.: 7mm screw torque: 0.20Nm-0.25Nm screwdriver blade: 0.4x2.5mm flat	<b>DIMENSIONS</b>	72 x 82.5 x 18 mm (rectangular bounds) regular hexagon shaped

All specifications are subject to change without notice.

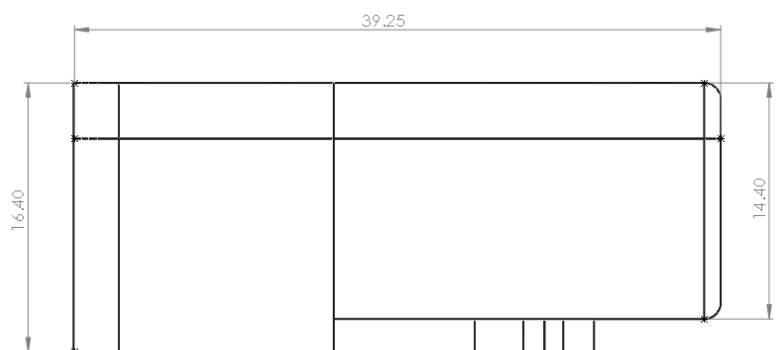
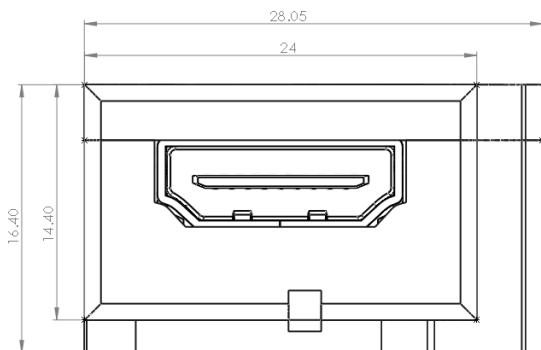
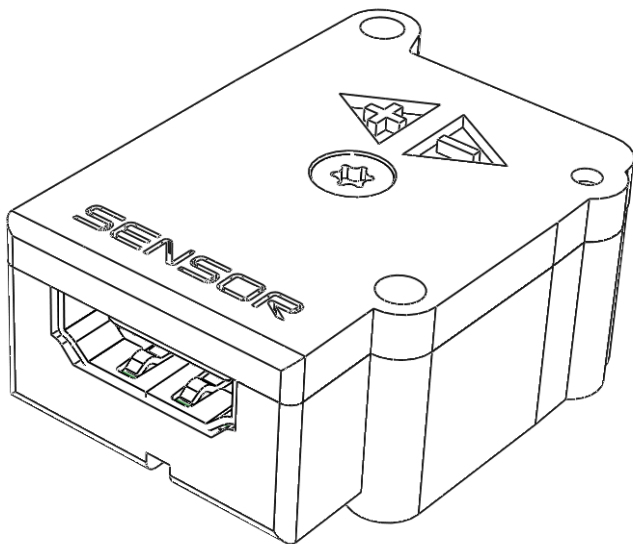
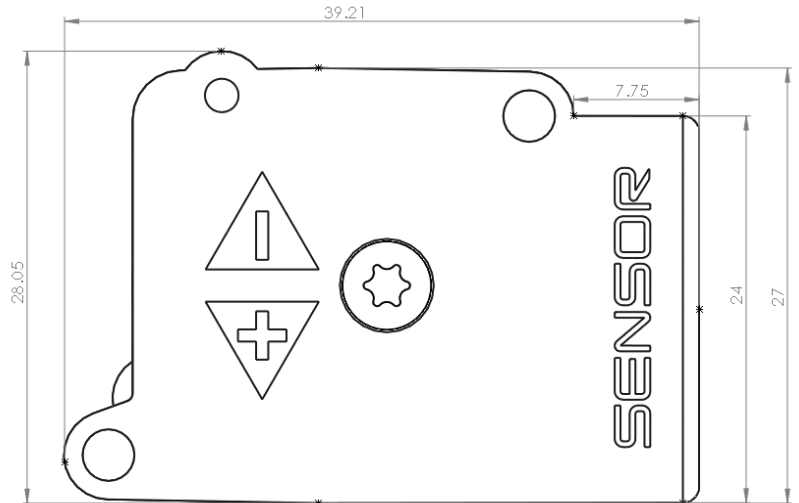
### DIMENSIONS (GFM-3XXXUC)

All dimensions are in mm. Mounting holes are designed for M3 screws with a 5.5mm (dia) x 3mm (h) cylindrical cap head.



### DIMENSIONS (3000 CAP)

All dimensions are in mm. This cap is only compatible with the Sensirion<sup>®</sup> SFM-3000<sup>™</sup> sensor model.



**DIMENSIONS (3200/3300/3400 CAP)**

All dimensions are in mm. This cap is compatible with the Sensirion® SFM-3200™, SFM-3300™, SFM-3400™ sensor models.

