



*Flomega Liquid Mass Flow Meter
and Controller*

Flomega™ 5880 and 5890 Series

Liquid Mass Flow Meters and Controllers

Overview

The Flomega™ Series is Brooks Instrument's robust liquid flow controller and meter. The patented Flomega thru-flow liquid mass flow meter uses proven thermodynamic principles, allowing for accurate low liquid flow measurement from 1 to 1000 grams/hour.

From low flows in catalyst research to precursor flow in vacuum processes, Flomega provides the precision, accuracy, and repeatability required. For a complete solution, couple Flomega for your liquid needs with Brooks gas, pressure, and vacuum products. For applications in challenging environments, Flomega comes equipped in a rugged IP-65 enclosure.

Product Description

Flomega uses the patented Brooks thru-flow thermal sensor design, which does not use a bypass, for low flow liquid applications. The thru-flow sensor technology gives Flomega a fast and linear measurement. The in-line valve in the controller options has been specially designed to reduce dead volume, to ensure trouble-free operation. The design does not allow for gas to become trapped in the valve, and improves purge ability with a valve override purge option.

Features and Benefits

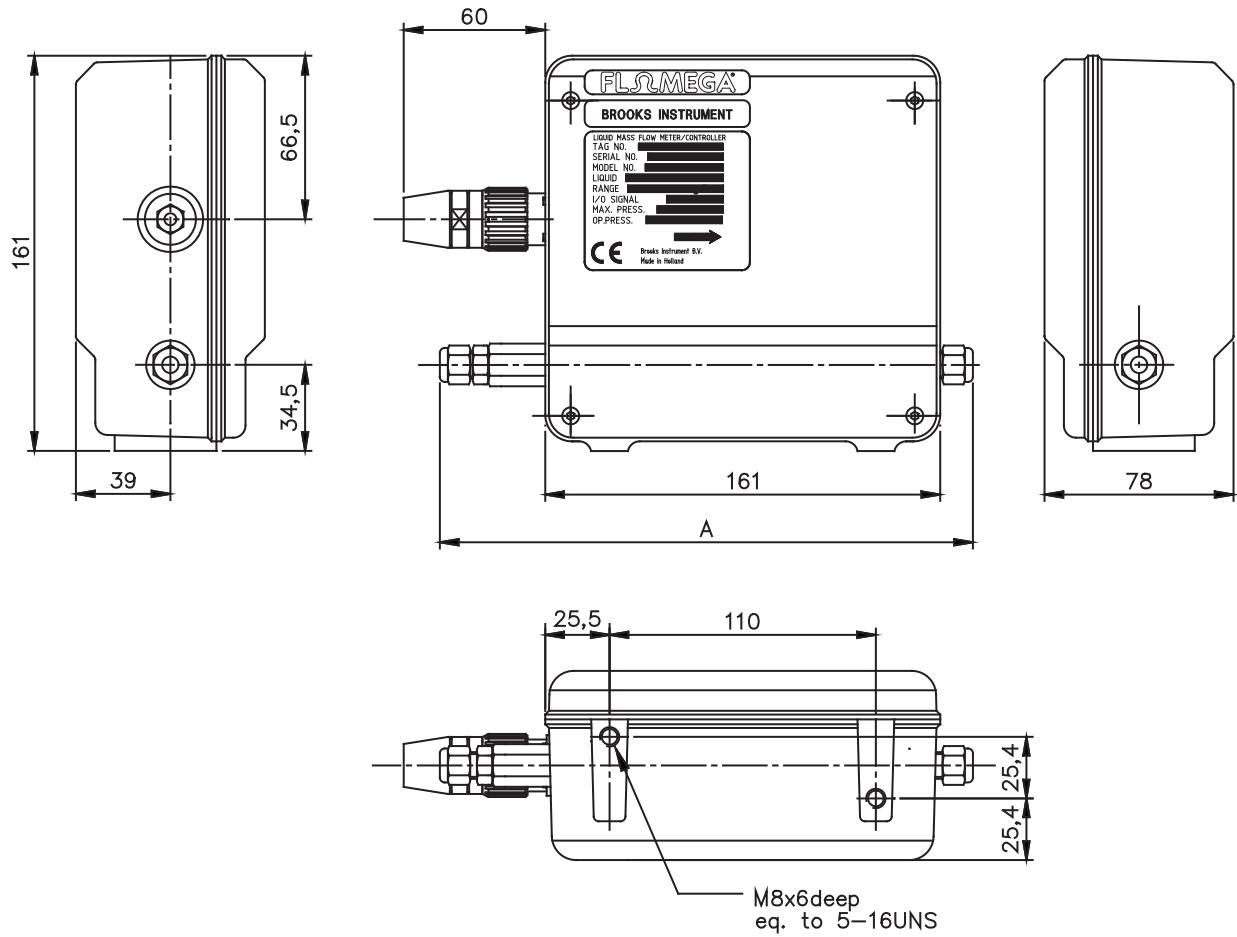
Features	Benefits
Integrated sensor, valve and PID control all in one small package	Simplifies purchase, installation, and start-up by having everything available from one supplier in a single, compact unit.
Superior thru-flow design mass flow sensor	Virtually insensitive to changes in process conditions and resistant to bubbles and clogging
High accuracy and repeatability	High reliability ensures proper process recipe and consistent results
Rugged IP65 enclosure	Packaged for use in hose down/wash down industrial processes

Product Specifications

Performance Specifications	5881/5891	5882/5892
Minimum Full Scale Flow (gr/hr)	15	200
Maximum Full Scale Flow (gr/hr)	100	1000
Accuracy	<30 gr/hr F.S.: $\pm 1\%$ F.S.; ≥ 30 gr/hr F.S. $\pm 0.5\%$ F.S.	$\pm 0.5\%$ F.S.
Process Temperature Range	0-100°C	0-90°C
Process Temperature Coefficient	$\pm 0.03\%$ F.S./°C	
Ambient Temperature Range	0-65°C	
Ambient Temperature Coefficient	$\pm 0.1\%$ F.S./°C	
Repeatability	<50% Max. F.S.: $\pm 0.2\%$ of F.S. 50-100% Max. F.S.: $\pm 0.2\%$ of rate	<50% Max. F.S.: $\pm 0.4\%$ of rate 50-100% Max. F.S.: $\pm 0.2\%$ of rate
Metering Rangeability	Calibrated F.S. flow down to a minimum of 2 g/h	Calibrated F.S. flow down to a minimum of 20 g/h
Control Range	50:1	
Viscosity Limit	200 cP	
Max. Pressure Differential	20 bar	40 bar
Pressure Drop (sensor)	10 mbar (@ 100 gr/hr H ₂ O)	150 mbar (@1000 gr/hr H ₂ O)
Input/output Signal Options	0-20 mA or 4-20 mA or 0-5 Vdc	
Power Supply	15 Vdc or 24 Vdc	
Response Time (to $\pm 2\%$ of SP for 2-10% change)	5 sec	7 sec

Physical Specifications	5881/5891	5882/5892
Mechanical Connections	5/16", 1/16", 1/8" tube connection, 1/4" compression, 1/4" NPT, 1/4" VCO, 1/4" VCR	
Inlet Filter	40 micron stainless steel mesh	
Wetted Materials	Stainless steel, Viton, PTFE, EPDM, Buna, Kalrez, Teflon	
Housing Material	Cast aluminum	
Electrical Connections	12-pole circular connector	
Certifications	CE certified, IP65 weatherproof, PED 97/23/EC compliant	

Product Dimensions



Connections	A
5/16" - 24 UNF	175 mm
1/16" Tube Connection	208 mm
1/8" Tube Connection	220 mm
1/4" Tube Connection	220 mm
1/4" NPT (F) VCR	240 mm

Flomega Model 5881/5891 and Model 5882/5892 Dimensions

Model Code

Code Description	Code	Code Description
I. Base Model Code	5881/D	Controller, 100 gr/hr maximum full scale water equivalent flow
	5891/D	Meter, 100 gr/hr maximum full scale water equivalent flow
	5882/D	Controller, 1000 gr/hr maximum full scale water equivalent flow
	5892/D	Meter, 1000 gr/hr maximum full scale water equivalent flow
II. Materials of Construction	1A	316 SS body/Viton valve seat/Viton O-rings
	1B	316 SS body/Buna valve seat/Buna O-rings
	1C	316 SS body/Teflon O-ring around customer connection fitting, valve stem & in-filter body/Kalrez O-rings between sensor & body, around orifice and caged valve seat (P> 14 bar)
	1F	316 SS body/caged Kalrez valve seat/Kalrez O-rings
III. Pressure Rating	1	≤1450 psig/100 bar
	3	≤5800 psig/400 bar
IV. Input/Output Signals	A	4-20 mA
	B	0-20 mA
	C	0-5 Vdc
V. Process Connections	1	5/16" UNF female threads (no fittings)
	2	1/16" compression (5881/5891 only) (≤100 bar only)
	3	1/8" compression
	4	1/4" compression
	5	1/4" NPT (F)
	7	1/4" VCR Male (≤100 bar only)
VI. Interconnection Cable	0	None
	A	Weatherproof connector
	B	3m interconnection cable*
	C	6m interconnection cable*
VII. Options	0	Standard Brooks
VIII. Ex-Options	0	None
IX. Power Supply Input	0	+15 Vdc
	1	+ 24 Vdc

* This cable is provided with a mating 15-pin D-Type connector for connection with the Brooks Model 0254 Secondary Electronics

Sample Model Code

I	II	III	IV	V	VI	VII	VIII	IX
5881/D	1A	1	A	3	B	0	0	0

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Brooks Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local weights and measures authorities and traceable to the relevant international standards.

Visit www.BrooksInstrument.com to locate the service location nearest to you.

START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 quality certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

CUSTOMER SEMINARS AND TRAINING

Brooks Instrument can provide customer seminars and dedicated training to engineers, end users and maintenance persons.

Please contact your nearest sales representative for more details.

HELP DESK

In case you need technical assistance:

Americas ☎ 1 888 554 FLOW
Europe ☎ +31 (0) 318 549 290
Asia ☎ +81 3 (0) 5633 7100

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

TRADEMARKS

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Kalrez DuPont Performance Elastomers
VCR Swagelok Company
Viton DuPont Performance Elastomers



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