

# Flow Switch



- ▶ **Pressure**
  - Electronic Pressure Switches
  - Mechanical Pressure Switches
  - Pressure Transducer
- ▶ **Valves & Regulators**
- ▶ **Temperature**
- ▶ **Level**
- ▶ **Flow**
- ▶ **Air Suspension Valves**

## Solid State Flow Switch

**UQS7 Series**

### Features

- ▶ Flow and volume flow monitoring
- ▶ Ultrasonic sensor with digital display
- ▶ Integrated 4-20 mA analog output
- ▶ Easy to read LED display
- ▶ Fully configurable via keypad
- ▶ 2 set points and analog output
- ▶ Suitable for water-based fluids
- ▶ IP 65 protection

### Applications

- ▶ OEM applications
- ▶ Cooling systems
- ▶ Test systems



### General Specifications\*

|                                  |  |
|----------------------------------|--|
| <b>Accuracy:</b>                 | 2.5% f. s.   |
| <b>Linearity Error:</b>          | ±2.5% f. s. at 77°F (+25°C)                                |
| <b>Repeatability:</b>            | ±0.1% f. s.  |
| <b>Sensor Element:</b>           | Ultrasonic sensor  |
| <b>Material:</b>                 |  |
| Wetted Parts:                    | Brass  |
| Housing (electronics):           | Aluminum die-cast  |
| Seals (media):                   | Klingersil®  |
| Push Buttons:                    | Polyester  |
| <b>Measuring ranges:</b>         |  |
| g/min:                           | 2.6 / 6.6 / 10.5 / 26.4 / 44.9                             |
| l/min:                           | (10 / 25 / 40 / 100 / 170)                                 |
| <b>Process connection:</b>       | G 3/4, G 1, G 1-1/4, G 2                                   |
| <b>Electrical Connection:</b>    | Plug M 12 x 1, 5-pin                                       |
| <b>Power Supply:</b>             | 15-32 VDC, reversed polarity protected                     |
| <b>Power Consumption:</b>        | Appr. 50 mA (without load)                                 |
| <b>A/D-Converter:</b>            |  |
| Scanning Rate:                   | 500 ms (for peak value memory)                             |
| <b>Analog Output:</b>            |  |
| Scanning Rate:                   | 500 ms   |
| Resolution:                      | 10 bit (1024 steps per measuring span)                     |
| Current Output (standard):       | 4-20 mA  |
| Load:                            | max. RI = (Ub-12 V) / 20 mA<br>RI = 600 Ohm at Ub = 24 VDC |
| Load Influence:                  | 0.3% / 100 Ohms  |
| Voltage Output (optional):       | 0 to 10 VDC  |
| Rating (optional):               | max. 10 mA, short circuit-proof                            |
| Adjustment Range:                | 25% to 100% f. s.  |
| <b>Switching output(s):</b>      |  |
| Switching Function (adjustable): | Normally open/normally closed, standard/windows-mode       |
| Adjustment Range:                | 0% to 125% f. s.   |
| Hysteresis:                      | 0% to 125% f. s.   |

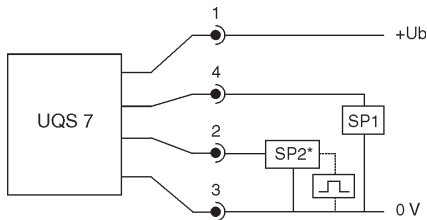
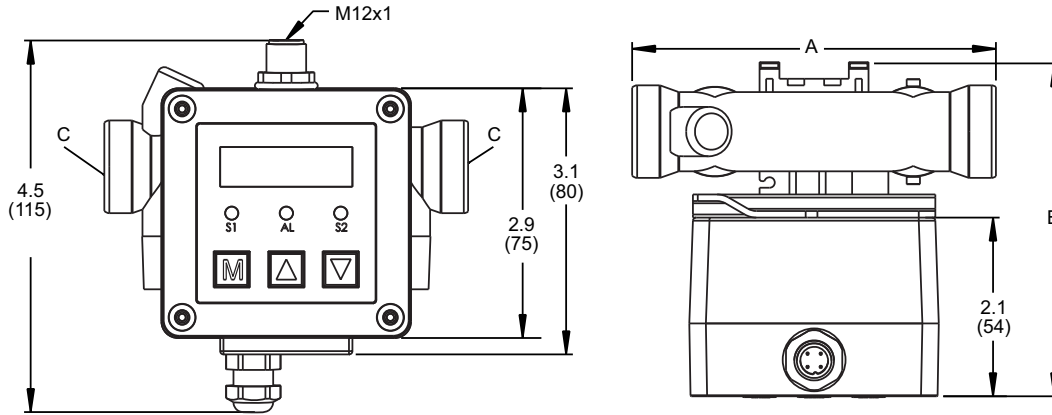
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|-----------------------------------|--|
| <b>Switching output(s) Cont.:</b> |  |
| Diagnosis Function:               | 0 to 125% f. s.  |
| Switching Frequency:              | max. 100 Hz  |
| Rating:                           | max. 500 mA, short circuit-proof   |
| Delay:                            | 0.0 to 9.9 s adjustable  |
| Status Display(s):                | LED(s) green   |
| <b>Digital Display:</b>           | 4-digit 7-segment LED-display<br>height 0.5 in., red   |
| <b>Error Display:</b>             | LED yellow and alphanumeric display,   |
| <b>Display Rate:</b>              | 500 mS   |
| <b>Operating Elements:</b>        | 3 easy response push buttons   |
| <b>Temperature Range:</b>         | 39°F to 266°F  |
| Electronics:                      | 14°F to 158°F  |
| Storage:                          | -22°F to 176°F   |
| <b>Temperature Influence:</b>     | ±0.2% f. s. /10K   |
| <b>Compensation Range:</b>        | 14°F to 158°F (-10° to +70°C)  |
| <b>Protection Class:</b>          | IP65   |
| <b>Dimensions (Housing):</b>      | 3.9 in. X 4.3 in. (UQS7-10)  |
| <b>Inlet - Outflow Zone:</b>      | Integrated in the measuring device   |
| <b>Media:</b>                     | Water and similar media, max. pressure 360 psi (25 bar) (higher pressures on request)  |
| <b>Options:</b>                   | Electrical plug, adapters  |
| <b>Additional Features:</b>       | 7-segment LED display, microprocessor-controlled, self-monitoring with error display. All parameters are configured by keypad. Tamper proof, keypad lock, rugged construction, vibration-proof and shock-proof, long term stability, display unit rotatable in steps of 90°. |

\* See product configurator for additional options.

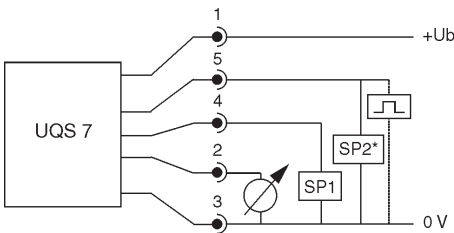
# Solid State Flow Switch

# UQS7 Series

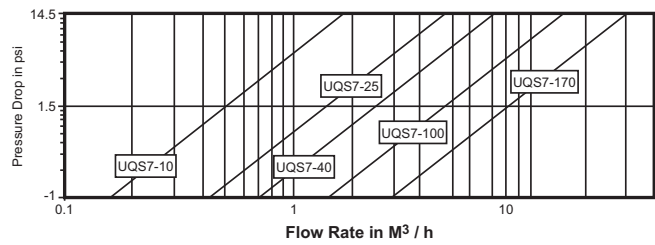
## Technical Drawings



\*SP2 = pulse outlet



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## Product Configurator

Example **UQS7** **-40-G4-2**

Base Model

UQS7

## Flow Rate & Connections

|           |  |
|-----------|--|
| -10-G3-2  | 10 l/min, G3/4 & no analog output        |
| -10-G3-3  | 10 l/min, G3/4 & 4-20mA analog output    |
| -25-G3-2  | 25 l/min, G3/4 & no analog output        |
| -25-G3-3  | 25 l/min, G3/4 & 4-20mA analog output    |
| -40-G4-2  | 40 l/min, G1 & no analog output          |
| -40-G4-3  | 40 l/min, G1 & 4-20mA analog output      |
| -100-G5-2 | 100 l/min, G1-1/4 & no analog output     |
| -100-G5-3 | 100 l/min, G1-1/4 & 4-20mA analog output |
| -170-G8-2 | 170 l/min, G2 & no analog output         |
| -170-G8-3 | 170 l/min, G2 & 4-20mA analog output     |

## Accessory

| Order # | Description                              |
|---------|--|
| 239263  | - 5 Pin, M12 electrical mating connector |

## Connection Chart

| Plug M 12 X 1 4/5 pin | Model with 2 switching outputs | Model with 2 switching outputs and 1 analog output | Model with 1 switching output and 1 pulse output | Model with 1 switching output, 1 pulse output and 1 analog output |
|-----------------------|--------------------------------|--|--|---|
| Pin 1                 | +Ub (15 - 32 V DC)             | +Ub (15 - 32 V DC)                                 | +Ub (15 - 32 V DC)                               | +Ub (15 - 32 V DC)  |
| Pin 2                 | SP2 0.5 A max.                 | Analog   | Pulse output                                     | Analog  |
| Pin 3                 | 0 V                            | 0 V  | 0 V  | 0 V   |
| Pin 4                 | SP1 0.5 A max.                 | SP1 0.5 A max.                                     | SP1 0.5 A max.                                   | SP1 0.5 A max.  |
| Pin 5                 | -                              | SP2 0.5 A max.                                     | -  | Pulse output  |



## Global Presence

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**Barksdale Inc.**  
3211 Fruitland Ave.  
Los Angeles, CA 90058-0843  
U.S.A.  
Phone: (800) 835-1060  
Fax: (323) 589-3463  
Email: [sales@barksdale.com](mailto:sales@barksdale.com)  
[www.barksdale.com](http://www.barksdale.com)

**Barksdale GmbH**  
Dorn-Assenheimer Strasse 27  
61203 Reichelsheim, Germany  
Phone: (49) 6035-949-0 (main office)  
(49) 6035-949-204 (sales)  
Fax: (49) 6035-949-111/-113  
Email: [info@barksdale.de](mailto:info@barksdale.de)  
[www.barksdale.de](http://www.barksdale.de)

**Barksdale GmbH**  
Dorn-Assenheimer Strasse 27  
61203 Reichelsheim, Germany  
Phone: (49) 6035-949-0 (main office)  
(49) 6035-949-204 (sales)  
Fax: (49) 6035-949-111/-113  
Email: [info@barksdale.de](mailto:info@barksdale.de)  
[www.barksdale.de](http://www.barksdale.de)

**Barksdale India**  
SF- 43, Ansal Fortune Arcade  
Sector – 18  
India-201301 Noida  
Phone: +91-120 25 10 522  
Fax: +91-120 25 10 520  
[manojsingh@barksdale.in](mailto:manojsingh@barksdale.in)

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