

# Rate & Totalizing Display

Pulse Input



measuring  
•  
monitoring  
•  
analyzing

ZOE



2" Pipe Mounting Kit



- Battery Operated or External DC Power Supply
- LCD-Display, Background Lighting
- Pulse Input (NPN, PNP, NAMUR, or Reed Switch)
- Scalable Pulse Output
- Sensor Supply
- Fully Scalable
- Housings for Wall or Pipe Mounting



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## Description

The ZOE is specifically designed for the calculation and display of volumetric or mass flow rate & total. It operates via battery or an external power supply. The ZOE can be paired with flowmeters that have a pulse/frequency output. The electronic displays the flow rate, a resettable total, and a grand totalizer. Mass units can also be set. The ZOE is weather resistant and offers IP66/67 protection. The electronics are housed in a UV-resistant, glass-fibre reinforced plastic housing with stainless steel screws and FKM seals. The ZOE is suitable for harsh indoor or outdoor environments and complies with EU Directive 2004/108/EC for electromagnetic compatibility.

## Special Features

- Scalable, Resettable, Flow Rate & Totalizer
- Plastic Housing
- Universal Pulse Input
- Linearization Function
- Battery Powered with 3.6 V AA Lithium or 2x AA Standard Alkaline Batteries
- Optional Wall or Pipe Mounting

Additionally for ZOE-ZE:

- External Supply 9-28 V<sub>DC</sub>
- Scalable Pulse Output
- Sensor Supply
- Background Lighting for the Display

## Technical Details

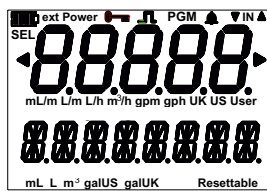
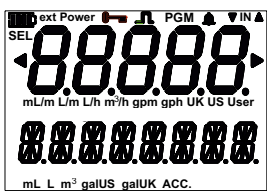
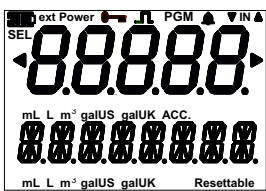
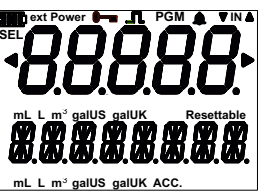
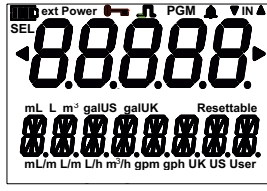
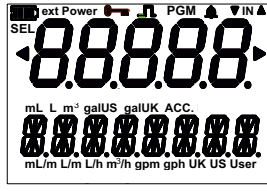
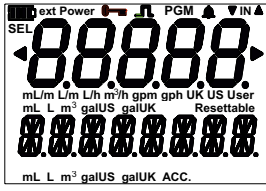
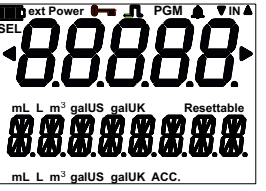
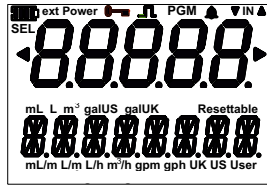
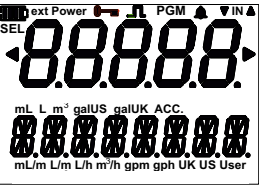
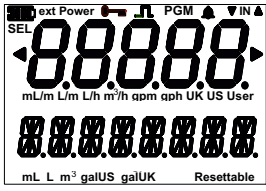
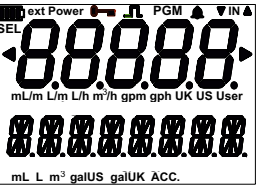
<b>External Supply:</b>	9-28 V <sub>DC</sub> Power Consumption Max. 40 mA (only ZOE-ZE)
<b>Battery for Operation:</b>	1x 3.6 V AA Lithium Batteries or 2x 1.5V AA Alkaline Batteries
<b>Battery Life:</b>	Using 3.6 V Lithium with 2200 mAh: up to 5 Years (at 50 µA); Using 2x Alkaline Batteries with 2600 mAh each: up to 2 Years (at 50 µA)
<b>Display:</b>	LCD Display (for ZOE-ZE), White Background Lighting) Height of Digits for 5-Digit Volume Flow: 0.51" (13 mm), 8-Digit Volume Totalizer: 0.31" (8 mm), Display of Battery Power
<b>Mounting Options:</b>	Meter Mount, Wall or Pipe Mounting
<b>Measuring Input*:</b>	Universal, Configurable (NPN, PNP, NAMUR Coil, Reed Switch or Active) Input Frequency: 0.1 ... 1000 Hz, High-Low-Threshold 1 V <sub>DC</sub>



<b>Measured Rate:</b>	1 s
<b>Volume Flow Units:</b>	GPM, GPH, ml/m, l/m, l/h, m³/h, or User-defined
<b>Units for Volume Totalizer:</b>	Gal, ml, l, m³, or User-defined
<b>Control Input (only ZOE-ZE..3):</b>	for Resettable Totalizer
<b>Linearization:</b>	1 ... 9 Interpolation Points, can be Deactivated
<b>Accuracy of Volume Flow Measurement:</b>	< 0.1% of Reading (Depending on Scaling and Resolution)
<b>Sensor Supply (only ZOE-ZE..3):</b>	8 V <sub>DC</sub> , Max. 25 mA (for External Supply > 10 V <sub>DC</sub> )
<b>Pulse Output (only ZOE-ZE..3):</b>	NPN, Open Collector, Max. 30 V <sub>DC</sub> , Max. 50 mA
<b>Operation:</b>	4 Buttons
<b>Housing:</b>	Plastic, PA6, GF-reinforced
<b>Protection:</b>	IP 66/67
<b>Cable Entry:</b>	3x M20 x 1.5 or ½" NPT (Prepared)
<b>Electrical Connection:</b>	Plug-in Terminals Wire Size Max. 0.75 mm²
<b>Retention of Meter Readings in Case of Power Failure:</b>	Cyclic, Non-volatile Memory
<b>Ambient Temp:</b>	-4°F ≤ T <sub>ambient</sub> ≤ 176°F
<b>Storage Temp:</b>	-13°F ≤ T <sub>storage</sub> ≤ 176°F (without Battery)

\*For battery operation: passive reed switches can be used as sensor. Usage of induction coils with high sensitivity (amplitude < 30mV pp) can result in an increase of the minimal range value. Other sensors requiring sensor supply for operation cannot be used for battery operation.

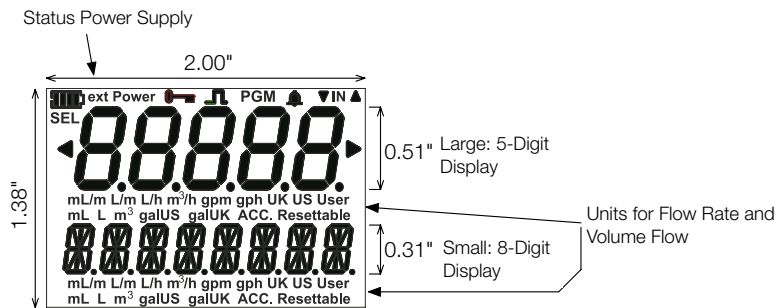
## Configurable Display Layouts

<b>Rate/Resettable Total</b> 	<b>Rate/Grand Total</b> 	<b>Grand Total/Resettable Total</b> 	<b>Resettable Total/Grand Total</b> 
<b>Resettable Total/Rate</b> 	<b>Grand Total/Rate</b> 	<b>Alt/Grand Total</b>  <p>For this layout, the bigger display will alternate b/w partial totalizer and flow, while the smaller display is fixed and will show accumulated totalizer.</p>	<b>Resettable Total/Alt</b>  <p>For this layout, the smaller display will alternate b/w accumulated total and flow, while the bigger display is fixed and will show partial totalizer.</p>
<b>Alt/Rate</b> 	<b>Rate/Alt</b>  <p>For this layout, the bigger display will alternate b/w partial and accumulated total, while the smaller display is fixed.</p>	<b>Rate/Alt</b> 	<b>Rate/Alt</b>  <p>For this layout, the smaller display will alternate b/w partial and accumulated total, while the bigger display is fixed.</p>

Configuration	5-Digit Larger Display	8-Digit Smaller Display
Rate/Resettable Total	Rate Display	Resettable Total Display
Grand Total/Resettable Total	Grand Total Display	Resettable Total Display
Resettable Total/Rate	Resettable Total Display	Rate Display
Alternating/Grand Total	Alternating Display between Rate Display and Resettable Total Display	Grand Total Display
Alternating/Rate	Alternating Display between Grand Total and Resettable Total	Rate Display
Rate/Grand Total	Rate Display	Grand Total Display
Resettable Total/Grand Total	Resettable Total Display	Grand Total Display
Grand Total/Rate	Grand Total Display	Rate Display
Resettable Total/Alternating	Resettable Total Display	Alternating between Grand Total Display and Rate Display
Rate/Alternating	Rate Display	Alternating between Grand Total Display and Resettable Total Display



## Rate & Totalizing Display Model ZOE



### Order Details (Example: ZOE-ZE K MF 30 0)

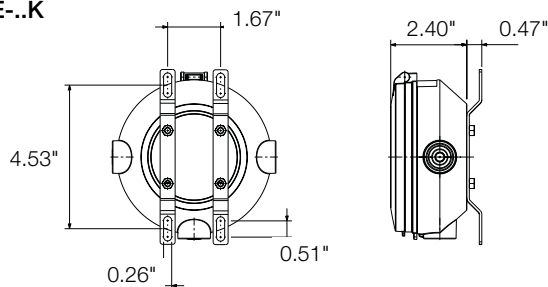
Model	Electronics	Housing Type	Electrical Connection/ Cable Gland	Power Supply	Options
ZOE-	..ZB.. = Rate Totalizer Battery Powered	..0.. = Universal Mount (Standard, Round Plastic without Mounting Plates, without Holes)	..MF.. = 3x M20 x1.5 Cable Entry	..B0 <sup>1)</sup> .. = Battery for Operation	..0 = No Options
	..ZE.. = Rate Totalizer Battery Powered & Externally Powered	..K.. = Universal Mount (Standard, Round Plastic with Mounting Plates)  ..M.. = Universal Mount (Round Plastic for Retrofitting DON)	..NF.. = 3x ½" NPT Cable Entry	..30 <sup>2)</sup> .. = 9-28 V <sub>DC</sub> , Battery for Operation, Pulse Output	

<sup>1)</sup> Only available with ZOE-ZB

<sup>2)</sup> Pulse output, sensor supply, and LCD backlight only with external power supply ZOE-ZE

### Dimensions

#### ZOE-..K



### Accessories

Description	Model
Stainless Steel Wall Mounting Kit	ERS-ZOK-023618
Stainless Steel 2" Pipe Mounting Kit	ERS-ZOK-003402

#### ZOE-..M, ZOE-..0

