

## 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



KOBOLD companies worldwide:

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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 2xAA 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 $\mu$ A); Using 2x Alkaline Batteries with 2600 mAh each: up to 2 Years (at 50 $\mu$ A)
<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>



### Measured Rate:

1 s

### Volume Flow Units:

GPM, GPH, ml/m, l/m, l/h, m<sup>3</sup>/h, or  
User-defined

### Units for Volume

Totalizer: Gal, ml, l, m<sup>3</sup>, or User-defined

### Control Input

(only ZOE-ZE..3): for Resettable Totalizer

### Linearization:

1...9 Interpolation Points,  
can be Deactivated

### Accuracy of Volume Flow Measurement:

< 0.1% of Reading (Depending on  
Scaling and Resolution)

### Sensor Supply (only ZOE-ZE..3);

8 V<sub>DC</sub>, Max. 25 mA (for External  
Supply >10 V<sub>DC</sub>)

### Pulse Output (only ZOE-ZE..3):

NPN, Open Collector, Max. 30 V<sub>DC</sub>,  
Max. 50 mA

### Operation:

4 Buttons

### Housing:

Plastic, PA6, GF-reinforced

### Protection:

IP66/67

### Cable Entry:

3x M20 x 1.5 or 1/2" NPT (Prepared)

### Electrical Connection:

Plug-in Terminals Wire Size  
Max. 0.75 mm<sup>2</sup>

### Retention of Meter Readings in Case of

Cyclic, Non-volatile Memory

### Power Failure:

-4 °F ≤ T<sub>ambient</sub> ≤ 176 °F

### Ambient Temp:

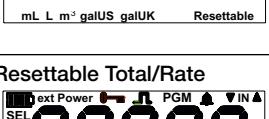
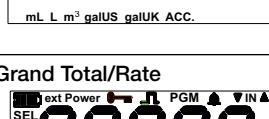
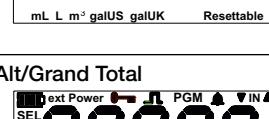
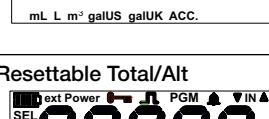
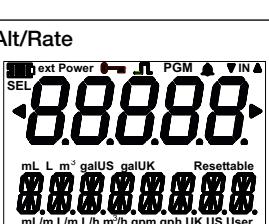
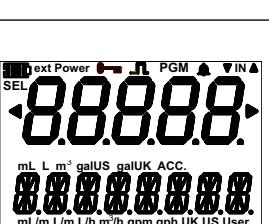
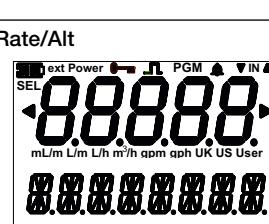
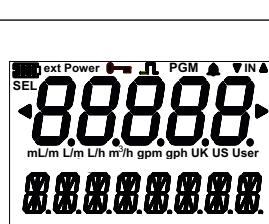
-13 °F ≤ T<sub>storage</sub> ≤ 176 °F

### Storage Temp:

(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.

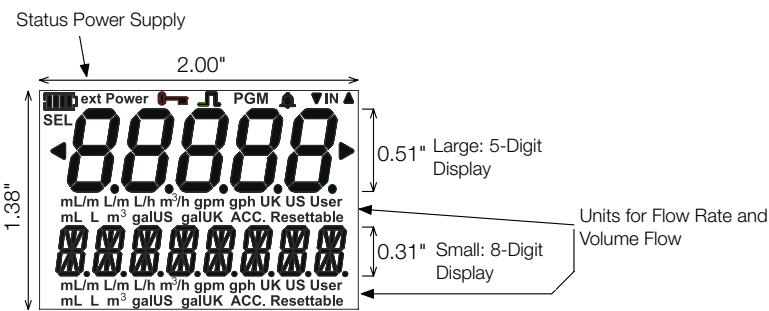
## Configurable Display Layouts

<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> 	<b>Resettable Total/Alt</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>	<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>		<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)

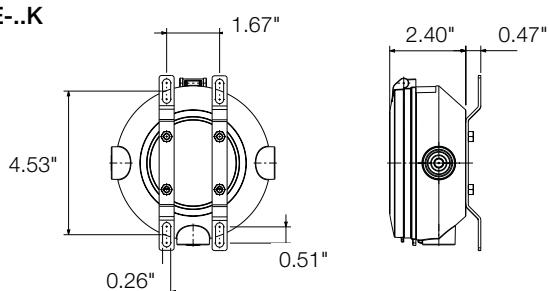
Model	Electronics	Housing Type	Electrical Connection/Cable Gland	Power Supply	Options
ZOE-	..ZB.. = Rate Totalizer Battery Powered	..0.. = Universal Mount (Standard, Round Plastic without Mounting Plates, without Holes)	..MF.. = 3x M20 x1.5 Cable Entry	..B0 <sup>1)</sup> .. = Battery for Operation	..0 = 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 1/2" NPT Cable Entry ..30 <sup>2)</sup> .. = 9-28 Vdc, 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

