

Description

Single point flow monitor (SU 1003), dual point flow monitor (SU 1004), with change over MIN/MAX monitoring function, suitable for water, oil, air and media with similar thermal conductivities. With either no delay, or with a 60 seconds switch on delay or 10 seconds change over delay (SU 1003).

Features

- Adjustable to wide range of flow rates
- No moving parts in the flow stream
- Operation largely independent of pipe diameter
- LED Status indication
- Fast response time
- MIN or MAX switch point
- Suitable for all media (water, oil and air)
- Explosion proof and weatherproof



SU 1003 / SU 1004

1

Technical data

| General data | | SU 1003 | SU 1004 |
|---|----------------------------|---|--|
| Compact housing | | Single Point Flow Monitor | Dual Point Flow Monitor |
| Media | | liquids, gases | liquids, gases |
| Monitoring function | flow rate | 1 switch point (MIN or MAX) | 1 or 2 switch points (MIN and MAX) |
| | medium temperature | | 1 switch point (MAX) |
| Display | flow rate | 1 dual color LED | 1 or 2 dual color LED's (red/green) |
| | medium temperature | | 1 dual color LED |
| Temperature range | medium and monitoring head | -25°C...+70°C (-13°F...+158°F) | -25°C...+70°C (-13°F...+158°F) |
| | electronic control unit | -25°C...+50°C (-13°F...+122°F) | -25°C...+50°C (-13°F...+122°F) |
| Electrical data | | | |
| Input voltage | | AC 230, 115, 24 V 50/60 Hz +10%, -15% DC 24 V ±20 % | |
| Power consumption | | approx. 1.2 VA | approx. 1.5 VA |
| Relay outputs | flow rate | 1 change over contact AC 250 V / DC 30 V, 5 A | 1 or 2 change over contacts AC 250 V / DC 30 V, 5 A |
| | medium temperature | | 1 change over contact AC 250 V / DC 30 V, 5 A |
| Flow monitoring | | | |
| Flow response level adjustment (steplessly by means of a potentiometer) | | with gases: 0.5 m/s...50 m/s (2 to 160 FPS) with liquids: 0.01 m/s...2 m/s (0.03 to 7 FPS) | |
| Repeatability ⁽¹⁾ | | ± 10 % | |
| Response delay ⁽²⁾ | | 2 s with water, 4 s with oil, 7 s with air selectable delay (no delay, 60 s switch-on delay or 10 s change over delay) | |
| Switch point drift through temperature change of the medium | | approx. ±0.7 %/°C | |
| Mechanical data | | | |
| Type and size of monitoring head | | 1/2"NPT, 3/4"NPT, 1"NPT | |
| Pressure resistance of monitoring head | | 250 bar/3675 PSI | |
| Environmental protection | monitoring head | IP67 | |
| | electronic control unit | explosion proof FM, CSA approved housing | |
| Materials | fitting/sensor support | stainless steel 1.4571/AISI 316Ti | |
| | sensor | stainless steel 1.4571/AISI 316Ti | |
| | sealing | nickel based solder DIN 8513-L-Ni | |
| | electronic control unit | Epoxy painted cast aluminium | |
| Housing dimensions | electronic control unit | 4.5" x 4.5" x 3.5" | |
| Cable length | standard | without | |
| | max. length | 100 m | |

⁽¹⁾ of the set value, at constant temperature and flow conditions, and stable thermal conductivity.

⁽²⁾ Delay with the switch point set to 1 m/s and the flow at 2 m/s, after a sudden complete stop.

Ordering information

| Flow Monitor | |
|---------------------------------|---|
| SU 1003 | Single Point Flow Monitor |
| SU 1004 | Dual Point Flow Monitor |
| 01 | Explosion proof for Class 1, Div. 1, Groups B, C and D, NEMA 4x Weatherproof. FM/CSA Approved Housing with Window |
| Power Input | |
| 03 | 115 V AC |
| 04 | 24 V AC/DC |
| 05 | 230 V AC |
| Process connection (see note 2) | |
| 050 | 1/2" MNPT (Standard) |
| 075 | 3/4" MNPT |
| 100 | 1" MNPT |
| F | Mounting Configuration (Flanges, Spools, Tees, Removable Probe Assembly) - Please Specify (see note 1) |
| Sensor Material (see note 1) | |
| SS | 316 Ti, 1.4571 |
| HC | Hastelloy |
| B | PVDF Plastic with Gold Plated Tips (3/4" NPT only, not explosionproof) |
| Insertion length | |
| | 1/2" MNPT 3/4" MNPT 1" MNPT |
| 01 | 1" 1" N/A |
| 02 | 2" 2" 1" |
| 04 | 4" 3" 3" |
| 06 | 6" 5" 5" |
| 08 | 8" 7" 7" |
| 10 | 10" 9" 9" |
| 00 | Specify length in inches |
| Options | |
| 0 | No Selection |
| 1 | Remote Electronics |
| 5*** | 60 Sec. "Power On" Relay Delay to "De-energize" **/** |
| 6*** | 10 Sec. "Setpoint Switching" Relay Delay to "De-energize" **/** |
| 7*** | Relay De-energized on "Flow" Condition |
| 8*** | Relay De-energized on "No Flow" Condition (Standard) |
| 9 | 1/2" NPT Conduit Adaptor |
| 10**** | Temperature switch Option |
| 11 | SS Tag (Specify Markings) |
| 12 | Reverse Front Cover Plate Orientation |
| Extension wire (see note 3) | |
| 0 | No Selection |
| 1 | PVC |
| 2 | Teflon |

SU 1003 - 01 - 03 - 050 - A - 01 - 5/8/11 - 0 ordering example

Notes:

- 1.) If mounting, switch configuration or sensor material is other than shown in the ordering information please consult factory for pricing and availability.
- 2.) A Pipe thread size adaptor is supplied for 3/4" MNPT and 1" MNPT process connections as shown in the chart in the above dimension drawing and is used with a Process Connection Code "050" probe in all cases. A Sensor Material Code "A" probe is shown in the above drawing. If insertion length is other than noted, please specify. Insertion length = from tip of probe to the start of the insertion threads or flange.
- 3.) For optional remote electronics only. Enter code followed by

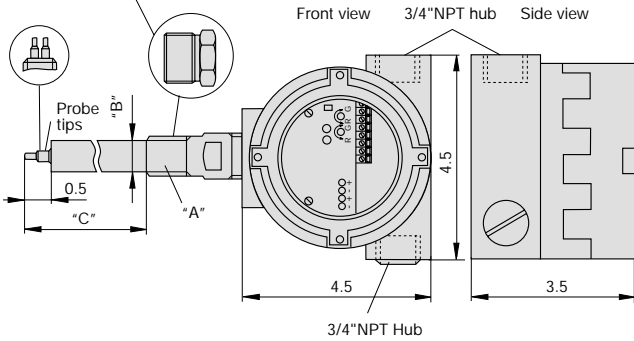
number of feet (Example: 1-6=6" PVC Cable)

- * Field Selectable
- ** Time delay is inactive in standard unit
- *** Type SU 1003 only
- **** Type SU 1004 only. Field Selectable. Setpoint "B" Only. Standard factory setup is Setpoint "A" = low setpoint for flow (fixed) & Setpoint "B" = high setpoint for flow. Setpoint "B" can be changed by jumper selection to be a temperature switch.

Dimensions

Explosion-proof/weatherproof housing

1/2" FNPT to 3/4" MNPT adaptor or
1/2" FNPT to 1" MNPT adaptor
(See chart below)

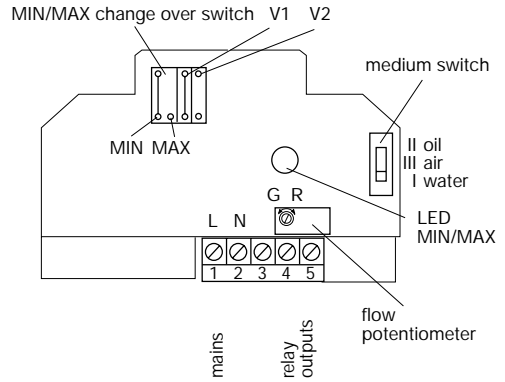


| Code | Process connection "A" | | "B" |
|----------------------|------------------------|-------------------|-------------------|
| 050 | 1/2" MNPT | | 0.7" |
| 075 # | | 3/4" MNPT | 0.9" |
| 075 ## | | 3/4" MNPT | 0.7" |
| 100 | | 1" MNPT | 0.7" |
| Insertion length "C" | | | |
| 01 | 1.0" ¹ | 1.0" ¹ | N/A |
| 02 | 2.0" ¹ | 2.0" ¹ | 1.0" ³ |
| 04 | 4.0" ¹ | 3.0" ² | 3.0" ³ |
| 06 | 6.0" ¹ | 5.0" ² | 5.0" ³ |
| 08 | 8.0" ¹ | 7.0" ² | 7.0" ³ |
| 10 | 10.0" ¹ | 9.0" ² | 9.0" ³ |

- # 1.0" & 2.0" insertion lengths
- ## 3.0" thru 9.0" insertion lengths
- ¹ No size adaptor
- ² 1/2" FNPT to 3/4" MNPT size adaptor supplied
- ³ 1/2" FNPT to 1" MNPT size adaptor supplied

Connection diagram

SU 1003



SU 1004

