

Solartron

Type 7845/46/47 densitometer

Data sheet
B1017

Description

The Solartron Mobrey field proven range of industrial densitometers have been specifically designed to tackle the most demanding of applications found in modern process plants.

Three units are detailed here:

- ▶ 7845 stainless steel version designed for general process applications
- ▶ 7846 in Hastelloy C22 designed for corrosive applications
- ▶ 7847 3A authorised version designed for hygienic applications

Specification

| Parameter | Type 7845/46/47 |
|--------------------------------|---|
| Accuracy | 0.00035 g/cc** Range 0.6-1.2 g/cc 0.0005 g/cc** Range 0.6-1.6 g/cc |
| Density range | 0-3 g/cc |
| Repeatability | 0.00005 g/cc |
| Temperature effect (Corrected) | +/-0.00005 g/cc/°C (+/-0.003 g/cc/100°F) |
| Pressure effect (Corrected) | +/-0.000006 g/cc/bar (+/-0.0004 g/cc/psi) |
| Max. operating pressure | 7845 100bar (1450psi) † 7846 50bar (725psi) † 7847 20bar (290psi) † |
| Test pressure | 1.5 x flange rating |
| Temperature range | -50° to +110°C (-58° to +230°F) (160°C (320°F) with high temp kit) |

Mechanical features

| | |
|-----------------------|--|
| Wetted parts | Stainless steel 316L - 7846: Hastelloy C22 |
| Case finish | Stainless steel 316 |
| Flange materials | Stainless steel 316L - 7846: Hastelloy C22 |
| Weight | 22kg (48lb) |
| Material traceability | Contact sales office for further information |

Electrical features

| | |
|-----------------------|--|
| Temp. measurement | 100ohm PRT 4 wire |
| Power supply | 16 to 28V dc at 17mA max |
| Signal output | Current modulation on power supply line |
| Electrical connectors | Screw terminals housing BS5490 IP65 enclosure |
| Safety approval | ATEX EEx ia IIC T6 |

** Accuracy of 0.0001 g/cc available on densitometers with UKAS calibration or water check

† Or flange unit

Features

- ▶ Pipeline quality - all welded construction
- ▶ IP65 Weatherproof
- ▶ Straight-through flow path
- ▶ Continuous high accuracy measurement
- ▶ Insensitive to mounting position, plant vibration, flow rate and pressure
- ▶ Intrinsically safe designs
- ▶ Zero maintenance



System capabilities

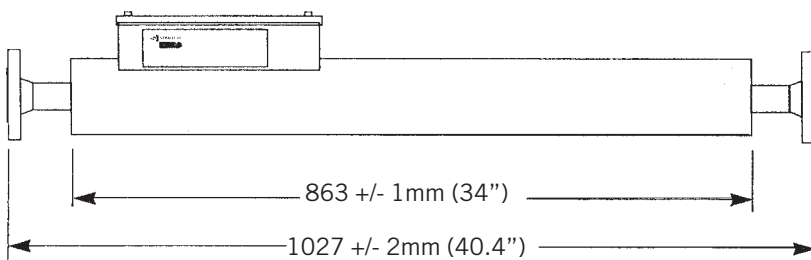
The 7845 is best used with 795x Series signal converters, which offer the following facilities:

| Model | | 7950 | 7951 | Option |
|---|--------------------------|-------------|--------------|---------|
| Mounting | | Wall | Panel | |
| Inputs | Density* | 1 | 1 | |
| | Temperature (PRT) 4 wire | 4 | 4 | |
| | Analogue 0-4-20mA | 4 | 4 | +4/+6 |
| | Digital/status | 8 | 8 or 18 | |
| Outputs | Analogue 0-4-20mA | 4 | 4 | +4 |
| | Digital/status | 8 | 8 or 16 | |
| Comms. | RS232/RS485 | 3 | 3 | +2 HART |
| Calculations Line and base density (API or Matrix referral) Derived parameters (%volume, %mass, °Brix, °API, SG, SSU) | | | | |

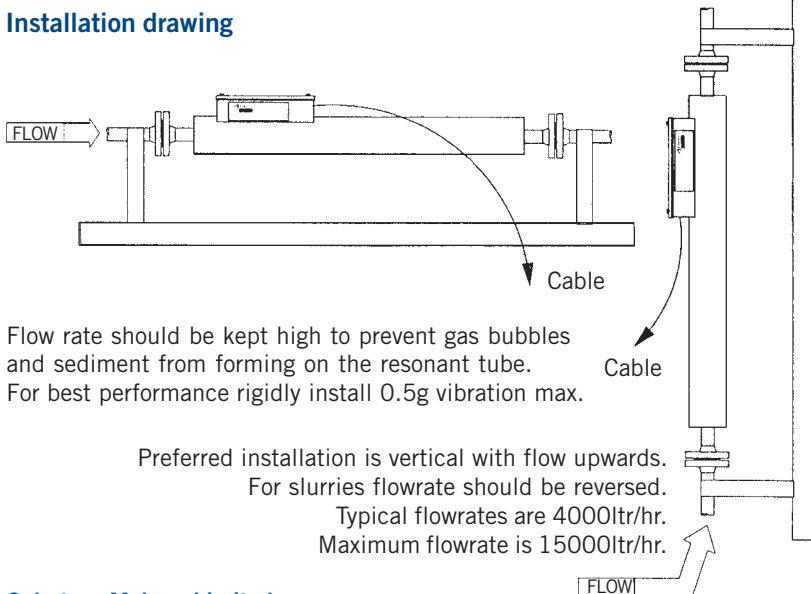
* Some software versions support more than one density/viscosity input

For more details see 795x signal converter data sheet B1251.

Dimensional drawing



Installation drawing



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Ordering information

Stainless steel

| | |
|----------------------|--|
| 7845C | 1" ANSI 300 RF |
| 7845H | 25mm DIN2635 RF DN25/PN40 |
| 7845J | 25mm DIN 2635/2512 GVD DN25/PN40 |
| 7835K | 1" ANSI 600 RF |
| Hastelloy C22 | |
| 7846C | 1" ANSI 300 RF |
| 7846H | 25mm DIN2635 RF DN25/PN40 |
| 7846J | 25mm DIN 2635/2512 GVD DN25/PN40 |

Stainless steel

| | |
|-------|--|
| 7845C | 1" ANSI 300 RF |
| 7845H | 25mm DIN2635 RF DN25/PN40 |
| 7845J | 25mm DIN 2635/2512 GVD DN25/PN40 |
| 7835K | 1" ANSI 600 RF |

Stainless steel with hygienic bellows

| | |
|--------|------------------------------|
| 7847A | 1" Ladish Tri-clamp |
| 7847C | 25mm ISO 2853 ISS (DF) |
| 7847E | 25mm DIN 11851 |
| 7847J | 1" ANSI 300 RF |
| 7847K | 25mm DIN2635 RF DN25/PN40 |
| 78401A | High temp. kit |

For applications which have a high % of entrained gas, Solartron Mobrey manufactures an entrained gas densitometer which may be used with up to 100% entrained gas - see data sheet B1018.


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