

HACH SC200 UNIVERSAL CONTROLLER WITH ULTRASONIC FLOW SENSOR



Applications

- Wastewater
- Collection Systems
- Industrial Water



The SC200 Universal Controller with Ultrasonic Sensor is designed to give highly accurate flow and depth measurements for your open channel flow monitoring applications.

From the easy-to-read display to reliable data management with SD card data transfer, the flow system provides an economical choice for flow monitoring.

The flow system can be used for a variety of applications including NPDES permitting requirements and the monitoring of storm water, inlet flow, final effluent and activated sludge. It replaces the Hach GLI53 analog controller with advanced features for easier operator use.

The SC200 controller platform can be configured to operate either 2 Digital Sensor Inputs, or 1 or 2 Analog Sensor Inputs, or a combination of Digital and Analog Sensor Inputs. Customers may choose communication options from a variety of offerings ranging from MODBUS RTU to Profibus DPV1.

Maximum Versatility

- Standardized controller eliminates the need for a variety of dedicated controllers
- Multi-channel controller operates either 1 or 2 sensors reducing inventory holding costs and providing an inexpensive option to add a second sensor at a later time
- True dual sensor controller provides 4-20 mA outputs to transmit primary and secondary measurement values
- Controller may be panel, surface or pole mounted (hardware included)

Display

- Large display with scrolling menus for easy set up
- Transreflective display stays readable even in sunlight

Data Management

- SD Card simplifies data download and transfer
- Update firmware via SD card or special RS232 cable

Ultrasonic Flow Sensor

- Select primary gauging structure from the library of flumes and weirs for flow sensor set up or enter a flow curve for non-standard structure
- Non-contact flow sensor requires no routine maintenance
- Pulse echo technology

Sensor Inputs

- Analog sensor modules may be added in the field
- Digital sensor ports are factory installed
- Controller will scan and detect new sensors added
- Works with GLI and Hach digital sensors

Analog Inputs

- Enables non-sc analyzer monitoring
- Accepts mA signals from other analyzers for local display
- Consolidates analog mA signals to a digital output

4-20 mA Outputs

- Total of six (6) 4-20 mA outputs (2 std/4 optional) enables up to 3 mA outputs per sensor input

Digital Communication

- MODBUS 232/485 and Profibus DP V1.0

Ease of Use and Confidence in Results

- New display and guided calibration procedures reduce operator error
- Password protection to prevent tampering and unwanted programming changes
- Visual warning system provides critical alerts



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Be Right™

Specifications*

SC200 General Specifications

Display	Graphic dot matrix LCD with LED backlighting. Transreflective
Display Size	48 x 68 mm (1.89 x 2.67 in.)
Display Resolution	240 x 160 pixels
Height x Width x Depth	144 x 144 x 181 mm (5.7 x 5.7 x 7.1 in.)
Weight	1.70 kg (3.75 lb)
Power Requirements	100 – 240 Vac \pm 10%, 50/60 Hz; 24 Vdc -15% + 20%
Operating Temperature	-20 to 60°C (-4 to 140°F), 0 to 95% RH non-condensing
Storage Temperature	-20 to 70°C (-4 to 158°F), 0 to 95% RH non-condensing
Analog Output Signal	Two 0/4 to 20 mA isolated current outputs, max 500 Ω
	<i>Operational Mode</i> Primary or secondary measurement or calculated value (dual channel only)
	<i>Functional Mode</i> Linear, Logarithmic, Bi-linear, PID
	Optional 4 additional 4/20 mA isolated current outputs, max 500 Ω @ 18-24 Vdc (customer-supplied power source)
Security Levels	Two password protected levels
Enclosure Materials	Polycarbonate, Aluminum (powder coated), Stainless Steel
Mounting Configurations	Wall, pole and panel mounting
Enclosure Rating	NEMA 4X / IP 66
Conduit Openings	1/2" NPT Conduit
Relays	Four electromechanical SPDT (Form C) contacts, 1200W, 5 A, 250 Vac
	<i>Operational Mode</i> Primary or secondary measurement, calculated value (dual channel only) or timer
	<i>Functional Mode</i> Alarm, Timer, Feeder Control, PWM or FM Control, System Alarm
Digital Communication	MODBUS RS232/RS485, Profibus DPV1 optional
Memory Backup	Flash memory
Electrical Certifications	EMC: CE compliant for conducted and radiated emissions CISPR 11 (Class A limits), EMC Immunity EN 61326-1 (Industrial limits)
	Safety: General Purpose UL/CSA 61010-1 with cETLus safety mark
Data Logging	Secure Digital Card (Maximum recommended capacity 8 GB) or special RS232 cable connector for data logging and performing software updates.

UltraSonic Flow Sensor

Flow Rate	0-9999, 0-999.9, 0-99.99 with selectable flow rate units
Volume	0-9,999,999 with selectable volume units
Depth Measurement Range/Resolution	0.25 m (10 in.) to 6 m (20 ft.) \pm 1 mm (0.04 in.)
Air Temperature	-40 to to 90°C (-40 to 194°F) \pm 0.1°C (0.18°F)
Input Filter	999 sec
Totalizers	8-digit resettable LCD software totalizer
Totalized Flow	Gal., ft. ³ , acre-ft., lit., m ³ , in. ³
	Totalizer may be set to auto or manual mode.
	(Menu option to reset is available in manual mode only.)
Accuracy	\pm 0.5% of span
Repeatability	\pm 0.1% of span
Sensor Cable (integral) Lengths	10 m (33 ft.), 20 m (66 ft.), 50 m (164 ft.), or 100 m (328 ft.)
Calibration Methods	Cal Depth 1 point; Cal Depth 2 point
Operating Frequency	75kHz
Construction	NEMA 6P (IP68) polybutylene terephthalate (PBT) body with integral temperature sensor
Weight	~0.5 kg (1.1 lb)

Select from the Following Gauge Types:

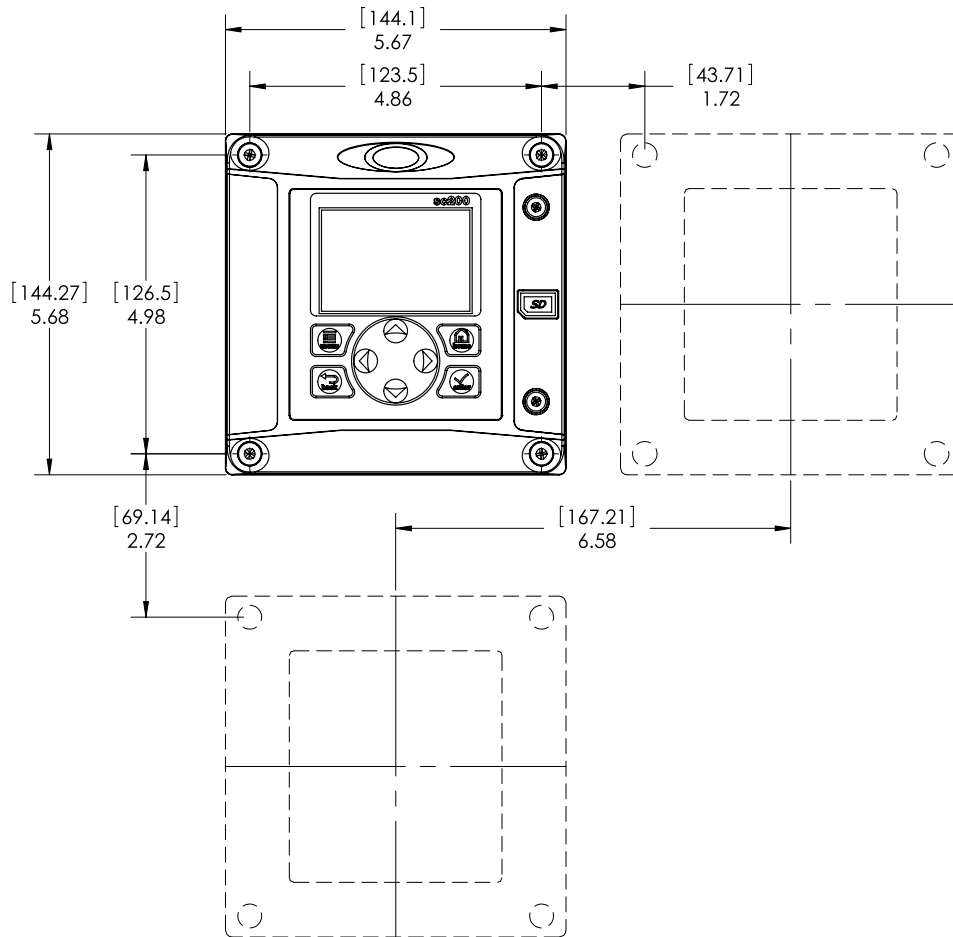
V Notch Weir
 Rectangle Weir
 Rectangle Flume
 Round Bot Flume
 Cipolletti Weir
 Neyrpic Flume
 Parshall Flume
 P Bowlus Flume
 Khafagi Flume
 L Lagco Flume
 H Type Flume
 Trapezoidal Flume
 User Defined

*Subject to change without notice.

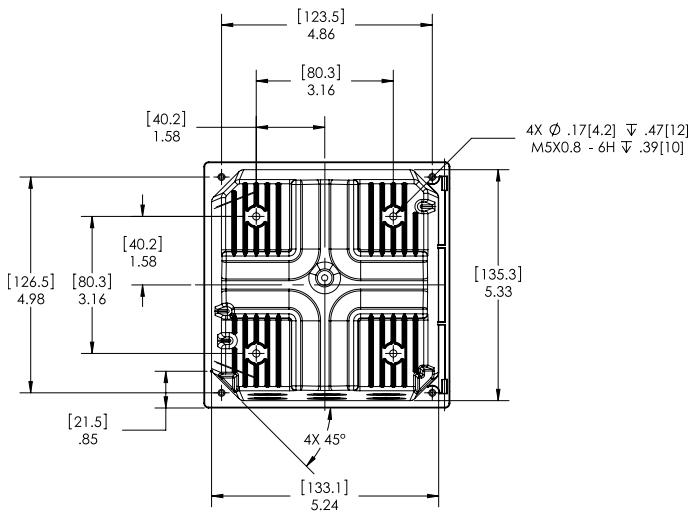
Dimensions

The SC200 controller unit can be installed on a surface, panel, or pipe (horizontally or vertically). No tools are needed to connect the controller unit to any Hach digital sensor. NOTE: Dimensions are in inches [millimeters].

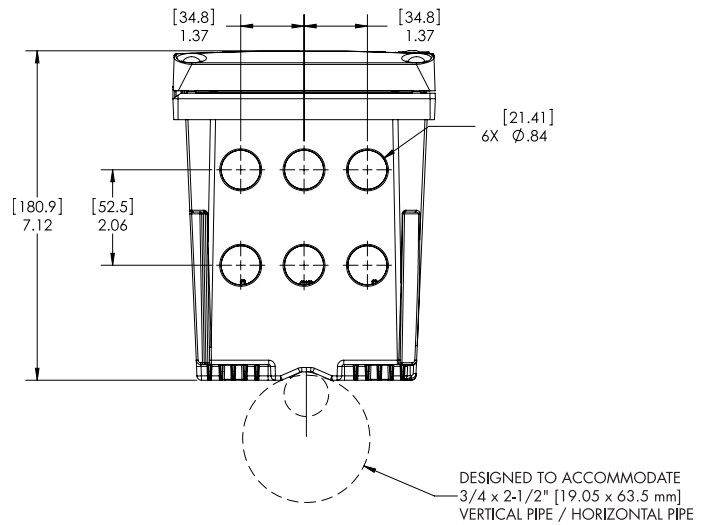
Minimum Spacing Dimensions for Group Mounting



Mounting Dimensions



Bottom View



Ordering Information

SC200 Controller and Module Smart Part Numbering System	Old U53 Sensor				
	0	0	3	0	2
LXV404.99.	X	X	X	X	X
Power					
No power cord	0				
No power cord Type-O—installed strain reliefs	1				
With EU power cord installed with cord grip	2				
With UK power cord installed with cord grip	3				
With US power cord installed with cord grip	5				
24VCD power supply with no cord or cord grips	7				
Communications Output					
Standard (two 4-20mA outputs)		0			
MODBUS 232 & 485		1			
Profibus DP		3			
HART + four 4-20mA analog outputs		5			
Four additional 4-20mA analog outputs		9			
Sensor Input 1					
pH & DO			1		
Conductivity			2		
Flow			3		
mA input			4		
Digital			5		
Sensor Input 2					
None				0	
pH & DO				1	
Conductivity				2	
Flow				3	
mA input				4	
Digital				5	
Brand					
Hach					2

Ultrasonic Flow Sensors

- U53S010** Ultrasonic sensor with 10 ft. cable
- U53S030** FL900 Flow Logger with AV9000 analyzer module, 1 sensor port
- U53S100** Ultrasonic sensor with 100 ft. cable

Power Cords

- 9202900** SC200 power cord with strain relief, 125 Vac
- 9203000** SC200 power cord with strain relief, 230 Vac, European-style plug



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Accessories

- 9220600** SC200 Weather and Sun Shield with UV Protection Screen
- 8809200** SC200 UV Protection Screen
- 1000G3088-001** Weather Protection Cover
- 9218200** SD card reader (USB) for connection to PC
- 9218100** 4 GB SD card
- 9012700** Flow Module
- 9013100** Module for 4 additional analog mA out (passive)
- 9013200** Modbus module
- YAB104** Profibus DP kit
- LZX887** Data com cable
- 3004A0017-001** Flow sensor mounting kit

LIT2767 Rev 4

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