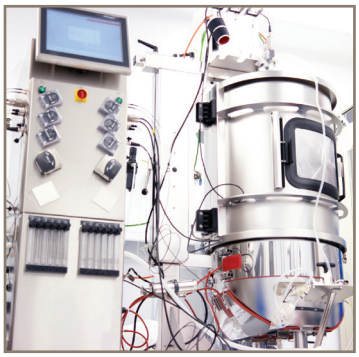

X-Flow™

Mass Flow Controller

Parker

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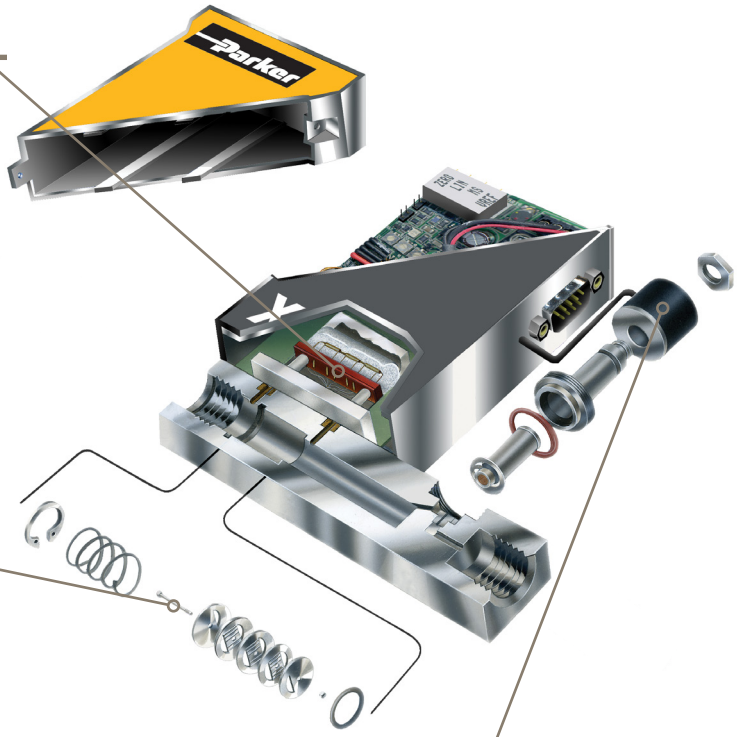
X-Flow™ Mass Flow Controller

Highlights

Parker Hannifin Precision Fluidics Division is excited to introduce X-Flow™, a new easy to use general purpose mass flow controller for your instrument, lab, or process needs. X-Flow™ delivers fast, repeatable, and reliable high accuracy flow control through proven Constant Thermal By-Pass Mass Measurement Technology coupled with our most popular digital communication protocols.

Constant Heat Thermal By-Pass Sensor

- Proven and reliable technology
- Great low range flow measurements
- Minimal impacts from pressure changes
- Low pressure drop and blockage impact on system



Laminar Flow Element & Turbulence Filter

- Tuned to your flow range
- Smooths out flow vortexes and perturbations
- Accurate measurement regardless of upstream and downstream flow disturbances

Proportional Valve

- Reliable solenoid technology
- Orientation independent
- Digitally controlled by sensor

X-Flow™ Mass Flow Controller

Designed and Produced with Simplicity in Mind for:

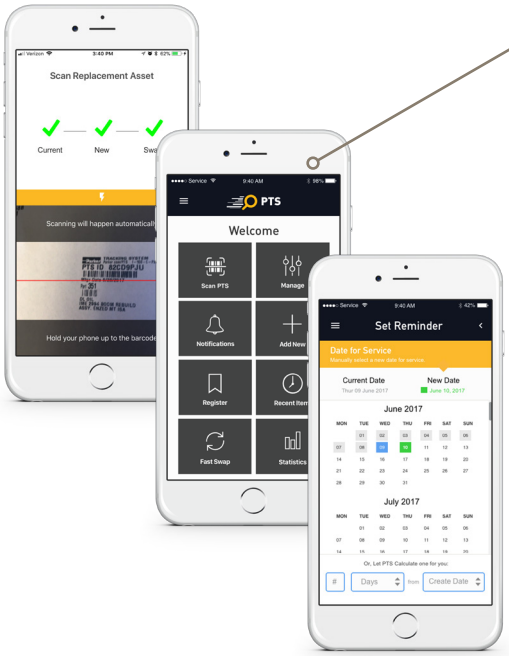
- Analytical Instrumentation
- Pharma / Bio Pharma
- Emissions Monitoring
- Process Industry Needs

PTS
Parker Tracking System

Included asset management system - Parker Tracking System (PTS)

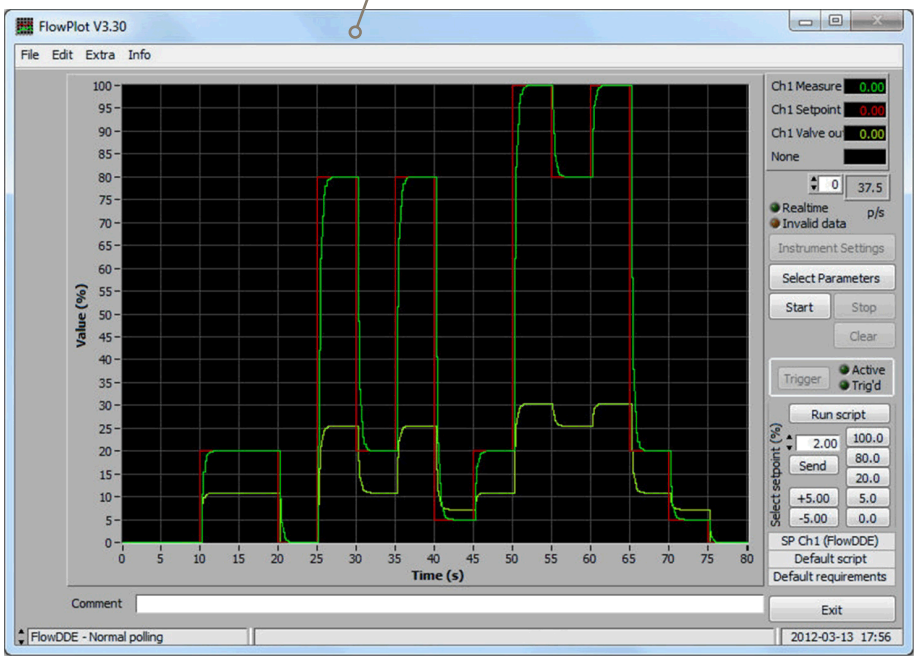
- Reduce downtime with automatic reminders based on your calibration cycle
- Track your asset's specific conditions
- Centralized location for all documentation

Learn more at www.parker.com/PTS



Parker Floware: Included free software tools to get the most out of your unit:

- View your Flow Signal, Set Point and Output Signal on a graph
- Flexibility around process changes, setpoint changes, and fine tune flow response
- Set alarms and counters for over and aggregate usage



X-Flow™ Mass Flow Controller
Product Specifications

Measurement / Control System

Accuracy	±1.0% Full Scale
Turndown	50:1
Repeatability	<0.2% of Reading
Controller Settling Time	1 second (Nominal)
Control Stability	<±0.1% Full Scale (typical for 1 l/min N2)
Controllable Flow Range	0.8 ml/min to 20 l/min
Full Scale Calibration Range	40 ml/min to 20 l/min
Operating Temperature	32 to 122°F, 0 to +50°C
Operating Pressure	145 PSIG, 10 Barg
Temperature Sensitivity Zero	<0.1% Full Scale/°C; span: <0.1% Reading/°C
Leak Integrity (External)	Tested < 2 x 10^{-9} mbar l/s He
Warm-Up Time	±2% Full Scale after 2 min, ±1.0% Full Scale after 30 min
Control Valve	Normally Closed Proportional Valve

Mechanical Parts

Material (wetted parts)	Stainless Steel 316L or comparable, FKM
Process Connections	1/8", 1/4", and 6mm with 44 micron screens 325 mesh (See accessories section for details)
Seals	FKM
IP Rating	IP40
Nominal Dimensions	4.5" x 1" x 3" (11.4 cm x 2.5 cm x 7.6 cm)
Mounting Options	Two mounting options included. (Accessory transition plate adds two additional mounting options)

Electrical Properties

Power Supply	+15-24 Vdc
Power Consumption Controller	320 mAdc (max)
Analog Output/Command	0-5 Vdc or 4-20 mAdc (Sourcing)
Digital Communication	RS232, Modbus-RTU, Modbus-ASCII (RS485)
Electrical Connection	9-pin D-connector (male)
Electrical Adapters	9 to 15 Pin, 9 to 9 Pin (See accessories section for details)
Compliance	CE, REACH, RoHS II

X-Flow™ Mass Flow Controller

Gas Flow Range

	F	G	H	I	J	K	M	N
Gas	ml/min					l/min		
N2	0.8 to 100	2 to 200	4 to 500	10 to 1,000	20 to 2,000	0.04 to 5	0.1 to 10	0.2 to 20
AR	1.1 to 139	2.8 to 277	5.6 to 694	13.9 to 1,388	27.5 to 2,737	0.06 to 7	0.14 to 14	0.3 to 27
CH4	0.6 to 78	1.6 to 157	3.1 to 392	7.8 to 784	15.7 to 1580	0.03 to 4	0.08 to 8	0.16 to 16
CO2	0.6 to 73.7	1.5 to 147.1	2.9 to 368.6	7.3 to 737.2	14.6 to 1,458	0.03 to 3.6	0.07 to 7.3	0.15 to 14.6
H2	0.8 to 103	2.0 to 205	4.1 to 514	10.2 to 1,027	20.8 to 2,114	0.04 to 5.3	0.1 to 10.6	0.21 to 21.2
He	1.1 to 142.8	2.8 to 285.7	5.7 to 714.2	14.3 to 1,429	28.9 to 2,936	0.06 to 7.3	0.14 to 14.7	0.29 to 29.4
O2	0.8 to 98.6	2 to 197.1	3.9 to 492.8	9.9 to 985.6	19.7 to 1,973	0.04 to 4.9	0.1 to 9.9	0.2 to 19.7

Notes

The selected orifice of the control valve may limit the rangeability
Standard accuracy (based on actual calibraiton): +/- 1% FS
Factors for gas not in the above table are available from the factory
All flow ranges are standard conditions of 14.7 PSIA and 0°C

Ordering Information

601XF F A A D 00 V

Base Model

601XF

Nitrogen Full Scale Equivalent Flow Range*

F	40-100 ml/min
G	100-200 ml/min
H	200-500 ml/min
I	500-1000 ml/min
J	1000-2000 ml/min
K	2-5 l/min
M	5-10 l/min
N	10-20 l/min

*Standard conditions of 14.7 PSIA and 0°C

Analog I/O

A	0-5 Vdc
G	4-20 mAdc Sourcing

Communication (I/O)

A	Analog + RS232 or ModBus™

Supply Voltage

D	+15-24 Vdc

Connection

00	None

Elastomers

V	FKM

Accessories

Accessories
B-1562-039V: 1/8” Compression Fitting with 325 Mesh (44 Micron) Filter Screen and FKM O-ring
B-1562-025V: 1/4” Compression Fitting with 325 Mesh (44 Micron) Filter Screen and FKM O-ring
B-1562-040V: 6mm Compression Fitting with 325 Mesh (44 Micron) Filter Screen and FKM O-ring
B-1562-038V: 1/8” NPT Adapter with 325 Mesh (44 Micron) Filter Screen and FKM O-ring
B-5757-000: Transition Plate for Increased Mounting Options
A-4541-000: Transition Kit with Transition Plate, 2 Screws and Hex Wrench
C-700-002: Interface cable with flying leads on one end
C-1739-010: CM-400 Interface Cable
7.03.366: Digital Interface T Cable
Electrical Adapter / Connector (Contact Factory for Details)

Chemical Compatibility Chart

X-Flow's robust proven sensor technology offers a wide variety of gasses that are compatible for use.

Acetylene (Ethyne)	Helium (3-)
Argon	Hydrogen
Air	Isobutane
Butadiene (1,3-)	Isobutylene (Isobutene)
Butane	Krypton
Butene (2-) (Cis)	Methane
Butene (2-) (Trans)	Methylacetylene
Carbon disulfide	Methylchloride
Carbon monoxide	Neon
Chlorine	Nitrogen
Deuterium	Nitrous oxide
Ethane	Oxygen
Ethylene (Ethene)	Pentane
Ethylchloride	Perfluoropropane
Freon-11	Phosphine
Freon-12	Silane
Freon-13	Vinylbromide
Freon-13B1	Vinylchloride
Germane	Vinylfluoride
Helium	Xenon

X-Flow™ Mass Flow Controller

Serving a broad spectrum of life science, air quality, and process instrumentation OEM fluidic needs

Providing Pressure and Vacuum:
Broad range of diaphragm pumps for Gas and Liquid

Gas Flow Control:
High to Low Flow Proportional Valves

On/Off & Channel Selection Capabilities:
Gas and Liquid Solenoid Valves

High Precision Thermal Flow Control:
Mass Flow Controllers and Meters

X-Flow™ Mass Flow Controller

Learn More at: solutions.parker.com/X-Flow

Below are some common specifications that are helpful to have on hand to accelerate your product selection:

- Gas Type
- Maximum Flow Rate
- Inlet and Outlet Pressures
- Operating Temperature
- Standard Reference Conditions
- Process Connection Size and Type
- Set Point Signal
- Digital Communication Protocol Preferences

Recommendations on application design and material selection are based on available technical data and are offered as suggestions only. Each user should conduct their own tests to determine the suitability for their own use. Parker offers no express or implied warranties concerning the form, fit, or function of a product in any application.

PPF XFMF - 002/US Oct 2018

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