

# 3600 Series

## Severe Duty Mass Flow Meter & Controller



### High Performance Gas Flow Control for Industrial Environments

The Porter 3600 Series Digital Mass Flow Instruments are designed specifically for applications in severe industrial environments. Various models in this series meet IP 66, NEMA 4X and Class 1, Div. 2 requirements. Series 3600 devices will satisfy food & beverage, biotech/ pharmaceutical and chemical processing applications that require frequent wash down, as well as chemical/petrochemical and industrial process applications where hazardous location certification is required.

Digital control electronics provide unparalleled accuracy, repeatability and control stability. TURCK™ electrical connectors simplify wiring and replacement. Percentage of reading accuracy, fast response and multi-gas capability, along with analog or digital I/O options make the Porter 3600 Series a versatile solution to many demanding applications.



### Contact Information:

Parker Hannifin Corporation  
**Porter Instrument Division**  
245 Township Line Road  
Hatfield, PA 19440

phone 215 723 4000  
fax 215 723 2199  
Industrial@parker.com

www.parker.com

### 3600 Series Features:

- NEMA 4X, IP 66 Watertight Construction
- Listed for Class 1, Division 2 Environments
- Industry Standard TURCK™ Electrical Connectors
- Stainless Steel Body and Internal Components
- Digital Electronics
- Multi-Gas Capability
- 4-20 mA, Modbus, Profibus or DeviceNet I/O
- Self-Diagnostics



ENGINEERING YOUR SUCCESS.

# Specifications

## Flow Capacity

Model 3601 controller & 3611 meter:  
100 SCCM to 10 SLPM

Model 3602 controller and 3612 meter:  
10 SLPM to 100 SLPM (nitrogen equivalent)

## Response Time (per SEMI E17-91 Settling Time)

1 to 2 seconds (consult factory for applications requiring faster response times)

## Accuracy and Linearity

±1.0% of reading (20%-100% full scale) & ±0.8% of reading plus ±0.2% full scale (below 20% full scale)

## Repeatability

Within ±0.2% of rate at any constant temperature within operating temperature range

## Rangeability (Control Range)

50:1 (2%-100% full scale) (accuracy and control)

## Ambient Temperature Range

Devicenet: -10°C to 60°C (14°F to 140°F)  
All Other Protocols: -10°C to 70°C (14°F to 158°F)

## Temperature Coefficient

### (per SEMI E18-91 Zero Effect and Span Effect)

±0.05% full scale/°C of zero  
±0.05% of reading/°C of span

## Maximum Operating Pressure: 1500 PSIG

## Pressure Coefficient

### (per SEMI E28-92 Total Calibration Effect)

± 0.1%/atmosphere typical using nitrogen (N2)



## Warm-up Time: 10 minutes

## Setpoint Input/Flow Signal Output

Setpoint	Flow Signal
0-5 Vdc	0-5 Vdc (2K ohm min. load resist.)
0-10 Vdc	0-10 Vdc (3K ohm min. load resist.)
4-20 mAdc	4-20 mAdc (sourcing) (refer to load resistance values below)
0-100%	0-100% (Modbus, Profibus, DeviceNet)

Load resistance values for 4-20 mAdc flow signal output: 200-750 ohm for 15-30 Vdc loop supply voltage

# Certifications (Model Dependent)

EMC Directive 89/336/EEC Pressure Equipment Directive (97/23/EC) Hazardous Location Classification Non-Incendive Enclosure Type 4X/IP66 <b>Temperature (Ambient)</b> Devicenet: -10° to 60°C (14° to 140°F) All Other Protocols: -10 to 70°C (14° to 158°F)	CI I Div 2 Gps ABCD Class I Zone 2  AEx nA IIC T5 IP66 Ex nA IIC T5 IP66 Intertek 4000657 
--	--

## Power Supply Requirements

All models operate from nominal power supply voltages of +15 to +24 Vdc. Current Consumption <250 mAdc (MFC), <70 mAdc (MFM)

## Electrical Connections

### For Class1, Div 2, NEMA4X, IP66

#### External Electrical Connectors on Device

Analog: TURCK™ minifast

Digital: TURCK™ minifast

#### Mating Cordsets (TURCK™, Inc.):

Analog: TURCK™ p/n P-RKV 71-219-\*M

Digital: TURCK™ p/n P-RKV 55-099-\*M (Modbus)

Digital: TURCK™ p/n RSCV RKCVC 5711-\*M  
(Devicenet; male/female)

Digital: TURCK™ p/n RKCVC 5711-\*M  
(Devicenet; female/flying leads)

Digital: for Profibus, contact factory

\* Indicates cordset length

#### Mating Cordset for Internal Electrical Connector inside Device:

RS232 Comm: TURCK™ p/n PKG 3Z-\*

\* Indicates cordset length

### For NEMA4X, IP66 Device

#### External Electrical Connectors on Device

Analog: TURCK™ eurofast

Digital: TURCK™ eurofast

#### Mating Cordsets (Turck, Inc.):

Analog: TURCK™ p/n RKSVC 8T-\*

Digital: TURCK™ p/n RKSVC 4.5T-\* (Modbus)

Digital: TURCK™ p/n RKCVC 5711-\*M

(Devicenet; female/flying leads)

TURCK™ p/n RSCV RKCVC 5711-\*M

(Devicenet; female/male)

Digital: TURCK™ p/n RKSVC 455-\*M

(Profibus; female/flying leads)

TURCK™ p/n RSSVC RKSVC 455-\*M

(Profibus; female/male)

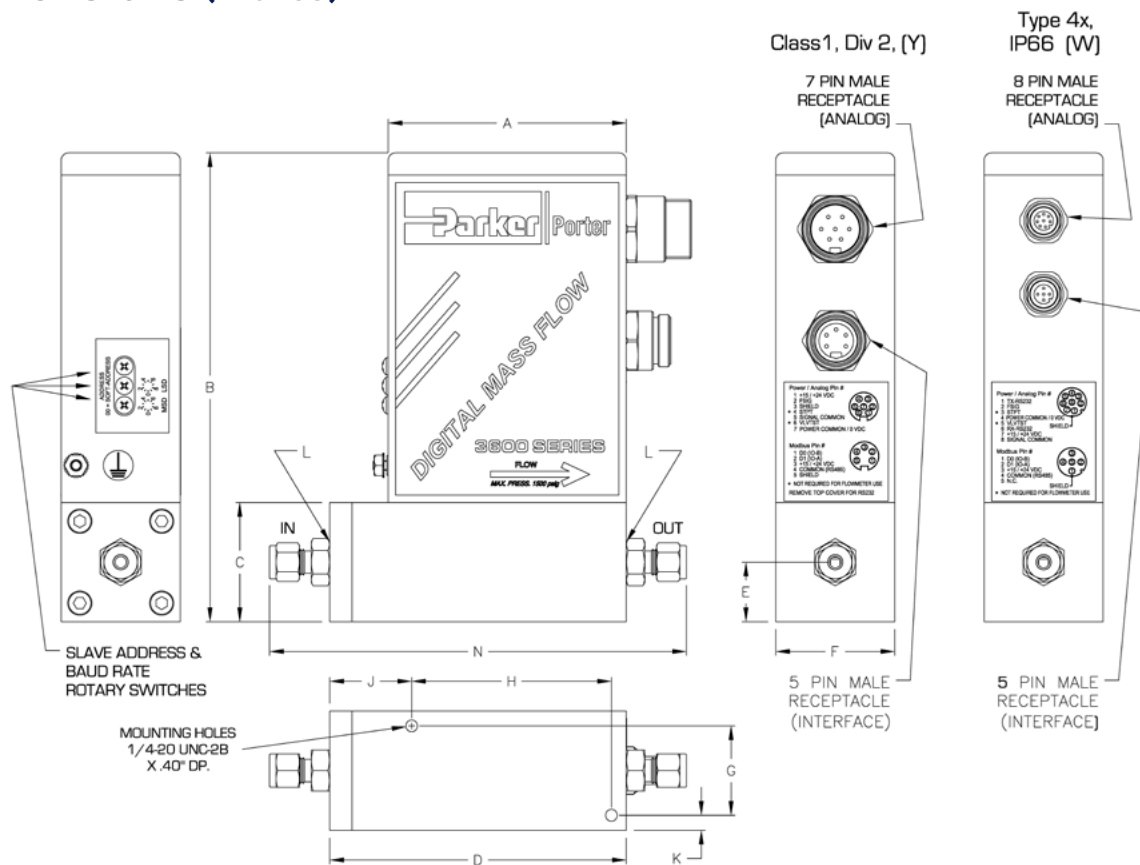
\* Cordset length indicator

# Materials

<b>Body</b>	316 Stainless Steel
<b>Sensor Assembly</b>	316L Stainless Steel
<b>Orifice</b>	316 Stainless Steel (MFCs only)
<b>Valve Components (Wetted)</b>	302 Stainless Steel, 316 Stainless Steel, 430F Stainless Steel and Sandvik® (MFCs only)
<b>Elastomers</b>	Buna N, EPDM, Kalrez®, Neoprene or Viton®
<b>Process Connections</b>	316 Stainless Steel

Sandvik® is a registered trademark of AB Sandvik Materials Technology. Kalrez® and Viton® are registered trademarks of DuPont Dow Elastomers L.L.C.

# Dimensions (Inches)



Class 1, Div 2, (Y)

Type 4x, IP66 (W)

7 PIN MALE RECEPTACLE (ANALOG)

8 PIN MALE RECEPTACLE (ANALOG)

5 PIN MALE RECEPTACLE (INTERFACE)

5 PIN MALE RECEPTACLE (INTERFACE)

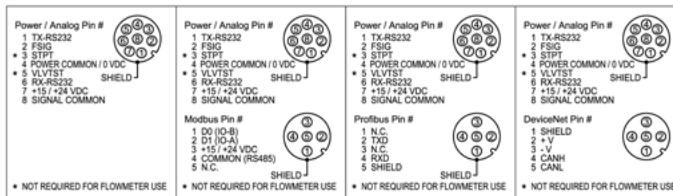
Model	A	B	C	D	E	F	G	H	J	K	L	N
3602	4.000	7.875	2.000	4.982	1.000	2.000	1.500	3.355	1.377	0.250	9/16-18	Ref. Table Below
Model	A-LOK®/CPI™					VacuSeal™						
	1/8"	1/4"	3/8"	1/2"	3/4"	1/4"	3/8"	1/2"				
3602	6.822	7.002	7.122	7.282	N/A	6.862	7.162	7.162				

## External Wiring Diagram Cable Information and Connector Pinouts

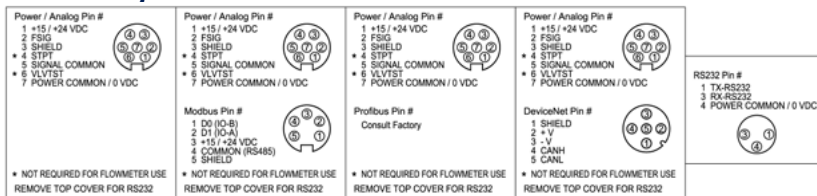


Analog/Power Connector  
Digital Communications Connector

### W Configuration



### Y Configuration

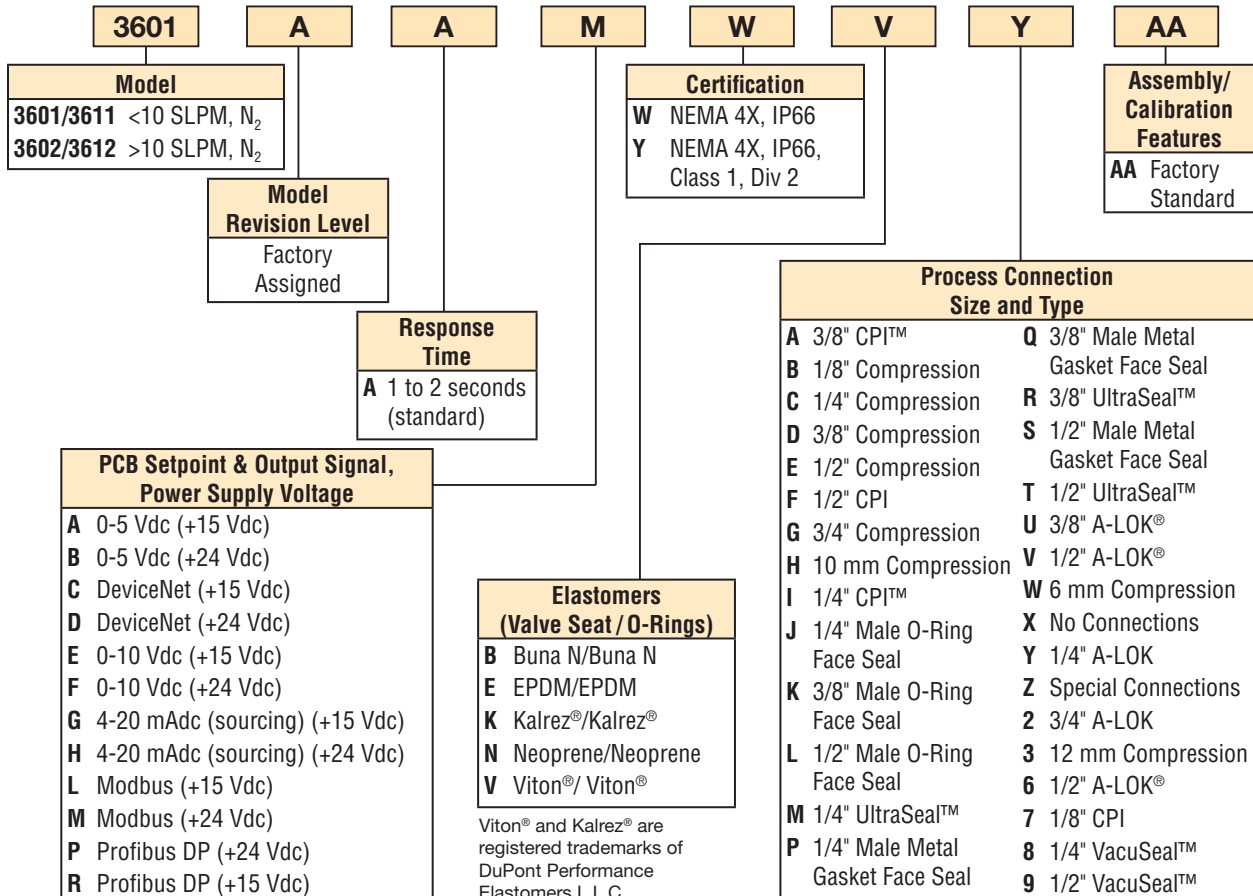


# Ordering Information

Use the following guide to determine the specific product number you require.

The following example describes a 3600 Series Flow Controller, standard response, Modbus communications, 24 Vdc power, NEMA 4X & IP 66 Certification, Viton® elastomers and 1/4" A-LOK® connections.

**Example: 3601AAMWVYAA**



## ⚠ WARNING – USER RESPONSIBILITY

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

## Offer of Sale

The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document or available at [www.parker.com/safety](http://www.parker.com/safety).