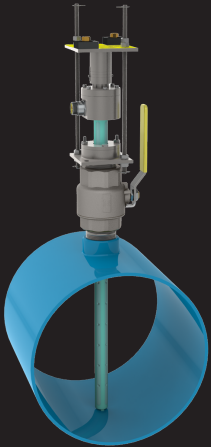




Flow Meters FOR THE MUNICIPAL WATER INDUSTRY

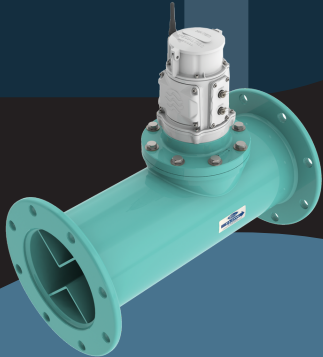
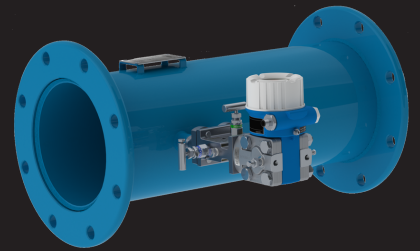


The Ultra Mag®'s unique **NSF-approved UltraLiner™** eliminates problems with delamination and is ideal for applications near pumps, water wells, and other municipal locations.



The FPI Mag® is the **quick-installation** choice for tough applications and retrofits, eliminating the need to interrupt service and cutting installation and ownership costs up to 45%.

The VM V-Cone® provides unprecedented accuracy with **minimal straight-run requirements**. It is the space-saving choice for applications with challenging flow conditions or weight restrictions. Acting as its own flow straightener, the VM V-Cone can be placed close to elbows, valves, and pumps.



The Water Specialties® propeller meter is engineered to deliver superior performance, low maintenance and **unsurpassed durability**. With an integrated FlowConnect™ telemetry unit featuring ExactRead™ technology, data collection is automated for reliable resource management.

EXPERTISE

McCrometer's team of experts customizes all meters to best fit each application. From initial quote to product installation, McCrometer is **your partner in flow measurement.**

Did you know?



McCrometer mag meter technology is based on Faraday's Law of Electromagnetic Induction, a technology that can measure voltage as proportionate to current flow.



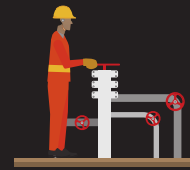
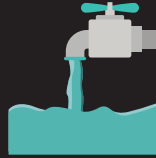
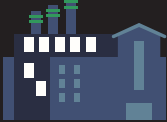
THANKS, MR. FARADAY!

McCrometer meters support water management objectives, including:

- Operations & Metering
- Billing & Accounting
- Conservation
- Regulations & Allocation
- Planning & Development



MUNICIPAL APPLICATIONS



Distribution | Wells, Pumping, & Booster Stations | Effluent | UV Dosing | Filter Balancing & Backwash | Recycled & Reclaimed



±0.5%

McCrometer meters are designed with unique operating principles, and deliver accurate readings up to ±0.5%

45%

The FPI Mag meter can save up to 45% in installation and ownership costs

ProComm is the newest mag meter converter for the McCrometer product suite. Its sleek design and easy installation creates a **seamless user experience**, and features conduit-friendly fittings, built-in verification, and internal data logger. Constructed with input from McCrometer's municipal customer base, ProComm is the flexible converter that takes the hassle out of daily monitoring.

PROCOMM



AMI/AMR | Built-In Verification | Internal Data Logger | 4-20mA & Pulse Output | HART & ModBus Protocols

Learn more about **saving money** and increasing efficiency with McCrometer flow meters.

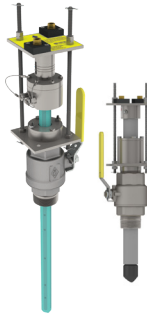
www.mccrometer.com/muni

Lit. # 30124-70 Rev. 1.0 28MAY2019

Electromagnetic Flow Meters



Insertion mag meters offer ease of installation and total cost savings for customers. The FPI Mag delivers accuracy unmatched by other insertion meters and rivals the performance of full-bore mag meters.



FPI Mag	
Media:	Applications:
Potable water	Agriculture
Cooling water	Municipal
	Industrial

SPI Mag	
Media:	Applications:
Potable water	Agriculture
Waste water	Municipal
Cooling water	Oil and gas
	Industrial



The Ultra Mag is a leading-edge mag meter that requires only 1D upstream and 0D downstream of most flow disturbers, and still maintains 0.5% accuracy across a large flow range.



Media:	Applications:
Potable water	Agriculture
Waste water	Municipal
Cooling water	Oil and gas
	Industrial



The Dura Mag is an affordable, full bore mag meter that provides rugged durability and telemetry-ready options for agricultural and municipal customers.



Media:	Applications:
Potable water	Agriculture
Cooling water	Municipal
	Oil and gas
	Fracking
	Industrial



With a five-year battery life, data logging capability and saddle mount design, the Mc Mag³⁰⁰⁰ delivers dependability and easy installation.



Media:	Applications:
Potable water	Agriculture
Waste water	Irrigation



Designed for agriculture and irrigation, McMag2000 offers low cost of ownership with mag meter technology for the price of a propeller meter.



Media:	Applications:
Potable water	Agriculture
Waste water	Municipal

Propeller Flow Meters



The best selling propeller meter in the U.S., the McPropeller meter is the market standard for ease-of-use and value for agricultural, municipal, industrial, and turf markets since 1955.



Media:	Applications:
Potable water	Agriculture
Cooling water	Municipal
	Oil and gas
	Industrial



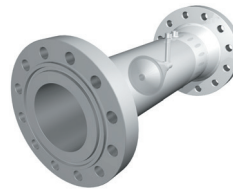
Water Specialties propeller meters offer minimal maintenance and maximum durability, making them particularly well suited for the municipal market.

Media:	Applications:
Potable water	Agriculture
Cooling water	Municipal

Differential Pressure Flow Meters



The original cone meter, McCrometer's V-Cone is designed for the most challenging applications. Customizable to meet needed specifications, the V-Cone offers best in accuracy and repeatability while also providing customers wider rangeability, installation flexibility, and reduced maintenance.



Media:	Application:
Potable water	Agriculture
Waste water	Oil and gas
Cooling water	Municipal
Liquid natural gas	Industrial
Steam	
Natural gas	
Wet gas	



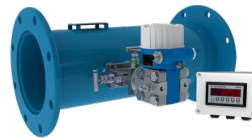
Optimized for small line sizes and designed with an interchangeable cone, the Wafer-Cone offers the scalable and adaptable solutions our customer's processes depend on while maintaining high accuracy and repeatability.



Media:	Application:
Potable water	Oil and gas
Waste water	Municipal
Cooling water	Industrial
Liquid natural gas	
Steam	
Natural gas	



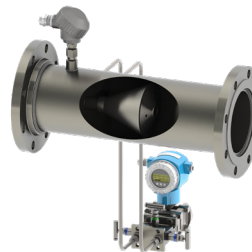
All the outstanding features of V-Cone specially packaged for municipal applications. The VM V-Cone combines high performance and accuracy with low head loss to provide a self-conditioning solution that reduces costs.



Media:	Application:
Potable water	Municipal
Waste water	
Cooling water	



A highly accurate V-Cone package optimized for saturated and superheated steam measurement. ExactSteam is a plug and play solution focused on high reliability and low maintenance cost.



Media:	Application:
Steam	Industrial

Connected Solutions



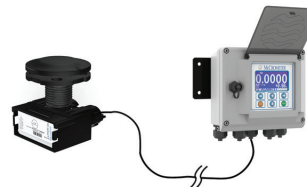
FlowConnect is a built-in solution for collecting and transmitting flow data from McCrometer's McPropeller and Water Specialties flow meters.



Used with Products:
McPropeller
Water Specialties



Smart Output enables McCrometer's magnetic flow meters to communicate with AMI and AMR systems.



Used with Products:
All meters that use the ProComm converter



A complete solution for wireless irrigation and crop management. Provides real-time data reports on soil moisture, weather, frost, water level, meter reading, and much more.



Compatible with
McCrometer's agricultural meter product suite

DESCRIPTION

The FlowCom Register displays a flow meter's flow rate and volumetric total. The FlowCom can be fitted to any new or existing McPropeller or Water Specialties propeller flow meter.

FEATURES

- Retrofits to any existing Mc Propeller or Water Specialties propeller flow meter.
- Output options: 4-20mA Analog, open collector pulse, AMI output
- Unique units of measurement for rate, total, 4-20mA, and pulse outputs.
- Smart Trax on Board integrated telemetry available.



SPECIFICATIONS

Physical Specifications

Electronic Housing	Diecast aluminum, powder coated enclosure w/ tamper resistant seal, 6½" x 6½" x 43/8" tall
Digital register Dimensions	See "Dimensions" section for meter mount and remote mount digital register dimensions.
Power	Battery: Standard: three 3.6V lithium-thionyl chloride (Li-SOCI2) D size batteries
Electrical Connections	Optional shielded cable for pulse out

Performance and Operational Specifications

Battery Life	Five-year expected battery life, five-year battery warranty. 3 year battery life with Smart Trax on Board, if reporting in 24 hour intervals.
Location	Indoor or outdoor use
Altitude	Operating: 2000 meters Storage: 12,000 meters
Operating Temperature	-4° to 140° F (-20° to 60° C)
Storage Temperature	-4° to 140° F (-20° to 60° C)
Relative Humidity	0% to 100%
IP Rating	IP67 Die cast aluminum digital register

Outputs	Digital output:	Digital pulse (open collector) output for volumetric - Two isolated digital pulse (open collector) outputs for volumetric - AMI output
	Analog output:	4-20mA: Galvanically Isolated, 16 Bit resolution. All power configurations (including battery).

Display and Measurement

Display	<ul style="list-style-type: none"> • 2-Line LCD display (no backlight) • Non-volatile memory • Anti-reverse totalizer (standard) • Total (to 9 digits of precision) 	<ul style="list-style-type: none"> • Flow rate and velocity (to 5 digits of precision) • Two alarms: low battery and empty pipe (optional) • Opening lid activates display 			
	Digits	5 Rate, 9 Total			
Units	GPM	Gallons per minute	KLH	Kiloliters per hour	
	MGD	Mega gal per day	LPH	Liters per hour	
	CFS	Cubic feet per second	CMM	Cubic meters per minute	
	MLD	Megaliters per day	CFM	Cubic feet per minute	
	LPS	Liters per second	CFM	Cubic feet per minute	
	CMH	Cubic meters per hour	B5M	Barrels per minute (55G)	
	LPM	Liters per minute	B5H	Barrels per hour (55G)	
	GPH	Gallons per hour	B5D	Barrels per day (55G)	
	IGM	Imperial gal per minute	B4M	Barrels per minute (42G)	
	MI9	Miners inch (9G)	B4H	Barrels per hour (42G)	
	MI1	Miners inch (11.22G)	B4D	Barrels per day (42G)	
	APD	Acre feet per day			
		GAL	Gallons	AIN	Acre Inch
		CUF	Cubic Feet	TON	Ton (Short)
Totalizer Units	AFT	Acre Feet	MM1	Miners Inch Minute (11.22G)	
	CUM	Cubic Meters	MM9	Miners Inch Minute (9G)	
	LIT	Liters	MH1	Miners Inch Hour (11.22G)	
	MML	Megaliter	MD1	Miners Inch Day (11.22G)	
	MTT	Metric Ton (KL)	MH9	Miners Inch Hour (9G)	
	B31	Barrel (31G)	MD9	Miners Inch Day (9G)	
	B42	Barrel (42G)	KGL	Kilo Gallons	
	B46	Barrel (46G)	MGL	Mega Gallons	
	B55	Barrel (55G)	IN3	Cubic Inch	
	IMG	Imperial Gallon			
Data Logger	Standard with all models, minimum of five years of data stored (4gb)				

Other Specifications

Options and Accessories	<ul style="list-style-type: none"> • Data Logger - included as standard with five years of data storage at default (12hr) interval. (Cable sold separately) • Smart Trax on Board optional (Includes Hosting & Data Fee options that will not apply until after delivery of your units, when SmartTrax is activated online.)
--------------------------------	--

FLOWCOM FC200 AND FC201 PART NUMBER MATRIX

FC2							
Product Line							
McCrometer	00						
Water Specialties	01						
Assembly Component Options							
Conversion Kit (From Mechanical)	K						
Flowcom (FC100 to FC200) Upgrade Kit	R						
Flowcom (FC200) Replacement Kit	F						
Output Options							
No Outputs							
Open Collector Pulse	1						
4-20mA Analog	2						
4-20mA Analog and Open Collector Pulse	3						
Output Cable Options							
No Output Cables							
6 ft	C1						
15 ft	C2						
25 ft	C3						
50 ft	C4						
75 ft	C5						
100 ft	C6						
150 ft	C8						
Smart Output Protocol / Telemetry Options							
No AMI Outputs/Telemetry Options							
Sensus Protocol (6ft Open End Cable)	SEN						
Itron 6 digit Protocol (6ft Open End Cable)	IT6						
Itron 9 digit [100W] Protocol (6ft Open End Cable)	IT9						
Neptune Protocol (6ft Open End Cable)	NEP						
SmartTrax On-Board (Integrated Telemetry on FlowCom)	STX						
2 ft SmartTrax Standalone Unit ExactRead Cable	S02						
6 ft SmartTrax Standalone Unit ExactRead Cable	S06						
25 ft SmartTrax Standalone Unit ExactRead Cable	S25						
50 ft SmartTrax Standalone Unit ExactRead Cable	S50						
Register Remote and Extension Options							
Meter Mount (Standard)							
6 ft Cable Remote Mount (Flowcom only)	R06						
25 ft Cable Remote Mount (Flowcom only)	R25						
50 ft Cable Remote Mount (Flowcom only)	R50						
No Batteries, Battery Tray Options							
Includes Batteries (Standard)							
No Batteries (Alkaline Tray)							NBA
No Batteries (Lithium Tray)							NBL

Copyright © 2024 McCrometer, Inc. All printed material should not be changed or altered without permission of McCrometer. Any published pricing, technical data, and instructions are subject to change without notice. Contact your McCrometer representative for current pricing, technical data, and instructions.

Features & Benefits

- ExactRead™ technology for exact match from meter to website
- Affordable and reliable remote meter reading with streamlined design
- More frequent data for timely water management decisions
- Pre-assembled on new meters for simplified installation
- Retrofits on existing meters in less than 30 minutes



Telemetry System for Mc Propeller™ and Water Specialties™ Flow Meters

Your trusted partner for water meters now offers an innovative built-in remote meter reading option, FlowConnect.

McCrometer's latest development in flow metering technology provides districts, growers, and irrigators with a new solution to meter data collection.

This built-in telemetry system for McCrometer Flowmeters is designed to provide easy access to meter data without requiring additional hardware.

FlowConnect can be added to any new or existing McPropeller or Water Specialties Propeller flowmeter.

Applications

- Billing and accounting
- Conservation
- Regulation and allocations
- Planning and development
- Operations and metering

Compatibility

- Mc Propeller - Mechanical and Digital Registers
- Water Specialties Propeller - Digital Register ONLY

TECHNICAL AND PERFORMANCE SPECIFICATIONS

Communication

Network Type	Cellular	Satellite
Protocols	GSM/GPRS	Iridium
Operating Frequency (MHz)	824–849 869–894 1850–1910 1930–1990 1710–1755	1616-1626.5
Antenna	External Bulkhead Extension TNC Antenna 800/1800/1900 MHz	External Bulkhead Extension TNC Antenna 1,600 Mhz

Power

Batteries	Batteries can be replaced by user on-site Battery Only: 2 Primary D-Cells 3.6V 13Ah (Both batteries need to be replaced at the same time) Rechargeable: 1 Primary D-Cell 3.6V and 3 Secondary C-Cells, 1.2V in series
External Power	Requires Rechargeable Battery Configuration listed above. Recommended 9-12 VDC, 0-1000mA Max: 14.5 VDC (Power supply or solar panel)
Recommended Battery Replacement Interval	Battery Only: 3 years (Daily Report Interval) Rechargeable: 4 years

Environmental

Operating Temperature	- 30°C to 70°C (-22°F to 158°F)
Electrical / Mechanical Protection	All electrical components are grounded to fluid column and pipe. Manufactured in accordance with IP-67 Standards and ESD-safe
Environmental Protection	Ingress Protection (Dust Tight / Water Tight) to IP67 Vibration proof while operating: Validated Vibration and 20G Sinusoidal testing to JEDEC 22B103B Section 4.3, Table 3, Service Condition C, for all axis and 20G sin sweep 20 - 2,000Hz for all axis.
Tamper Protection	Factory installed tamper-evident wire lock system

Other Characteristics

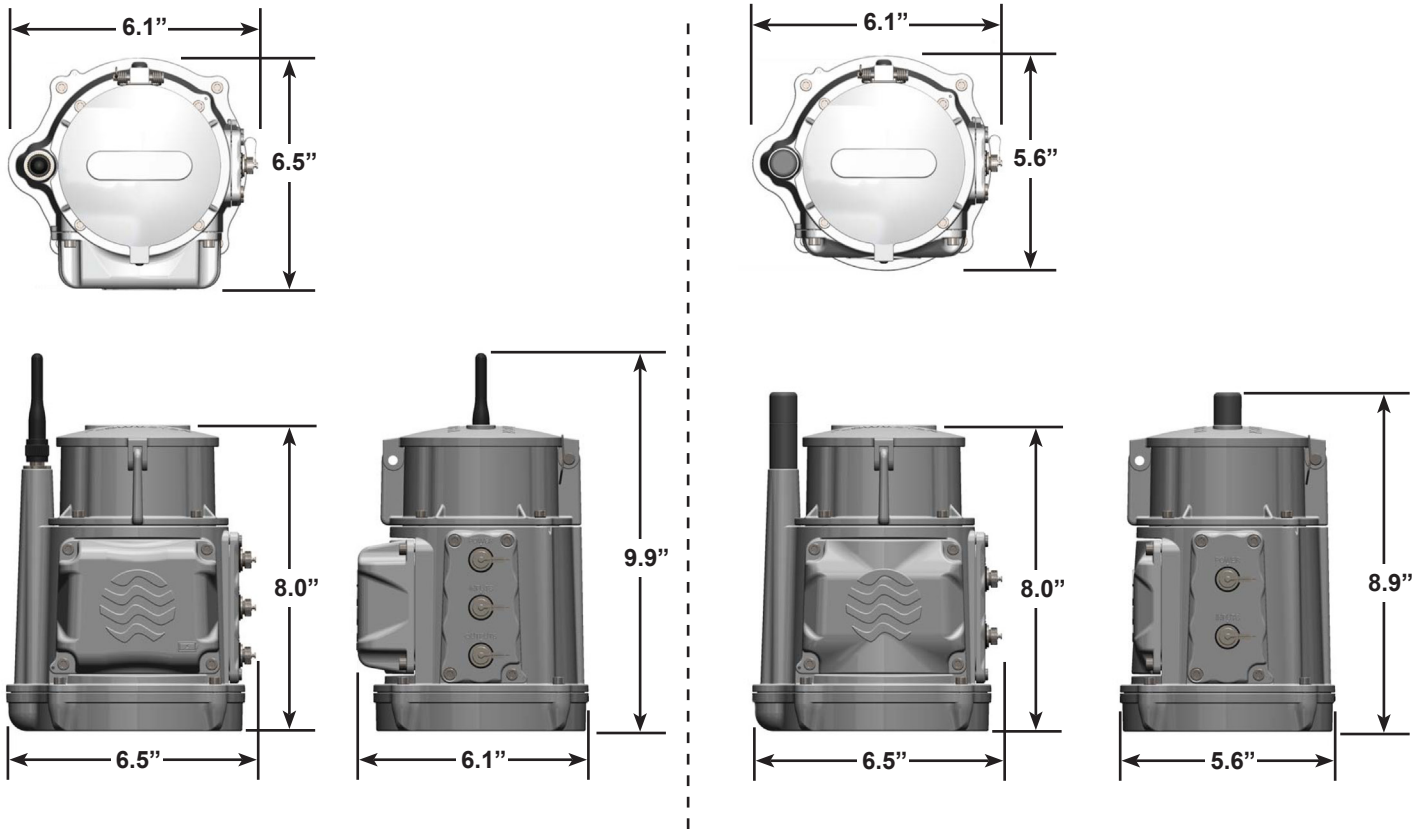
Mounting	Top Plate compatible with any McCrometer Propeller or Water Specialties (Digital Register Only)
External Interface	Five-pin serial-USB cable
Flow Indicator	Digital Register or McPropeller Mechanical Register
Operating Temperature	- 30°C to 70°C (-22°F to 158°F)
Inputs	Two analog sensors, 1 pulse accumulator (for rain gauge)
Outputs	Mechanical Register: None Digital Register: 4-20 mA, Open Collector Pulse, Dry Contact Pulse, Optically Isolated Pulse (via 5- pin output cable)
Data Collection Method	Digital Register: Serial interface between FlowConnect and digital register allows FlowConnect to read totalizer and rate value directly. No pulse counting required and always a perfect match. Mechanical Register (McPropeller only): Pulse counter and high-low digital signal for forward-reverse pulses. Accuracy between meter and Web totalizer: ±0.25%
Data Storage	Capable of storing up to 1,000 reports in local memory

Accessories

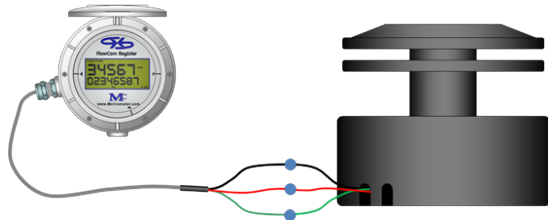
Optional Protective Cover	Gray boot cover, p/n TOB065	
Serial Accessories	200.720.542 serial-USB cable	
Power Accessories	Rechargeable: 200.733.522 5W 540 mA Solar Panel 200.720.523 115V Power Supply Battery Only: No Power Accessories	
Sensor Accessories	Adcon PA1 Cables - Pressure 10bar 500.000.120 - 16 ft. Cable 500.000.119 - 32 ft. Cable 200.733.048 - RGI Rain Gauge 200 200.720.510 - Y Cable 200.733.902 - A902 1/2/3 Cable	
Communication Accessories	Cellular	Satellite
	900.000.590 TNC Rigid Antenna (Included) 900.000.565 Directional Antenna 900.000.567 Extension Antenna	TOB039 Helical Antenna (Included) MCC-510-AI-A Extension Antenna, Magnet Mount

Dimensions

Network Type	Cellular	Satellite
Unit Enclosure Size	W x D x H	W x D x H
Non-Rechargeable	6.5" x 5.6" x 9.9"	6.5" x 5.6" x 9.8"
Rechargeable	6.5" x 6.1" x 9.9"	6.5" x 6.1" x 9.8"
Packaged Dimensions	11" x 11" x 11"	11" x 11" x 11"
Packaged Weight	6 lbs.	6 lbs.



Note: The models shown above are used as general examples of the most common features and may not necessarily represent your particular model.



FC100 / FC101 FlowCom Register

Wiring Diagram for AMI Compatible Flow Meters

30122-27 Rev. 1.3 | October 15, 2020

Introduction

McCrometer offers an output option to interface with FlexNet¹ networks sold by Sensus[®]. When this option is included, an additional output cable is also included to connect to a Sensus antenna. There is no procedure required for setting up the Sensus interface². It will come with the cable already connected and Sensus already active. There is no additional configuration required on the FlowCom.

For details on remote mount and outputs (pulse and 4-20mA), refer to the associated sections in the FlowCom Manual.

[24510-29 FC100 FlowCom Manual for McPropeller Flow Meters](#)

[30119-50 FC101 FlowCom Manual for Water Specialties Flow Meters](#)

Applies to the following FlowCom options:

FC100-06 / FC101-06 Sensus FlowCom

FC100-07 / FC101-07 Sensus FlowCom with OC Output

FC100-08 / FC101-08 Sensus FlowCom with Optional Output

FC100-08-RM / FC101-08-RM Sensus FlowCom with Optional Output and Remote Mount

FC100-09 / FC101-09 Sensus FlowCom with Relay Output

FC100-09-RM / FC101-09-RM Sensus FlowCom with Relay Output and Remote Mount

FC100-16-RM / FC101-16-RM Sensus FlowCom with Remote Mount

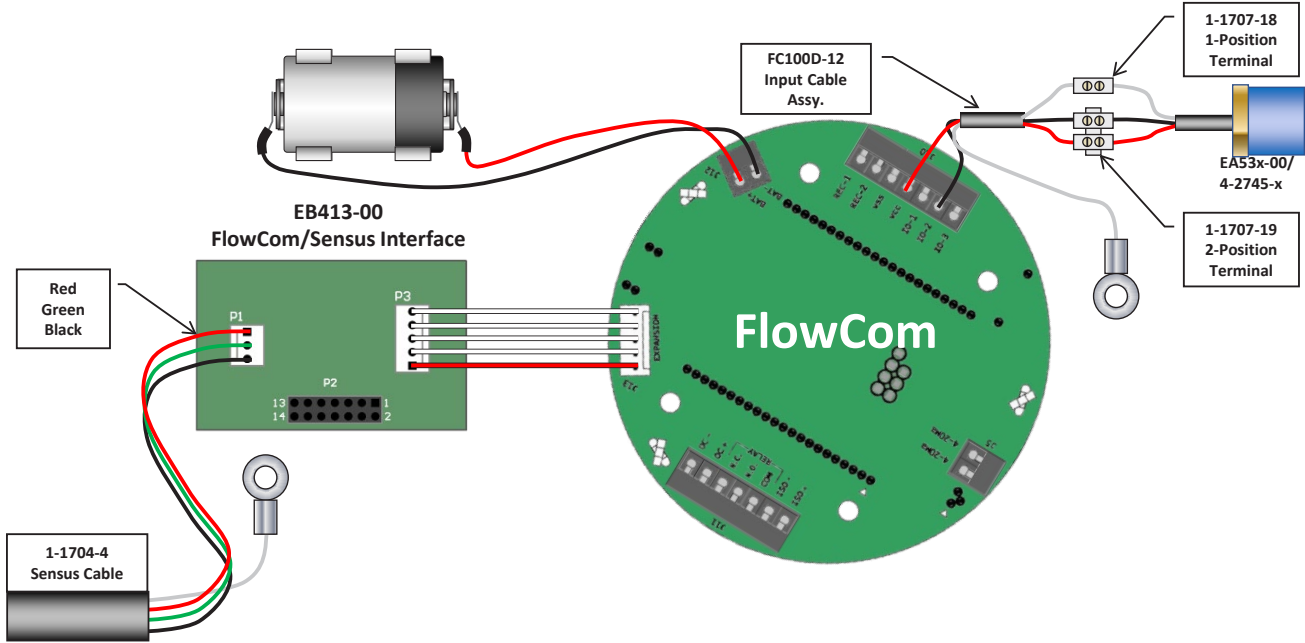
Wiring the Sensus Option

Make sure the FlowCom display is on. Wire the output cable coming from the FlowCom into a Sensus compatible antenna. Wire colors from the output cable match the wire colors on the Sensus antenna.

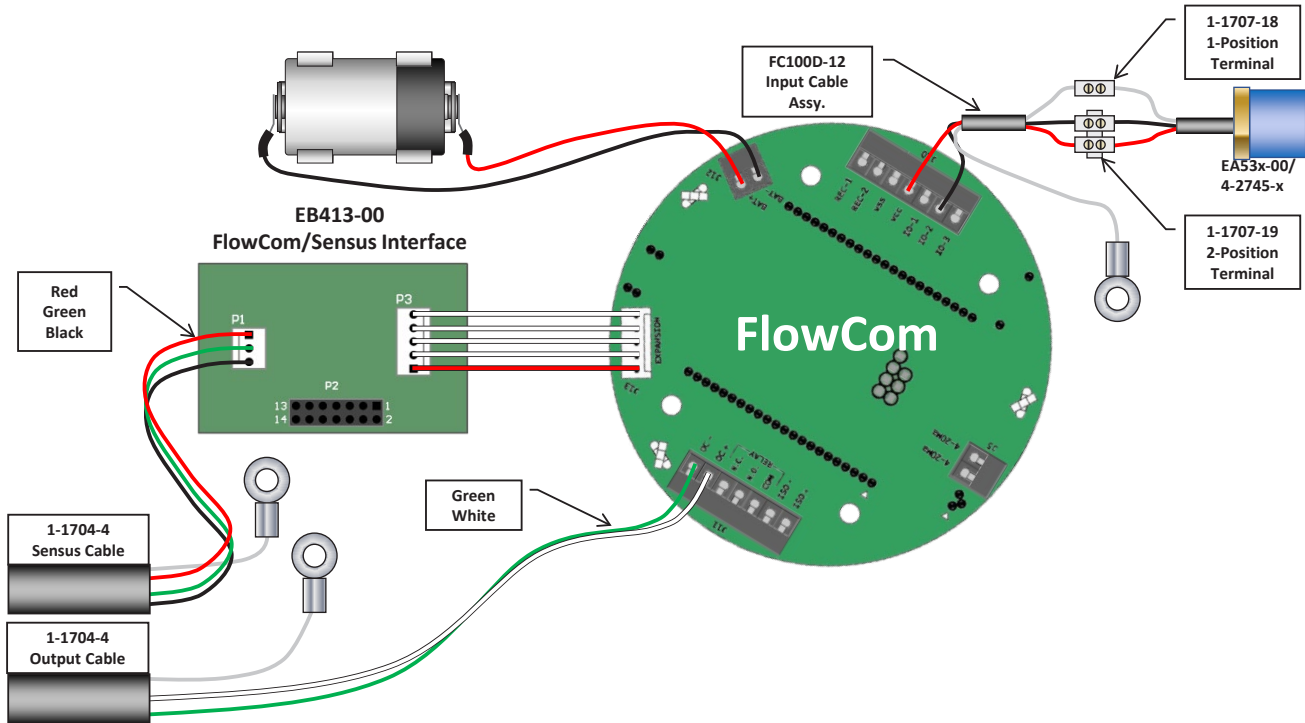
¹ FlexNet[®] is a network infrastructure owned by Sensus. See Sensus.com for more details.

² The FlowCom MUST have firmware version 2.4, which will be taken care of at the factory when the FlexNet Output option is ordered.

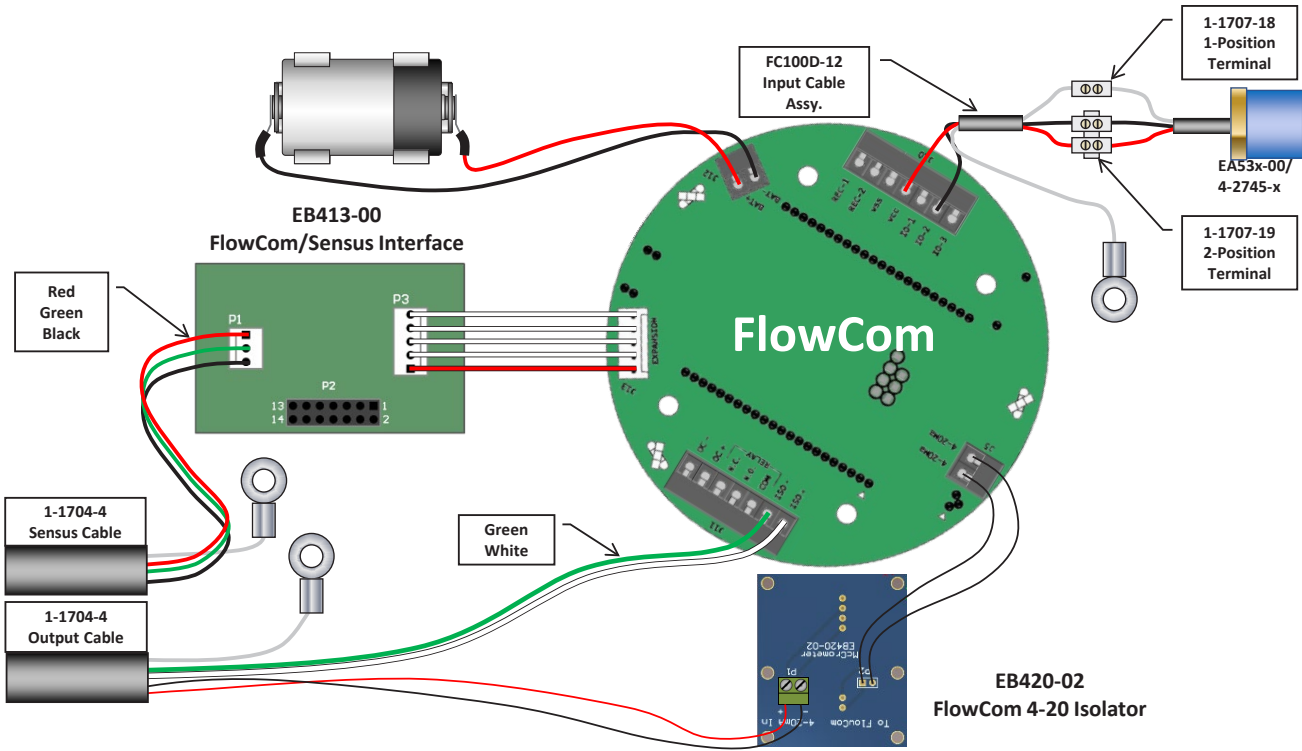
FC100-06 / FC101-06, Sensus FlowCom



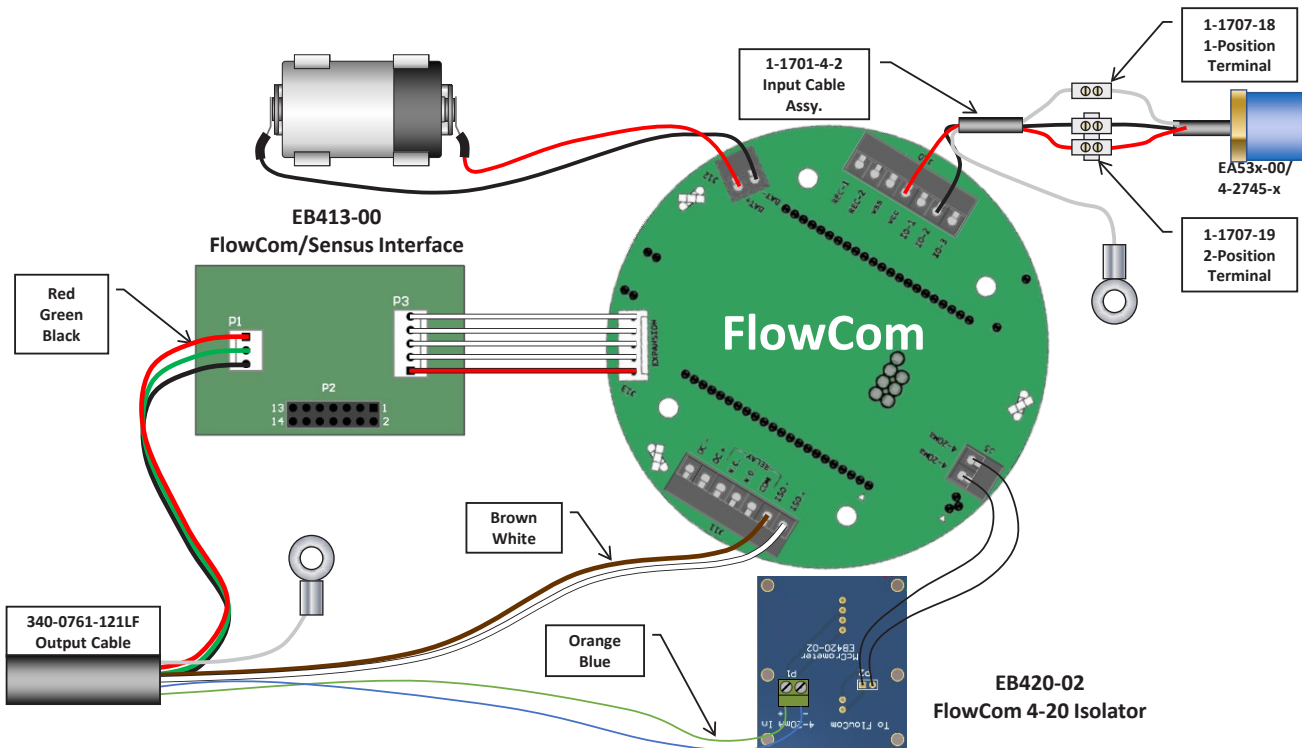
FC100-07 / FC101-07, Sensus FlowCom with OC Output



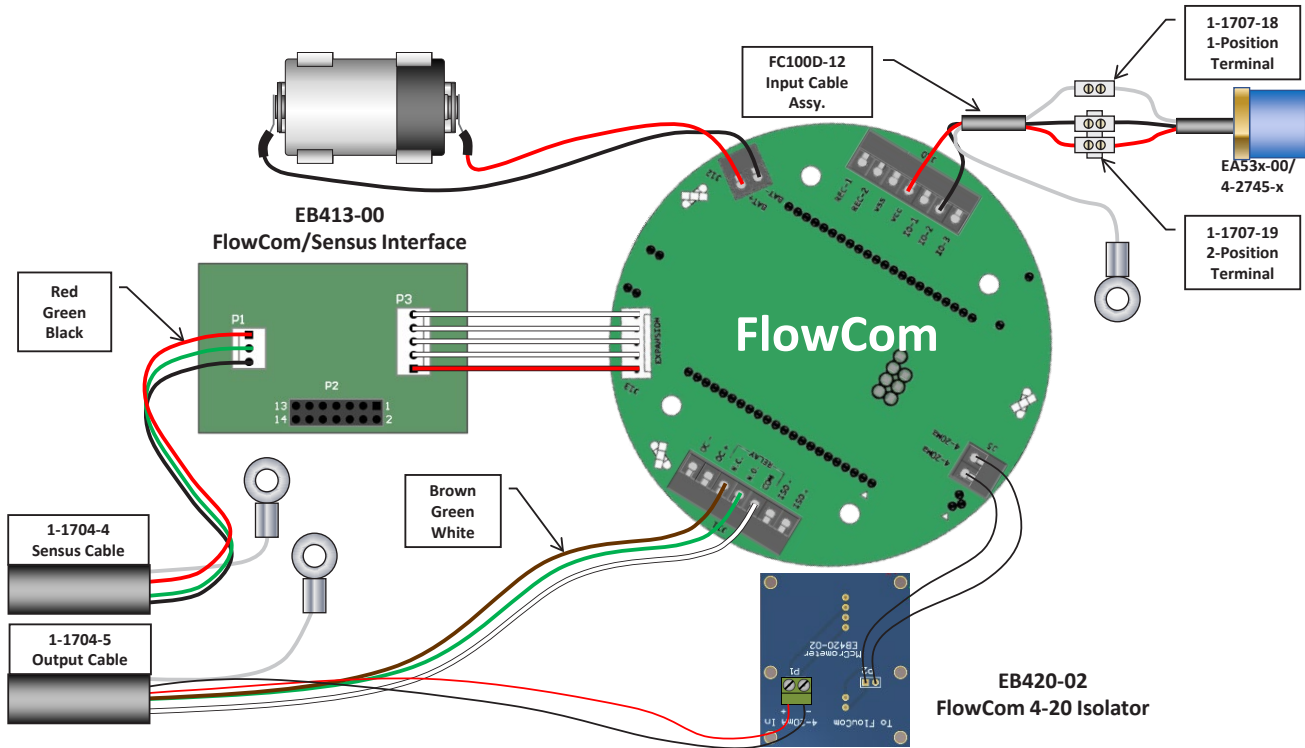
FC100-08 / FC101-08, Sensus FlowCom with Optional Output



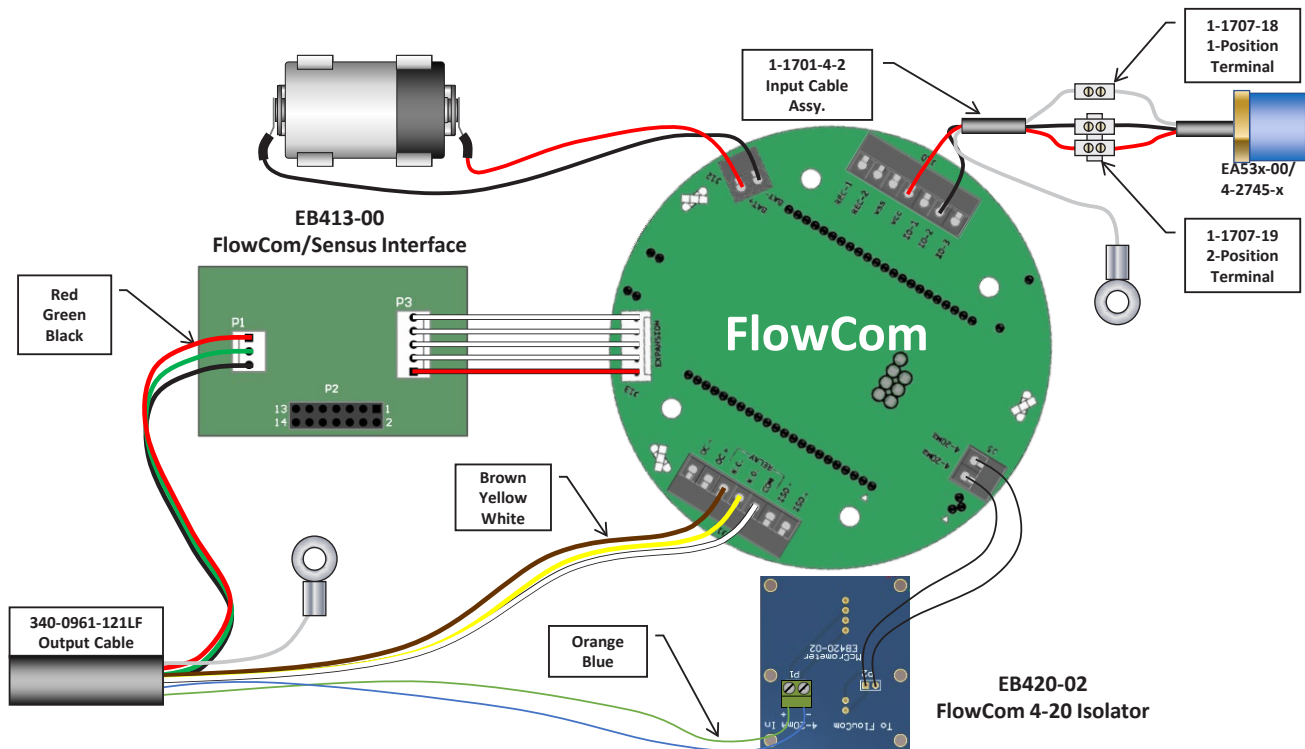
FC100-08-RM / FC101-08-RM, Sensus FlowCom with Optional Output and Remote Mount



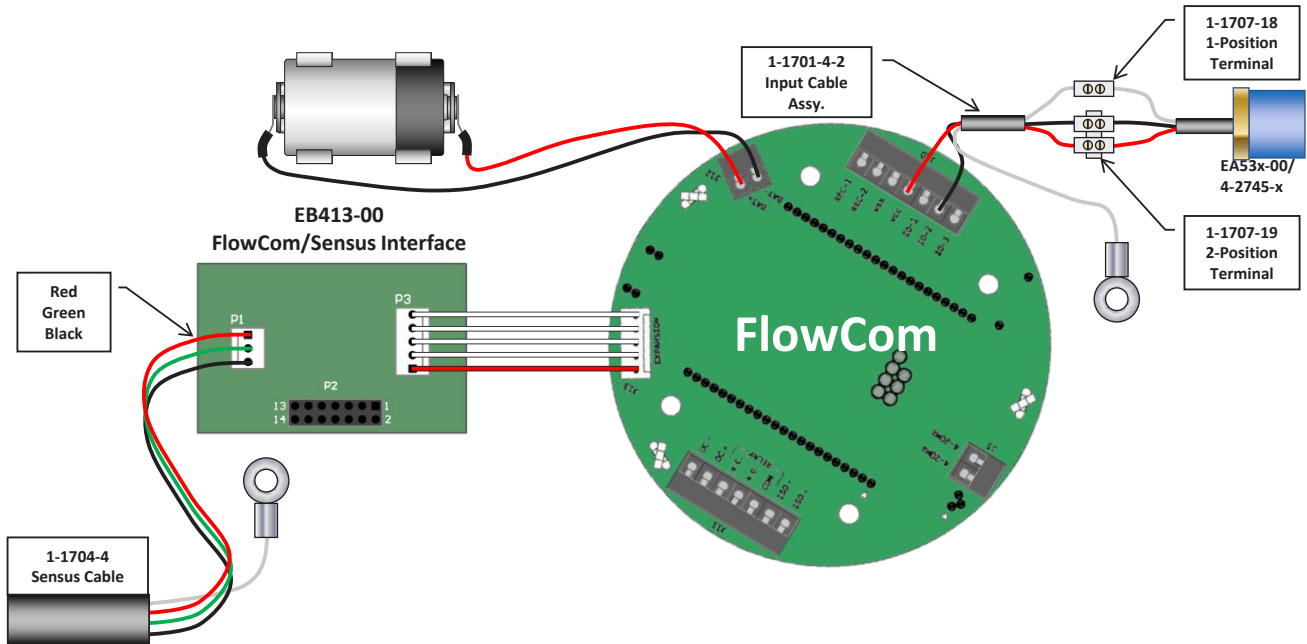
FC100-09 / FC101-09, Sensus FlowCom with Relay Output



FC100-09-RM / FC101-09-RM, Sensus FlowCom with Relay Output and Remote Mount



FC100-16-RM / FC101-16-RM, Sensus FlowCom with Remote Mount



Copyright © 2020 McCrometer, Inc. All printed material should not be changed or altered without permission of McCrometer. Any published pricing, technical data, and instructions are subject to change without notice. Contact your McCrometer representative for current pricing, technical data, and instructions.