

# Data sheet deltawaveVER2



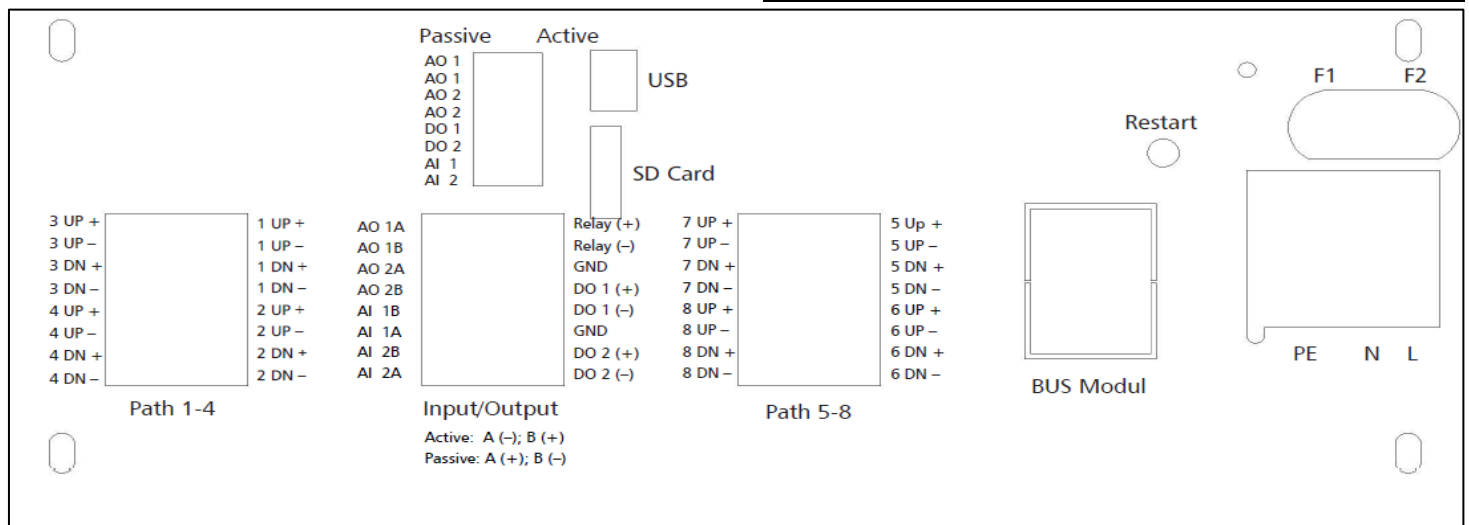
Range of application	
Temperature range	-30 to +80 °C
Pressure range	0 to 160 bar
Channel widths or Pipe diameter	0,1 m – 80 m
Media	Water
Channel shapes	Open channels Partially filled pipes Fully filled pipes Rectangular channels

General Information	
	Housing: stainless steel, wall-mounted Protection class: IP65 Dimensions (WxHxD, mm): 352 x 430 x 140 Weight: 7,5 kg Display: LCD 320x240 (Backlight: LED, dimmable) Operation: Intuitive via 8 main keys (soft keys) Operating temperature: -20 ... 60 °C Ex: Alternative Ex housing (optional)

Interfaces	
Inputs	2x 4...20 mA (active/passive)
Outputs	1x USB-socket (Micro B) 16x Transducer 2x 4...20mA (active/passive) 2x Puls (active/passive) 1x Relay (max 50V; 0,5A)
Communication	Modbus RTU / ASCII (RS485) opt. MBUS (via RS485) optional

Technical Data	
Measurement method	Ultrasonic transit time difference
Measured values	Volume flow, flow velocity, sound velocity, Water level
Counters	Total volume
Measuring range	-30 ... +30 m/s
Languages	German, English
Units	metric, imperial
Power supply	90 – 240 VAC 18 – 36 VDC (optional)
Power consumption	approx. 23 Watt
Integrated data storage	Micro-SD card, 8 GB (more possible)
Signal damping	1...60 sec (adjustable)
Diagnostic functions	Speed of sound, signal strength, SNR, signal quality, amplitude, energy. Signals can be shown graphically on the display.
No. of measuring paths	1 to 8
Arrangement measurement paths	Up to 8 paths vertically above each other Up to 4 crossed paths vertically above each other
Quantity	1 – 4 paths: 1 MUS-Board 5 – 8 paths: 2 MUS-Boards
Fuses F1 & F2	Fine-wire fuses: M 3,15 / 250E

Active / passive switching (On/Off)		
SW1	Analogue output 1	<b>Switch right: Active</b> Internal power supply
SW 2	Analogue output 1	
SW 3	Analogue output 2	
SW 4	Analogue output 2	<b>Switch left: Passive</b> External power supply
SW 5	Pulse output 1	
SW 6	Pulse output 2	
SW 7	Analogue input 1	
SW 8	Analogue input 2	



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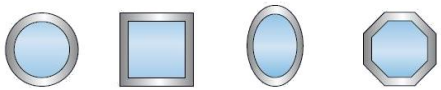
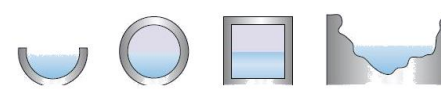
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Wiring diagram Path 1 – 4		Wiring diagram Path 5 – 8		Wiring diagram Input/Output		
1	MUS1_CH1_UP (1U+)	1	MUS2_CH5_UP (1U+)	1	Relay (+)	Max. 50 V AC/DC and 0,5 A
2	MUS1_CH1_UP (1U-)	2	MUS2_CH5_UP (1U-)	2	Relay (-)	
3	MUS1_CH1_DOWN (1D+)	3	MUS2_CH5_DOWN (1D+)	3	Pulse output 1 (+)	For passive operation: Max. 30 VDC at 0,1 A
4	MUS1_CH1_DOWN (1D-)	4	MUS2_CH5_DOWN (1D-)	4	Pulse output 1 (-)	
5	MUS1_CH2_UP (2U+)	5	MUS2_CH6_UP (2U+)	5	GND	
6	MUS1_CH2_UP (2U-)	6	MUS2_CH6_UP (2U-)	6	Pulse output 2 (+)	For passive operation: Max. 30 VDC at 0,1 A
7	MUS1_CH2_DOWN (2D+)	7	MUS2_CH6_DOWN (2D+)	7	Pulse output 2 (-)	
8	MUS1_CH2_DOWN (2D-)	8	MUS2_CH6_DOWN (2D-)	8	GND	
9	MUS1_CH3_UP (3U+)	9	MUS2_CH7_UP (3U+)	9	Analogue output 1A	When switching between <b>active</b> and <b>passive</b> , the polarity changes:  Active: A = (-); B = (+)  Passive: A = (+); B = (-)
10	MUS1_CH3_UP (3U-)	10	MUS2_CH7_UP (3U-)	10	Analogue output 1B	
11	MUS1_CH3_DOWN (3D+)	11	MUS2_CH7_DOWN (3D+)	11	Analogue output 2A	
12	MUS1_CH3_DOWN (3D-)	12	MUS2_CH7_DOWN (3D-)	12	Analogue output 2B	
13	MUS1_CH4_UP (4U+)	13	MUS2_CH8_UP (4U+)	13	Analogue input 1A	
14	MUS1_CH4_UP (4U-)	14	MUS2_CH8_UP (4U-)	14	Analogue input 1B	
15	MUS1_CH4_DOWN (4D+)	15	MUS2_CH8_DOWN (4D+)	15	Analogue input 2A	
16	MUS1_CH4_DOWN (4D-)	16	MUS2_CH8_DOWN (4D-)	16	Analogue input 2B	

Specifications ultrasonic transducer					
Transducer	Pathlength	Media temperature	Cable length	Material housing	Pressure range
1 MHz (Ex opt.)	0,1 m to 7 m	-40 ... 80°C *Optional: -40 ... 140°C	10 m – 150 m	PVC / PU / V4A	Max. 10 barü *Optional: up to 100 barü
0,5 MHz (Ex opt.)	0,5 m to 40 m	-40 ... 80°C	10 m – 150 m	PVC / PU / V4A	Max. 3 barü Optional: up to 100 barü
0,2 MHz	3 m to 150 m	-40 ... 80°C	10 m – 300 m	PVC / PU / V4A	Max. 2 barü

\* When using the optional temperature extension, a pressure extension is only possible up to 28 barü.

Accuracies (apply from v = 0.1 m/s)					
Inlet Path	> 10 D			< 5 D	
	2	4	6	2 x 2	4 x 2
 Filled pipes and filled rectangular cross-sections	< 2 %	0,5 %	0,3 %	< 2 %	0,5 %
 Open channels Partially filled pipes, running water	3 %	2 %	1 %	3 %	2 %

## Any questions? We are happy to help you!

If you are not sure whether deltawaveVER2 is right for your application, contact us! We are happy to help.

Further, detailed information about the deltawaveVER2 and application examples can be found on the product pages of our website at [www.systemec-controls.de](http://www.systemec-controls.de) (Products)

At [www.systemec-controls.de](http://www.systemec-controls.de) (Info & Contact) you will find your personal contact person and you can also send us an enquiry using the online form.

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