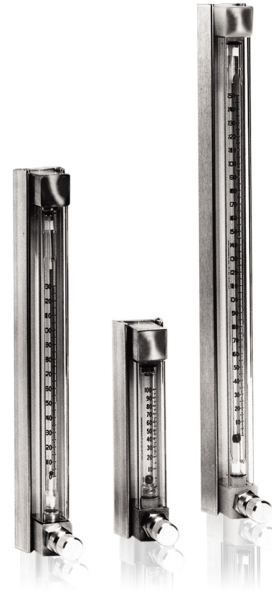


# Models A6100 & A6200 Purgemaster 'SNAP-IN' Small Flowmeter

Long-term reliable  
performance flowmeters with  
low cost-of-ownership



## High strength stainless steel body

- the body is corrosion resistant stainless steel, rigidly constructed to maintain tube alignment and resist pipe strain

## 'SNAP-IN' tube construction

- minimizes the downtime needed to clean the meter tube or to change the meter range

## Polycarbonate operator protection shield

- safety tested shield protects personnel from glass fragments in the rare event of accidental tube breakage

## Component flexibility

- all parts for the three scale lengths except bodies, tubes and protector shields are interchangeable

## Internal backcheck

- restricts back flow and draining of process fluid when metering tube is removed

## Choice of operating position

- the meter can be inverted and its tube reversed to change the control valve position from the inlet to the outlet

## Options of valve, DP regulator and alarms

## ATEX-approved versions available both with and without alarms

- II 2GD approval without alarms; II 2G approval with alarms

## Introduction

ABB Purgemaster Flowmeters are low capacity variable area flowmeters for both liquid and gas with an excellent selection of material and scale lengths in a single product family design. They provide optimum flexibility with a minimum number of components. The meter features a corrosion resistant, high strength stainless steel body, quick, easy snap-in tube construction and a safety tested operator protection shield.

ABB Purgemasters are ideal for applications such as the purging of control lines and instrument enclosures. Their use is easily extended into fluid sampling, liquid specific gravity, level measurement and similar services.

## Specification

### Measuring ranges

See measuring range tables on pages 3, 4 and 5

### Rangeability

≥10:1

### Scale design

% or direct reading scales

Dt/Df ratio scale, millimeters

### Accuracy classes (VDE/VDI 3513)

5 in. scale length

1/4 in. & 1/8 in. tube diameter 2.5

1/16 in. tube diameter 6

3 in. scale length

All sizes 10

1 1/2 in. scale length

All sizes 10

### Permissible operating temperatures

Non-certified systems

Stainless steel fittings 0 to 120 °C process

Brass fittings 0 to 95 °C process

ATEX Certified systems

|                            | Max permissible Ambient or process temperature in deg C – whichever is the greater |    |     |
|----------------------------|------------------------------------------------------------------------------------|----|-----|
| Option/Temp Class          | T6                                                                                 | T5 | T4  |
| A6xxx without ring sensors | 75                                                                                 | 90 | 120 |
| A6xxx with ring sensors    | 40                                                                                 | 40 | 40  |

### Types of installation

In-line, front- & rear-panel-mounting

Wall-mounting (regulator only)

### Permissible operating pressures – kPa (bar)

| Scale length (in.) | Material           |                   |                   |                   |
|--------------------|--------------------|-------------------|-------------------|-------------------|
|                    | Stainless steel    |                   | Brass             |                   |
|                    | Fluid Temperature  |                   | Fluid Temperature |                   |
|                    | Max.               | Design            | Max.              | Design            |
|                    | 120 °C<br>(248 °F) | 38 °C<br>(100 °F) | 95 °C<br>(203 °F) | 38 °C<br>(100 °F) |
| 1 1/2 to 3         | 1800 (18)          | 1800 (18)         | 1400 (14)         | 1800 (18)         |
| 5 to 10            | 1800 (18)          | 1800 (18)         | 1400 (14)         | 1800 (18)         |

### Materials

| Wetted Parts                               | Standard                                           | Options                                         |
|--------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| Measuring Tube                             | Borosilicate glass                                 | –                                               |
| Float<br>1/16 in.                          | Glass (BG)<br>Sapphire (SA)<br>316 Stainless Steel | Carboloy (CA)<br>Tantalum (TA)                  |
| 1/8 in.                                    | Glass (BG)<br>Sapphire (SA)<br>316 Stainless Steel | Carboloy (CA)<br>Tantalum (TA)                  |
| 1/4 in.                                    | Glass (CD)<br>316 Stainless Steel                  | Sapphire (SA)<br>Carboloy (CA)<br>Tantalum (TA) |
| Float Stop<br>5 in. tube<br>3 1/2 in. tube | PTFE<br>316 Stainless Steel                        | 316 Stainless Steel                             |
| Fittings                                   | Brass<br>316 S31 Stainless Steel                   |                                                 |
| O-rings                                    | Buna N<br>Viton A                                  | Ethylene propylene<br>Kalrez                    |
| Tube Adapter                               | Brass<br>316 Stainless Steel                       | –                                               |
| Needle Valve                               | 316 S31 Stainless Steel                            | –                                               |
| Return Ball                                | PTFE                                               | 316 Stainless Steel                             |

### Other components

|                            |                     |
|----------------------------|---------------------|
| Body                       | 304 Stainless Steel |
| Operator Protection Shield | Polycarbonate       |

### Connections

1/4 in. NPT or G1/4 internal thread, rear-facing horizontal or vertical

### Weights

|                | Without Regulator (kg) | With Regulator (kg) |
|----------------|------------------------|---------------------|
| Model A6131/41 | 0.45                   | 1.6                 |
| Model A6132/42 | 0.65                   | 1.8                 |
| Model A6133/43 | 0.80                   | 2.0                 |
| Model A6134/44 | 0.45                   | 1.6                 |
| Model A6135/45 | 0.45                   | 1.6                 |

## Measuring Range Tables

### Models A6131/41

| Measuring Tube   | Float              | Water       |              | Air 0 °C 1013 mbar<br>(cm³/min) (Q <sub>n</sub> ) |                      | Min. diff.<br>press.<br>bar <sup>a</sup> | Alarm<br>RC10 = 1<br>RC15 = 2 | Measuring<br>Tube/Float<br>Combination <sup>c</sup> |
|------------------|--------------------|-------------|--------------|---------------------------------------------------|----------------------|------------------------------------------|-------------------------------|-----------------------------------------------------|
| Tube No.         | Float No.          | cm³/min     | l/h          | Q <sub>n</sub> (cm³/min)                          | Q <sub>n</sub> (l/h) |                                          |                               |                                                     |
| FP-1/8-08-P-3/37 | BG-18              | 0.4 to 4.4  | 0.02 to 0.26 | 20 to 360*                                        | 2 to 21              | 0.17                                     | –                             | F1                                                  |
|                  | SA-18              | 0.5 to 8.5  | 0.04 to 0.5  | 20 to 500                                         | 2 to 30              | 0.18                                     | –                             | F5                                                  |
|                  | SS-18              | 1 to 19*    | 0.1 to 1.1   | 50 to 850*                                        | 3 to 50              | 0.18                                     | 1                             | F6                                                  |
|                  | CA-18              | 2 to 34     | 0.1 to 2.0   | 50 to 1300                                        | 5 to 80              | 0.18                                     | 1                             | F2                                                  |
| FP-1/8-20-P-3/37 | BG-18              | 2 to 28     | 0.1 to 1.7   | 100 to 1500                                       | 5 to 95*             | 0.21                                     | –                             | F8                                                  |
|                  | SA-18              | 4 to 48*    | 0.2 to 2.9   | 200 to 2000                                       | 10 to 125            | 0.21                                     | –                             | G1                                                  |
|                  | SS-18              | 5 to 90*    | 0.4 to 5.4*  | 200 to 3000*                                      | 10 to 180            | 0.21                                     | 1                             | G2                                                  |
|                  | CA-18              | 10 to 135   | 0.5 to 8.0   | 400 to 4000                                       | 20 to 260            | 0.21                                     | 1                             | F9                                                  |
|                  | TA-14              | 15 to 145   | 1 to 8.5     | 460 to 4600                                       | 27 to 270            | 0.21                                     | –                             | H1                                                  |
| FP-1/4-15-P-3/37 | CD-14              | 10 to 130   | 0.5 to 7.5   | 500 to 6500                                       | 20 to 380            | 0.35                                     | –                             | N0                                                  |
|                  | SA-14              | 23 to 230   | 1.4 to 14    | 850 to 8500                                       | 52 to 520            | 0.35                                     | –                             | N3                                                  |
|                  | SS-14              | 20 to 400   | 2 to 23.0    | 1000 to 12500                                     | 50 to 750            | 0.7                                      | 2                             | N6                                                  |
|                  | CA-14              | 40 to 580   | 2 to 34.0    | 1000 to 17000                                     | 100 to 1050          | 0.7                                      | 2                             | M3                                                  |
| FP-1/4-20-P-3/37 | CD-14              | 20 to 220*  | 0.5 to 13.0* | 500 to 9500                                       | 40 to 560            | 0.35                                     | –                             | M4                                                  |
|                  | SA-14              | 40 to 400   | 2 to 22      | 1000 to 12500                                     | 70 to 750            | 0.35                                     | –                             | M5                                                  |
|                  | SS-14              | 40 to 580*  | 2.0 to 34.0* | 1000 to 18000                                     | 100 to 1100          | 0.7                                      | 2                             | M6                                                  |
|                  | CA-14              | 50 to 850   | 4 to 50.0    | 2000 to 25000                                     | 100 to 1500          | 0.7                                      | 2                             | N1                                                  |
| FP-1/4-41-G-3/37 | CD-14              | 40 to 460   | 2 to 27.0    | 1000 to 19000                                     | 100 to 1150          | 0.7                                      | –                             | N2                                                  |
|                  | SA-14              | 70 to 750   | 4 to 46      | 3000 to 27000                                     | 200 to 1600          | 0.7                                      | –                             | N5                                                  |
|                  | SS-14              | 100 to 1200 | 5 to 75.0*   | 2000 to 38000                                     | 100 to 2300          | 0.7                                      | 2                             | N8                                                  |
|                  | CA-14 <sup>b</sup> | 100 to 1800 | 10 to 105    | 4000 to 54000                                     | 200 to 3200          | –                                        | 2                             | M9                                                  |

#### Notes.

- a) Applies only with differential pressure regulator  
b) Not available with differential pressure regulator  
c) For ordering information only  
\* Direct reading scales as standard

### Models A6131/41 with Inductive Alarm Sensor (RC10/RC15)

| Measuring Tube   | Float | Water cm³/min | Air 0 °C 1013 mbar<br>(cm³/min) (Q <sub>n</sub> ) | Minimum Differential<br>Pressure (bar) <sup>a</sup> | Ring Sensor        |
|------------------|-------|---------------|---------------------------------------------------|-----------------------------------------------------|--------------------|
| FP-1/8-08-P-3/37 | SS-18 | 2 to 19       | 100 to 850                                        | 0.18                                                | RC10-14-N3-Y115614 |
| FP-1/8-20-P-3/37 | SS-18 | 10 to 90      | 400 to 3200                                       | 0.21                                                |                    |
| FP-1/4-15-P-3/37 | SS-14 | 40 to 400     | 1000 to 12500                                     | 0.7                                                 | RC15-14-N3-Y115615 |
|                  | CA-14 | 80 to 580     | 2000 to 17000                                     | 1.5                                                 |                    |
| FP-1/4-20-P-3/37 | SS-14 | 80 to 580     | 2000 to 18000                                     | 0.7                                                 |                    |
|                  | CA-14 | 100 to 850    | 4000 to 25000                                     | 1.5                                                 |                    |
| FP-1/4-41-G-3/37 | SS-14 | 150 to 1200   | 6000 to 40000                                     | 0.7                                                 |                    |
|                  | CA-14 | 200 to 1800   | 8000 to 54000                                     | Note <sup>b</sup>                                   |                    |

#### Notes.

- a) In conjunction with differential pressure regulator  
b) Not available with differential pressure regulator

## Measuring Range Tables

### Models A6132/42

| Measuring Tube Size   | Measuring Tube No. | Float No. | Max. flow <sup>a</sup>        |                                                                | Alarm<br>RC10 = 1<br>RC15 = 2 | Float/<br>Measuring Tube<br>Combination <sup>c</sup> |
|-----------------------|--------------------|-----------|-------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------|
|                       |                    |           | Water<br>cm <sup>3</sup> /min | Air 0 °C 1013 mbar<br>(cm <sup>3</sup> /min) (Q <sub>n</sub> ) |                               |                                                      |
| 1/16 in. <sup>b</sup> | FP-1/16-10-G-5/81  | BG-16     | 0.53                          | 48.1                                                           |                               | B1                                                   |
|                       | 12                 |           | 0.92                          | 80.0                                                           |                               | B6                                                   |
|                       | 16                 |           | 1.61                          | 131.1                                                          |                               | C1                                                   |
|                       | 20                 |           | 2.45                          | 192.5                                                          |                               | C6                                                   |
|                       | FP-1/16-10-G-5/81  | SA-16     | 1.05                          | 73.2                                                           |                               | B3                                                   |
|                       | 12                 |           | 1.58                          | 117.0                                                          |                               | B8                                                   |
|                       | 16                 |           | 3.2                           | 188.6                                                          |                               | C3                                                   |
|                       | 20                 |           | 4.82                          | 270.1                                                          |                               | C8                                                   |
|                       | FP-1/16-10-G-5/81  | SS-16     | 2.46                          | 136.0                                                          |                               | B4                                                   |
|                       | 12                 |           | 4.2                           | 203.5                                                          |                               | B9                                                   |
|                       | 16                 |           | 7.2                           | 319.2                                                          |                               | C4                                                   |
|                       | 20                 |           | 10.3                          | 430.5                                                          |                               | C9                                                   |
|                       | FP-1/16-10-G-5/81  | CA-16     | 4.71                          | 217.9                                                          |                               | B2                                                   |
|                       | 12                 |           | 7.6                           | 307.1                                                          |                               | B7                                                   |
|                       | 16                 |           | 12.3                          | 475.3                                                          |                               | C2                                                   |
|                       | 20                 |           | 17.8                          | 636.2                                                          |                               | C7                                                   |
|                       | FP-1/16-10-G-5/81  | TA-16     | 5.25                          | 234.2                                                          |                               | B5                                                   |
|                       | 12                 |           | 8.4                           | 326.7                                                          |                               | C0                                                   |
|                       | 16                 |           | 13.5                          | 508.5                                                          |                               | C5                                                   |
|                       | 20                 |           | 18.6                          | 678.0                                                          |                               | D0                                                   |
| 1/8 in.               | FP-1/8-08-G-5/81   | BG-18     | 6.1                           | 373.6                                                          |                               | H2                                                   |
|                       | 12                 |           | 13.9                          | 696.3                                                          |                               | H7                                                   |
|                       | 16                 |           | 22.6                          | 1046.2                                                         |                               | J2                                                   |
|                       | 20                 |           | 31.5                          | 1426.6                                                         |                               | J7                                                   |
|                       | 25                 |           | 43.7                          | 1885.1                                                         |                               | K2                                                   |
|                       | FP-1/8-08-G-5/81   | SA-18     | 10.5                          | 511.3                                                          |                               | H4                                                   |
|                       | 12                 |           | 23.0                          | 928.8                                                          |                               | H0                                                   |
|                       | 16                 |           | 35.7                          | 1384.7                                                         |                               | J4                                                   |
|                       | 20                 |           | 48.5                          | 1857.6                                                         |                               | J9                                                   |
|                       | 25                 |           | 64.5                          | 2454.0                                                         |                               | K4                                                   |
|                       | FP-1/8-08-G-5/81   | SS-18     | 20.5                          | 804.4                                                          | 1                             | H5                                                   |
|                       | 12                 |           | 39.5                          | 1421.4                                                         | 1                             | J0                                                   |
|                       | 16                 |           | 60.0                          | 2092.8                                                         | 1                             | J5                                                   |
|                       | 20                 |           | 81.0                          | 2788.3                                                         | 1                             | K0                                                   |
|                       | 25                 |           | 107.0                         | 3629.1                                                         | 1                             | K5                                                   |
|                       | FP-1/8-08-G-5/81   | CA-18     | 33.6                          | 1205.7                                                         | 1                             | H3                                                   |
|                       | 12                 |           | 61.2                          | 2089.4                                                         | 1                             | H8                                                   |
|                       | 16                 |           | 90.6                          | 3014.3                                                         | 1                             | J3                                                   |
|                       | 20                 |           | 121.7                         | 3997.8                                                         | 1                             | J8                                                   |
|                       | 25                 |           | 159.7                         | 5136.7                                                         | 1                             | K3                                                   |
|                       | FP-1/8-08-G-5/81   | TA-18     | 36.5                          | 1287.9                                                         |                               | H6                                                   |
|                       | 12                 |           | 66.0                          | 2219.0                                                         |                               | J1                                                   |
|                       | 16                 |           | 97.5                          | 3202.4                                                         |                               | J6                                                   |
|                       | 20                 |           | 130.0                         | 4229.3                                                         |                               | K1                                                   |
|                       | 25                 |           | 171.5                         | 5456.3                                                         |                               | L1                                                   |
| 1/4 in.               | FP-1/4-10-G-5/81   | CD-14     | 78                            | 3717                                                           |                               | R4                                                   |
|                       | 16                 |           | 152                           | 6742                                                           |                               | S0                                                   |
|                       | 20                 |           | 206                           | 8928                                                           |                               | S6                                                   |
|                       | 25                 |           | 275                           | 11479                                                          |                               | T2                                                   |
|                       | FP-1/4-10-G-5/81   | SA-14     | 134                           | 5200                                                           |                               | R5                                                   |
|                       | 16                 |           | 253                           | 9245                                                           |                               | S1                                                   |
|                       | 20                 |           | 337                           | 12231                                                          |                               | S7                                                   |
|                       | 25                 |           | 446                           | 15650                                                          |                               | T3                                                   |
|                       | FP-1/4-10-G-5/81   | SS-14     | 228                           | 7793                                                           | 2                             | R6                                                   |
|                       | 16                 |           | 415                           | 13672                                                          | 2                             | S2                                                   |
|                       | 20                 |           | 547                           | 17979                                                          | 2                             | S8                                                   |
|                       | 25                 |           | 703                           | 22900                                                          | 2                             | T4                                                   |
|                       | FP-1/4-10-G-5/81   | CA-14     | 346                           | 10967                                                          | 2                             | R3                                                   |
|                       | 16                 |           | 612                           | 19227                                                          | 2                             | R9                                                   |
|                       | 20                 |           | 805                           | 25293                                                          | 2                             | S5                                                   |
|                       | 25                 |           | 1036                          | 32200                                                          | 2                             | T1                                                   |
|                       | FP-1/4-10-G-5/81   | TA-14     | 370                           | 11704                                                          |                               | R7                                                   |
|                       | 16                 |           | 660                           | 20457                                                          |                               | S3                                                   |
|                       | 20                 |           | 860                           | 26703                                                          |                               | S9                                                   |
|                       | 25                 |           | 1105                          | 34276                                                          |                               | T5                                                   |
|                       | FP-1/4-40-G-6/81   | SS-14     | 1500                          | 45700                                                          | 2                             | V0                                                   |
|                       | FP-1/4-40-G-6/81   | CA-14     | 2050                          | 64800                                                          | 2                             | T7                                                   |
|                       | FP-1/4-40-G-6/81   | TA-14     | 2200                          | 67200                                                          |                               | W1                                                   |

#### Notes.

a) Maximum flow rates for other fluids can be calculated using our sizing software – contact ABB

b) Not available with differential pressure regulator

c) For ordering information only

**Models A6132/42 with Inductive Alarm Sensor (RC10/RC15)**

| Measuring Tube                           | Float          | Max. Flow                             |                                                             | Minimum Differential Pressure (bar) <sup>a</sup> | Ring Sensor        |
|------------------------------------------|----------------|---------------------------------------|-------------------------------------------------------------|--------------------------------------------------|--------------------|
|                                          |                | Water cm <sup>3</sup> /min            | Air 0 °C 1013 mbar (cm <sup>3</sup> /min) (Q <sub>n</sub> ) |                                                  |                    |
| FP-1/8-08-G-5/81<br>12<br>16<br>20<br>25 | SS-18          | 20.5<br>39.5<br>60.0<br>81.0<br>107.0 | 804.4<br>1421.4<br>2092.8<br>2788.3<br>3629.1               | 0.18                                             | RC10-14-N3-Y115614 |
| FP-1/4-10-G-5/81<br>16<br>20<br>25       | SS-14          | 228<br>415<br>547<br>703              | 7793<br>13672<br>17979<br>22900                             | 0.7                                              |                    |
| FP-1/4-10-G-5/81<br>16<br>20<br>25       | CA-14          | 346<br>612<br>805<br>1036             | 10967<br>19227<br>25293<br>32200                            | 1.5                                              | RC15-14-N3-Y115615 |
| FP-1/4-40-G-6/281<br>40                  | SS-14<br>CA-14 | 1512<br>2180                          | 48384<br>67580                                              | 0.7 <sup>b</sup>                                 |                    |

**Notes.**

a) In conjunction with differential pressure regulator

b) Not available with differential pressure regulator

**Models A6133/43**

| Measuring Tube   | Float | Max. Flow            |              |                                        |             |
|------------------|-------|----------------------|--------------|----------------------------------------|-------------|
|                  |       | Water                |              | Air 0 °C 1013 mbar                     |             |
|                  |       | cm <sup>3</sup> /min | l/h          | cm <sup>3</sup> /min (Q <sub>n</sub> ) | l/h         |
| FP-1/8-077-G-10  | SA-18 | 1 to 9.5             | 0.08 to 0.58 | 80 to 520                              | 4 to 32     |
| FP-1/8-13.3-G-10 | BG-18 | 2 to 17              | 0.1 to 1.0   | 100 to 850                             | 6 to 50     |
| FP-1/8-077-G-10  | SS-18 | 2 to 20              | 0.15 to 1.2  | 100 to 800                             | 6 to 50     |
| FP-1/8-13.3-G-10 | SA-18 | 2 to 27              | 0.2 to 1.6   | 150 to 1100                            | 10 to 65    |
| FP-1/8-13.3-G-10 | SS-18 | 6 to 48              | 0.2 to 2.9   | 200 to 1700                            | 10 to 100   |
| FP-1/4-10-G-10   | BG-14 | 10 to 95             | 0.8 to 5.6   | 400 to 4200                            | 20 to 250   |
| FP-1/4-19-G-10   | BG-14 | 20 to 230            | 1.5 to 13.5  | 1000 to 9000                           | 80 to 560   |
| FP-1/4-10-G-10   | CA-14 | 40 to 360            | 2 to 22      | 1500 to 11500                          | 100 to 700  |
| FP-1/4-19-G-10   | SS-14 | 80 to 540            | 4 to 32      | 2000 to 17000                          | 150 to 1050 |
| FP-1/4-40-G-10   | BG-14 | 80 to 600            | 4 to 38      | 2000 to 26000                          | 200 to 1600 |
| FP-1/4-19-G-10   | CA-14 | 100 to 800*          | 6 to 48      | 2000 to 24000                          | 150 to 1450 |
| FP-1/4-40-G-10   | SS-14 | 150 to 1500*         | 10 to 90     | 6000 to 48000                          | 200 to 2900 |
| FP-1/4-40-G-10   | CA-14 | 200 to 2200*         | 15 to 135    | 1000 to 70000                          | 400 to 4000 |

\*Not available with differential pressure regulator

**Models A6133/43 with Inductive Alarm Sensor (RC10/RC15)**

| Measuring Tube   | Float | Max. Flow            |             |                           |             |
|------------------|-------|----------------------|-------------|---------------------------|-------------|
|                  |       | Water                |             | Air 0 ° C 1013 mbar       |             |
|                  |       | cm <sup>3</sup> /min | l/h         | cm <sup>3</sup> /min (Qn) | l/h         |
| FP-1/8-077-G-10  | SS-18 | 2 to 20              | 0.15 to 1.2 | 100 to 800                | 6 to 50     |
| FP-1/8-13.3-G-10 | SS-18 | 6 to 48              | 0.2 to 2.9  | 200 to 1700               | 10 to 100   |
| FP-1/4-10-G-10   | CA-14 | 40 to 360            | 2 to 22     | 1500 to 11500             | 100 to 700  |
| FP-1/4-19-G-10   | SS-14 | 80 to 540            | 4 to 32     | 2000 to 17000             | 150 to 1050 |
| FP-1/4-19-G-10   | CA-14 | 100 to 800*          | 6 to 48     | 2000 to 24000             | 150 to 1450 |
| FP-1/4-40-G-10   | SS-14 | 150 to 1500*         | 10 to 90    | 6000 to 48000             | 200 to 2900 |
| FP-1/4-40-G-10   | CA-14 | 200 to 2200*         | 15 to 135   | 1000 to 70000             | 400 to 4000 |

\*Not available with differential pressure regulator

**Models A6134/44**

| Measuring Tube <sup>b</sup> | Float No. | Water<br>cm <sup>3</sup> /min | Air 0 °C 1013 mbar<br>(cm <sup>3</sup> /min) (Q <sub>n</sub> ) | Min. Required<br>Differential Press<br>bar <sup>a</sup> | Float/<br>Measuring Tube<br>Combination <sup>d</sup> |
|-----------------------------|-----------|-------------------------------|----------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|
| Tube No.                    |           |                               |                                                                |                                                         |                                                      |
| FP-1/16-08-P-1 1/2/19       | BG-16 °   | 0.05 to 0.8                   | 5 to 65                                                        | –                                                       | A1                                                   |
|                             | SA-16 °   | 0.10 to 1.0                   | 5 to 90                                                        | –                                                       | A2                                                   |
|                             | SS-16 °   | 0.50 to 4.0                   | 15 to 170                                                      | –                                                       | A3                                                   |
| FP-1/16-30-P-1 1/2/19       | BG-16     | 0.5 to 7.0                    | 25 to 400                                                      | 0.17                                                    | A4                                                   |
|                             | SA-16     | 1.0 to 13.0                   | 50 to 550                                                      | 0.17                                                    | A5                                                   |
|                             | SS-16     | 2.0 to 22.0                   | 50 to 850                                                      | 0.17                                                    | A6                                                   |
| FP-1/8-21-P-1 1/2/19        | BG-18     | 2.5 to 37.5                   | 100 to 2000                                                    | 0.21                                                    | E1                                                   |
|                             | SA-18     | 5.0 to 60.0                   | 200 to 2600                                                    | 0.21                                                    | E3                                                   |
|                             | SS-18     | 10 to 120.0                   | 200 to 3800                                                    | 0.21                                                    | E4                                                   |
|                             | CA-18     | 14 to 180                     | 280 to 5600                                                    | 0.21                                                    | E2                                                   |
| FP-5/32-40-P-1 1/2/19       | BG-5/32   | 15 to 190                     | 700 to 8000                                                    | 0.18                                                    | W2                                                   |
|                             | SS-5/32   | 40 to 450                     | 1200 to 15000                                                  | 0.18                                                    | W3                                                   |
| FP-1/4-28-P-1 1/2/19        | SA-14     | 30 to 570                     | 1300 to 19500                                                  | 0.7                                                     | L2                                                   |
|                             | SS-14     | 50 to 850                     | 2000 to 28000                                                  | 0.7                                                     | L3                                                   |
| FP-1/4-41-P-1 1/2/19        | SS-14 °   | 100 to 1600                   | 2500 to 45000                                                  | –                                                       | M1                                                   |
|                             | CA-14 °   | 200 to 2200                   | 5000 to 70000                                                  | –                                                       | L4                                                   |

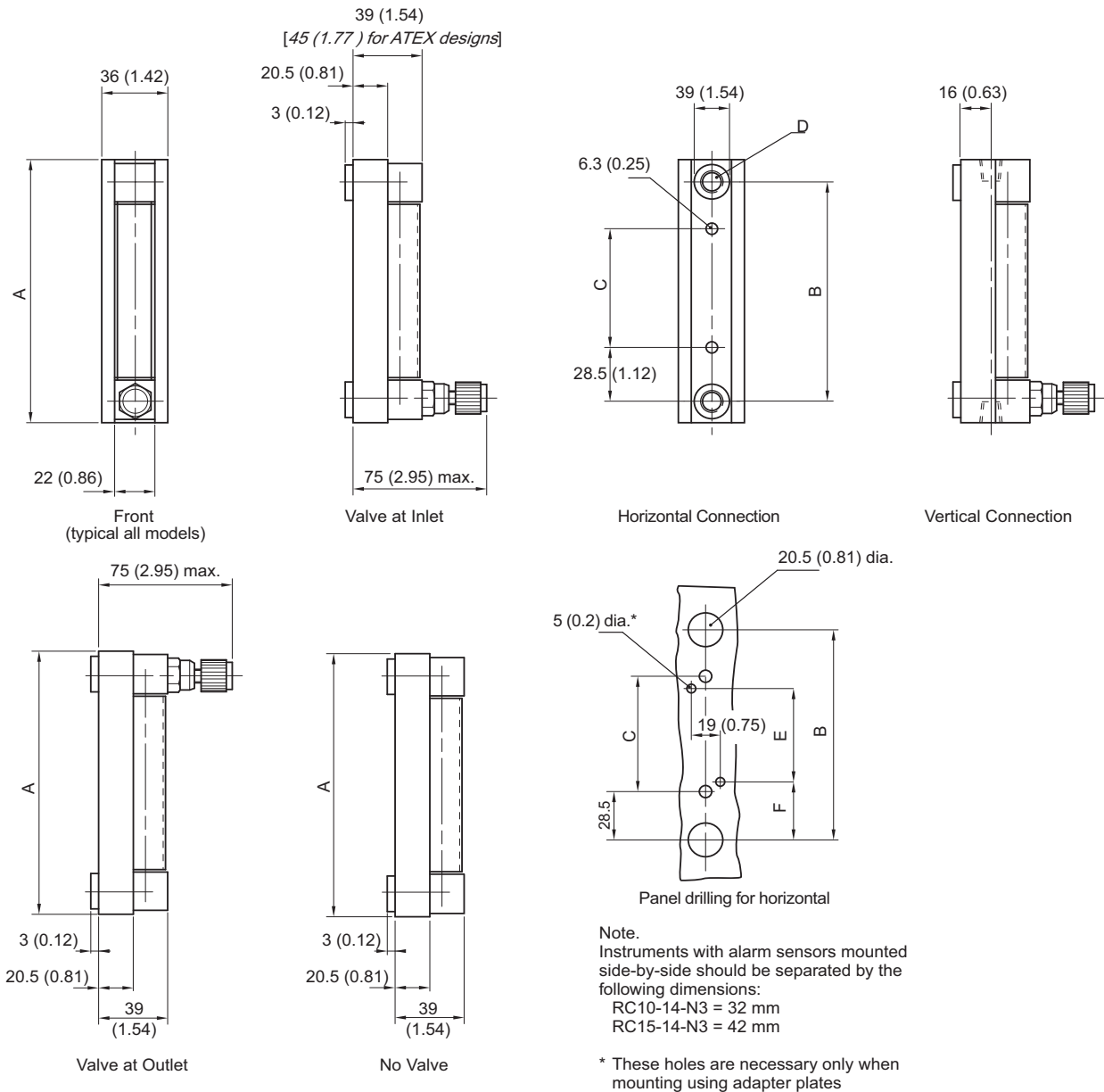
**Notes.**

- a) Applies only with built-in differential pressure regulator  
b) Only with % scale. Not available with differential pressure regulator.  
c) Not available with differential pressure regulator.  
d) For ordering information only.

Overall Dimensions

In-line and Front Panel-mounting (horizontal and vertical connections)

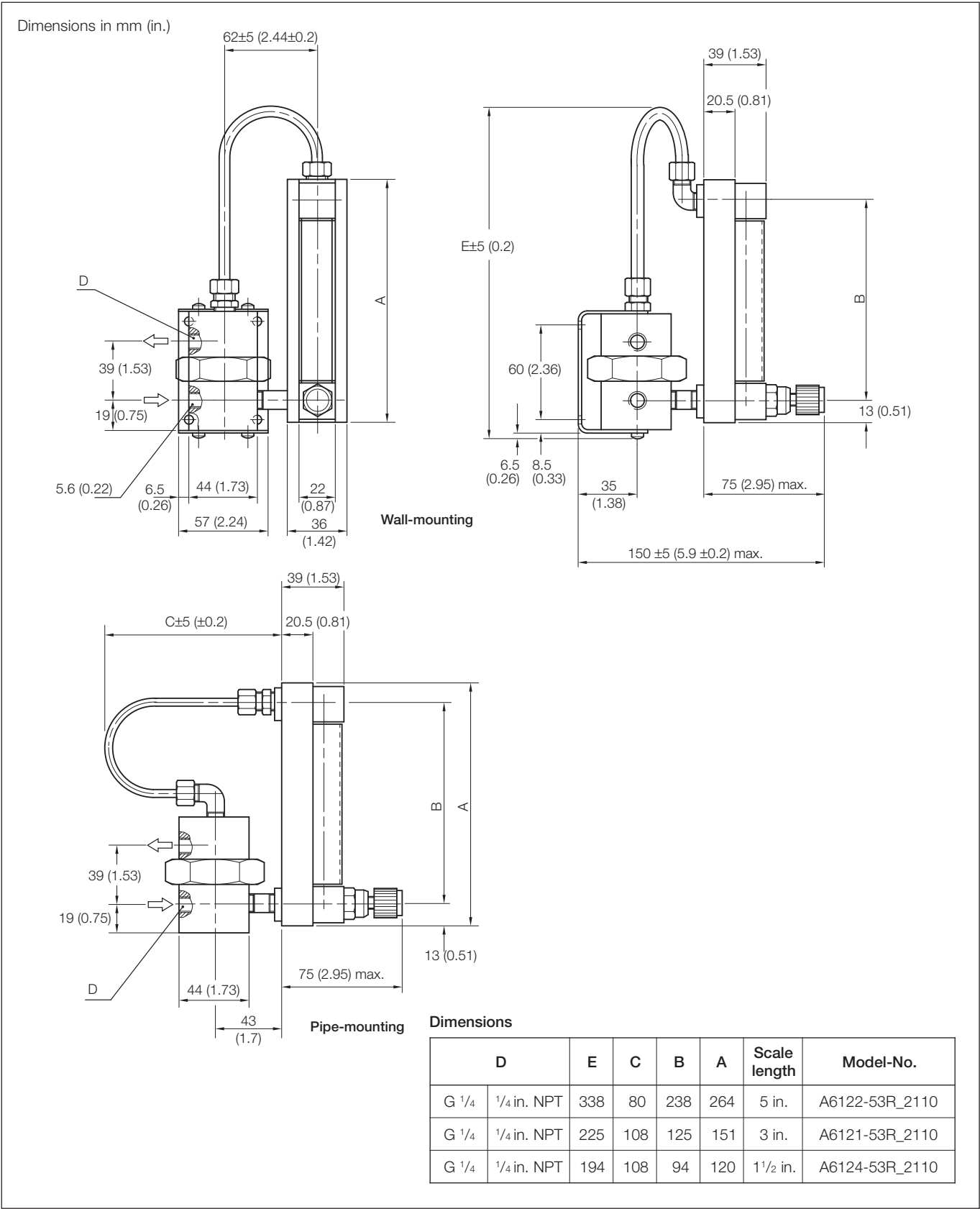
Dimensions in mm (in.)



Dimensions

|       | D           | F    | E   | C   | B   | A   | Scale Length | Model No. |
|-------|-------------|------|-----|-----|-----|-----|--------------|-----------|
| G 1/4 | 1/4 in. NPT | 36.5 | 165 | 181 | 238 | 264 | 4/5 in.      | A6x32/42  |
| G 1/4 | 1/4 in. NPT | 27.2 | 71  | 68  | 125 | 151 | 3 in.        | A6x31/41  |
| G 1/4 | 1/4 in. NPT | 27.2 | 40  | 37  | 94  | 120 | 1 1/2 in.    | A6x34/44  |
| G 1/4 | 1/4 in. NPT | 27.2 | 71  | 68  | 125 | 151 | 3 in.        | A6x35/45  |

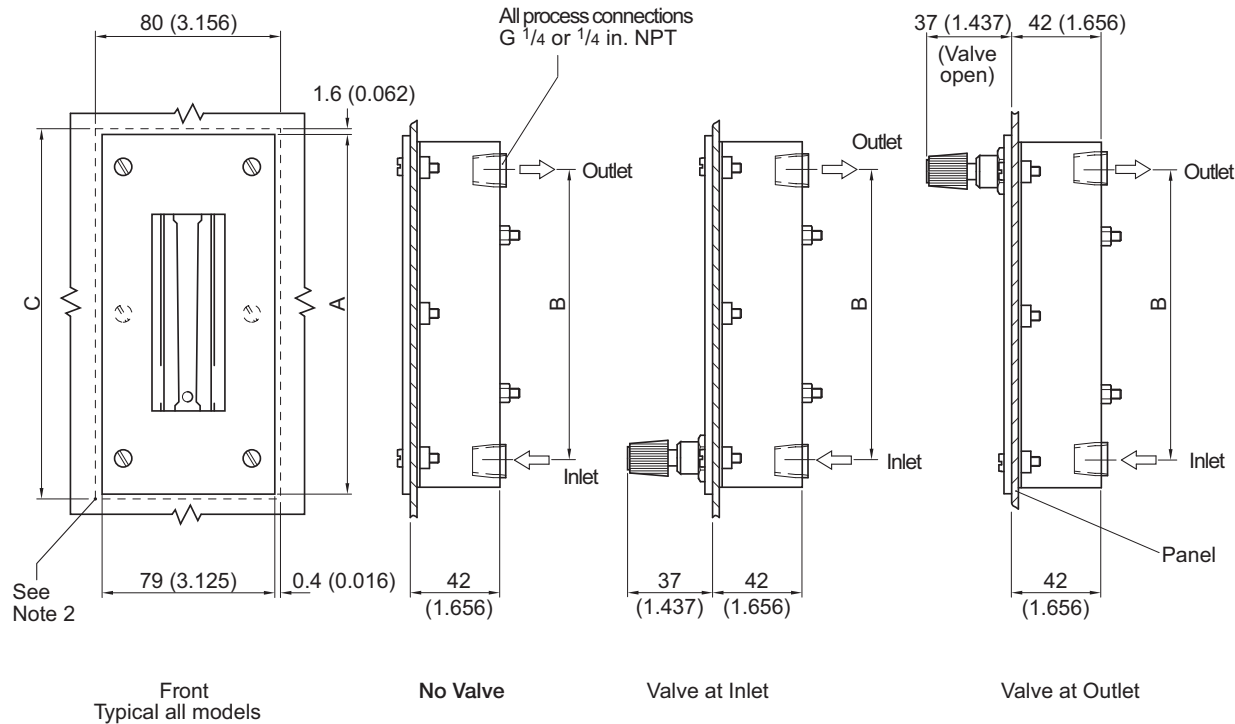
Purgemaster with Regulator



...Overall Dimensions

Panel-mounting (horizontal connections)

Dimensions in mm (in.)



Dimensions

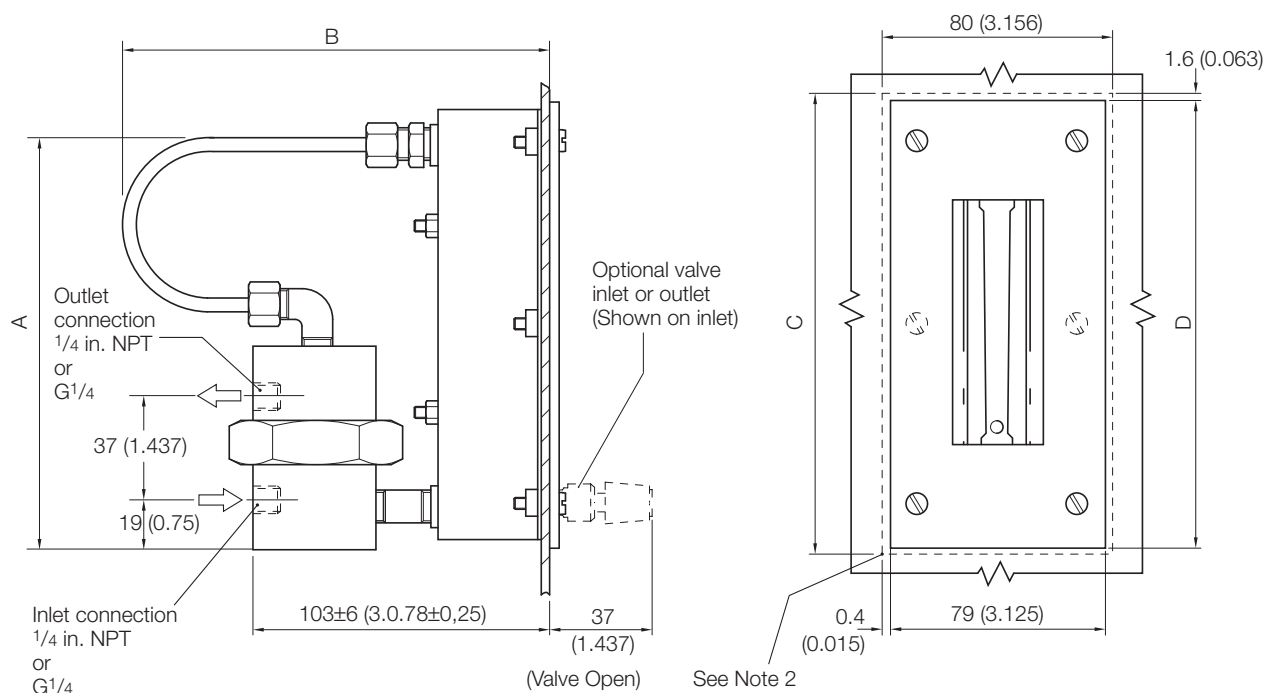
| Nom. Scale Length |     | A       |     | B        |     | C       |     |
|-------------------|-----|---------|-----|----------|-----|---------|-----|
| in.               | mm  | in.     | mm  | in.      | mm  | in.     | mm  |
| 1 1/2             | 38  | 4 31/32 | 126 | 3 23/32  | 94  | 5 3/32  | 129 |
| 3                 | 76  | 6 3/16  | 157 | 4 15/16  | 125 | 6 5/16  | 160 |
| 5                 | 127 | 10 5/8  | 270 | 9 3/8    | 238 | 10 3/4  | 273 |
| 10                | 254 | 15 1/16 | 383 | 13 13/16 | 351 | 15 3/16 | 386 |

Notes.

- 1) All dimensions are subject to a manufacturing tolerance of  $\pm 3$  mm (0.125), unless otherwise specified.
- 2) Dotted line indicates rear of panel clearance requirements.
- 3) Panel hardware for 8 (0.312) max. panel thickness.

### Panel-mounting with Differential Pressure Regulator

Dimensions in mm (in.)



## Dimensions

| Scale Length                  |     | A                                |     | B                                                               |         | C                               |     | D                               |     |
|-------------------------------|-----|----------------------------------|-----|-----------------------------------------------------------------|---------|---------------------------------|-----|---------------------------------|-----|
| in.                           | mm  | in.                              | mm  | in.                                                             | mm      | in.                             | mm  | in.                             | mm  |
| 1 <sup>1</sup> / <sub>2</sub> | 38  | 5 <sup>7</sup> / <sub>8</sub>    | 149 | 5 <sup>7</sup> / <sub>8</sub> ± 1 <sup>1</sup> / <sub>4</sub>   | 149 ± 6 | 5 <sup>3</sup> / <sub>32</sub>  | 129 | 4 <sup>31</sup> / <sub>32</sub> | 126 |
| 3                             | 76  | 5 <sup>7</sup> / <sub>8</sub>    | 149 | 5 <sup>7</sup> / <sub>8</sub> ± 1 <sup>1</sup> / <sub>4</sub>   | 149 ± 6 | 6 <sup>5</sup> / <sub>16</sub>  | 160 | 6 <sup>3</sup> / <sub>16</sub>  | 157 |
| 5                             | 127 | 10 <sup>1</sup> / <sub>4</sub>   | 260 | 4 <sup>21</sup> / <sub>32</sub> ± 1 <sup>1</sup> / <sub>4</sub> | 118 ± 6 | 10 <sup>3</sup> / <sub>4</sub>  | 273 | 10 <sup>5</sup> / <sub>8</sub>  | 270 |
| 10                            | 254 | 14 <sup>11</sup> / <sub>16</sub> | 373 | 4 <sup>21</sup> / <sub>32</sub> ± 1 <sup>1</sup> / <sub>4</sub> | 118 ± 6 | 15 <sup>3</sup> / <sub>16</sub> | 386 | 15 <sup>1</sup> / <sub>16</sub> | 383 |

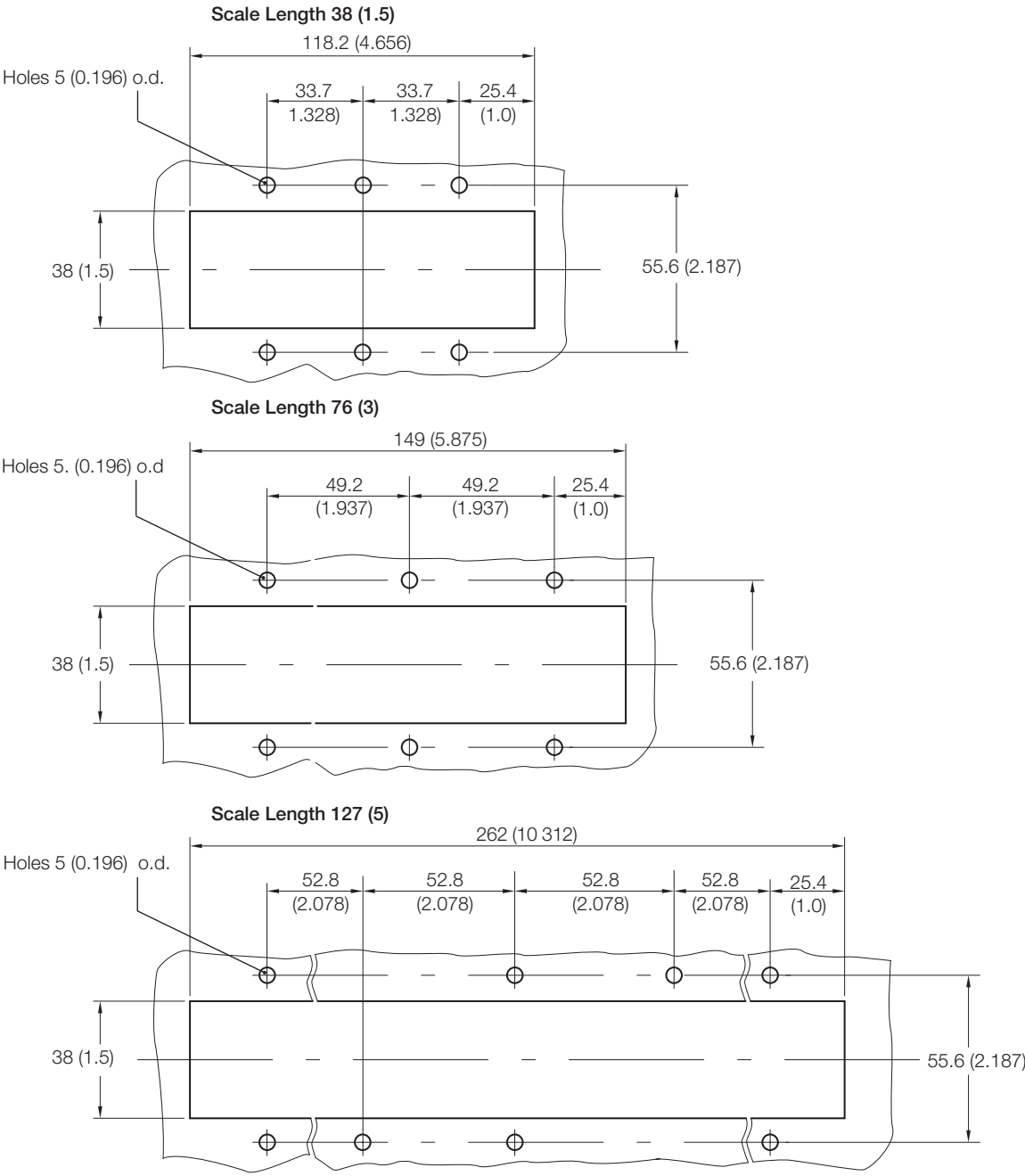
## Notes.

- 1) All dimensions are subject to a manufacturing tolerance of  $\pm 3$  mm (0.125 in.), unless otherwise specified.
- 2) Dotted line indicates rear of panel clearance requirements.
- 3) Panel hardware for 8 (0.312) max. panel thickness

...Overall Dimensions

Panel Cut-out for Panel-mounting

Dimensions in mm (in.)



## Ordering Information

| Model Code                                  |  | A6 | X | X | X                                                | X | X | X | X | X | X | X | X | X | X | X |
|---------------------------------------------|--|----|---|---|--------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Connection                                  |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Horizontal                                  |  | 1  |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Vertical                                    |  | 2  |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Connection Type                             |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| As regulator                                |  |    | 2 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 1/4 in. NTP                                 |  |    | 3 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| G1/4                                        |  |    | 4 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Tube 6 mm                                   |  |    | 5 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Tube 8 mm                                   |  |    | 6 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Hoses 6 mm                                  |  |    | 7 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Hoses 8 mm                                  |  |    | 8 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Special                                     |  |    | 9 |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Tube Length                                 |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 3 in.                                       |  |    |   | 1 |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 5 in.                                       |  |    |   | 2 |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 10 in.                                      |  |    |   | 3 |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 1 1/2 in.                                   |  |    |   | 4 |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Tube Diameter                               |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| 1/16 in.                                    |  |    |   |   |                                                  | A |   |   |   |   |   |   |   |   |   |   |
| 1/8 in.                                     |  |    |   |   |                                                  | B |   |   |   |   |   |   |   |   |   |   |
| 1/4 in.                                     |  |    |   |   |                                                  | C |   |   |   |   |   |   |   |   |   |   |
| 5/32 in.                                    |  |    |   |   |                                                  | D |   |   |   |   |   |   |   |   |   |   |
| Tube / Float                                |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| None                                        |  |    |   |   |                                                  |   |   | O | O |   |   |   |   |   |   |   |
| Select from Tables on pages 3, 4 or 5       |  |    |   |   |                                                  |   |   | * | * |   |   |   |   |   |   |   |
| Scale Type pages 3, 4, 5 or 6               |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Without                                     |  |    |   |   |                                                  |   |   |   |   | 0 |   |   |   |   |   |   |
| Direct reading                              |  |    |   |   |                                                  |   |   |   |   | 1 |   |   |   |   |   |   |
| dt/df ratio                                 |  |    |   |   |                                                  |   |   |   |   | 2 |   |   |   |   |   |   |
| Percent                                     |  |    |   |   |                                                  |   |   |   |   | 3 |   |   |   |   |   |   |
| Standard direct reading                     |  |    |   |   |                                                  |   |   |   |   | 4 |   |   |   |   |   |   |
| Calibrated                                  |  |    |   |   |                                                  |   |   |   |   | 5 |   |   |   |   |   |   |
| Materials                                   |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Brass / Viton                               |  | A  |   |   | Stainless steel / Buna                           |   |   |   |   | J |   |   |   |   |   |   |
| Brass / Buna                                |  | B  |   |   | Stainless steel / Ethylenepropylene              |   |   |   |   | K |   |   |   |   |   |   |
| Brass / Ethylenepropylene                   |  | C  |   |   | Stainless steel / Kalrez                         |   |   |   |   | L |   |   |   |   |   |   |
| Brass / Kalrez                              |  | D  |   |   | Special                                          |   |   |   |   | Z |   |   |   |   |   |   |
| Stainless steel / Viton                     |  | I  |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Valve                                       |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Without Valve                               |  | A  |   |   | DVGW Valve at Outlet, Low Capacity (Size 1.2)    |   |   |   |   | S |   |   |   |   |   |   |
| Valve at Outlet, Low Capacity (Size 1.2)    |  | C  |   |   | DVGW Valve at Outlet, Medium Capacity (Size 2.2) |   |   |   |   | Q |   |   |   |   |   |   |
| Valve at Outlet, Medium Capacity (Size 2.2) |  | M  |   |   | DVGW Valve at Outlet, High Capacity (Size 3.2)   |   |   |   |   | U |   |   |   |   |   |   |
| Valve at Outlet, High Capacity (Size 3.2)   |  | E  |   |   | DVGW Valve at Inlet, Low Capacity (Size 1.2)     |   |   |   |   | T |   |   |   |   |   |   |
| Valve at Inlet, Low Capacity (Size 1.2)     |  | D  |   |   | DVGW Valve at Inlet, Medium Capacity (Size 2.2)  |   |   |   |   | R |   |   |   |   |   |   |
| Valve at Inlet, Medium Capacity (Size 2.2)  |  | N  |   |   | DVGW Valve at Inlet, High Capacity (Size 3.2)    |   |   |   |   | V |   |   |   |   |   |   |
| Valve at Inlet, High Capacity (Size 3.2)    |  | F  |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Alarm (excluding amplifier)                 |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Without                                     |  |    |   |   |                                                  |   |   |   |   |   |   |   | A |   |   |   |
| Min. alarm                                  |  |    |   |   |                                                  |   |   |   |   |   |   |   | B |   |   |   |
| Max. alarm                                  |  |    |   |   |                                                  |   |   |   |   |   |   |   | C |   |   |   |
| Min. & max. alarm                           |  |    |   |   |                                                  |   |   |   |   |   |   |   | D |   |   |   |
| Suitable for alarms (no sensors fitted)     |  |    |   |   |                                                  |   |   |   |   |   |   |   | E |   |   |   |
| Regulator                                   |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Without                                     |  |    |   |   |                                                  |   |   |   |   |   |   |   |   | 0 |   |   |
| Standard capacity 1/4 in. NTP               |  |    |   |   |                                                  |   |   |   |   |   |   |   |   | 1 |   |   |
| Standard capacity G 1/4                     |  |    |   |   |                                                  |   |   |   |   |   |   |   |   | 2 |   |   |
| High capacity 1/4 in. NTP                   |  |    |   |   |                                                  |   |   |   |   |   |   |   |   | 3 |   |   |
| High capacity G 1/4                         |  |    |   |   |                                                  |   |   |   |   |   |   |   |   | 4 |   |   |
| Mounting                                    |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| In-line                                     |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | A |   |
| Wall                                        |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | B |   |
| Rear panel                                  |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | C |   |
| Front panel                                 |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | D |   |
| Laboratory stand                            |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | E |   |
| Front panel + adaptor                       |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | F |   |
| Front panel + end cap                       |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | G |   |
| Front panel + end cap + adaptor             |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   | H |   |
| Design level                                |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| A                                           |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| Certification                               |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   |   |
| ATEX II 2Gc T6 –T4 with Ring Sensor         |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   | A |
| ATEX II 2GDc T4 130 °C without Ring Sensor  |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   | D |
| None                                        |  |    |   |   |                                                  |   |   |   |   |   |   |   |   |   |   | S |

## Alarm Unit for Purgemaster

The alarm comprises a ring sensor and associated switching amplifier, available as an accessory, for glass-tube type variable-area flowmeters, type A6x31/41 and A6x32/42.

Clamped directly to the body, the ring sensor is continuously adjustable across the overall metering range. The ring sensor can be used with all metal-float equipped flowmeters according to the capacity tables.

## Principle of Operation

The ring sensor, with a bistable switching action, energizes the relay in the amplifier when the float reaches the trigger level. It remains in that position, even if the float continues to move towards the alarm zone, thus leaving the trigger level. The relay de-energizes as soon as the float crosses the trigger level from the opposite direction and moves back from the alarm zone into the normal operating range. The actual float position – above or below the trigger level – is indicated precisely.

Operation in a hazardous area is possible, since the ring sensor used is an intrinsically safe switch with an intrinsically safe circuit. Flowmeter Model A6x31/41 is suitable for use either as a minimum alarm or a maximum alarm, due to its short metering tube. Model A6x32/42 is recommended if both alarm operations are required.

## Design Features

- Sensor height 14 mm, minimizes coverage of the scale
  - Integrated clamp secures device directly to the meter body
- No automatic adjustment during operation is possible

## Specification – Ring Sensor

### Part Nos.

Measuring tube 1/8 in. type RC10-14-N3-Y115614

Measuring tube 1/4 in. type RC15-14-N3-Y115615

### Supply voltage

10 V DC

### Operating range

In direction 1 – 2.9 mA

In direction 2 – 4.8 mA

### Permissible resistance of control cable

$\leq 100 \Omega$

### Repeatability

1 % (T = constant)

### Temperature drift

$\pm 10 \%$

### Permissible ambient temperature

0 to 40 °C (32 to 104 °F)

### Permissible process temperature

0 to 40 °C (32 to 104 °F)

### Connection cable

LIFYY x 0.14 mm<sup>2</sup>

### Cable length

5 m (16.5 ft)

### Housing

Black Polycarbonate

### Protection type as per EN 60529

IP67

### Certificate of conformity

|                                |                                              |
|--------------------------------|----------------------------------------------|
| Ring Sensor only:              | PTB 99 ATEX 2128X<br>II 2G EEx ia IIC T6     |
| Flowmeter with Ring Sensor:    | BASEEFA 03 ATEX 0424X<br>II 2G EEx c T6 – T4 |
| Flowmeter without Ring Sensor: | BASEEFA 03 ATEX 0424X<br>II 2GD EEx c 130°C  |

### Weight

40 g (1.4 oz.) approx.

...Alarm Unit for Purgemasters

Specification – Switching Amplifier

Switch amplifier

| Amplifier      | Supply Voltage | Channels | Certificate number    |
|----------------|----------------|----------|-----------------------|
| KFD2-SR2-Ex1.W | 24 V DC        | 1        | PTB 00 ATEX 2080      |
| KFD2-SR2-Ex2.W | 24 V DC        | 2        |                       |
| KFA5-SR2-Ex1.W | 115 V AC       | 1        | Protection class      |
| KFA5-SR2-Ex2.W | 115 V AC       | 2        | IP20                  |
| KFA6-SR2-Ex1.W | 230 V AC       | 1        | Electrical connection |
| KFA6-SR2-Ex2.W | 230 V AC       | 2        | Terminals             |

**Output**

Relay with potential-free changeover contacts.

Switching capacity max. 2 A at 250 V AC

**Weight**

0.15 kg (0.33 lb) approx.

Power consumption

Max. 1 W

Permissible ambient temperature

-20 to +60 °C (-4 to 140 °F)

Ex protection

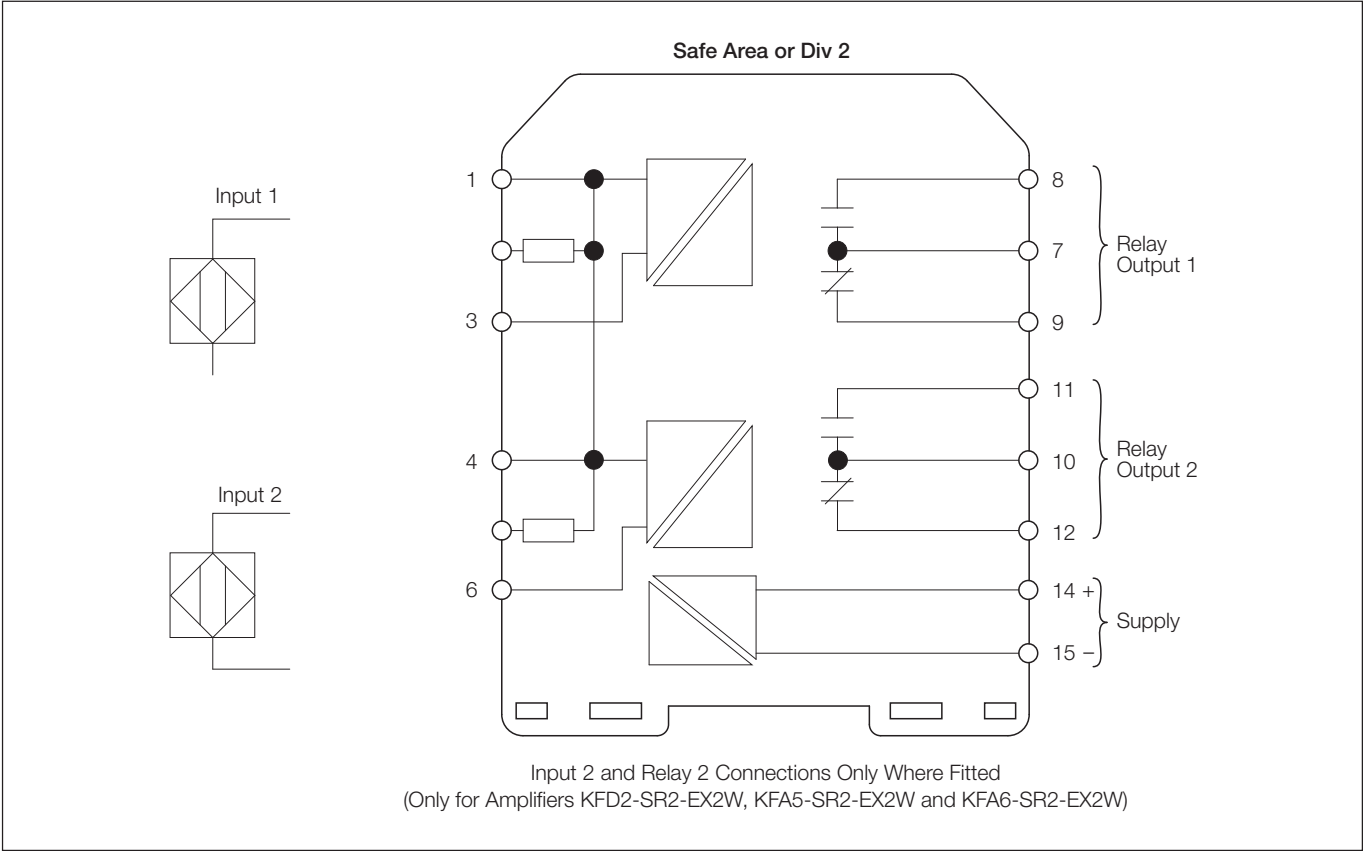
Circuits in Zone 0/1/2 – EEx II (I) G D [EEx aj] IIC

U<sub>0</sub> = 10.5 V

I<sub>0</sub> = 13 mA

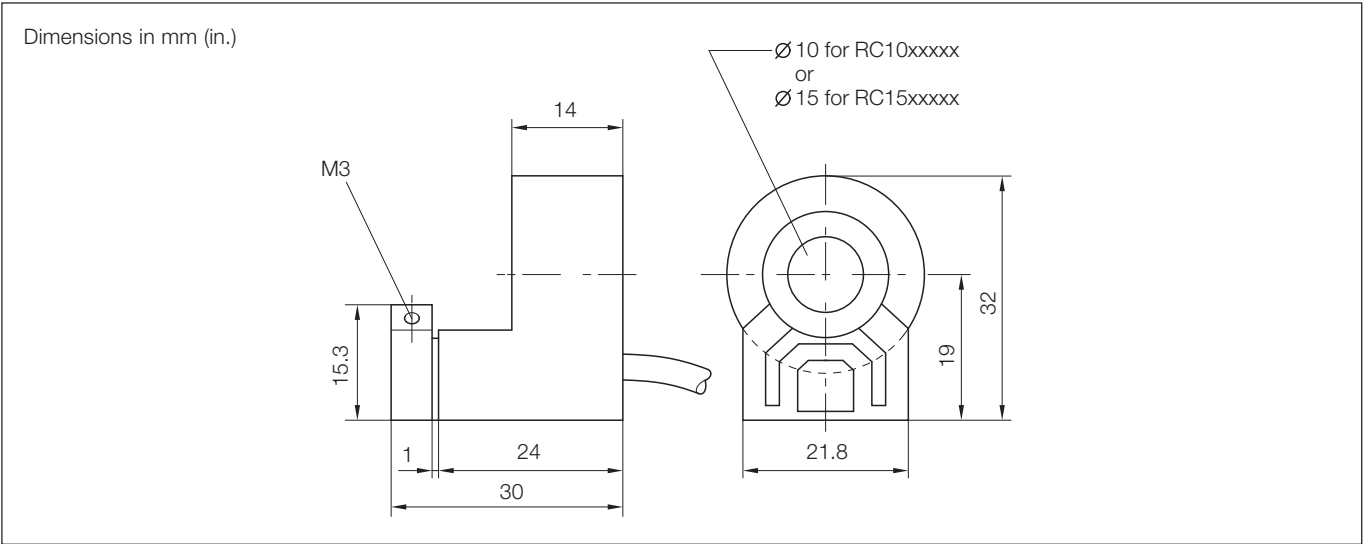
P<sub>0</sub> = 34 mW

Electrical Connections

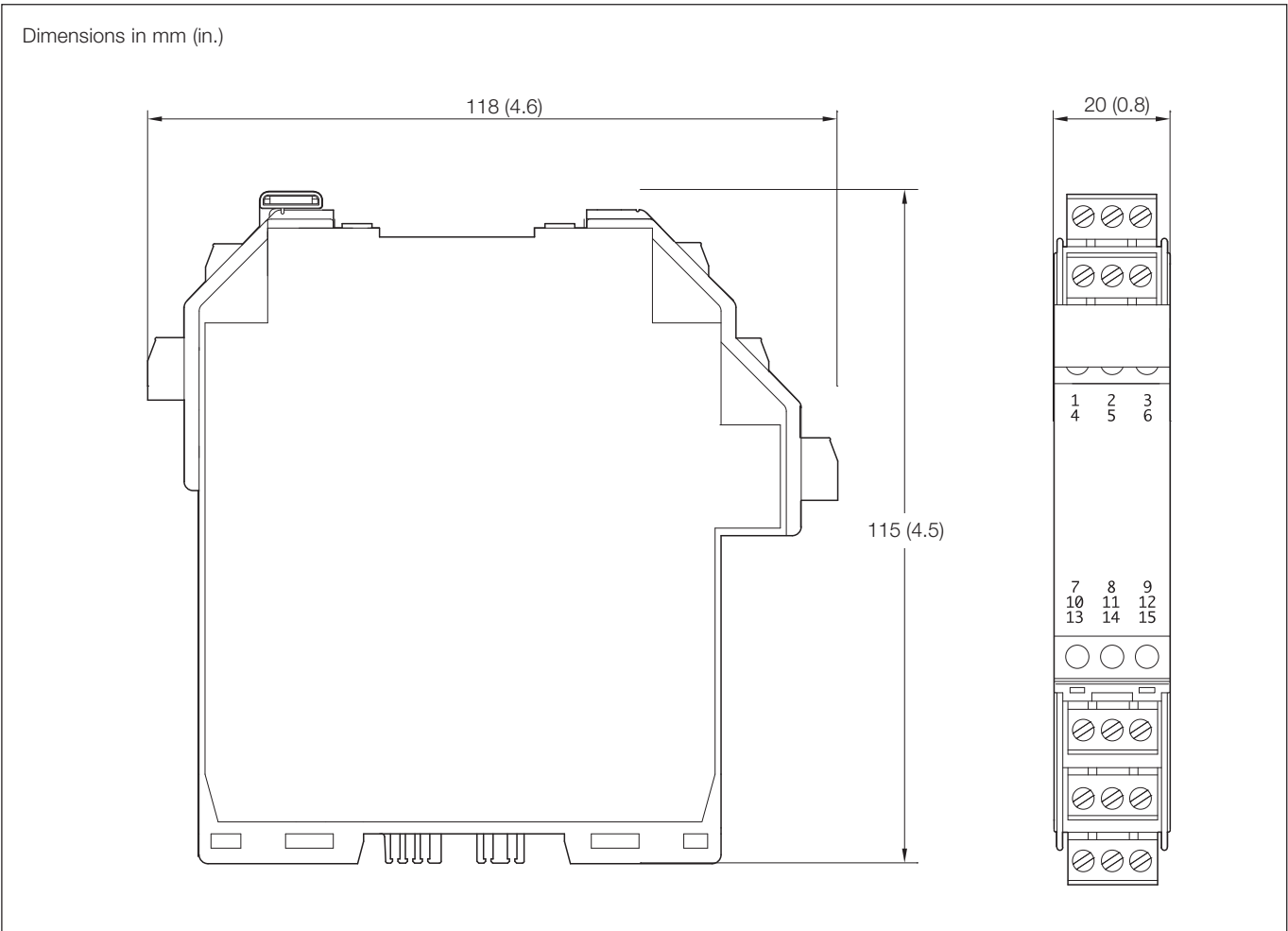


Electrical Connections

Overall Dimensions



Ring Sensor



Switch Amplifier

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Service